

Sydney Water Corporation
Operational Audit 2002/2003

INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

Sydney Water Corporation
Operational Audit 2002/2003

Compliance No 12

December 2003

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INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

Our reference: 03/179

18 December 2003

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The Hon Frank Sartor MP
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Dear Minister

Operational Audit of Sydney Water Corporation 2002-2003

In accordance with Section 31 of the *Sydney Water Act 1994*, the Tribunal is pleased to submit the independent Operational Audit Report for Sydney Water Corporation for the period from 1 July 2002 to 30 June 2003.

The Audit has found that *"Sydney Water Corporation has managed its resources to achieve predominantly full to high compliance with the Operating Licence during 2002/03."*

Having considered the Audit report, the Tribunal recommends that no penalties be imposed on the Corporation. However, the auditors have highlighted some areas where performance could be improved.

Drinking Water Quality

In relation to this fundamental issue, the auditors concluded that:

"Sydney Water has an excellent water quality management system. The quality of drinking water supplied to customers is generally of an excellent standard and complies with the health related requirements of the Australian Drinking Water Guidelines 1996."

While this result may be attributed to low rainfall in the catchments, it also reflects the calibre of the management systems Sydney Water uses to ensure the quality of drinking water.

Water Conservation and Demand Management

Based on current water conservation performance, the auditors have assessed that it is highly unlikely that Sydney Water will meet the demand management targets in the Operating Licence for 2004/2005. However, they believe that the 2010/11 target may be achievable with the planned expansion of conservation programs, provided the assumptions and calculations of the End Use Demand model are correct and customers accept the more stringent requirements.

The auditors report that Sydney Water is achieving some success in water conservation through leakage reduction and its "Every Drop Counts" program for business customers. However, the Tribunal is concerned that Sydney Water does not appear to have fully utilised the budgeted expenditure and resources allocated to meet the significant challenges inherent in reducing the demand for water. In particular, the auditors comment that actual expenditure on the public housing retrofit program and rainwater tank rebates were well below planned levels.

The Tribunal supports the auditors' recommendation (recommendation R8.2) that Sydney Water report to the Minister and the Tribunal on progress in completing retrofit work in Department of Housing properties.

The Tribunal believes that it is important to comprehensively understand water use within Sydney Water's system before efficient and effective conservation measures can be developed. In the 2001/2002 audit report, the Tribunal recommended that Sydney Water account more fully for use of water. Sydney Water complied with this requirement.

As the next step in this process, the auditors now suggest that Sydney Water improve the quality of this data. The Tribunal supports the auditors' recommendation (R8.1) that Sydney Water improve the certainty of its estimates of leakage and leakage reduction.

System Performance Standards

During 2002/2003, Sydney Water complied fully with the amended system performance standards for water pressure, water continuity and sewer overflows. However, the auditors report a substantial increase in the incidence of dry weather sewer overflows. This is, in part, due to increased intrusion into the sewer system by tree roots. More importantly, the report shows that, since 1999/2000, there has been an increasing trend in the number of properties affected by sewer overflows.

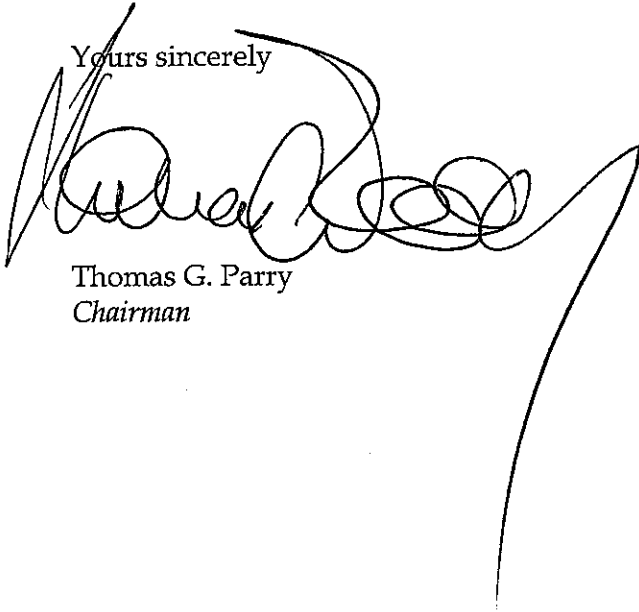
The Tribunal understands that drought conditions may exacerbate the rate of sewer overflows. However, it has some concerns about the asset management implications of the longer term trend in performance against this standard. The auditors have recommended that Sydney Water should review the causes of the increasing trend in dry weather sewer overflows, demonstrate strategies to ensure that the standard is not exceeded, and report progress to the Tribunal by 1 September 2004. The Tribunal supports this recommendation.

During this audit period, the Tribunal finalised the Monitoring and Reporting Protocol with Sydney Water. This protocol includes specific provisions concerning the reporting of accuracy and confidence limits for each system performance standard. Apart from providing the community with confidence in reported system performance results, future assessments of accuracy and confidence limits for system performance standards will allow Sydney Water to identify, report and correct system performance problems, especially those that affect customer service.

The Tribunal intends to monitor Sydney Water's progress in addressing all matters raised by the auditor, especially the matters discussed above.

Please do not hesitate to contact me if I can be of further assistance.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Thomas G. Parry', with a long, sweeping underline that extends downwards and to the right.

Thomas G. Parry
Chairman

IPART

**Sydney Water Corporation
Operational Audit 2002/03
Final Report**

December 2003



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Abbreviations

Acronym	Description
ADWG	Australian Drinking Water Guidelines (1996)
ACCESS	Automated Corporate Customer Enquiry Service System
Act	<i>Sydney Water Act, 1994</i>
ARMCANZ	Agriculture and Resource Management Council of Australia and NZ
AWT	Australian Water Technologies Pty. Ltd.
BWESC	Botany Wetlands Environmental Steering Committee
CE	Chief Executive
CEO	Chief Executive Officer
CIBS	Customer Information and Billing Service
CRC	Co-operative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSR	Customer/Stakeholder/Regulator
DLWC	Former Department of Land and Water Conservation (NSW), now DIPNR
DLWPA	Designated Low Water Pressure Areas
DIPNR	Department of Infrastructure, Planning and Natural Resources (NSW)
DWQMS	Drinking Water Quality Management System
EDC	Every Drop Counts
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EKAMS	Effluent Knowledge and Management System
EMS	Environmental Monitoring Services, a division of AWT
EP	Environment Plan
EPA	Environment Protection Authority (NSW)
ERM	Environmental Risk Management
ESD	Ecologically Sustainable Development
EWON	Energy and Water Ombudsman NSW
GHD	GHD Pty Ltd
GIS	Geographical Information Systems (computer mapping)
GLPA	Gigalitres per annum
HRC	Healthy Rivers Commission
HVRF	Hunter Valley Research Foundation



IPART	Independent Pricing and Regulatory Tribunal (NSW)
ISF	Institute for Sustainable Futures
IWA	International Water Association
JLG	Joint Liaison Group
LR	Licence Regulator
LPCD	Litres per capita per day
ML	Megalitre (1 million litres)
MOU	Memorandum of Understanding
M&R	Measurement and Reporting
NATA	National Analytical Testing Authority
NCC	Nature Conservation Council (NSW)
NHMRC	National Health and Medical Research Council
NHT	Natural Heritage Trust
NPWS	National Parks and Wildlife Service (NSW)
NSW Health	NSW Department of Health
NTU	Nephelometric turbidity unit
OLCR	Operating Licence Compliance Report
OPC	Operational Policy Committee
PENGO	Peak Environmental Non-Government Organisation
POEO	<i>Protection of the Environment Operations Act, 1997</i>
REP	Regional Environmental Plan
RIS	Regulatory Impact Statement
SCA	Sydney Catchment Authority
SEDA	Sustainable Energy Development Authority
SEPP	State Environmental Planning Policy
SLG	Strategic Liaison Group
SoE	State of the Environment (report)
SOP	Standard Operating Procedure
STP	Sewage Treatment Plant
Sydney Water	Sydney Water Corporation
SWC	Sydney Water Corporation
TEC	Total Environment Centre
TRC	Total Residual Chlorine
TSR	Towards Sustainability Report



TSS	Total Suspended Solids
WAMC	Water Administration Ministerial Corporation
WAMS	Works and Asset Management System
WATHNET	Water Supply Systems Model developed by Sydney Catchment Authority
WC&RIR	Water Conservation and Recycling Implementation Report
WFP	Water Filtration Plant
WHO	World Health Organisation
WML	Water Management Licence
WSAA	Water Services Association of Australia



Glossary/definitions

GENERAL TERMS AND DEFINITIONS

Term	Meaning
Act	<i>Sydney Water Act, 1994.</i>
Area of Operations	As specified in section 10(1) of the Act and described in Schedule 2 of the Operating Licence.
Audit period	1 July 2002 to 30 June 2003.
Auditor	GHD Pty. Ltd. in association with Hunter Valley Research Foundation.
Bulk Water	Water supplied by the SCA to Sydney Water (under the Bulk Water Supply Agreement) and to customers other than Sydney Water.
Bulk Water Supply Agreement	The Bulk Water Supply Agreement between the SCA and Sydney Water signed on 15 September 1999.
Commencement Date	12 April 2000.
End of Term Review	A review of the Operating Licence to be undertaken on or about 1 January 2004.
Function	Means a power, authority or duty.
Minister	The Minister responsible for administering the provisions of the <i>Sydney Water Act, 1994.</i>
Operating Licence	The licence between 1 January 2000 and 31 December 2004.
Water Management Licence	A Water Management Licence granted under the <i>Water Act, 1912</i> and issued by DLWC on 23 April 2001.

COMPLIANCE TABLE ASSESSMENT

Term	Meaning
Grading of Compliance	The following ratings are used to grade achievement of compliance with a Licence condition.
Full compliance	All requirements of the condition have been met.
High compliance	Most requirements of the condition have been met with some minor technical failures or breaches.
Partial compliance	The major requirements of the condition have been met.
Low compliance	Key requirements of the condition have not been met but minor achievements regarding compliance have been demonstrated.
Non compliance	The requirements of the condition have not been met.
Insufficient information	Relevant, suitable or adequate information to make an objective determination regarding compliance was not available to the auditor.
No requirement	The requirement to comply with this condition does not occur within the audit period or there is no requirement for Sydney Water to meet, such as a definition, or a requirement placed upon another agency.



Preface

GHD Pty Ltd, in association with the Hunter Valley Research Foundation (HVRF), was commissioned by the Independent Pricing and Regulatory Tribunal (IPART) to undertake the 2002/03 Operational Audit of the Sydney Water Corporation (Sydney Water). The 2002/03 Operational Audit (and the extent of this report) covers the period 1 July 2002 to 30 June 2003.

Sydney Water is a State Owned Corporation, which is wholly owned by the NSW Government. The roles and responsibilities of Sydney Water derive from the *Sydney Water Act 1994* (the Act) and the Operating Licence issued pursuant to Part 5 of the Act. The Operating Licence enables Sydney Water to provide water, sewerage and some stormwater drainage services to approximately 4 million customers within the areas of Sydney, the Blue Mountains and Illawarra Regions.

The scope of the audit is defined in Part 10 of the Operating Licence. The scope includes assessment of compliance against the Ministerial requirements as presented by the Minister responsible for administering the provisions of the *Sydney Water Act, 1994*, following the 2000/01 Operational Audit and the Review of the System Performance Standards.

The findings of the report are presented in a format consistent with the Operating Licence structure and not in a “prioritised order” or “order of significance”. The report also identifies factors that have affected compliance and presents recommendations to improve compliance in subsequent years.

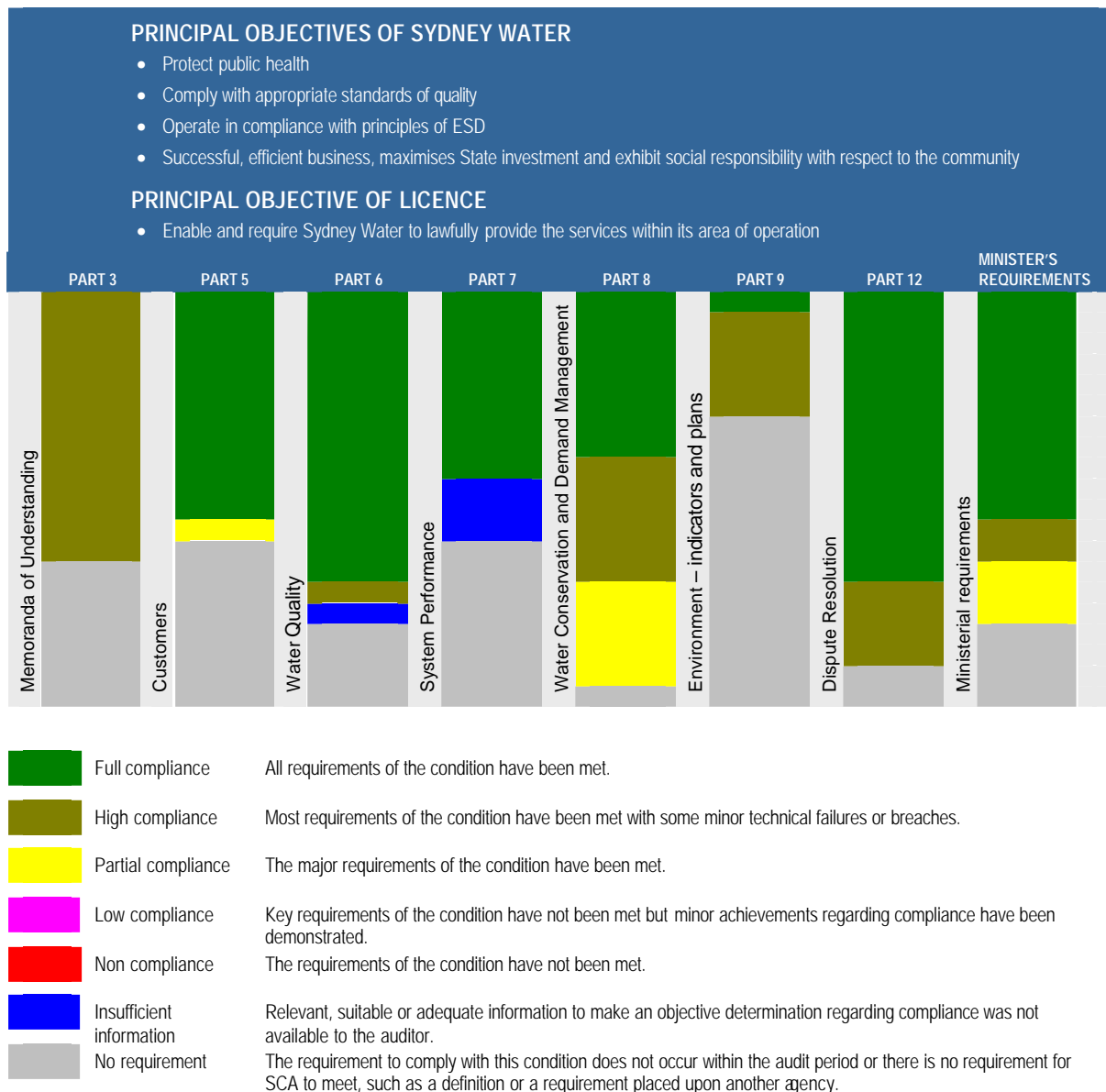
The audit methodology involved the preparation of an audit plan, inception meetings, application of audit tests, review and reporting. The audit tests directly relate to the respective clauses of the Operating Licence conditions, assembling evidence through document review, interviews and analysis to determine compliance.



Executive Summary

The Sydney Water Corporation (Sydney Water) has managed its resources to achieve predominantly **Full to High compliance** with the Operating Licence during 2002/03. Figure 1 provides an indicative overview of Sydney Water's level of compliance.

Figure 1 Overview of compliance for 2002/03 Audit Period



NOTE: Figure is indicative only.



Compliance against each Part of the Licence is summarised below in the order the parts occur in the Licence:

Memoranda of Understanding

Sydney Water is required to maintain Memoranda of Understanding (MOU) with the Water Administration Ministerial Corporation (WAMC), NSW Department of Health (NSW Health) and Environment Protection Authority (EPA) for the term of the Licence. Revised MOUs for both the EPA (16 October 2002) and WAMC (28 June 2002) were approved and commenced operating in 2002/03.

High compliance was the collective assessment for the MOUs with all three agencies. Sydney Water exhibited **Full compliance** for the MOU with NSW Health, **High compliance** for the EPA MOU and **Partial compliance** for the MOU with WAMC.

Customer and Consumer Rights

A revised Customer Contract has been in effect since the 1 April 2002, and Sydney Water achieved **High compliance** with most clauses relating to the Contract.

Sydney Water obtained **Full compliance** with all aspects of the Customer Councils and overall **High compliance** with the Code of Practice and procedure on debt and disconnection, though a **Partial compliance** was noted against one clause.

Water Quality

Sydney Water obtained **Full compliance** with respect to the requirements for the supply of treated drinking water to its customers. The water quality supplied is generally of an excellent standard and complies with the health related requirements of the Australian Drinking Water Guidelines and the aesthetic related requirements of NSW Health and the Minister.

Sydney Water also obtained **Full compliance** for:

- ▶ having regard to the concepts of risk minimisation in its management of the water supplies;
- ▶ the preparation of reports on water quality monitoring and water quality improvement (annual *Drinking Water Quality Report*, endorsed by NSW Health, and an *Annual Water Quality Improvement Plan*);
- ▶ monitoring in accordance with the *Annual Drinking Water Quality Monitoring Plan*;
- ▶ the preparation of a *Drinking Water Quality Incident Management Plan*;
- ▶ meeting the Ministerial requirement to consider risks that may occur through variations in bulk water quality or plant failure through its Annual Drinking Water Quality Improvement Plan.

Sydney Water obtained **High compliance** in respect to meeting environmental water quality requirements for discharges or water releases that take place under licences issued by regulatory agencies.

Insufficient information was received to confirm that Sydney Water complies with the requirements for “supply of other grades of water” to customers; however, the information provided suggests that Sydney Water may comply with the requirements for supply of other grades of water.



System Performance

Sydney Water achieved **Full compliance** with each of the amended System Performance Standards for water pressure, water supply continuity (unplanned interruptions and “*planned and warned*” interruptions) and sewerage overflows. There is **Insufficient information** available to the auditor to make an objective judgement on whether Sydney Water has met the accuracy and confidence limit requirements for the reported numbers for each of the System Performance Standards.

Sydney Water also achieved **Full compliance** with the Ministerial requirements to collect and report on performance indicators as a measure of performance against the System Performance Standards. However, **Partial compliance** was achieved for the Ministerial requirement to collect (and report) data during the audit period commencing 1 July 2002 in accordance with the new arrangements under the M&R Protocol.

Water Conservation and Demand Management

Sydney Water attained a **Partial compliance** rating for actions taken to reduce the quantity of water (other than re-use) it draws from all sources. It is highly unlikely that Sydney Water will meet the 2004/05 target. The 2010/11 target may be achievable with the planned expansion of the conservation programs provided the assumptions and calculation of the End Use Demand model are correct. Until details of the model, its assumptions and the scientific validation of these are provided the reasonableness of the plan cannot be determined. There is a significant difference between baseline (no further demand management intervention) forecast of demand by Sydney Water and by the Ministry for Energy and Utilities that has not been reconciled.

Partial compliances were assessed for reasonableness of progress on developing new performance measures for water reliability criteria and for action taken on providing an update of the cost of alternative water supplies for comparison against future plans for water reclamation and demand management.

Sydney Water attained a **High compliance** rating for its significant actions to develop a climate adjustment model for water demand and describing expected supply deficiencies and for describing, costing, evaluating and prioritising additional conservation measures and reducing discharges

Environment – Indicators and Plans

Sydney Water obtained an overall **High compliance** for requirements relating to environmental indicators. Sydney Water prepared a report that described its performance against most gazetted environmental indicators. However, some environmental indicators were not monitored or compiled during the audit period following the recommendations of an internally commissioned review of its monitoring programs.

Sydney Water obtained **High compliance** for requirements relating to ESD indicators. Sydney Water prepared a clear report outlining performance against each indicator. Some indicators demonstrated high performance while others indicated areas where performance should be improved.

Sydney Water’s Environment Plan was adopted at the end of September 2000 and includes objectives for the five-year period to 2005. Targets were set and for those targets due in the audit period, Sydney Water obtained **High compliance**, having met most of the targets.

Sydney Water has mirrored previous year’s performance and been assessed as **High compliance** for the implementation of the Botany Wetlands Plan of Management.



Dispute Resolution Scheme

Sydney Water generally achieved **High compliance** regarding reports covering external complaint handling (EWON). Sydney Water has overcome a major area of poor compliance in previous years by providing a report listing complaints received on a month by month basis and classified by suburb and other appropriate categories.

Full compliance was achieved for most areas relating to Internal Dispute Resolution. Those areas rated as **High compliance** can be upgraded through the provision of a more co-ordinated and documented skills assessment and training program on complaint handling and dispute resolution. Further refinement of the Emergency Contact Survey and the reporting on complaints remaining unresolved for 50 days or more have been suggested.

An **Insufficient information** rating has been applied to the area of complaints to other bodies because of a disparity in interpretation of what constitutes a complaint. Sydney Water has indicated that there are no complaints to courts and tribunals, however this appears to be using a limited interpretation of the clause, which Sydney Water believes only refers to complaints determined by Tribunals empowered to hear complaints. It appears that this interpretation may have limited the provision of information relating to other court cases that may be relevant but has not been able to be verified.

Ministerial Requirements

Following the findings and recommendations of the 2001/02 Operational Audit, the Minister for Energy issued five Ministerial requirements to Sydney Water. An additional eight requirements were previously imposed on Sydney Water following the Review of the System Performance Standards, making a total of thirteen Ministerial requirements. Sydney Water demonstrated **High to Full compliance** with eight of these requirements and a further three requirements were satisfied in the previous audit period. Sydney Water demonstrated **Partial compliance** in the following areas:

- ▶ In relation to the Monitoring and Reporting Protocol, Sydney Water did not include some important requirements for data reporting in its Compliance Report and did not ascertain the accuracy and confidence levels for the System Performance Standards data; and
- ▶ Sydney Water did not demonstrate adequate evidence of working with the SCA to develop performance measures for water reliability. A number of demand side factors that can alter the calculated safe yield estimate were identified in the audit and Sydney Water provided no evidence of significant joint Sydney Water action with SCA in these aspects.

‘The big picture’

The 2002/03 Operational Audit of Sydney Water Corporation has identified Sydney Water’s performance against the following key issues as the “big picture” items for noting or action

In brief:

- ▶ Sydney Water provides excellent quality water and has an excellent water quality management system that incorporates monitoring, risk minimisation, incident management and continuous improvement.
- ▶ However, Sydney Water’s demand (635 GL/pa) for potable water currently exceeds the Sydney Catchment Authority’s (SCA) estimate of “safe yield” (600 GL/pa). Considerable effort is required firstly, in water demand management to correct this recurring shortfall and achieve long-term targets and secondly, to incorporate demand side effects (for example, demand hardening and climate variation) in calculation of “safe yield” to ensure it is accurate. A key is to improve the accuracy of Sydney Water’s WATHNET model by, for example, checking fit to past data, establishing environmental flow regimes, defining the impact of a major bushfire on streamflow and improving the rigor of water demand estimates.
- ▶ Based on current water conservation performance, it is unlikely that Sydney Water will meet the 2004/05 target for reducing the demand for water. However, the 2010/11 target may be achievable with the planned expansion of conservation programs. Thus, whilst it is unlikely a balance of water demand and supply is attainable in the short term, it is achievable with effort in the mid-term.
- ▶ System Performance Standards (SPS) were all met and associated reporting systems continue to be well structured, documented and integrated. Yet, Sydney Water’s accuracy and confidence limits for SPS were not reported. Also some indicators demonstrated a trend of deteriorating performance, which require review including the impact, for example, of an ageing sewer network. A reported level of dry weather sewage overflows, very close to exceeding the set standard, warrants a specific report to the Tribunal on causes and proposed actions to reduce the occurrence of overflows.
- ▶ Sydney Water’s performance against the Ecologically Sustainable Development indicators and the Environment Plan was variable. Its achievements included significant reductions in nutrients discharged to the Hawkesbury Nepean River and 100% recycling of biosolids. However, performance was below target for water demand management, and increases in oil and grease discharges and dry weather sewage overflows were observed.
- ▶ Sydney Water’s compliance against the Customer Contact and Code of Practice relating to debt management was generally very high.
- ▶ Sydney Water was assigned high levels of compliance regarding its dispute resolution and reporting process although there was insufficient information to assess its compliance against complaints to “other” bodies, such as court actions. (Further discussion is required between the Licence Regulator and Sydney Water regarding the types of complaints that need to be reported under Clause 12.3 of the Operating Licence).



Water Quality

Sydney Water has an excellent water quality management system. The quality of drinking water supplied to customers is generally of an excellent standard and complies with the health related requirements of the Australian Drinking Water Guidelines 1996 and the aesthetic related requirements specified by NSW Health.

The audit has shown that Sydney Water has in place excellent systems for the management of drinking water quality and, through its various risk management procedures, has identified where risks to drinking water quality may arise and is developing strategies to manage these risks.

Some of the risks involve factors that are not necessarily easily controlled by Sydney Water, for example:

- ▶ In the case of the Prospect Water Filtration Plant (WFP) risk assessment, extreme risks were identified to result from a potential bush fire in the catchment and higher numbers of *Cryptosporidium* and *Giardia* during flood events.
- ▶ The Expert Panel identified a number of important emerging water quality issues, including for example, drought breaking rains, algal blooms in storages, and organic matter in the raw water (through changing perspectives related to water constituents such as disinfection by-products).

Addressing these issues will require Sydney Water to place a high reliance on the management of the catchment and the maintenance of bulk water quality by SCA, unless it is accepted that such control should be exercised through the water filtration plants, or the risk is accepted as a reasonable business risk.

Water Demand Management and “Safe Yield”

Sydney Water’s demand for potable water at 635,000 ML per annum continues to exceed SCA’s estimate of “safe yield” of 600,000 ML per annum. This exceedence will become an increasingly significant issue in the longer term. It is the auditor’s view that there have not been sufficient gains in water demand management during 2002/03 to demonstrate downward a trend in total water demand sufficient to achieve the 2004/05 demand management target. Also, there are a number of assumptions in the long-term demand management program which mean achievement of the 2010/2011 target for the estimated outlay of \$264m is uncertain. Based on experience to date, the cost could be higher and/or the time required to achieve the demand management target may be longer.

During 2002/03, Sydney Water has demonstrated considerable effort and expenditure in programs such as leakage reduction, residential and business water use reduction programs and recycling initiatives. However, total reduction in demand due to all demand management initiatives is only 16.1 litres per capita per day (lcd) which is within the random variability for the total demand (406 lcd) of + 28.4 lcd (7%) and –16.2 lcd(4%). Hence, detection of downward trend in the total demand due to demand management programs remains uncertain. Also, the model for climate adjustment of demand to remove this major source of variability continues to be considered unreliable by CSIRO.

Key issues that face Sydney Water are summarised below:

- ▶ The need to progress joint Sydney Water and the SCA activity to improve the accuracy of the estimate of “safe yield” by taking into account demand side issues such as demand hardening and climate variation in demand.
- ▶ The future projection of demand to achieve the 2010/11 target is based on a set of assumptions in the ‘End Use Demand’ model that needs to be externally validated in terms of scientific correctness.

- ▶ The climate adjustment model for demand is, as yet, not a reliable predictive tool for determining the average annual demand compared to specified targets. It may be that an alternative approach in which demand reduction targets are set for each water conservation and reuse program is a more effective approach.
- ▶ More detailed social research is needed to determine if there is a “threshold” of more stringent water conservation and/or reuse strategies beyond which customers consider the impact on them is an unacceptable reduction in the level of service given the price they are charged for water supply. This is important as reduced residential outdoor water use is considered a major demand management initiative
- ▶ Recycling is seen by Sydney Water as a significant initiative to reduce demand. However, careful pricing, business planning and regulation are needed to maximise the rate and extent of uptake by industry and developers.
- ▶ There is significant uncertainty in the estimate of leakage reduction, in targeting of where to look for leaks and the causes, and the timing and magnitude of the decay rate in leakage reduction. More flow meters, smaller zone sizes and careful management of divide valves could reduce this problem.
- ▶ Investigation of and a suitable response is needed to stop rising unit demand in the residential and commercial sectors together with a more concerted effort on existing programs, for example, retrofitting Department of Housing properties.
- ▶ Sydney Water needs to clarify how factors other than levelised cost, for example, customer acceptability, are used in decisions about conservation or reuse options to be implemented, continued or stopped.

System Performance Standards

The overall systems, processes and procedures for measurement and reporting of compliance with System Performance Standards (SPS) was found to be well documented, well structured and integrated, and complied with by staff. However, the absence of assessments of accuracy and confidence level needs to be addressed by Sydney Water in accordance with the agreed Monitoring and Reporting Protocol. Sydney Water should provide a historical comparison of performance, trend analysis and proposed actions in its Compliance Report; this is an agreed requirement for future reports. There is also a need for planned internal audits and for maintaining training in relevant processes.

The number of properties affected by dry weather sewage overflows was less than 1% below the standard. However Sydney Water over-counted the number of properties affected in the case of “superlots” and “master strata” properties. Adjustment for this over-counting would reduce the number of properties affected more than 8% below the standard. The reported number shows an increasing trend over the past 4 years, attributed to continuing drought conditions. Sydney Water should review the program and take into account the continuing ageing of the sewer network and its impact on chokes and sewage overflows to ensure long term compliance with this standard.

Sydney Water should review the trends in its System Performance Standards and its proposed programs for meeting compliance in the long term. In particular, the number of properties with water pressure problems persisting over a number of years has not been greatly reduced, although significantly below the standard, and the number of problem areas has increased and apparently been exacerbated by water restrictions. Sydney Water should review its program of water pressure improvements for



effectiveness and investigate the impact of water restrictions on peak demands and water pressure in vulnerable areas, to ascertain ways to mitigate water pressure problems.

Environmental Plan

Sydney Water's performance against the Environmental Indicators and Ecologically Sustainable Development indicators provides an indication of its environmental performance. The key areas of the Environment Plan that require improved performance, as well as where significant progress has been made, include:

- ▶ Sydney Water's demand for potable water continues to exceed SCA's estimate of "safe yield". Despite the introduction of voluntary water restrictions during the 2002/03 audit period, and other measures such as the user-pays system, water consumption per person per day slightly increased to 416 L. Sydney Water will require significantly greater effort to achieve the target of 364 L per person per day by April 2005. Sydney Water indicated at this stage the target is unlikely to be met.
- ▶ Unaccounted for water has remained stable since June 2000 but remains high at 13.2% of total water use (or 84,874 ML). 'Real losses' (leaks, bursts and overflows up to the customer's meter) currently account for 10.7% of the demand (188ML/day).
- ▶ Dry weather sewage overflows increased 24% with a small increase in customers' properties affected by overflows. Sydney Water states the increase in dry weather overflows is largely due to the drought causing tree roots to crack pipes, sewer chokes and blockages.
- ▶ Oil and grease discharged increased by 2.2% (from 10,371 tonnes per year in 2001/02 to 10,601 tonnes/year in 2002/03);
- ▶ Some key capital works programs relating to environmental protection are falling behind schedule, such as West Camden Effluent Reuse Scheme, Illawarra Waste Water Strategy, Upper Georges River Wastewater Strategy, Priority Sewage Program and Stormwater Environmental Improvement Program.
- ▶ Total energy consumption increased 2.2% to 1,643,846 GJ. 87.5% of total energy use in electricity. According to Sydney Water this was partly due to increase in population growth, infrastructure upgrades and the drought.
- ▶ Since 1995, phosphorus and nitrogen discharges in the Hawkesbury Nepean Catchment have been reduced significantly and further significant progress was made in 2002/03, with a 56% reduction in phosphorus discharged and a 28% reduction in nitrogen discharged.

Customers and dispute management

Sydney Water's performance against the requirements for customer relationships was generally high

Sydney Water's review of the Customer Contract needs to take into account technology and its capacity to provide information, however, the assumption of access to such technology (web pages and computer systems) may disadvantage some.

Sydney Water obtained full compliance with all aspects of the Customer Councils; the terms of the Councils were not up for renewal within this audit period. Sydney Water regularly coordinates customer research using statistical surveys and focus groups. The challenge is to ensure that improvement in the transfer of information from the community (through the Customer Councils and other mechanisms) flows through to Sydney Water and is translated into action.



The major issue to emerge from the audit in regard to dispute management is the classification of complaints to *other bodies*, specifically to *courts*. Sydney Water has indicated that there are no complaints to courts and tribunals. However, Sydney Water bases this statement on a limited interpretation of the clause that only refers to complaints about the provision of water and sewer services to its customers. This interpretation may have limited the provision of information (for example, court action resulting from Sydney Water's maintenance program) which the auditor was not able to verify.

Comparison of Sydney Water's compliance with the previous two years

This section of the audit provides a tabular summary of the compliance levels attained by Sydney Water in the 2002/03 audit period and over the two previous audit periods. Table A provides a summary of the assessment of compliance with each auditable requirement of the Operating Licence.

It is evident from Table A that:

- ▶ Sydney Water is continuing to work at generally high to full compliance, with there being little change in Sydney Water's compliance levels from the previous year on most parts of the Licence.
- ▶ There was an increase in performance in relation to MOUs as a result of new agreements with NSW Health and the former EPA.
- ▶ Compliance with the requirements for the customer contract, code of practice and customer councils remained at the very high levels of previous years.
- ▶ Performance against the drinking water quality requirements was again very high maintaining Sydney Water's reputation in this area.
- ▶ Compliance with the monitoring and reporting requirements for drinking water quality remained at a very high level reflecting the findings of the previous audit.
- ▶ Planning for maintaining and improving drinking water quality also received very high levels of compliance.
- ▶ For the second year running, it was not possible to confirm that Sydney Water supplied *other grades of water* for reuse (irrigation) that met the relevant guidelines because the guidelines and compliance level could not be provided.
- ▶ Compliance with the amended standards for continuity of supply, water pressure and sewerage overflows was very high although, for the second year, Sydney Water was unable to provide the required accuracy limits.
- ▶ Performance against water conservation targets for the last three years has been low and partial, reflecting Sydney Water's inability to meet targets.
- ▶ The preparation of a demand management strategy yielded mixed results against the requirements with areas, such as evaluating costs of options, dropping in performance while others, such as characterisation of users, increasing in performance.
- ▶ Actions to implement non-potable reuse of effluent increased in performance as planning and implementation schemes were advanced over previous years.
- ▶ Performance against the requirements for environmental indicators and Ecologically Sustainable Development indicators were similar to previous years with small changes resulting from technical non-compliances.
- ▶ Performance against the requirements for the Environment Plan was similar to the previous year; although most requirements are procedural and were addressed in the first year of preparing the Plan.



- ▶ There was no change in energy management compliance though the next milestone is not due until 2005.
- ▶ Performance against the requirements for Trade Waste remained at the high levels of previous years.
- ▶ The requirements for the Internal Dispute Resolution Process demonstrated very high performance with a notable improvement from previous years resulting from the enhanced categorisation of complaints.
- ▶ Compliance with the External Dispute Resolution Scheme requirements was again very high for the third year in a row.
- ▶ A notable change in performance occurred for *complaints to other bodies* because Sydney Water (due to its interpretation of the relevant clause) did not provide information on matters subject to Court action.
- ▶ Performance against the requirements for the Botany Wetlands remained at the high levels of previous years.
- ▶ The majority of clauses reported as “No requirement” for this audit period were also reported as “No requirement” in previous years. These relate to the development of plans and other milestones that have now been satisfied, to requirements not enacted during the audit period, or are “definitions” or requirements on agencies other than Sydney Water.

There are a number of variations from full to high compliance between years on individual clauses. These results reflect changing priorities and resourcing that take place within organisations from year to year. The auditor does not believe that this signifies any trend unless numerous clauses also demonstrate a consistent change in level of compliance.



Table A Operating Licence - summary of compliance over the last three years

Licence Clause	Summary of Requirement	2002/03	2001/02	2000/01
3.3.1	Maintain MOUs for Licence term	High	Partial	Partial
3.3.2	The MOU is to form the basis for co-operative relationships between the parties	High	Partial	Low
3.3.3	Not limit the persons with whom Sydney Water may have a MOU	NR	NR	NR
5.1	Customer contract			
5.1.1	The Customer Contract may only be varied in accordance with the Act	NR	Full	NR
5.1.2	The Customer Contract automatically applies to persons specified in the Act	Full	Full	NR
5.1.3	The Customer Contract is to set out the rights and obligations of customers and Sydney Water	Full	Full	NR
5.1.4	A copy of the Customer Contract, and any variations to it must be posted on Sydney Water's website	Full	Full	NR
5.1.5	Sydney Water must initiate an independent review of the Customer Contract	NR	Partial	NR
5.1.6	The person undertaking the review must produce a report setting out its findings and recommendations.	NR	Full	NR
5.1.7	Within three months of the completion of the review of the Customer Contract, Sydney Water must issue a new Customer Contract	NR	High	NR
5.1.8	Within three months of the review Sydney Water must prepare a pamphlet.	NR	Partial	NR
5.1.9	The pamphlet must be updated and disseminated free of charge.	NR	NR	NR
5.1.10	Sydney Water may enter into other contracts or arrangements for the supply of services.	Full	Full	NR
5.3	Code of Practice & Procedure on Debt & Disconnection			
5.3.1	Develop a code of practice and procedure on debt and disconnection by 12 October 2000	NR	NR	Full
5.3.2(a)	Provide for deferred payment or payment by instalment options for consumption bills	Full	Full	Full
5.3.2(b)	Provide for the payment options referred to in (a) to be advised in consumption bills	Full	Full	Partial
5.3.3	Include the code of practice and procedure on debt and disconnection in its Customer Contract	Full	Full	Non
5.3.4(a)	Disseminate information by placing sufficient copies with the Rental Bond Board	Partial	Full	Full



Licence Clause	Summary of Requirement	2002/03	2001/02	2000/01
5.3.4(b)	Disseminate information to Customers at least once annually with their quarterly or other bills	Full	Full	Full
5.3.4(c)	Disseminate information to any other person on request	Full	Full	Full
5.4	Customer Councils			
5.4.1	Establish and regularly consult with one or more Customer Councils	Full	Full	NR
5.4.2	A Customer Council may be utilised by Sydney Water to provide high quality advice	Full	Full	NR
5.4.3	The first Customer Council must be established within 3 months of the commencement date	NR	Full	NR
5.4.4	Members must be appointed consistent with the licence	NR	High	NR
5.4.5	Membership must include the specified groups	Full	Full	NR
5.4.6	Sydney Water may require members to serve on multiple Councils	NR	NR	NR
5.4.7	Term of members is two years	Full	Full	NR
5.4.8	Half the members of a Council must be new members	NR	High	NR
5.4.9	No person may have more than two consecutive terms	NR	Non	NR
5.4.10	Appointments for the remaining term of the Council is possible if a position becomes vacant	NR	NR	NR
5.4.11	If members of a Council are not individuals 5.4.8. and 5.4.9 do not apply	NR	Full	NR
5.4.12	Development of a Customer Council Charter addressing the specified issues	NR	Full	NR
5.4.13	Special compliance provisions	NR	NR	NR
5.4.14	A single Customer Council Charter may be applied to other Councils	Full	Full	NR
5.4.15	Provide the necessary information to enable the Council to discharge its tasks	Full	Full	NR
5.4.16	The Charters must be posted on Sydney Water's website	Full	Full	NR
5.4.17	As part of the end of term review the Licence Review Body must evaluate the effectiveness of the Councils	NR	NR	NR
6.2	Drinking Water Quality - Standards			
6.2.1(a)	Comply with NHRMC & ARMCANZ guidelines (1996 Guidelines)	Full	Full	Full
6.2.1(b)	Comply with updates to 1996 Guidelines (Updated Guidelines) specified by NSW Health	Full	Full	NR
6.2.1(c)	Comply with aesthetic guideline values of 1996 Guidelines	Full	Full	Full



Licence Clause	Summary of Requirement	2002/03	2001/02	2000/01
6.2.1(d)	Comply with aesthetic guideline values of the Updated Guidelines	Full	Full	NR
6.2.2	Have regard to risk minimisation practices & system management of public water supplies	Full	Full	Full
6.2.3	Commission an independent study on costs & benefits of compliance with 1996 Guidelines	NR	Full	NR
6.3	Drinking Water Quality – Monitoring			
6.3.1	Prepare an Annual Drinking Water Quality Monitoring Plan by 30 June 2000	Full	Full	Full
6.3.2	Include system performance monitoring in the Plan to ensure quality control	Full	Full	Full
6.3.2(a)	The Plan to include health guideline values required in 6.2.1(a) & (b)	Full	Full	Full
6.3.2(b)	The Plan to include aesthetic guideline values required in 6.2.1(c) & (d)	Full	Full	Full
6.3.3	Monitor for aesthetic guideline values of 1996 Guidelines	Full	Full	Full
6.3.4	Monitor to assess drinking water quality	Full	Full	High
6.3.5	Undertake drinking water quality monitoring to 30 June 2001	Full	Full	Full
6.4	Drinking Water Quality - Reporting			
6.4.1	Make monitoring results publicly available and on website	Full	Full	Full
6.4.2	Produce an Annual Drinking Water Quality Report	Full	Full	High
6.4.2(a)	The Report to use health guideline values required in 6.2.1(a) & (b)	Full	Full	High
6.4.2(b)	The Report to use aesthetic guideline values required in 6.2.1(c) & (d)	Full	Full	High
6.4.2(c)	The Report to use aesthetic guideline values of 1996 Guidelines for Physical Characteristics	Full	Full	High
6.4.3	Include a summary of monitoring information, problems and system failures	Full	Full	High
6.4.4	Prepare a report by 30 November annually and make publicly available	Full	Full	Full
6.5	Drinking Water – Planning			
6.5.1	Prepare a 5 year Drinking Water Quality Management Plan before 12 September 2000	NR	NR	Full
6.5.2	Include Management Strategies in Plan	NR	NR	Full
6.5.3	Prepare an Annual Drinking Water Quality Improvement Plan for water supply system	Full	Full	Full
6.5.4	The Plan to incorporate system and operational changes	Full	Full	High



Licence Clause	Summary of Requirement	2002/03	2001/02	2000/01
6.5.5	Review Plan as part of Mid-term review in 2.3.1	NR	Full	NR
6.5.6	Prepare a Drinking Water Incident Management Plan by 12 May 2000	Full	NR	Full
6.5.7	The Plan to contain procedures and protocols for managing incidents	Full	NR	Full
6.6	Environmental Water Quality			
6.6	Meet environmental water quality requirements for discharges	High	High	High
6.7	Other Grades of Water			
6.7.1	Supply other grades of water according to relevant guidelines	Insufficient Information	Insufficient Information	High
6.7.2	Identify minimum standards to regulate supply of other grades of water in Mid term review	NR	NR	NR
6.7.3	Minister to resolve any conflict	NR	NR	NR
7.1	Compliance with Performance Standards			
7.1.1	Comply with amended standards for continuity, water pressure and sewerage overflows.	Full	Full	Full
	Accuracy and confidence limits	Insufficient Information	Insufficient Information	NR
7.2	Standards in Respect of Low Pressure Areas			
7.2.1(a)	Develop standards for minimum level of water pressure required in Blue Mountains	NR	NR	Full
7.2.1(b)	Develop standards for minimum level of water pressure required in non-urban areas	NR	NR	Full
7.2.2	Comply with standards developed in 7.2 (or those determined by the Minister in 7.3)	Full	Full	High
8.1	Water Conservation Target			
8.1.1(a)	Take action to reduce water quantity from all sources to 364L/day/capita by 2004/5	Partial	Partial	Low
8.1.1(b)	Take action to reduce water quantity from all sources to 329L/day/capita by 2010/11	Partial	Partial	Low
8.1.1(c)	Mid term review to specify reduction target for 2014/15	Partial	Partial	Low
8.2	Demand Management Strategy			
8.2.1	Definition of Demand Management Strategy	NR	NR	NR
8.2.2	Consider demand side management for planning future services	Full	Full	Full
8.2.3	Provide Demand Management Strategy Implementation Report by 1 September 2001	Full	Full	Full



Licence Clause	Summary of Requirement	2002/03	2001/02	2000/01
8.2.4(a)	The Report to estimate past, current and projected water uses and distinguish users	Full	High	High
8.2.4(b)	The Report to describe supply deficiencies	High	Partial	Low
8.2.4(c)	The Report to identify conservation measures	Full	Full	Full
8.2.4(d)	The Report to describe, cost and evaluate additional conservation measures	High	High	Partial
8.2.4(e)	The Report to describe future plans for water reclamation & strategies to alter water use practices	Full	Full	Full
8.2.4(f)	The Report to evaluate cost of plans and alternatives	Partial	High	Non
8.2.4(g)	The Report to prioritise and schedule the implementation of courses of action	High	Partial	Partial
8.2.4(h)	Report to identify strategies for reducing unaccounted water losses	High	High	Full
8.2.5	Engage third party to verify mathematical models for future water demand	Full	Full	Full
8.3	Reducing Discharges			
8.3.1	Take action to implement non-potable reuse of effluent	High	Partial	Partial
8.4	Water Conservation Rating and Labelling			
8.4.1	Encourage manufacturers to improve water use efficiency of appliances	Full	High	High
9.1	Environmental Indicators			
9.1.1	Monitor and compile data on indicators of impact on environment	High	Partial	Full
9.1.2	Use indicators in accord with those published in Government Gazette 15 December 1995	High	High	Partial
9.1.3	Report to Licence Regulator on performance in relation to indicators by 1 September 2000	High	Partial	Partial
9.1.4	The Report to enable a year to year comparison	High	Partial	Low
9.1.5	The Report to be made publicly available within one month of receipt by Licence Regulator	High	Full	Non
9.1.6	Indicators in 9.1.2 to be reviewed in End of term review	NR	NR	NR
9.2	Ecologically Sustainable Development Indicators			
9.2.1	Develop measures to indicate the degree to which its activities / services comply with ESD principles	NR	NR	Full
9.2.2	Develop a draft list of ESD Indicators by 12 May 2000	NR	NR	Full
9.2.3	The draft list must undergo public consultation.	NR	NR	Full
9.2.4	Present a final list of ESD Indicators to the Minister for approval within three months of 9.2.3	NR	NR	Full



Licence Clause	Summary of Requirement	2002/03	2001/02	2000/01
9.2.5	Monitor and compile data on ESD indicators by 1 July	NR	NR	Full
9.2.6	Report to Licence Regulator on performance in relation to ESD indicators by 1 September	High	High	Full
9.2.7	Make yearly report available to the public within one month of receipt by Licence Regulator	High	Full	Non
9.2.8	The ESD indicators in clause 9.2.4 are to be reviewed as part of the End of term review	NR	NR	NR
9.3	Environment Plan			
9.3.1	Produce 5 year Environment Plan by 30 September 2000	NR	NR	Full
9.3.2	Engage public consultation in developing the Plan	NR	NR	Full
9.3.3(a)	The Plan to contain water, waste water and stormwater strategies and environmental aspects of other activities	NR	NR	Full
9.3.3(b)	The Plan to endorse ESD principles	NR	NR	Full
9.3.3(c)	The Plan to be recognised in business plans	High	NR	Full
9.3.4	The Plan must set targets & time tables for compliance over term of Plan	NR	NR	Full
9.3.5	Make Plan publicly available and on website	NR	NR	Full
9.3.6	Compile report detailing progress in meeting Plan and complying with targets and timetables	Full	Full	Partial
9.3.7	Amendments to Plan made only after public consultation	NR	NR	NR
9.4	Energy Management			
9.4.1	Energy Management Policy	NR	NR	NR
9.4.2	Adopt energy consumption targets in the Energy Management Policy	NR	Full	Full
9.4.2(a)	Targets in Policy to reduce consumption in buildings to 15% of 1995 level by 2001	NR	Full	Insufficient Information
9.4.2(b)	Targets in Policy to reduce consumption in buildings to 25% of 1995 level by 2005	NR	NR	NR
9.4.2(c)	Targets in Policy to reduce consumption to any subsequent targets set by Policy	NR	NR	NR
9.4.3	Report to licence regulator on performance in relation to Clause 9.4.2 by 1 September	Full	Full	Full
9.5	Botany Wetlands			
9.5.1	Definition of Botany Wetlands Plan	NR	NR	NR
9.5.2	Implement Plan in conjunction with appropriate persons	High	High	Full
9.5.3	Report annually to IPART on compliance with Plan	Full	Full	Full



Licence Clause	Summary of Requirement	2002/03	2001/02	2000/01
9.5.4	Prior to End of term review, review Plan in consultation with EPA, DLWC, NPWS etc.	NR	NR	Full
9.7	Trade Waste			
9.7.1	Prepare trade waste policy & management plan	NR	Full	High
9.7.2	Report to IPART on progress on objectives and indicators under Clause 9.7.1 by 1 September	Full	Full	Full
12.1	Internal Dispute Resolution Process			
12.1.1	Establish internal complaints handling procedures	Full	Full	Full
12.1.2	Base internal complaints handling procedures for customer and consumer complaints on AS4269-1995	High	High	Partial
12.1.3	Make information on procedures publicly available	Full	Full	Full
12.1.4	Provide information in 12.1.3 through customer bills at least annually	Full	Full	Full
12.1.5	Complaint process to be reviewed and amended where necessary to AS4269	High	High	Partial
12.1.6	Report each year to the Licence Regulator concerning complaints on the following:	NR	Low	Partial
12.1.6(a)	number & type of complaints each month in each suburb	Full	Low	Partial
12.1.6(b)	number & type of complaints & how well each was handled	High	Low	Partial
12.1.6(c)	any systemic problems	Full	Partial	Partial
12.2	External Dispute Resolution Scheme			
12.2.1	Establish Dispute Resolution Scheme for customers and consumers by 12 May 2000	NR	NR	Full
12.2.2	Scheme subject to Minister's approval	NR	NR	Full
12.2.3	Dispute Resolution Body to handle complaints	Full	Full	Full
12.2.4	Scheme to comply with minimum standards as in Benchmarks for Industry based Consumer Dispute Resolution Schemes	Full	Full	Full
12.2.5(a)	Scheme to be independent of Sydney Water	Full	Full	Full
12.2.5(b)	Sydney Water to abide by decisions of Body	Full	Full	Full
12.2.5(c)	Scheme must discourage legalistic adversarial approach	High	Full	Full
12.2.5(d)	Decisions of Body to be fair	High	Full	High
12.2.5(e)	Scheme to operate efficiently by keeping track of disputes	High	Full	High
12.2.5(f)	Scheme to be free of cost to customers	Full	Full	Full
12.2.6	Prepare pamphlet to explain Scheme	Full	Full	Full
12.2.7	Provide pamphlet to customers through bills	Full	Full	Full



Licence Clause	Summary of Requirement	2002/03	2001/02	2000/01
12.2.8	Provide reports to Licence Regulator on determinations of Body	NR	NR	NR
12.2.9(a)	Produce annual report to Licence Regulator on Dispute Resolution Scheme on:	Full	Full	Full
12.2.9(b)	number and types of complaints received by Body	Full	High	Full
12.2.9(c)	outcome of complaints	Full	Full	Full
12.2.9(d)	time taken to resolve complaints	Full	Full	Full
12.2.9(e)	procedure for resolving complaints	Full	Full	Full
12.2.9(f)	systemic problems arising from complaints	Full	High	Full
12.2.9(g)	other information required by IPART	NR	NR	NR
12.2.10	Make report in 12.2.9 publicly available	Full	Full	Full
12.3	Complaints to Other Bodies			
12.3(a)	Report to Licence Regulator on number & type of complaints made to a court or tribunal by 1 September	Insufficient information	Full	Full
12.3(b)	Report on outcome of these complaints	Insufficient information	Full	Full
12.3(c)	Report on how complaints were resolved	Insufficient information	Full	Full
12.3(d)	Report on systemic problems arising from complaints	Insufficient information	NR	NR
12.3(e)	Report on other information required by Licence Regulator	Insufficient information	NR	NR

Table B provides a summary of compliance levels reached by Sydney Water in the 2002/03 audit period for the Ministerial requirements. Ministerial requirements are usually specific to each operating year and hence yearly comparisons with previous operational audits are not applicable for a number of requirements.



Table B Ministerial Requirements - summary of compliance

Directive No.	Summary of Requirement	2002/03	
Summary of Ministerial requirements arising from 2001/02 Operational Audit (Letter from the Minister of Energy to the Chairman, Sydney Water, 27 February 2002)			
M1	Demand Management "As a result of IPART's Mid Term Review, I have already placed a number of Ministerial requirements on the Corporation which are designed to increase the clarity of reporting on its demand management program."	High	
M2	Leakage "I require the Corporation to describe its approach to ascertaining, in a cost effective way, the amount of leakage from its pipes and the means it uses to validate the level of leakage reduction achieved. The corporation should report to myself and IPART on these matters by 1 September 2003."	Full	
M3	Water Quality "I therefore require Sydney Water to consider risks that may occur through variations in bulk water quality or plant failure through its Annual Drinking Water Quality Improvement Plan."	Full	
M4	Dispute Resolution "I require Sydney Water to prepare a comprehensive report which demonstrates the use of complaint data to identify problems of a systemic nature in specific geographical areas and the strategies used to overcome these problems. This report should be prepared using data gathered during the 2002 – 2003 Audit period, to allow it to be considered as part of next year's audit. I require delivery of this report to me and IPART by no later than 1 September 2003."	Full	
M5	System Performance Standards "I require Sydney Water to develop as part of the Measuring and Reporting Protocol with IPART, an agreed scope, methodology and assumptions in order to provide a platform for reporting on the accuracy and confidence limits for each of the respective system performance standards. I require these arrangements to be in place by no later than 1 July 2003."	Full	
Directive No.	Summary of Requirement	2002/03	2001/02
Summary of Ministerial requirements arising from the Review of System Performance Standards (SPS) (Letter from the Minister of Energy to the Chairman, Sydney Water 22 August 2001)			
SPS1	System Performance Standards "...I require Sydney Water to report to me by 1 July 2002 on its program of capital works to bring the Designated Low Water Pressure Areas in urban areas up to the amended pressure standard. The program should also reflect any of Sydney Water's existing arrangements with regard to the provision of water services to these areas."	NR	High
SPS2	"...I require Sydney Water to work with the Sydney Catchment Authority with a view to develop performance measures for water reliability for further consideration at the end of term review of both Operating licences."	Partial	Partial
SPS3	"...I now require Sydney Water to incorporate the Tribunal's findings regarding repeat continuity and repeat sewage overflow events into its Asset Management Framework and to provide the Framework to the Minister of Energy and Utilities for comment."	NR	High



Directive No.	Summary of Requirement	2002/03	2001/02
SPS4	<i>"Sydney Water is to update its Asset Management Framework by 1 January 2002"</i>	NR	Full
SPS5	Performance Indicators <i>"I support the use of performance indicators to provide further insight into performance against system performance standards. Accordingly, I require Sydney Water to collect and report data on those performance indicators that relate to the amended standards for drinking water pressure, drinking water continuity and sewerage overflows on private land."</i>	Full	Full
SPS6	<i>"Performance indicators are to be reported to the Tribunal by 1 September each year with the first report due to the Tribunal on 1 September 2002."</i>	Full	Full
SPS7	Customer Service <i>"While I am satisfied that negotiations between Sydney Water and the Tribunal have begun, I would like Sydney Water to commence collection of data on the customer service indicators in Attachment 3 from 1 July 2001."</i>	Full	Full
SPS8	Monitoring and Reporting Protocol <i>"I require Sydney Water to finalise this Protocol in consultation with the Tribunal as soon as possible, so that data collected during the audit period commencing 1 July 2002 is covered by the new arrangements"</i>	Partial	Low



Summary of Key Recommendations

The **key recommendations** of the 2000/01 Operational Audit are presented below and grouped by the audited parts of the Operating Licence.

Additionally, **secondary recommendations** are presented in the body of this report. Sydney Water is encouraged to give due consideration to those recommendations and facilitate improved performance and compliance for subsequent audit periods.

Memoranda of Understanding

It is recommended that Sydney Water:

- R3.1 Engages the Water Administration Ministerial Corporation (WAMC), at CEO and Strategic Liaison Group levels, to actively identify strategic joint issues and utilise the MOU to advance these issues.
- R3.2 Establishes a formal “*cooperative relationship*” agreement with Sydney Catchment Authority (SCA), through a Memorandum of Understanding (consistent with Clause 3.3.3 of the Operating Licence) recognising their interdependence and the comprehensive and mutual nature of the strategic and operational issues jointly faced by both organisations.
- R3.3 Upgrades the *Strategic Relationship Agreement* with the Department of Environment and Conservation (formerly NPWS) to a Memorandum of Understanding (consistent with Clause 3.3.3 of the Operating Licence).

Customers

It is recommended that Sydney Water:

- R5.1 Reviews the customer service measures to ensure consistency with the Customer Contract.
- R5.2 Includes Customer Council members (or other relevant customer groups) in the evaluation of Sydney Water’s performance against the Customer Contract, with the aim of pursuing continual improvements (as opposed to threshold compliance) in the delivery of customer service.

Water Quality

There are no key recommendations relating to water quality.

System Performance

It is recommended that Sydney Water:

- R7.1 Reviews the causes of the increasing trend in dry weather sewage overflows (currently at 92% of the standard) and reports to IPART on 30 March and 30 June 2004 on actions proposed and taken to ensure the standard is not exceeded in the future.



Water Conservation and Demand Management

It is recommended that Sydney Water:

- R8.1 Improves the certainty of the estimates of leakage and leakage reduction by, for example, increasing the number of flow meters, giving attention to divide valve status and, where appropriate, reducing zone size.
- R8.2 Completes a public housing retrofit work for all 25,000 Department of Housing properties within a shorter time frame than the current proposal of the next 6 years.
- R8.3 Considers development of further incentives (for example, subsidies to industry and developers) to accelerate take-up of recycled water, especially from the Georges River program, and encourage new residential estate developments based on minimum potable water use and maximum rainwater/recycled water use.
- R8.4 Considers, together with IPART, alternative performance measures for water conservation and reuse programs given the likelihood that the climate adjustment of demand approach is unlikely to provide a reliable basis.
- R8.5 Completes a technical audit of the End of Use Demand model for reasonableness of assumptions based on past experience and relevant scientific data.
- R8.6 Completes detailed social research to determine if there is a “threshold” of more stringent water conservation and/or reuse beyond which customers consider the impact is unacceptable.
- R8.7 Completes detailed evaluation with SCA of the impact of demand side factors (for example, demand hardening and climate effects on demand) on calculated “safe yield”, recognising that most of these factors will reduce the “safe yield” and intensify the need for conservation and reuse activities.

Environment – Indicators and Plans

It is recommended that Sydney Water:

- R9.1 Improves the format and presentation of its reporting on Environmental Indicators to more clearly demonstrate performance against each environmental indicator.
- R9.2 Implements programs to improve in areas where environmental and ESD indicators show poor or decreasing performance (especially demand management, energy use, heritage and greenhouse gas emissions) or where progress indicates future targets are unlikely to be met (such as reduced water consumption).
- R9.3 Reviews the Botany Wetland Plan of Management, recognising it is now in its seventh year of operation, prior to the End of Term review (nominally January, 2004) and includes participation of wider interests so as to reinvigorate, or replace, the Botany Wetlands Environmental Management Steering Committee.



Dispute Resolution

It is recommended that Sydney Water:

- R10.1 Undertakes an annual skills assessment and training program for all relevant staff involved in dispute resolution and complaints handling.
- R10.2 Reports annually on the reasons why complaints that have remained unresolved for 50 days or more have not been resolved.
- R10.3 Obtains annual information from Energy and Water Ombudsman (EWON) to verify that Sydney Water has met the operational performance standard of EWON.



1. Introduction and objectives

1.1 Sydney Water Corporation

Sydney Water Corporation (Sydney Water) is a State Owned Corporation, wholly owned by the NSW Government. The roles and responsibilities of Sydney Water derive from the *Sydney Water Act, 1994* (the Act) and the Operating Licence issued pursuant to Part 5 of the Act. In accordance with the Act, the NSW Government granted an Operating Licence to Sydney Water in 1995. At the end of 1999, the Licence Regulator recommended to the Government various terms and conditions to amend the Operating Licence for Sydney Water. The current Operating Licence was developed by IPART and commenced on 12 April 2000 for a 5-year term.

The Operating Licence enables Sydney Water to provide, construct, operate, manage and maintain systems and services (in accordance with the Act) for:

- a) supplying water;
- b) providing sewerage services;
- c) providing stormwater drainage systems, and
- d) disposing of wastewater.

Throughout its Area of Operations, Sydney Water provides services to approximately four million customers within the areas of Sydney, the Blue Mountains and Illawarra Regions. The area of operations for which Sydney Water is responsible is shown in Figure 1.1. A schematic representation of the major infrastructure under the control of Sydney Water is shown in Figure 1.2.

1.2 Independent Pricing and Regulatory Tribunal

The Independent Pricing and Regulatory Tribunal (IPART) was established in 1992 to regulate the pricing of monopoly services. On 1 November 2000 the NSW Government initiated the *Independent Pricing and Regulatory Tribunal and Other Legislation Amendment Act*, which, under Schedule 1, transferred Licence auditing and other regulatory responsibilities for the three metropolitan water authorities (Sydney Water, Hunter Water and the Sydney Catchment Authority) to IPART.

1.3 Scope of Operational Audit

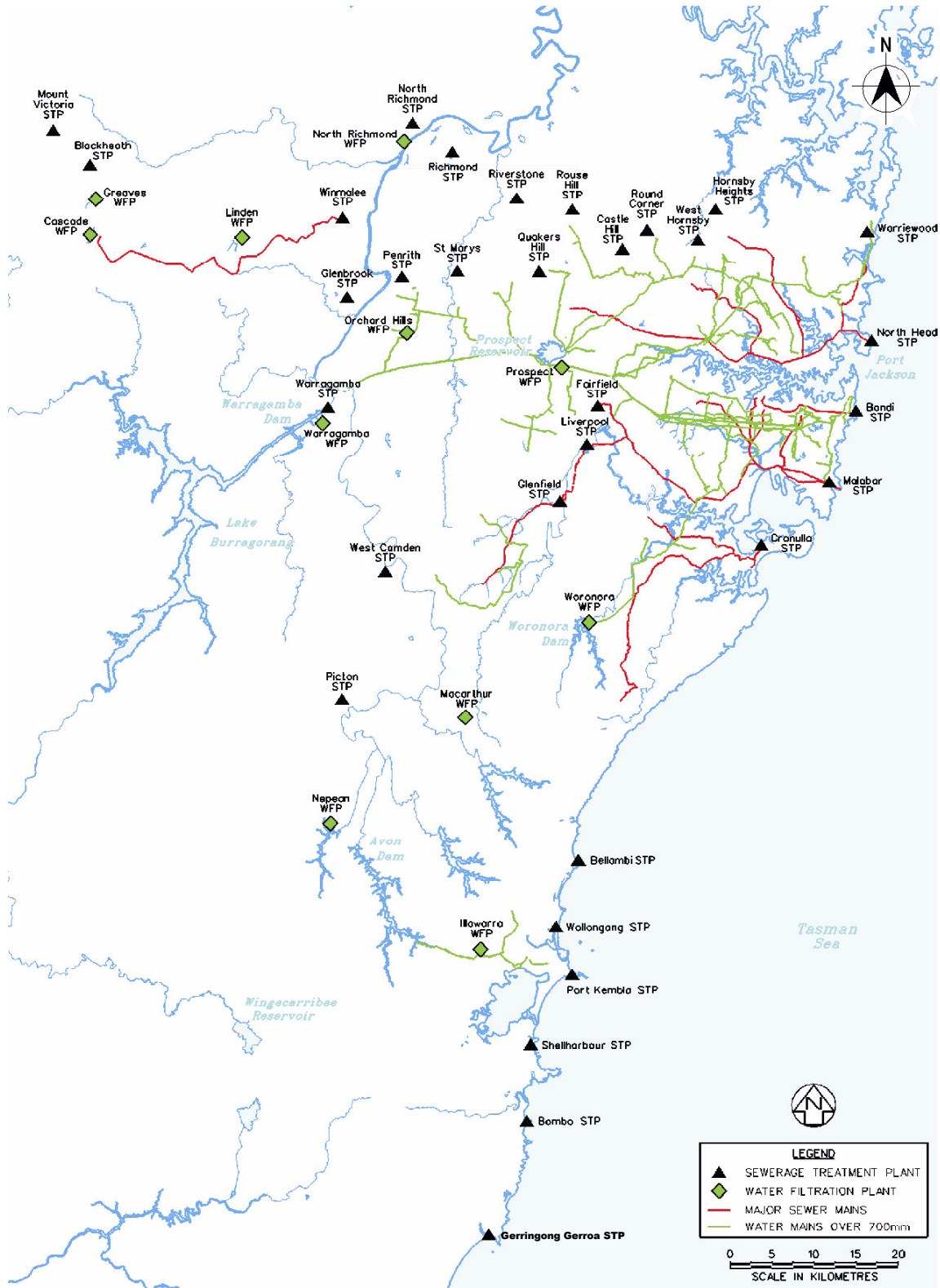
This is the seventh annual audit of Sydney Water's compliance against the requirements of the Operating Licence. It is the third annual audit against the requirements of the current Licence.

Figure 1.1 Sydney Water Corporation's Area of Operations



Source: Sydney Water Corporation

Figure 1.2 Sydney Water Corporation's major infrastructure



Source: Sydney Water Corporation



The audit of the Operating Licence for Sydney Water (and the extent of this report) covers the period 1 July 2002 to 30 June 2003. The scope of the audit is defined in Part 10 of the Operating Licence and broadly includes assessment of compliance against the Parts of the Licence as outlined in Table 1.1.

The scope of the audit also includes assessment of compliance against the requirements of the Minister for Energy resulting from the 2001/02 Operational Audit and the Review of System Performance Standards.

The full audit brief is contained in Appendix A. The Operating Licence and the Ministerial requirements are provided in Appendix C.

Table 1.1 Scope of the 2002/03 Audit

Licence Part - Key Area		General Requirements	Report Section
Part 3	Sydney Water's Responsibilities	Memoranda of Understanding with the Department of Health, the Environment Protection Authority and the Water Administration Ministerial Corporation.	Section 4
Part 5	Customer and Consumer Rights	Customer Contract; Code of Practice and procedures on debt and disconnection; and Customer Councils	Section 5
Part 6	Water Quality	Drinking water quality standards, monitoring and reporting; drinking water planning; environmental water quality; and other grades of water.	Section 6
Part 7	System Performance	Compliance with performance standards; standards in respect to low pressure areas; review of performance standards; keeping of records of discontinuity, low pressure and sewage overflow; and annual reporting on compliance with performance standards.	Section 7
Part 8	Water Conservation and Demand Management	Water conservation targets; demand management strategy; reducing discharges; and water conservation rating and labelling.	Section 8
Part 9	Environment – Indicators and Plans	Environmental indicators; ecologically sustainable development indicators; environment plan; energy management; Botany Wetlands; pollution reduction targets; and trade waste.	Section 9
Part 10	Operational Audits of the Licence	Commission of audits; what the audit is to report on; reporting of audit; additional audits; and provision of information.	NA
Part 12	Dispute Resolution Scheme	Internal dispute resolution process; external dispute resolution scheme; and complaints to other bodies.	Section 10

1.4 Structure of the audit report

This 2002/03 Operational Audit report has been presented in plain English and in a format that provides detail directed at different levels of readership and to allow an understanding of Sydney Water's operations and its compliance with specific statutory requirements.

The audit report has been specifically prepared to meet the audit brief and Part 10 of the Operating Licence. The findings of the report are not presented in a "prioritised order" or "order of significance". Rather, the report is designed to follow the structure of the Operating Licence. The report is structured into compliance sections that correspond to the key areas (parts) of the Operating Licence (see Table 1.1 above). Each compliance section of the report provides the following:

- ▶ a *compliance summary* addressing the principal compliances and any non-compliances relevant;
- ▶ a *requirements summary* placing in context and summarising the requirements of the Operating Licence against which the performance of Sydney Water is assessed;
- ▶ *substantive evidence and findings* that support the assessments of compliance and are presented in compliance tables breaking each auditable requirement into sub-clauses and includes:
 - a statement describing the *level of compliance* with the Licence condition; and
 - a detailed appraisal of the *findings* of the audit based on the evidence provided.

There are up to three compliance tables in each section:

- ▶ The first table presents compliance under Part 10 of the Licence;
- ▶ The second table presents compliance with the relevant Part of the Licence; and
- ▶ The third table presents the assessment of compliance with any Ministerial requirements.

This is followed by:

- ▶ a discussion or expansion of compliance comments for each key area when required;
- ▶ factors affecting compliance for each key area where applicable; and
- ▶ recommendations for each key area.

As the specific requirements of Part 10 of the Operating Licence and the Ministerial requirements are reported in the relevant sections, Table 1.2 and Table 1.3 provide guidance on where these are addressed in this report.



Table 1.2 Requirements of Part 10 of the Operating Licence

Part 10 of the Operating Licence		Report Table
10.2.1 The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:		
(a)	on-going compliance by Sydney Water with its Customer Contract and specific areas of non-compliance	Table 5.1
(b)	Sydney Water's compliance with its Code of Practice and Procedure on Debt and Disconnection under clause 5.3.2 and any similar initiatives developed by Sydney Water	Table 5.1
(c)	Compliance by Sydney Water with its obligations under Part 6 (Water Quality) of this Licence	Table 6.3
(d)	Compliance by Sydney Water with the performance standards under clauses 7.1 (Compliance with Performance Standards) and 7.2 (Standards in respect of Low Pressure Areas)	Table 7.1
(e)	Compliance by Sydney Water with the water conservation targets under clause 8.1.1	Table 8.1
(f)	Sydney Water's performance in relation to implementation of the Demand Management Strategy under clause 8.2	Table 8.1
(g)	Progress by Sydney Water in meeting the Reuse Target required under clause 8.3.1	Table 8.1
(h)	Progress by Sydney Water in relation to the implementation of the National Water Conservation Rating and Labelling Scheme under clause 8.4.1	Table 8.1
(i)	Sydney Water's performance in relation to the Environment Indicators under clause 9.1	Table 9.1
(j)	Sydney Water's performance in relation to the ESD Indicators compiled under clause 9.2.5	Table 9.1
(k)	Compliance by Sydney Water with the Environment Plan under clause 9.3	Table 9.1
(l)	Compliance by Sydney Water with the targets in the Energy Management Policy for Energy Consumption of Buildings in clause 9.4.2	Table 9.1
(m)	Compliance by Sydney Water with the Botany Wetlands Plan under clause 9.5	Table 9.1
(n)	Compliance by Sydney Water with the Trade Waste objectives and performance indicators under clause 9.7	Table 9.1
(o)	The effectiveness of Sydney Water's Internal Dispute Resolution scheme under clause 12.1	Table 10.1
(p)	The effectiveness of Sydney Water's External Dispute Resolution scheme under clause 12.2	Table 10.1
(q)	Complaints made against Sydney Water to a court or tribunal under clause 12.3 (Complaints by other Bodies).	Table 10.1
(r)	Any other matter required by this Licence or the Act to be assessed or considered as part of the Annual Audit, eg: Ministerial requirements.	See Table 1.3
10.2.2 Despite clause 10.2.1, neither the Licence Regulator nor the persons undertaking the Annual Audit may investigate a matter under clause 10.2.1 if the investigation of that matter is ordinarily within the regulatory activities of the EPA, NSW Health or the DLWC and the relevant agency has undertaken an investigation of that matter. However, the Licence Regulator may, as part of the Annual Audit:		
(a)	Report on Sydney Water's implementation of any Memorandum of Understanding referred to in clause 3.3.1.	Table 4.1



Table 1.3 Ministerial Requirements

Ministerial requirement		Report Table
<i>Summary of Ministerial requirements arising from 2001/02 Operational Audit (Letter from the Minister for Energy to the Chairman, Sydney Water 27 February 2003)</i>		
M1	<p>Demand Management</p> <p><i>"As a result of IPART's Mid Term Review, I have already placed a number of Ministerial requirements on the Corporation which are designed to increase the clarity of reporting on its demand management program."</i></p>	8.3
M2	<p>Leakage</p> <p><i>"I require the Corporation to describe its approach to ascertaining, in a cost effective way, the amount of leakage from its pipes and the means it uses to validate the level of leakage reduction achieved. The corporation should report to myself and IPART on these matters by 1 September 2003."</i></p>	8.3
M3	<p>Water Quality</p> <p><i>"I therefore require Sydney Water to consider risks that may occur through variations in bulk water quality or plant failure through its Annual Drinking Water Quality Improvement Plan."</i></p>	6.5
M4	<p>Dispute Resolution</p> <p><i>"I require Sydney Water to prepare a comprehensive report which demonstrates the use of complaint data to identify problems of a systemic nature in specific geographical areas and the strategies used to overcome these problems. This report should be prepared using data gathered during the 2002 – 2003 Audit period, to allow it to be considered as part of next year's audit. I require delivery of this report to me and IPART by no later than 1 September 2003."</i></p>	10.3
M5	<p>System Performance Standards</p> <p><i>"I require Sydney Water to develop as part of the Measuring and Reporting Protocol with IPART, an agreed scope, methodology and assumptions in order to provide a platform for reporting on the accuracy and confidence limits for each of the respective system performance standards. I require these arrangements to be in place by no later than 1 July 2003."</i></p>	7.3
<i>Summary of Ministerial requirements arising from the Review of System Performance Standards (SPS) (Letter from the Minister for Energy to the Chairman, Sydney Water 22 August 2001)</i>		
SPS1	<p>System Performance Standards</p> <p><i>"...I require Sydney Water to report to me by 1 July 2002 on its program of capital works to bring the Designated Low Water Pressure Areas in urban areas up to the amended pressure standard. The program should also reflect any of Sydney Water's existing arrangements with regard to the provision of water services to these areas."</i></p>	7.3
SPS2	<p><i>"...I require Sydney Water to work with the Sydney Catchment Authority with a view to develop performance measures for water reliability for further consideration at the end of term review of both Operating Licences."</i></p>	8.3
SPS3	<p><i>"...I now require Sydney Water to incorporate the Tribunal's findings regarding repeat continuity and repeat sewage overflow events into its Asset Management Framework and to provide the Framework to the Minister of Energy and Utilities for comment."</i></p>	7.3
SPS4	<p><i>"Sydney Water is to update its Asset Management Framework by 1 January 2002"</i></p>	7.3



Ministerial requirement		Report Table
SPS5	Performance Indicators <i>"I support the use of performance indicators to provide further insight into performance against system performance standards. Accordingly, I require Sydney Water to collect and report data on those performance indicators that relate to the amended standards for drinking water pressure, drinking water continuity and sewerage overflows on private land."</i>	7.3
SPS6	<i>"Performance indicators are to be reported to the Tribunal by 1 September each year with the first report due to the Tribunal on 1 September 2002."</i>	7.3
SPS7	Customer Service <i>"While I am satisfied that negotiations between Sydney Water and the Tribunal have begun, I would like Sydney Water to commence collection of data on the customer service indicators in Attachment 3 from 1 July 2001."</i>	5.3
SPS8	Monitoring and Reporting Protocol <i>"I require Sydney Water to finalise this Protocol in consultation with the Tribunal as soon as possible, so that data collected during the audit period commencing 1 July 2002 is covered by the new arrangements"</i>	7.3

2. Audit methodology

2.1 Standards

To meet the specific requirements of IPART, the Operational Audit was undertaken adopting a methodology consistent with ISO1401, “*Guidelines for Environmental Auditing*”. This guideline provides a *systematic approach* to defining the requirements of the audit, planning, interpreting Licence conditions, collecting audit evidence, objectively assessing the evidence, and reporting in a clear and accurate manner. It also ensures that the audit has been conducted in accordance with an established and recognised audit protocol.

2.2 Audit preparation

Brief descriptions and dates for key audit activities are described below.

Draft Audit Plan

To ensure that the audit requirements outlined in the Licence and the brief were addressed, the scope of the audit was confirmed with IPART and a draft audit plan prepared.

Inception Meetings

Following the preparation of the draft audit plan, an inception meeting with IPART representatives and Sydney Water’s Chief Executive Officer and support officers was held on 26 August 2003 and a further meeting was held with relevant Sydney Water staff on 28 August 2003. The primary objective of these meetings was to develop working relationships, mutual understandings and expectations relating to the requirements and process of the audit. The meetings also enabled Sydney Water to present an organisational background and its overview of compliance.

Audit Tests

Specific audit tests were developed for all requirements within the scope of the audit. These tests were designed to define *substantive compliance* with the Licence requirements as well as to identify factors that have impacted on compliance. Development and conduct of the audit tests was achieved by:

- ▶ dissecting each Licence condition or other requirement into elements;
- ▶ interpreting (and documenting the interpretation of) each element;
- ▶ assembling evidence to assess levels of compliance for each element;
- ▶ identifying the factors that have affected, or may affect compliance (within the risk framework); and
- ▶ identifying the measures to determine Sydney Water’s performance against those factors.

The above tasks were collated into the audit tests that were provided to Sydney Water prior to the audit interviews wherever practicable.

The audit tests also assessed the application of underlying procedures that Sydney Water has in place relevant to the requirements. The purpose was to verify that the underlying management processes within Sydney Water are sound and that there is confidence that work is carried out systematically and in accordance with internal procedures.



2.3 Conduct of the audit

To ensure a positive relationship, audit protocols were established at the inception meeting between the auditor and Sydney Water representatives. The protocols were designed to ensure efficient and transparent information transfer and foster an open and professional working relationship between all parties.

Both Sydney Water and the auditor adhered to the established protocols.

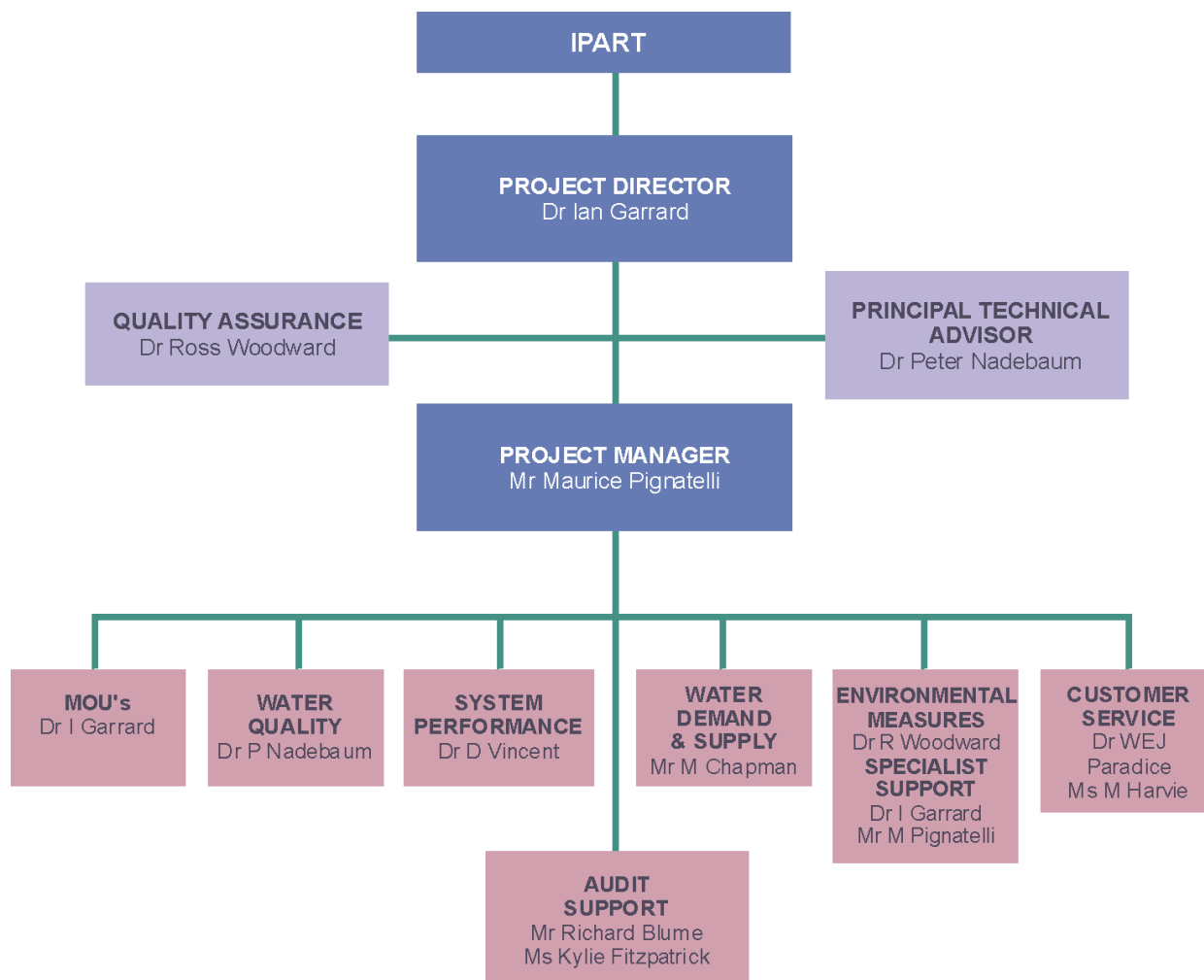
2.4 Audit interviews

The first and, in some cases, second round interviews were conducted by the relevant specialist team auditors over September and October 2003. Second round interviews allowed information requested in advance to be explained and presented in person by Sydney Water and provided another opportunity for detailed examination and additional questioning.

2.5 Audit team

The audit team consisted of specialist auditors from GHD Pty Ltd and Hunter Valley Research Foundation. The audit was coordinated by the Project Manager calling on the expertise of the team members for the auditing of key areas as shown below in Figure 2.1.

Figure 2.1 Structure and responsibility of the audit team



3. Regulatory regime

3.1 Introduction

Sydney Water has the primary role of managing potable water supply and sewerage treatment (including assets) to protect public health and the environment for the benefit of Sydney and surrounding urban areas. These roles and responsibilities of Sydney Water are derived from the *Sydney Water Act, 1994* and the Operating Licence issued pursuant to Part 5 of the Act.

The NSW Government in 1995 granted the Operating Licence to Sydney Water. At the end of 1999, the Licence Regulator recommended to the Government various terms and conditions to amend the Operating Licence for Sydney Water. The Licence was amended by IPART and renewed on 1 January 2000 for a five-year term although it did not commence until 12 April 2000.

The Act establishes a set of sub-ordinate statutory instruments namely: the Operating Licence; Memoranda of Understanding (MOUs) with regulatory or other agencies; and a Customer Contract. Such instruments impose compliance requirements upon Sydney Water, which are measurable and can therefore be audited.

A brief description of the major components of the regulatory framework within which Sydney Water operates is presented below.

3.2 Sydney Water Act, 1994

Under Section 21 of the Act, the principal objectives of Sydney Water are as follows:

- ▶ *To be a successful business and to this end operate at least as efficiently as any comparable businesses, maximise the net worth of the State's investment in the Corporation, and exhibit a sense of social responsibility by having regard to the interests of the community in which it operates;*
- ▶ *To protect the environment by conducting its operations in compliance with the principles of ecologically sustainable development contained in section 6(2) of the Protection of the Environment Administration Act, 1991; and*
- ▶ *To protect public health by supplying safe drinking water to its customers and other members of the public in compliance with the requirements of any operating licence.*

In addition, Sydney Water has special objectives under Section 22(1) regarding reduction of risks to human health and preventing the degradation of the environment.

The Act also establishes the provisions listed in Table 3.1.

Table 3.1 Provisions of the Sydney Water Act, 1994 - Relating to the Audit

▶ the Sydney Water Corporation (Sydney Water);	▶ provisions relating to works;
▶ the functions of Sydney Water;	▶ the preparation and implementation of MOUs;
▶ the area of operations;	▶ customer contracts;
▶ the granting of the Operating Licence;	▶ fees and charges;
▶ the objectives of Sydney Water;	▶ management of infrastructure;
▶ the functions of the Licence Regulator;	▶ offences provisions; and



- | | |
|-----------------------------|--------------------------------|
| ▶ environmental management; | ▶ other miscellaneous matters. |
| ▶ the Operational Audit; | |

3.3 Operating Licence

Sydney Water must conduct its activities in accordance with an Operating Licence issued under section 12 of the *Sydney Water Act, 1994*. The current Operating Licence has effect from 1 January 2000 until 31 December 2004.

The nature and scope of the Operating Licence and the period over which the Licence is applicable, for the purposes of this audit report, have been presented in Section 1.3 of this report. The Operating Licence is reproduced in full in Appendix B.

A summary of the requirements of each Part of the Operating Licence is presented in Section 4 to Section 10 of this report.

3.4 Customer Contract

The Customer Contract sets out the terms of the contract between Sydney Water and each person who is defined to be a customer of Sydney Water. It sets out the rights of customers and those of Sydney Water. The Contract is comprehensive and includes the areas outlined in Table 3.2. Under the Operating Licence, Sydney Water was required to *"initiate an independent review of the Customer Contract to be carried out within 12 months of the Commencement Date"*. It was also required to:

"...within 3 months of the completion of the review of the Customer Contract, Sydney Water must take all steps necessary to issue a new Customer Contract that addresses the recommendations of the review report".

The Independent Pricing and Regulatory Tribunal (IPART), who conducted the review, sent the revised Customer Contract to the Minister on 23 November 2001. The Minister wrote to Sydney Water on 1 March 2002 indicating his approval of the new Customer Contract with implementation of the Contract beginning on 1 April 2002.

This audit assesses Sydney Water's performance against the revised Customer Contract.

Table 3.2: Key Areas of the Customer Contract

- | | |
|---|--|
| ▶ Who is covered; | ▶ Entry into a customer's property for maintenance; |
| ▶ Services provided by Sydney Water including water supply, sewerage services, stormwater drainage; | ▶ Water meter installation, testing and maintenance; |
| ▶ Charges and payment; | ▶ Obtaining information from Sydney Water; |
| ▶ Assistance in payment; | ▶ Complaints and complaint handling; |
| ▶ Disconnection or restriction of services; | ▶ Consultation, information and privacy; and |
| ▶ Redress; | ▶ Termination of the contract. |
| ▶ Responsibilities for maintenance; | |

3.5 Memoranda of Understanding

Sydney Water is required, under Part 6, Division 3 of the Act and the provisions of the Operating Licence, to enter into Memoranda of Understanding (MOUs) with certain regulatory agencies. The objective of the MOUs is to assist in the formation and development of “*cooperative relationships*” between the agencies with a view to furthering the objectives of the Operating Licence and the Act.

The key regulatory agencies with which Sydney Water has established MOUs are:

- ▶ Water Administration Ministerial Corporation (WAMC);
- ▶ NSW Department of Health (NSW Health); and
- ▶ NSW Environment Protection Authority (EPA).

MOUs are useful in identifying roles and responsibilities and for establishing the frameworks for on-going consultation and joint initiatives between the parties. They become more useful and rigorous documents when they also contain specific agreements for planning, implementation, monitoring and review of programs. Sydney Water is not limited by the agencies with which it may have a Memorandum of Understanding.

3.5.1 Water Administration Ministerial Corporation and Sydney Water

A new MOU with the Water Administration Ministerial Corporation (WAMC) was signed on 28 June 2002 and applied throughout this operating year.

This new MOU sets out the intended relationship between WAMC (now managed by the Department of Environment and Conservation, formerly by the Department of Land and Water Conservation) and Sydney Water. It recognises the powers of WAMC to regulate Sydney Water in regard to water extraction, operation of works, activities on waterfront land and water uses (including demand management). The MOU sets out the functions and objectives of both organisations, principles, term, structure and processes, and dispute resolution provisions.

3.5.2 NSW Department of Health and Sydney Water

The MOU with NSW Health was entered into in November 1997 and updated in November 2000. Its objective is consistent with Sydney Water’s Operating Licence being a “*basis for a cooperative relationship*” and includes issues of respective roles and responsibilities, dispute resolution, liaison and public health issues and events.

3.5.3 NSW Environment Protection Authority and Sydney Water

The MOU with the EPA is required to recognise the EPA as the environmental regulator of the State and to commit Sydney Water to environmental improvements.

A new MOU, consistent in intent and content with those of the above regulators, was signed on 16 October 2002 and has been used as the basis to assess compliance over this operating period.

The EPA MOU (2002) sets out the functions and objectives of both the EPA and Sydney Water and includes agreed principles, term, structure and processes, dispute resolution and amendment provisions.

The EPA was amalgamated into the newly formed Department of Environment and Conservation (DEC) in September 2003.



3.6 Other Acts

Sydney Water is obliged to comply with the provisions of all other NSW Acts. The Acts that are most relevant to this audit include:

- ▶ *Environmental Planning and Assessment Act, 1979;*
- ▶ *Protection of the Environment Operations Act, 1997;*
- ▶ *Public Health Act, 1991;*
- ▶ *Water Act, 1912;*
- ▶ *Water Management Act 2000;*
- ▶ *Water Legislation Amendment (Drinking Water and Corporate Structure) Act, 1998; and*
- ▶ *Independent Pricing and Regulatory Tribunal Act, 1992.*

4. Memoranda of Understanding

4.1 Summary of findings

► Maintain Memoranda of Understanding

Sydney Water is required to maintain Memoranda of Understanding (MOU) with the Water Administration Ministerial Corporation (WAMC), NSW Department of Health (NSW Health) and Environment Protection Authority (EPA) for the term of the Licence. **High compliance** was the collective assessment for the MOUs with all three agencies, with revised MOUs being approved and operating for both the EPA and WAMC in 2002/03.

Sydney Water exhibited a **Full compliance** for the MOU with NSW Health, **High compliance** for the EPA MOU and **Partial compliance** for WAMC.

In the case of WAMC, a new MOU was finalised on 28 June 2002 similarly, a new EPA MOU was signed on 16 October 2002. Now the MOUs reflect the respective responsibilities and accountabilities of NSW Health, EPA, WAMC and Sydney Water and provide a relevant and current basis for cooperative relationships.

► Cooperative relationships

Sydney Water achieved **High compliance** under this clause. Cooperative relationships are evident with both NSW Health and EPA. The opportunities remain for a cooperative relationship to be further developed through the WAMC MOU, though the relationship will equally depend on a positive and active involvement of WAMC, itself.

The new WAMC and EPA MOUs are largely consistent and generic in form (addressing *Functions and Objectives, Principles, Terms*, etc). In parallel with the MOUs, Sydney Water in 2001/02 established “*Stakeholder Relationship Plans*” which set out specific tasks / actions to be implemented under the MOU. However, the rate of change both within and external to Sydney Water was such that the plans were set aside in 2002/03.

► Other MOUs

No requirement applies to this sub clause, as Sydney Water did not establish a MOU with any other relevant agency over the year. Recognising the integral link between Sydney Water and Sydney Catchment Authority in supplying Sydney’s drinking water, a MOU to formalise and guide a “cooperative” relationship is recommended.

4.2 Summary of requirements

Section 35 of the *Sydney Water Act 1994* requires Sydney Water to maintain MOUs with three agencies, namely the Water Administration Ministerial Corporation (WAMC), NSW Health and the EPA (since September 2003, the Department of Environment and Conservation, DEC) for the term of this Operating Licence. A Memorandum of Understanding is entered into with each of the three agencies and recognises the regulatory role these agencies have with Sydney Water. Should Sydney Water and the respective regulatory agency not be able to agree on the terms of the MOU, then the views of the regulatory agency prevail. Any amendments to the three Memoranda are to be made available for public input through public exhibition and public comment.



The Operating Licence states the purpose of the Memoranda is to form the basis for “*cooperative relationships*” between the parties (clause 3.3.2) and, in the case of NSW Health, recognise its role in providing advice in relation to drinking water quality and the supply of safe water. Further, the EPA MOU needs to recognise EPA’s role as an environmental regulator of NSW and also ensure Sydney Water is committed to environmental improvements.

Though not stated within the respective Operating Licence clause, the MOU between Sydney Water and the Water Administration Ministerial Corporation should also reflect Sydney Water’s role as a joint manager (with Sydney Catchment Authority) of Sydney’s water supply. Sydney Water is licensed by WAMC (through DIPNR) for the North Richmond Water Filtration Plant (which draws from the Hawkesbury River), Manly Dam, and Botany Wetlands.

A final clause under Section 3.3 (Clause 3.3.3) also indicates that there is no limit to the persons with whom Sydney Water may have a MOU.



4.3 Details of compliance

Table 4.1 Memoranda of Understanding – Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
10.2.2	Despite clause 10.2.1, neither the Licence Regulator nor the persons undertaking the Annual Audit may investigate a matter under clause 10.2.1 if the investigation of that matter is ordinarily within the regulatory activities of the EPA, NSW Health or the DLWC and the relevant agency has undertaken an investigation of that matter. However, the Licence regulator may, as part of the Annual Audit:	No requirement	
10.2.2 (a)	Report on Sydney Water's implementation of any MOU referred to in clause 3.3.1.	No requirement	<p>Sydney Water has MOUs with NSW Health, Environment Protection Authority and the Water Administration Ministerial Council (via DIPNR). Although the Operating Licence does not limit (Clause 3.3.1) the persons with whom Sydney Water may have a MOU, no other MOUs have been established. Audit assessment of the MOUs is outlined in the following Table 4.2 – Memoranda of Understanding – Part 3 Licence Clauses.</p> <p>In 2000/01 NPWS indicated that it was in the process of developing a MOU with Sydney Water. Instead the two organisations have established a <i>Strategic Relationship Agreement</i> in-line with Sydney Water's <i>Stakeholder Relations Plan</i>. Sydney Water has developed <i>Stakeholder Relationship Plans</i> for SCA, DLWC, NSW Health, EPA and IPART. However, in general, Sydney Water found it necessary to put aside such plans due to the rate of change occurring within the organisations and resources needed to keep such plans up to date.</p>



Table 4.2 Memoranda of Understanding – Part 3 Licence clauses

Clause	Requirement	Compliance	Findings
3.3	Memoranda of Understanding		
3.3.1	<p>In accordance with Section 35 of the Act, Sydney Water must maintain a Memorandum of Understanding (MOU) with each of the Water Administration Ministerial Corporation (WAMC), NSW Health (Health) and Environment Protection Authority (EPA) for the term of this Licence.</p> <p>[Note: Section 35 of the Act requires Sydney Water to enter into separate Memoranda of Understanding with certain regulatory agencies, being the Water Administration Ministerial Corporation, the Director-General of NSW Health and EPA. If Sydney Water and those regulatory agencies are not able to agree on a term of the memorandum of understanding, the view of the regulatory agency prevails. Section 36 deals with public exhibition of Memoranda of Understanding.]</p>	<p>High compliance</p> <p>MOU NSW Health: Full compliance</p> <p>MOU NSW EPA: High compliance</p> <p>MOU WAMC: Partial compliance</p>	<p>MOUs exist between the Sydney Water Corporation and the WAMC, NSW Health and EPA. Operating under current and 'cooperative' MOUs is a joint responsibility of Sydney Water and its regulators.</p> <p>In light of Section 35 of the Act, Sydney Water's performance in 'maintaining' the MOUs is also reliant on the response from the respective regulatory agencies. Sydney Water operated under new and updated MOUs with the WAMC and EPA and maintained its MOU with NSW Health over the audit period.</p> <p>The MOU with NSW Health exhibits Full compliance.</p> <p>High compliance was established with the EPA in its first year under the new (16 October 2002) MOU. These performances were evidenced by minutes of the Strategic Liaison Groups and Operational Policy Committees, which were consistent with the requirement of the Operating Licence.</p> <p>On 28 June 2002 the MOU with WAMC and on 16 October 2002 the MOU with the EPA were signed and both reflect the current operating environment of the organisations and "form the basis for a cooperative relationship". However, evidence of such a cooperative relationship with WAMC is low with little activity evident through Liaison Groups or Committees. (See Appendix E MOU Compliance Tables for further details).</p>
3.3.2	<p>The purpose of a Memorandum of Understanding is to form the basis for co-operative relationships between the parties to the memorandum. In particular:</p> <p>The memorandum with NSW Health is to recognise the role of NSW Health in providing advice to the Government of NSW in relation to drinking water quality standards and the supply of water which is safe to drink; and</p>	High compliance	<p>Evidence presented by Sydney Water demonstrated that the MOUs with NSW Health and the EPA are providing the basis for a <i>cooperative relationship</i> between the two parties. The parties have demonstrated a commitment to fulfilling their roles and responsibilities, cooperatively, and to ensure the supply of safe drinking water.</p> <p>The MOU with the WAMC provides a basis for a cooperative relationship at strategic and operational levels, however this is operating far below that of Health and EPA. Sydney Water has shown a commitment to develop the relationship, though WAMC's perspective on the need for such a MOU was reported to the auditor as being of low priority.</p>



Table 4.2 Memoranda of Understanding – Part 3 Licence clauses

Clause	Requirement	Compliance	Findings
	the memorandum with the EPA is to recognise the EPA as the environmental regulator of the State and to commit Sydney Water to environmental improvements;		
	MOU NSW Health	Full compliance	The MOU between Sydney Water and NSW Health has provided the basis for a positive and co-operative relationship. NSW Health's role (to provide advice to the Government of NSW in relation to drinking water quality standards and the supply of water, which is safe to drink) is clearly stated (see Appendix E, Table B). Further, the MOU sets out the roles and responsibilities of each party. NSW Health (Appendix G) has indicated it is " <i>satisfied</i> " that Sydney Water is meeting its obligations under the MOU, which is " <i>adequate</i> ".
	MOU EPA	High compliance	<p>The new MOU with the EPA (signed in October 2002) reflects the current environmental legislation and EPA's role as the environmental regulator. Sydney Water has exhibited high compliance in its MOU with the EPA (see Appendix E, Table B), which is an increased compliance over 2000/01 ('Partial Compliance') in recognition of the efforts to establish a new MOU and build an increasingly cooperative relationship.</p> <p>Evidence was presented that Sydney Water recognises EPA's role as an environmental regulator and activities, through a Strategic Liaison Group (SLG) and Operational Policy Committee (OPC), indicate a clear and positive improvement in the relationship (see Appendix E, Table A) with the EPA.</p>
	MOU WAMC	Partial compliance	<p>The new MOU with WAMC (June 2002) also reflects the current operating environment for the two organisations and forms the basis for a cooperative relationship.</p> <p>In recognition of their mutual interests, the two parties have continued to maintain a cooperative working relationship, but not one built from the MOU. An active relationship through the MOU process (for example, agreed strategic and operational committees with active work programs) was not evident. The auditor was advised that WAMC is not convinced of the value or need for the MOU, apart from it being an Operating Licence requirement (see Appendix E, Table C). DIPNR, on behalf of WAMC, in providing comment on Sydney Water's performance indicated one Strategic Liaison Group meeting (October 2002) was held after signing of the MOU, but no other activity under the MOU over the audit period.</p>



Table 4.2 Memoranda of Understanding – Part 3 Licence clauses

Clause	Requirement	Compliance	Findings
3.3.3	Clause 3.3.1 does not limit the persons with whom Sydney Water may have a Memorandum of Understanding	No requirement	<p>Sydney Water has not exercised this clause in that it does not have MOUs apart from the three specified agencies viz: EPA, WAMC and NSW Health.</p> <p>In 2001/02 Sydney Water developed a '<i>Strategic Relationship Agreement</i>' (in accordance with Sydney Water Stakeholder Relations Strategy) with a number of agencies including, for example, WAMC (part of DIPNR, formerly DLWC) but the rate of change in DIPNR was such that the agreed strategic issues (following a joint workshop, April 2003) were put aside.</p> <p>Sydney Water signed a 'Strategic Relationship Agreement' with National Parks and Wildlife Service on 20 August 2002, which has a form and structure similar to Sydney Water's existing MOU's. The reason advised by Sydney Water for not adopting a MOU with NPWS was that <i>the intent was to improve the relationship and both parties believed that a regulatory instrument to achieve this outcome was inappropriate</i>. <i>The MOU would drive certain formal behaviours, which weren't aligned, to the open, transparent communication required</i>. It is viewed by the auditor that clause 3.3.3 allows for MOUs with agencies like NPWS and a formal MOU would be more consistent with the Operating Licence intent.</p>

4.4 Discussion

Progress has again been made in 2002/03 in regard to demonstrating an improved “*cooperative relationship*” with each of the three regulatory bodies with which Sydney Water has MOUs. The Department of Health MOU is strategic, proactive and has clearly demonstrated the benefits of such a Memoranda. A new EPA MOU came into practice in October 2002 and it too is demonstrating worth at both strategic and operations levels. At this stage, while “*cooperative relationships*” have been established by Sydney Water with EPA and NSW Health, the relationship with WAMC is less mature and effective. The auditor was advised this, in part, relates to the attitude of WAMC, which has been more internally focussed and that WAMC saw little merit in the MOU. This could relate to the provisions (to Sydney Water) of WAMC’s *Water Management Act*, which are yet to come into operation.

Over 2001/02 Sydney Water had developed “*Stakeholder Relationship Plans*” with detailed *strategies and objectives, tasks and actions* for respective agencies as well as identifying the responsible persons and a timetable. The initiative by Sydney Water to develop, in cooperation with the agencies, the Stakeholder Relationship Plans was commended and gave an indication of the “*co-operative relationship*” that Sydney Water is seeking to achieve. However such plans were put on hold in 2002/03 as the degree of change in agencies such as DLWC (now DIPNR) was such that in Sydney Water’s opinion, the resources required to update the plans was greater than the derived benefits.

In reviewing MOU compliance, the important interrelationship between Sydney Water and Sydney Catchment Authority became increasingly evident and yet there is no formal agreement to direct this relationship (like with EPA, NSW Health and WAMC). Contractual agreements such as Bulk Water Agreements exist, there is broader Government activity at some senior levels (for example Water CEO’s meeting) and SCA staff participate in Sydney Water – NSW Health MOU committees. However, the interrelationship between Sydney Water and SCA is far broader and encompasses technical, environmental, social, as well as commercial arrangements. In Sydney Water’s view, MOU’s reflect a ‘regulator’ relationship and Sydney Water, correctly, does not consider SCA as a regulator. Yet Sydney Water Corporation and Sydney Catchment Authority are directly and intrinsically dependent upon one another in supplying safe drinking water. The Operating Licence does not limit (Clause 3.3.1) the persons with whom Sydney Water may have a Memorandum of Understanding and the purpose (clause 3.3.2a) of MOU’s “*is to form the basis for cooperative relationships*” and are not restricted to “regulators”. There are some differing views on the form of an SCA – Sydney Water relationship document. Sydney Water expressed the view that an MOU is a “*regulatory instrument and not appropriate in a business, corporate or partnership arrangement.*” However, the available mechanisms under Sydney Water’s Operating Licence to address relationships is the MOU which also brings a transparency and openness as opposed to an internal agreement outside the Operating Licence. Recognising the importance of Sydney Water relationship with the Sydney Catchment Authority, formal expression of the relationship through a Memorandum of Understanding is recommended.

Each of the three authorities having MOUs with Sydney Water was asked to comment on the MOUs. Their responses are outlined below.

4.4.1 MOU with the NSW Department of Health

NSW Health advised by letter, 21 November 2003, that it “*...enjoys an effective and open relationship with Sydney Water at officer and strategic levels. The Department is satisfied that Sydney Water has*



met or is making good progress towards meeting its obligations under the Operating Licence and Memorandum of Understanding”.

4.4.2 MOU with the NSW Environment Protection Authority

Minutes of MOU committees (Strategic Liaison and Operational Policy) indicates an active program of issue identification and resolution with regular involvement of CEO's from both Sydney Water and EPA.

The Department of Environment and Conservation (DEC)(incorporating the Environment Protection Authority) advised, 27 November 2003, the new MOU, *“... is working satisfactorily. Consultative mechanisms required by the MOU, including Chief Executive Officer (CEO) meetings, Strategic Liaison Group (SLG) and Operational Policy Committee (OPC) meetings, enable strategic and operational issues to be discussed”.*

4.4.3 MOU with the Water Administration Ministerial Corporation

A relationship exists between Sydney Water and WAMC primarily through broader intergovernment activities.

In many respects, the relationship exists ‘in spite of’ as opposed to ‘because of’ the MOU. This importance may, in part, be due to the increased relevance (for example, EPA’s impact on capital spending and the joint responsibility of Sydney Water and Health for public health) of the MOU. A clearer focus and legitimate attempt to utilise the MOU is available to WAMC and Sydney Water, particularly once the relevant provisions of the *Water Management Act 2000* come into play.

The auditor was advised by Sydney Water that WAMC saw little value in the MOU, though again this may relate to the delay in the commencement of the relevant provisions of the *Water Management Act 2000*.

In responding to an opportunity to comment on Sydney Water and the MOU, WAMC noted a new MOU had been signed and one Strategic Liaison Group meeting had been held over the year.

4.5 Factors affecting compliance

As indicated, new MOUs with the EPA and WAMC operated over the audit period and established an updated basis for a *cooperative relationship* to be maintained. Improvements are evident in the working relationship between Sydney Water and both EPA and NSW Health.

Although the new MOU with WAMC provides a foundation to improve relationships, rates of change and alternate priorities appears to have hindered a *cooperative relationship* being established. Sydney Water continues to build on its MOU with NSW Health. Where implementation is more outcome orientated and directed by an agreed Strategic Work Plan, which is prepared annually. A similar approach is evident with the EPA MOU. Such agreements and outcomes demonstrate how the cooperative relationship is working. Such opportunities remain available with the Sydney Water – WAMC MOU, otherwise the MOU is likely to remain a structural shell, the value of which is open to question.



4.6 Recommendations

4.6.1 Key recommendations

It is recommended that Sydney Water:

- R3.1 Engages the Water Administration Ministerial Corporation (WAMC), at CEO and Strategic Liaison Group levels, to actively identify strategic joint issues and utilise the MOU to advance these issues.
- R3.2 Establishes a formal “*cooperative relationship*” agreement with Sydney Catchment Authority (SCA), through a Memorandum of Understanding (consistent with Clause 3.3.3 of the Operating Licence) recognising their interdependence and the comprehensive and mutual nature of the strategic and operational issues jointly faced by both organisations.
- R3.3 Upgrades the *Strategic Relationship Agreement* with the Department of Environment and Conservation (formerly NPWS) to a Memorandum of Understanding (consistent with Clause 3.3.3 of the Operating Licence).

4.6.2 Secondary recommendations

- R3.4 Reviews benefits and costs of its *Stakeholder Relationship Plans* and formally determine if the *Plans* should continue as a basis to guide improved relations.

5. Customer and consumer rights

5.1 Summary of findings

► Customer Contract

Sydney Water's revised Customer Contract has been in effect since the 1 April 2002, and achieved **High compliance** with most clauses of the Contract. While in place for a relative short time, the relevance of some clauses of the Contract has already changed and full implementation is yet to be achieved for other clauses.

While the Contract appeared to reflect the existing and desired practices in Sydney Water at the time of writing, practices seem to have evolved over time. Sydney Water is increasingly reliant on web-based information and while this is appropriate for a range of reasons, (i.e. up-to-date information is provided at all times) it should be recognised that there is still a proportion of the community that does not have ready access to the web. Sydney Water accepts that information provided on the web will be made available in hard copy to customers on request, however it is important to ensure that those without web access are regularly informed of the information that can be made available to them.

Future review could pay attention to the wording of the Contract to clarify the provision of information through publication of brochures in addition to web-based information.

Similarly, where it is specified in the Contract that information should be made available in languages other than English this would seem to be over and above the interpretive service generally available through Sydney Water. The Contract needs to be more specific about the form of media Sydney Water uses to provide information.

As mentioned in the 2001/02 audit, the auditor believes that there would be value in an approach of continual improvement of the Contract. Effort should be directed to not only meet but to exceed and improve the intent of the Contract and to provide "excellent customer service". This can be demonstrated in a range of ways and can be supported by key performance measures drawn from the regular customer and client surveys undertaken by Sydney Water.

► Customer Councils

Sydney Water obtained **Full compliance** with all aspects of the Customer Councils. The review of Customer Councils conducted in August 2002 has recommended new ways in which people can be brought together to discuss customer issues. The review recognised that Sydney Water has changed since Customer Councils were established in the 1980s. It now regularly coordinates customer research using surveys and focus groups. The challenge is to ensure that improvement in the transfer of information from the community (via the Customer Councils and other mechanisms) flows through Sydney Water and is translated into action.

► Debt and disconnection

Sydney Water obtained overall **High compliance** with the Code of Practice and procedure on debt and disconnection but the auditor established (under clause 5.3.4) that while information has been placed with the Renting Services Branch of the Department of Commerce (previously the Department of Fair Trading), this has been used (as per the written request of



Sydney Water) for the information of staff in providing advice to their customers. The information has not been widely available for collection by interested persons. It is the auditors understanding that the intent of the clause is that information should be freely available to interested persons (ie. through the distribution of brochures directly to those interested rather than the dissemination of information via a Rental Services staff member.

5.2 Summary of requirements

Part 5 of the Licence specifies requirements relating to Customer and Consumer Rights. The key requirements of these clauses are outlined below.

Clause 5.1 - Customer Contract: The clause specifies what needs to be covered in the Contract, the process for review of the Contract and the process necessary to communicate the Contract to customers.

Clause 5.2 – Consumers: The need to deal with all complaints under the Customer Contract as if the complainants are consumers.

Clause 5.3 - Code of Practice and procedure on debt and disconnection: The need to have a code which includes a number of specific features; the Code is to be included in the Customer Contract; and information about the Code is to be disseminated in specific ways.

Clause 5.4 - Customer Councils: That one or more Customer Council be established, consulted and operate under a specific set of protocols as defined in the Licence.

Section 10 of the Licence requires that the audit must investigate and prepare a report on:

10.2.1 (a) *on-going compliance by Sydney Water with its Customer Contract and specific areas of non-compliance* (this relates to Clause 5.1).

While Section 10 does not refer directly to the requirement to report on Clause 5.4 (Customer Councils) it has been interpreted that as Customer Councils are referred to under the Customer Contract, that a review of the requirements for Customer Councils will be reported under this area.

10.2.1 (b) *Sydney Water's compliance with its Code of Practice and procedure on debt and disconnection under clause 5.3.2 and any similar initiatives developed by Sydney Water.*



5.3 Details of compliance

Table 5.1 Customer and Consumer Rights – Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
10.2	The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:	No requirement	
10.2.1(a)	Ongoing compliance with Customer Contract and specific areas of non-compliance	High compliance	Detailed findings are presented for each of the key clauses of the Customer Contract in Appendix F.
10.2.1 (b)	Sydney Water's compliance with its Code of Practice and procedure of debt and disconnection under clause 5.3.2 and any similar initiatives developed by Sydney Water	Full compliance	Code of Practice and procedure under clause 5.3.2 has been incorporated into section 5 of the Customer Contract.

Table 5.2 Customer and Consumer Rights – Part 5 Licence clauses

Clause	Requirement	Compliance	Findings
5.1	Customer Contract		A detailed analysis of compliance with the revised Customer Contract is reported in Appendix F.
5.1.1	The Customer Contract may only be varied in accordance with the Act	No requirement	The Customer Contract has not been varied.
5.1.2	The Customer Contract automatically applies to persons specified in the Act	Full compliance	The Customer Contract applies to such persons.
5.1.3	The Customer Contract sets out the rights and obligations of Customers and Sydney Water	Full compliance	The Customer Contract sets out the rights and obligations of both the Customer and Sydney Water.



Table 5.2 Customer and Consumer Rights – Part 5 Licence clauses

Clause	Requirement	Compliance	Findings
5.1.4	A copy of the Customer Contract, and any variations to it must be posted on Sydney Water's website	Full compliance	The Customer Contract is available and can be downloaded free of charge from the website and is readily available in pamphlet form from Sydney Water's offices.
5.1.5	Sydney Water must initiate an independent review of the Customer Contract to be carried out within 12 months of the Commencement Date.	No requirement	Review conducted prior to this audit period.
5.1.6	The person undertaking the review must produce a report setting out its findings and recommendations.	No requirement	Review conducted prior to this audit period.
5.1.7	Within 3 months of the completion of the review of the Customer Contract, Sydney Water must issue a new Customer Contract	No requirement	Issue of new Customer Contract prior to this audit period.
5.1.8	Within 3 months of the review Sydney Water must prepare a pamphlet.	No requirement	Preparation of pamphlet outside of this audit period.
5.1.9	The pamphlet must be updated and disseminated free of charge.	No requirement	As there has been no change to the Customer Contract this audit period, there has been no requirement to update the pamphlet. (NOTE: The Customer Contract was updated in the previous audit period and the updated Pamphlet (relating to 2001/02) was disseminated in 2002/03). It has been distributed free of charge on an annual basis (April 2003) to the Rental Bond Board. It has been sent annually to customers with their April 2003 quarterly bill. It is available to others on request through Sydney Water offices.
5.1.10	Sydney Water may enter into other contracts or arrangements for the supply of services.	Full compliance	Sydney Water has entered into other agreements dealing with trade waste.
5.3	Code of Practice and Procedure on Debt and Disconnection		
5.3.1	The Code of Practice and procedure on debt and disconnection must be developed within 6 months of the commencement date (by 12 October 2000)	No requirement	The Code has been incorporated into the Customer Contract.
5.3.2(a)	Provide for deferred payment or payment by instalment options for consumption bills	Full compliance	The Code provides for deferment or payment by instalment. These components are described in Section 5 of the revised Customer Contract.



Table 5.2 Customer and Consumer Rights – Part 5 Licence clauses

Clause	Requirement	Compliance	Findings
5.3.2(b)	Provide for the payment options referred to in (a) to be advised in consumption bills	Full compliance	A sample of bills was reviewed and all included information about obtaining payment assistance, specifically deferred payment or payment by instalment. The schedule of bill inserts also indicated that the brochure titled <i>“Experiencing financial hardships (Code on debt and disconnection)”</i> was included in the April 2003 bill run.
5.3.3	Sydney Water must include the Code of Practice and procedure on debt and disconnection in its Customer Contract.	Full compliance	The Code is included in section 5 of the revised Customer Contract, which came into effect on 1 April 2002.
5.3.4	Sydney Water must disseminate free of charge information on its Code of Practice and procedure on debt and disconnection:	High compliance	The pamphlet <i>“Our Customer Contract in Brief”</i> is widely distributed free of charge to comply with the requirement for distribution of information on the <i>“Code of Practice and procedure on debt and disconnection”</i> . This brochure includes a short version of information that is part of the Code and indicates that customers will not be disconnected if they have not been provided with information on the Code. It further advises customers that the brief is a summary and the full Customer Contract is available from Sydney Water. To make it completely clear the pamphlet should also indicate that the Code itself is imbedded into the ‘Customer Contract’. Customers need to know how to access a copy of what is referred to as the <i>‘Code of Practice and procedure on debt and disconnection’</i> which is in fact embedded in the <i>‘Customer Contract’</i> .
	a) by placing sufficient copies with the Rental Bond Board for collection by interested persons;	Partial compliance	<i>‘Our Customer Contract in brief’</i> is made available to the Renting Services Branch of the Department of Commerce (formerly the Department of Fair Trading) on an annual basis for the use of staff in their advice to their clients. This is in the instruction to Rental Services. The <i>‘Code of Practice and procedure on debt and disconnection’</i> should be available in sufficient supply for collection by interested parties. It is the auditor’s understanding that copies of the brochure should be made available through these offices to the public. Further to this, Sydney Water should endeavour to have the Rental Services Branch understand, through liaison and training sessions, the potential significance of this information to tenants.
	b) to Customers at least once annually with their quarterly or other bills; and	Full compliance	Sydney Water provided the billing insert schedule that indicates that the contract pamphlet was inserted in the April 2003 bill run.
	c) to any other person on request.	Full compliance	Sydney Water confirmed that people were supplied with copies of the Customer Contract upon request.



Table 5.2 Customer and Consumer Rights – Part 5 Licence clauses

Clause	Requirement	Compliance	Findings
5.4	Customer Councils		
5.4.1	Sydney Water must establish and regularly consult with one or more Customer Councils	Full compliance	Seven Customer Councils have been operating in the audit period and have met regularly. During the audit period Sydney Water undertook a review of the effectiveness of all Customer Councils. Any implementation of recommendations from this review will be decided at the end of term review for the Licence. The term of the current Council membership is until the end of 2003 and any reappointment to Councils need to comply with the current Operating Licence.
5.4.2	A Customer Council may be utilised by Sydney Water to provide high quality advice	Full compliance	Sydney Water uses Customer Councils to obtain advice on the range of issues of importance to the Councils including consumer issues, planning and capital works and urban growth and development. In addition the recommendations of the review of Customer Councils have been investigated in consultation with Customer Council members.
5.4.3	The first Customer Council must be established within 3 months of the commencement date	No requirement	Customer Councils had been operating prior to the commencement of the Licence.
5.4.4	Members must be appointed consistent with the Licence	No requirement	All appointments to the Customer Councils were from January 2002 through to December 2003. In that two year period there has been one resignation from a regional Council but this position was not replaced. Previous comment about some Councils failing to have half their membership comprised of new members was not able to be changed in this audit period as Customer Council appointees did not come up for renewal.
5.4.5	Membership must include the specified groups	Full compliance	All groups are represented as required by the Licence.
5.4.6	Sydney Water may require members to serve on multiple Councils	No requirement	Some members can serve on more than one Council, if they are willing. This situation has not occurred within the audit period.
5.4.7	Term of members is 2 years	Full compliance	Members are appointed for a term of two years.
5.4.8	Half the members of a Council must be new members	No requirement	In some cases there are more than half of the members appointed for longer than the last two years and in others there are less but due to appointments not coming up for renewal in the audit period this situation was not able to be adjusted.
5.4.9	No person may have more than 2 consecutive terms	No requirement	There were no new appointments.



Table 5.2 Customer and Consumer Rights – Part 5 Licence clauses

Clause	Requirement	Compliance	Findings
5.4.10	Appointments for the remaining term of the Council is possible if a position becomes vacant	No requirement	This option has not been taken up given the review of Customer Councils.
5.4.11	If members of a Council are not individuals 5.4.8. and 5.4.9 do not apply	No requirement	This clause is relevant to the Corporate Customer Council and the Industrial and Commercial Trade Waste Councils.
5.4.12	Development of a Customer Council Charter addressing the specified issues	No requirement	There have been no changes to the Customer Council Charter in consultation with the Council members given that there have been no changes to the membership of the Councils within the audit period. Charters have been sighted and cover the issues specified. In addition Charters are on the Sydney Water web page.
5.4.13	Special compliance provisions	No requirement	Clause was prepared to clarify the positions relevant to clause 5.4.12.
5.4.14	A single Customer Council Charter may be applied to other Councils.	Full compliance	Customer Council Charters are available. Charters were established in consultation with the Council in 2002. There are three different Customer Council Charters for: <ul style="list-style-type: none"> - Industrial and Commercial Trade Waste Customer Council; - Local Customer Council; and - Corporate Customer Council.
5.4.15	Sydney Water must provide the necessary information to enable the Council to discharge its tasks	Full compliance	Information provided to Councils was sighted in the Business papers, Minutes and the Corporate Customer Council forward plan. Information included 2002 residential surveys, information on projects, maintenance and environmental issues, storm water, research and development, and demand management etc.
5.4.16	The Charters must be posted on Sydney Water's website	Full compliance	The Charters are available on Sydney Water's website. It is understood that Sydney Water offices will download and print such information from the web page and provide it free of charge to members of the public on their request.
5.4.17	As part of the end of term review, the Licence Review Body must evaluate the effectiveness of the Councils	No requirement	Sydney Water undertook a review of Customer Councils in August 2002. Recommendations of this review will be considered as part of the End of Term Review. The term of appointment for the current Councils is the end of 2003 and the Councils will need to continue to operate under the existing Operating Licence requirements until the End of Term Review.



Table 5.3 Customer and Consumer Rights – Ministerial Requirement

ID	Requirement	Compliance	Findings
SPS7	"While I am satisfied that negotiations between Sydney Water and the Tribunal have begun, I would like Sydney Water to commence collection of data on the customer service indicators in Attachment 3 from 1 July 2001."	Full compliance	The <i>Operating Licence Compliance Report 1 July 2001 – 30 June 2002</i> , which reports on the customer service indicators, was provided by Sydney Water.



5.4 Discussion

5.4.1 Customer Contract

The revised Customer Contract came into effect 1 April 2002. For the most part, Sydney Water appears to comply with the clauses of the Contract, however there would be value in having a consistent set of measures to apply to each of the key clauses of the Contract. Given the nature of some of these clauses, it is difficult to assess compliance in absolute terms but rather it appears more appropriate to measure compliance in relative terms.

In addition there is a need for more specific details of how information referred to in the Customer Contract is to be provided to the customer. Where information is available through the Sydney Water website, a pamphlet could be provided for those without web access to advise them on the availability of this information if they contact a Sydney Water office.

To assess compliance with the Customer Contract, the auditor relied on preliminary information from the emergency contact survey, together with the Operating Licence Compliance Report (OLCR) covering the audit period.

There is value in having performance measures for customer service that are directly aligned with the requirements of the Customer Contract to capture the level of satisfaction experienced by Sydney Water customers. The current Customer Service Indicators demonstrate the delivery of a service but provide no indication of the customer's satisfaction with that service. The collection of such data would provide another means to measure compliance in relative terms.

5.4.2 Code of Practice and Procedure on debt and disconnection

The revised Customer Contract includes the Code of Practice as part of the Contract. Reference to the word 'Code' may be confusing for customers in that it may not be clear to them that the Code is contained within the document that is titled '*Customer Contract*'. The Payment Assistance Scheme (PAS) is one measure of the outcomes related to the Code. Sydney Water reported that for the audit period there were 4,699 cases receiving 18,767 vouchers valued at a total of \$469,167. This is a similar amount as for last financial year.

The auditor contacted the Renting Services Branch of the NSW Office of Fair Trading (formally the Rental Bond Board and now part of the Department of Commerce) to confirm the availability of the Code. Based on discussions with the Manager of Information Services the pamphlet is not made available to clients of the Renting Services Branch but is rather provided to staff members so that they can potentially provide this information to the customers. There are not, in fact, adequate copies made available for the collection of interested persons as is the requirement in the Operating Licence. This situation needs to be rectified for the benefit of renting customers. There needs to be ongoing contact between officers in the two organisation to ensure that adequate brochures are supplied on a regular basis. Currently, if extra copies are required for the advice of staff it is understood that the brochure is reproduced by photocopy.

5.4.3 Customer Councils

The majority of the clauses relating to Customer Councils refer to the appointment and establishment process. The recent review of the Customer Councils made recommendations with respect to the

operation of the Customer Councils and these recommendations will be decided upon as part of the End of Term Review. As the term for the membership of the current Councils is due for renewal at the end of 2003, Sydney Water will need to put in place interim arrangements, with respect to the operation of the Customers Councils, until the potential changes as result of the 2003 review are implemented. The review will no doubt result in new arrangements for consulting customers, through the Customer Councils and other mechanisms, recognising that Sydney Water now communicates and consults with its customers through a range of mechanisms.

5.5 Factors affecting compliance

5.5.1 Customer Contract

Compliance with the Customer Contract covers two specific components. Firstly, the compliance assessment against Clause 5.1, which primarily covers procedural matters dealing with the review and preparation and dissemination of the revised Customer Contract. The second compliance component deals specifically with the clauses of the Customer Contract itself.

Clause 3 of the Customer Contract describes the services provided by Sydney Water. All subclauses were rated as high compliance based on the results of the customer surveys and the reporting of specific events. Given that events such as interruption to supply occur, it is difficult to give full compliance. Benchmarking, either through time or with other water utilities, provides an opportunity to introduce relativities in determining the level of compliance. In a number of clauses any indication of dissatisfaction or complaint by a customer makes it difficult to assign full compliance.

To provide greater guidance, it may be beneficial to identify new performance measures based upon the Contract. Such measures can assist Sydney Water to direct its efforts in the improvement of Customer Service as well as minimising auditor interpretation of requirements for compliance against the Customer Contract.

5.5.2 Code of Practice and procedure on debt and disconnection

There were four areas that could be improved.

The first is in making information on the Code available through the Renting Services Branch of the Office of Fair Trading. While in the past there was a publication of charges (updated annually) and there continues to be reference in the *'Our Customer Contract in brief'* document to information on charges being available on the web, no 'publication' as such is available, as suggested in the Customer Contract.

There is no notification of price variations provided, as these relate to service charges, as opposed to usage charges that are notified via the bill prior to that increase coming into effect. This seems to be in breach of the Customer Contract promise to notify in writing of any variation to charges.

Additionally, there is suggestion that information about concessions should be available in languages other than English. While a separate publication indicates the availability of pension concessions there is no specific reference in this brochure of the availability of this information in languages other than English.



5.5.3 Customer Councils

All relevant clauses relating to Customer Councils were rated as Full compliance. Given that members were appointed prior to this audit period and their term went beyond the period, the clauses related to appointment received a No requirement rating. While full detail of the recommendations from the review of Customer Councils was not made available, it is recommended that in the appointment of members of any Council, at least 50% of the members are new members to be consistent with the Licence.

Similarly, it is recommended that Sydney Water ensures that potentially interested individuals or organisations are made aware of the opportunity for appointment to any future Council or other consultation forum. It is accepted that there is possibly waning interest on behalf of customers to spend valuable time serving on these forums however care should be taken to ensure that every effort is made to inform people of the opportunity to give their views. This should not only be via newspaper advertisement but through direct contact with potentially interested groups and individuals identified through their previous interest in consumer or water issues.

5.6 Recommendations

5.6.1 Key recommendations

It is recommended that Sydney Water:

- R5.1 Reviews the customer service measures to ensure consistency with the Customer Contract.
- R5.2 Includes Customer Council members (or other relevant customer groups) in the evaluation of Sydney Water's performance against the Customer Contract, with the aim of pursuing continual improvements (as opposed to threshold compliance) in the delivery of customer service.

5.6.2 Secondary recommendations.

- R5.3 Ensures that ample copies of the brochures on the Code of Practice and procedure on debt and disconnection are made available to the staff of the Rental Service Branch of the Department of Fair Trading, as well as *"interested persons"*. Further, establish regular contact officers between Sydney Water and the Department Fair Trading to ensure that this practice is ongoing through out the year and its staff understand, through training, how aspects of the Contract may impact or benefit the interests of those renting properties.
- R5.4 Ensures the Emergency Contacts Survey is completed by the 1st September each year for inclusion in the Operational Audit.
- R5.5 Establishes benchmarks based on the Customer Contract and determine ways to achieve progress against the requirements of the Contract. This could occur in association with other water utilities with emphasis on continual improvement rather than simply meeting the requirements of the Contract.
- R5.6 Investigates and implements mechanisms to encourage more community



members to express interest in involvement in Customer Councils or other means of communication to be formed at the conclusion of the current term of the Customers Councils (end 2003).

- R5.7 Provides information on concessions in languages, other than English, and identifies the availability of interpretive service in brochures and information with respect to Pensioner Rebates.
- R5.8 Notifies customers in advance of any increases to service charges.
- R5.9 Considers reprinting the brochure on pricing and charges updates and continues to include references to it in *"Our Customer Contract in Brief"*.

6. Water quality

6.1 Summary of findings

▸ Drinking Water Quality - Standards

Sydney Water obtained **Full compliance** with respect to the supplies of treated drinking water to their customers. The water quality supplied is generally of an excellent standard and complies with the health related requirements of the Australian Drinking Water Guidelines and the aesthetic related requirements of NSW Health and the Minister. (A summary of results is shown in Tables 6.1 and 6.2, and in Figure 6.1).

▸ Drinking Water Quality - Monitoring

Sydney Water has prepared an *Annual Drinking Water Quality Monitoring Plan* for the water supply systems to monitor health-related and aesthetic-related water quality parameters and to demonstrate compliance with the Guidelines. The Plan has been prepared in accordance with the Licence requirements and has been endorsed by NSW Health.

Sydney Water obtained **Full compliance** with respect to considering and including the concepts of risk minimisation practices and system management in its operation of the water supply.

Sydney Water obtained **Full compliance** with respect to monitoring in accordance with the *Annual Drinking Water Quality Monitoring Plan*. Sydney Water maintains an effective system of quality assurance for monitoring, sampling, testing and reporting on the Plan.

▸ Drinking Water Quality – Reporting and Drinking Water - Planning

Sydney Water obtained **Full compliance** for the preparation of reports on the results of water quality monitoring and water quality improvement. An annual *Drinking Water Quality Report* for the 2002/2003 year, which includes results of monitoring for health and aesthetic water quality characteristics, and an *Annual Water Quality Improvement Plan* have been prepared.

Sydney Water obtained **Full compliance** with respect to the preparation of a *Drinking Water Quality Incident Management Plan*.

Sydney Water obtained **Full compliance** with respect to meeting the Ministerial requirement to consider risks that may occur through variations in bulk water quality or plant failure through its Annual Drinking Water Quality Improvement Plan.

▸ Environmental Water Quality

Sydney Water obtained **High compliance** with respect to meeting environmental water quality requirements for discharges or water releases that take place under licences issued by regulatory agencies.

▸ Other Grades of Water

Sydney Water complies with the requirements for “supply of other grades of water” for the Rouse Hill scheme, but **Insufficient information** was provided to confirm that the requirements were met for other supplies.



► **Ministerial Requirement**

Full compliance was obtained in considering risks, through variations in bulk water quality or plant failure; in the Annual Drinking Water Quality Improvement Plan.



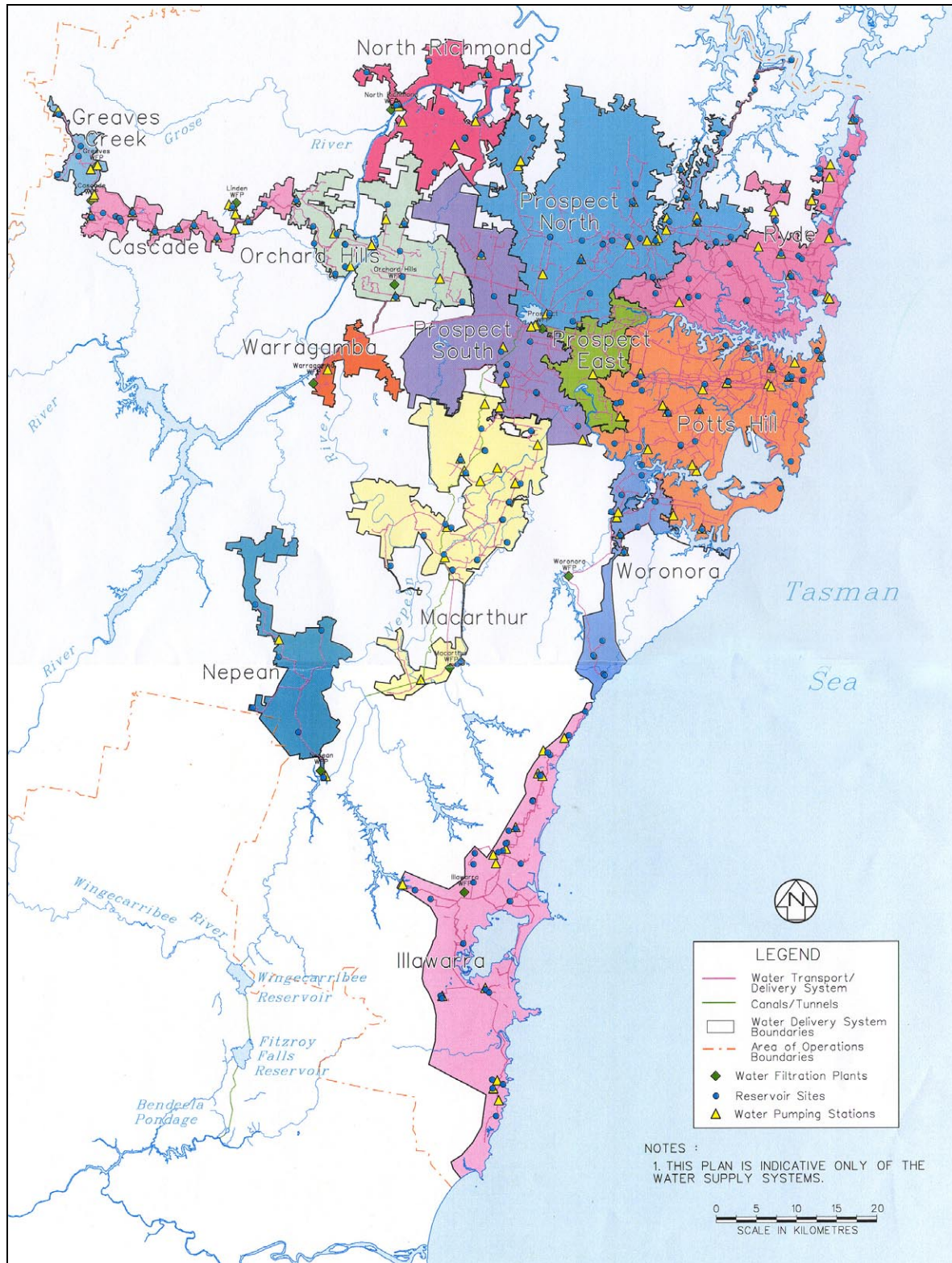
Table 6.1 Water quality performance: water supply systems

Delivery System	Thermo-tolerant coliforms		Total coliforms	
	2001/2002	2002/2003	2001/2002	2002/2003
	At least 98% of samples shall contain no Thermo-tolerant Coliforms		At least 95% of samples shall contain no Total Coliforms	
Greaves Creek	100	100	100	100
North Richmond	99.5	100	99.5	100
Orchard Hills	100	100	99.8	99.8
Prospect South	100	100	99.2	99.8
Prospect North	99.8	100	98.4	100
Prospect East	100	100	98.4	100
Ryde	99.8	100	99.2	99.9
Potts Hill	99.8	100	99.4	99.8
Warragamba	100	100	99.1	100
Nepean	100	100	100	100
Macarthur	100	100	99.1	99.1
Illawarra	99.9	100	99.2	99.6
Woronora	100	100	99.7	100
Cascade	100	100	99.2	100
Combined Systems	99.9	100	99.2	99.8

Table 6.2 Water quality performance: last six years

Year	Thermo-tolerant coliforms	Total Coliforms
	At least 98% of samples shall contain no thermo-tolerant coliforms	At least 95% of samples shall contain no total coliforms
2002/2003	100	99.8
2001/2002	99.9	99.2
2000/2001	99.9	99.1
1999/2000	99.8	98.4
1998/1999	99.8	97.8
1997/1998	99.9	97.9

Figure 6.1 Sydney Water's 14 Water Delivery Systems



Source: Sydney Water

6.2 Summary of requirements

The objectives of Part 6 of the Operating Licence are to ensure that Sydney Water:

1. Supplies drinking water that is safe and meets appropriate guidelines;
2. Supplies grades of water in a manner that is safe to the end users and meets appropriate guidelines;
3. Is abreast of emerging water quality issues and engages the community in the development of future water quality goals; and
4. Has in place appropriate strategies and management plans that minimise risks and ensure continual improvements in its operation.

To meet the requirements of Part 6, Sydney Water is required to undertake the following:

- ▮ Supply treated drinking water to customers that complies with the health related requirements of the Australian Drinking Water Guidelines and the aesthetic related requirements of NSW Health.
- ▮ Have regard to the concepts of risk minimisation in its management of the water supplies.
- ▮ Commission an independent study on the costs and benefits of complying with aesthetic guideline values; this is to involve community consultation and the report is to be completed prior to 31 January 2002.
- ▮ Prepare a comprehensive Annual Drinking Water Quality Monitoring Plan to monitor health-related and aesthetic-related water quality parameters to demonstrate compliance with the Guidelines. The sampling frequency and locations chosen for monitoring should be such that the results are representative of the water quality supplied to customers.
- ▮ Undertake monitoring in accordance with the Plan.
- ▮ Prepare an Annual Drinking Water Quality Report on the health-related and aesthetic-related monitoring results, and make the Report available free of charge, including via the Sydney Water website.
- ▮ Prepare a Five-year Drinking Water Quality Management Plan. The preparation of this Plan is to include public consultation and strategies for the comprehensive management of drinking water quality, minimise risk to public health and to meet aesthetic guidelines. The Plan is also to include an audit program for potable water backflow prevention devices.
- ▮ Prepare an Annual Drinking Water Quality Improvement Plan incorporating system and operational changes needed to address problems identified through monitoring and inspection, reduce risk to public health and to meet aesthetic guidelines.
- ▮ Prepare a Drinking Water Quality Incident Management Plan that coordinates management of drinking water incidents.
- ▮ Meet environmental water quality requirements for discharges or water releases that take place under licences issued by regulatory agencies.
- ▮ Supply other grades of water, such as water for reuse, in accordance with relevant guidelines and requirements of government agencies.
- ▮ Comply with the Ministerial Requirements M3:

"I therefore require Sydney Water to consider risks that may occur through variations in bulk water quality or plant failure through its Annual Drinking Water Quality Improvement Plan."



6.3 Details of compliance

Table 6.3 Water Quality - Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
10.2.1	The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:	No requirement	
(c)	Compliance by Sydney Water with its obligations under Part 6 of this Licence.	High Compliance	Refer to Table 6.4.

Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
6.2	Drinking Water Quality – Standards		
6.2.1	Sydney Water must comply with the following relating to drinking water:	No requirement	
6.2.1(a)	The NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 (“1996 Guidelines”) relating to health guideline values	Full compliance	<p>The monitoring results indicated the water supplied by Sydney Water to its customers is of an excellent quality and complies with the health guideline values outlined in the <i>Annual Drinking Water Quality Monitoring Plan 2002/2003</i> as approved by NSW Health.</p> <p>A number of the characteristics listed in the 1996 Guidelines were not monitored. The basis for this and conformance with the Guidelines has been explained in the Plan (2002/2003).</p> <p>In particular, with respect to the reported monitoring results:</p> <ul style="list-style-type: none">all systems complied with the health related guidelines (viz: no samples contained Thermotolerant Coliforms, and 99.8% of samples contained no Total Coliforms (cf. guideline value of 95%);there was full compliance with the guidelines for disinfection by-products, inorganic



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>compounds (various metals, cyanide, fluoride, nitrate, nitrite, sulphate), selected organic compounds, and pesticides at North Richmond WFP.</p> <p>In the 2002/2003 year, characteristics added to the monitoring plan included: trichloroacetaldehyde, DEHP (a phthalate), and for North Richmond only: xylene, 1,2 and 1,4 dichlorobenzenes, radiological characteristics, and amitrol.</p> <p>In the 2002/2003 year, characteristics that have been deleted from the previous year's monitoring plan were: carbon tetrachloride, benzo(a)pyrene, chloride and sodium. These characteristics were shown to comply in the previous year and were not expected to be present at concentrations in excess of the guideline value.</p> <p>Compliance with the guideline values is generally improving and no characteristic has shown a significant decline in performance. In particular:</p> <ul style="list-style-type: none"> ▶ Thermotolerant Coliforms and Total Coliforms: improving; ▶ Free chlorine: decreasing average free chlorine levels; ▶ Disinfection residuals (for example, THMs) have decreased for most systems; and ▶ With respect to pesticides, Sydney Water monitors for pesticides only for the North Richmond plant and relies on SCA monitoring for the other supplies. Because treatment may not remove pesticides effectively, this places reliance on the SCA monitoring and Sydney Water must ensure that SCA's pesticide monitoring program is adequate. Sydney Water advises that it has reviewed pesticide use in the catchments and will report to NSW Health and SCA on possible revisions to the monitoring program. <p>While not required for compliance, the numbers of <i>Cryptosporidium</i> and <i>Giardia</i> in the raw water to WFPs was significantly less than the previous year. There were no positive detections in the treated water.</p>
6.2.1(b)	Any amendments, updates or supplements to the 1996 Guidelines ("Updated Guidelines") relating to health guideline values specified by NSW Health	Full compliance	There have been no changes to the health guideline values that have resulted in more stringent requirements. There have been less stringent guideline values set for certain radiological characteristics, microcystins, boron and atrazine.
6.2.1(c)	The aesthetic guideline values of the 1996 Guidelines specified by the NSW Minister for Health following	Full compliance	The results of the monitoring program for the 2002/2003 period indicate that:



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
	consultation with the Minister		<ul style="list-style-type: none"> all systems complied with the aesthetic guideline values specified by NSW Health; all systems complied with the aesthetic characteristics (True Colour, turbidity, aluminium, iron and zinc) specified by the Minister following the mid-term review, but there was not full compliance for pH (see below); and turbidity, an indicator of the potential for dirty water, had improved from the previous year. <p>In the case of pH, there was some non-compliance with the guideline range used for compliance purposes (6.5 – 8.5), with 7 of the 15 delivery systems having an 95% Upper Confidence Limit for the mean pH of greater than 8.5, and 3 greater than 8.6. The highest pH values reported were 9.3, which occurred in two supply systems. The Australian Drinking Water Guidelines allow for higher values to occur in the case where new cement lined pipes are present (pH may be up to 9.2). The observed pH values are not expected to give rise to adverse health effects and the exceedences are not considered to be serious.</p> <p>There had been an increase of 50% in pipeline breaks and leaks over the previous year; this was because of sub-soil contraction due to the dry conditions. However, this does not appear to have resulted in reduced water quality or an increase in customer complaints.</p> <p>In terms of customer water quality complaints (3202 for 2002/2003), the number of complaints has decreased from the previous year (3786 for 2001/2002) and there is a generally increasing trend in the percentage of customers who are satisfied with the quality of their tap water, and a decreasing percentage of customers who had problems with their tap water in the past 12 months.</p> <p>Of the various systems, Greaves Creek is the poorest in terms of customer dirty water (1 – 2 per 1000 population). Sydney Water has prepared a draft Asset Management – Water Operations DWQ Customer Complaint Strategy to reduce the number of dirty water complaints. Sydney Water also proposes to decommission the Greaves Creek WFP and supply water from the Cascades WFP by construction of a new pipeline and related infrastructure.</p>
6.2.1(d)	The aesthetic guideline values of the Updated Guidelines specified by the NSW Minister for Health following consultation with the Minister	Full compliance	There have been no changes required under this clause to the aesthetic guideline values.



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
6.2.2	In delivering the Services, Sydney Water must have regard to the concepts of risk minimisation practices and system management of public water supplies in the 1996 Guidelines (including in relation to <i>Cryptosporidium</i> and <i>Giardia</i>)	Full compliance	<p>As noted in the 2001/2002 audit, Sydney Water has adopted the concepts of risk minimisation and system management of public water supplies outlined in the 1996 Guidelines, and is also taking a leadership role in the industry in adopting risk management principles that are being considered by the NHMRC for inclusion in a revision to the 1996 Guidelines. The body of work being undertaken by Sydney Water provides evidence of a systematic and well managed approach to managing water quality risk. Elements of this include:</p> <ul style="list-style-type: none"> ▮ A 5-year Drinking Water Quality Management Plan, which demonstrates a comprehensive risk-based approach to drinking water quality management. ▮ A comprehensive risk study of the entire water supply system from "Catchment to tap" (carried out in 1999). ▮ Standard Operating Procedures for assuring water quality. ▮ Annual drinking water quality monitoring plans and consumer satisfaction reports to verify water quality. ▮ Incident management planning. ▮ Employee training on water quality issues, with records of training maintained on a register. ▮ Community consultation, including communication of information relating to water quality, for example, daily posting of test results on the website; consumer confidence report. <p>In the 2002/3 audit period, Sydney Water undertook:</p> <ul style="list-style-type: none"> ▮ A catchment-to-tap hazard identification and risk assessment with the Sydney Catchment Authority (SCA), the Water Filtration Plant operators, and NSW Health. ▮ A detailed review of earlier hazard identification and risk assessments carried out for the various water filtration plants. The auditor sighted risk assessment reports completed in the audit period for the various WFPs and confirmed that assessments had been completed for all relevant WFPs (Nepean, Prospect, Illawarra, Macarthur, Warragamba, North Richmond, Cascades, Orchard Hills and Woronora). An assessment was not carried out for Greaves Creek WFP because this WFP will be taken out of service and water will instead be supplied via the Cascades WFP. These risk assessments were



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>consistent with the principles that are being proposed in revisions to the Australian Drinking Water Guidelines, and considered the inherent risk and residual risk after application of existing controls. In the case of the Woronora WFP (where disinfection failure had occurred due to bush fires) and the Prospect WFP, Sydney Water had assembled all of the risk work together and has carried out formal reviews of actions recommended from the prior assessments.</p> <p>► A similar detailed hazard identification and risk assessment of the various distribution systems and supply networks. The auditor confirmed that these had been carried out for all supply systems (for example, Nepean, Prospect South, Prospect North, Prospect East, Ryde, Potts Hill, Illawarra, Macarthur, Warragamba, North Richmond, Cascades, and Woronora).</p>
6.2.3	<p>Sydney Water must commission an independent study of the costs and benefits of Sydney Water complying with the aesthetic guideline values of the NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 and must report to the Licence Review Body on the results of that study by no later than 31 January 2002, to enable the Licence Review Body to report on the matter as part of the Mid term review.</p> <p>Sydney Water must ensure that the process of conducting the independent study includes public consultation in accordance with clause 1.2.2 on a discussion paper before the study is finalised</p>	No requirement	Sydney Water has previously complied with this requirement.
6.3	Drinking Water Quality – Monitoring		
6.3.1	Sydney Water must prepare, to the satisfaction of NSW Health, a comprehensive Annual Drinking Water Quality Monitoring Plan for the Water supply system by 30 June 2000 and then by 31 March in each subsequent year, for the duration of this Licence.	Full compliance	<p>The 2003/2004 Drinking Water Quality Monitoring Plan was prepared in consultation with NSW Health, with a draft submitted on 31 January 2003. Sydney Water received comments from NSW Health on 26 February 2003 (letter was sighted by the auditor). Sydney Water made changes and submitted a final Plan to NSW Health on 31 March 2003, and the Plan was signed off by NSW Health on 22 April 2003.</p> <p>The monitoring plan includes:</p>



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> health and aesthetic parameters; and monitoring for aesthetic parameters. <p>The NSW Health review of the draft Plan (letter dated 25 February 2003) identified a number of requirements to be included in the 2003/2004 Plan:</p> <ul style="list-style-type: none"> New organic compounds should only be included if a validated method exists and the limit of detection is below the guideline value; Monitoring for both nitrate and nitrite be carried out for both chlorinated and chloraminated supplies, on a 5 year interval; and Pesticide monitoring of raw water for North Richmond should be consistent with that carried out by SCA for inflows at other WFPs, and should include metasulfuron. <p>NSW Health also recommended that Sydney Water undertake a review and assessment of diazinon used in the North Richmond catchment, to determine the need for including diazinon in the monitoring program. Sydney Water advised the auditor that it has progressed this review and will report to NSW Health in 2003/2004.</p>
6.3.2	The Annual Drinking Water Quality Monitoring Plan for the Water supply system must include system performance monitoring and regular sampling, laboratory testing and processes to ensure quality control. The monitoring of Drinking water quality must include:	Full compliance	<p>The Annual Drinking Water Quality Monitoring Plan includes system performance monitoring and regular sampling at a large number of sites. Sampling and analysis is undertaken by Sydney Water's Environment and Innovation (E&I) laboratories (previously AWT).</p> <p>The Plan is an excellent and well presented document, and includes the following.</p> <ul style="list-style-type: none"> A comprehensive listing of parameters, the requirements of the Australian Drinking Water Guidelines, 1996 (ADWG), the past history of monitoring and the results reported, and the proposed monitoring for the years to 2007. This listing provides an excellent reference point for understanding the basis for inclusion of parameters from year to year. Details on Quality Control procedures, including the basis for numbers of blanks, duplicates spikes per batch or collection run. <p>In addition to the quality control measures that are included in the Plan, Sydney Water and its laboratories undertake a number of other quality assurance measures. These are outlined in Section 6.4.4 of this audit report.</p>



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
6.3.2(a)	The health guideline values for which compliance is required under clauses 6.2.1(a) and (b)	Full compliance	The Annual Drinking Water Quality Monitoring Plan includes all health guideline values for which compliance is required by NSW Health.
6.3.2(b)	The aesthetic guideline values for which compliance is required under clauses 6.2.1(c) and (d)	Full compliance	The Annual Drinking Water Quality Monitoring Plan includes all aesthetic guideline values for which compliance is required by NSW Health.
6.3.3	Sydney Water must monitor Drinking water quality for the aesthetic guideline values of the 1996 Guideline that apply to the Physical characteristics of Drinking water	Full compliance	The Annual Drinking Water Quality Monitoring Plan includes monitoring and reporting against the aesthetic guideline values that apply to physical characteristics of drinking water. These include, for example, pH, hardness, taste and odour, and colour. Sydney Water carried out this monitoring.
6.3.4	The Drinking water quality monitoring must assess the quality of Drinking water in Sydney Water's Water supply system. The sampling frequency and the locations chosen for the monitoring should be such that the results are representative of the quality of water supplied to Customers and Consumers	Full compliance	<p>It was confirmed that:</p> <ul style="list-style-type: none"> ▀ The sampling frequencies for the various water quality parameters were in accordance with those listed in the Australian Drinking Water Guidelines (1996); and ▀ The basis for selection of the sampling locations is consistent with the requirements of the Guidelines, and has the objective of being representative of the quality of water supplied to customers and consumers. <p>Sydney Water adopts a rotational sampling approach that provides a better indication of spatial variation across each system than sampling on a non-rotational basis.</p> <p>Sydney Water advised that the selection of taps includes situations that are representative of the water supplied to customers, and includes samples from both the extremities and dead end sections of the system, and from supply loops and mains. This is in accordance with the Guidelines. Sydney Water did not have an analysis of the distribution of sample points which verified this. It is recommended that Sydney Water tabulate the various sampling situations for each system to verify that the selection of taps continues to be representative (because over time the selection of sample points can change as taps are added and removed from the program).</p> <p>Taste and odour monitoring is restricted to February, which is considered to be the month with the highest risk of taste and odour problems. The program involves the taking of only a single sample at each site, which is unlikely to provide a good characterisation of odour issues. However, the Guidelines allow for this level of sampling noting that complaints provide additional information.</p>



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
			There has been discussion in the previous audits as to whether the subdivision of water supply systems into water quality zones for setting sampling frequencies complies with the Australian Drinking Water Guidelines (1996). The current monitoring plan retains the system-based approach and does not comply in this respect; however, it is noted that Sydney Water and NSW Health have agreed that basing the program on the zone sizes in the Guidelines would result in a substantial increase in the number of samples and cost of monitoring, and was not warranted because of the good water quality that is achieved. Sydney Water advised the auditor that, in order to provide a higher level of confidence in this regard and avoid the concern that localised exceedences may be masked by averaging with a large number of results, if detections of faecal or total coliforms occur in a particular water quality zone, then that zone will be monitored at the frequency required in the Guidelines. The auditor considers that this is a good strategy for meeting the intent of the guidelines. It is noted that the microbiological quality of the water quality is generally excellent in the Sydney Water systems, and coliform detections occur very infrequently. Because of this, it is likely that this strategy will not result in a significant increase in the level of monitoring.
6.3.5	Sydney Water must undertake the Drinking water quality monitoring for the period from the Commencement Date to 30 June 2001 and after that for each subsequent financial year	Full compliance	Monitoring has been carried out for the period 1 January 2000 to 30 June 2003.
6.4	Drinking Water Quality – Reporting		
6.4.1	Sydney Water's water quality monitoring test results must be placed on its website on the internet for downloading by the public, free of charge and made available at its offices for access or collection by any person, also free of charge	Full compliance	Quarterly and annual summaries of monitoring results and daily test results for <i>Cryptosporidium</i> and <i>Giardia</i> are placed on Sydney Water's website for downloading. These are also printed on demand, free of charge, if a person requests them at a Sydney Water office.
6.4.2	Sydney Water must produce an Annual Drinking Water Quality Report that reports on the Water supply system in relation to:	Full compliance	See below.
6.4.2(a)	The health guideline values for which compliance is required under clauses 6.2.1(a) and (b)	Full compliance	The <i>Annual Drinking Water Quality Report for 2002/2003</i> had been prepared by Sydney Water and was made available for the audit in October 2003.



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
			Tables in the annual report provide a summary of compliance with the health guideline values for which compliance is required.
6.4.2(b)	The aesthetic guideline values for which compliance is required under clauses 6.2.1(c) and (d)	Full compliance	Table 12 of the <i>Annual Drinking Water Quality Report</i> provides a summary of compliance for the aesthetic characteristics for which compliance is required.
6.4.2(c)	The aesthetic guideline values of the 1996 Guidelines that apply to the Physical characteristics of drinking water	Full compliance	Table 13 of the <i>Annual Drinking Water Quality Report</i> provides a comparison of the results with the guideline values that apply to the physical characteristics of drinking water.
6.4.3	The Annual Drinking Water Quality Report must also include a summary of monitoring information, indicating water quality trends and problems, and a summary of system failures (significant and major water quality incidents) over the previous year and action taken to resolve them and how public health was protected	Full compliance	A summary of water quality trends for key parameters is included in the <i>Annual Drinking Water Quality Report</i> . The Report is excellent and provides information on changes in requirements, system performance and system failures.
6.4.4	The Annual Drinking Water Quality Report must be prepared by 30 November each year and must be placed on Sydney Water's website on the internet for downloading by the public free of charge and made available at its offices for access or collection by any person, also free of charge	Full compliance	The <i>Annual Drinking Water Quality Report for 2002/2003</i> had been prepared by Sydney Water on 11 September 2003 and was made available for the audit in October 2003. Sydney Water advised that this report will be posted on the website before 30 November 2003. The Annual Drinking Water Quality Report for 2001/2002 was posted on the website on 30 November 2002 in accordance with the requirement of this clause.
6.5	Drinking Water – Planning		
6.5.1	Sydney Water must prepare, to the satisfaction of NSW Health, a Five Year Drinking Water Quality Management Plan within 5 months after the Commencement Date. Sydney Water must release a discussion paper in relation to the Five Year Drinking Water Quality Management Plan within 2 months after the Commencement Date and must engage in a public consultation in accordance with clause 1.2.2 on the discussion paper	No requirement	The Commencement Date as defined in the Operating Licence is the 12 April 2000. The <i>Five Year Drinking Water Quality Management Plan</i> was prepared in March 2000 and finalised and endorsed by NSW Health on the 12 September 2000. Community consultation was carried out on the management plan.



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
6.5.2	The Five Year Drinking Water Quality Management Plan must include strategies for the comprehensive management of the quality of Drinking water in Sydney Water's Water supply system, the aim of which is to reduce risk to public health and meet any aesthetic guideline values extended to Sydney Water in or by this Licence. It must also include an audit program for Potable water backflow prevention devices	No requirement	<p>As noted in a previous audit, the <i>Five Year Drinking Water Quality Management Plan</i> is an excellent and comprehensive document. The Management Plan sets out the current situation of the supply system, the emerging issues and performance gaps, and has action plans for maintaining high quality drinking water.</p> <p>The Management Plan encompasses catchment management and bulk water delivery, water treatment and water distribution to consumer's taps. It also addresses the areas of risk management, emerging water quality issues, monitoring and reporting, research and development, communication with stakeholders and incident management.</p> <p>Although no audit program for backflow prevention devices is included in the Management Plan, the Management Plan itself includes a discussion of the issues and refers to separate documents available within Sydney Water. A progress report on Sydney Water's implementation of the Backflow Prevention Policy (30 June 2003) was reviewed by the auditor. The Plan indicates that: implementation is well advanced, with 99% of customers complying with the requirements to install a backflow prevention device; an audit having been completed in 2002 and the next audit (2003) being planned.</p>
6.5.3	Sydney Water must prepare, to the satisfaction of NSW Health, an Annual Drinking Water Quality Improvement Plan for the Water supply system within one month after the Commencement and after that by 31 March in each year, unless otherwise specified following the review under clause 6.5.5	Full compliance	<p>The Annual Drinking Water Quality Improvement Plan 2003/2004 was submitted to NSW Health on 31 March 2003 and NSW Health endorsed the Plan on 15 May 2003. NSW Health advised in their letter that "<i>Sydney Water had addressed all water quality improvement needs as identified by proposed action to address water quality issues through optimisation of WFP performance, improvement of chemical dosing reliability, and continued reservoir dosing</i>". NSW Health suggested some additional improvements for inclusion in the next year's plan.</p>
6.5.4	The Annual Drinking Water Quality Improvement Plan must incorporate system and operational changes needed to address problems identified through drinking water quality monitoring data and through periodic system inspections and evaluations, the aim of which is to reduce risks to public health and meet any aesthetic guideline values extending to Sydney Water in or by this Licence	Full compliance	<p>The Annual Drinking Water Quality Improvement Plan 2003/2004 is an excellent document which includes, in concise form, for each of the delivery systems:</p> <ul style="list-style-type: none"> ▶ a systematic consideration of the status of water quality in the various water supply systems and incidents that have occurred; and ▶ for each water quality issue, proposed actions, the benefit and improvement, and the timeframe for implementation. <p>It was noted in the previous audit that the Plan has a focus on treated water quality, and does not, for example, refer to:</p> <ul style="list-style-type: none"> ▶ the bulk water quality, even though the bulk water quality did not comply with the



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>requirements of the Bulk Water Supply Agreement for some of the supplies (particularly for algae); or</p> <ul style="list-style-type: none"> the performance and reliability of treatment systems (for example, whether there were periods in which treatment systems such as disinfection systems did not comply with essential performance targets). <p>This observation is still applicable in the case of the new Plan. The analysis in the Plan which leads to the improvements is based largely on the actually achieved water quality, rather than looking at possible situations (i.e. risk) that may occur through variations in bulk raw water quality or plant failure. Notwithstanding this observation, the Plan does include proposed actions to improve the water quality risk management and to prioritise and prepare action plans for gaps identified in the risk assessment for all water filtration plants and bulk water supply. It can be expected that the next Improvement Plan will include reference to these action plans (additional comment on this issue is included under the Ministerial Requirement M3 below).</p> <p>It is concluded that Sydney Water is enhancing the Improvement Plan to address the issues that have been identified in previous audits.</p>
6.5.5	The Annual Drinking Water Quality Improvement Plan must be reviewed as part of the Mid term review under clause 2.3.1 to assess its continued effectiveness and whether there is a continued need for the plan each year	No requirement	A review of the Plan was carried out as part of the Mid-Term Review. The Review concluded that the Annual Drinking Water Quality Plan should remain as a Licence condition.
6.5.6	Sydney Water must prepare, to the satisfaction of NSW Health, a Drinking Water Quality Incident Management Plan, within 1 month after the Commencement Date which must remain in place until any new plan is developed in agreement with NSW Health	Full compliance	An initial Drinking Water Quality Incident Management Plan was prepared in 1999, and a new Drinking Water Quality Incident Management Plan was developed in 2001/2002. The new Plan comprises the Event Management Standard Operating Procedure and the Emergency Risk Management Manual. NSW Health confirmed its agreement with the Plan on 12 August 2002. Further revisions were made to the Plan in August 2003 and NSW Health confirmed its agreement with the revised Plan on 9 September 2003.
6.5.7	The Drinking Water Incident Management Plan must contain, or incorporate by reference, procedures and protocols for the coordinated management of Drinking water incidents including media and stakeholder liaison	Full compliance	Drinking water incidents are managed within an Emergency Response Framework. As noted under 6.5.6, there is an overarching Emergency Risk Management Manual, and strategic level plans (such as the Drinking Water Quality Emergency Response Plan) which manage hazards that relate to the whole of Sydney, and tactical level plans (such as Business



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
	and any notification of public health advice received from NSW Health to Customers		<p>Community Plans, WFP Emergency Response Plans, and STP Emergency Response Plans) for specific systems. Sydney Water has adopted the categories of <i>Incident</i>, <i>Major Incident</i>, and <i>Emergency</i>. In addition, the term “<i>event</i>” is used to refer to an occurrence or test result that could develop into an incident. In 2002/2003 there were no declared <i>emergencies</i>, 2 major drinking water <i>incidents</i> and 9 other <i>events</i>.</p> <p>The Incident Management System was tested during 2002/2003 and was found to work effectively, although some areas of improvement were indicated. The testing has included, for example, a joint training exercise “Mary” involving Sydney Water, SCA, NSW Health, and Australian Water Services. There were two actual incidents: a fire broke out in the electrical switch room at the Prospect Water Filtration Plant on 12 September 2002 and a bushfire burnt down power lines supplying the Nepean Water Filtration Plant in November 2002. The “Windstorms Incident” (declared as a major incident on 26 August 2003) was outside the audit period, but the debrief also indicated some areas for improvement. These included, for example:</p> <ul style="list-style-type: none"> ▶ The incident should have been declared earlier to assist prioritisation, resourcing and communication; ▶ The full resources of the Emergency Coordination Centre were not deployed (OPS, Logistics, Planning, Communications). Resource listings were not complete. Generator sizes were not specified correctly; ▶ OHS issues; and ▶ Unreliability of paging system. <p>Sydney Water advised that debriefs are carried out for all incidents and the results of the debriefs are included as Action Plans.</p> <p>It is concluded that the Incident Management System is now well developed and can be expected to work effectively.</p> <p>In regard to managing the reporting and information that is obtained relating to incidents, Sydney Water has a Corporate Incident Management Database. Sydney Water advises that because of the complex nature of reporting on incidents to the various stakeholder groups, it is considering improvements to its reporting systems.</p> <p>The auditor notes that the occurrence of “drought breaking rains” has been identified by</p>



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>Sydney Water and SCA as having potential to give rise to a major incident, and the minutes of liaison meetings between Sydney Water, SCA and NSW Health indicate that they are actively planning for such an event, should it occur. This provides further evidence that Sydney Water regards the Incident Management System as a critical part of its business management system and is continually working to improve it.</p> <p>During the period Sydney Water worked with NSW Health to improve its procedures for notification of Sewer Overflows. The improvement was required because Sydney Water had been tending to over notify (i.e. notify when overflows were minor and not significant, rather than reporting only overflows which had potential to give rise to a health concern). For this purpose, Sydney Water set up in January 2003 an improved paging and faxing notification system. Sydney Water advised that this system appears to have been successful in achieving a level of notifications consistent with the requirements of NSW Health.</p>
6.6	Environmental Water Quality		
6.6	Sydney Water must meet the environmental water quality requirements for any discharges or water releases by licences issued to it by the EPA or the Department of Land and Water Conservation (DLWC, now DIPNR since May 2003).	High compliance	<p>For this audit period, the EPA has issued 31 Environmental Protection Licences to Sydney Water, related to discharges. These Licences cover:</p> <ul style="list-style-type: none"> ▶ 27 licences granted to regulate discharges from the sewage treatment plants and reticulation systems; ▶ 2 licences granted for discharges at water filtration plants at Cascades and North Richmond; and ▶ 2 licences granted for the application of herbicide spraying at Botany Wetlands and Rouse Hill. These licences were surrendered on 23 April 2003. <p>Sydney Water reports compliance with the EPA licences to the EPA on an annual basis as a requirement of the licences. Sydney Water advised that it reported seven non-compliances to the EPA with water quality requirements set by the Clause L3 of the EPA licences, for this audit period (see Table 6.7). In accordance with the EPA reporting requirements, Sydney Water reported the reasons for non-compliance and the actions taken to prevent, control or mitigate, and prevent recurrence of the non-compliance. These are discussed further in Section 6.4.7 of this report.</p> <p>This low number of non-compliances compared to the number of environmental discharges</p>



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>demonstrates a high level of compliance with the requirements of this Clause.</p> <p>DIPNR (former DLWC) has issued Water Management Licences to Sydney Water. The licences do not impose environmental water quality requirements for discharges or water releases. Therefore with respect to DIPNR licences, there is no requirement under this Clause.</p>
6.7	Other Grades of Water		
6.7.1	Other Grades of water supplied by Sydney Water must be supplied according to relevant guidelines and requirements prescribed by EPA, NSW Health, the Department of Land and Water Conservation, the Department of Agriculture, other relevant government agencies and the NSW Recycled Water Coordination Committee	Insufficient information	<p>Sydney Water supplies reclaimed water for a number of non potable purposes including parks and golf course irrigation, residential use (Rouse Hill) and some industrial applications. The guidelines that are to be applied vary with the use of the water and are outlined below.</p> <p>Use for irrigation (such as by golf courses and by Sydney Water's STPs – there are 12 external organisations using the recycled effluent (Appendix 4) and 32 Sydney Water STPs): NSW EPA guidelines for <i>"the Utilisation of Treated Effluent by Irrigation"</i>.</p> <p>Use for urban residential use (for example, Rouse Hill): NSW Recycled Water Coordination Committee <i>"NSW guidelines for Urban and Residential Use of Reclaimed Water"</i>.</p> <p>Industrial applications (for example, BHP Port Kembla): National Water Quality Management Strategy (ARMCANZ, ANZECC, NHMRC): <i>"Guidelines for Sewerage Systems – Reclaimed Water"</i>.</p> <p>In the supply of treated sewage effluent for irrigation, the water is treated to a tertiary standard, including disinfection. In the case of supply to BHP Port Kembla, the water is unfiltered raw water (not sewage effluent) and subject only to disinfection.</p> <p>Sydney Water advised that approximately 10 GL of effluent was used on site at STPs, 3 GL was used off site. The Rouse Hill scheme serves approximately 13,000 properties. The total reuse corresponds to approximately 3% of the total sewage effluent. An additional 10GL of unfiltered raw water was used by BHPS.</p> <p>In ensuring that Sydney Water meets these requirements, Sydney Water achieved the following:</p> <ul style="list-style-type: none"> ► Certification of its wastewater operations under AS/NZS ISO 14001:1996. A Certificate of Registration issued by SAI Global Limited dated 12 September 2002 was sighted. This



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>registration covers the management and processing of wastewater to produce recycled water, reclaimed water and biosolids, all available for beneficial re-use. In addition, on 13 August 2003, Sydney Water obtained certification under AS/NZS ISO 9001:2000 for the supply of recycled water for designated recycled water schemes.</p> <ul style="list-style-type: none"> ▮ Commissioned an independent audit of all STPs and users to identify risks and ensure that appropriate Environmental Management Plans are in place. This audit program is being targeted to the older schemes first. Sydney Water advises that it will assist some users to develop appropriate EMPs where required. ▮ At Rouse Hill, undertakes an inspection and audit program that includes all properties at the time of ownership change and 20% of all properties on an annual basis. A customer awareness program is also carried out, and fact sheets have been prepared regarding the approved uses of water. At time of construction of houses, 5 inspections are carried out (cf. 2 for a normal house). ▮ At the STPs, the treatment system includes a series of interlocks (BOD, turbidity and chlorine residual) that will initiate automatic shut down of the plant. ▮ Monitors the quality of the effluent at a designated monitoring point. ▮ Uses NATA-certified laboratories for monitoring. A single company carries out the sampling and analysis for the inland plants (NATA certification sighted) and another company carries out the sampling and analysis for the coastal plants (NATA certification sighted). ▮ Provides annual returns to NSW EPA for each STP EPA Licence (example of annual return submitted for Licence 4965, submitted on 28 August 2003, was sighted). ▮ Reports monthly to NSW Health on an exceptions basis, and provides an annual <i>"Performance Report to NSW Health on Rouse Hill Recycled Water Quality"</i> (sighted report for period 1 September 2001 to 31 August 2002). <p>In regard to achieving compliance, the results of monitoring treated effluent quality indicated that there was generally full compliance with requirements for the Rouse Hill supply. There was some pH non-compliances reported; however, the auditor considers this to be of a technical nature and did not indicate that the water would not be suitable for use (Sydney Water advised that the upper limit of pH 8.0 was sometimes exceeded during potable water</p>



Table 6.4 Water Quality - Part 6 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>top-up events). Sydney Water advised that NSW Health has since approved a variation to the upper level to bring it into line with the potable water upper pH level of 8.5, and Sydney Water believes that compliance with this revised guideline will no longer be an issue.</p> <p>There were also some exceedences of the free chlorine levels. However, Sydney Water advised that it considers it to be more important to maintain measurable residuals throughout the system, which causes some exceedences in some locations. There have been no detections of cross connections in the current year, and the 20% inspections program has not identified problems such as illegal modifications. This provides confidence that cross connections are now not a problem. Sydney Water advised that there was only one complaint in the previous year that could have been attributed to water quality (one complaint of sickness); this was followed up by Sydney Water and was found to be spurious.</p> <p>In the case of supply of treated effluent from STPs used for irrigation (mainly on golf courses), the results of monitoring reported to EPA for STP licence purposes was provided to the auditor. EPA advised the auditor that Sydney Water complied with its licence conditions. The reported chemical analyses were well within Guidelines for irrigation. The average/maximum faecal coliform numbers reported for each STP for which data was provided were 548/4400, 32/900, 25/520, 70/240, 1/5, 337/1480 coliforms per 100 mL which may be satisfactory for use under controlled conditions. However, insufficient information was provided to indicate what the applicable Guidelines were in each instance and whether compliance had been achieved. It is concluded that there is insufficient data for the auditor to reach a conclusion on the degree of compliance for supply of treated effluent for irrigation purposes.</p>
6.7.2	Minimum standards and guidelines to regulate the supply of Other Grades of water must be identified in the Mid term review. Where the Minister is of the opinion that the minimum standards and guidelines for the supply of Other Grades of water identified in the Mid term review are appropriate, such standards and guidelines must be observed by Sydney Water as a condition of this Licence	No requirement	The Mid-Term Review recommended that no minimum standards and no guidelines (in addition to those in Clause 6.7 of the Licence) be included in the Licence. No change to Sydney Water's practices is required from the Mid-Term review.
6.7.3	Where there is a conflict between any of the guidelines, requirements or standards applying to Sydney Water under clause 6.7 the Minister's decision will prevail	Not requirement	No conflicts have been identified.



Table 6.5 Water Quality - Ministerial Requirements

ID	Requirement	Compliance	Findings
M3	"I therefore require Sydney Water to consider risks that may occur through variations in bulk water quality or plant failure through its Annual Drinking Water Quality Improvement Plan."	Full compliance	<p>Sydney Water has undertaken a series of actions to consider the risks that may occur through variations in bulk water quality or plant failure. Some of these have been (and are being) implemented through the Improvement Plan and other actions are being carried out. These actions include the following.</p> <ul style="list-style-type: none"> ▮ Sydney Water has included in the Annual Water Quality Improvement Plan 2003/2004 a set of items common to all/most systems that address significant issues relevant to this requirement. For example: power failures (such as may occur during bush fires), reliability of chemical dosing and security risks. ▮ Sydney Water participated with SCA and NSW Health in joint risk assessments of the catchments and reservoirs. These assessments identified where risks may arise through variations in the quality of the bulk raw water. Refer to further comment below. ▮ Sydney Water instituted reporting on the <i>"Effect of Moderate Rainfall on Bulk Water Quality Supply Network"</i>. This particular item addresses issues relating to run off from catchments affected by bushfires. ▮ Sydney Water participated in the preparation of a report by SCA on <i>"Managing adverse water quality consequences of bushfires"</i>. This provides a detailed review of effects of bushfires on water quality, mapping of high risk spots, water quality warning and response, operational measures to reduce contamination of bulk water supplies and treatment methods to reduce contamination of tap water supplied. ▮ Sydney Water instituted a 6 weekly Sydney Water/SCA Operational Interface Meeting. These meetings included standing agenda items on compliance with the BWSA and whether the WFPs had water quality problems. Sydney Water advised that no problems had been reported (even though full compliance with the BWSA had not been achieved). This was confirmed in the meeting reports sighted. <p>In addition, it is noted that:</p> <ul style="list-style-type: none"> ▮ SCA provides monthly Bulk Water Quality Monthly Compliance Reports to Sydney Water as per Clause 5.3 Schedule 2 of the BWSA (this includes commentary on any significant water quality risks); and



Table 6.5 Water Quality - Ministerial Requirements

ID	Requirement	Compliance	Findings
			<p>▮ SCA undertakes a variety of water quality monitoring activities that provide an understanding of the water quality of catchments, tributaries and storages. The results of this work are available to Sydney Water.</p> <p>In respect to catchment-related bulk water quality variations, the Annual Water Quality Improvement Plan 2003/2004 has not yet included information relating to catchments other than as noted above. However, Sydney Water has included an action item (Table 21.1 Item 1) in the Plan: "prioritise and prepare action plan for gaps identified in risk assessments for all WFPs and bulk water supply". The Plan indicates that it is proposed that this be progressively carried out to December 2004. Sydney Water has commenced this work with completion of risk assessments for all catchment/supply systems in conjunction with SCA, and Sydney Water advises that 95% of the action plans resulting from the risk assessments have been completed. The auditor reviewed the risk assessments and noted that they identified a range of high risk issues related to the catchments and storages which could result in significant variations in the quality of the raw water to the WFPs. Sydney Water advises that it will include the actions in future Annual Water Quality Improvement Plans or the next 5 Year Drinking Water Quality Management Plan, and in the next audit it will be important to determine whether the indicated actions and issues have been addressed or are underway.</p> <p>Because the work being undertaken by Sydney Water is consistent with the Minister's requirements, full compliance has been assigned</p>
Carried over from 2001/2002	"...I require that Sydney Water include in future Annual Drinking Water Quality Monitoring Plans, submitted to NSW Health, reference to the selection and frequency of testing of the drinking water characteristics."	Full compliance	<p>Action carried out by Sydney Water has now largely addressed this requirement. Sydney Water advises:</p> <p>▮ A strategy has been agreed with NSW Health to meet the requirements of the Australian Drinking Water Guidelines with respect to the frequency of sampling in water quality zones (refer to discussion under Operating Licence clause 6.3.4 above); and</p> <p>▮ A review of pesticide use has been carried out and a report is being finalised for NSW Health.</p> <p>It is concluded that the requirements of the Minister are being complied with.</p>



Table 6.6 Water Quality - recommendations from 2001/2002 Audit of the Operating Licence

ID	Recommendation	Addressed	Findings
1	Establish a system to track adherence by the SCA to the water quality aspects of the Bulk Water Supply Agreement	Adequately addressed	<p>The basis for this requirement was that Sydney Water has a high reliance on Sydney Catchment Authority for the provision of bulk water that complies with the requirements and can be adequately treated by the WFPs. Because variations in bulk water quality could potentially make it difficult for Sydney Water to achieve the required treated water quality, it was recommended that Sydney Water should formally confirm that the measures necessary for protection of bulk water are being carried out.</p> <p>Sydney Water advised that it does not consider that it is necessary to establish such a system, because:</p> <ul style="list-style-type: none"> ▶ Sydney Catchment Authority already reports the status of actions to Sydney Water; and ▶ Sydney Water and SCA are working together to develop risk management plans, and longer term plans are also interchanged between the organisations for review. <p>The auditor reviewed the exchange of information between the two organisations, and confirms that there is a high level of exchange. Because of this the auditor accepts the Sydney Water assurance that Sydney Water is fully aware of the activities of SCA.</p> <p>Relevant to this, the auditor notes that the Operational Audit of Sydney Catchment Authority indicates that the SCA's activities to identify and control high risk activities in the catchments have not been delayed or not been able to be carried through for a number of reasons, and it can be concluded that Sydney Water is aware of the limitations in management of the catchment and takes this into account in its planning and assessment of business risk.</p>
2	Consider possible variations in bulk water quality in the preparation of the Drinking Water Quality Improvement Plan	Adequately addressed	Refer to Ministerial M3.
3	Prepare a report for senior management on risks to Drinking Water Quality	To be addressed in 2003/2004	Sydney Water advises that a report for senior management on risks to Drinking Water Quality will be prepared in conjunction with the development of the 5 Year Plan 2004/2009.



6.4 Discussion

6.4.1 Drinking Water quality

The quality of drinking water supplied to customers is generally of an excellent standard and complies with the health related requirements of the Australian Drinking Water Guidelines and the aesthetic related requirements specified by NSW Health and the Minister.

6.4.2 Joint working with SCA and NSW Health

It is clear from the information provided to the auditor that Sydney Water has established a good working relationship with SCA and NSW Health. This relationship provides confidence that issues that require joint consideration by these organisations will be properly dealt with.

6.4.3 Expert Panel Report

In April 2003 Sydney Water and SCA convened a second meeting of the Water Quality Expert Panel to review progress on recommendations made during the first panel meeting in 1999, and to make additional recommendations based on progress and changes in the industry over the past 4 years.

The Panel report was issued in May 2003, and noted that Sydney Water has made good improvements in implementing the 1999 Panel recommendations; this has included improvements in public health protection through enhancements in the operation of water treatment facilities, management of the distribution system and in monitoring. Significant improvements have included successfully operating to a lower treated water turbidity goal (0.1 NTU), increasing the microbiological quality of the water and reducing the levels of disinfection byproducts.

The Panel made a number of suggestions regarding further improvements and the balance of the programs, such as, the focus of the monitoring program and the balance between improving the microbiological quality of the water vis increasing the concentrations of disinfection byproducts.

Overall, the Expert Panel Report has provided a thoughtful analysis of the risks to water quality and where improvements may be considered. Sydney Water is actively considering the various issues in conjunction with SCA and NSW Health, and it will be important to follow Sydney Water's response and progress on the various issues in the coming years.

6.4.4 Water Quality Monitoring and Quality Assurance

Sydney Water undertakes a program of water quality monitoring which is detailed in an *Annual Drinking Water Quality Monitoring Plan* and is in accordance with the requirements of the *Australian Drinking Water Guidelines 1996*. An issue identified in previous audits relating to the frequency of sampling in water quality zones has been resolved satisfactorily with NSW Health.

Sydney Water has a well developed quality management system for both its water operations group and for its laboratory that undertakes sampling and analysis of water for monitoring purposes. The extent to which quality management and quality assurance has been integrated with Sydney Water's business is impressive.

This provides confidence that Sydney Water properly manages its day to day activities related to water quality.

The auditor reviewed the program of quality assurance undertaken by the laboratories and found that the program of proficiency testing provides confidence that the monitoring results are a good measure of the parameters monitored for compliance. The program includes, by way of example:

- ▶ Independent comparative testing for *Cryptosporidium* and *Giardia* through the UK-based LEAP scheme, which indicated that there had been a substantial improvement in performance over the period that the testing had been carried out (1998 – 2003), although some further improvement was possible.
- ▶ Proficiency testing by NATA for *Cryptosporidium* and *Giardia*. A recent round of testing resulted in one outlier and, because of this result, the current status of the laboratory has been designated by NATA as “questionable” and the laboratory will need to report no extreme results and no unacceptable percentage recovery rates in the next two rounds before receiving a satisfactory performance grading. It will be a matter for concern if the monitoring laboratory should obtain further outliers when undertaking NATA proficiency testing for *Cryptosporidium* and *Giardia*, as this could cause the laboratory to lose its NATA accreditation for this analysis.
- ▶ Proficiency testing by NATA for microbiological parameters (E. coli, Total Coliforms, Plate count) and other chemical parameters: most results satisfactory.
- ▶ Independent checking by the Australian Water Quality Centre in Adelaide of positive *Cryptosporidium* and *Giardia* results: Sydney Water advised that these checks results were satisfactory, but insufficient information was provided to the auditor to confirm this finding.
- ▶ Proficiency testing with other Sydney Water system laboratories for alkalinity, conductivity, fluoride, pH, turbidity, True Colour, manganese, iron, hardness and chlorine: good correspondence.
- ▶ Analysis of internal quality control checks and blanks and duplicates: good correspondence.

The monitoring of *Cryptosporidium* and *Giardia* is the most challenging monitoring requirement, and it can be expected that the actual numbers of organisms will be typically be 1.5 – 2 times that reported, reflecting the range of recoveries achieved. In general, the levels of recovery being achieved by Sydney Water can be considered to be good for these types of analyses.

6.4.5 Water quality improvement

Sydney Water has developed an excellent Water Quality Improvement Plan, and includes an analysis that shows how the proposed improvements are linked to addressing particular water quality issues or risks. The extent to which Sydney Water has identified issues and has systems in place to address these issues in the forthcoming years is impressive.

Further comments regarding the possible effects of bulk water quality variations on compliance are discussed in Section 6.4.7 below and the Ministerial Requirement M3 of this report.

6.4.6 Reporting

Sydney Water noted that it has to prepare many reports related to drinking water quality and it would be desirable if the reporting requirements could be simplified. The reports prepared by Sydney Water on drinking water quality include: monthly reports to Sydney Water staff and NSW Health; quarterly reports to NSW Health; Annual Report to NSW Health; and an Annual Report to the public. In addition, there are a number of other reports, although these are on other topics and for other purposes (such as Incident



Reports; 5 Year Plan, Annual Improvement Plan; Quarterly Status report on the Improvement Plan; and Annual Monitoring Plan).

Of these various reports, it appears that most are required, although there could be some saving in the reporting to NSW Health if the report formats were formulated in a way, which could avoid the need to produce separate quarterly reports. Sydney Water may wish to discuss this with NSW Health to determine if some saving could be achieved.

6.4.7 Non-Compliances reported to the EPA

Sydney Water reported to the EPA seven non-compliances against Clause L3 of licences issued by the EPA under the *Protection of the Environment Operations Act 1997*. These non-compliances and progress towards prevention of re-occurrence is briefly presented in Table 6.7.

Table 6.7 Non-Compliances with Clause L3 of the EPA Licence

Licence No.	Non-Compliance Recorded	Progress on Prevention of Re-occurrence
Water Filtration Plant		
5425 (Nth Richmond)	Monitoring sample taken on 24 September 2002 from the EPA Licence Monitoring Point recorded pH 6.4 units, which is below the licence compliance limit of pH 6.5 units. Sydney Water suspected sampling error caused the non-compliance.	Second and third samples from the same point showed a pH within the licence limits.
4406 (Cascade)	Monitoring sample taken on 28 January 2003 from the EPA Licence Compliance Point recorded pH 8.8 units, which is exceeds the licence compliance limit of pH 8.5 units. The non-compliance was caused by an equipment fault in the sludge handling system at the plant and some high pH water was being bled into the wash water system	To minimise the effect of the non-compliance, Sydney Water reported that the volume of high pH water being discharged into the wash water system was reduced and closely monitored. The fault with the sludge system has been repaired, an SOP has been developed, and the fault with the plant causing high pH water has been rectified.
Sewage Treatment Plant		
1712 (Blackheath) 1778 (Warragamba) 190 (Nth Richmond)	Sydney Water exceeded the allowable total residual chlorine (TRC) limit. Sydney Water advised that the cause of this exceedence is unknown and likely to be due to analytical error as the STP's do not dose chlorine or sodium hypochlorite.	Sydney Water is currently negotiating with the EPA for the removal of total residual chlorine limits from licenses of plants STPs that do not dose chlorine or sodium hypochlorite. At the Sydney Water/EPA Operational Policy Committee meeting of 22 June 2003, it was agreed that Sydney Water would present a case to EPA for the removal of total chlorine limits on licenses which use Ultraviolet light for disinfection.
1728 (Cronulla)	Wet weather conditions on the 15/16 and 17 May resulted in a 3 day geometric mean (3DGM) for Total Suspended Solids (TSS) to exceed the limit.	STP configuration investigation being undertaken to determine cause and possible actions. Integrated Management System is being used to track action against this non-conformance.
10555 (Picton)	Expansion of a settling dam caused increased turbulence within the dam and exceedence of the TSS licence limit for the period between 1 July 02 and 10 September 02.	Sydney Water sought, and the EPA granted, a temporary increase in the TSS limit for the dam.

6.5 Factors affecting compliance

6.5.1 Changing Bulk Water Quality

The quality of water supplied to customers is of an excellent standard and complies with the health related requirements of the Australian Drinking Water Guidelines and the aesthetic related requirements specified by NSW Health and the Minister. The audit has shown that Sydney Water has in place excellent systems for the management of drinking water quality and, through its various risk management procedures, has identified where risks to drinking water quality may arise and is developing strategies to manage these risks.

Some of these issues involve factors that are not necessarily easily controlled by Sydney Water. For example:

- ▶ In the case of the Prospect Water Filtration Plant (WFP) risk assessment, extreme risks were identified to result from a bush fire in the catchment, and higher numbers of *Cryptosporidium* and *Giardia* during flood events.
- ▶ The Expert Panel identified a number of important emerging water quality issues, including for example, drought breaking rains, algal blooms in storages, and organic matter in the raw water (through changing perspectives related to water constituents such as disinfection by-products).

Addressing these issues will require Sydney Water to place a high reliance on the management of the catchment and the maintenance of bulk water quality by SCA, unless it is accepted that control should be exercised through the water filtration plants or the risk is accepted as a reasonable business risk.

6.5.2 Drinking Water Quality Improvement Program

Sydney Water has prepared an Annual Status Report – Drinking Water Quality Improvement Plan 2002/2003. This Report outlines progress on the actions listed in the Improvement Plan. Sydney Water has completed many significant projects that will result in improved drinking water quality. However, it is noted that only 50% of the actions due to be completed by 30 June 2003 were completed. Of these:

- ▶ In regard to actions for projects and activities related to specific systems, 75% of actions related to treatment were fully completed, and approximately 40% of actions that related to networks were fully completed. Of the actions that were not completed, approximately 50% of these were not completed because of drought and 25% were deferred or delayed due to a lack of funding.
- ▶ In regard to actions for projects and activities that are common to all systems, 50% of the actions related to treatment were completed and the remainder are on schedule for completion (during 2004) and 79% of the actions related to networks were completed. Of the latter, those actions not completed had been deferred due to drought.

Some of the key activities that Sydney Water completed in 2002/2003 were:

- ▶ New ammonia dosing facility at Prospect WFP;
- ▶ Optimised pH buffering at Greaves Creek WFP;
- ▶ Replaced granular activated carbon in one contactor at North Richmond WFP;
- ▶ Introduced prechlorination at North Richmond WFP;
- ▶ Installed 4 rechlorination plants;



- ▶ Conducted Emergency Risk Management exercise with key stakeholders;
- ▶ Carried out risk assessments for all systems; and
- ▶ Engaged the Expert Panel to review the management of Sydney's water supply.

In respect to actions that were delayed due to funding, these included:

- ▶ Hydraulic improvements to the Potts Hill delivery system;
- ▶ Trials on pre-oxidation to reduce iron and manganese (ie dirty water);
- ▶ Report on feasibility of flow pacing the addition of water treatment chemicals, and
- ▶ Investigating water quality deficiencies in large reservoirs by modelling mixing options (Dover Heights and Maroubra Waverley reservoirs).

A review by the auditor of the actions that have been delayed suggests that they do not relate to serious health matters; instead, it appears that delay will result in a continuation of current service levels and a delay in the improvement of aesthetic water quality.

In respect to the drought, Sydney Water considered it was not appropriate to carry out works (such as mains cleaning and swabbing of the distribution systems) that would result in loss of water during the drought conditions, other than reactive flushing on a needs basis. So far this does not appear to have resulted in poor water quality (such as increased dirty water complaints). It is possible that this may result in an accumulation of sediment and higher level of dirty water events and complaints in the future when the drought finishes and water usage returns to normal levels. Sydney Water advises that it is evaluating more optimal approaches to mains cleaning that will meet the requirements for adequate removal of sediment while using less water.

A review of the actions common to all systems indicates that water quality items that are related to protection of health (such as improving disinfection systems) have been completed or are scheduled for completion in the next year.

It is concluded that Sydney Water has achieved generally good performance on completing water quality improvement actions, although some actions have been deferred because of drought.

6.6 Recommendations

6.6.1 Key Recommendations.

There are no key recommendations for water quality.

6.6.2 Secondary Recommendations.

It is recommended that Sydney Water:

- R 6.1 Formulates an action plans to address the recommendations of the Expert Panel Report (discussed in Section 6.4.3 of this report) and action plans to address the risk associated with variations in the quality of the bulk water (discussed under Ministerial Requirement M3); and reports performance against these action plans.

7. System performance

7.1 Summary of findings

► Compliance with performance standards

Sydney Water achieved **Full compliance** with each of the amended System Performance Standards of water pressure, water supply continuity (unplanned interruptions and “*planned and warned*” interruptions) and sewage overflows, over the reporting period. Sydney Water could have assisted stakeholders in understanding these standards by providing a historical comparison of performance, trend analysis and proposed actions in its Compliance Report. This aspect is an agreed requirement for future years.

Of particular note is the reported number of properties adversely affected by the lack of water supply continuity, which was some 99% of the standard. The actual figure was found to be some 92% of the standard when an over-counting anomaly was discovered. Nevertheless, the figure number shows an increasing trend over the past 4 years and while this is attributed to continuing drought conditions, it is appropriate that Sydney Water review the causes and the proposed actions to ensure the standard will not be exceeded in the future. A more holistic review of sewage overflows is considered warranted, including cost-benefit analysis of choke reduction programs. The review should also take into account the continuing ageing of the sewer network and its impact on chokes and sewage overflows.

It is further suggested that Sydney Water should review the trends in the System Performance Standards and its proposed programs for long term compliance, including:

- Reviewing its program of water pressure improvements for effectiveness, as the number of properties with persistent pressure problems has not reduced significantly in recent years. This could also investigate the impact of water restrictions on peak demands and water pressure in vulnerable areas, to ascertain ways to mitigate water pressure problems.
- A long term projection of the impact of burst and leak rates on the water continuity standard to ensure the standard can continue to be met in the long term.

Sydney Water did not undertake the agreed audit requirements for accuracy and confidence reporting, so there was **Insufficient information** available to the auditor to make an objective judgement on whether Sydney Water has met the accuracy and confidence limit requirements for the reported numbers for each of the System Performance Standards. The audit requirements were agreed as part of the Monitoring and Reporting Protocol between Sydney Water and the Tribunal.

► Standards in respect of Low Pressure Areas

There was **No requirement** for Sydney Water to develop standards that establish the minimum pressure for Designated Low Water Pressure Areas, as Sydney Water complied with this requirement in 2001.

► Ministerial requirements

There was **No requirement** for Sydney Water to report to the Minister on its program of capital works to bring the Designated Low Water Pressure Areas in urban areas up to the amended



pressure standard. Sydney Water complied with this requirement in 2002.

There was **No requirement** for Sydney Water to incorporate IPART's requirements on repeat water continuity and sewage overflow events into its Asset Management Framework by 1 January 2002, and provide the Framework to the Minister of Energy and Utilities. Sydney Water complied with this requirement in 2002.

Sydney Water achieved **Full compliance** with the requirement to collect and report data on those performance indicators that relate to the amended standards for drinking water pressure, drinking water continuity and sewerage overflows on private land by 1 September each year commencing in 2002. Some trend analysis of performance indicators by Sydney Water in its Compliance Report to the Minister would assist stakeholders gain a better appreciation of Sydney Water's performance over time and the external and internal factors influencing this performance.

Sydney Water achieved **Full compliance** with the requirement to develop and report on the accuracy and confidence limits for the system performance standards by 1 July 2003, as part of the Monitoring and Reporting (M&R) Protocol.

Sydney Water achieved **Partial compliance** with the Ministerial requirement to collect (and report) data during the audit period commencing 1 July 2002 in accordance with the new arrangements under the M&R Protocol. It is recommended that Sydney Water undertake the necessary audits of accuracy and confidence of the reported numbers for each of the System Performance Standards, for the 2002/03 year and for subsequent years, as set out in the agreed Monitoring and Reporting Protocol.

7.2 Summary of requirements

The requirements of Clauses 7.1, 7.2 and 7.3 of the Licence are that Sydney Water ensures its systems comply with the standards of service in Schedule 4 of the Licence or such other standards determined by the Minister. The Minister has amended the standards, which in summary are:

- *Water Pressure* - The number of properties connected to the water supply system not receiving water pressure at the main tap of at least 15 metres head will not exceed 15,000.
- *Water Continuity* – Unplanned Interruptions. The number of properties connected to the water supply system reported as affected by an unplanned shutoff of water supply exceeding 5 hours will not exceed 35,000.
- *Water Continuity* – Planned and Warned Interruptions. The number of properties connected to the water supply system reported as affected by a “*planned and warned*” shutoff exceeding 5 hours will not exceed 32,000.
- *Sewage Overflows* - The number of private properties reported as affected by dry weather uncontrolled sewage overflows will not exceed 25,000.

These standards include requirements for accuracy and confidence levels for the reported numbers.

In respect to Ministerial requirements, Sydney Water is required to do the following:

- Report on its program of capital works to bring the Designated Low Water Pressure Areas in urban areas up to the amended pressure standard, including existing arrangements with regard to the provision of water services to these areas (SPS 1).



- ▶ Incorporate the Tribunal's findings regarding repeat continuity and sewage overflow events into its Asset Management Framework by 1 January 2002, and provide this to the Minister of Energy and Utilities for comment (SPS 3 and SPS 4).
- ▶ Collect and report data on performance indicators relating to the amended standards for drinking water pressure, drinking water continuity and sewage overflows (SPS 5), and report these indicators to the Tribunal by 1 September each year, commencing in 2002 (SPS 6).
- ▶ Develop as part of the Monitoring and Reporting Protocol with IPART, requirements for reporting on accuracy and confidence limits for system performance standards by no later than 1 July 2003 (M5). Data collected during the audit period commencing 1 July 2002 is to be covered by the new protocol (SPS 8).



Table 7.1 System Performance – Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
10.2	The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:	No requirement	
(d)	Compliance by Sydney Water with the performance standards under clauses 7.1 and 7.2.	Full compliance	Refer to Findings for Clause 7.1.1 in Table 7.2 for each amended System Performance Standard (SPS).

Table 7.2 System Performance – Part 7 Licence clauses

Clause	Requirement	Compliance	Findings
7.1	Compliance with Performance Standards		
7.1.1	Sydney Water must ensure that its Systems comply with the standards for continuity, water pressure and sewage overflows in Schedule 4 or other such standards determined by the Minister under clause 7.3. <i>Amended standards were determined by the Minister to apply from 1 July 2001, as detailed below.</i>	No requirement	Refer to findings below for each amended System Performance Standard (SPS). Although not a Licence requirement for System Performance Standards, Sydney Water did not provide the agreed historical comparison of performance, trend analysis or explanations or proposed actions in the Compliance Report, as provided in the M&R Protocol. This analysis would be a useful context for stakeholders.
	Water Supply Pressure – The number of properties connected to Sydney Water's system that are reported as not receiving continuous water pressure at the main tap of at least 15 metres should not exceed 15,000 properties in a report year. The number of reportable properties is to include designated low pressure areas.	Full compliance	Sydney Water reported 5,826 properties as not receiving continuous water pressure of at least 15 metres during the year, including properties in Designated Low Water Pressure Areas (DLWPAs). Most of these properties experienced more than one instance of low water pressure. The measurement and reporting of the standard is generally reliable and adequate systems appear to be in place to ensure that the amended standard is maintained. The number of properties with persistent pressure problems has not reduced significantly in recent years and Sydney Water should review its program of improvements for effectiveness. Refer to Section 7.3.2 for further discussion on drinking water pressure.
	Water Supply Pressure – Accuracy of the above standard to +/- 10% with 95% confidence limits.	Insufficient information	There is insufficient information available to the auditor to make an objective judgement on whether Sydney Water has met the accuracy and confidence limit requirements for the



Table 7.2 System Performance – Part 7 Licence clauses

Clause	Requirement	Compliance	Findings
			reported number for this standard. Sydney Water did not analyse or report the accuracy of the standard and some key documentation required under the M&R Protocol could not be provided. Nevertheless the auditor is satisfied that the methods used would not be expected to result in under reporting of the number of properties affected. Consequently, this finding does not reduce the above finding of Full compliance with the standard.
	Water Supply Continuity – Unplanned Interruptions. Sydney Water must ensure that in any report year, the number of properties connected to its water supply system that are reported as affected by an unplanned shutoff of water supply exceeding 5 hours does not exceed 35,000.	Full compliance	Sydney Water reported 19,580 properties as being affected by an unplanned shutoff of water supply exceeding 5 hours, well below the standard of 35,000 properties. The measurement and reporting of the standard is generally reliable and adequate systems appear to be in place to ensure that the amended standard is maintained in the short term. A long term projection of the impact of burst and leak rates on the water continuity standard is suggested to ensure the standard can continue to be met in the long term.
	Water Supply Continuity – Unplanned Interruptions. Accuracy of the above standard to +/- 5% with 95% confidence limits.	Insufficient information	There is insufficient information available to the auditor to make an objective judgement on whether Sydney Water has met the accuracy and confidence limit requirements for the reported number for these standards. Sydney Water did not analyse or report the accuracy of the standard. Nevertheless the auditor is satisfied that the methods used would not be expected to result in under reporting of the number of properties affected. Consequently, this finding does not reduce the above finding of Full compliance with the standard.
	Water Supply Continuity – “Planned and Warned” Interruptions. Sydney Water must ensure that in any report year, the number of properties connected to its water supply system that are reported as affected by a “planned and warned” shutoff of water supply exceeding 5 hours does not exceed 32,000.	Full compliance	Sydney Water reported 20,230 properties as being affected by a “planned and warned” shutoff of water supply exceeding 5 hours, well below the standard of 32,000 properties. The measurement and reporting of the standard is generally reliable and adequate systems appear to be in place to ensure that the amended standard is maintained.
	Water Supply Continuity – “Planned and Warned” Interruptions. Accuracy of the above standard to +/- 5% with 95% confidence limits.	Insufficient information	There is insufficient information available to the auditor to make an objective judgement on whether Sydney Water has met the accuracy and confidence limit requirements for the reported number for these standards. Sydney Water did not analyse or report the accuracy of the standard. Nevertheless the auditor is satisfied that the methods used would not be expected to result in under reporting of the number of properties affected. Consequently, this finding does not reduce the above finding of Full compliance with the standard.
	Sewage Overflows – Sydney Water must ensure that in	Full compliance	Sydney Water reported 24,767 private properties as being affected by a dry weather



Table 7.2 System Performance – Part 7 Licence clauses

Clause	Requirement	Compliance	Findings
	any report year, the number of private properties reported as affected by dry weather uncontrolled sewage overflow incidents does not exceed 25,000.		<p>uncontrolled sewage overflow, which is just below the standard of 25,000 properties. The measurement and reporting of the standard is generally reliable and adequate systems appear to be in place to ensure that the amended standard is maintained in the short term.</p> <p>Upon auditor investigation, it appears Sydney Water over-counted the number of properties affected in the case of “superlots” and “master strata” properties. Adjustment for this over-counting would reduce the number of properties affected to less than 23,000, which is 92% of the standard. Nevertheless, the reported number shows an increasing trend over the past 4 years. Even though this trend is attributed to continuing drought conditions, Sydney Water should review the causes of the increasing trend in sewage overflows and the proposed actions. A more holistic review of sewage overflows is considered warranted, including cost-benefit analysis of choke reduction programs. The review should also take into account the continuing ageing of the sewer network and its impact on chokes and sewage overflows.</p>
	Sewage Overflows – Accuracy of the above standard to +/- 5% with 95% confidence limits.	Insufficient information	There is insufficient information available to the auditor to make an objective judgement on whether Sydney Water has met the accuracy and confidence limit requirements for the reported number for this standard. Sydney Water did not analyse or report the accuracy of the standard. Nevertheless the auditor is satisfied that the methods used would not be expected to result in under reporting of the number of properties affected. Consequently, this finding does not reduce the above finding of Full compliance with the standard.
7.2	Standards in Respect of Low Pressure Areas		
7.2.1	Within 1 month after the Commencement Date, Sydney Water must develop standards that establish the minimum level of water pressure required for the low pressure areas in Schedule 4.	No requirement	Sydney Water complied with this requirement during the 2000/01 audit period.
7.2.2	Sydney Water must comply with the standards developed under clause 7.2. Sydney Water must comply with such other standards determined by the Minister under clause 7.3.	Full compliance	Designated Low Water Pressure Areas (DLWPAs) were included in the amended standard for Water Pressure for the 2001/02 Audit. Refer to Clause 7.1 for details of compliance.



Table 7.3 System Performance – Ministerial Requirements

ID	Requirement	Compliance	Findings
M5	"I require Sydney Water to develop as part of the Monitoring and Reporting Protocol with IPART, an agreed scope, methodology and assumptions in order to provide a platform for reporting on the accuracy and confidence limits for each of the respective system performance standards. I require these arrangements to be in place by no later than 1 July 2003."	Full compliance	Sydney Water and IPART jointly developed the relevant sections of the Monitoring and Reporting Protocol for each of the system performance standards. The Monitoring and Reporting Protocol was signed off by both parties by 30 June 2003.
SPS1	"...I require Sydney Water to report to me by 1 July 2002 on its program of capital works to bring the Designated Low Water Pressure Areas in urban areas up to the amended pressure standard. The program should also reflect any of Sydney Water's existing arrangements with regard to the provision of water services to these areas."	No requirement	Sydney Water achieved High compliance with this requirement during the 2001/02 year by submitting a report to the Minister that described the proposed works program to address pressures in all of the urban DLWPAs.
SPS3	"...I now require Sydney Water to incorporate the Tribunal's findings regarding repeat continuity and repeat sewage overflow events into its Asset Management Framework, and provide the Framework to the Minister of Energy and Utilities for comment."	No requirement.	Sydney Water achieved High compliance with this requirement during the 2001/02 year. No further action was required for this year.
SPS4	"Sydney Water to update its Asset Management Framework by 1 January 2002."	No requirement.	Sydney Water achieved Full compliance with this requirement during the 2001/02 year.



Table 7.3 System Performance – Ministerial Requirements

ID	Requirement	Compliance	Findings
SPS5	"I support the use of performance indicators to provide further insight into performance against system performance standards. Accordingly, I require Sydney Water to collect and report data on those performance indicators that relate to the amended standards for drinking water pressure, drinking water continuity and sewerage overflows on private land."	Full compliance	<p>Sydney Water has collected and reported data on performance indicators for drinking water pressure, drinking water continuity and sewerage overflows on private land, in accordance with this requirement.</p> <p>The performance indicators are drawn from the same base data, and collated and reported using the same processes as the service performance standards. They will consequently have the same degree of validation and reporting accuracy as the performance standards. There are no accuracy requirements specified for performance indicators.</p>
SPS6	"Performance indicators are to be reported to the Tribunal by 1 September each year with the first report due to the Tribunal on 1 September 2002."	Full compliance	The indicators were reported to the Tribunal as part of the Operating Licence Compliance Report for 1 July 2002 – 30 June 2003, which was forwarded on 29 August 2003.
SPS8	"I require Sydney Water to finalise this Protocol in consultation with the Tribunal as soon as possible, so that data collected during the audit period commencing 1 July 2002 is covered by the new arrangements"	Partial compliance	Sydney Water finalised the Monitoring and Reporting Protocol with the Tribunal by 30 June 2003. Raw performance data collected in the 2002/03 period was covered by the new arrangements, but Sydney Water did not include some important requirements for data reporting in its Compliance Report, nor did Sydney Water ascertain the accuracy and confidence levels for the system performance standards data.

7.3 Discussion

7.3.1 General processes for measurement, reporting and ensuring compliance

General comment on Sydney Water's processes for measurement, reporting and ensuring compliance are set out in this section, as they are common to all the system performance standards. The general requirements for reporting on the Operating Licence are covered in the Monitoring and Reporting (M&R) Protocol which was finalised on 30 June 2003 between Sydney Water and IPART. There is also a specific section in the Protocol relating to reporting on the System Performance Standards with particular reference to the accuracy and confidence limits applying to each standard.

For system performance standards, the audit generally covered the aspects listed in Table 7.4. Items 1 to 4 in the Table are discussed below as they apply to all System Performance Standards, while Items 5 and 6 are discussed separately for each Standard.

Table 7.4 Aspects covered by the Audit for the system performance standards

- | |
|--|
| <ol style="list-style-type: none">1. Interpretation and application of the amended standards.2. Existence of appropriate procedures, documentation and data collection and reporting systems for the amended standards.3. Compliance of Sydney Water with procedures and requirements.4. Accuracy and confidence limit analysis of reported information, in accordance with the Monitoring and Reporting Protocol.5. Analysis of performance compared to the standard and to historical performance where possible and relevant.6. Strategies, plans and programs in place to ensure compliance with each standard is maintained in the future. |
|--|

Interpretation and application of the amended standards

Sydney Water's definitions and interpretations of the standard are generally consistent with the Minister's requirements as expressed in the Minister's Notice of Amended Performance Standards. Sydney Water defines the number of properties affected as the number of rateable properties plus any associated flats affected. This definition does not include non-rateable properties (including parks, roads, vacant land, creeks and rivers), which is appropriate.

Sydney Water advised that it included in the reported totals the following.

- ▶ All properties (multiple flats, villas, town houses and/or terraces which may span a number of streets) that exist under a single Department of Housing "superlot" or rateable property, even though only some of these properties may have been affected by an overflow or water discontinuity.
- ▶ "Master Strata" properties, even though these are not physical properties but administrative entities used by Bodies Corporate.

This approach may result in over-counting of properties actually affected by a sewage overflow especially, but also a water discontinuity. Sydney Water proposes to amend its procedures to exclude Master Strata and unaffected properties in "superlots". The auditor concurs with this amendment to more



accurately reflect the actual number of properties affected by incidents in future, and more appropriately interpret the definition of “properties affected” in the standard.

Procedures, documentation and data collection and reporting systems

Sydney Water has maintained extensive documentation for collecting, collating and reporting of data for service standards under its Operating Licence Measurement and Reporting (M&R) System. The Process for Compilation and Reporting of the Operating Licence Compliance Requirements was last updated on 30 June 2002 and has not been amended to reflect the recently agreed M&R Protocol. The Quality Assurance Manual for Operating Licence Measurement and Reporting was updated on 1 July 2003 to reflect changes of scope and management and includes reference to the M&R Protocol. The system is certified to ISO 9002: 2000.

Minor changes have been made to data collection and reporting systems used by Sydney Water for performance standards over the last year, primarily in signoff of records. There have been no changes to the methods for collecting data or determining the number of properties affected by a water continuity, water pressure or sewage overflow incident.

Compliance of Sydney Water with procedures and requirements

Management and compliance staff demonstrated a sound understanding of the measurement and reporting process relevant to their responsibility, except in relation to the implementation of the M&R Protocol.

The M&R Protocol (Section 3.2) for Compliance Reports, provides that: *“Where appropriate, and specifically for System Performance Standards, reports should provide a historical comparison of performance, preferably presented graphically, along with an analysis of any trends, together with a commentary on the possible explanations and proposed actions to address any adverse trend.”* While this is not a Licence requirement, the intent of this paragraph is to inform stakeholders and provide a basis for understanding of trends and actions to address them. For the System Performance Standards and System Performance Indicators, the Operating Licence Compliance Report for 1 July 2002 to 30 June 2003 did not include any historical comparison of performance, trend analysis or explanations or proposed actions, apart from brief comment on the increase in the number of properties affected by sewage overflows since last year, and attributing this to the drought. This analysis would be a useful context for stakeholders and should be included in future.

Review of records indicated that appropriate verification checks and reviews had been undertaken on the various System Performance Standard reports.

No detailed sampling or review of the process for collection and compilation of reports was undertaken by the auditor, as this was required to be covered by Sydney Water as part of the accuracy and confidence limit assessment. This aspect is separately discussed below.

A surveillance audit was undertaken by SAI Global Assurance Services on 9 to 11 July 2003 against the ISO9001:2000 Standard. The audit reported that the system complies with the Standard and had some strengths including the excellent business flow process chart and online system for recording, maintenance and closure of process actions. Improvements were suggested to verify competency of staff after training, amend procedures for corrective action and develop process instructions for data collection and recording.



In general, the process of monitoring and reporting is considered to be highly reliable, but Sydney Water has not met the agreed requirements for reporting on System Performance Standards.

Accuracy and confidence limits of reported numbers

The amended System Performance Standards include requirements for accuracy and confidence limits to apply from 1 July 2001. The M&R Protocol includes agreed interpretations, applications and audit expectations for the accuracy and confidence limit requirements. The Minister (requirement SPS8) required these arrangements to apply to the audit period commencing 1 July 2002, although the original requirement was for the M&R Protocol to be completed for 2001/02 year.

Sydney Water had not reported accuracy and/or confidence limits for system performance standards for the period between 1 July 2002 and 30 June 2003; hence, Sydney Water has not provided the required information for the auditor to assess if the accuracy and confidence limits for any of the system performance standards have been met.

Sydney Water has sought to undertake the accuracy and confidence audit but did not proceed with the audit because of unresolved scope and cost issues.

In order to have some confidence in the reported numbers, the auditor again gave some consideration to *subjective* assessments of the accuracy of the reported data. Specific aspects are discussed below for each system performance standard.

7.3.2 Drinking water pressure

Reported compliance and historical trend comparison

Sydney Water reported the number of properties affected by a low pressure event as 5,826, which is significantly below the Licence standard of 15,000.

The Licence standard was changed for 2001/2002 from a requirement expressed as a percentage of connected properties, to an absolute number, so comparison with previous years data requires some caution. The standard was also changed to include properties in Designated Low Water Pressure Areas (previously excluded) and to require reporting of low pressure as a result of operational problems that are not remedied within 4 consecutive days (rather than 7 days in previous years). A historical comparison of the number of properties affected at least once by a low pressure instance is provided in Table 7.5 and Figure 7.1.

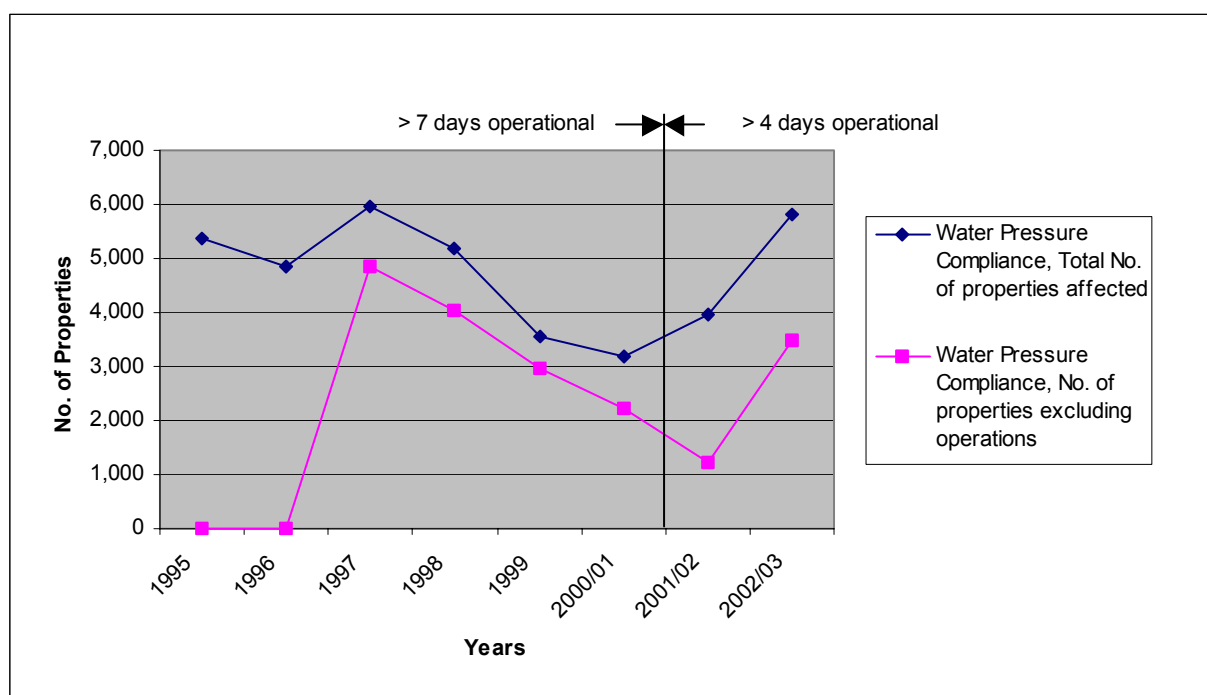
Table 7.5 Water pressure – historical performance comparison

Year	Number of Properties Affected at Least Once
1995 (calendar)	5,400
1996 (calendar)	4,837
1997 (calendar)	5,974
1998 (calendar)	5,166
1999 (calendar)	3,553
1999/2000	5,674
2000/2001	3,199

Year	Number of Properties Affected at Least Once
2001/2002	3,973
2002/2003	5,826

Sources: Sydney Water Folio of Progress B16.1/B17.1/B17.2/BB1/BI1/BM1/CC3.1.3/CC3.1.4, 1995 to 2000/2001 data; Sydney Water Operating Licence Compliance Report, 1 July 2002 to 30 June 2003.

Figure 7.1 Water pressure – historical performance compliance



Source: Sydney Water - Water Pressure Compliance Table, 2003.

Comparison of these numbers with previous years indicates a higher number of properties affected compared to the past three years. The number excluding those affected by operational problems greater than 4 days has increased significantly. Sydney Water has attributed this increase to:

- high peak demands in October and November following some 6 months of no rain; and
- the combination of hot weather and voluntary water restrictions, which tended to increase short term peak demand either side of the restriction period while reducing overall demand.

Sample evidence of this trend was provided.

The amended standard includes the 2,818 properties in Designated Low Water Pressure Areas (DLWPAs), of which some 221 properties were reported as having at least one instance of low water pressure, an increase over the 105 reported last year. This increase is attributed to the reasons outlined above.



The number of properties affected by low pressure events resulting from operational problems not remedied within 4 days was 2,357, which is a decrease from 2,766 in 2001/02. Sydney Water indicated that the number of operational problems had remained high.

Accuracy and confidence assessment

The water pressure standard was required to be reported to an accuracy of +/- 10% with a 95% confidence level.

Assessing this audit component against the agreed interpretation in the M&R Protocol, Sydney Water provided evidence of:

- ▶ design standards for water pressure;
- ▶ review of water distribution systems for sites requiring pressure monitoring using either temporary or permanent gauges; and
- ▶ a limited sample review of the accuracy of recorded property numbers affected relating to pressure gauge type and location, which indicated a tendency of the reporting systems to over-report numbers of properties affected.

Sydney Water explained the processes for ensuring the water pressure monitoring and recording system was robust and adequate. Some key documentation required under the M&R Protocol could not be provided, including the operating procedures for overall review of pressure monitoring locations and the business processes aimed at preventing pressure problems. The accuracy and confidence audit of the collection, compilation and reporting system for the pressure standard was also not undertaken.

Nevertheless, considering the procedures, documentation and systems in place, and the information provided by Sydney Water, the auditor is satisfied that the methods used would not be expected to result in under reporting of the number of properties affected.

Strategies, plans and programs to ensure compliance

Last year, Sydney Water indicated it had commenced a five year program of capital works to improve pressure to 3,070 properties in areas that experience water pressure below the Licence minimum standard on a recurrent or continuing basis. Stage 1 of this project has been implemented comprising 5 booster pump stations and other works. Review of Sydney Water reports (Summary of Outcomes from 2000/01 to 2002/03) of areas experiencing water pressure problems indicates that:

- ▶ capital works have been completed in some of the larger areas with persistent pressure problems;
- ▶ numerous new areas of pressure problems have arisen due to hot weather or peak demands, which are being either monitored further, investigated or included in the capital improvement program;
- ▶ many areas have experienced persistent pressure problems over at least two years, which are being investigated or planned for capital works over the next four years; and
- ▶ major problem areas are usually monitored by more reliable systems.

This review indicates that Sydney Water generally has adequate processes and programs in place to maintain water pressures, however the number of properties with pressure problems persisting over a number of years has not been greatly reduced and it is recommended that the capital program be reviewed to assess whether it is satisfactorily addressing these pressure problems. It may also be appropriate for Sydney Water to undertake a review of the affect of possibly permanent water restrictions



on peak demands, the impact this has on areas vulnerable to low pressure, and ways in which Sydney Water can mitigate pressure problems for customers.

Summary

Sydney Water fully complies with the standard requirement for not more than 15,000 properties affected by water pressure at the main tap of less than 15 metres. Sydney Water reported that it has readily achieved the amended standard for drinking water pressure. The measurement and reporting of the standard is generally reliable and adequate systems appear to be in place to ensure that the amended standard is maintained. The number of properties with persistent pressure problems has not reduced significantly in recent years and Sydney Water should review its program of improvements for effectiveness.

There is insufficient information available to the auditor to make an objective judgement on whether Sydney Water has met the accuracy and confidence limit requirements for the reported number for this standard. Sydney Water did not analyse or report the accuracy of the standard, and some key documentation required under the M&R Protocol could not be provided. Nevertheless, considering the interpretation, procedures, documentation and systems in place, and the information provided by Sydney Water, the auditor is satisfied that the methods used would not be expected to result in under reporting of the number of properties affected. Consequently, this finding does not reduce the above finding of full compliance with the standard.

7.3.3 Drinking water continuity (unplanned and “Planned and Warned”)

Reported compliance and historical trend comparison

Sydney Water reported the number of properties affected by an unplanned interruption as 19,580 compared to the Licence standard of 35,000, and the number of properties affected by a “planned and warned” interruption as 20,230 compared to the Licence standard of 32,000. The total number of properties affected by an interruption of water supply exceeding 5 hours was 39,810 including multiple interruptions.

Comparison of these numbers with previous years should be undertaken with care, as the Licence standard is expressed differently (i.e. as a number of properties affected compared with a percentage of all properties connected to the water supply system previous to 2001/2002) and is tighter than previously (i.e. the reporting threshold is interruptions exceeding 5 hours rather than 6 hours previously).

The number of properties affected by a water supply interruption exceeding the 5 or 6 hour period (as appropriate) at least once in the reporting period, compared to previous years, is set out in Table 7.6 and presented in Figure 7.2.

Table 7.6 Drinking water continuity – historical performance comparison

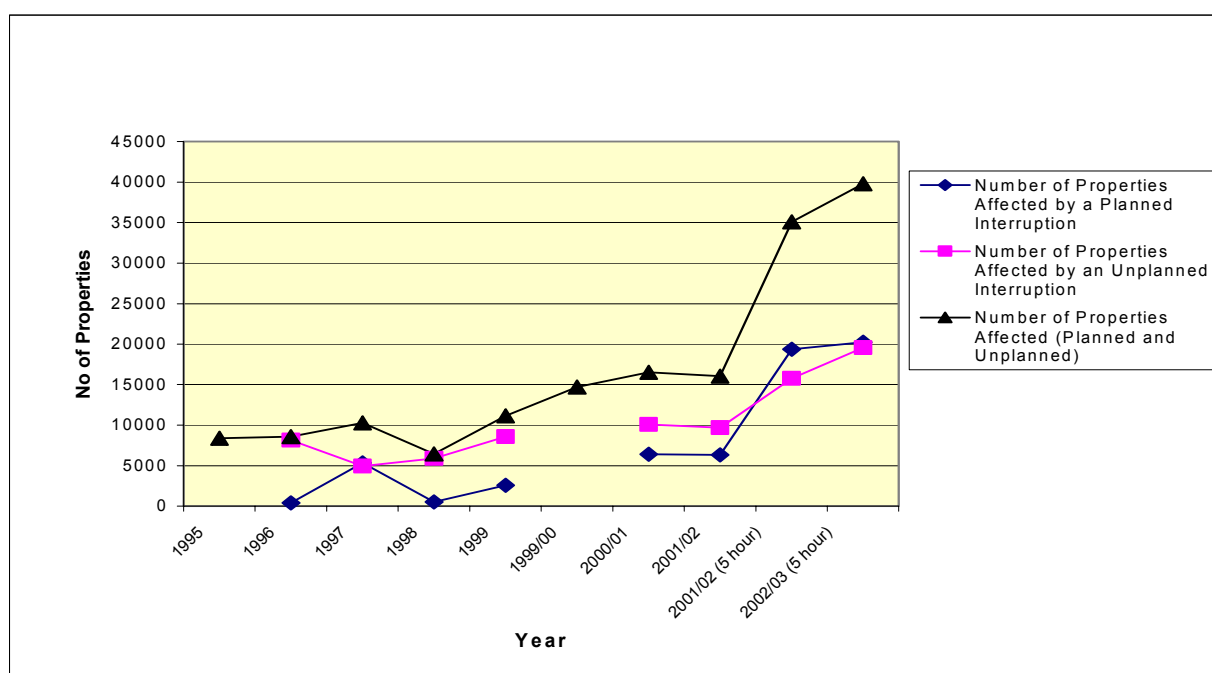
Year	Number of Properties Affected by a Planned Interruption	Number of Properties Affected by an Unplanned Interruption	Number of Properties Affected (Planned and Unplanned)
1996 (calendar)	432	8,151	8,583
1997 (calendar)	5,335	4,961	10,296
1998 (calendar)	554	5,913	6,467

Year	Number of Properties Affected by a Planned Interruption	Number of Properties Affected by an Unplanned Interruption	Number of Properties Affected (Planned and Unplanned)
1999 (calendar)	2,561	8,583	11,144
1999/2000	Data not available	Data not available	14,704
2000/2001	6,431 [#]	10,100 [#]	16,531 [#]
2001/2002	6,360	9,680	16,040
2001/2002 (5 hour)	19,342 [@]	15,770 [@]	35,112 [@]
2002/2003 (5 hour)	20,230 [@]	19,580 [@]	39,810 [@]

Sources: Folio of Progress – Water Systems Continuity, Sydney Water audit response dated 5 November 2002, data for 1999/2000, 2000/2001 and 2001/2002 (6 hour).

Note: # denotes 18 month reporting period.
@ denotes 5 hour interruption standard since 2001/2002.

Figure 7.2 Drinking water continuity - historical performance comparison



It is difficult to draw firm conclusions from the above comparison without detailed analysis. There is a correlation between the incidence of bursts and leaks and unplanned interruptions. Across all of Sydney Water's systems, the number of water main bursts and leaks reduced progressively from around 49 per 100km in 1997/98, to around 37 per 100km in 2001/02, and increased dramatically to around 50 per 100km in 2002/03. Sydney Water has largely attributed the increase in bursts and leaks to extreme rainfall deficit in the latter half of 2002, especially in those areas of reactive clay soils with cast iron water mains constructed in the 1930's to 1960's. Areas of sandy soils or rock, and areas where water mains are of more contemporary materials have shown a much lower deterioration in performance. Sydney



Water presented detailed analysis supporting the above assessment. The auditor accepts these representations.

The other key indicators are the number of properties affected by each interruption, and the duration of the interruption. The average duration of unplanned interruptions was 2.04 hours in 2002/03 which lies within the range of 1.93 to 2.20 hours since 1997/98. Sydney Water has indicated it has reduced the duration of interruptions over 5 hours, from 7.76 hours in 2001/02 to 7.16 hours in 2002/03. This is considered a reasonable improvement in interruptions of long duration. Sydney Water is considering means to reduce the number of properties affected by an interruption, through such techniques as under-pressure repairs and valve insertions to reduce the number of properties connected to mains between valves.

The occurrence of “planned and warned” interruptions is largely a function of the water main maintenance and renewals programs, and connection of developer works. There has been a significant increase in the number of planned interruptions over the past 6 years, attributed to planned maintenance, water main replacement activity, increased developer-related works and customer connections. Efforts are being made to reduce the number of properties affected by planned shutdowns by additional valve inserts in water mains, which reduce the length of main between valves.

Accuracy and confidence assessment

The water continuity standards were required to be reported to an accuracy of +/- 5% with a 95% confidence level.

This component of the audit assessment is undertaken against the agreed interpretation in the M&R Protocol.

Sydney Water provided evidence of:

- ▶ design standards, which largely relate to materials selection and installation are largely reactive programs; and
- ▶ processes in place to analyse water continuity incidents and implement programs to ensure the standard continues to be met.

These indicated that the systems, processes and documentation relating to the standard are robust and adequate. However, the accuracy and confidence audit of the collection, compilation and reporting system for the water continuity standard was not undertaken.

Nevertheless, considering the procedures, documentation and systems in place, and the information provided by Sydney Water, the auditor is satisfied that the methods used would not be expected to result in under reporting of the number of properties affected.

Strategies, plans and programs to ensure compliance

Processes are in place to identify poorly performing mains for replacement, based on historical failures or system analysis. Sydney Water has an internal benchmark of 3 breaks in two years, which triggers an investigation of a water main for renewal. Normal practice provides for assessment of water main maintenance activity to ascertain if the work can be undertaken without causing a service interruption.

During 2002/03, some 59.8 km of water mains were replaced, continuing the historic level of water main renewals.



Sydney Water has also considered the long term future trend of water main breaks and advised that it has built this trend into ongoing investment strategies for water mains. The auditor did not verify this aspect.

These points indicate that Sydney Water has made adequate provision to maintain its level of service for drinking water continuity in the short term, and appears to have considered the long term ageing of the network which may affect the number of water main bursts and leaks in future years. Long term projections of the impact of water main breaks on the water continuity (unplanned) standard would be valuable in ascertaining if this is likely to result in Sydney Water not meeting its current standard.

Summary

Sydney Water fully complies with the standard requirement for not more than 35,000 properties affected by an unplanned water interruption and not more than 32,000 properties affected by a “planned and warned” interruption. The measurement and reporting of the standard is generally reliable and adequate systems appear to be in place to ensure that the amended standard is maintained in the short term. A long term projection of the impact of burst and leak rates on the water continuity standard is suggested to ensure the standard can continue to be met in the long term.

There is insufficient information available to the auditor to make an objective judgement on whether Sydney Water has met the accuracy and confidence limit requirements for the reported number for these standards. Sydney Water did not analyse or report the accuracy of the standard. Nevertheless, considering the procedures, documentation and systems in place, and the information provided by Sydney Water, the auditor is satisfied that the methods used would not be expected to result in under reporting of the number of properties affected. Consequently, this finding does not reduce the above finding of full compliance with the standard.

7.3.4 Sewage overflows

Reported compliance

Sydney Water reported the number of private properties affected by dry weather uncontrolled sewage overflows as 24,767 compared with a Licence standard of 25,000. The reported number is less than 1% below the standard. This aspect is further discussed under the accuracy and confidence assessment below.

Comparison with previous performance for sewage overflows is provided in Table 7.7 and presented in Figure 7.3.

Table 7.7 Dry weather sewer overflows – historical performance comparison

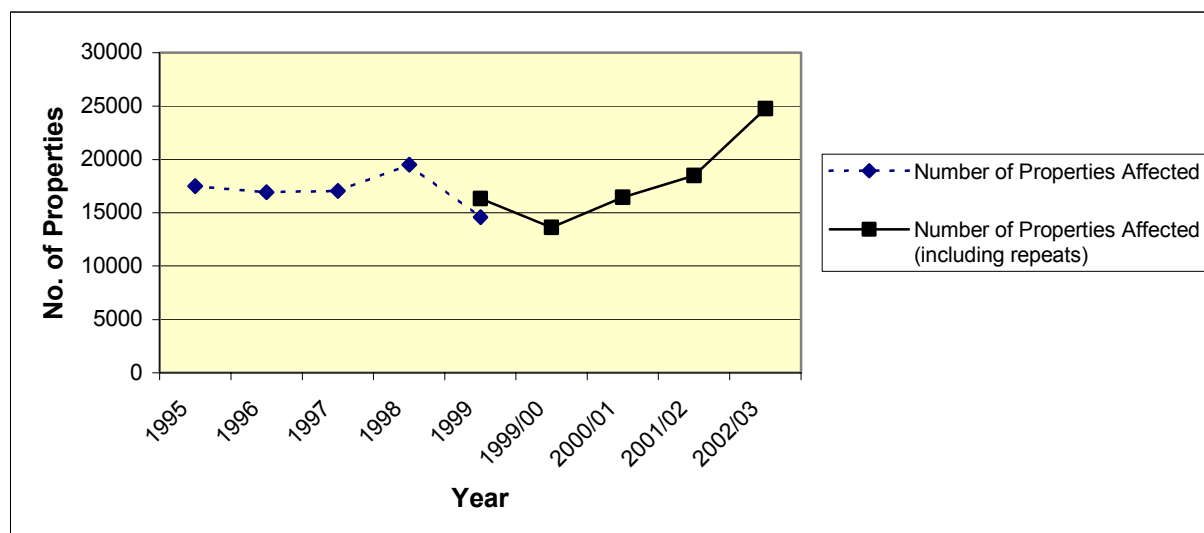
Year	Number of Properties Affected
1995 (calendar)	17,500
1996 (calendar)	16,919
1997 (calendar)	17,056
1998 (calendar)	19,522
1999 (calendar)	14,586 (16,332*)

Year	Number of Properties Affected
1999/2000	13,612*
2000/2001	16,440*
2001/2002	18,486*
2002/2003	24,767*

Sources: IPART Review of System Performance Standards in Sydney Water Corporation's Operating Licence, 11 April 2001 for 1995 to 1999 data, Sydney Water Operating Licence Compliance Report, 1 July 2001 to 30 June 2002 for 1999/2000 to 2001/2002 data, and Sydney Water Operating Licence Compliance Report, 1 July 2002 to 30 June 2003 for 2002/2003 data.

Note: * Includes repeats

Figure 7.3 Sewer overflows – historical performance comparison



The number of properties affected by an overflow has increased to a high of 24,767 in 2002/2003 and shows an increasing trend in the past 4 years, although remaining within the historical range of values until the current year. The number of properties affected by sewage overflows is closely linked to the number of sewer “chokes” or blockages, however the number of properties affected shows an increasing trend against the number of chokes. This is attributed to more accurate recording of properties affected over the last three years compared to previously.

Sewer chokes have averaged around 76 per 100km of sewer over the past decade, but vary considerably from lows of around 60 per 100km of sewer to peaks of up 88 per 100km of sewer. The choke rate for 2002/03 is 83 per 100km of sewer, compared to 68 per 100km for 2001/02. The 2002/03 level is at the higher end of expectations and is attributed by Sydney Water to the continuing drought conditions and its effect on vegetation growth. Sydney Water advises that some 80% of chokes are caused by tree root intrusion into sewers and private property connections. Tree roots seek out moisture which may result from leakage from pipe joints and cracked pipes. Older pipe materials with mortar joints and rubber rings are more subject to leakage and tree root problems than newer materials.



There were some 11,300 dry weather overflow events which affected the 24,767 properties reported. Some 9,721 events (86% of the total events) affected only one property, and the remaining 14% of events affected more than one property, accounting for some 15,046 (or 60%) of properties affected.

Accuracy and confidence assessment

The sewage overflow standard for dry weather was required to be reported to an accuracy of +/- 5% with a 95% confidence level.

This component of the audit assessment was undertaken against the agreed interpretation in the M&R Protocol.

Sydney Water provided evidence of:

- ▶ design standards; and
- ▶ processes in place to analyse sewage overflow incidents and implement programs to ensure the standard continues to be met.

These indicated that the systems, processes and documentation relating to the standard are robust and adequate. However, the accuracy and confidence audit of the collection, compilation and reporting system for the water continuity standard was not undertaken.

Given that the reported number of properties affected was some 99% of the standard, further attention was given by the auditor to considering the accuracy of the reported standard. Section 7.3.1 referred to potential over-counting of properties, especially for sewage overflows, in cases where incidents occurred on "superlot" properties and where "master strata" properties were counted in totals. This overcounting has occurred as a result of internal processes within Sydney Water and appears to be beyond the intent of the standard and a reasonable interpretation of "properties affected". A review of these instances by Sydney Water revealed that excluding these properties from the total could reduce the total number of reported properties by some 2,000. Applying this adjustment to the reported number of properties affected would result in Sydney Water reporting less than 23,000 properties affected by a sewage overflow, which is some 92% of the standard. Sydney Water intends to modify its practices to exclude unaffected properties in "superlots" and master strata properties reported in future. The auditor considers this reasonable.

Considering the procedures, documentation and systems in place, and the information provided by Sydney Water, the auditor is satisfied that the methods used would not be expected to result in under reporting of the number of properties affected by sewage overflow.

Strategies, plans and programs to ensure compliance

Sydney Water analysed the trends in sewer chokes during the year and as a result of high levels of chokes, modified its strategy for the latter half of the year. Modifications were made to improve the effectiveness of choke clearing in sewers by including jetting in conjunction with tree root cutting. Analysis of chokes was also focussed on those areas with forecast high choke rates, shallower sewers constructed prior to 1980, and included adjacent sewers rather than just the identified sewer.

These activities were related to the chokes caused by tree roots in Sydney Water's sewers. A high number of chokes occur on private property. Sydney Water advised that it had previously notified property owners to address problems in private connections, but that this practice was ceased as owners did not generally comply. Sydney Water advised it has no programs to consider reduction in "soft" chokes resulting from sewer blockages due to build-up of fats, oils and greases. The auditor considers



that further review of choke causes is warranted with a more holistic view to containing sewage overflows with targeted programs assessed on a cost-benefit basis.

In the longer term, Sydney Water advised that the 5-year rolling average for sewer chokes should continue its downward trend because of the various choke reduction programs. The auditor considers that this trend should be reviewed to take into account the continuing ageing of the sewer network, to ensure longer term future compliance with the standard.

Summary

Sydney Water fully complies with the standard requirement for not more than 25,000 properties affected by an uncontrolled dry weather sewage overflow. The measurement and reporting of the standard is generally reliable and adequate systems appear to be in place to ensure that the amended standard is maintained in the short term.

The reported number of properties affected was some 99% of the standard, however the figure fell to some 92% when an over-counting anomaly was taken into consideration. Nevertheless, the reported number shows an increasing trend over the past 4 years and while this is attributed to continuing drought conditions, it is appropriate that Sydney Water reviews the causes and the proposed actions to ensure the standard will not be exceeded in the future.

A more holistic review of sewage overflows is considered warranted, including cost-benefit analysis of choke reduction programs. The review should also take into account the continuing ageing of the sewer network and its impacts on chokes and sewage overflows, to ensure long-term compliance with this standard.

There is insufficient information available to the auditor to make an objective judgement on whether Sydney Water has met the accuracy and confidence limit requirements for the reported number for this standard. Sydney Water did not analyse or report the accuracy of the standard. Nevertheless, considering the procedures, documentation and systems in place, and the information provided by Sydney Water, the auditor is satisfied that the methods used would not be expected to result in under reporting of the number of properties affected. Consequently, this finding does not reduce the above finding of full compliance with the standard.

7.3.5 Ministerial Requirements SPS5 and SPS6 – System Performance Indicators

System performance indicators were reported by Sydney Water as part of its Compliance Report forwarded to the Tribunal on 29 August 2003.

The reported information is presented in Table 7.4 below along with a comparison of performance in 2001/2002. These data have only been required to be reported for these two years.

Table 7.4 – Comparison of System Performance Indicators

Water Pressure

Indicator	2001/2002	2002/2003
Number of properties that do not receive continuous water pressure at main tap of a least 15 metres as a result of abnormal operations.	2,338	2,357



<i>(These data includes properties as a result of abnormal operations and includes operational problems greater than 4 days. The data excludes system capability problems).</i>		
Number of properties where pressure of less than 15 metres head at the main tap occurs more than once during the report year.	3,136	5,769
<i>(These data includes properties affected for a period exceeding 15 minutes per 1 calendar day as a result of system capability deficiencies and exceeding 4 days as a result of abnormal operations. Properties in Designated Low Pressure Areas are included).</i>		



Water Continuity

Indicators	Indicator Parameters	2001/2002	2002/2003
Water Continuity – <u>Planned</u> Number of properties affected by shut-offs in a report year that are:	>1 hour but ≤ 5 hours	73,188	76,264
	>5 hours but ≤ 12 hours	18,816	20,132
	>12 hours but ≤ 24 hours	526	98
	>24 hours	0	0
Water Continuity – <u>Unplanned</u> Number of properties affected by shut-offs in a report year that are:	>1 hour but ≤ 5 hours	163,338	253,332
	>5 hours but ≤ 12 hours	14,658	18,976
	>12 hours but ≤ 24 hours	1,010	604
	>24 hours	102	0
Water Continuity –Number of events in a report year by type of interruption:	Planned and warned	1,412	1,334
	Unplanned		
	<i>Third Party Damage</i>	51	64
	<i>Power Failure</i>	6	0
	<i>Other</i>	4,256	6,071
	Unplanned Total	5,719	6,135

Sewage Overflows

Indicators	Indicator Parameters	2002/2002	2002/2003
Number of dry weather uncontrolled sewage overflow events in a report year resulting from:	Chokes	15,290	18,968
	Third party damage	13	33
	Hydraulic overload	0	0
Response to priority 6 sewer incidents by time band in a report year:	≤ 1 hours	3,729	4,040
	>1 hour	1,109	1,740
Response to priority 5 sewer incidents by time band in a report year:	≤ 3 hours	20,908	23,910
	>3 hour	2,035	5,067

Trend analysis in these performance indicators is difficult without at least a few years of data, however, some aspects are apparent on review of the data in conjunction with the findings on the system performance standards:

- Similar impacts were observed in the performance indicators as for the system performance standards (SPS). The number of instances and properties affected increased for each of the indicator groups of water pressure, water continuity and sewage overflows. As for the SPS, the increase was attributed to the drought and hot weather conditions.

- ▶ Significant reductions are apparent in long period (greater than 12 hours) interruptions to water services (both planned and unplanned), which indicate Sydney Water is improving its level of service for those interruptions causing most inconvenience to customers. Response to shorter period interruptions appears to have been maintained, despite the significant increase in the number of water continuity instances over the year.
- ▶ Responses to sewage incidents (priority 6 over 1 hour and priority 5 over 3 hours) appears to have deteriorated with a greater proportion of events in these categories. Sydney Water attributes this to stretched resources over some months of the period when there were major increases in the instances of burst water mains and sewage overflows due to tree root blockages.

Some trend analysis by Sydney Water in its Compliance Report to the Minister would assist stakeholders gain a better appreciation of Sydney Water's performance over time and the external and internal factors influencing this performance.

7.3.6 Discussion on Ministerial Requirement M5 and SPS8

The Monitoring and Reporting Protocol was completed and signed off by 30 June 2003 and hence fully met the Minister's requirement.

SPS8 states *"I require Sydney Water to finalise this Protocol in consultation with the Tribunal as soon as possible, so that data collected during the audit period commencing 1 July 2002 is covered by the new arrangements"*.

The auditor has interpreted "data covered" as including the reports of system performance standards and performance indicators to the Minister. The Compliance Report to the Minister for the period commencing 1 July 2002 covered the reporting of the standard and indicator numbers and their monthly accumulation for the period. The report did not cover the following.

- ▶ Any historical comparison of performance, analysis of any trends, or any commentary on the possible explanations and proposed actions to address any adverse trends, apart from brief comment on the increase in the number of properties affected by sewage overflows since last year, and attributing this to the drought. This aspect was considered a core protocol, specifically for system performance standards, in the M&R Protocol.
- ▶ Reporting of accuracy and confidence limits, which are integral to the system performance standards. Sydney Water did not undertake the agreed audit to determine the accuracy and confidence limits for any of the system performance standards.

Sydney Water submitted that these requirements were not deemed applicable to the 2002/03 period. However, there was no evidence that the requirement of SPS8 was deferred or withdrawn.

Consequently, the auditor concludes that Partial compliance was achieved for this requirement.

7.4 Factors affecting compliance

There are no external factors considered to have affected compliance during the year. Drought conditions and hot weather contributed to an increase in the number of properties affected under each of the system performance standards, but all reported numbers remained within the standards. Factors considered relevant to Sydney Water's internal systems, processes and actions are discussed in the relevant sections above, and appropriate recommendations made in the following section.



7.5 Recommendations

7.5.1 Key recommendations

It is recommended that Sydney Water:

- R7.1 Reviews the causes of the increasing trend in dry weather sewage overflows (currently at 92% of the standard) and reports to IPART on 30 March and 30 June 2004 on actions proposed and taken to ensure the standard is not exceeded in the future.

7.5.2 Secondary recommendations

It is recommended that Sydney Water:

- R7.2 Reviews its five-year program of capital works to reduce water pressure problems, to assess whether it is satisfactorily addressing problem areas and to investigate the impact of water restrictions on peak demands and water pressure in vulnerable areas.
- R7.3 Considers long term projections of the impact of water main breaks on the water continuity (unplanned) standard.
- R7.4 Undertakes a more holistic review of sewage overflows, including cost-benefit analysis, in order to obtain optimum benefit from choke reduction programs.
- R7.5 Undertakes the necessary audits of accuracy and confidence of the reported numbers for each of the System Performance Standards, for the 2002/03 year, and for subsequent years, as set out in the agreed Monitoring and Reporting Protocol.
- R7.6 Includes in future Operating Licence Compliance Reports an historical comparison of the System Performance Standards and System Performance Indicators performance, trend analysis and explanations of proposed actions.

8. Water conservation and demand management

8.1 Summary of findings

In this years audit there are more areas where full and high compliance have been achieved which is consistent with the greater expenditure and significant gains in demand reduction and new recycling initiatives which are soon to come on line.

► Water conservation targets

Sydney Water has attained **Partial compliance** for actions taken to reduce the quantity of water (other than re-use) it draws from all sources. It is highly unlikely that Sydney Water will meet the 2004/05 target for reducing potable water use. The 2010/11 target may be achievable with the planned expansion of the conservation programs provided the assumptions and calculation of the End Use Demand model are correct and customers accept the more stringent requirements.

The Water Conservation and Recycling Implementation Report ("Report") identified that Sydney Water has achieved particular success in the areas of leakage reduction, Every Drop Counts (EDC) Business and on reuse. However, actual expenditure on public housing retrofits for the Department of Housing (DoH) and rainwater tank rebates were well below planned values. Total expenditure on all programs in 2002/03 was about \$19.8m and a further \$26.6m is understood to be planned for 2003/04. However, Sydney Water Board approval for the entire amount for 2003/04 needs to be verified. Over 2003/2011 an indicative budget of about \$264m is quoted.

Key actions which could improve conservation/reuse include early completion of Department of Housing retrofits, greater financial incentives to produce more rapid uptake of recycled water and encouraging of construction of new residential developments which maximize reuse. Also, action to increase the accuracy of estimation of leak reduction (eg more flow meters) should help target the right areas, reduce underestimation and help understanding of why decay of leak reduction occurs over time and produce ways to minimise it.

► Demand management strategy

A **Partial compliance** was assessed for reasonableness of progress in developing new performance measures for water reliability criteria because greater progress is required on, for example: ensuring a more accurate assessment of "safe yield" by including climatic effects on demand and demand hardening in the Water Supply Systems Model (WATHNET). This is considered a significant issue as firstly current demand (635,000 ML per annum) exceeds the SCA estimate of "safe yield" for water supply (600,000 ML per annum) and secondly, the "safe yield" may reduce further when these factors are included.

It is also noted that there is a level of confusion regarding the full intent of the Ministerial requirement (SPS2) addressing performance measures for water reliability. The requirements need to be clarified.

Sydney Water attained **Partial compliance** for action taken on providing an update of the cost of alternative water supplies for comparison against future plans for water reclamation and demand management. No details of such costs were provided in the "Report".

Sydney Water attained a **High compliance** rating for its significant actions to develop a climate



adjustment model for water demand and for describing expected supply deficiencies, costing, evaluating and prioritising additional conservation measures and reducing discharges. However, CSIRO review of the climate model suggests it remains unreliable. It may be that other reuse and conservation program specific demand reduction performance targets should be set in place of overall demand targets.

► **Reducing discharge**

Sydney Water obtained **High compliance** with the requirement to reduce discharge to the ocean or waterways.

► **Water conservation rating and labelling**

Sydney Water demonstrated **Full compliance** in encouraging improvements in water use efficiently in appliances.

8.2 Summary of requirements

Section 8 of the Operating Licence requires Sydney Water to comply with specific water conservation and demand management objectives. This is to ensure that Sydney Water achieves appropriate water reduction targets and implements water re-use or interception strategies to minimise wastewater discharge and to delay or avoid the construction of another water supply dam.

Section 8 specifically addresses the following aspects of water conservation and demand management.

Water conservation targets

Sydney Water must act to reduce water consumption to specified conservation target levels for the next 10 years. Assessment of compliance with these targets must consider effects of weather on water usage and annual averages. Progress in meeting these targets must be reported annually.

Demand Management Strategy

Sydney Water must give priority consideration to demand side management in the provision of services. Sydney Water must produce an annual Demand Management Strategy Implementation Report on activities over the last 12 months.

Reducing discharges

Sydney Water must take action to re-use, intercept or otherwise prevent wastewater from discharging to the ocean, waterways and other waters through non-potable reuse.

Water conservation rating and labelling

Sydney Water must encourage manufacturers of water appliances to improve the water use efficiency of these appliances. Achievements must be reported each year.



Table 8.1 Water conservation and demand management – Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
10.2	The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:	No requirement	
(e)	Compliance by Sydney Water with the water conservation targets under clause 8.1.1;	No requirement.	<p>There is no compliance requirement against this clause, as it requires an assessment of 'performance' rather than 'compliance'.</p> <p>As these targets are defined only for 2004/05 and 2010/11, compliance by Sydney Water (under Clause 8.1.1) cannot be accurately determined in this Audit period. However, Sydney Water believes it is not possible to achieve the 2004/05 target of 364 litres/capita/day (lpcd) although the gap is likely to be reduced to 13 lpcd. Based on Sydney Water's End Use Demand model projection and expectations for recycling, leakage reduction and pressure management, achievement of the 2010/11 target (329 lpcd) is possible but will require an indicative investment of over \$264m between 2003 and 2011 (refer table 10 in the "Report"). No budget allowance has been made for work to ensure water savings occur in response to regulatory measures. Also there is no direct comparison of the demand management budget against new supply options to confirm cost-effectiveness.</p> <p>See Table 8.2 for further information.</p>
(f)	Sydney Water's performance in relation to implementation of the demand management strategy under clause 8.2;	No requirement	<p>There is no compliance requirement against this clause, as it requires an assessment of 'performance' rather than 'compliance'.</p> <p>The impact of Sydney Water's demand management strategy on the overall annual per capita trend continues to be obscured by other influences such as long-term dry conditions, uncertainty about population, water quantity measurement accuracy and implementation of voluntary and mandatory restrictions. For example, climate introduces about +7% (28.4 litres/capita/day (lpcd)) to -4% (16.2 lpcd) variation in the annual per capita usage figure. This compares with gains in conservation/recycling since 1999 of about 16.1lpcd. An alternative approach, say based on each conservation and reuse programs ability to achieve a target level of demand reduction, should be investigated (see also findings for clause 8.1.2)</p> <p>A statement of actual program expenditure versus original budgets for 2002/03 is now included in the Water Conservation and Recycling Implementation Report. There is also a well defined, detailed and easy to follow forecast for 2003/04 (see also section 8.3).</p>



Table 8.1 Water conservation and demand management – Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
(g)	Progress by Sydney Water in meeting the re-use targets required under clause 8.3.1;	No requirement	<p>There is no compliance requirement against this clause, as it requires an assessment of 'performance' rather than 'compliance'.</p> <p>Reuse has increased significantly over the 2002/03 period compared to previous years. This is due largely to commencement of urban area reuse at Rouse Hill and greater reuse for irrigation due to drought conditions. When BHP industrial recycling comes on line in 2004 this will increase recycling by 20ML/day.</p> <p>The Minister has not set a recycled water target since 2000. Sydney Water is within its additional recycling "projections" for the period 2000 to 2005 ranging between 4 to 67 ML/d.</p> <p>See Table 8.2 for further information.</p>
(h)	Progress by Sydney Water in relation to the implementation of the National Water Conservation Rating and Labelling Scheme under clause 8.4.1.	No requirement	<p>There is no compliance requirement against this clause, as it requires an assessment of 'performance' rather than 'compliance'.</p> <p>Sydney Water has demonstrated a commitment to the National Water Conservation Rating and Labelling Scheme. The Federal Minister has announced that mandatory labelling of water using appliances will be implemented in 2004. However, Sydney Water has not budgeted any direct expenditure related to the regulatory measures but anticipates substantial water savings from take up of efficient appliances. There are as yet no moves by Government to set minimum efficiency requirements on water appliances, only labelling of the water efficiency of the existing and future range of appliances.</p> <p>Refer to Table 8.2, Clause 8.4.1.</p>



Table 8.2 Water conservation and demand management – Part 8 Licence clauses

Clause	Requirement	Compliance	Findings
8.1	Water Conservation Target		
8.1.1	<p>Sydney Water must take action to reduce the quantity of water (other than re-use water) it draws from all sources to the following target levels ("water conservation targets"):</p> <ul style="list-style-type: none"> a) 364 litres per capita per day by 2004/5 (being a reduction of 142 litres per capita per day or 28% from the 1990/1991 baseline) b) 329 litres per capita per day by 2010/2011 (being a reduction of 177 litres per capita per day or 35% from the 1990/1991 baseline) c) Such target level for 2014/2015 as determined as part of the Mid term review of this Licence conducted under clause 2.3.1 	Partial compliance	<p>A 'partial compliance' rating has been assessed, as although Sydney Water believes it will not achieve compliance with the 2004/05 water conservation target significant actions are underway to achieve the 2010/11 target. However, Sydney Water's projection of future demand depends on the assumptions in its End Use Demand model. The auditor has yet to see evidence that provides independent review and scientific validation of these assumptions.</p> <p>It is also evident that the Ministry of Energy and Utilities (MEU) projects a growth rate in total demand for water that is 1.3% per annum compared to Sydney Water's projection of about 0.4% per annum. These projections assume no active demand management activities that require special incentives to encourage uptake of demand side initiatives. By 2020 this difference is 780 Gigalitres per annum (GLpa) compared to 670GLpa. If MEU is correct, then a major increase in expenditure by Sydney Water on demand management and reuse will be required, well beyond that currently proposed. There has not been any evidence provided to the auditor to demonstrate there is a process to reconcile the differences in demand estimates.</p> <p>Sydney Water met its proposed 2002/03 budget commitments identified in the previous years Water Conservation and Recycling Implementation (WC&RI) Report only in the areas of washing machine rebates and the Every Drop Counts (EDC) business programs. All other programs were underspent. Also, the planned program expenditures listed for 2003/04 in this years WC&RI Report are generally lower than those in last years report. The major increases in effort planned for 2003/04 are in the EDC Business program and in recycling. These programs are discussed further under Clause 8.2 below.</p>
8.1.2	<p>The following principles and parameters must be applied by Sydney Water in assessing compliance within water conservation targets:</p> <ul style="list-style-type: none"> a) assessment of performance against water conservation targets is to be adjusted for effects of weather on water usage b) the water conservation targets in clause 8.1.1 are 	High compliance	<p>MEU and Hunter Water have used the existing climate adjustment model. There is a CSIRO report on the model. The CSIRO report indicates that the existing model has significant uncertainty. The confidence limits of the demand calculated using this model remain undefined. Further discussion on this model is included in Section 8.4 of this report. The results shown in the WC&RI Report comparing actual demand with Licence targets have been climate adjusted using this model.</p>



Table 8.2 Water conservation and demand management – Part 8 Licence clauses

Clause	Requirement	Compliance	Findings
	for an average year.		
8.2	Demand Management Strategy		
8.2.1	In this clause: Demand Management Strategy means the 1995 Demand Management Strategy updated from time to time by Sydney Water or as required by the Minister	No requirement	
8.2.2	Sydney Water must give priority consideration to demand side management as the basis for planning the future provision of its services, including addressing unaccounted water losses.	Full compliance	<p>Sydney Water appears to have committed \$26.61m to its Demand Management (DM) activities over 2003/04 compared to a total actual expenditure of about \$19.81m in 2002/03. There are also program annual budget forecasts out to 2010/11. However, there are discrepancies in the forecast for 2003/04 between Table 10 (\$25.2m), the reporting schedule in Attachment A (\$26.61m) and Section 3.4.2; <i>“For 2003/04, the Sydney Water Board has endorsed allocation of \$13.4million for demand management programs”</i>. As all expenditure is expected to require Sydney Water Board approval it is essential that the commitment of the planned \$26.6m be verified as being approved by this Board. Refer to Demand Management Strategy Implementation Report.</p> <p>Least Cost modelling continues to be the basis for economic evaluation of options to reduce demand and for the planned program. There are other criteria which are also used to set future plans including timeliness, community equity, greenhouse emission impact, new product evaluation and directives from Government (for example, continuation of the rainwater tank rebate program). However, the report does not define how these criteria (where they are measurable) are weighted in decisions about which options to include in future plans. The Water CEOs forum also monitors the planned program and considers how the cost of new water supply options (for example, groundwater) compares with demand reduction options.</p> <p>Sydney Water will assess 7,000 km of pipe over 2003/04 compared 4,410 km in 2002/03 and has embarked on a pressure management program to further reduce losses. However, there does not appear to be a significant increase the number of flow meter in the system and no zones have been reduced in size. This work would improve accuracy of leak estimation. Substantial reductions in water loss are also forecast from pressure management however the auditor has yet to cite any data that validates this potential for gains.</p> <p>The Leakage Reduction program and planning/costing issues are discussed further in Section</p>



Table 8.2 Water conservation and demand management – Part 8 Licence clauses

Clause	Requirement	Compliance	Findings
			8.3 of this report.
8.2.3	By no later than 1 September each year, Sydney Water must provide a report ("the Demand Management Strategy Implementation Report") to the Licence Regulator on implementation of Sydney Water's Demand Management Strategy for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit	Full compliance	A Water Conservation and Recycling Implementation (WC&RI) Report that represents Sydney Water's obligation under this clause was delivered on 31 August 2001.
8.2.4	The Demand Management Strategy Implementation Report is to:		
(a)	Contain an estimate of past, current and projected water uses and distinguish between residential, industrial, commercial and government uses	Full compliance	A full compliance has been awarded as the report contains the history of annual waste demand for each use for the period 1991 to 2003. While demand per account has decreased for industry, it is showing signs of increase for residential and government/institutional properties. Hence, it is timely that Sydney Water is focusing in its 2003/04 program on Every Drop Counts Business programs. A special investigation of demand patterns in residential properties may be warranted.
(b)	Describe the frequency and magnitude of expected supply deficiencies, including those arising as a result of wastage or loss, drought or emergency	High compliance	<p>The WC&RI Report and supporting information provide an excellent summary of the basis of the safe yield of 600GL/year calculated by SCA, the implications of current restrictions and the options to avoid running out of water during a drought. However, actions with SCA to define the impacts on calculated "safe yield" of "demand hardening" and climate effects on demand have not progressed. Demand hardening means that because of the demand management savings now in place, it is likely to require more stringent and perhaps unachievable restrictions than in the past to produce the targeted demand reductions (as listed in section 6.1.1 of the "Report" and in Schedule 2 of SCA's Operating Licence).</p> <p>This factor plus lack of climate driven variation in monthly demand could result in overestimation of "safe yield" using SCA's WATHNET model. The calculated "safe yield" output from the model would also tend to reduce as demand management activities intensify in the future.</p>



Table 8.2 Water conservation and demand management – Part 8 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>Finally, current social research by Sydney Water to understand customer attitude to issues such as demand hardening and the frequency, duration and severity of restrictions does not appear to be accompanied by a community education program on these complex subjects to ensure an informed response from the public. A partial compliance has been awarded.</p> <p>Further discussion of these issues is presented in Section 8.3 of this report.</p>
(c)	Identify conservation measures currently adopted and being practiced	Full compliance	The WC&RI Report describes the currently adopted and practiced measures and further information validates the reasonableness of performance and practice. Hence a full compliance rating has been awarded.
(d)	Describe, cost and evaluate additional conservation measures (In this context, additional conservation measures are taken to mean new measures not currently implemented or planned in 2003/04).	High compliance	<p>A comprehensive range of additional conservation measures are summarised in the Report. Annual expenditure and water saving projections cover the period 2003/04 to 2010/11. However, the projected effectiveness of most of these measures depends on the assumptions and accuracy of data used in Sydney Water's End Use Demand model to confirm the least cost options and demand reductions. This model is now run by Sydney Water and there has been no independent review of the assumptions during 2002/03. Information on the assumptions and scientific backup information which validates these assumptions or the way the model calculates costs and demand reductions has been provided. No information on results of the models sensitivity to changes in assumptions has been provided. Refer also to comments made on 8.2.2 regarding other criteria.</p> <p>For these reasons, a high compliance has been awarded.</p>
(e)	Describe future plans for water reclamation and strategies to alter water use practices, including those relating to the installation of more efficient water appliances and devices by users	Full compliance	These plans are well advanced in implementation.
(f)	Evaluate these plans in terms of their cost and contrast with the cost of alternative water supplies	Partial compliance	<p>Levelised costs for alternative water supplies such as large-scale development of ground water, Shoalhaven run of river, desalination and stormwater harvesting were not included in the WC&RI Report.</p> <p>The report also did not provide any references to or details on such alternative water supply options except in the area of reuse. The levelised cost and details of total cost and feasibility</p>



Table 8.2 Water conservation and demand management – Part 8 Licence clauses

Clause	Requirement	Compliance	Findings
			(for example, size, location, all capital and annual costs, waste disposal and community acceptance) are needed to establish the reasonableness of the assumptions used in selecting options for assessment and how they compare with demand management options.
(g)	Prioritise and schedule the implementation of courses of action found to be cost effective	High compliance	<p>A high compliance has been awarded because the criteria, other than least cost, that help prioritise and schedule actions have been more clearly defined in this year's report compared to the previous year's report.</p> <p>However, as discussed previously, there is still no evidence that these criteria have been used in a systematic way to establish which programs have the higher priority and therefore receive more funds and/or are implemented earlier.</p> <p>Further discussion of issues relevant to the requirement are included in Section 8.4.5 of this report.</p>
(h)	Identify strategies for reducing Unaccounted water losses	High compliance	<p>A high, as opposed to full, compliance has been assigned as improving the understanding of the status of divide valves, providing additional flow meters, and reducing zone sizes does not appear to have been given a high priority. The benefits of this work would include more accurate estimation of leakage reductions, better basis for targeting of repair activities and better understanding of decay of leakage reduction and possible ways to reduce it. However, a comprehensive leak detection program is in place and a good summary of the basis for the estimated leakage reduction calculation is provided in the report. Also, it is recommended that Sydney Water provide comprehensive details on pressure management outcomes and assumptions in its next report, as this program is forecast to be a major future cost with water savings projected to grow significantly in the period 2008 to 2011.</p>
8.2.5	Sydney Water must engage a suitably qualified third party to verify the accuracy and soundness of its mathematical models for water usage and report the results to the Licence Regulator within 1 month after the commencement date.	Full compliance	Completed in March 2000. Sydney Water has not carried out a subsequent third party audit.
8.3	Reducing Discharges		
8.3.1	Sydney Water must take action to re-use, intercept or	High compliance	A high compliance rating is assigned. This rating reflects the significant progress made during



Table 8.2 Water conservation and demand management – Part 8 Licence clauses

Clause	Requirement	Compliance	Findings
	otherwise prevent from discharge into the ocean, waterways and other waters, sewage or effluent of customers and consumers by way of non-potable re-use. Sydney Water is to meet the targets set by the Minister from time to time.		2002/03 on bringing into operation the Gerringong- Gerroa irrigation recycle scheme, stage 2 of the Rouse Hill urban reuse scheme and completing \$7.2m expenditure on the BHP Wollongong recycle scheme with a further \$12.5m for its completion in 2003/04. However, no action has been taken to climate adjust the recycled water usage trend graph. Therefore, assessment of the overall trend in total reuse is uncertain. Sydney Water now have water meters on all reuse points at their STPs but no reduction in total potable water use occurred at the STPs compared to 1997/98. The End Use Demand model is used to assess the market for reuse but its assumptions remain unknown. A market plan for the next 5 to 10 years is not yet in place and no data have been made available on experiences and market research to define what price and/or incentives strategy would trigger substantial increases in reuse for different types of customer.
8.4	Water Conservation Rating and Labelling		
8.4.1	Sydney Water, through continuing support for the National Water Conservation Rating and Labelling Scheme, is to encourage manufacturers of water appliances to improve the water use efficiency of these appliances where consistent with Sydney Water's objectives	Full compliance	Sydney Water is represented on the committee overseeing the development of the National Water Conservation Rating and Labelling Scheme. A full compliance rating is given because although Sydney Water only provides "in kind" support for this project. Staff carry out End Use modelling, have developed a web site promotion and have an active promotion campaign of water efficient products through retrofits and its <i>Go Slow with H2O message</i> . Also it is evident from Federal Minister's recent statement that a mandatory National labelling scheme is likely in 2004.



Table 8.3 Water conservation and demand management – Ministerial Requirements

ID	Requirement	Compliance	Findings
M1	<p>Demand management</p> <p>“As a result of IPART’s Mid Term Review, I have already placed a number of Ministerial Requirements on the Corporation which are designed to increase the clarity of reporting on its demand management program” (refer A69 in the folio of progress and Ministerial correspondence on this requirement)</p>	High compliance	<p>A high, as opposed to full, compliance rating has been given because Sydney Water has not provided information which adequately validates the assumptions and shows details of calculations behind the current “total demand with revised demand management program” projection shown in Figure 13 of the WC&RI Report. This is the basis of the 2003/04 to 2010/11 estimates of water saving and costs.</p>
M2	<p>Leakage measurement and reduction</p> <p>“ I require the Corporation to describe its approach to ascertaining, in a cost effective way, the amount of leakage from its pipes and the means it uses to validate the level of leakage reduction achieved. The Corporation should report to myself and IPART on these matters by 1 September 2003”</p>	Full compliance	<p>Sydney Water has provided a good summary on the method used to estimate leakage and reductions in leakage and the relatively high cost to achieve and maintain it In the WC&RI Report a water balance table from which the total amount of leakage is calculated has been provided. The format is adequate and consistent with standard practice in other major water authorities. However, no estimate of the accuracy of the various components which make up the water balance have been defined which makes it difficult to determine the overall accuracy of the total annual leakage volume which exists. Also it is assumed that water use by illegal connections (unauthorised consumption) is zero, which is unlikely to be true. The opinion of Sydney Water is that it is very low at less than 0.1%. This opinion is based on findings during routine meter exchange and monitoring of customer bills for unusual reductions in consumption which may not be representative. Sydney Water is considering metering fire services to reduce the potential for illegal use but it is not listed in its future demand management programs.</p> <p>The limited accuracy of measurement of leakage rates and of leak reduction after repairs is addressed by using low estimates for both. Sydney Water consider this is a suitable response to this uncertainty and avoids the need for a large number of additional flow meters and extensive reorganising of zone boundaries, which would add to program costs. However, given the high cost of the leakage reduction program the auditor recommends that Sydney Water needs to continue a program of adding /calibrating flow meters, reducing relevant zone sizes and checking status of divide valves to ensure an overall cost effective result. That is, accurate assessment of leakage and gains after repairs are fundamental to minimising costs associated with knowing where to look for leaks and what the decay rate for leakage reduction is. Sydney Water has standard operating procedures in place to ensure a consistent approach for leak detection and estimation. A pilot pressure reduction program at the Beecroft zone will also</p>



Table 8.3 Water conservation and demand management – Ministerial Requirements

ID	Requirement	Compliance	Findings
			include work to reduce zone size, check divide valves and improve Minimum Night Flow estimation. This will give guidance on the cost benefit for implementation of improvements across the other zones.
SPS2	'I require Sydney Water to work with the Sydney Catchment Authority with a view to develop performance measures for water reliability for further consideration at the end of term review of both Operating Licences'	Partial compliance	<p>There is a level of variance in the understanding of this requirement and it would benefit from clarification. To date, Sydney Water views the requirement as relating to the preparation of drought response plans and assessment of additional supply options (such as groundwater, access to water near the bottom of SCA storages, contingencies for greater use of Shoalhaven water and ensuring reliable supply to smaller systems like the Blue Mountains) not specifically included in SCA's WATHNET model. Significant action on this subject has occurred via support of the Water CEOs, Hawkesbury-Nepean and Drought Expert committees.</p> <p>However, cooperating with SCA on developing a better WATHNET model representation of the Sydney Water supply and demand system has not been a focus. A gap exists in that the WATHNET model does not consider climate variation in demand or the impact of demand hardening on demand reductions achievable when restrictions are imposed. Also, the distribution of demand between demand nodes in the model may now be different and small systems (for example, Blue Mountains) are not modelled. These demand side factors tend to reduce the calculated safe yield estimate. Also, as the demand management programs intensify, the combined effect may also reduce the safe yield estimate. Finally, there will be a need for Sydney Water and SCA to cooperate on data required to run the WATHNET model to see if it correctly fits to recent history. No evidence of significant joint Sydney Water/SCA action on improving the accuracy of the WATHNET model was provided to the auditor. A partial compliance has been awarded.</p>

8.3 Discussion

8.3.1 Overview

This audit has considered information provided by Sydney Water in the Water Conservation and Recycling Implementation (WC&RI) Report and supplementary information documents arising from audit interviews and relevant information from SCA.

In this years audit key issues which have arisen are outlined below.

- ▮ Sydney Water is unlikely to meet its 2004/05 target for reduced water consumption per person.
- ▮ There is a need to progress joint Sydney Water and the SCA activity to improve the accuracy of the estimate of “safe yield” by taking into account demand side issues such as demand hardening and climate variation in demand.
- ▮ There is still significant uncertainty in the estimate of leakage reduction, in targeting of where to look for leaks and the causes, timing and magnitude of the decay rate in leakage reduction. More flow meters, smaller zone sizes and careful management of divide valves would assist in reducing this problem.
- ▮ The future projection of demand to achieve the 2010/11 target is based on a set of assumptions in the ‘End Use Demand’ model that need to be externally validated in terms of past experience and scientific correctness.
- ▮ More detailed social research is needed to determine if there is a “threshold” of more stringent water conservation and/or reuse strategies beyond which customers consider the impact on them is unacceptable. This is important as reduced residential outdoor water use is considered a major future demand management initiative.
- ▮ The climate adjustment model for demand is, as yet, not a reliable predictive tool for determining the average annual demand compared to specified targets. It may be that an alternative approach in which demand reduction targets are set for each water conservation and reuse program is more effective.
- ▮ Recycling is seen by Sydney Water and elsewhere as a major way to reduce demand. However, careful pricing and business planning is needed by Sydney Water to maximise the rate and extent of uptake by industry and developers.
- ▮ A focus on reducing demand at Department of Housing properties is needed. Actual expenditure 2001/02 for Department of Housing retrofits was well below planned expenditure.
- ▮ It remains unclear how Sydney Water uses factors other than levelised cost (for example, customer acceptability, refer appendix A5.3.2 of the “Report”) in decisions about conservation or reuse options to be implemented, continued or stopped.
- ▮ Actual expenditure 2001/02 for Department of Housing retrofits and for rainwater tank rebates were well below planned expenditure values.
- ▮ Sydney Water has indicated confusion about the intent of Ministerial requirement SPS2, which relates to cooperation with SCA to improve the accuracy of “safe yield” by taking into account demand side issues such as demand hardening and climate variation. The auditor believes joint development of improved water demand and supply measures is needed.



- ▶ Sydney Water has not budgeted any direct expenditure on actions to encourage implementation of regulations that set minimum efficiency for water use appliances. At present the commitment by Sydney Water extends only to an “in kind” commitment of representation on relevant investigating committees.
- ▶ Specific investigation is required in to why and how to reduce the rising demand water by residential units and commercial properties.
- ▶ It remains unclear how Sydney Water compares demand management options in terms of factors other than levelised price. For example, there is no update comparison of levelised cost of demand side versus supply side in the report. Also, it remains unclear how the other evaluation criteria listed in the WC&RI Report (Appendix A5.3.2) are used in decisions.

8.3.2 Increasing residential and Government/Institutional demand

In spite of implementation of voluntary water restrictions from 15 Nov 2002, it is evident that demand per property for these sectors has continued to slowly increase since about 1999 or 2000.

The possible reasons for these trends and Sydney Water’s responses to these sustained increases are not discussed in the WC & RI Report. The increase in demand is surprising given the extent of residential *Every Drop Counts* retrofitting already in place. Understanding why the increases might be occurring is fundamental to developing changes to the relevant programs. For example, if it is only a response to drier conditions the response would be different than if it represented a change in attitude to water conservation. This trend reinforces the importance of rapid completion of the Department of Housing retrofit to its 25,000 properties and perhaps stepping up the residential indoor/outdoor and *Every Drop Counts* business programs.

8.3.3 Cost, accuracy and sustainability of leakage reduction

Sydney Water has adopted a conservative approach to leakage reduction. Estimated leakage reductions for 2002/03 could be as high as 31.33ML/d. The adopted figure was 14.01ML/d. In the adopted figure there were 23 leaks where actual values could be measured (verified). In addition there were 151 leaks which could not be measured (not verified). For each of these a value of 0.5KL/day was adopted which is in line with experience elsewhere. For the upper limit case of 31.3ML/d the main source of additional leakage reduction is a higher estimate (1.61l/s/leak) for the 151 leaks that were not measured. The value for the average of the 23 observed leaks with a flow rate less than 5l/s/leak was used. In this estimate average values for all the verified leaks < 5l/s and > 5l/s were also used. The calculations are outlined below:

Factor		2002/03 Leakage Reduction (ML/d)	Upper Estimate on Leakage Reduction (ML/d)
Two-thirds of 23 No. measured leaks with < 5 l/s/leak	=	2.98(verified)	2.24 (ave 1.62l/s/leak)
One-third of 23 No. measured leaks with > 5l/s/leak	=	5.11(verified)	3.82(ave 8.42l/s/leak)



151 No. unmeasured leaks	=	1.81(ave 0.5KL/day/leak)	21.13(ave 1.61l/s/leak)
595 No. Leaks at fittings at an estimated 0.25kL/day/leak	=	4.14	4.14
		<hr/>	<hr/>
		14.01 ML/d	31.33 ML/d

Documents provided to the auditor indicate a proposed flowmeter calibration program has been developed. However, it is evident that Sydney Water has not yet implemented a comprehensive program to calibrate all meters, optimise zone size or increase the number of reliable flow meters. It is suggested that a focus on this is desirable so that a more accurate targeting of effort to reduce leakage can be accomplished and a more reliable estimate of actual leakage reductions can be defined.

The total cost to date on this program is estimated at \$4.68m for a net reduction in leakage of 12,274ML or about 37.8c/KL. Although the levelised cost for this program is not directly comparable with this value, it is high compared to the levelised cost of 12c/KL quoted in the WC&RI Report.

8.3.4 Overall performance of water conservation and recycling activities

The water balance for 2002/03 has been prepared in accordance with International Water Association standards. The total amount is 641,450ML for the year compared to a figure of 635,000ML/year quoted in the WC&RI Report. The difference is due to the different date each was determined. The water balance is aligned to the twelve month meter reading cycle which does not exactly correspond to the 1 July to 30 June period. The value adopted by Sydney Water for the period 1 July 2002 to 30 June 2003 is 635,000ML/year.

Actual expenditure was well below planned levels for Department of Housing retrofits and rainwater tank rebates, lower than expected expenditure was also noted for washing machine rebates, retrofit agent work, residential landscape assessment and remote metering of single dwellings. Higher than planned expenditure occurred for residential retrofits, outdoor awareness, Every Drop Counts business and water recycling programs. Department of Housing retrofit under-expenditure was due to contractual issues regarding Sydney Water contractors working competitively with Department of Housing contractors and legal issues on the Sydney Water /Department of Housing agreement regarding early termination clauses. This agreement aims for an equal split of costs for retrofits between the Sydney Water and Department of Housing over a six year implementation program.

The auditor notes that the residential retrofit program offers free installation to low income households. Also, it is unclear to the auditor why Department of Housing contractors are not completing all Department of Housing retrofits and why implementation requires this long to complete. The auditor has no issue with the under expenditure on rainwater tank rebates and agrees with Sydney Waters view that this program should be reviewed as it has low uptake and a very high levelised cost. The increased expenditure on recycling is considered by the auditor to be an important step as recycling has potential to substantially reduce demand and is reasonably cost effective and fits well with social and environmental evaluation criteria. It is a successful approach used in many other water authorities.

However, to date reuse and recycling have not increased significantly partly because the amount estimated in the base line year of 1995 had substantial uncertainty because not all recycle/reuse flows were monitored using flow meters. Also climate appears to influence output to reuse/recycle. It is evident that some new recycle/reuse projects have been implemented:



- Rouse Hill Development Stage 2 (Oct 2002); and
- Gerringong-Gerroa irrigation recycling water scheme (Aug 2002).

The BHP industrial reuse project that is currently under construction will increase recycling from its current level of around 30 ML/d to about 50 ML/d when commissioned in 2004.

The success of the Georges River Effluent Reuse project may largely depend on the price at which reuse water is sold compared to the price of drinking water supply. Little work is evident by Sydney Water on the development of a long-term business plan. This plan should consider issues such as:

- Price and subsidy options;
- Protocols to avoid cross connections;
- Sustainability and contingency plans if failures in water quality compliance require scheme shut down; and
- Target industries and criteria for identifying them.

A future concept to reduce demand in new areas could be developments similar to the 8,500 allotments “Aurora” residential project in Melbourne. The projected demand for water is expected to be only about 203 litres per household per day compared to current consumption in Melbourne of about 735 litres per household per day. This reduction is to be achieved by installation of water efficient appliances, restrictors in household plumbing, substitution of potable water by recycled water for all garden water and toilet flushing and use of rainwater to augment hot water supply.

8.3.5 Water reliability, safe yield and demand management

“Safe Yield” has been defined in the Mid Term Review of the SCA Operating Licence as “the amount of water that can be withdrawn from a reservoir on an ongoing basis with an acceptably small risk of reducing the reservoir storage to zero”.

The requirement of Ministerial requirement (SPS2) was for Sydney Water to work with the SCA to develop performance measures for water reliability. This requirement has been interpreted by Sydney Water as ensuring that during drought events there is a reliable drought response plan including adequate supply contingency plans (for example, greater use of Shoalhaven catchment water) and a restrictions strategy which achieves required demand reductions. Reliability, in terms of criteria which define “safe yield”, is seen to be a SCA responsibility by Sydney Water. Sydney Water provides seasonal average demand data to SCA. This is used by SCA in its WATHNET model, along with stream flow and storage volume data to calculate safe yield in terms of reliability, robustness and security criteria. However, Sydney Water has not, as yet, been requested or sought to assist SCA in relevant “demand side” issues such as assessing the impact of climate variations on demand and any reduced response to restriction (demand hardening) on “safe yield” calculations.

The distribution of demand across Sydney is represented in the WATHNET model as a set of demand nodes. There are constraints within the model on the interconnections between these demand nodes and supply points that represent hydraulic limitations of major transfer pipes. The assumptions regarding distribution in demand across these nodes and constraints between nodes may require review, as they were set several years ago.

Finally, Sydney Water participated in the recent review of the WATHNET model. However the recommendation regarding running the model over recent history (for example, 1995 – 2003) to see how



well the calculated results “fit” history has yet to be implemented. (In this calibration exercise, the calculated monthly volumes in storages would be compared with actual volumes).

8.3.6 Prioritising of water conservation, demand management options and cost allocation

The End Use Demand model is Sydney Water’s primary basis for defining the effects on demand of its demand management strategy. Sydney Water now runs this model “in house”.

Detailed external review of the accuracy of the model assumptions and calculation methodology has not occurred since 1999. Sydney Water is in the process of releasing the model for use by other water utilities as a means of obtaining external reviews. This may not be relevant to the conditions of the Sydney Water supply system. Also, the model does not take into account climate variation effects or statistical uncertainties associated with the impact of water conservation measures. For example, an average value of water saved (at the 95% confidence limit) for “Every Drop Counts” retrofits has been used rather than the range in possible savings across Sydney which represents a scaling up of the observed distribution obtained in test areas. If the statistical distribution of values was not a normal distribution the average value would not be an accurate estimate.

The basis for the mix of demand management activities, and the scientific basis for each one, used in the current projection of demand also needs independent expert validation.

8.3.7 Climate adjustment of demand and demand projections

The intent of the climate corrected demand model is to monitor the underlying trend in demand after climate effects are removed. In terms of the Licence requirements, the model should permit comparison of actual annual per capita demand with the water conservation targets set for 2004/05 and 2010/11. These targets are for “average” climate conditions. Hence for accurate comparison, actual demands need to be modified to eliminate climate (for example, drought) effects. CSIRO reviewed the current climate correction model and in its June 2001 report concluded that, in its present form, the model is unreliable for this use. This was due to a lack of independence in some of the data used. For example, soil moisture is used twice; once to derive soil moisture index (an independent variable in the regression equation) and again as a dependent variable in the corrected demand regression equation. The model also lacks validation over recent years since significant demand management has occurred. Selection of 1998/90 as the calibration year for the current model may not be suitable. Finally, correction for the impact of voluntary and mandatory restrictions is not included in the current model.

Alternative approaches to demand projections need to be considered. For example, comparing verified reductions in demand for each conservation and reuse program with program expenditure would be a more reliable measure. This approach has already commenced and the principle is also in place for recycling. The main problem with linking conservation program outcomes to climate adjusted total demand is that the reduction in demand since 1999 is within the uncertainty limits of the climate adjusted model. Similarly, the demand reduction achieved each year is subject to this basic problem.

8.3.8 Customer acceptance of demand and demand projections

Customer acceptance of the demand management strategy has, to a limited extent, been investigated using customer surveys to identify customer preferences with respect to type of demand management. However, little has been done to understand whether there is a level of demand management/conservation measures beyond which the issue of insufficient level of service for annual



water rates paid or “value for money” emerges as a significant constraint. This may cause resistance to further reduction in demand where customer acceptance is required (for example, reduced garden watering).

8.3.9 Minimum performance standards for water appliances

Regulatory measures available to Sydney Water include mandatory labelling of water appliances and minimum performance standards for water appliances.

Sydney Water in its Every Drop Counts retro fitting program represents the major installer of showerheads etc. that are of an approved minimum standard for water conservation

Sydney Water has a good promotion program through its website promotion, retro fitting program and “Go Slow with H₂O” media campaign.

However, Sydney Water has not identified a specific budget towards achieving regulations that require all new water appliances to meet minimum water efficiency standards.

8.4 Factors affecting compliance

A lack of clarity in the interpretation of Ministerial requirement (SPS2) is a possible contributing factor explaining why Sydney Water and SCA have not commenced evaluation of demand side factors (for example, demand hardening) which may reduce the “safe yield” based on the current Schedule 2 criteria (reliability, robustness and severity).

The complexity and “state of the art” nature of the End Use demand model used by Sydney Water to forecast the impact of its demand management initiatives may mean it will be difficult to find a suitably experienced external auditor to check the assumptions and scientific accuracy of the model.

There is only a relatively short period of records available to Sydney Water for calibration of its model for climate adjustment of demand.

Because a National approach is required for the introduction of regulations setting minimum efficiency standards for water appliances it will require substantial effort to achieve agreement.

Forecasting future demand out to year 2010/11 is not only subject to uncertainty with respect to the impact of future demand management initiatives but, as illustrated by the work by the Ministry for Energy and Utilities (MEU), there is also uncertainty regarding the “baseline” demand forecast, predicated on no additional demand management activities. Growth in household numbers, locations where growth occurs, interest rates, price of water and occupancy rates are examples of factors that are beyond the control of Sydney Water which can affect the outcome of demand management activities. It may be useful to look more closely at the factors that the future demand projection is particularly sensitive to in order to better understand the lead times available before it becomes essential to start developing alternative supply options

8.5 Recommendations

8.5.1 Key recommendations

It is recommended that Sydney Water:



- R8.1 Improves the certainty of the estimates of leakage and leakage reduction by, for example, increasing the number of flow meters, giving attention to divide valve status and, where appropriate, reducing zone size.
- R8.2 Completes a public housing retrofit work for all 25,000 Department of Housing properties within a shorter time frame than the current proposal of the next 6 years.
- R8.3 Considers development of further incentives (for example, subsidies to industry and developers) to accelerate take-up of recycled water, especially from the Georges River program, and encourage new residential estate developments based on minimum potable water use and maximum rainwater/recycled water use.
- R8.4 Considers, together with IPART, alternative performance measures for water conservation and reuse programs given the likelihood that the climate adjustment of demand approach is unlikely to provide a reliable basis.
- R8.5 Completes a technical audit of the End of Use Demand model for reasonableness of assumptions based on past experience and relevant scientific data.
- R8.6 Completes detailed social research to determine if there is a “threshold” of more stringent water conservation and/or reuse beyond which customers consider the impact is unacceptable.
- R8.7 Completes detailed evaluation with SCA of the impact of demand side factors (for example, demand hardening and climate effects on demand) on calculated “safe yield”, recognising that most of these factors will reduce the “safe yield” and intensify the need for conservation and reuse activities.

9. Environment - indicators and plans

9.1 Summary of findings

► Environmental Indicators

Sydney Water obtained an overall **High compliance** for requirements relating to environmental indicators. Sydney Water prepared a report that described its performance against most gazetted environmental indicators. Further, some environmental indicators were not monitored or compiled during the audit period, as a result of the recommendations of an internally commissioned review of its monitoring programs. As a consequence, the auditor was not able to report on the performance of Sydney Water in relation to all the environmental indicators. Over the last year, however, Sydney Water has introduced the Effluent Knowledge and Management System (EKAMS) that addresses data reliability and quality control and minimises labour. Sydney Water has also demonstrated a concerted effort to improve the usefulness of the reporting, however the reporting and monitoring of environmental indicators remains problematic because of the number and relevance.

► Ecologically Sustainable Development (ESD) Indicators

Sydney Water obtained **High compliance** for requirements relating to ESD indicators, having prepared a clear report outlining performance against each indicator. The range of performance in relation to the ESD indicators was diverse, with some indicators demonstrating high performance and others requiring improved performance.

► Environment Plan

Sydney Water's Environment Plan was adopted at the end of September 2000 and includes objectives for the five-year period to 2005. For those targets due in the audit period, Sydney Water obtained **High compliance**, having met most of the targets.

► Energy Management

Sydney Water had **no requirements** over this audit period in regard to specific reduction in energy consumption and **Full compliance** in reporting its performance in energy consumption.

► Botany Wetlands

Sydney Water has mirrored its previous year's performance and been assessed as a **High compliance** in implementing the Botany Wetlands Plan of Management. Sydney Water continued implementation of the Plan across a range of program areas, including the surveillance and monitoring of blue-green algae and weed and pollution management. However, implementation of some programs (for example, Landscape and Visual and Land Management) have not been actioned, despite the plan being in its seventh year. If such programs are no longer relevant, the Plan of Management should be updated. The Plan is being implemented almost solely by Sydney Water and not "*in conjunction with other appropriate persons*". Plan review also continues to be limited and it is unlikely the Plan will be reviewed prior to the required date (on or about January 2004).



9.2 Summary of requirements

This section of the audit report addresses the following clauses:

- ▶ 9.1 – Environmental Indicators;
- ▶ 9.2 – ESD Indicators;
- ▶ 9.3 – Environment Plan;
- ▶ 9.4 – Energy Management;
- ▶ 9.5 – Botany Wetlands; and
- ▶ 9.7 – Trade Waste.

In summary, Clauses 9.1 and 9.2 of the Operating Licence require Sydney Water to monitor and compile data on the ESD and Environmental Indicators, to report to the Licence Regulator by 1 September each year on its performance in relation to the indicators, and to make the report available to the public within one month of its receipt by the Licence Regulator.

Clause 9.3 requires Sydney Water to prepare a five-year Environment Plan by 30 September 2000 involving public consultation. The Plan must contain environmental strategies, endorse ESD principles and be recognised in business plans. The Plan must set targets using the environmental and ESD indicators, timeframes for achieving the targets and be available to the public. Sydney Water must also produce an annual report detailing progress on meeting the Plan as well as compliance with the targets and timetables.

Clause 9.4 requires Sydney Water to adopt energy reduction targets for buildings, identified in the NSW Government Energy Management Policy, and to report by 1 September each year to the Licence Regulator on its performance in relation to the targets.

Clause 9.5 requires Sydney Water to implement the Botany Wetlands Plan of Management and to report on its compliance with the plan by 1 September each year.

Clause 9.7 requires Sydney Water to prepare a trade waste policy that contains objectives and performance indicators, and it must report no later than 1 September each year on its progress in satisfying the objectives and indicators.

This section of the audit also includes the reports by the person undertaking the Annual Audit on Sydney Water's performance and/or compliance in relation to the environmental indicators, the ESD indicators, the Environment Plan, energy conservation targets, Botany Wetlands Plan of Management and trade waste related objectives as required by Clause 10.2.1 of the Operating Licence.



9.3 Details of compliance

Table 9.1 Environment: Indicators and Plans – Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
10.2.1	The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:	No requirement	
(i)	Sydney Water's performance in relation to the environment indicators under clause 9.1	No requirement	<p><i>There is no compliance requirement against this clause, as the clause requires an assessment of 'performance' by the auditor rather than 'compliance'.</i></p> <p>Sydney Water's performance against the environmental indicators is presented in the <i>Environmental Indicators Compliance Report 2003</i> (EICR). The EICR contains commentary and summarised data in Volume 1 and compiled and statistically analysed monitoring data in Volumes 2 and 3.</p> <p>Improvements in reporting have been made to clarify where the gazetted environmental indicators are addressed in the EICR.</p> <p>A table at the beginning of the report under 'Sydney Water's legislative framework for environmental reporting', lists the environmental indicators and cross references to sections of the report where they are addressed. Each indicator is clearly defined and the location where performance is addressed is clearly identified. This is a more user-friendly format than previous years.</p> <p>The EICR is produced primarily to address regulatory requirements. The data it contains (not the report) are used to assist in asset planning and management on a day-to-day basis.</p> <p>The Environmental Indicators will be included on a CD-ROM in the Annual Report. This is the first step in streamlining reporting and preparing a triple bottom line report. Reporting against the 'special objectives' is not in this years EICR but included in the report on ESD Indicators and the Environment Plan.</p> <p>Some environmental indicators were not monitored or compiled for the audit period (refer to Appendix H). Consequently Sydney Water has not reported environmental performance against these indicators, for example:</p> <ul style="list-style-type: none"> ► Schedule 10 chemicals (a suite of over 33 pollutants identified in the Act) for receiving



Table 9.1 Environment: Indicators and Plans – Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>water quality in rivers and streams have not been monitored and so these data have not been compiled for the audit period.</p> <ul style="list-style-type: none"> Oil and grease from sewage effluent discharges to rivers and streams was not monitored for eight sites. However, it is noted that this is not part of the monitoring program according to an “internal review”. Therefore data were not compiled and performance not reported. (The data were also not required as part of the STS Licences and therefore no data are available or reported). For the Sewerage Reticulation System, the environmental indicators relating to Schedule 10 chemicals for discharge quality, water quality and sediment have not been monitored and data have not been compiled for the audit period. <p>Sydney Water reported performance against some environmental indicators in Volume 1 of the EICR using bar graphs and trend plots together with an interpretation of the results.</p> <p>Some data were not presented for indicators for the previous 10 years (where comparable) as required by the Licence. Sydney Water suggests the integrity of some data prior to 1994 is questionable. Therefore to ensure maximum accuracy of historical data, Sydney Water does not include some information prior to 1994.</p> <p>The compiled and statistically analysed monitoring data presented in Volumes 2 and 3 show trends in the environmental indicators in a database format, bar graphs and trend plots. A statement, ‘Methodology behind trend bars’, has been included at the beginning of the volumes to aid the reader in understanding the statistical treatment of the data. The data compiled in Volumes 2 and 3 is primarily an outcome to satisfy regulatory requirements rather than for use by the public. As a consequence, the majority of the large volume of data are presented in tabular form and graphs. It would be a time consuming process to present the data in a form that is more suited to the public and Sydney Water advised that hits on its website for these data were few and primarily from universities.</p> <p>The auditor acknowledges difficulties in reporting the data and performance on all environmental indicators and Sydney Water has made improvements to the reporting as recommended in the 2001/02 audit.</p> <p>For further details on performance, refer to Appendix H.</p>



Table 9.1 Environment: Indicators and Plans – Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
(j)	Sydney Water's performance in relation to the ESD Indicators compiled under clause 9.2.5	No requirement	<p><i>There is no compliance requirement against this clause as the clause requires an assessment of 'performance' by the auditor rather than 'compliance'.</i></p> <p>Sydney Water obtained 'high compliance' for requirements in Part 9 relating to the ESD Indicators. Sydney Water reported performance in relation to ESD indicators to IPART in the form of 'Folios of Progress' – an internal document system in Sydney Water that tracks compliance with the Operating Licence. Numerous folios addressing a number of subjects covering the ESD Indicators were provided to IPART. The folio number indicated the ESD Indicator or environment target addressed in each folio. However, this was presented in a format that was not user-friendly and was time consuming to comprehend.</p> <p>A draft 'ESD Indicators and Environment Plan Report 2002/03' was also prepared which provides a comprehensive and clear report on performance in relation to each ESD Indicator. This report was provided to IPART on 14 October 2003. (The report replaces the Towards Sustainability Report that has been produced in previous years). Information from the ESD Indicators and Environment Plan Report is being integrated with and released as part of the Annual Report. Sydney Water advised that the Annual Report would not be available until after 31 October 2003.</p> <p>Sydney Water reported on its overall performance against all 29 ESD indicators.</p> <p>Performance is very high with little scope for improvement for some ESD indicators such as: 100% of captured biosolids were recycled from treatment plants, indicating trade waste issues have been resolved; there were no Tier 1, 2 or 3 penalties under the <i>Protection of the Environment Operations Act 1997</i>; and the Moveable Heritage Policy and Procedures Manual was completed.</p> <p>Performance in relation to other ESD indicators shows improvement is being made, such as: Environmental Management System / Environmental Impact Assessment procedures have been developed; a 56% reduction in phosphorus discharged and a 28% reduction in nitrogen discharged from inland STPs in the Hawkesbury Nepean Catchment in 2002/03; the number of trade waste agreements continues to increase; recycling of wastes (non-process, primarily from capital works projects) increased to 69%; and increased customer satisfaction with both water and sewerage services.</p> <p>Sydney Water's performance decreased against some key ESD indicators from previous years, for example: total energy consumption increased 2.2%; water consumption per</p>



Table 9.1 Environment: Indicators and Plans – Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>person per day slightly increased to 416 L despite voluntary water restrictions; noise complaints increased by 62.8% from the 2001/02 period; operating cost per property increased to \$382 (up 10%); oil and grease discharged increased by 2.2% (from 10,371 tonnes per year in 2001/02 to 10,601 tonnes/year in 2002/03); unaccounted for water was 13.2%; odour complaints increased 6% and dry weather sewage overflows increased 24% with a small increase in customers properties affected by overflows.</p> <p>Performance against some ESD indicators remained low. Only 13.5% of items on the State Heritage Register were managed in accordance with Conservation Management Plans, however, it is noted that significant effort is being made to remedy this.</p>
(k)	Compliance by Sydney Water with the Environment Plan under clause 9.3	No requirement	<p>The 2000-2005 Environment Plan identifies the actions proposed by Sydney Water to minimise adverse effects on the environment whilst performing its important environmental and public health functions. The Environment Plan addresses the issues required under Clause 9.3 of the Operating Licence. Sydney Water achieved 'High compliance' for meeting these requirements.</p> <p>Sydney Water's progress in meeting the targets and timeframes of the Environment Plan is detailed in the <i>ESD Indicators and Environment Plan Report 2003</i>. The Report describes the progress against the 10 objectives in the Environment Plan.</p> <p>Many of the targets in the Environment Plan were developed without a specific deadline. It has been assumed that the timeframe for these targets would be the end of the plan's operating period, that is, at the end of 2005. Therefore compliance with many of the targets was not determined in this reporting period.</p> <p>However, it is evident that Sydney Water has made progress in meeting the targets. For the targets that were to be achieved in the 2002/2003 reporting period, Sydney Water met most of these milestones. Areas that require particular attention are demand management and energy use where Sydney Water is not meeting its targets.</p> <p>For targets with an achievement date in future audit periods and at the end of 2005, Sydney Water had predominantly established the frameworks for achieving the targets.</p> <p>Refer to Appendix I for further detail on performance.</p>
(l)	Compliance by Sydney Water with the targets in the	No requirement	Refer to Clause 9.4.2.



Table 9.1 Environment: Indicators and Plans – Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
	Energy Management Policy for energy consumption of buildings in clause 9.4.2		
(m)	Compliance by Sydney Water with the Botany Wetlands Plan under clause 9.5	No requirement	Sydney Water was assessed as high compliance in implementing the Plan of Management. Sydney Water continued its active implementation across a range of program areas, including the surveillance and monitoring of blue-green algae, and weed and pollution management. However, implementation of some programs (for example, Landscape and Visual and Land Management) have not been actioned, despite the Plan being in its seventh year. The Plan is being implemented almost solely by Sydney Water and not <i>"in conjunction with other appropriate persons"</i> . Plan review continues to be limited and is unlikely to be complete prior to the required date (nominally January 2004).
(n)	Compliance by Sydney Water with the trade waste objectives and performance indicators under clause 9.7	No requirement	Progress in achieving trade waste objectives and performance indicators was reported in <i>Sydney Water's Trade Waste Objectives and Performance Indicators Report 2003</i> (TWOIR), produced in August 2002. See Clause 9.7.2.

Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
9.1	Environmental Indicators		
9.1.1	Sydney Water must monitor and compile data on indicators of the direct impact of its activities on the environment, whether such activities are carried out by or on behalf of Sydney Water, in accordance with section 14(1)(d) of the Act.	High compliance	Sydney Water monitors and compiles data for 6 major activities that are monitored through 16 groups of environmental indicators and a total of 154 different analytes as part of the monitoring for environmental indicators. Tens of thousands of data points are presented in the <i>Environmental Indicators Compliance Report</i> (EICR) 2003 for over 1,000 separate sets of data. The auditor acknowledges that the interpretation and documentation of these data requires a considerable effort for somewhat undefined benefits. Volume 1 of the EICR 2003 contains summarised data and interpretation, and Volumes 2



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>and 3 contain the large quantity of statistically analysed data in tabular and graphical forms. An 'independent' consultant was commissioned to verify the data presented in the EICR. A high level of accuracy with only a small number of errors (which have been corrected prior to finalisation of the report) was confirmed and data trails were easily identifiable, traceable and verifiable. This result reflects the use of Effluent Knowledge and Management System (EKAMS) for the audit year.</p> <p>Sydney Water has prepared an <i>Environmental Indicators Monitoring Program Methods Report</i> that outlines the "methodology for collection, analysis and storage of data collected for Sydney Water's Environmental Indicators Monitoring Program". This document contributes to the soundness of the data acquired. It has been updated for 2003 including revised monitoring regimes for Bondi STP, more details on parameters used for the Pollution Reduction Targets and detection limits have been removed.</p> <p>Sydney Water also prepared the <i>Environmental Indicators Monitoring Program</i> (EIMP), published on 31 December 1995. This document details a "final" list of indicators and Sydney Water's interpretation of the monitoring to be undertaken. This document is the main tool used for guidance on monitoring environmental indicators and is referred to as the "Grey Book" or "internal review". Recommendations in the EIMP to not monitor for some Environmental Indicators were not reflected in the subsequent revision of the Operating Licence; thus Sydney Water continues to be in non-compliance with those monitoring requirements.</p> <p>The <i>Process for Compiling the Environmental Indicators Compliance Report</i> describes the system for reporting on the indicators. This document was provided and examples of Performance Indicator Sheets relating to wastewater procedures were examined. The document is part of the quality system and demonstrates process and quality controls in place for data management.</p> <p>Sydney Water provided a copy of the <i>Inland and Ocean Waste Water Pollution Reduction Targets Report 2002/20003</i>, an annual report produced to meet requirements of the Environmental Protection Licences. This report also provides information on Schedule 10 chemicals that are required to be measured as part of the Environmental Indicators.</p> <p>Sydney Water is changing the monitoring program to be toxicity based and less labour intensive. Sydney Water is in the process of discussions with the Department of Environment and Conservation (DEC) (formerly the EPA) to include toxicity based reporting</p>



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>and to remove the requirements for Schedule 10 chemicals and the PRT reporting process from its Licences.</p> <p>The <i>Effluent Knowledge and Management System</i> (EKAMS) has been used for the audit period for recording monitoring data replacing the PIPES system. (All historical data will become available as part of EKAMS.) EKAMS helps ensure data quality and facilitates quality assurance.</p>
9.1.2	The environmental indicators used are to accord with those published in the Governmental Gazette on 15 December 1995, except for those indicators solely applicable to the Sydney Catchment Authority (SCA).	High compliance	<p>A copy of the gazetted indicators was provided by Sydney Water. Reporting of the indicators is based on these gazetted indicators (see clause 9.1.1).</p> <p>It is noted, however, that some of the indicators are not monitored and compiled. Sydney Water advised that some of the indicators were not monitored during this audit period as a consequence of the monitoring review processes guided by the 'Environmental Indicators Monitoring Program' (EIMP). A review of the indicator program was undertaken by the CSIRO (1997/1998) and the outcomes of the review were accepted by the EPA in November 1999. The review recommended against monitoring all indicators each year. It is noted that these outcomes were not included in the current Operating Licence issued in April 2000, hence Sydney Water is in breach of its Licence.</p> <p>Some environmental indicators were not monitored or compiled for the audit period (refer to Appendix H). Consequently Sydney Water has not reported environmental performance against these indicators, for example:</p> <ul style="list-style-type: none"> ▮ Schedule 10 chemicals (a suite of over 33 pollutants identified in the Act) for receiving water quality in rivers and streams have not been monitored and so these data have not been compiled for the audit period. ▮ Oil and grease from sewage effluent discharges to rivers and streams was not monitored for eight sites. It is noted that this is not part of the monitoring program according to the "internal review". Therefore data were not compiled and performance not reported. (The data were not required as part of the STS Licence and therefore no data are available or reported). ▮ For the Sewerage Reticulation System, the environmental indicators relating to Schedule 10 chemicals for discharge quality, water quality and sediment have not been monitored and data have not been compiled for the audit period.



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
9.1.3	Sydney Water must report on its performance in relation to the indicators compiled under Clause 9.1.1 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as a part of the Annual audit, by no later than 1 September each year,	High compliance	<p>The '<i>Environmental Indicator Compliance Report</i>' (EICR) 2003 is the document presented by Sydney Water to the Licence Regulator to meet this requirement. An 'independent' consultant has independently verified the validity of the data.</p> <p>A draft EICR 2003 report was provided by 29 August 2003.</p> <p>The final EICR 2003 was provided to the Licence Regulator on 29 September 2003. However, the final report was completed after the date of the Licence requirement (1 September 2003). Although Sydney Water had advised IPART earlier of the late submission of the final report, the Licence requirement is that the report must be submitted no later than 1 September each year.</p> <p>Sydney Water advised that the EICR will form part of its Annual Report (Triple Bottom Line report) which is due to be tabled in Parliament later in 2003.</p> <p>The EICR 2003 provides a satisfactory report on Sydney Water's performance for most gazetted environmental indicators. Improvements have been made to the report format since the 2001/02 report. Many gazetted indicators are reported to varying degrees in the key functional areas in Volume 1.</p> <p>The environmental indicators are identified early in the report with cross-referencing to identify the location of each indicator in the EICR.</p> <p>Refer to Appendix H for performance in relation to the indicators in 2002/03.</p>
9.1.4	The yearly report provided by Sydney Water must provide information which enables year to year comparison in relation to Sydney Water's performance in this area. In particular, Sydney Water is to use the indicators with historical annual values over at least the previous 10 years, where comparable data permits such a compilation.	High compliance	<p>Year to year Comparison</p> <p>Sydney Water has provided data that enables a year to year comparison of some of the indicators that were monitored. These data are presented in Volumes 2 and 3 of the EICR 2003 for most indicators and are generally summarised in Volume 1. The aggregated data shows trends in the environmental indicators in a database format. Statistically significant trends can be identified from Volumes 2 and 3. Appendix 1B of Volume 2 and Appendix 2B of Volume 3 provides a statement about the <i>Methodology behind trend bars</i> to assist the reader in interpreting the plots and therefore the trends from year to year.</p> <p>Volume 1 of the EICR presents the interpretation and discussion of the data, however, as previously noted, not all indicators are presented or discussed. There is only limited</p>



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>discussion of year to year comparisons and trends.</p> <p>Ten Years of Data, where comparable data permits such a compilation</p> <p>Ten years of data were reported for the annual STP discharge volumes at Sydney coastal STPs, nutrients, grease and suspended solids at coastal STPs and beach water quality at Sydney beaches. Data for many of the environmental indicators have been presented for 10 years, whereas for some environmental indicators only a few years of data have been presented.</p> <p>According to Sydney Water, to maintain the integrity of monitoring data, the best comparable data is post 1994. The PIPES database was the data source from 1994 – 2001. Prior to this period, integrity of the data is questionable or has not been verified.</p> <p>Refer to Appendix H for where data for the previous 10 years are identified.</p>
9.1.5	<p>The yearly report is to be made available to the public by Sydney Water within 1 month after receipt by the Licence Regulator.</p> <p>Copies are to be made available from Sydney Water's offices on request free of charge and posted on Sydney Water's website on the internet for downloading by any person free of charge. A reasonable number of copies are to be made available from Sydney Water offices and lodged with environmental centres and public libraries in the Area of Operations</p>	High compliance	<p>EICR 2002</p> <p>The final EICR 2002 was submitted on 23 September 2002. As a result the report was required to be available to the public by the 23 October 2002 ie. one month after receipt by IPART. The EICR was posted to all Sydney Water Business Centres, numerous environment centres, public libraries and placed on the internet on 23 October 2002. The report is available free of charge to the public.</p> <p>EICR 2003</p> <p>The final EICR 2003 was submitted on 29 September 2003. As a result the report was required to be available to the public by the 29 October 2003 ie. one month after receipt by IPART. However, due to the EICR 2003 report forming part of the Annual Report, the EICR will not be publicly released until the Annual Report is released.</p> <p>Sydney Water advised that the EICR will be distributed to all Sydney Water Business Centres, numerous environment centres, public libraries and placed on the internet following release of the Annual Report later in 2003. The report will available free of charge to the public.</p>
9.1.6	The environmental indicators in clause 9.1.2 are to be reviewed as part of the End of Term review	No requirement	Recommendations from third party reviews have suggested that monitoring of a number of environment indicators is not necessary. However, the monitoring of the environment



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>indicators is required by the Licence and this cannot be amended by an internal review. Formal amendments to the Licence are required.</p> <p>The monitoring of environmental indicators needs to be reviewed and amended, together with the ESD Indicators, to rationalise monitoring, reporting and performance measurements for key performance indicators. Changes recommended by the EPA and CSIRO from independent reviews in 1997/98 should be considered as part of the review process. The reason for and desired outcomes from the monitoring program should be reviewed for the new Operating Licence due at the end of 2004.</p>
9.2	Ecologically Sustainable Development (ESD) Indicators		
9.2.1	Sydney Water must develop measures to indicate the degree to which its activities and services comply with the principles of ESD.	No requirement	Full compliance in 2000/01 audit period
9.2.2	<p>Sydney Water must develop a draft list of ESD Indicators within 1 month after the Commencement Date (12/4/00).</p> <p>The draft list must have regard to:</p> <ul style="list-style-type: none"> a) Corporate management (including corporate policy and planning, and corporate asset management) b) Management of the system c) The planning, design & construction of: <ul style="list-style-type: none"> i) New Systems; ii) The upgrading of existing Systems; and iii) Depots. 	No requirement	Full compliance in 2000/01 audit period
9.2.3	The draft list developed by Sydney water must undergo public consultation where the public has at least 20 days to provide their comments.	No requirement	Full compliance in 2000/01 audit period.



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
	Specific comments must also be invited from the EPA, DLWC, NPWS, NSW Fisheries, SEDA and peak environment non-governmental organisations.		
9.2.4	Sydney Water must present a final list of ESD Indicators to the Minister for approval, and if approved, for publication in the Gazette, within three months of the close of submissions, following public consultation under clause 9.2.3	No requirement	Full compliance in 2000/01 audit period. Sydney Water provided a copy of the relevant gazette (NSW Government Gazette No. 81, 30 June 2000)
9.2.5	Sydney Water must commence monitoring and compiling data on the ESD Indicators from the later of the Commencement Date (12 April 2000) and 1 July 2000	No requirement	Full compliance in 2000/01 audit period for the commencement of monitoring and compiling data. The ESD findings are reported in the ESD Indicators and Environment Plan 2003. Sydney Water commissioned an 'independent' consultant to verify the data and content of the report.
9.2.6	Sydney Water must report to the Licence Regulator on its performance in relation to the ESD indicators compiled under clause 9.2.4 for the previous 12 months, by no later than 1 September each year, to enable the Licence Regulator to consider and report on the matter as a part of the Annual audit	High compliance	<p>Reporting 2001/02</p> <p>The due date for the report in relation to ESD indicators for the 2001/2002 period falls within this audit period. The final <i>Towards Sustainability Report 2002</i> (TSR) was provided to the Licence Regulator on 23 September 2002. A copy of a letter from Sydney Water to IPART dated 23 September 2002 was provided to verify this. However, the final report was completed after the date of the Licence requirement (1 September 2002).</p> <p>Reporting 2002/03</p> <p>For the 2002/2003 audit period, Sydney Water submitted to IPART a copy of Folios of Progress that deal with the ESD Indicators. Folios of Progress is an internal document system submitted for tracking compliance with the requirements of the Operating Licence. The Folios were submitted to IPART on 1 September 2003 to meet the requirement of the Licence.</p> <p>Sydney Water suggested that the Folios represent the report required under the Licence provisions. It is the auditor's opinion that the Folios fall short of the report quality that Sydney Water has provided in previous years. The ESD Indicators are cross-referenced in numerous folios addressing several topics and the folio number indicated the ESD or</p>



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>environment target addressed in each folio.</p> <p>Sydney Water advised the auditor that the <i>ESD Indicators and Environment Plan Report 2002/03</i> had been drafted. This document reports on performance against the ESD Indicators and Environment Plan. The auditor formally requested a copy of the Report because of its usefulness to the Audit and this was provided on 14 October 2003.</p> <p>Sydney Water advised that the final <i>ESD Indicators and Environment Plan Report 2002/03</i> would be included in the Annual Report, as part of a <i>triple bottom line</i> reporting initiative. The Annual Report will be available after 31 October 2003.</p> <p>Sydney Water has therefore not complied with the full requirements of the Licence but has put in place processes to comply as far as possible within the reporting constraints imposed by other statutory requirements.</p> <p>The draft <i>ESD Indicators and Environment Plan Report 2002/03</i> has been presented in a logical and clear manner and is written in plain English. All twenty-nine ESD indicators have been reported. Data for the previous 12 months, in addition to results prior to the 2002/03 audit period, are reported. Performance in relation to the indicators over the last 12 months has been clearly stated.</p> <p>Overall, Sydney Water's performance relating to ESD indicators is diverse. Refer to the performance summary at Clause 10.2.1 (j) above:</p>
9.2.7	<p>The yearly report provided under Clause 9.2.6 is to be made available by Sydney Water to the public within 1 month after receipt by the Licence Regulator.</p> <p>Copies are to be made available from Sydney Water offices and lodged with environmental centres and public libraries in the Area of Operations</p>	High compliance	<p>Reporting 2001/02</p> <p>The final Towards Sustainability Report 2002 (TSR) was completed on 23 September 2002. As a result the report was required to be available to the public by the 23 October 2002 (ie. one month after receipt by IPART). The TSR was distributed to all Sydney Water Business Centres, numerous environment centres, all public libraries and placed on the internet on 23 October 2002. The report is available free of charge to the public.</p> <p>Reporting 2002/03</p> <p>Sydney Water advised that the final <i>ESD Indicators and Environment Plan Report 2002/03</i> would be included in the Annual Report, as part of a <i>triple bottom line</i> reporting initiative. The Annual Report will be available when it has been tabled in Parliament after 31 October 2003. Sydney Water was not able to advise when the Licence Regulator would receive the</p>



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
			report or when the report would be available to the public. Sydney Water advised that the Annual Report will be available in all Sydney Water Business Centres, numerous environment centres, all public libraries and placed on the internet. The report will be free of charge to the public.
9.2.8	The ESD indicators in clause 9.2.4 are to be reviewed as part of the End of term review (1 January 2004)	No requirement	ESD Indicators and environmental indicators need to be reviewed and rationalised to reflect key performance areas and provide an informative measure of Sydney Water's environmental performance. See earlier comments at clause 9.1.6.
9.3	Environment Plan		
9.3.1	Sydney Water must produce a five year Environment Plan by the later of the Commencement Date (12 April 2000) and 30 September 2000. After that Sydney Water must produce further five year Environment Plans every 5 years	No requirement	Audited in 2000/01 audit period and received full compliance.
9.3.2	Sydney Water must engage in public consultation in developing the Environment Plan	No requirement	Audited in 2000/01 audit period and received full compliance.
9.3.3	The Environment Plan must:	No requirement	Audited in 2000/01 audit period and received full compliance.
9.3.3(a)	Contain details of Sydney Water's water, waste water and stormwater strategies, as well as the environmental aspects of its other activities such as waste minimisation and heritage	No requirement	Audited in 2000/01 audit period and received full compliance.
9.3.3(b)	Endorse ESD principles	No requirement	Audited in 2000/01 audit period and received full compliance.
9.3.3(c)	Be recognised in Sydney Water's business plans	High compliance	A summary sheet for each of the Divisional Business Plans for 2002/03 was provided. The 10 objectives of the Environment Plan could be related to each Business Plan, but it was not possible to confirm whether each target was recognised and had funding allocated to achieve it.
9.3.4	The Environment Plan must set targets and timetables	No requirement	Audited in 2000/01 audit period and received full compliance.



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
	for compliance by Sydney Water with those targets set over the term of the Environment Plan. These targets must utilise the environmental and ESD indicators in clauses 9.1 and 9.2 and also the targets and indicators in clauses 9.6 and 9.7		
9.3.5	The Environment Plan must be posted on Sydney Water's website on the internet for downloading free of charge, made available at its premises for access or collection by any member of the public and lodged with environmental centres and public libraries in the Area of Operations, in each case also free of charge	No requirement	Audited in 2000/01 audit period and received full compliance.
9.3.6	The report detailing Sydney Water's progress in meeting the Environment Plan, and in particular, in complying with the targets and timetables in clause 9.3.4 are to be compiled on a yearly basis. Within 1 month of its completion, the report must be posted on Sydney Water's website on the internet for downloading free of charge, made available at its premises for access or collection by any member of the public and lodged with environmental centres and public libraries in the Area of Operation, in each case also free of charge	Full compliance	The 2000-2005 Environment Plan identifies how Sydney Water will minimise adverse effects on the environment whilst performing its important service delivery functions. The Environment Plan describes the progress against the 10 Environment Plan Objectives (Objectives 1 to 10 in the Towards Sustainability Report 2002). For the year 2001/02, the report was submitted to IPART on 23 September 2002 and was made publicly available at Sydney Water premises and on their website. Sydney Water advised the auditor that the <i>ESD Indicators and Environment Plan Report 2002/03</i> had been drafted but declined to make a copy available. This document reports on performance against the ESD Indicators and Environment Plan. The auditor formally requested a copy of the draft Report because of its usefulness to the Audit and a copy was made available on 14 October 2003. Sydney Water advised that the final <i>ESD Indicators and Environment Plan Report 2002/03</i> would be included in the Annual Report, as part of a <i>triple bottom line</i> reporting initiative. The Annual Report will be available after 31 October 2003. Performance against the Objectives of the Environment Plan is detailed in Appendix I. Objectives, actions and targets listed in the plan are to be completed by 2005 or sooner if a date is specified (refer to Appendix I). The end of the Environment Plan period is the end of 2005. Therefore compliance with many of the targets was not determined in this reporting



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
			period. However, it is evident that Sydney Water has made progress in meeting the targets. For the targets that were to be achieved in the 2002/2003 reporting period, Sydney Water met most of these milestones. For targets with an achievement date in future audit periods and at the end of 2005, Sydney Water had predominantly established the frameworks for achieving the targets, however, a significant improvement is required in some areas – especially demand management and energy usage.
9.3.7	Amendments may only be made to the Environment Plan following public consultation	No requirement	<p>No amendments to the Environment Plan were made within the audit period.</p> <p>The length of the Environment Plan's operating period (5 years) and the time consuming processes required to make amendments to the Environment Plan reduce the usefulness of the Plan. Over a period of 5 years, environmental issues and priorities can change significantly. Sydney Water's Operating Licence sets the operating period for the Environment Plan at five years and requires that extensive community consultation be undertaken if changes to the plan are to be made. As environmental and operational issues have changed since the development of the Environment Plan, the cost and time required for the necessary community consultation to amend it, is a barrier to keeping it relevant and contemporary. As a result, the Environment Plan may not be adequately aligned with the corporations other business plans, nor may it adequately reflect changes to Sydney Water's priorities and achievements.</p>
9.4	Energy Management		
9.4.1	In this clause Energy Management Policy means the energy management policy of the NSW Government released by the NSW Department of Energy (now the Ministry of Energy and Utilities) in 1998 and updated from time to time.	No requirement	Definition
9.4.2	<p>Sydney Water must adopt the following targets in the Energy Management Policy for energy consumption of buildings:</p> <p>(a) 15% reduction from the 1995 level by 2001</p> <p>(b) 25% reduction from the 1995 level by 2005</p>	No requirement	<p>No requirement this audit period. The 15% reduction from the 1995 level by 2001 was met in the previous audit period and compliance against the 25% target is not due until 2005.</p> <p>During the audit period, Sydney Water demonstrated a further reduction in energy consumption for buildings and currently stands at 18% reduction of consumption from the 1995/96 levels. Sydney Water arranged for an 'independent' review of the Stark EA Energy Information Database prior to the production of the 2002-2003 Annual Energy</p>



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
	(c) Any subsequent targets set by the Energy Management Policy		<p>Consumption and GEMP report. It was concluded, "...the energy database contains accurate data, and produces output reports that reflect the energy consumption of the Sydney Water assets".</p> <p>In December 2002, Sydney Water entered into a long term energy partnership with two private companies. The objective of the partnership is to identify opportunities for (and implement of) consumption reduction and co-generation. Sydney Water also produced an Interim Energy Management Plan - 20 March 2003 (IEMP) that outlines actions towards meeting the 2005 target (for buildings).</p> <p>Sydney Water has demonstrated implementation of a number of actions in the IEMP by commissioning an energy consumption review. A draft report (Energy Review: GEMP Properties June 2003, Ref: J105256) was produced in June 2003. The report outlines energy saving initiatives for buildings that exceed the 2005 target. At this stage, Sydney Water has endorsed the following energy saving initiatives in the draft report:</p> <ul style="list-style-type: none"> ▀ The retrofitting of lighting in head office; ▀ Upgrades of the building managements systems by 2004/05 financial year; and ▀ The current plan to move head office to Parramatta is scheduled for 2006. <p>The Government Energy Management Policy has set no other targets.</p>
9.4.3	By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its performance in relation to clause 9.4.2 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.	Full compliance	Sydney Water's Operating Licence Compliance Report and covering letter were sent to IPART on 30 August 2003.
9.5	Botany Wetlands	No requirement	
9.5.1	Botany Wetlands Plan means the plan of management (POM) for the area known as Botany Wetlands, issued by Sydney Water in December 1997.	No requirement	<p>The POM (1997) outlines actions to be undertaken and delegated responsibilities to members of Botany Wetlands Environmental Steering Committee (BWESC).</p> <p>The POM was last formally reviewed by Sydney Water in February 2000, though operational performance is reviewed annually (see Clause 9.5.4). Sydney Water had called for a proposal to review the plan, however the brief had not been finalised by the end of the</p>



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
			operating year.
9.5.2	Sydney Water is to implement the Botany Wetlands Plan in conjunction with other appropriate persons	High compliance	<p>A review of information (eg. <i>“Botany Wetlands – Removal of European Carp from Ponds 5 and 6 (2002-03)”</i> and <i>Implementation of Botany Wetlands Plan of Management – Summary Report 2002-03</i>) demonstrated an active program of implementation, monitoring and reporting.</p> <p>Sydney Water has demonstrated implementation across a range of program areas, including sediment and gross pollution management, monitoring of blue-green algae, integrated weed management and removal of European Carp from ponds 4 and 5. The above indicated, in a budgetary and planning sense, the preparedness of Sydney Water to resource the implementation programs of the Plan of Management.</p> <p>Preparation (though in draft form) of the 2002/03 performance reports on Sydney Water activities were sighted by the auditor, including, for example, for European Carp removal, Blue-Green Algae, Ecological Assessment and Weed Management.</p> <p>Reasons for a high rather than full compliance included the following:</p> <p>The Act requires implementation <i>in conjunction with other appropriate persons</i>. To this end, a Botany Wetlands Environmental Management Steering Committee (BWEMSC) was established to review the Plan of Management each twelve to eighteen months or as needed and to discuss new programs and bids for the following financial year. For the second year the Committee has not met and has appeared to have lost momentum. Despite this situation, Sydney Water continues to effectively implement the Plan, through its own resources and direction. Yet this implementation is not being undertaken <i>“in conjunction with other appropriate persons”</i>.</p> <p>Sydney Water reports its performance through an <i>“Implementation of Botany Wetlands Plan of Management – Summary Report 2002 – 2003”</i> as well as a more detailed individual report. Good performance is achieved on long standing programs and has prompted Sydney Water to nominate the Botany Wetlands for an <i>Environment Award</i> under the Premiers Public Sector Awards program. However, some (such as <i>Landscape and Visual</i>) have not been implemented over the seven year life of the Plan of Management. If such programs are not relevant then the Plan should be duly updated.</p>
9.5.3	By no later than 1 September each year, Sydney Water	Full compliance	<i>The Implementation of Botany Wetlands Plan of Management – Summary Report</i>



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
	must report to the Licence Regulator on its compliance with the Botany Wetlands Plan for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit		2002/2003 dated August 2002 was sighted, as was the covering letter to IPART dated 29 August 2002. The report and covering letter were reviewed.
9.5.4	Prior to the commencement of the End of term review, Sydney Water must review the Botany Wetlands Plan in consultation with EPA, the Department of Land and Water Conservation, National Parks and Wildlife, and peak environmental non-governmental organisations for the purpose of advising the Minister whether any amendments are required to the Plan	No requirement	<p>Sydney Water has a requirement to complete a review of the Plan prior to the commencement of the end of term review, nominally January 2004.</p> <p>The 2001/02 audit recommended this review commence earlier in recognition of the age of the Plan itself (with its roots reflecting community views of some 10 – 15 years ago). A proposal has been called for by Sydney Water however, as at October 2003, it remained a proposal. The remaining time (two-three months) to complete a comprehensive review of the Plan, and to do so <i>in conjunction with other appropriate persons</i> involving members of the BWEMS Committee and public, is questioned. Whilst the proposal focuses on an ecological review, it is of equal importance to review the plan's ability to engage stakeholders and <i>"other appropriate persons"</i> as required by the Operating Licence.</p> <p>Also the inability to hold BWEMS committee meetings has meant that the proposed role of the steering committee in reviewing and redirecting implementation has not been effective (despite Sydney Water's efforts in this regard).</p>
9.7	Trade Waste		
9.7.1	Sydney Water must prepare a trade waste policy and management plan, which must include trade waste water objectives and performance indicators. Sydney Water must ensure that the process of preparing the trade waste policy and management plan includes public consultation in accordance with clause 1.2.2 on a discussion paper before the plan is finalised	No requirement	Sydney Water complied with this requirement in the previous audit period.
9.7.2	By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its progress in satisfying the objectives and indicators under clause 9.7.1 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part	Full compliance	An annual report on Trade Waste Objectives and Performance Indicators (dated August 2003) prepared by Sydney Water was sighted. This report identifies progress against each of the seven trade waste objectives, and performance indicators, and is comprehensive and relatively concise.



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
	of the Annual audit		
	Objective 1: Protect receiving waters from toxic substances originating from trade waste discharges	Full compliance	<p>The EPA identified three key pollutants for pollution reduction targets to protect waters from toxic substances. The EPA set numerical targets for total residual chlorine, unionised hydrogen sulphide and chlorpyrifos for each of the ocean, inland and Georges River Sewage Treatment Plants.</p> <p>Sydney Water reported that numerical targets relating to total residual chlorine and unionised hydrogen sulphide were achieved by changes to treatment processes. These concentrations were not directly related to trade waste discharges.</p> <p>Sydney Water reported that targets for chlorpyrifos for 2002/03 were achieved a (significant reduction from the 2001/02 period) through a combination of education of residential and commercial customers, and through trade waste policies (not accepting chlorpyrifos in trade waste streams) for industrial customers.</p>
	Objective 2: Assist Sydney Water to meet relevant environmental, Public Health and other regulations and pollution reduction targets	Full compliance	<p>EPA has set threshold limits for substances at each sewerage treatment plant (STP) as part of the Pollution Reduction Targets. Results are monitored in three different ways:</p> <p>(a) Individual sample concentrations are compared with a value equal to 10 times the published threshold. Sydney Water's STPs have had a number of exceedences, of the 10 times threshold, for free chlorine residual, iron, nitrate, chloramines, aluminium and manganese. These exceedences were attributable to operations of the STPs including overdosing of iron or alum and incomplete dechlorination, and not directly attributable to trade waste.</p> <p>(b) Annual mean concentrations are compared with the threshold concentrations. A number of substances were identified as showing significant exceedences in median concentration with the threshold concentrations. These include chloramine, chorine, ammonia, nitrates, nonylphenol ethoxylates, cobalt, chloride and nitrogen oxides. These exceedences were predominantly attributable to operations of the STPs and not directly attributable to trade waste with the exception of:</p> <ul style="list-style-type: none"> Trade waste from a contracting packaging business in the Warriewood catchment contains nonylphenol ethoxylates. Various pre-treatment upgrades are in progress; and



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> An unidentified catchment source of cobalt in the Castle Hill catchment where investigations are continuing. <p>(c) Annual load for organochlorine pesticides and metals is compared with a schedule of loads that will be included in future EPA Licences after a full year of monitoring data are collected.</p>
	Objective 3: Assist Sydney Water sewage processing operations to produce a guaranteed quality of water and biosolids	Full compliance	<p>Performance indicator 1 is to meet agreed quality specifications for achievement of corporate targets for biosolids reuse (90%). During the 2001-2002 reporting period, 100% of biosolids were suitable for re-use. Total production of biosolids for 2002/03 was 43,926 dry tonnes of cake.</p> <p>Performance indicator 2 is to meet agreed quality requirements for implemented reuse water schemes. During this reporting period, only reused water distributed within the Rouse Hill catchment had quality specifications in relation to trade waste contaminants. The Rouse Hill effluent quality complies with all chemical quality requirements of the Guidelines that may be attributable to trade waste sources with the exception of nitrate and total dissolved solids (TDS).</p> <p>The nitrate limit was exceeded immediately prior to commissioning of a second bioreactor. This was predominantly due to a sewage treatment issue rather than a trade waste issue. The second bioreactor is likely to maintain nitrate below the limit. Sydney Water is managing high TDS by close monitoring and dilution with potable water when TDS exceeds the limit and advising residents to select salt tolerant plants for their gardens. It is further noted the 2001 Trade Waste Policy and Management Plan has introduced an acceptance standard for TDS and a mechanism for defining catchment and site specific mass limits for TDS from trade waste sources.</p>
	Objective 4: Protect the health and safety of all people working in the sewerage system by applying strict standards for harmful substances	Full compliance	The performance indicator for this is the number of injuries or lost time for sewerage system workers due to substances attributable to trade waste sources. Although a few injuries occurred, none were attributable to trade waste sources.
	Objective 5: To protect the system and the plants from damage due to harmful substances from Trade Waste (TW) sources	Full compliance	The performance indicator is trade waste agreements in place restricting the discharge of substances that may damage sewerage system assets. These substances include: flammable/explosive substances; acids and sulphur compounds in combination with a source of oxygen demand, measured as BOD and temperature.



Table 9.2 Environment: Indicators and Plans – Part 9 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>Sydney Water is continuing to control these substances through trade waste agreements. It is also undertaking further investigations/trials/studies in identifying the actual impacts these substances have on the sewers and tools for controlling the impacts: including:</p> <ul style="list-style-type: none"> ▶ Creating a new trade waste category called volatile organic compounds; ▶ Managing the impacts of minimal dilution (due to the absence of residential customers) in the Smithfield Carrier; ▶ Introducing chemical methods of controlling the impact of sulphur compounds; ▶ Improved measures for oxygen demand; and ▶ The impact of temperature on oxygen demand.
	Objective 6: Encourage waste minimisation and cleaner production in the commercial and industrial sectors	Full compliance	<p>Incentive pricing is used to manage waste waters at source. Sample concentrations higher than the published 'Standards for Acceptance' attract a penalty of double the dollar rate per kilogram. Customers are encouraged to adopt cleaner production processes in order to increase the margins between discharged concentrations and the 'Standards for Acceptance', and thereby avoid such penalties. Trade waste inspectors consider waste minimisation and cleaner production when visiting customers. Sydney Water has developed fact sheets on waste minimisation and cleaner production including the following:</p> <ul style="list-style-type: none"> ▶ Managing Trade Waste in the Motor Vehicle Industry (Sydney Water Feb 2003); and ▶ Managing Trade Waste in the Food Industry (Sydney Water Feb 2003). <p>Sydney Water did not undertake a trade waste customer survey during this audit period hence any change to customer attitudes since the previous survey in 2001 could not be determined.</p> <p>For this audit period however, all parameters with the exception of cadmium and lead, compared similarly to 2001/02. For zinc and grease, invoiced mass was greater than or comparable to invoiced mass for 1997/98. Sydney Water attributes the increase in invoiced mass to more agreements being put in place.</p>
	Objective 7: Encourage and enable further water conservation	Full compliance	<p>The performance indicator for this requirement is Trade Waste Agreements in place, enabling reduction of total water consumption as a result of the mass based policy.</p>



Table 9.2 **Environment: Indicators and Plans – Part 9 Licence clauses**

Clause	Requirement	Compliance	Findings
			<p>Following observations by industry that the emphasis on tight concentration limits was a disincentive to water conservation, concentrations expressed in the 'Acceptance Standards' have been raised for some pollutants.</p> <p>Sydney Water has also developed diagnostic tools such as <i>One to Five Water</i>, to assist industry manage water. Sydney Water has developed fact sheets and flyers relating to water conservation efforts and success stories and produces "<i>The Conserver</i>" a quarterly Every Drop Counts Business bulletin.</p> <p>Compared to the baseline year (2000/01), water usage per trade waste property has been marginally reduced by 1.1% and after adjustment for economic activity, an overall reduction of 8% has occurred compared to the baseline year.</p>

9.4 Discussion

9.4.1 Environmental indicators

It is evident that the collation and reporting of data for environmental indicators involves extensive effort by Sydney Water. Sydney Water is required to monitor and report its performance against various indicators: including Environmental Indicators required by Section 14(1)(d) of the Act; ESD Indicators by Clause 9.2 of the Licence; and chemicals in sewage discharges (Schedule 10 substances) required by Section 23 of the Act. The current usefulness and the benefits of collecting so much data needs to be reviewed.

In relation to ESD indicators, Sydney Water drafted a comprehensive and clear report that addressed technical issues and is considered to be understandable by the lay reader. The report was in draft form at the time of the audit in October 2003.

Further attention is required to help ensure Sydney Water's reporting of performance against the Environmental Indicators can be understood in a clear and meaningful manner. Specific, clearer interpretation or discussion on performance in relation to Volumes 2 and 3 of the EICR would enable a lay reader to understand the environmental performance of Sydney Water and the trends in environmental performance over the past decade.

9.4.2 Botany wetlands

Sydney Water continues to apply significant resources to implement the Management Plan for the Botany Wetlands. The wetlands have improved markedly in a number of environment parameters, viz: ecological stability and water quality outcomes over the last six years. Sydney Water is to be congratulated for its continuing commitment of resources and the improvements achieved. However, the *Botany Wetlands Plan of Management* has aged considerably and is in need of review and update to guide future management direction, priorities and funding. This update is a requirement during the current Operating Licence. A number of the other specific Plan programs (viz: *Landscape* and *Land Management*) have either not or only partially commenced. Sydney Water considers these programs to be a low priority.

Recognising the age of the plan, the lack of public review for over a decade, and that the Botany Wetlands Environmental Steering Committee appears largely defunct (not having met for two years), it was a recommendation of the previous years audit to undertake a review of the Plan of Management. Such a review was not forthcoming in 2002/03.

As such it is considered timely to review the Plan of Management so as to direct future resources. During the 2001/02 audit Sydney Water indicated that a major review of the Plan should be conducted early in 2003. This timing has not been achieved and it is unlikely it will be completed prior to the End of Term review (nominally January 2004).

Notwithstanding that the Plan of Management has improved the coordination of adjacent land managers (for example, through Environmental Management Plans for the three neighbouring golf courses), the implementation of the Plan is almost solely funded by, and dependent upon, Sydney Water's resources and decision making.

Whilst the Plan was prepared in December 1997, its roots can be traced back to 1993 with the production of an Environmental Management Plan for Botany Wetlands. This, in turn, reflected the social and community attitudes of the taskforce, which commenced in 1988. Thus the Plan of Management's roots are some 10 – 15 years old. The good performance of Sydney Water in the implementation of the Plan may have resulted in a degree of apathy from adjacent land holders in that Sydney Water is "doing a good job". Yet the Operating Licence requires Sydney Water to implement the Plan of Management "*in conjunction with other appropriate persons*" and it is with this latter point that the greatest opportunities are available to Sydney Water. The opportunities contained in last year's audit continue to apply, however the time available to complete the review "*prior to commencement of the End of Term Review*" (nominally 1 January 2004) is limited. Suggested programs and issues to update the Plan of Management include:

1. initiating a review of the Plan of Management;
2. establishing a process, timetable and resources to undertake the review;
3. seeking to link the management of the lagoon with other water and land resource infrastructure (viz: catchment management committee's and related Council programs);
4. adopting and formally reporting on *Key Performance Indicators* and applying qualitative as well as quantitative assessment of rates of implementation and achievements; and
5. using the review to reinvigorate participation from adjacent land holders and current BWEMSC members;
6. advertising for other groups to participate in the reinvigorated BWEMSC;
7. seeking to leverage Sydney Water financial and resource inputs through broader programs of the NSW and Federal Governments to increase funds for programs which have not received funding over the last five years, for example *Land Management, Landscape and Visual and Operation and Maintenance* categories; and
8. advising the community through Sydney Water's website and advertisements of the opportunity to comment on and contribute to the review of the Plan.

9.5 Factors affecting compliance

No extraordinary events or factors affected compliance for environmental indicators, ESD indicators and the Environment Plan or Botany Wetlands. As described in the compliance table, the preparation of a new style Annual Report that includes the performance reporting against the ESD Indicators and Environment Plan for 2002/03 resulted in a delay to the finalisation and the public release of these reports.



9.6 Recommendations

9.6.1 Key recommendations

It is recommended that Sydney Water:

- R9.1 Improves the format and presentation of its reporting on Environmental Indicators to more clearly demonstrate performance against each environmental indicator.
- R9.2 Implements programs to improve in areas where environmental and ESD indicators show poor or decreasing performance (especially demand management, energy use, heritage and greenhouse gas emissions) or where progress indicates future targets are unlikely to be met (such as reduced water consumption).
- R9.3 Reviews the Botany Wetland Plan of Management, recognising it is now in its seventh year of operation, prior to the End of Term review (nominally January, 2004) and includes participation of wider interests so as to reinvigorate, or replace, the Botany Wetlands Environmental Management Steering Committee.

9.6.2 Secondary recommendations

- R9.4 Sydney Water and IPART consider developing a more streamlined process for amendments to the Environment Plan.
- R9.5 The End of Term review of the Licence should include a rationalisation of environmental and ESD Indicators to better measure the performance of Sydney Water in key environmental areas.



10. Dispute resolution scheme

10.1 Summary of findings

Internal dispute resolution

Over this audit period Sydney Water provided the required complaints report (listing complaints received on a month by month basis and classified by suburb and the appropriate categories), which had overcome an area of low compliance in previous years. This report, together with the Systemic Complaints Report, demonstrated **Full compliance** with the information required by the Operating Licence.

While most areas relating to Internal Dispute Resolution obtained a **Full compliance** rating, those areas which were rated as **High compliance** can be upgraded through the provision of a more co-ordinated and documented skills assessment and training program on complaint handling and dispute resolution. Further refinement of the Emergency Contact Survey, and the reporting on complaints remaining unresolved for 50 days or more, have been recommended.

External Dispute resolution scheme

The Energy and Water Ombudsman NSW (EWON) scheme continues to be the mechanism adopted by Sydney Water as the means through which customers can obtain an independent review of their complaint. Sydney Water is in **Full compliance** with the requirement for the External Dispute Resolution Scheme.

Sydney Water is reliant on the activities of EWON to ensure Sydney Water's compliance with its Licence. It appears that Sydney Water may require more regular evaluation and reporting by EWON on a number of issues, such as efficiency, fairness and informality, all of which may vary from time to time. An annual report from EWON to Sydney Water addressing these issues may assist in assessing compliance.

Complaints to other bodies

The major issue to emerge is the classification of complaints to other bodies, specifically to Courts. Sydney Water has indicated that there are no complaints to Courts and tribunals. However, this conclusion appears to be using a limited interpretation of the clause, which Sydney Water believes only refers to complaints determined by Tribunals empowered to hear complaints about the provision of services by Sydney Water. This interpretation may have limited the provision of information relating to Court cases which are relevant to this clause but this has not been able to be verified.

Ministerial requirement

Sydney Water was assigned **Full compliance** in preparing or using complaint data to identify systematic or geographic problems.



10.2 Summary of requirements

Part 10 (Clause 10.2.1) of the Licence specifically requires the Auditor to report on:

- (o) the effectiveness of Sydney Water's internal dispute resolution scheme;
- (p) the effectiveness of Sydney Water's external dispute resolution scheme; and
- (q) complaints made to a Court or Tribunal.

These clauses refer to Part 12 of the Licence that sets the requirements for the Dispute Resolution Scheme adopted by Sydney Water. Specifically Part 12 includes:

12.1 - Internal dispute resolution process: This clause covers the process used by Sydney Water to receive, respond to and resolve complaints made by customers against Sydney Water.

12.2 - External dispute resolution process: If customers are unable to resolve complaints made to Sydney Water then a further process is in place to assist customers. The external dispute resolution scheme is therefore to be at arms length to the operations of Sydney Water.

12.3 - Complaints to other bodies: Customers may also lodge complaints with other bodies and these also need to be reported to the Licence Regulator.

As well as the dispute resolution process, a Ministerial requirement is also covered in this section, vis:

Ministerial Requirement 4: *"I require Sydney Water to prepare a comprehensive report which demonstrates the use of complaint data to identify problems of a systemic nature in specific geographical areas and the strategies used to overcome these problems. This report should be prepared using data gathered during the 2002 – 2003 Audit period, to allow it to be considered as part of next year's audit. I require delivery of this report to me and IPART by no later than 1 September 2003."*



10.3 Details of compliance

Table 10.1 Dispute Resolution Scheme – Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
10.2.1	The Licence Regulator or the person undertaking the Annual Audit must investigate and prepare a report on the following:	No requirement	
(o)	The effectiveness of Sydney Water's internal dispute resolution scheme under Clause 12.1	No requirement	This clause requires an assessment of "effectiveness" rather than "compliance". Concern had been expressed previously about the reporting of information against the requirements of the Licence. This year the appropriate reports have been provided and the matter is discussed below.
(p)	The effectiveness of Sydney Water's external dispute resolution scheme under Clause 12.2	No requirement	This clause requires an assessment of "effectiveness" rather than "compliance". The external dispute resolution scheme, based upon EWON, appears effective in dealing with complaints made by customers against Sydney Water. A report, prepared to summarise the outcomes of the complaints, provides a valuable overview and assessment of the scheme.
(q)	Complaints made against Sydney Water to a court or tribunal under clause 12.3	Insufficient information	Sydney Water indicated that there were no matters before a Court or tribunal. The Auditor asked specifically if there were any cases before any Court relating to the bushfires of 2001-02. At the interview, Sydney Water indicated to the Auditor that it was not aware of any such cases. Sydney Water has interpreted this clause to be limited to only complaints about the provision of water and sewer services to its customers. While Sydney Water acknowledges that there are other claims for damages that are covered under clause 7.5 of the Customer Contract and that they may involve common law court actions against Sydney Water, no details have been provided about these actions. However, because Sydney Water has judged that these claims are not associated with the provision of water or wastewater services it believes that they are not to be included as a customer complaints. This issue had not been canvassed at previous audits and was raised in the context of the reporting of any cases before the courts that may have resulted from activities associated with maintenance works of Sydney Water that may have been linked with bush fires.



Table 10.1 Dispute Resolution Scheme – Part 10 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>It would appear that Sydney Water's interpretation has limited their reporting. Part 12 of the Operating Licence concerns dispute resolution and any reporting should therefore relate to disputes associated with the overall operation of Sydney Water. As this is the only part of the Operating Licence where Sydney Water is required to report any disputes before a Court, it is recommended that Sydney Water be more comprehensive in its reporting under this clause.</p>



Table 10.2 Dispute Resolution Scheme – Part 12 Licence clauses

Clause	Requirement	Compliance	Findings
12.1	Internal Dispute Resolution Process		
12.1.1	Sydney Water must establish internal complaints handling procedures for receiving, responding to and resolving complaints by Customers and Consumers against Sydney Water	Full compliance	Procedures for collecting complaints and resolving these have been sighted. The physical settings and processes were observed at a previous audit at the Liverpool call centre. The reports provided show that Sydney Water is receiving, responding to and resolving complaints.
12.1.2	The internal complaints handling procedures of Sydney Water must be based on the Australian Standard AS4269-1995 Complaint Handling	High compliance	<p>Sydney Water presented the “<i>Customer Complaint Procedure</i>” document, which was current as of September 2003. This document was the same one that had been received previously dated November 2001. The only change appears to be the inclusion of a section on Business Continuity, which was made after the end of this audit period.</p> <p>Information was provided to the auditor on complaint awareness training. Such training was conducted in late June 2002 (and reported in the previous audit) which was also followed by further programs in August 2002 and another program in October 2003 (outside this audit period). A PowerPoint presentation titled “<i>Customer Service and Complaint Management</i>” was also provided as evidence. While lists of people that have received training were provided, it is difficult to put this training into context with regard to all the relevant staff who require training. It would appear that a more formalised training program and reporting system would be appropriate given the recommendations from the report prepared by Sydney Water in June 2001 titled “<i>Sydney Water Customer Complaints Policy and Procedure Review</i>”. Such a training report would need to be provided to obtain full compliance.</p> <p>As mentioned in last year’s audit, an important measure concerning achievement of the appropriate standard of complaint handling is the perceptions of the complainants themselves. The central mechanism that has been used to assess complainant satisfaction is the Emergency Contact Survey, which is conducted on a sample of complaints made through Works and Asset Management Service (WAMS) as service complaints. An interim report on the 2002-03 Emergency Contacts Survey was provided. (The final report is not available for this year’s audit). This report provided analysis on data collected from 30 September 2002 to 28 September 2003. Some of this period is outside the audit period. While this provides valuable information it does not cover all complaints and it does not ask questions of each of the elements of the AS4269-1995. The Auditor suggests that the survey instrument could be refined to include specific questions which address each of the relevant elements of AS4269-</p>



Table 10.2 Dispute Resolution Scheme – Part 12 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>1995. This would assist in providing the information necessary to make an assessment that the complaint handling system fully complies with this clause. Sydney Water discussed this issue at the audit interview and indicated that the questions were not written to explicitly address the matters listed in AS4269-1995. This issue could be looked at in the context of 'continuous business improvement', just as the survey methods have been refined to include continuous sampling throughout the year rather than a five or six week period once a year as was the case. It would also be appropriate for the survey to be conducted so as to align it with the audit period so that the full year of results/report would be available for the audit.</p> <p>Last year the auditor noted that the Emergency Contact Survey only achieved a 47% response rate. In the context of continuous improvement, this could be improved. This year no measure on the current response rate for the survey was provided to demonstrate if any improvement had been made compared with the previous year.</p>
12.1.3	Sydney Water must make available to Customers and Consumers information concerning its internal complaints handling procedures which explains how to make a complaint and how the procedure works	Full compliance	Pamphlets have been sighted and the procedures have been listed on the Sydney Water website.
12.1.4	Sydney Water must provide information of the nature described in Clause 12.1.3 to Customers through their quarterly, or other, bills at least once annually	Full compliance	Pamphlets have been sighted and the schedule of bill inserts shows that the pamphlet <i>"Sharing your views with Sydney Water"</i> was mailed in the October 2002 (50%) and January 2003 (50%) bill runs.
12.1.5	The Customer complaint handling, complaint resolution process and Customer redress provided to Customers under the Customer Contract must be reviewed and amended where necessary by Sydney Water to ensure that it is based on the Australian Standard AS4269-1995 Complaint Handling	High compliance	<p>This clause is related to Clause 12.1.2 so the comments there are relevant to the level of compliance with this Clause.</p> <p>Sydney Water claims that during 2002-03 it has met eight of the nine recommendations from the June 2001 review <i>"Sydney Water Customer Complaints Policy and Procedure Review"</i>. However, as mentioned in Clause 12.1.2, a more formal skill assessment and training program report is required to be able to ensure that the appropriate staff have the required skills for complaint handling. Sydney Water should also include complaints as a standard item on the executive meeting agendas as per its own recommendation and provide a summary of these discussions and resolutions for the Operational Audit.</p>
12.1.6	Sydney Water must report each year to the Licence Regulator as part of the Annual Audit on the following	No requirement	



Table 10.2 Dispute Resolution Scheme – Part 12 Licence clauses

Clause	Requirement	Compliance	Findings
	details concerning complaints made against Sydney Water which are handled by its internal complaints handling process:		
12.1.6(a)	<p>The number and type of complaints received on a month by month basis, classified by Suburb into one or more of the following categories:</p> <p>Water quality including health and aesthetic parameters;</p> <p>Continuity of water supply;</p> <p>Water pressure;</p> <p>Sewage odour;</p> <p>Sewage overflow;</p> <p>Stormwater and drainage services; and</p> <p>Billing including availability charges payable under the Act.</p>	Full compliance	The Auditor has received the reports as required by the Licence.
12.1.6(b)	The number and type of complaints resolved or not resolved (on a month by month basis) in sufficient detail and using sufficient classifications to enable the Licence Regulator to gain a reasonable understanding of how and how well those complaints were resolved or why complaints were not resolved, as the case may be; and	High compliance	<p>Reports were provided which show the number of complaints resolved and unresolved on a monthly basis. Reports were also provided which show the number of unresolved complaints by age and type. While these quantitative reports also show the main methods used to resolve complaints, they do not address the issue of “<i>how well those were resolved</i>” other than the length of time it takes to respond to a complaint. Complaints are therefore “<i>resolved</i>” or “<i>unresolved</i>” and the success of the resolution is reported through the Emergency Contact Survey (ECS) previously discussed.</p> <p>The ECS is the main data source able to provide this form of assessment and is based on the Works and Asset Management Services (WAMS) database. There is no similar assessment done for complaints received through the ECS or ACCESS (an account billing) system. This issue was identified in last years audit.</p> <p>While Sydney Water indicated that 76% of all complaints are resolved within 2 days there appeared to be 264 complaints in the ECS still unresolved after 50 days or more.</p>



Table 10.2 Dispute Resolution Scheme – Part 12 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>Sydney Water has indicated that it is presently working on a report to provide the relevant information on why complaints have remained unresolved for more than 50 days. Sydney Water has also indicated that it is presently developing a field in the reporting system to allow management to follow up on unresolved complaints.</p> <p>Given these developments are underway, the auditor provided a rating of high compliance</p>
12.1.6(c)	Any problems of a systemic nature arising from the complaints	Full compliance	The report provided to address Ministerial Requirement #4 also meets the requirements under this clause of the Licence (see Table 10.3).
12.2	<i>External Dispute Resolution Scheme</i>		
12.2.1	Within 1 month after the Commencement Date, Sydney Water must establish a Dispute Resolution Scheme for the resolution by a Dispute Resolution Body of disputes between Sydney Water and its Customers and between Sydney Water and Consumers of the nature described in 12.2.3	No requirement	Sydney Water achieved full compliance in the 2000-01 audit. Sydney Water joined EION that then became EWON. Sydney Water has been a member of the EWON scheme since the 1 January 2000.
12.2.2	The Dispute Resolution Scheme so established by Sydney Water is subject to the Minister's approval	No requirement	As reported previously, the scheme and Sydney Water's participation in the scheme, was launched by the Minister.
12.2.3	<p>The Dispute Resolution Body is to hear disputes relating to complaints made by Customers and Consumers in relation to the following issues:</p> <ul style="list-style-type: none"> (a) Water quality, including health and aesthetic parameters; (b) Continuity of water supply; (c) Water pressure; (d) Sewage odour; (e) Sewage overflow; 	Full compliance	Sydney Water provided a report from data provided by EWON that describes the various disputes handled in the specific categories.



Table 10.2 Dispute Resolution Scheme – Part 12 Licence clauses

Clause	Requirement	Compliance	Findings
	(f) Stormwater and drainage services; and (g) Billing, including availability charges payable under the Act		
12.2.4	The Dispute Resolution Scheme must comply with the minimum standards, so far as applicable, specified in the Benchmarks for Industry-based Consumer Dispute Resolution Schemes released by the Commonwealth Minister for Customs and Consumer Affairs in August 1997	Full compliance	The EWON member's manual indicates that EWON applies the National Benchmarks for Industry-Based Customer Dispute Resolution Schemes.
12.2.5	The Dispute Resolution Scheme must have the following features:	No requirement	
12.2.5(a)	The decision making process of the Dispute Resolution Body and administration of the scheme is to be independent from Sydney Water and subsidiaries of Sydney Water	Full compliance	As reported in the previous audits the Articles/Constitution of EWON and the associated governance structure provide the necessary independence between Sydney Water and the scheme.
12.2.5(b)	Sydney Water agrees to abide by the decisions of the Dispute Resolution Body in relation to disputes referred to it for resolution	Full compliance	In becoming a member of EWON Ltd, Sydney Water has agreed "to be bound by and observe the terms of the Constitution" (Clause 11.8.2 (a)) and under Clause 6.2 of the Constitution of the scheme, "All decisions by the Ombudsman under paragraph 6.1 shall be automatically binding upon members."
12.2.5(c)	The Dispute Resolution Scheme must adopt informal proceedings which discourage a legalistic adversarial approach	High compliance	<p>The report prepared by Sydney Water describes the process followed to resolve complaints, however, as mentioned last year it does not specifically refer to whether the proceedings are informal or whether they specifically discourage a legalistic or adversarial approach. An independent review cited last year concluded from the EWON customer survey "<i>most customers rate EWON's handling of their complaint highly, even in cases where the matter was not resolved in their favour</i>".</p> <p>Sydney Water indicated that this clause is covered in the EWON Constitution, however as indicated in last years audit Sydney Water should demonstrate each year how the process meets the requirements of this clause. As this information has not been provided, the</p>



Table 10.2 Dispute Resolution Scheme – Part 12 Licence clauses

Clause	Requirement	Compliance	Findings
			compliance level has been reduced from full to high compliance.
12.2.5(d)	Decisions of the Dispute Resolution Body should be fair and seen to be fair, by observing the principles of procedural fairness, by making its decisions based upon the information before it and by having specific criteria upon which its decisions are based	High compliance	The auditor has used the outcome of the independent survey of the previous year to assess compliance with this clause. The survey suggests that 83% of the customers/complainants agreed or strongly agreed with the statement <i>"My complaint was handled fairly and impartially by EWON"</i> . Only 11% disagreed. As mentioned last year this type of information should be provided annually to maintain full compliance with this clause or at least provide evidence that EWON has an ongoing evaluation process to assess compliance with this clause. As Sydney Water is reliant on the previous years information from EWON to assess compliance, the compliance rating has been reduced from full (previous year) to high.
12.2.5(e)	The Dispute Resolution Scheme is to operate efficiently by keeping track of disputes referred to it, ensuring complaints are dealt with by the appropriate process and by the Dispute Resolution Body regularly reviewing the operation of the Dispute Resolution Scheme	High compliance	Details of finalised contacts are provided to Sydney Water on a quarterly basis. The report indicates that EWON is able to track and report on the disputes referred to it. The report also indicates that EWON itself has been reviewed, however this review took place in previous audit periods. The auditor supports the suggestion that such external reviews need to be commissioned from time to time and that regular customer satisfaction surveys should be conducted. Such programs would need to be undertaken for Sydney Water to maintain full compliance with this clause.
12.2.5(f)	The Dispute Resolution Scheme is to be free of cost to Customers and Consumers and is to be funded by Sydney Water	Full compliance	Sydney Water contributes to the operation of EWON together with other members of the scheme. The contributions are based upon the number of complaints sourced from a particular member.
12.2.6	Sydney Water must prepare a pamphlet that explains how the Dispute Resolution Scheme operates and how it can be accessed	Full compliance	Sydney Water provided a copy of the pamphlet <i>"Sharing your views with Sydney Water"</i> which covers both internal and external complaint handling. In reviewing the wording in the pamphlet Sydney Water should consider providing more detail on how the scheme operates as required by this clause.
12.2.7	Sydney Water must provide the pamphlet to Customers through their quarterly or other bills, at least once annually	Full compliance	Evidence was available that the pamphlet <i>"Sharing your views with Sydney Water"</i> had been circulated to customers during the audit period, as discussed previously.
12.2.8	Sydney Water must provide the Licence Regulator with written reports of the determination made by the Dispute Resolution Body based on information reasonably	No requirement	As was the case last year, there appears to have been no complaints requiring "determination" by EWON and therefore no need for a report. (Note: The word "determination" has a very specific meaning for EWON and refers to complaints about which a negotiated



Table 10.2 Dispute Resolution Scheme – Part 12 Licence clauses

Clause	Requirement	Compliance	Findings
	obtained from the Dispute Resolution Body. Where considered appropriate by Sydney Water and the Dispute Resolution Body, confidentiality arrangements are to be made so as not to disclose the Customer or Consumer's identity in such reports		outcome between Sydney Water and the complainant was not possible and therefore had to be "determined" by EWON. It does not refer to all the complaints referred to EWON and the specific outcomes of those complaints.)
12.2.9	Sydney Water must produce a yearly report to the Licence Regulator based on information available to Sydney Water and information reasonably obtained from the Dispute Resolution Body. The report must contain the following information:	See below	Sydney Water has prepared a report with compliance ratings provided for each of the following sub clauses.
12.2.9(a)	How the scheme works	Full compliance	Included in the Report.
12.2.9(b)	<p>The number and types of complaints received by the Dispute Resolution Body, classified by Suburb into one or more of the following categories:</p> <ol style="list-style-type: none"> 1. Water quality including health and aesthetic parameters 2. Continuity of water supply 3. Water pressure 4. Sewage odour 5. Sewage overflow 6. Stormwater and drainage services 7. Customer billing, including availability charges payable under the Act 	Full compliance	This year's report provides the number of complaints received by EWON and unresolved at the end of the year (18); all other information is provided for finalised complaints, rather than received complaints.
12.2.9(c)	The outcome of these complaints	Full compliance	Included in the report.
12.2.9(d)	The time taken to resolve complaints	Full compliance	Included in the report.



Table 10.2 Dispute Resolution Scheme – Part 12 Licence clauses

Clause	Requirement	Compliance	Findings
12.2.9(e)	The procedure for resolving complaints	Full compliance	Included in the report.
12.2.9(f)	Any problems of a systemic nature arising from the complaints	Full compliance	Sydney Water has provided an assessment of the key complaint generating categories and key complaint generating local government areas together with a general comment about Sydney Water's response to these concerns.
12.2.9(g)	Any other relevant information required by the Licence Regulator to be included in the report	No requirement	No other information was required.
12.2.10	The report referred to in Clause 12.2.9 is to be made available to the public free of charge	Full compliance	Sydney Water indicated that the report would be made available to the public free of charge.
12.3	<i>Complaints to Other Bodies</i>		
12.3	Sydney Water must report to the Licence Regulator by no later than 1 September each year (for consideration and reporting by the Licence Regulator as part of the annual audit) on complaints made against Sydney Water to a court or tribunal, such as the Fair Trading Tribunal, (based on information available from these bodies and Sydney Water itself as a party to the complaint) containing the following details	Insufficient information	<p>Sydney Water presented a report indicating that no matters have been, or are currently, before a Court or tribunal during the audit period. As was mentioned in Clause 10.3, the Auditor asked specifically if there were any cases before any court relating to the bushfires of 2001-02. At the interview, Sydney Water indicated to the auditor that it was not aware of any such cases.</p> <p>Sydney Water has interpreted this clause to be limited only to complaints about the provision of water and sewer services to its customers. Sydney Water acknowledges that there are other claims for damages that are covered under Clause 7.5 of the Customer Contract and that they may involve common law court actions against Sydney Water. However, because Sydney Water has judged that these claims are not associated with the provision of water or wastewater services, it has judged that they are not to be included as customer complaints. This issue had not been canvassed at previous audits and was raised in the context of the reporting of any cases before the Courts that resulted from maintenance works linked with bush fire incidents. Sydney Water is of the opinion that the intent of this clause is to identify where their customers are dissatisfied with the quality of service or where Sydney Water has breached the intent of the customer contract or the operating licence. Sydney Water believes that in most instances these complaints are referred to EWON.</p> <p>It would appear that Sydney Water's interpretation of the Licence has limited its reporting. Part 12 of the Operating Licence concerns dispute resolution and any reporting should</p>



Table 10.2 Dispute Resolution Scheme – Part 12 Licence clauses

Clause	Requirement	Compliance	Findings
			<p>therefore relate to disputes associated with the overall operation of Sydney Water. This clause does not restrict the reporting of issues to those covering the provision of water and sewer services. This is the only part of the Operating Licence where Sydney Water is required to report any disputes before a Court. As part of the reason for reporting complaints is to identify possible systemic issues within the system the reporting of various court cases may identify issues which need to be addressed through Sydney Water's operations just as other issues have been identified through the internal complaints handling system and EWON. Sydney Water should therefore discuss with the Licence Regulator the specific requirements for reporting under this clause.</p> <p>The auditor has searched a number of legal databases and noted that Sydney Water has had various Court cases listed which had not been reported in previous years, but may well have been relevant to the audit.</p>
12.3(a)	The number and types of complaints received by such other bodies	As above	As above, see Clause 12.3.
12.3(b)	The outcome of complaints	As above	As above, see Clause 12.3.
12.3(c)	How the complaints were resolved	As above	As above, see Clause 12.3.
12.3(d)	Any problems of a systemic nature arising from the complaints	As above	As above, see Clause 12.3.
12.3(e)	Any other relevant information required by the Licence Regulator to be included in the annual report	As above	As above, see Clause 12.3.



Table 10.3 Dispute Resolution Scheme – Ministerial Requirement

ID	Requirement	Compliance	Findings
M4	<i>"I require Sydney Water to prepare a comprehensive report which demonstrates the use of complaint data to identify problems of a systemic nature in specific geographical areas and the strategies used to overcome these problems. This report should be prepared using data gathered during the 2002 – 2003 Audit period, to allow it to be considered as part of next year's audit. I require delivery of this report to me and IPART by no later than 1 September 2003."</i>	Full compliance	<p>This report has been provided. The report provides an overview of the complaint management process and a summary of the outcomes. It also provides a detailed analysis of wastewater complaints, water complaints, account/billing complaints and other miscellaneous complaints. The report provides an analysis of the major causes for the complaints and proposes a range of initiatives which can be implemented to improve performance into the future.</p> <p>Waste water complaints have been related to sewer chokes and sub areas of the sewerage system known as SCAMPS (Sewerage Catchment Asset Management Plans) to assess areas which require further investment. Attempts have also been made to standardise the information to enable comparison between different areas. For example, sewer chokes per 100 km have been utilised together with complaints per 1,000 consumers. This allows a better comparison between areas of low and high density population.</p> <p>This information provides much more confidence that Sydney Water has integrated its complaints data into its strategic planning.</p>

10.4 Discussion

10.4.1 Internal dispute resolution process

Sydney Water continues to maintain three systems for the collection of complaint information. These are the Electronic Complaint System (ECS), Water Asset Management System (WAMS) and ACCESS (the account and billing system). The plan had been to integrate these systems into one, the Customer Information and Billing System (CIBS), however the plans for this system were abandoned during this audit period.

WAMS records and reports the majority of the complaint information handled by Sydney Water, however the output of this system and the two other systems do not appear to be fully integrated. For example, it is difficult to obtain reports about why certain complaints in the ECS remain unresolved after 50 days or more. Sydney Water has, for the first time, provided a report which classifies complaints by suburb, month and appropriate category as required by the Licence. Sydney Water has also improved its performance on Clause 12.1.6(b), although there is the opportunity to fine-tune the reporting of unresolved disputes.

The Operating Licence requires that the dispute resolution scheme needs to be based on the Australian standard for complaint handling – AS 4269-1995. While Sydney Water indicated it has developed a procedure which covers the key elements of the complaint handling standard, the key judge of the system needs to be the customer or complainant. The Emergency Contact Survey is a process which allows feedback from customers who have registered a complaint, although it is presently restricted to complainants registered through WAMS. Sydney Water has improved some aspects of the survey to provide information over the full year, however there are still opportunities for improvement. Sydney Water should continue to develop this evaluation system in order to obtain feedback from its customer base and refine its survey instrument to better assess the factors relevant to AS 4269-1995.

Sydney Water has also provided a systemic complaints report which covers the requirements of Clause 12.1.6(c) and the Ministerial requirement for this year. This report provides a comprehensive assessment of the complaints data and is a positive move in the process of integrating the complaint information into strategic decision making and resource allocation.

10.4.2 External dispute resolution scheme

The Energy and Water Ombudsman NSW (EWON) scheme continues to be the mechanism adopted by Sydney Water through which customers can obtain an independent review of their complaint.

The auditor continues to rely heavily on the material provided by Sydney Water from EWON to assess compliance. Following the implementation of the suggestions from the previous audit there were no new areas of concern. However, because Sydney Water is reliant on the activities of EWON to ensure compliance with its Licence, it appears that Sydney Water may require more regular evaluation and reporting by EWON on a number of issues relevant to specific clauses of the Operating Licence. Three clauses refer to characteristics of the dispute resolution scheme which need to be evaluated annually. Clauses 12.2.5 (c), 12.2.5. (d) and 12.2.5 (e) require some mechanism which allows Sydney Water to demonstrate the scheme continues to comply with its Licence on an annual basis. In the previous year, EWON had fortuitously prepared a report that reviewed its operations and could be used to evaluate the above clauses. Because these reviews are undertaken by EWON on an irregular basis, they are not



necessarily current for the audit period. As a result, the audit on these clauses becomes reliant on using out dated information.

EWON also provided comments on Sydney Water's Operating Licence independently to IPART. The key issues raised by this submission were a summary of points covered by the EWON report provided by Sydney Water. Key areas identified were complaints associated with billing and customer service. Of the 366 cases raised with EWON, 211 matters were billing issues and 140 were customer service.

10.4.3 Complaints to other bodies

Sydney Water indicated that there were no complaints to other bodies reported, however the auditor has expressed some reservations about whether any matters that may be before Courts have been appropriately identified. Sydney Water indicated that it has interpreted the requirements of this clause to refer only to complaints determined by Tribunals empowered to hear complaints about the provision of water and sewer services to its customers.

Sydney Water has adopted the Australian Standard definition of a complaint which is:

"A complaint is any communication received from a consumer or representative of a consumer which expresses dissatisfaction with a product, service or disservice of Sydney Water or its representative that relates to its obligations as set out on the Sydney Water Act 1994 or its Operating Licence".

Sydney Water has also provided a definition which determines when a contact made with Sydney Water is to be considered a complaint. This definition is:

"A contact is considered to be a complaint if the issue is clearly or likely to have resulted from an action, omission, error, failure or policy of Sydney Water".

This would appear to cover a wide range of issues which may be before a Court or tribunal.

The auditor asked if there were any complaints before Courts which resulted from a well publicised bush fire event in the audit year. Sydney Water indicated at the time of the audit interview that there were no such complaints before Courts. However, in comments provided later, Sydney Water indicated that there may be claims for damages involving common law court actions but these claims are not associated with the provision of water or wastewater services and as such have not been included as customer complaints.

Given that these disputes have not been identified by Sydney Water, it is difficult to independently assess and verify whether they need to be reported to meet the intent of this clause. As this clause appears to be the only clause which requires Court cases to be reported, it is appropriate for Sydney Water to be as comprehensive as possible in the identification of cases before the Courts. Some issues, which Sydney Water may consider are not relevant, such as worker's compensation claims which are clearly not relevant. However, other court action could be related to maintenance or some other operational issues. The relationship should therefore be able to be independently verified by the auditor. Further discussion between the Licence Regulator and Sydney Water on the interpretation of this clause would also appear relevant.

10.5 Factors affecting compliance

10.5.1 Internal dispute resolution process

Overall Sydney Water obtained high levels of compliance with clauses relating to internal dispute resolution processes. The major issue impacting on compliance in previous years has been resolved through the preparation of the required report on its complaint handling (see Clause 12.1.6) and Sydney Water is congratulated for this action.

There remains the potential for improvement in the implementation and documentation of unresolved complaints and the training of staff in complaint handling and dispute resolution.

The issue of unresolved complaints is related to the integration of the three complaint recording systems and the reporting of the reasons for long term (50 days and over) unresolved complaints remaining unresolved. The quantitative report outlines the main resolution methods used but does not address the issue of *“how well those were resolved”*. Complaints are therefore *“resolved”* or *“unresolved”* and the success of the resolution is reported through the Emergency Contact Survey (ECS).

The Emergency Contact Survey (ECS) is the main data source able to provide this form of assessment and is based on the WAMS database. There is no similar assessment undertaken for complaints received through the ECS or ACCESS system. This issue was also identified in last year's audit.

The second area is the need for a more formalised training plan relating to dispute resolution and complaint handling. While training has been undertaken, the information provided does not indicate the existence of a comprehensive training plan or schedule and it is difficult to determine whether all people dealing with disputes and complaints have been through the training program and what level of skills and knowledge these people may have. There is no a regular schedule associated with assessing the skills of staff or the provision of training on a regular basis. While Sydney Water indicates that intermittent training is provided, there are no criteria or policies which determine when and what is required. There is an opportunity in this area for Sydney Water to improve its performance.

10.5.2 External dispute resolution scheme

Most clauses under this section received a rating of full compliance. However, three clauses were rated as high compliance when the auditor was reliant on information provided on EWON's internal processes that applied to previous audit periods. While EWON undertakes internal reviews from time to time, these reviews are not undertaken annually. As a result, information provided (parts of Clause 12.2.5) was sourced from the previous year's review. The auditor has therefore assumed that the processes implemented by EWON produce similar levels of efficiency, fairness and non-legal processes as in previous years.

Clearly, Sydney Water cannot delegate responsibility for parts of its Operating Licence to another authority, and being only one member of EWON, it may not be able to direct EWON to undertake the required reviews, annually. The longer the time periods between reviews, the greater the uncertainties that appropriate procedures are in place.

10.5.3 Complaints to other bodies

Sydney Water reported that there were no complaints before other bodies. However as has been described previously, this statement is based upon a limited interpretation of this clause.



Sydney Water suggested that *“There are other claims for damages that are covered under Clause 7.5 of the customer contract. These may involve common law court actions against Sydney Water but are not associated with the provision of water or wastewater services and as such are not included as customer complaints.”*

Given the uncertainty that exists about whether or not Sydney Water has any complaints before the Courts, the auditor was unable to assess compliance.

10.6 Recommendations

10.6.1 Key recommendations

It is recommended that Sydney Water:

- R10.1 Undertakes an annual skills assessment and training program for all relevant staff involved in dispute resolution and complaints handling.
- R10.2 Reports annually on the reasons why complaints that have remained unresolved for 50 days or more have not been resolved.
- R10.3 Obtains annual information from Energy and Water Ombudsman (EWON) to verify that Sydney Water has met the operational performance standard of EWON.

10.6.2 Secondary recommendations

It is recommended that Sydney Water:

- R10.4 Introduces complaints as a standard agenda item on the Customer Services executive and Sydney Water executive meetings as per the 2001 *“Sydney Water Customer Complaints Policy and Procedure Review”*.
- R10.5 Refines the Emergency Contact Survey to align the survey period to the audit period, refines questions to test all dimensions of AS4269-1995 and expand to cover the other complaint register systems (ECS and ACCESS).



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



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0	M. Pignatelli	R. Woodward		I. Garrard		05/12/03
1	M. Pignatelli	I. Garrard		I. Garrard		15/12/03



Appendix A

Audit brief



INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

INVITATION TO TENDER

SYDNEY WATER CORPORATION - 2002/03 OPERATIONAL AUDIT

1 BACKGROUND

The Independent Pricing and Regulatory Tribunal of New South Wales is seeking suitably qualified consultants to conduct an audit of Sydney Water Corporation's performance against its Operating Licence.

Sydney Water is a statutory State Owned Corporation wholly owned by the NSW Government. The Corporation provides water, sewerage and some stormwater drainage services to about 4 million people within Sydney, Blue Mountains and Illawarra regions.

In accordance with the *Sydney Water Act 1994*, an Operating Licence was granted to Sydney Water by the NSW Government in 1995. A copy of the Operating Licence can be found at www.sydneywater.com.au. A requirement of the licence is that an annual Operational Audit be undertaken to assess the Corporation's performance against the requirements of the Operating Licence. The Audit is used by the Tribunal as the basis for its report on Sydney Water's performance and its recommendations to the Minister for Energy and Utilities (the Minister responsible for Sydney Water).

The Environment Protection Authority, the Department of Infrastructure, Planning and Natural Resources and NSW Health continue to regulate Sydney Water's activities concerning the environment, its use of water resources and public health respectively.

2 OBJECTIVES OF CONSULTANCY

The objective of this project is to advise and report to the Tribunal on Sydney Water's performance against its Operating Licence for the period from 1 July 2002 to 30 June 2003. In undertaking this task the auditor must:

1. Review and assess the level of compliance (or progress) achieved by Sydney Water against the Operating Licence requirements for the period 1 July 2002 to 30 June 2003.
2. Assess and report on progress by Sydney Water in implementing the Ministerial Requirements arising from the 2001/02 Operational Audit of Sydney Water (Attachment 1).
3. Review and assess the level of compliance with, or performance against, the amended System Performance Standards introduced by the Minister on 1 July 2001. These standards relate to water pressure, water continuity and sewerage overflows on private land (Attachment 2).

4. Identify any factors that have affected Sydney Water's performance for the period from 1 July 2002 to 30 June 2003 in relation to the above.
5. Identify any factors that could impact on Sydney Water achieving the performance requirements of the Operating Licence in the future.
6. Based upon the audit assessment, make recommendations on how Sydney Water can improve its performance in the future.

The audit process should take account of public submissions and the views of Sydney Water's regulators (EPA, NSW Health and the Department of Infrastructure, Planning and Natural Resources) and other stakeholders, including environmental, social welfare and public interest groups.

The auditor will be responsible for assessing and interpreting the audit requirements and ensuring that the audit process satisfies all statutory requirements. Under its Operating Licence Sydney Water is required to provide IPART with a range of reports to inform the Operational Audit. This package of information will be provided to the successful tenderer at the start of the contract.

2.1 Outputs

The main outputs from the Audit are:

1. two draft reports and a final written report addressing the objectives of the consultancy relevant to the Operating Licence and the Ministerial requirements.
2. discussions and meetings with the Tribunal and/or the Tribunal Secretariat, and
3. presentations to the Tribunal and/or Tribunal Secretariat which outline the major issues and findings relevant to the objectives.

Four bound copies and 1 loose-leaf copy, as well as electronic copies in Microsoft Word format, should be provided for the draft and final reports referred to in point 1 above.

The auditor should note that the final Operating Licence report will be tabled in Parliament by Sydney Water's portfolio Minister and, as such, will become a public document. Accordingly, the report should be clearly and logically set out and written in plain English, avoiding the use of unnecessary technical language. The Tribunal will also publicly display and make the report available for downloading on its website.

On completion of the audit, the auditor's Operating Licence reports, working papers and advice provided to the Tribunal will become the property of the Tribunal.

2.2 Format of Report

The Tribunal's format for the final report includes:

- a summary of compliance with the requirements of the Operating Licence and Ministerial Requirements and a summary of key recommendations.
- a summary of key audit findings providing a performance overview within the context of the Sydney Water's business, legislated objectives and regulatory environment.

- for each section of the licence and for any Ministerial Requirements:
 - a summary of findings
 - a summary of requirements
 - details of compliance
 - a discussion of any relevant factors affecting compliance
 - a discussion of any other relevant issue
 - recommendations on how performance can be improved in the future.

Further details of the Tribunal's preferred format will be provided to the successful tenderer.

2.3 Audit for NSW Health

NSW Health sets standards for water quality and has responsibility for ensuring that those standards are met. NSW Health may wish to engage a consultant to conduct an audit of Sydney Water. NSW Health may desire to negotiate with the Tribunal's preferred consultant for that consultant to conduct the audit for NSW Health, contemporaneously with the audit to be undertaken for the Tribunal.

However these are matters for the decision of NSW Health. The Tribunal provides no assurance that NSW Health will necessarily engage the Tribunal's preferred consultant or indeed any consultant. The preferred consultant is advised to discuss these matters directly with NSW Health at the appropriate time.

3 CONDITIONS OF TENDER

3.1 Timing

The successful tenderer must be able to meet the following work schedule:

CONTRACT PROGRAM		
Month	Date	Activity
September	Mon 1	Start of contract
October	Mon 20	Delivery of first draft Audit Report (First milestone)
	Fri 24	Discussion of first draft with Tribunal and /or Secretariat
November	Mon 17	Delivery of second draft Audit Report (Second milestone)
	Wed 19*	Discussion of second draft with Tribunal and/or Secretariat
December	Mon 1	Delivery of final Audit Report (Third milestone)
	Fri 5*	Discussion of final Audit Report with Tribunal and/or Secretariat (if required)
	Tue 9*	Debriefing meeting with the Tribunal and Sydney Water on the final Operating Licence audit recommendations
		End of Contract

*Indicative dates – subject to negotiation between the Tribunal Secretariat and auditor.

Formal written progress updates will be required from the consultant on a weekly basis. Progress meetings in addition to those in the above program are expected. The detailed consultancy work plan should reflect these.

3.2 Fee

The fee quoted is to be inclusive of all costs including Goods and Services Tax, incidental expenses and disbursements. Payments will be due within 28 days of receiving an invoice as per an agreed payment schedule. The consultant may wish to outline a draft payment schedule.

A detailed breakdown of the consultancy work program is required with the proposal. The proposal should include estimates of the time required for the project, auditors to be involved in the project, their rates, and a total fee estimate. Staff costs should be clearly reconciled to the detailed work plan. The auditor should allow for presentations to the Tribunal, discussion and meetings with the Tribunal Secretariat, and stakeholder meetings as required.

3.3 Proposal

The consultancy proposal should:

- demonstrate an appreciation for the task and describe the intended approach to the audit
- provide a list of personnel to be involved in the audit, together with brief resumes detailing relevant experience
- include a detailed work plan
- outline any potential conflicts of interest
- provide details of previous clients who can be contacted.

3.4 Presentation

Short listed tenderers will be required to make a presentation on their proposal as part of the tender evaluation process.

3.5 Criteria for selection

In selecting the successful consultant the Tribunal will consider the following matters:

- in-depth understanding and expertise in other areas covered by the Operating Licence (water quality, system performance, customer service and environmental measures)
- extent of knowledge about water and sewerage businesses
- experience in similar projects
- understanding of Sydney Water's regulatory framework
- proposed consultancy fee
- proposed audit and quality assurance procedures
- adequate resourcing and ability to provide results within the stated time frame and guaranteed availability of key staff
- demonstrated ability to enlist the agency's cooperation while encouraging an acceptance of the audit outcomes
- any conflict of interest identified

- demonstrated ability to produce quality reports suitable for public distribution.

The successful tenderer will be able to assemble an audit team with specific expertise and experience in each of the core auditable areas (water quality, system performance standards, customer service and environmental measures) and will include in its consultancy proposal details of the audit team structure having regard to these categories. Tenderers may consider forming consortia or contracting specialist consultants to achieve this balance of skills.

3.6 Acceptance of Tender

The Tribunal reserves the right to:

- accept no tender at all
- postpone indefinitely the acceptance of a tender
- call for new tenders
- appoint one or more tenderers to undertake the review
- approve or reject any sub-contractors the tenderer may wish to appoint.

3.7 Disclosure of information on Government Contracts

Potential tenderers should note that Government contracting guidelines may require the routine disclosure of the following information:

- details of contract (description of project to be completed or goods/services to be provided or property to be transferred; commencement date of the contract; the period of the contract)
- the full identity of the successful tenderer including details of cross ownership of relevant companies
- the price payable by the agency and the basis for future changes in this price
- the significant evaluation criteria and the weighting used in tender assessment, and
- provisions for re-negotiation (where applicable).

3.8 Consultancy Contract

The successful tenderer will be obliged to enter into a contract with the Tribunal prior to commencing the Audit. This consultancy contracts will cover issues including, but not limited to:

- consultancy information and documentation
- ownership of intellectual property
- conflicts of interest
- confidentiality
- insurance.

The Tribunal reserve the right to modify contract terms for the final contract as it considers appropriate. A copy of the draft contract is available on request.

4 PARTIES TO THE AUDIT

The party managing and commissioning the Audit is the Independent Pricing and Regulatory Tribunal of New South Wales. The primary contact at the Tribunal is:

Bob Burford

tel: 61-2-9290-8408

e-mail: bob_burford@ipart.nsw.gov.au

5 LODGEMENT OF TENDER

Three bound copies and 1 loose-leaf copy of the tender should be lodged in a sealed envelope marked **2002/03 Sydney Water Operational Audit**

addressed to:

Ms Meryl McCracken

General Manager, Support Services

Independent Pricing and Regulatory Tribunal of NSW

at

PO Box Q290

QVB POST OFFICE NSW 1230

or

Level 2

44 Market Street

SYDNEY NSW 2000

The tender should be received at the Tribunal's office no later than 5.00 pm Sydney time, on Wednesday 23 July 2003.

ATTACHMENT 1 SUMMARY OF MINISTERIAL REQUIREMENTS AND AUDIT RECOMMENDATIONS FROM THE 2002/2003 PERATIONAL AUDIT

Summary of Ministerial Requirements arising from the 2001/2002 Operational Audit¹

Issue	Requirement
Demand Management	1. <i>"As a result of IPART's Mid Term Review, I have already placed a number of Ministerial Requirements on the Corporation which are designed to increase the clarity of reporting on its demand management program."</i>
Leakage	2. <i>"I require the Corporation to describe its approach to ascertaining, in a cost effective way, the amount of leakage from its pipes and the means it uses to validate the level of leakage reduction achieved. The corporation should report to myself and IPART on these matters by 1 September 2003."</i>
Water Quality	3. <i>"I therefore require Sydney Water to consider risks that may occur through variations in bulk water quality or plant failure through its Annual Drinking Water Quality Improvement Plan."</i>
Dispute Resolution	4. <i>"I require Sydney Water to prepare a comprehensive report which demonstrates the use of complaint data to identify problems of a systemic nature in specific geographical areas and the strategies used to overcome these problems. This report should be prepared using data gathered during the 2002 – 2003 Audit period, to allow it to be considered as part of next year's audit. I require delivery of this report to me and IPART by no later than 1 September 2003."</i>
System Performance Standards	5. <i>"I require Sydney Water to develop as part of the Measuring and Reporting Protocol with IPART, an agreed scope, methodology and assumptions in order to provide a platform for reporting on the accuracy and confidence limits for each of the respective system performance standards. I require these arrangements to be in place by no later than 1 July 2003."</i>

¹ Letter from the Minister for Energy to the Chairman, Sydney Water, 12 April 2002.

ATTACHMENT 2 SYDNEY WATER'S AMENDED SYSTEM PERFORMANCE STANDARDS

Area	Requirement
System Performance Standards	1. "...I require Sydney Water to report to me by 1 July 2002 on its program of capital works to bring the Designated Low Water Pressure Areas in urban areas up to the amended pressure standard. The program should also reflect any of Sydney Water's existing arrangements with regard to the provision of water services to these areas."
	2. "...I require Sydney Water to work with the Sydney Catchment Authority with a view to develop performance measures for water reliability for further consideration at the end of term review of both Operating licences."
	3. "...I now require Sydney Water to incorporate the Tribunal's findings regarding repeat continuity and repeat sewage overflow events into its Asset Management Framework and to provide the Framework to the Minister of Energy and Utilities for comment."
	4. "Sydney Water is to update its Asset Management Framework by 1 January 2002"
Performance Indicators	5. "I support the use of performance indicators to provide further insight into performance against system performance standards. Accordingly, I require Sydney Water to collect and report data on those performance indicators that relate to the amended standards for drinking water pressure, drinking water continuity and sewerage overflows on private land."
	6. "Performance indicators are to be reported to the Tribunal by 1 September each year with the first report due to the Tribunal on 1 September 2002."
Customer Service	7. "While I am satisfied that negotiations between Sydney Water and the Tribunal have begun, I would like Sydney Water to commence collection of data on the customer service indicators in Attachment 3 from 1 July 2001."
Monitoring and Reporting Protocol	8. "I require Sydney Water to finalise this Protocol in consultation with the Tribunal as soon as possible, so that data collected during the audit period commencing 1 July 2002 is covered by the new arrangements"

The amended performance standards and indicators refer to water pressure, water continuity and sewage overflows on private land.

The customer service indicators refer to complaints, telephone calls to a primary contact number, metered accounts where meter is not read, account contacts, and disconnections.



Appendix B

Operating Licence

Operating

LICENCE

under the
Sydney Water Act 1994

NEW SOUTH WALES



SYDNEY WATER ACT 1994

**OPERATING LICENCE RENEWED UNDER SECTION 17 AND
AMENDED UNDER SECTION 16 OF THE SYDNEY WATER ACT 1994**

With the advice of the Executive Council, I, the Honourable Gordon Samuels AC, Governor of New South Wales, hereby renew the operating licence of Sydney Water Corporation under section 17 of the Sydney Water Act, and amend the operating licence under 16 of the Sydney Water Act 1994 and clause 10.1 of the operating licence, in the manner set out below.


Governor of New South Wales

Signed at Sydney, this 19th day of October 1999.

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SYDNEY WATER CORPORATION



Operating Licence under the *Sydney Water Act 1994*

- A. The Governor of New South Wales has renewed Sydney Water Corporation's operating licence under section 17 of the *Sydney Water Act 1994*.
- B. This Licence is renewed for a period of 5 years from 1 January 2000.
- C. This Licence is renewed subject to the Act.
- D. The Commencement Date of the Licence is 12 April 2000.

DEFINITIONS & INTERPRETATION

1.1 Definitions

In this Licence:

Act means the *Sydney Water Act 1994* and any regulations in force under it.

Annual audit is defined in clause 10.1.1 as the annual operational audit of Sydney Water.

Area of Operations means the area of operations specified in section 10(1) of the Act, a description of which is in Schedule 2.

[Note: Sydney Water has the same area of operations that Sydney Water Corporation Limited had immediately before it ceased to be a company State Owned Corporation. Section 10(1) requires that an operating licence contain a schedule that details the area of operations to which the operating licence applies.]

ARMCANZ means the Agriculture and Resource Management Council of Australia and New Zealand.

Catchment Authority means the Sydney Catchment Authority constituted under the *Sydney Water Catchment Management Act 1998*.

Commencement Date means the date on which these terms and conditions of licence take effect.

Competition Principles Agreement means the Competition Principles Agreement made on 11 April 1995 between the Commonwealth, States and internal territories, as in force from time to time.

Consumer means any person who consumes or uses the Services and includes, but is not limited to, a resident consumer (such as a tenant) or a non-resident consumer.

Customer means any person who is taken to have entered into a Customer Contract under section 55 of the Act, or to have entered into a contract on terms relating to the imposition of charges under sections 64 or 65 of the Act. Persons within this definition are owners of land:

- (a) connected to a water main, sewer main or re-use main owned by Sydney Water; or

- (b) not connected but having available for connection a water main, sewer main or re-use main owned by Sydney Water and liable for charges by Sydney Water in accordance with the Act; or

- (c) within a declared stormwater drainage area located in Sydney Water's Area of Operations.

Customer Contract means the contract annexed as Schedule 1, as varied from time to time in accordance with section 59 of the Act.

Dispute Resolution Body means a reputable person possessing qualifications and experience in the resolution of disputes by way of mediation or otherwise and includes a person who carries out investigative functions in the nature of an ombudsman.

Drinking water means water intended primarily for human consumption but which has other personal, domestic or household uses such as bathing and showering.

Ecologically Sustainable Development or ESD has the same meaning as in the *Protection of the Environment Administration Act 1991*.

ESD Indicators means indicators of Ecologically Sustainable Development practices and principles.

End of term review means the end of term review of this Licence under clause 2.4.1.

[Note: The End of term review is to commence on or about 1 January 2004.]

Environment Plan means a plan concerning the environment which contains, at a minimum, the details set out in clause 9.3.

EPA means the Environment Protection Authority constituted by the *Protection of the Environment Administration Act 1991*.

IPART means the Independent Pricing and Regulatory Tribunal of NSW constituted by the *Independent Pricing and Regulatory Tribunal Act 1992*.

Licence means this operating licence granted under section 12 of the Act to Sydney Water or any renewal of it, as in force for the time being.

Licence Review Body means IPART or, if the Minister administering the *Independent Pricing and Regulatory Tribunal Act 1992* directs that IPART is not to undertake the Mid-term review or the End of term review (as applicable) following receipt of advice from IPART concerning its workload, a person, (other than the Licence Regulator, Sydney Water or its Subsidiaries), who in the opinion of the Minister has suitable qualifications and experience for undertaking a Mid-term review or an End of term review.

Licence Regulator means a body established under section 30 of the Act.

[Note: The Licence Regulator is a body corporate representing the Crown.]

Memorandum of understanding means a memorandum of understanding to which clause 3.3.1 applies.

Mid-term review means the mid-term review of this Licence under clause 2.3.1.

[Note: The mid-term review is to occur on or about 1 January 2002.]

Minister means the Minister responsible for administering those provisions of the Act relating to this Licence.

National Parks and Wildlife means the National Parks and Wildlife Service constituted by the *National Parks and Wildlife Act 1974*.

NSW Fisheries means the NSW Department of Fisheries.

NSW Health means the NSW Department of Health.

NHMRC means the National Health and Medical Research Council.

Other Grades of water includes Re-use water but not Drinking water.

Property means any real property that is connected to or for which a connection is available to Sydney Water's Water supply system or Sewerage system determined from the point that the services provided by those systems are measured by Sydney Water for billing or other purposes. "Properties" has a corresponding meaning.

Rental Bond Board means the Rental Bond Board constituted by the *Landlord and Tenant (Rental Bonds) Act 1977*.

Re-use water means water derived from sewage treatment plants and untreated effluent extracted from sewers, which upon further treatment is suitable for its intended re-use application.

Services means the following services of Sydney Water permitted by this Licence and any applicable law:

- (a) storing and supplying water;
- (b) providing sewerage services;
- (c) providing stormwater drainage services; and
- (d) disposing of waste water.

Sewage overflow means a discharge of untreated or partially treated sewage from the Sewerage system. These overflows may occur in wet or dry weather.

Sewerage system means the system employed by Sydney Water to provide sewerage services.

SOC Act means the *State Owned Corporations Act 1989*.

Stormwater drainage system means the stormwater drainage system which Sydney Water must provide, operate, manage and maintain, which system was transferred from the Water Board to Sydney Water under Part 3 of the Act, subject to the transfer of any part or the whole of that system to another body where the Minister is satisfied that satisfactory arrangements have been made for the system to be provided by another body in accordance with section 14 of the Act.

Subsidiary has the same meaning as in the SOC Act. "Subsidiaries" has a corresponding meaning.

[Note: Section 3(1) of the State Owned Corporations Act 1989 defines a subsidiary to mean "a body corporate that is a subsidiary of a state owned corporation as determined in accordance with the Companies (New South Wales) Code or any other applicable law, and (in relation to a statutory SOC) includes a body corporate that would be such a subsidiary if the statutory SOC were a company SOC".]

DEFINITIONS & INTERPRETATION CONT.

Suburb means the suburb assigned a geographical name under the *Geographical Names Act 1966*.

Sydney Water means the Sydney Water Corporation constituted as a corporation by the Act.

Systems means the following systems of Sydney Water necessary for it to provide the Services:

- (a) Water Supply system;
- (b) Sewerage system;
- (c) Stormwater drainage system; and
- (d) Waste water system.

Trade Waste water means any Waste water generated from or as a result of an industrial or commercial activity undertaken, other than at domestic or household premises.

Unaccounted water losses means the difference between the amount of bulk water measured entering Sydney Water's supply system from all sources and the amount of water used by Customers, including metered water use and estimated legitimate unmetered usage. Unaccounted water losses includes the water lost, for example through evaporation, leakage from the system or unlawful use.

Waste water means any discarded water of any origin, clean or contaminated, that is discharged into a Sewerage or Stormwater drainage system.

Waste water system means the system employed by Sydney Water to provide waste water services.

Water Board means the body established under the *Water Board Act 1987*.

Water supply system means the system maintained and operated by, or on behalf of, Sydney Water for the purpose of supplying water derived from all sources of supply including water held in storage, groundwater and water made available for supply following chemical or other treatment, filtration or processing.

1.2 Interpretation

1.2.1 In this Licence, unless the contrary intention appears:

- (a) the word person includes an individual, a body corporate, an unincorporated body or other entity and one or more of each of them;
- (b) a reference to a law includes legislation (including the Act) and regulations made under legislation;
- (c) a reference to regulations includes ordinances, codes, licenses, orders, permits and directions;
- (d) a reference to a law, regulations, guidelines, any memorandum of understanding, plan or other strategy, standards, or list of indicators includes consolidations, amendments, variations, re-enactments, or replacements of any of them;
- (e) a reference to a person includes a reference to the person's executors, administrators, successors, substitutes (including, but not limited to, persons taking by novation) and assigns;
- (f) a reference to a year means a calendar year that ends on 31 December. "Yearly" has a corresponding meaning;
- (g) a reference to a financial year means a period of 12 months that ends on 30 June; and
- (h) a reference to a clause or Schedule is to a clause of or Schedule to this Licence.

1.2.2 If this Licence requires that something undergo public consultation, it requires as a minimum that:

- (a) notice of that thing and the nature and timing of the consultation be:
 - (i) advertised in a major daily newspaper circulating in the Area of Operations;
 - (ii) communicated to persons to whom it would reasonably be expected notice should be given; and
 - (iii) given to the Licence Regulator.
- (b) submissions be sought from the public and that these submissions be considered by the person conducting the review.

- 1.2.3 If any part of this Licence is prohibited, void, voidable, illegal or unenforceable, then that part is severed from the Licence but without affecting the continued operation of the remainder of the Licence.
- 1.2.4 A reference in this Licence to any organisation, association, society, group or body shall, in the event of it ceasing to exist or being reconstituted, renamed or replaced or if its powers or functions are transferred to any other entity, body or group, refer respectively to any such entity, body or group, established or constituted in lieu thereof or succeeding to similar powers and functions.
- 1.2.5 If there is disagreement between Sydney Water and the Licence Regulator as to the proper interpretation of any term of this Licence, the matter must be referred to the Minister for resolution by him or a person appointed by him.
- 1.2.6 The italicised explanatory notes in this Licence do not form part of this Licence.
- 1.2.7 Where the Licence Regulator requires some act or thing to be done under this Licence, Sydney Water must provide reasonable assistance to the Licence Regulator, or other person nominated by the Licence Regulator, with the intent of enabling that act or thing to be done.
- 1.2.8 If there is any inconsistency between this Licence and a Memorandum of understanding or between this Licence and a Customer Contract (including any interpretation of any provision), this Licence will prevail to the extent of the inconsistency, in each case.
- 1.2.9 Any clause of this Licence that expressly or impliedly requires Sydney Water to vary the Customer Contract is subject to section 59 of the Act and is of no force or effect unless the variation is approved by the Governor under section 59 of the Act.

INFORMATION ABOUT THIS LICENCE

2.1 Objectives of this Licence

The objective of this Licence is to enable and require Sydney Water to lawfully provide the Services within its Area of Operations. Consistent with this objective, this Licence requires Sydney Water to:

- (a) meet the objectives and other requirements imposed on it in the Act;
- (b) comply with the quality and performance standards in this Licence;
- (c) recognise the rights given to Customers and Consumers;
- (d) be subject to operational audits of compliance with this Licence; and
- (e) establish a dispute resolution scheme.

2.2 Duration of licence

- 2.2.1 This Licence is renewed for a term of 5 years commencing on 1 January 2000.
- 2.2.2 Notwithstanding the expiry of the term, the Governor may renew this Licence in accordance with the Act.

[Note: Section 17 of the Act allows the Governor to renew the licence for a maximum of 5 years at a time.]

2.3 Mid-term Licence Review

- 2.3.1 On or about 1 January 2002, a Mid term review must be undertaken:
 - (a) to determine whether this Licence is fulfilling its objectives; and
 - (b) in relation to any matter required to be reviewed by this Licence.
- 2.3.2 The review is to be undertaken by a Licence Review Body appointed by the Minister.
- 2.3.3 The Licence Review Body must engage in public consultation as part of the review.
- 2.3.4 The Licence Review Body is to report to the Minister within six months of commencing the review on the following:
 - (a) the findings of the review;
 - (b) any recommendations for amendment to this Licence; and

- (c) any recommendations for amendment to any law that adversely impacts on this Licence.

- 2.3.5 The Minister may accept or reject any recommendation made by the Licence Review Body.
- 2.3.6 If any recommendation made by the Licence Review Body and accepted by the Minister requires an amendment to this Licence, the recommendation is of no force or effect unless this Licence is relevantly amended in accordance with section 16 of the Act.
- 2.3.7 Any recommendation made by the Licence Review Body that is not accepted by the Minister is of no force or effect.
- 2.3.8 The Licence Review Body's report must be made available to the public by Sydney Water at the direction of the Minister (which direction must be given within 2 months after the Minister receives the report). Copies are to be made available from Sydney Water's offices on request free of charge and posted on Sydney Water's website on the internet for downloading by any person also free of charge. A reasonable number of copies are to be made available from Sydney Water offices and lodged with environmental centres and public libraries in the Area of Operations.

2.4 End of Term Licence Review

- 2.4.1 An End of term review for the purpose of determining the terms of any renewal of this Licence is to commence on or about 1 January 2004.
- 2.4.2 The review is to be undertaken by a Licence Review Body appointed by the Minister.
- 2.4.3 The Licence Review Body is to engage in public consultation as part of the review.
- 2.4.4 The Licence Review Body is to report to the Minister within 12 months of commencing the review on the following:
 - (a) the findings of the review;
 - (b) any recommendations for amendment to this Licence, including any additional terms to be included in any renewal of this Licence; and

- (c) any recommendations for amendment to any law that adversely impacts on this Licence.
- 2.4.5 The Minister may accept or reject any recommendation made by the Licence Review Body.
- 2.4.6 If any recommendation made by the Licence Review Body and accepted by the Minister requires an amendment to this Licence, the recommendation is of no force or effect unless this Licence is relevantly amended in accordance with section 16 of the Act.
- 2.4.7 Any recommendation made by the Licence Review Body that is not accepted by the Minister is of no force or effect.
- 2.4.8 The Licence Review Body's report must be made available to the public by Sydney Water at the direction of the Minister (which direction must be given within 2 months after the Minister receives the report). Copies are to be made available from Sydney Water's offices on request free of charge and posted on Sydney Water's website on the internet for downloading by any person also free of charge. A reasonable number of copies are to be made available from Sydney Water offices and lodged with environmental centres and public libraries in the Area of Operations.

2.5 Licence amendment

- 2.5.1 Subject to section 16 of the Act and clause 2.5.2, this Licence may be amended by the Governor by notice in the Government Gazette.

[Note: Section 16 of the Act requires that, in addition to the above procedure, in order for an amendment to this Licence to take effect, written notice of the amendment must be laid before Parliament. 15 sitting days of each House of Parliament must have passed after the proposed amendments were laid before Parliament without a notice of motion being given to disallow the proposed amendment; or if such a notice has been given, it has lapsed, been withdrawn or defeated.]

- 2.5.2 Before notice of the Licence amendment is tabled in Parliament under section 16 of the Act, the Minister must give Sydney Water reasonable

notice of the proposed amendment to enable it to comply with the amendment (if relevant) upon its commencement.

2.6 Contravention of Licence

Sydney Water acknowledges that, if the Minister is of the opinion that Sydney Water has contravened this Licence, the Minister may take action against Sydney Water under section 19 of the Act.

[Note: Section 19 of the Act provides that, where the Minister is of the opinion that Sydney Water contravenes this Licence, the Minister may serve a notice on Sydney Water requiring it to rectify the contravention; or, in addition to or instead of the notice to rectify, the Governor may direct that a letter of reprimand is to be served on Sydney Water, or direct that Sydney Water is to pay a monetary penalty not exceeding \$1 million.]

2.7 Cancellation of Licence

This Licence may be cancelled by the Governor in the circumstances described in section 20 of the Act.

[Note: Section 20 sets out the circumstances in which this Licence may be cancelled by the Governor. These include where Sydney Water ceases without authority or permission to do any of the things referred to in section 14 of the Act; or where Sydney Water is, in the Minister's opinion, in material default in compliance with the Licence and has not rectified such default or shown cause why the Licence should not be cancelled; or where Sydney Water is convicted on more than 3 occasions within a 12 month period of criminal offences punishable by at least \$10,000 fine or 12 months penal servitude or imprisonment if Sydney Water were a natural person.]

SYDNEY WATER'S RESPONSIBILITIES

3.1 Responsibilities of Sydney Water under this Licence and other laws

- 3.1.1 Sydney Water must comply with this Licence and all applicable laws.

[Note: Sydney Water has obligations under a number of laws including:

- Protection of the Environment Operations Act 1997;
- Public Health Act 1991;
- Water Legislation Amendment (Drinking Water and Corporate Structure) Act 1998;
- Water Act 1912; and
- Independent Pricing and Regulatory Tribunal Act 1992.]

3.2 Responsibility of Sydney Water under the Sydney Water Act

- 3.2.1 Sydney Water acknowledges that its principal objectives under section 21 of the Act (each of which is of equal importance) are:

- (a) to be a successful business and to this end operate at least as efficiently as any comparable business, maximise the net worth of the State's investment in Sydney Water, and exhibit a sense of social responsibility by having regard to the interests of the community in which it operates;
- (b) to protect the environment by conducting its operations in compliance with the principles of Ecologically Sustainable Development contained in section 6(2) of the *Protection of the Environment Administration Act 1991*;
- (c) to protect public health by supplying safe drinking water to its customers and other members of the public in compliance with the requirements of this Licence.

- 3.2.2 Sydney Water acknowledges that its special objectives under section 22 of the Act are:

- (a) to reduce risks to human health; and
- (b) to prevent the degradation of the environment.

- 3.2.3 The special objectives are to be interpreted by reference to the objectives referred to in section 6(1)(b) of the *Protection of the Environment Administration Act 1991*, so far as they are relevant to Sydney Water.

3.3 Memorandum of Understanding

- 3.3.1 In accordance with section 35 of the Act, Sydney Water must maintain a Memorandum of understanding with each of the Water Administration Ministerial Corporation, NSW Health, and EPA for the term of this Licence.

[Note: Section 35 of the Act requires Sydney Water to enter into separate memoranda of understanding with certain regulatory agencies, being the Water Administration Ministerial Corporation, the Director-General of NSW Health and EPA. If Sydney Water and those regulatory agencies are not able to agree on a term of the memorandum of understanding, the view of the regulatory agency prevails. Section 36 deals with public exhibition of memoranda of understanding.]

- 3.3.2 The purpose of a Memorandum of understanding is to form the basis for co-operative relationships between the parties to the memorandum. In particular:

- (a) the memorandum with NSW Health is to recognise the role of NSW Health in providing advice to the Government of NSW in relation to drinking water quality standards and the supply of water which is safe to drink; and
- (b) the memorandum with the EPA is to recognise the EPA as the environmental regulator of the State and to commit Sydney Water to environmental improvements;

- 3.3.3 Clause 3.3.1 does not limit the persons with whom Sydney Water may have a memorandum of understanding.

LICENCE AUTHORISATION & AREA OF OPERATIONS

4.1 What the licence authorises and regulates

- 4.1.1 This Licence is granted to enable and require Sydney Water to provide, construct, operate, manage and maintain efficient, co-ordinated and commercially viable Systems for providing the Services throughout the Area of Operations.

[Note: The Systems include those systems of Sydney Water necessary to enable it to provide the Services.]

- 4.1.2 Sydney Water must ensure that the Systems comply with the quality and performance standards required in this Licence or required to be developed under this Licence.

4.2 Powers not limited

This Licence does not restrict or affect Sydney Water's power to carry out any functions imposed under any applicable law.

4.3 Area of Operations

The Area of Operations may only be varied under section 10 of the Act.

[Note: The Area of Operations for Sydney Water is listed in Schedule 2 of this Licence. Section 10 of the Act states that subject to certain requirements the Governor may vary the Area of Operations by order published in the NSW Government Gazette. Such order does not take effect until after the notice of the order has been laid before Parliament.]

4.4 Connection of Services

- 4.4.1 Subject to Sydney Water continuing to be in compliance with any applicable law, Sydney Water must ensure that its Services are available for connection on request to any land situated in the Area of Operations.
- 4.4.2 Connection to the Services is subject to any conditions Sydney Water may determine to ensure the safe, reliable and financially viable supply of Services to land in the Area of Operations in accordance with this Licence. Satisfactory

compliance with the conditions of connection is to be taken as forming an essential requirement for gaining Sydney Water's approval for connection of the land to a water main or sewer main under section 56(2) of the Act.

4.5 Non-exclusive licence

This Licence does not prohibit another person from providing services in the Area of Operations that are the same as or similar to the Services, if the person is lawfully entitled to do so.

CUSTOMER & CONSUMER RIGHTS

5.1 Customer contract

- 5.1.1 The Customer Contract may only be varied in accordance with section 59 of the Act.

[Note: The Customer Contract is set out in Schedule 1 of this Licence. Division 7 of Part 6 of the Act contains various provisions in relation to the Customer Contract.]

[Note: Section 59 of the Act requires that a variation of the Customer Contract must be published in a daily newspaper circulating in the Area of Operations at least 6 months before the variation becomes effective, or a shorter period of notice approved by the Minister. A copy of the notice must also be given to the Customer. Section 59 does not apply to an alteration of fees or charges where the alteration is in accordance with an IPART determination.]

- 5.1.2 Subject to section 56 of the Act, the Customer Contract automatically applies to persons specified in section 55(1) of the Act.
- 5.1.3 The Customer Contract sets out the rights and obligations of Customers and Sydney Water in relation to the Services provided through Systems required under this Licence. These rights and obligations are in addition to the rights and obligations conferred by the Act and any other law.
- 5.1.4 A copy of the Customer Contract, and any variations to it must be posted on Sydney Water's website on the internet for downloading free of charge and made available at its premises for access or collection by any member of the public, also free of charge.
- 5.1.5 Unless otherwise required by the Minister, Sydney Water must initiate an independent review of the Customer Contract to be carried out within 12 months of the Commencement Date. The review must have regard to the system performance standards in clause 7.1.1 or as determined by the Minister under clause 7.3 of this Licence.
- 5.1.6 The person undertaking the review must produce a report setting out its findings and recommendations. A copy of the report must be provided to the Minister upon its production.
- 5.1.7 Within 3 months of the completion of the review of the Customer Contract, Sydney Water must take all

steps necessary to issue a new Customer Contract that addresses the recommendations of the review report.

- 5.1.8 Within 3 months of review of the Customer Contract under clause 5.1.5, Sydney Water must prepare a pamphlet that:
- (a) provides a brief explanatory introduction to the Customer Contract;
 - (b) summarises the key rights and obligations of Customers under the Customer Contract; and
 - (c) contains a list of Sydney Water's local offices and emergency contact numbers in its Area of Operators.
- 5.1.9 The pamphlet prepared under clause 5.1.8 must be updated when changes are made to the Customer Contract and must be disseminated by Sydney Water free of charge:
- (a) by placing sufficient copies with the Rental Bond Board for collection by interested persons and where reasonably possible for despatch by the Rental Bond Board in correspondence sent to tenants;
 - (b) to customers, at least once annually with their quarterly or other bills; and
 - (c) to any other person on request.
- 5.1.10 As provided by and subject to section 57 of the Act, Sydney Water may enter into other contracts or arrangements for the supply of Services. The terms of any such contract or arrangement are such as may be negotiated between Sydney Water and any such person.

5.2 Consumers

- 5.2.1 Sydney Water must fulfil its obligations under the Customer Contract relating to complaint handling and complaint resolution procedures as if those obligations also extended to Consumers.

5.3 Code of practice & procedure on debt & disconnection

- 5.3.1 Within 6 months of the Commencement Date, Sydney Water must develop a code of practice and procedure on debt and disconnection.

- 5.3.2 The code of practice and procedure on debt and disconnection must:
- (a) provide for deferred payment or payment by instalment options for consumption bills; and
 - (b) provide for the payment options referred to in (a) to be advised in consumption bills.
- 5.3.3 Sydney Water must include the code of practice and procedure on debt and disconnection in its Customer Contract.
- 5.3.4 Sydney Water must disseminate free of charge information on its code of practice and procedure on debt and disconnection:
- (a) by placing sufficient copies with the Rental Bond Board for collection by interested persons;
 - (b) to Customers at least once annually with their quarterly or other bills; and
 - (c) to any other person on request.
- 5.4 Customer councils**
- 5.4.1 In accordance with section 15 of the Act, Sydney Water must establish and regularly consult with one or more Customer Councils to enable community involvement in issues relevant to the performance of Sydney Water's obligations under this Licence.
- 5.4.2 A Customer Council may be utilised by Sydney Water, among other things, to provide it with high quality advice on the interests of Customers and Consumers of Sydney Water and on the Customer Contract, in accordance with the terms of the relevant Customer Council Charter, and on such other key issues related to Sydney Water's planning and operations as Sydney Water may determine.
- 5.4.3 The first Customer Council under this Licence in respect of the period after the Commencement Date must be established within 3 months of the Commencement Date. However, if Sydney Water has appointed members to its Customer Councils since 1 January 2000 substantially in accordance with clauses 5.4.5 to 5.4.11 (inclusive), Sydney Water will be taken to have complied with this clause 5.4.3.
- 5.4.4 Sydney Water must appoint the members of a Customer Council, consistent with this Licence.
- 5.4.5 At all times, the membership of one or more Customer Councils must between them include a representative from at least each of the following:
- (a) business and consumer groups;
 - (b) low income households;
 - (c) people living in rural and urban fringe areas;
 - (d) residential consumers;
 - (e) environmental groups;
 - (f) local government; and
 - (g) the Ethnic Communities Council.
- 5.4.6 Sydney Water may require a representative under clause 5.4.5 to serve on so many Customer Councils as it considers appropriate to best discharge the tasks assigned to him or her.
- 5.4.7 Subject to clause 5.4.10, the term of a member of a Customer Council will expire 2 years after his or her appointment.
- 5.4.8 Subject to clause 5.4.11, at least half of the persons appointed as members of a Customer Council must be new members. That is, they must not be persons who were members of a Customer Council at any time during the period of 2 years before the date of their appointment.
- 5.4.9 Subject to clause 5.4.11, no person may be appointed as a member of a Customer Council for more than 2 consecutive terms (including, without limitation, any term served as a replacement member under clause 5.4.10).
- 5.4.10 If a member's place becomes vacant before the expiration of his or her term, Sydney Water may appoint a suitable replacement for the remainder of that member's term.
- 5.4.11 If Sydney Water chooses to establish one or more Customer Councils the majority of members of which are not individuals, clauses 5.4.8 and 5.4.9 do not apply to those Customer Councils.

CONSUMER & CUSTOMER RIGHTS CONT.

[Note: For example, Sydney Water might choose to establish a corporate Customer Council, the majority of members of which might be industry peak bodies. In this case, it is not desirable to refuse to reappoint these bodies after they have been members for 2 consecutive terms because Sydney Water would then lose the input of these bodies and the industries they represent. The selection criteria for membership on these Customer Councils must be addressed in the relevant Customer Council's Charter under clause 5.4.12(b).]

- 5.4.12 Subject to clause 5.4.13, within 3 months of establishing the Customer Councils or the Commencement Date (whichever is the later) Sydney Water must develop in consultation with members of the Customer Council, a Customer Council Charter that addresses the following issues:
- (a) the role of the Customer Councils;
 - (b) selection criteria on how members will be appointed;
 - (c) information on how the Customer Council will operate;
 - (d) a description of the type of matters that will be referred to the Customer Council;
 - (e) procedures for the conduct of Customer Council meetings, including the appointment of a chairperson;
 - (f) communicating the outcome of the Customer Council's work to Sydney Water;
 - (g) procedures for tracking issues raised and ensuring appropriate follow-up of those issues; and
 - (h) funding and resourcing of the Customer Council by Sydney Water.
- 5.4.13 If Sydney Water:
- (a) has appointed members to its Customer Councils since 1 January 2000 and is taken to have complied with clause 5.4.3; and
 - (b) has developed in consultation with members of those Customer Councils a Customer Council Charter substantially in accordance with clause 5.4.12,
- Sydney Water will be taken to have complied with clause 5.4.12.
- 5.4.14 There must be a Customer Council Charter for each Customer Council. However a single Customer Council Charter may be expressed to apply to more than one Customer Council.
- 5.4.15 Sydney Water must provide a Customer Council with information within its possession or under its control necessary to enable the Customer Council to discharge the tasks assigned to it, other than information or documents over which Sydney Water or another person claims confidentiality or privilege.
- 5.4.16 A copy of each Customer Council Charter must be posted on Sydney Water's website on the internet for downloading free of charge and made available at its offices for access or collection by any member of the public, also free of charge.
- 5.4.17 As part of the End of term review, the Licence Review Body must evaluate and report on the effectiveness of Customer Councils and compliance with the Customer Council Charter.

WATER QUALITY

6.1 Interpretation

In this Part:

aesthetic guideline values means the concentration or measure of a physical characteristic of water quality (a physical or chemical property) that is associated with good water quality. Some examples include appearance, pH, taste and odour.

health guideline values means the concentration or measure of a physical characteristic of water quality (a physical, chemical, biological or radionuclide property) that, based on present knowledge, does not result in any significant risk to the health of a person over a lifetime of consumption.

Physical characteristics of Drinking water means those physical characteristics of Drinking water specified in the NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 including dissolved oxygen, hardness, pH, taste and odour, total dissolved solids, true colour and turbidity.

Potable water backflow prevention devices are plumbing cross connections designed, installed and maintained to prevent contamination of drinking water.

6.2 Drinking Water Quality - Standards

6.2.1 Sydney Water must comply with the following relating to Drinking water:

- (a) the NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 ("1996 Guidelines") relating to health guideline values;
- (b) any amendments updates or supplements of the 1996 Guidelines ("Updated Guidelines") relating to health guideline values specified by NSW Health;
- (c) the aesthetic guideline values of the 1996 Guidelines specified by the NSW Minister for Health following consultation with the Minister; and
- (d) the aesthetic guideline values of the Updated Guidelines specified by the NSW Minister for Health following consultation with the Minister.

[Note: A significant aim of the Drinking water quality standards is to ensure that Sydney Water achieves appropriate public health outcomes.]

6.2.2 In delivering the Services, Sydney Water must have regard to the concepts of risk minimisation practices and system management of public water supplies in the 1996 Guidelines and Updated Guidelines (including in relation to *Cryptosporidium* and *Giardia*).

[Note: In releasing draft guidelines on Cryptosporidium and Giardia, NHMRC has stated that it is not possible to set guideline levels for Cryptosporidium and Giardia in drinking water because there is a lack of a suitable method to identify organisms in drinking water that cause human infection.]

6.2.3 Sydney Water must commission an independent study of the costs and benefits of Sydney Water complying with the aesthetic guideline values of the NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 and must report to the Licence Review Body on the results of that study by no later than 31 January 2002, to enable the Licence Review Body to report on the matter as part of the Mid-term review. Sydney Water must ensure that the process of conducting the independent study includes public consultation in accordance with clause 1.2.2 on a discussion paper before the study is finalised.

6.3 Drinking Water Quality - Monitoring

6.3.1 Sydney Water must prepare, to the satisfaction of NSW Health, a comprehensive Annual Drinking Water Quality Monitoring Plan for the Water supply system by 30 June 2000 and then by 31 March in each subsequent year, for the duration of this Licence.

6.3.2 The Annual Drinking Water Quality Monitoring Plan for the Water supply system must include system performance monitoring and regular sampling, laboratory testing and processes to ensure quality control. The monitoring of Drinking water quality must include:

- (a) the health guideline values for which compliance is required under clauses 6.2.1 (a) and (b); and

- (b) the aesthetic guideline values for which compliance is required under clauses 6.2.1 (c) and (d).
- 6.3.3 Sydney Water must monitor Drinking water quality for the aesthetic guideline values of the 1996 Guidelines that apply to the Physical characteristics of Drinking water.
- 6.3.4 The Drinking water quality monitoring must assess the quality of Drinking water in Sydney Water's Water supply system. The sampling frequency and the locations chosen for the monitoring should be such that the results are representative of the quality of water supplied to Customers and Consumers.
- 6.3.5 Sydney Water must undertake the Drinking water quality monitoring for the period from the Commencement Date to 30 June 2001 and after that for each subsequent financial year.

[Note: The requirement for an annual drinking water monitoring plan is also found in the Memorandum of understanding between NSW Health and Sydney Water, July 1999.]

6.4 Drinking Water Quality - Reporting

- 6.4.1 Sydney Water's water quality monitoring test results must be placed on its website on the internet for downloading by the public, free of charge and made available at its offices for access or collection by any person, also free of charge.
- 6.4.2 Sydney Water must produce an Annual Drinking Water Quality Report that reports on the Water supply system in relation to:
 - (a) the health guideline values for which compliance is required under clauses 6.2.1 (a) and (b);
 - (b) the aesthetic guideline values for which compliance is required under clauses 6.2.1 (c) and (d); and
 - (c) the aesthetic guideline values of the 1996 Guidelines that apply to the Physical characteristics of drinking water.
- 6.4.3 The Annual Drinking Water Quality Report must also include a summary of monitoring information, indicating water quality trends and problems, and a summary of system failures (significant and major water quality incidents) over the previous year and action taken to resolve them and how public health was protected.

- 6.4.4 The Annual Drinking Water Quality Report must be prepared by 30 November each year and must be placed on Sydney Water's website on the internet for downloading by the public free of charge and made available at its offices for access or collection by any person, also free of charge.

6.5 Drinking Water - Planning

- 6.5.1 Sydney Water must prepare, to the satisfaction of NSW Health, a Five-Year Drinking Water Quality Management Plan within 5 months after the Commencement Date. Sydney Water must release a discussion paper in relation to the Five-Year Drinking Water Quality Management Plan within 2 months after the Commencement Date and must engage in public consultation in accordance with clause 1.2.2 on the discussion paper.
- 6.5.2 The Five-Year Drinking Water Quality Management Plan must include strategies for the comprehensive management of the quality of Drinking water in Sydney Water's Water supply system, the aim of which is to reduce risk to public health and meet any aesthetic guideline values extended to Sydney Water in or by this Licence. It must also include an audit program for Potable water backflow prevention devices.

[Note: The requirement for a long term water quality management strategy is also found in the Memorandum of understanding between NSW Health and Sydney Water, July 1999.]

- 6.5.3 Sydney Water must prepare, to the satisfaction of NSW Health, an Annual Drinking Water Quality Improvement Plan for the Water supply system within 1 month after the Commencement Date and after that by 31 March in each year, unless otherwise specified following the review under clause 6.5.5.
- 6.5.4 The Annual Drinking Water Quality Improvement Plan must incorporate system and operational changes needed to address problems identified through drinking water quality monitoring data and through periodic system inspections and evaluations, the aim of which is to reduce risks to public health and meet any aesthetic guideline values extending to Sydney Water in or by this Licence.

- 6.5.5 The Annual Drinking Water Quality Improvement Plan must be reviewed as part of the Mid-term review under clause 2.3.1 to assess its continued effectiveness and whether there is a continued need for the plan each year.

[Note: The requirement for an annual drinking water quality improvement plan is also found in the Memorandum of understanding between NSW Health and Sydney Water, July 1999.]

- 6.5.6 Sydney Water must prepare, to the satisfaction of NSW Health, a Drinking Water Incident Management Plan, within 1 month after the Commencement Date which must remain in place until any new plan is developed in agreement with NSW Health.

- 6.5.7 The Drinking Water Incident Management Plan must contain, or incorporate by reference, procedures and protocols for the coordinated management of Drinking water incidents including media and stakeholder liaison and any notification of public health advice received from NSW Health to Customers.

[Note: The requirement for a comprehensive incident management plan is also found in the Memorandum of understanding between NSW Health and Sydney Water, July 1999.]

6.6 Environmental Water Quality

Sydney Water must meet the environmental water quality requirements for any discharges or water releases required by licences issued to it by the EPA or the Department of Land and Water Conservation.

6.7 Other Grades of Water

- 6.7.1 Other Grades of water supplied by Sydney Water must be supplied according to relevant guidelines and requirements prescribed by EPA, NSW Health, the Department of Land and Water Conservation, the Department of Agriculture, other relevant government agencies and the NSW Recycled Water Coordination Committee.

[Note: The NSW Recycled Water Coordination Committee has produced the NSW Guidelines for Urban and Residential Use of Reclaimed Water, May 1993.]

- 6.7.2 Minimum standards and guidelines to regulate the supply of Other Grades of water must be identified in the Mid-term review. Where the Minister is of the opinion that the minimum standards and guidelines for the supply of Other Grades of water identified in the Mid-term review are appropriate, such standards and guidelines must be observed by Sydney Water as a condition of this Licence.

- 6.7.3 Where there is a conflict between any of the guidelines, requirements or standards applying to Sydney Water under clause 6.7 the Minister's decision will prevail.

7

SYSTEM PERFORMANCE

7.1 Compliance with performance standards

- 7.1.1 Sydney Water must ensure that its Systems comply with the standards for continuity, water pressure and sewage overflows in Schedule 4 or such other standards determined by the Minister under clause 7.3.

7.2 Standards in respect of low pressure areas

- 7.2.1 Within 1 month after the Commencement Date, Sydney Water must develop standards that establish the minimum level of water pressure required for the following low pressure areas in Schedule 4:
- (a) Urban areas adjacent to reservoirs in the Blue Mountains.
 - (b) Non-urban properties in Bayview, West Camden, Llandilo, Berkshire Park, Castlereagh, North Richmond, Oakville, Riverstone, Schofields and the Blue Mountains.
- 7.2.2 Sydney Water must comply with the standards developed under clause 7.2 or such other standards determined by the Minister under clause 7.3.

7.3 Review of performance standards

- 7.3.1 Within 12 months of the Commencement Date, a person nominated by the Minister must consult with Sydney Water and other stakeholders and report to the Minister on whether the standards referred to in clauses 7.1 and 7.2 should be amended, and if so the nature of the amendments.
- 7.3.2 The report under clause 7.3.1 must include an analysis of the benefits and costs of amendments to the performance standards.
- 7.3.3 Following receipt of the report the Minister, or a person appointed by the Minister, may publish a notice which lists the amendments to the performance standards that must be adopted by Sydney Water.
- 7.3.4 Any amendments to the performance standards that must be adopted by Sydney Water under clause 7.3.3 must be incorporated into the Customer Contract as soon as reasonably possible and also considered by any review of the Customer Contract and the Mid-term review of this Licence.

7.4 Keeping of records on discontinuity, low pressure & sewage overflow

- 7.4.1 In this clause:
- Delivery system means the geographical classification used by Sydney Water for its own internal purposes which is based on geographic regions employed as part of the Water supply system or Sewerage system.
- 7.4.2 Sydney Water must keep records of the nature of incidents of discontinuity, low pressure and sewage overflows occurring each year and classified according to Delivery system.
- 7.4.3 From the Commencement Date, Sydney Water's record keeping systems must permit the reporting of incidents by Delivery system and by the commencement of the Mid-term review, also by Suburb.
- 7.4.4 Sydney Water must maintain record systems that are sufficient to enable it to measure compliance with the standards on discontinuity, low pressure and sewage overflows in Schedule 4.
- 7.4.5 Sydney Water's records must include details of any complaints concerning discontinuity, low pressure and sewage overflows regardless of whether they have been received from Customers, Consumers and real estate agents or other persons on behalf of Consumers.
- 7.4.6 Sydney Water must record multiple incidents of discontinuity, low pressure and sewage overflow occurring each year as separate incidents. In particular each incident of discontinuity affecting the one Customer or Consumer is to be recorded as one incident.
- 7.4.7 From the later of the Commencement Date and 1 July 2000, Sydney Water must also record the length of incidents of discontinuity, indicating whether the period of discontinuity has lasted for more than 6 hours, more than 12 hours, or more than 24 hours.
- 7.4.8 Sydney Water must also record the respective number of planned and unplanned interruptions to its Water supply system or to the supply of Drinking water.

7.5 Annual reporting on compliance with performance standards

- 7.5.1 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its compliance with the performance standards required to be compiled under clauses 7.1 and 7.2 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.
- 7.5.2 As part of its report, Sydney Water must provide the Licence Regulator with physical or electronic access to the records kept by Sydney Water under clause 7.4.

WATER CONSERVATION & DEMAND MANAGEMENT

8.1 Water Conservation Target

8.1.1 Sydney Water must take action to reduce the quantity of water (other than Re-use water) it draws from all sources to the following target levels ("water conservation targets"):

- (a) 364 litres per capita per day by 2004/5 (being a reduction of 142 litres per capita per day or 28% from the 1990/1991 baseline);

[Note: The 1990/1991 baseline is 506 litres per capita per day.]

- (b) 329 litres per capita per day by 2010/2011 (being a reduction of 177 litres per capita per day or 35% from the 1990/1991 baseline);
- (c) Such target level for 2014/2015 as determined as part of the Mid-term review of this Licence conducted under clause 2.3.1.

8.1.2 The following principles and parameters must be applied by Sydney Water in assessing compliance with the water conservation targets:

- (a) assessment of performance against water conservation targets is to be adjusted for the effects of weather on water usage; and
- (b) the water conservation targets in clause 8.1.1 are for an average year.

8.1.3 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its progress in complying with the water conservation targets in clause 8.1.1 (which may include any targets for Unaccounted water losses), to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.

8.2 Demand Management Strategy

8.2.1 In this clause:

Demand Management Strategy means the 1995 Demand Management Strategy updated from time to time by Sydney Water or as required by the Minister.

[Note: The 1995 Demand Management Strategy was released by Sydney Water in October 1995. Following the 1998 operational audit, the Minister required Sydney Water to produce a revised Demand Management Strategy by 31 December 1999.]

8.2.2 Sydney Water must give priority consideration to demand side management as the basis for planning the future provision of its Services, including addressing Unaccounted water losses.

8.2.3 By no later than 1 September each year, Sydney Water must provide a report (the "Demand Management Strategy Implementation Report") to the Licence Regulator on implementation of Sydney Water's Demand Management Strategy for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.

8.2.4 The Demand Management Strategy Implementation Report is to:

- (a) contain an estimate of past, current and projected water uses and distinguish between residential, industrial, commercial and government uses;
- (b) describe the frequency and magnitude of expected supply deficiencies, including those arising as a result of wastage or loss, drought or emergency;
- (c) identify conservation measures currently adopted and being practised;
- (d) describe, cost and evaluate additional conservation measures;
- (e) describe future plans for water reclamation and strategies to alter water use practices, including those relating to the installation of more efficient water appliances and devices by users;
- (f) evaluate these plans in terms of their cost and contrast with the cost of alternative water supplies;
- (g) prioritise and schedule the implementation of courses of action found to be cost effective; and
- (h) identify strategies for reducing Unaccounted water losses.

- 8.2.5 Sydney Water must engage a suitably qualified third party to verify the accuracy and soundness of its mathematical models for projecting future demands for water usage and report the results to the Licence Regulator within 1 month after the Commencement Date.

8.3 Reducing Discharges

- 8.3.1 Sydney Water must take action to re-use, intercept or otherwise prevent from discharge into the ocean, waterways and other waters, sewage or effluent of Customers and Consumers by way of non-potable re-use. Sydney Water is to meet the targets set by the Minister from time to time.

[Note: A re-use target of 58 megalitres per day was gazetted on 30 June 1995 under section 27(2) of the Act. Following the 1998 Operational Audit the Minister has required Sydney Water to develop, by 31 December 1999, a re-use strategy for the next five and ten years.]

- 8.3.2 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its progress in meeting the re-use target required under clause 8.3.1 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.

8.4 Water Conservation Rating and Labelling

- 8.4.1 Sydney Water, through continuing support for the National Water Conservation Rating and Labelling Scheme, is to encourage manufacturers of water appliances to improve the water use efficiency of these appliances where consistent with Sydney Water's objectives.
- 8.4.2 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its performance under clause 8.4.1 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.

ENVIRONMENT — INDICATORS & PLANS

9.1 Environmental Indicators

- 9.1.1 In accordance with section 14(1)(d) of the Act, Sydney Water must monitor and compile data on indicators of the direct impact of its activities on the environment, whether such activities are carried out by or on behalf of Sydney Water.
- 9.1.2 Except for those indicators solely applicable to the Catchment Authority, the environmental indicators used are to accord with those published in the Government Gazette on 15 December 1995.
- 9.1.3 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its performance in relation to the indicators compiled under clause 9.1.1 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.
- 9.1.4 The yearly report provided by Sydney Water must provide information which enables a year to year comparison in relation to Sydney Water's performance in this area. In particular, Sydney Water is to use the indicators with historical annual values over at least the previous 10 years where comparable data permits such a compilation.
- 9.1.5 The yearly report is to be made available to the public by Sydney Water within 1 month after receipt by the Licence Regulator. Copies are to be made available from Sydney Water's offices on request free of charge and posted on Sydney Water's website on the internet for downloading by any person also free of charge. A reasonable number of copies are to be made available from Sydney Water offices and lodged with environmental centres and public libraries in the Area of Operations.
- 9.1.6 The environmental indicators in clause 9.1.2 are to be reviewed as part of the End of term review.

9.2 Ecologically Sustainable Development Indicators

- 9.2.1 Sydney Water must develop measures to indicate the degree to which its activities and Services comply with the principles of Ecologically Sustainable Development or ESD.

- 9.2.2 Sydney Water must develop a draft list of ESD Indicators within 1 month after the Commencement Date. The draft list must have regard to:
 - (a) corporate management (including corporate policy and planning, and corporate asset management);
 - (b) management of the System; and
 - (c) the planning, design and construction of
 - (i) new Systems;
 - (ii) the upgrading of existing Systems; and
 - (iii) depots.
- 9.2.3 The draft list developed by Sydney Water must undergo public consultation where the public have at least 20 days to provide their comments. Specific comments must also be invited from EPA, the Department of Land and Water Conservation, National Parks and Wildlife, NSW Fisheries, SEDA and peak environment non-governmental organisations.
- 9.2.4 Within three months of the close of submissions, following public consultation under clause 9.2.3, Sydney Water must present a final list of ESD Indicators to the Minister for approval and, if approved, for publication in the Gazette.
- 9.2.5 Sydney Water must commence monitoring and compiling data on the ESD Indicators from the later of the Commencement Date and 1 July 2000.
- 9.2.6 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its performance in relation to the ESD Indicators compiled under clause 9.2.4 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.
- 9.2.7 The yearly report provided under clause 9.2.6 is to be made available by Sydney Water to the public within 1 month after receipt by the Licence Regulator. Copies are to be made available from Sydney Water offices and lodged with environmental centres and public libraries in the Area of Operations.
- 9.2.8 The ESD Indicators in clause 9.2.4 are to be reviewed as part of the End of term review.

9.3 Environment Plan

- 9.3.1 Sydney Water must produce a five-year Environment Plan by the later of the Commencement Date and 30 September 2000. After that Sydney Water must produce further five-year Environment Plans every 5 years.
- 9.3.2 Sydney Water must engage in public consultation in developing the Environment Plan.
- 9.3.3 The Environment Plan must:
 - (a) contain details of Sydney Water's water, waste water and stormwater strategies, as well as the environmental aspects of its other activities such as waste minimisation and heritage;
 - (b) endorse ESD principles; and
 - (c) be recognised in Sydney Water's business plans.
- 9.3.4 The Environment Plan must set targets and time tables for compliance by Sydney Water with those targets over the term of the Environment Plan. These targets must utilise the environmental and ESD indicators in clauses 9.1 and 9.2 and also the targets and indicators in clauses 9.6 and 9.7.
- 9.3.5 The Environment Plan must be posted on Sydney Water's website on the internet for downloading free of charge, made available at its premises for access or collection by any member of the public and lodged with environmental centres and public libraries in the Area of Operations, in each case also free of charge.
- 9.3.6 The report detailing Sydney Water's progress in meeting the Environment Plan, and in particular, in complying with the targets and timetables in clause 9.3.4 are to be compiled on an a yearly basis. Within one month of its completion, the report must be posted on Sydney Water's website on the internet for downloading free of charge, made available at its premises for access or collection by any member of the public and lodged with environmental centres and public libraries in the Area of Operations, in each case also free of charge.
- 9.3.7 Amendments may only be made to the Environment Plan following public consultation.

9.4 Energy Management

- 9.4.1 In this clause:

Energy Management Policy means the energy management policy of the NSW Government released by the NSW Department of Energy (now the Ministry of Energy and Utilities) in 1998 and updated from time to time.
- 9.4.2 Sydney Water must adopt the following targets in the Energy Management Policy for energy consumption of buildings:
 - (a) 15% reduction from the 1995 level by 2001;
 - (b) 25% reduction from the 1995 level by 2005; and
 - (c) any subsequent targets set by the Energy Management Policy.
- 9.4.3 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its performance in relation to clause 9.4.2 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.

9.5 Botany Wetlands

- 9.5.1 In this clause:

Botany Wetlands Plan means the plan of management for the area known as Botany Wetlands, issued by Sydney Water in December 1997.
- 9.5.2 Sydney Water is to implement the Botany Wetlands Plan in conjunction with other appropriate persons.
- 9.5.3 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its compliance with the Botany Wetlands Plan for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.
- 9.5.4 Prior to commencement of the End of term review, Sydney Water must review the Botany Wetlands Plan in consultation with EPA, the Department of Land and Water Conservation, National Parks and Wildlife, and peak environmental non-governmental organisations for the purpose of advising the Minister whether any amendments are required to the Plan.

ENVIRONMENT — INDICATORS & PLANS CONT.

9.6 Pollution reduction targets

Where pollution reduction targets are set under section 23 of the Act, the results are to be published each year and made available to EPA and members of the public for the purposes of section 23(7) of the Act, and may be included in a report on environmental indicators required to be compiled and published under Part 9.1.

9.7 Trade waste

- 9.7.1 Sydney Water must prepare a trade waste policy and management plan, which must include trade waste water objectives and performance indicators. Sydney Water must ensure that the process of preparing the trade waste policy and management plan includes public consultation in accordance with clause 1.2.2 on a discussion paper before the plan is finalised.
- 9.7.2 By no later than 1 September each year, Sydney Water must report to the Licence Regulator on its progress in satisfying the objectives and indicators under clause 9.7.1 for the previous 12 months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.

OPERATIONAL AUDITS OF THIS LICENCE

10.1 Commission of audits

- 10.1.1 The Licence Regulator must initiate an operational audit of Sydney Water as soon as practicable after 30 June each year covering the preceding 12 months, as required by this Part (the "Annual audit"). However the first Annual audit under this Licence will cover the period from 1 January 2000 to 30 June 2001.

[Note: The Licence Regulator is to arrange for the conduct of an operational audit covering the calendar year 1999.]

- 10.1.2 The Annual audit must be conducted by the Licence Regulator or by a person, other than Sydney Water or its Subsidiary, that the Licence Regulator considers is suitably qualified to perform the Annual audit.
- 10.1.3 As part of the Annual audit, the Licence Regulator must invite members of the public to make submissions to it. The Licence Regulator may also undertake any other public consultation it considers appropriate.

10.2 What the audit is to report on

- 10.2.1 The Licence Regulator or the person undertaking the Annual audit must investigate and prepare a report on the following:

- (a) on-going compliance by Sydney Water with its Customer Contract and specific areas of non-compliance;
- (b) Sydney Water's compliance with its code of practice and procedure on debt and disconnection under clause 5.3.2 and any similar initiatives developed by Sydney Water;
- (c) compliance by Sydney Water with its obligations under Part 6 of this Licence;
- (d) compliance by Sydney Water with the performance standards under clauses 7.1 and 7.2;
- (e) compliance by Sydney Water with the water conservation targets under clause 8.1.1;
- (f) Sydney Water's performance in relation to implementation of the demand management strategy under clause 8.2;
- (g) progress by Sydney Water in meeting the re-use target required under clause 8.3.1;
- (h) progress by Sydney Water in relation to the

implementation of the National Water Conservation Rating and Labelling Scheme under clause 8.4.1;

- (i) Sydney Water's performance in relation to the environment indicators under clause 9.1;
- (j) Sydney Water's performance in relation to the ESD Indicators compiled under clause 9.2.5;
- (k) compliance by Sydney Water with the Environment Plan under clause 9.3;
- (l) compliance by Sydney Water with the targets in the Energy Management Policy for energy consumption of buildings in clause 9.4.2;
- (m) compliance by Sydney Water with the Botany Wetlands Plan under clause 9.5;
- (n) compliance by Sydney Water with the trade waste objectives and performance indicators under clause 9.7;
- (o) the effectiveness of Sydney Water's internal dispute resolution scheme under clause 12.1;
- (p) the effectiveness of Sydney Water's external dispute resolution scheme under clause 12.2;
- (q) complaints made against Sydney Water to a court or tribunal under clause 12.3; and
- (r) any other matter required by this Licence or the Act to be assessed or considered as part of the Annual audit.

- 10.2.2 Despite clause 10.2.1, neither the Licence Regulator nor the persons undertaking the Annual audit may investigate a matter under clause 10.2.1 if the investigation of that matter is ordinarily within the regulatory activities of the EPA, NSW Health or the Department of Land and Water Conservation and the relevant agency has undertaken an investigation of the matter. However, the Licence Regulator may, as part of the Annual audit:

- (a) report on Sydney Water's implementation of any Memorandum of Understanding referred to in clause 3.3.1;
- (b) satisfy the requirement in clause 10.2.1 to investigate and report on a matter under clause 10.2.1 by including in its report consideration of the findings, the situation at the end of the licence audit period and Sydney Water's response to the findings, of any investigation of the matter by the EPA, NSW Health or the Department of Land and Water Conservation; and

OPERATIONAL AUDITS OF THIS LICENCE CONT.

- (c) request Sydney Water to provide information relating to an investigation of a matter by the EPA, NSW Health or the Department of Land and Water Conservation which is ordinarily within their regulatory activities, in accordance with clause 10.5.
- 10.2.3 The Licence Regulator must ensure that, subject to clause 10.2.2, the report of the Annual audit addresses the matters in clause 10.2.1 and advises the Minister on the following matters:
 - (a) areas in which Sydney Water's performance under this Licence may be improved;
 - (b) any changes to the Licence and the Customer Contract that the Licence Regulator considers necessary;
 - (c) any penalties or remedial action required as a result of Sydney Water's performance under the Licence;
 - (d) whether the Minister should recommend that Sydney Water's Licence be cancelled by the Governor under section 20 of the Act for reasons identified in the annual audit report; and
 - (e) any other matter relating to the annual audit or the Licence Regulator's functions that it considers appropriate.

10.3 Reporting of audit

- 10.3.1 The Licence Regulator must ensure that the report of the Annual audit is presented to the Minister within 1 month after its receipt of the audit under section 32 of the Act.
- 10.3.2 Where the Annual audit report has identified non-compliance with this Licence, in addition to whatever other action is taken or required to be taken, the Minister may require Sydney Water to promptly advertise publicly and notify Customers and Consumers, of the areas in which its performance has not complied, the reasons why and the measures that will be taken by it to address the non-compliance. Such advertisements and notices are to be in a form reasonably acceptable to the Licence Regulator.

10.4 Additional audits

- 10.4.1 The Licence Regulator must initiate additional audits of Sydney Water if required by the Minister.
- 10.4.2 An additional audit may address one or more of the matters in clause 10.2.1 or any other matter required by the Minister.
- 10.4.3 The provisions of this Part applying to the Annual audit will apply equally to additional audits under clause 10.4.1 (all necessary changes having been made), to the extent that those provisions are relevant.

10.5 Provision of Information

- 10.5.1 Sydney Water must provide the Licence Regulator and the person appointed by the Licence Regulator under clause 10.1.2 with all information within its possession or under its control (subject to clause 10.5.4) necessary to the conduct of the Annual audit or an additional audit, including whatever information is requested by the Licence Regulator or the person appointed by the Licence Regulator.
- 10.5.2 The information sought under clause 10.5.1 must be made available within a reasonable time of it being requested.
- 10.5.3 For the purposes of an audit, Sydney Water must, within a reasonable time of being required by the Licence Regulator or a person appointed by the Licence Regulator, permit the Licence Regulator or the person appointed:
 - (a) to have access to any works, premises or offices occupied by Sydney Water;
 - (b) to carry out inspections, measurements and tests on, or in relation to, any such works, premises or offices;
 - (c) to take on to or into any such premises, works or offices any other persons or equipment as necessary for the purposes of performing the audit;
 - (d) to inspect and make copies of, and take extracts from, any books and records of Sydney Water that are maintained in relation to the performance of Sydney Water's obligations in accordance with this Licence; and
 - (e) to discuss matters relevant to the audit with Sydney Water's employees.

- 10.5.4 For the purpose of an audit, the information to be provided by Sydney Water or a third party under clause 10.5.5 to the Licence Regulator or the person appointed by the Licence Regulator will include information over which Sydney Water, such a third party or other person claims confidentiality or privilege. The Licence Regulator or the person appointed by the Licence Regulator is required to enter into reasonable arrangements with Sydney Water or such third party to ensure that the confidential or privileged information is kept confidential.
- 10.5.5 If Sydney Water contracts out any of its activities to third parties (including a Subsidiary) it must take all reasonable steps to ensure that, if required by the Licence Regulator, any such third parties provide information and do the things specified in this Part that extend to Sydney Water as if that third party were Sydney Water.

PRICING

Sydney Water must set the level of fees, charges, and other amounts payable for its services subject to the terms of this Licence, the Act and the maximum prices and methodologies for Sydney Water's Services determined from time to time by IPART.

[Note: Division 8 of Part 6 of the Act governs the nature of fees and charges which may be imposed by Sydney Water. Under the terms of the Independent Pricing and Regulatory Tribunal Act, Sydney Water is a government agency for which IPART has standing reference to conduct investigations and report on the determination of pricing for services supplied and pricing policies.]

DISPUTE RESOLUTION SCHEME

12.1 Internal Dispute Resolution Process

- 12.1.1 Sydney Water must establish internal complaints handling procedures for receiving, responding to and resolving complaints by Customers and Consumers against Sydney Water.
- 12.1.2 The internal complaints handling procedures of Sydney Water must be based on the Australian Standard AS4269-1995 Complaint Handling.
- 12.1.3 Sydney Water must make available to Customers and Consumers information concerning its internal complaints handling procedures which explains how to make a complaint and how the procedure works.
- 12.1.4 Sydney Water must provide information of the nature described in clause 12.1.3 to Customers through their quarterly, or other, bills at least once annually.
- 12.1.5 The Customer complaint handling, complaint resolution process and Customer redress provided to Customers under the Customer Contract must be reviewed and amended where necessary by Sydney Water to ensure that it is based on the Australian Standard AS4269-1995 Complaint Handling.
- 12.1.6 Sydney Water must report each year to the Licence Regulator as part of the Annual audit on the following details concerning complaints made against Sydney Water which are handled by its internal complaints handling process:
 - (a) the number and types of complaints received on a month by month basis, classified by Suburb into one or more of the following categories:
 - (i) water quality, including health and aesthetic parameters;
 - (ii) continuity of water supply;
 - (iii) water pressure;
 - (iv) sewage odour;
 - (v) sewage overflow;
 - (vi) stormwater and drainage services; and
 - (vii) billing including availability charges payable under the Act.

- (b) the number and type of complaints resolved or not resolved (on a month by month basis) in sufficient detail and using sufficient classifications to enable the Licence Regulator to gain a reasonable understanding of how and how well those complaints were resolved or why complaints were not resolved, as the case may be; and
- (c) any problems of a systemic nature arising from the complaints.

12.2 External Dispute Resolution Scheme

- 12.2.1 Within 1 month after the Commencement Date, Sydney Water must establish a Dispute Resolution Scheme for the resolution by a Dispute Resolution Body of disputes between Sydney Water and its Customers and between Sydney Water and Consumers of the nature described in 12.2.3.
- 12.2.2 The Dispute Resolution Scheme so established by Sydney Water is subject to the Minister's approval.
- 12.2.3 The Dispute Resolution Body is to hear disputes relating to complaints made by Customers and Consumers in relation to the following issues:
 - (a) water quality, including health and aesthetic parameters,
 - (b) continuity of water supply,
 - (c) water pressure,
 - (d) sewage odour,
 - (d) sewage overflow,
 - (e) stormwater and drainage services, and
 - (f) billing, including availability charges payable under the Act.
- 12.2.4 The Dispute Resolution Scheme must comply with the minimum standards, so far as applicable, specified in the Benchmarks for Industry-based Consumer Dispute Resolution Schemes released by the Commonwealth Minister for Customs and Consumer Affairs in August 1997.
- 12.2.5 The Dispute Resolution Scheme must have the following features:
 - (a) the decision-making process of the Dispute Resolution Body and administration of the scheme is to be

	<p>independent from Sydney Water and Subsidiaries of Sydney Water;</p> <p>(b) Sydney Water agrees to abide by the decisions of the Dispute Resolution Body in relation to disputes referred to it for resolution;</p> <p>(c) the Dispute Resolution Scheme must adopt informal proceedings which discourage a legalistic adversarial approach;</p> <p>(d) decisions of the Dispute Resolution Body should be fair and be seen to be fair, by observing the principles of procedural fairness, by making its decisions based upon the information before it, and by having specific criteria upon which its decisions are based;</p> <p>(e) the Dispute Resolution Scheme is to operate efficiently by keeping track of disputes referred to it, ensuring complaints are dealt with by the appropriate process and by the Dispute Resolution Body regularly reviewing the operation of the Dispute Resolution Scheme; and</p> <p>(f) the Dispute Resolution Scheme is to be free of cost to Customers and Consumers and is to be funded by Sydney Water.</p>	<p>(ii) continuity of water supply;</p> <p>(iii) water pressure;</p> <p>(iv) sewage odour;</p> <p>(v) sewage overflow;</p> <p>(vi) stormwater and drainage services; and</p> <p>(vii) customer billing, including availability charges payable under the Act</p>
12.2.6	Sydney Water must prepare a pamphlet that explains how the Dispute Resolution Scheme operates and how it can be accessed.	
12.2.7	Sydney Water must provide the pamphlet to Customers through their quarterly or other bills, at least once annually.	
12.2.8	Sydney Water must provide the Licence Regulator with written reports of the determinations made by the Dispute Resolution Body based on information available to Sydney Water and information reasonably obtained from the Dispute Resolution Body. Where considered appropriate by Sydney Water and the Dispute Resolution Body, confidentiality arrangements are to be made so as not to disclose the Customer or Consumer's identity in such reports.	<p>(c) the outcome of those complaints,</p> <p>(d) the time taken to resolve complaints,</p> <p>(e) the procedure for resolving complaints,</p> <p>(f) any problems of a systemic nature arising from the complaints,</p> <p>(g) any other relevant information required by the Licence Regulator to be included in the report.</p>
12.2.9	<p>Sydney Water must produce a yearly report to the Licence Regulator based on information available to Sydney Water and information reasonably obtained from the Dispute Resolution Body. The report must contain the following information:</p> <p>(a) how the scheme works,</p> <p>(b) the number and types of complaints received by the Dispute Resolution Body, classified by Suburb into one or more of the following categories:</p> <p>(i) water quality including health and aesthetic parameters;</p>	<p>12.2.10 The report referred in clause 12.2.9 is to be made available to the public free of charge.</p>
		<p>12.3 Complaints to other bodies</p> <p>Sydney Water must report to the Licence Regulator by no later than 1 September each year (for consideration and reporting by the Licence Regulator as part of the Annual audit) on complaints made against Sydney Water to a court or tribunal, such as the Fair Trading Tribunal, (based on information available from these bodies and Sydney Water itself as a party to the complaint) containing the following details:</p> <p>(a) the number and types of complaints received by such other bodies,</p> <p>(b) the outcome of complaints,</p> <p>(c) how the complaints were resolved,</p> <p>(d) any problems of a systemic nature arising from the complaints, and</p> <p>(e) any other relevant information required by the Licence Regulator to be included in the annual report.</p> <p><i>[Note: Section 58 provides that the jurisdiction of the Fair Trading Tribunal under the Consumer Claims Act 1998 extends to the hearing and determination of a consumer claim within the meaning of that Act relating to a service supplied by Sydney Water under a Customer Contract. The Consumer Claims Act provides that any consumer (which would include any Customer) may apply to the Tribunal for determination of a consumer claim.]</i></p>

LIABILITY ISSUES

13.1 Contracting out

- 13.1.1 Sydney Water may contract out the provision, construction, operation, management or maintenance of any of the Systems and Services that are the subject of this Licence in accordance with section 91 of the Act.

[Note: Section 91 of the Act permits Sydney Water to enter into contracts or arrangements with any person for such purposes.]

- 13.1.2 Contracting out under clause 13.1.1 does not relieve Sydney Water of its responsibility to comply with its obligations under this Licence.

13.2 Damage and Compensation to Persons

Sydney Water is required by section 41 of the Act to do as little damage as practicable in exercising its functions under Division 4 of Part 6 of the Act, and in circumstances specified in that provision, to compensate persons who suffer damage by the exercise of those functions.

13.3 Competitive Neutrality

- 13.3.1 Subject to the Act, the SOC Act and any applicable law, Sydney Water must comply, and must ensure that its Subsidiaries comply, with the competitive neutrality policies and guidelines adopted by New South Wales under clause 3 of the Competition Principles Agreement.

- 13.3.2 This Part is in addition to any obligations of Sydney Water under the *Trade Practices Act 1974* and the *Competition Code* of NSW and other States and Territories as applicable.

[Note: For example Section 46 of the Trade Practices Act 1974 prohibits a corporation that has a substantial degree of power in a market from taking advantage of that power for the purpose of:

- (a) eliminating or substantially damaging a competitor of the corporation or of a body corporate that is related to the corporation in that or any other market;*
- (b) preventing the entry of a person into that or any other market; or*
- (c) deterring or preventing a person from engaging in competitive conduct in that or any other market.]*

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NOTICES

Any notice or other communication given under this Licence is to be made in writing addressed to the intended recipient at the address shown in Schedule 3, or the last address notified by the recipient.

CUSTOMER CONTRACT

The Customer Contract is published as a separate document.

AREA OF OPERATIONS

Areas of Operations means the local government areas specified below, the islands in Sydney Harbour, the deemed areas described below, any special area or deemed special area under section 21 of the *Water Board Act 1987* deemed to be a controlled area by section 88(3) of the Act or any special area, deemed special area or controlled area which continues in force by virtue of Part 2, Schedule 9 of the Act, as well as areas declared from time to time to be controlled in accordance with section 88 of the Act and any variation to the Area of Operations made by the Governor in accordance with section 10 of the Act.

Local Government Areas

Ashfield	Liverpool (City)
Auburn	Manly
Bankstown (City)	Marrickville
Baulkham Hills	Mosman
Blacktown (City)	North Sydney
Blue Mountains (City)	Parramatta (City)
Botany	Penrith (City)
Burwood	Pittwater
Camden	Randwick
Campbelltown (City)	Rockdale
Canterbury	Ryde
Concord	Shellharbour
Drummoyne	South Sydney (City)
Fairfield (City)	Sutherland
Hawkesbury (City)	Strathfield
Holroyd	Sydney (City)
Hornsby	Warringah
Hunter's Hill	Waverley
Hurstville (City)	Willoughby
Kiama	Wingecarribee (Part)
Kogarah	Wollondilly
Ku-ring-gai	Wollongong (City)
Lane Cove	Woollahra
Leichhardt	

Deemed Areas

Any land under the waters of Port Jackson and adjoining the boundaries of the City of Sydney upon which there is erected any wharf, pier, jetty, building, or other structure shall be deemed to be within the Area of Operations of Sydney Water.

[Note: Under section 10(1) of the Act, the Area of Operations for Sydney Water is the same as the area current for the Water Board as at the date of corporatisation. The Area of Operations for the Water Board was identical in extent to the Area of Operations proclaimed under the Metropolitan Water Sewerage & Drainage Board Act 1924.]

ADDRESS FOR NOTICES

Sydney Water Corporation

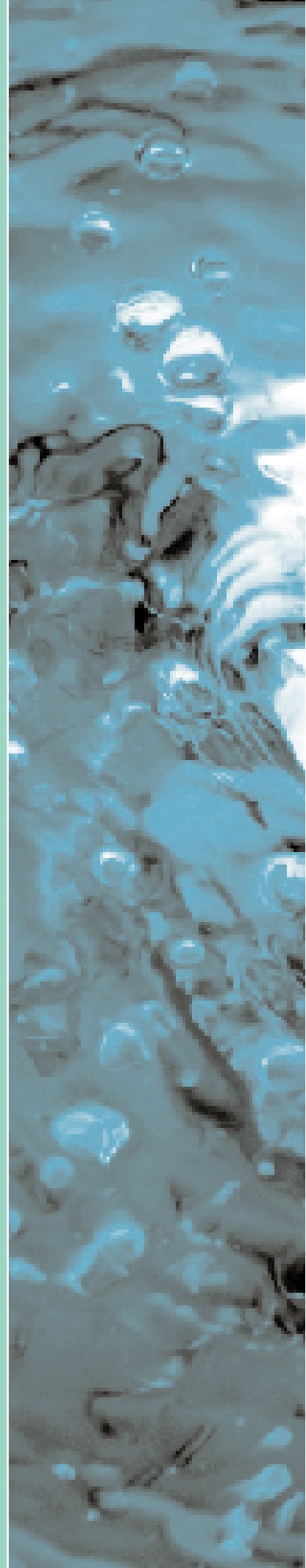
Managing Director
Sydney Water Corporation
115-123 Bathurst St
Sydney NSW 2000

Licence Regulator

The Licence Regulator
Level 6, 29-57 Christie St
St Leonards NSW 2065

SYSTEM PERFORMANCE STANDARDS

Section 1 Licence reference	Section 2 Levels of service	Section 3 Standard	Section 4 How standard is measured
Clause 7.1.1	Drinking Water – continuity	Sydney Water must ensure that, on an annual basis, 95% of all properties connected to its Water supply system will not have that connection affected by an interruption of water supply exceeding 6 hours.	<p>The number of interruptions exceeding 6 + 10 hours divided by total number of properties expressed as a percentage and then subtracted from 100.</p> <p>Where an interruption occurs again in the reporting period, each property is to be counted each time it experiences an interruption, regardless of the number of times the service is so affected.</p> <p>The duration of the interruption is to be measured from the time Sydney Water is advised and ends when the supply to the property is reinstated.</p>
Clause 7.1.1	Drinking water – pressure	<p>Sydney Water must ensure that, on an annual basis, 98% of all properties connected to its Water supply system will have water pressure at the main tap in excess of 15 metres head except in the following low pressure areas:</p> <ul style="list-style-type: none"> • Urban areas adjacent to reservoirs in the Blue Mountains • Non-urban properties in Bayview, West Camden, Llandilo, Berkshire Park, Castlereagh, North Richmond, Oakville, Riverstone, Schofields and the Blue Mountains 	<p>The number of instances where pressure is less than 15 metres head (excluding exemptions) divided by total number of properties expressed as a percentage and then subtracted from 100.</p> <p>Where pressure of less than 15 metres head occurs again in the reporting period, each property is to be counted each time, regardless of the number of times the pressure service is so affected.</p>
Clause 7.1.1	Sewage Overflows	Sydney Water must ensure that, on an annual basis, 96% of all properties connected to its Sewerage system will not have their land affected by a sewage overflow on their land from, or as a result of a sewer owned or operated by Sydney Water.	<p>Number of properties affected by a sewage overflow divided by total number of properties, expressed as a percentage and then subtracted from 100.</p> <p>Where a sewage overflow occurs again in the reporting period, the property is to be counted each time it experiences an overflow regardless of the number of times any property is so affected.</p>





Appendix C

Ministerial requirements

SWC Ministerial Requirements
from 02/02 Audit

02/108

DITM Ref. D1a377
MEU Ref: 03/00156
File No 99/6321 #3

Mrs Gabrielle Kibble
Chairman
Sydney Water Corporation
115 - 123 Bathurst Street
SYDNEY NSW 2000

27 FEB 2003

Dear Mrs Kibble

I am writing to you in relation to the 2001-2002 Operational Audit Report for Sydney Water Corporation, covering the period from 1 July 2001 to 30 June 2002. As the Minister responsible for overseeing the Corporation's performance against the requirements of the Operating Licence, I have considered the advice given to me by the Independent Pricing and Regulatory Tribunal (IPART) on the audit findings. I will table the audit report and a copy of this letter in Parliament.

I am pleased to note that overall the Audit revealed a trend of improvement with respect to compliance against the Licence, with the Auditor's finding either full or high compliance with over 80% of the Operating Licence requirements.

On the basis of the Audit report and the advice I have received, there will be no penalties imposed on the Corporation. I note, however, that the Auditors have identified concerns regarding demand management, and with a number of instances where I believe there is opportunity for improvement.

With respect to these aspects of the Licence, I make the following comments:

Water Conservation and Demand Management

I share general concerns expressed relating to Sydney Water's Water Conservation Targets and note the Auditor's comments that:

"Sydney Water has achieved 'Low compliance' with respect to actions taken to reduce the quantity of water it draws from all sources and it is unlikely that SWC will meet its 2004/05 target. The 2010/11 target may be achievable but expansion of current demand management activities or greater than expected outcomes from existing programs may be required."

I am aware of the view that Sydney's demand for drinking water may exceed the amount of water that, over the long term, can be safely extracted from the Sydney Catchment Authority's storages.

.../2

As you know, the Government formed the Demand Management Working Group under the Water CEOs Taskforce to address this issue. This Group is investigating existing demand management and water recycling initiatives and a range of new proposals. You will also recall that, as a result of IPART's Mid Term Review of Sydney Water's Operating Licence, I have already placed a number of new Ministerial Requirements on the Corporation which are designed to increase the clarity of reporting on its demand management program.

To this end, I am pleased to note the Auditor's comments that the Corporation has committed \$42 million to demand management activities to the end of 2002-03 and that it proposes to inspect 4,000 km of water pipes over the next year as part of its leakage reduction program.

I would like to take this opportunity to commend Sydney Water for its water conservation initiatives such as the Rainwater Tank Rebate Pilot Scheme, and the Every Drop Counts Household and Business Programs.

I believe, however, it is important to ensure that Sydney Water is able to accurately measure water savings achieved. This is an area in which some deficiencies were identified during the Mid Term Review.

Therefore, I require the Corporation to describe its approach to ascertaining, in a cost-effective way, the amount of leakage from its pipes and the means it uses to validate the level of leakage reduction achieved. The Corporation should report to myself, and IPART, on these matters by 1 September 2003.

Water Quality

I am pleased to note the continued strong performance of Sydney Water with respect to drinking water quality and the Auditor's comments that:

"Sydney Water obtained 'Full compliance' with respect to the supplies of treated drinking water for its customers. The water quality supplied is generally of an excellent standard and complies with the health related requirements of the Australian Drinking Water Guidelines and the aesthetic related requirements of NSW Health."

Despite this excellent result, incidents such as the electrical fire at Prospect Water Filtration Plant that occurred in September 2002, underscore the potential of unexpected events to affect water quality. I therefore require Sydney Water to consider risks that may occur through variations in bulk raw water quality or plant failure through its Annual Drinking Water Quality Improvement Plan.

Dispute Resolution Scheme

I note the Auditor's finding of "Partial compliance" with the Licence requirement that Sydney Water must identify and report on "problems of a systemic nature" that have been identified via its complaint handling system. This is of concern given that one of the primary functions of complaint handling systems is to identify, inform and lead

.../3

to improvements in customer service.

In response to this finding, I require Sydney Water to prepare a comprehensive report which demonstrates the use of complaint data to identify problems of a systemic nature in specific geographical areas and the strategies used to overcome these problems. This report should be prepared using data gathered during the 2002-03 Audit period, to allow it to be considered as part of next year's Audit. I require delivery of this report to me and IPART by no later than 1 September 2003.

System Performance Standards


The current Audit reports that Sydney Water has fully complied with the amended system performance standards for water pressure, water continuity and sewage overflows. This is a pleasing result given that standards, along with water quality, represent the most fundamental aspects of service delivery by Sydney Water and reflect the Corporation's asset management practices.

One area of difficulty identified in the Audit is that of reporting to the specific accuracy and confidence limits set out for each performance standard. I understand that Sydney Water proposes to address this for the 2002-03 Audit period by undertaking internal audits of the accuracy of the reported results for each of the performance standards.

The Tribunal has recommended that this issue be resolved over the longer term through the Monitoring and Reporting Protocol between Sydney Water and IPART. Accordingly I require Sydney Water to develop as part of the Measuring and Reporting Protocol with IPART, an agreed scope, methodology and assumptions in order to provide a platform for reporting on the accuracy and confidence limits for each of the respective system performance standards. I require these arrangements to be in place by no later than 1 July 2003.

Please pass on my appreciation of your staffs efforts over the past year. I thank you for the cooperation Sydney Water has shown in the conduct of the Audit.

Yours sincerely



Kim Yeadon MP
Minister for Energy



Appendix D

MOUs



MEMORANDUM OF UNDERSTANDING

Between

SYDNEY WATER CORPORATION

and

ENVIRONMENT PROTECTION AUTHORITY

October 2002

October 2002

MEMORANDUM OF UNDERSTANDING

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Introduction

This Memorandum of Understanding provides the foundations for a co-operative relationship between the Environment Protection Authority and Sydney Water Corporation. In doing so, it reflects the requirements of section 35 of the *Sydney Water Act 1994* as well as the *Sydney Water Operating Licence 2000 – 2005*.

Under the *Protection of the Environment Administration Act 1991*, the Environment Protection Authority is established as the primary organisation responsible for protecting the environment of NSW. The Environment Protection Authority's regulatory role, on behalf of the environment and community, is reflected in the *Protection of the Environment Administration Act 1991* and *Protection of the Environment Operations Act 1997*, as well as in various other acts and regulations, which the organisation administers.

Sydney Water Corporation's responsibilities are for the provision of drinking water, and wastewater services and some stormwater services to Sydney, the Blue Mountains and the Illawarra communities. The Environment Protection Authority constitutes Sydney Water Corporation's environmental regulator in carrying out such activities. More specifically, under the *Protection of the Environment Operations Act 1997*, the Environment Protection Authority regulates those Sydney Water activities that are scheduled under this Act, and is the appropriate regulatory authority for Sydney Water's other activities. The twenty-seven licences for Sydney Water's sewage treatment systems are primary examples of such regulation. Furthermore, the importance of Sydney Water Corporation's broad environmental responsibilities, and the relationship between these and the requirements of the *Protection of the Environment Administration Act 1991*, is directly reflected in Sydney Water's principal and special objectives.

In addition to recognising the respective roles of the Environment Protection Authority and Sydney Water Corporation, this Memorandum of Understanding outlines co-operative structures and processes between the Environment Protection Authority and Sydney Water Corporation, including the Strategic Liaison Group and the Operational Policy Committee. These structures and processes allow for joint consideration of strategic, operational and regulatory issues as well as joint deliberation on progress and alignment of Sydney Water's commitments to ongoing environmental improvements with the EPA's broader environmental protection charter.

The Environment Protection Authority and Sydney Water Corporation will work co-operatively through the Strategic Liaison Group, the Operational Policy Committee and other mechanisms to achieve the objectives of both organisations. In doing so, the Environment Protection Authority expects Sydney Water Corporation to meet environmental requirements, and will regulate Sydney Water Corporation in a manner consistent with its regulation of other organisations.

1 Parties to this Memorandum

This Memorandum of Understanding (MOU) is entered into by the Sydney Water Corporation (Sydney Water) and the Environment Protection Authority (EPA), in conformance with section 35 of the *Sydney Water Act 1994*.

2 Functions and Objectives of the Parties

Sydney Water Corporation

2.1 Functions of Sydney Water

Subject to one or more types of operating licences, the principal functions of Sydney Water are, in its area of operations, to provide, construct, operate, manage or maintain systems or services for:

- a. storing or supplying water; or
- b. providing sewerage services; or
- c. providing stormwater drainage services; or
- d. disposing of wastewater.

Sydney Water may provide facilities or services that are necessary, ancillary or incidental to its principal functions, and conduct any business activity (whether or not related to its principal functions) that it considers will further its objectives. These objectives are described below.

2.2 Principal Objectives of Sydney Water

The equally important principal objectives of Sydney Water are:

- a. to be a successful business and, to this end:
 - (i) to operate at least as efficiently as any comparable business;
 - (ii) to maximise the net worth of the state's investment in Sydney Water;
 - (iii) to exhibit a sense of social responsibility by having regard to the interests of the community in which it operates; and
- b. to protect the environment by conducting its operations in compliance with the principles of ecologically sustainable development contained in section 6(2) of the *Protection of the Environment Administration Act 1991*; and
- c. to protect public health by supplying safe drinking water to its customers and other members of the public in compliance with the requirements of any operating licence.

2.3 Special Objectives of Sydney Water

In implementing its principal objectives, Sydney Water has the following special objectives:

- a. to reduce risks to human health; and
- b. to prevent the degradation of the environment.

These special objectives are to be interpreted by reference to the objectives referred to in section 6(1)(b) of the *Protection of the Environment Administration Act 1991*, so far as they are relevant to Sydney Water.

Environment Protection Authority

2.4 Functions of the EPA

Established in 1992 under the *Protection of the Environment Administration Act 1991*, the EPA works with business, industry, government and community organisations to achieve and maintain a healthy environment. In addition to its regulatory functions the EPA is active in environmental education, environmental economics, environmental research and monitoring, and regular reporting on the state of the environment of NSW.

2.5 Objectives of the EPA

The EPA has two main objectives:

- a. to protect, restore and enhance the quality of the environment in NSW, having regard to the need to maintain ecologically sustainable development; and
- b. to reduce the risks to human health and prevent the degradation of the environment.

The EPA legislation expands on the means by which these objectives can be reached, which include:

- i. promoting pollution prevention;
- ii. adopting the principle of reducing to harmless levels the discharge into the air, water or land of substances likely to cause harm to the environment;
- iii. minimising the creation of waste by the use of appropriate technology;
- iv. regulating the transportation, collection, treatment, storage and disposal of waste;
- v. encouraging the reduction of the use of materials;
- vi. encouraging the reuse and recycling of materials;
- vii. encouraging material recovery;
- viii. adopting minimal environmental standards prescribed by complementary Commonwealth and State legislation, and advising the Government to prescribe more stringent standards;
- ix. where appropriate setting mandatory targets for environmental improvement;
- x. promoting community involvement in decisions about environmental matters;

- xi. ensuring the community has access to relevant information about hazardous substances arising from, stored, used or sold by any industry or public authority; and
- xii. conducting public education and awareness programs about environmental matters.

3 Principles

- 3.1 There is significant alignment of the principle and special objectives of Sydney Water and the objectives of the EPA, especially in regard to the principles of ecologically sustainable development, the prevention of environmental degradation, and the minimisation of human health risks. This alignment of objectives provides a strong basis for a co-operative relationship and shall be recognised through facilitation of the structures and processes established by this MOU.
- 3.2 The parties recognise the alignment of Sydney Water's and the EPA's objectives with Sydney Water's specific objectives and outcomes for environmental improvements as detailed in the current Environment Plan for Sydney Water. Liaison on issues associated with Sydney Water's commitments to environmental improvement will be facilitated through the structures and processes established by this MOU.
- 3.3 The parties shall recognise the important role of the community and of other stakeholders, especially the Sydney Catchment Authority and the Department of Health, in management of the urban water cycle in the catchments supplying water in Sydney Water's area of operations.
- 3.4 The parties shall recognise the need to apply innovation and full integration of water services in the pursuit of ecologically sustainable development. Interactions between the parties will be founded on the recognised need to maximise such opportunities for innovation and for a co-ordinated government approach to urban water cycle planning.

4 Term

- 4.1 This MOU commences on the date of endorsement by the respective parties and remains in force until amended or replaced.

5 Structures and Processes

5.1 Chief Executive Officer (CEO) Meetings

- 5.1.1 The CEO of Sydney Water and the CEO of the Environment Protection Authority, or respective deputies, shall meet to discuss matters of mutual concern and any matters referred by the Strategic Liaison Group or the Operational Policy Group.
- 5.1.2 CEO meetings will be on a regular basis but not less than once per financial year.
- 5.1.3 Either party shall initiate CEO meetings as required.

5.2 Strategic Liaison Group (SLG)

- 5.2.1 The EPA and Sydney Water will continue to operate the Strategic Liaison Group.
- 5.2.2 The role of the SLG will be to consider those issues determined by members of the group to be relevant, but may include:
- long-term joint strategic issues and policies arising from the functions of the parties given in sections 2.1 and 2.4 of this MOU, including future directions for water cycle management, sewage treatment system management and regulation;
 - the implications of the EPA's objectives for Sydney Water, as stated in section 2.5 of this MOU;
 - strategic issues of a scientific nature; and
 - areas for co-operative research and joint initiatives.
- 5.2.3 The SLG members shall report to their respective CEOs on significant issues that relate to the functions of the parties as detailed in 2.1 and 2.4 of this MOU.
- 5.2.4 The membership of the SLG will include CEOs and relevant members of their executive team. Specific membership will be as agreed between the parties from time to time. The chairperson of the SLG will rotate annually.
- 5.2.5 The SLG shall meet at least three (3) times per year. The SLG shall determine the specific frequency and procedure for calling meetings and the manner in which business is to be conducted at, and in relation to, those meetings.

5.3 Operational Policy Committee (OPC)

- 5.3.1 The EPA and Sydney Water will continue to operate the Operational Policy Committee.
- 5.3.2 The role of the OPC will be to consider those issues set by the strategic agenda of the SLG as well as issues determined by members of the group to be relevant. Issues considered may include:
- operational issues and regulatory issues;
 - issues relating to approaches to and progress of Sydney Water's commitments to environmental improvements;
 - unresolved matters of significance to Sydney Water's operations; and
 - requirements of the sewage treatment system (STS) licences.
- 5.3.3 The OPC members shall report to the SLG on significant issues that relate to the functions of the parties as detailed in 2.1 and 2.4 of this MOU.
- 5.3.4 The membership of the OPC will be as agreed between the parties from time to time.

- 5.3.5 The OPC shall meet at least four (4) times per year. The OPC shall determine the specific frequency and procedure for calling meetings and the manner in which business is to be conducted at, and in relation to, those meetings.
- 5.3.6 The OPC shall develop an annual work program to form the basis of OPC, and provide this to the SLG for endorsement following the first meeting for the financial year.

5.4 Joint Forums, Programs and Initiatives

- 5.4.1 Joint forums will be convened where appropriate with the Sydney Catchment Authority and other stakeholders on issues relevant to supplying water in Sydney Water's area of operations and sewerage and stormwater services.
- 5.4.2 Sydney Water and the EPA will consider developing joint programs and initiatives and undertaking research to meet the stated objectives of both organisations that are party to this MOU, as detailed in sections 2.2, 2.3 and 2.5 of this MOU.

5.5 Exchange of Information and Data

- 5.5.1 In recognition of the spirit of co-operation embodied in this MOU and to enable both parties to more effectively carry out their statutory functions given in 2.1 and 2.4 of this MOU, each party will share or supply relevant data and information and provide updated information where necessary. This agreement should not constrain the regulatory responsibilities of the EPA.
- 5.5.2 Data and information shared or supplied openly and honestly by the parties under this MOU shall be on such terms as agreed between the parties. The intention is to avoid either party being 'blindsided', that is where relevant information is not made available.

6 Dispute Resolution

- 6.1 Any difference or dispute that arises between the parties under this MOU will be addressed at the lowest management level possible. Either party will refer issues that cannot be resolved at a local level to more senior officers or the SLG for consideration and resolution.
- 6.2 The SLG will strive to resolve all disputes, but should there be unresolved issues, these will be referred to the CEOs of the two parties.


7 Amendments to this MOU

- 7.1 Upon either party to this MOU giving notice to the other of its desire to see the MOU reviewed, amended or replaced, this MOU must be reviewed, and amended or replaced accordingly.
- 7.2 Both parties must agree to the timeframe for any process of review, amendment or replacement of this MOU at the commencement of that process.
- 7.3 Any amendment to or replacement of this MOU shall be exhibited in accordance with the requirements of section 36 of the Sydney Water Act 1994.

Sydney Water-EPA Memorandum of Understanding

This Memorandum of Understanding is made between the Environment Protection Authority and the Sydney Water Corporation on the 16 day of October 2002.

SIGNED for and on behalf of the Environment Protection Authority


.....

Lisa Corbyn, Director General


.....

Witness to the above signature

Sonya Pike
.....

(Print name)

EPA
59-61 GOULBURN ST.
.....

SYDNEY NSW 2000
.....

(Address)

SIGNED for and on behalf of the Sydney Water Corporation


.....

Alex Walker, Managing Director

J. North
.....

Witness to the above signature

JENNIFER NORTH
.....

(Print name)

Sydney Water Corporation
.....

115-123 Bathurst St. Sydney
.....

(Address)

Memorandum of Understanding

Between **Sydney Water Corporation** and

The Water Administration Ministerial Corporation

(NSW Department of Land and Water Conservation)

June 2002

ISBN 0 7347 5255 5

Published by the NSW Department of Land and Water Conservation

Sydney July 2002

Introduction

In accordance with the requirements of *Sydney Water Operating Licence 2000 - 2005*, the purpose of this MOU is to form the basis for co-operative relations between the Water Administration Ministerial Corporation and Sydney Water Corporation.

Under the *Water Act 1912*, the *Sydney Water Act 1994* and the *Water Management Act 2000* the Ministerial Corporation (through the Department of Land and Water Conservation) has certain powers to regulate Sydney Water's operations. These include water extraction (including drought management), operation of works, activities on waterfront land, and water use (including demand management).

Section 372(3) of the *Water Management Act 2000* provides that the Ministerial Corporation may exercise any of its functions, and otherwise act, in the name of the Department of Land and Water Conservation.

Sydney Water is, therefore, a major stakeholder in the exercise of the Department's functions in the catchments supplying water to Sydney Water and in Sydney Water's area of operations. Specific Sydney Water facilities include North Richmond Filtration Plant, Manly Dam and the Botany Wetlands.

The MOU outlines a framework for achieving a co-operative relationship between the Department of Land and Water Conservation as the Ministerial Corporation's manager of water sources for the State of New South Wales, and Sydney Water as the supplier of water, stormwater and sewerage services to the people of Sydney, Illawarra and the Blue Mountains.

The MOU also recognises the relevance of the objectives of the Sydney Catchment Authority to the successful achievement of the functions and objectives of the parties in much of the Hawkesbury-Nepean catchment. The Authority's objectives are to ensure that the catchment areas and catchment infrastructure works are managed and protected so as to promote water quality, the protection of public health and public safety, and protection of the environment. The Authority is also obliged to manage its infrastructure works efficiently and economically, and in accordance with sound commercial principles and in conformity with the principles of ecologically sustainable development. In complying with its objectives, the Authority must comply with its Act, its Operating Licence and its water management licence.

1. Parties to the Memorandum

This Memorandum of Understanding (MOU) is entered into by the Sydney Water Corporation (Sydney Water) and the Water Administration Ministerial Corporation under Section 35 of the *Sydney Water Act 1994*.

2. Functions and Objectives

Sydney Water

2.1 Functions of Sydney Water

Subject to one or more operating licences, the principal functions of Sydney Water are, in the area of operations, to provide, construct, operate, manage or maintain systems or services for:

- (a) storing or supplying water, or
- (b) providing sewerage services, or
- (c) providing stormwater drainage services, or

- (d) disposing of waste water.

Sydney Water may provide facilities or services that are necessary, ancillary or incidental to its principal functions, and conduct any business activity (whether or not related to its principal functions) that it considers will further its objectives.

2.2 Principal Objectives of Sydney Water

The equally important principal objectives of Sydney Water are:

- (a) to be a successful business and, to this end:
 - (i) to operate at least as efficiently as any comparable businesses;
 - (ii) to maximise the net worth of the of the state's investment in Sydney Water;
 - (iii) to exhibit a sense of social responsibility by having regard to the interests of the community in which it operates; and
- (b) to protect the environment by conducting its operations in compliance with the principles of ecologically sustainable development contained in section 6(2) of the *Protection of the Environment Administration Act 1991*; and
- (c) to protect public health by supplying safe drinking water to its customers and other members of the public in compliance with the requirements of any operating licence.

2.3 Special Objectives of Sydney Water

In implementing the principal objectives set out in section 21 of the *Sydney Water Act 1994*, Sydney Water has the following special objectives:

- (a) to reduce risks to human health,
- (b) to prevent the degradation of the environment

Those special objectives are to be interpreted by reference to the objectives referred to in section 6(1)(b) of the *Protection of the Environment Administration Act 1991*, so far as they are relevant to Sydney Water.

Department of Land and Water Conservation

2.4 Functions of the Department

The Department has the following functions:

- (a) developing and implementing policies on natural resource management and use;
- (b) managing the planning and sharing of water across the State, including demand management and drought management;
- (c) maintaining databases on the condition of the State's land, soil, water, coasts and vegetation;
- (d) managing assets such as Crown lands, dams and fishing ports;
- (e) providing expertise and financial support to local councils and communities for the management of the coast, estuaries, flood risk, soils and vegetation; and
- (f) managing the Country Towns Water Supply and Sewerage Program.

2.5 Objects of the Department

The objects of the Department are generally to provide for the sustainable and integrated management of the water sources, crown land and native vegetation of the state for the benefit of both present and future generations and, in particular:

- (a) to apply the principles of ecologically sustainable development;
- (b) to protect, enhance and restore water sources and native vegetation, their associated ecosystems, ecological processes and biological diversity;
- (c) to recognise and foster the significant social and economic benefits to the State that result from the sustainable and efficient use of water, the proper development and conservation of Crown land, and the conservation and management of native vegetation;
- (d) to recognise the role of the community, as a partner with government, in resolving issues relating to the management of water sources, Crown land and native vegetation; and
- (e) to integrate the management of water sources, Crown land and native vegetation with the management of other aspects of the environment, including the built environment, soil and native fauna.

3. Principles

- 3.1 The significant overlap between the principal and special objectives of Sydney Water and the objects of the Department should be recognised, especially in regard to the principles of ecologically sustainable development as these relate to urban water use and sustainable management of an integrated urban water cycle.
- 3.2 The parties will recognise the role of the community and of other stakeholders, especially the Sydney Catchment Authority, the Environment Protection Authority and the Department of Health in management of the urban water cycle in the catchments supplying water to Sydney Water and in Sydney Water's area of operations.
- 3.3 All agreements entered into between Sydney Water and the Department will be in the public domain.

4. Term

- 4.1 This MOU commences on the date of endorsement by the respective parties and remains in force until amended or replaced.
- 4.2 This MOU must be reviewed, and amended or replaced upon either party to this MOU giving notice to the other of its desire to see the MOU reviewed, replaced or amended.
- 4.3 The process to review, and amend or replace this MOU must be undertaken within a timeframe agreed to by both parties at the commencement of that process. Any amendments to this MOU shall be exhibited in accordance with the requirements of Division 3 of the *Sydney Water Act 1994*

5. Structures and Processes

5.1 Chief Executive Officer (CEO) Meetings

- 5.1.1 The CEO of Sydney Water, or a deputy, and the CEO of the Department of Land and Water Conservation, or a deputy, shall meet to discuss matters of mutual concern and any matters referred by the Strategic Liaison Group. This will be on a regular basis but not less than once per financial year
- 5.1.2 CEO meetings may be initiated by either party as required.

5.2 Strategic Liaison Group (SLG)

- 5.2.1 The Department and Sydney Water will, as soon as practicable after the execution of this MOU, establish a Strategic Liaison Group.
- 5.2.2 The role of the SLG will be to consider those issues determined by members of the group to be relevant, but may include:
- long-term strategic issues and policies arising from the functions of the parties given in 2.1 and 2.4 above; including access licensing, the location and operation of works, and activity and use approvals;
 - issues arising from operation of catchment management boards and other natural resources management committees in the area of operations of Sydney Water;
 - the implications of the objects of DLWC in 2.5 above for Sydney Water; including water quality, effluent management, salinity, groundwater management, wetlands, and aquatic biodiversity; and
 - areas for co-operative research and joint initiatives.
- 5.2.3 The SLG members shall report to their respective CEOs on significant issues that relate to the functions of the parties given in 2.1 and 2.4 above.
- 5.2.4 The membership of the SLG will be as agreed between the parties from time to time.
- 5.2.5 The SLG shall determine the frequency and procedure for calling meetings and the manner in which business is to be conducted at those meetings.

5.3 Joint forums

- 5.3.1 Joint forums will be convened where appropriate with other authorities, agencies or peak community groups on issues relevant to integrated urban water cycle management in the catchments in Sydney Water's area of operations.

5.4. Exchange of Information and Data

- 5.4.1 In recognition of the spirit of co-operation embodied in this MOU and to enable both parties to more effectively carry out their statutory functions given in 2.1 and 2.4 above, each party must share or supply relevant data and information and provide updated information where necessary.
- 5.4.2 Data and information shared or supplied by the parties under this MOU shall be on such terms as agreed between the parties.

5.5. Joint Programmes And Initiatives

- 5.5.1 Sydney Water and the Department will consider developing joint programmes and initiatives and undertaking research to meet the principal and special objectives of Sydney Water given in 2.2 and 2.3 above and the objects of the Department given in 2.5 above.

6. Dispute Resolution

- 6.1 Any difference or dispute which arises between the parties under this MOU will be addressed at the lowest management level possible. Issues that cannot be resolved at a local level will be referred by either party to the SLG for consideration and resolution.
- 6.2 The SLG will strive to resolve all disputes, but should there be unresolved issues, these will be referred to the Chief Executive Officers of the two parties.
- 6.3 Ultimate arbitration will be by relevant Ministers.

This Memorandum of Understanding is made between the Water Administration Ministerial Corporation and the Sydney Water Corporation on the 28th day of ~~May~~ June 2002.

SIGNED for and on behalf of the **Water Administration Ministerial Corporation**
Bob Smith, Director-General, Department of Land and Water Conservation

Bob Smith

Witness to the above signature

P. Lynch JP

(signature)

Brendley Lynch

(name)

9-23-33 BRIDGE ST

Sydney 2000

(address)

SIGNED for and on behalf of the Sydney Water Corporation
Alex Walker, Managing Director

Alex Walker

Witness to the above signature

J. North

(signature)

JENNIFER NORTH

(name)

Sydney Water

(address)

MEMORANDUM OF UNDERSTANDING BETWEEN

**NSW HEALTH AND SYDNEY
WATER CORPORATION**

***Memorandum of Understanding between
NSW Health and Sydney Water Corporation***

NSW HEALTH DEPARTMENT

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March 2001

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Introduction

This is the Memorandum of Understanding (MOU) which was executed by the NSW Health Department and the Sydney Water Corporation on 11 November 1997, incorporating the amendments made to that MOU by agreement between those agencies signed 21 November 2000.

Memorandum of understanding

Memorandum of Understanding between the NSW Health Department (the Department) of the one part and the Sydney Water Corporation (the Corporation) of the other part.

This Memorandum was entered into on the 21 day of November 1997, and incorporates amendments made to that MOU by agreement between the NSW Health Department and the Sydney Water Corporation dated 21 November 2000.

Context

- A.** The Corporation is a statutory state owned corporation (SOC) under the *State Owned Corporations Act 1989*. The Corporation has a responsibility to supply safe drinking water to its customers in accordance with its Operating Licence granted under the *Sydney Water Act 1994*.
- B.** The Department has a role in providing advice to the Government on standards in relation to drinking water quality and to commit the Corporation to supplying water which is safe to drink having regard to public health.
- C.** The Minister for Health and the Director-General of the Department have certain responsibilities in relation to the protection of public health under the *Public Health Act 1991* and other relevant legislation. The Department's roles and responsibilities as outlined in this Memorandum are in addition to any functions conferred upon the Department, the Director-General of the Department, the Chief Health Officer of the Department or the Minister for Health under the *Public Health Act 1991*.

- D.** The objective of this Memorandum is to formally set out the terms of a cooperative relationship between the parties, establish their respective roles, facilitate fulfilment of each party's function in relation to the protection of public health, and to fulfil the requirements of section 35 of the *Act* and the Corporation's Operating Licence.
- E.** It is recognised that the Independent Pricing and Regulatory Tribunal has a role as the Operating Licence regulator for Sydney Water and in setting the Corporation's prices for services which takes into account community preferences including their willingness to pay or accept risk.

1. Interpretation

- 1.1 Unless otherwise specified, terms in this Memorandum shall have the same meaning as provided by the *Act* or the Operating Licence.
- 1.2 '*Act*' means the *Sydney Water Act 1994*.
- 1.3 'Water supply system' includes all the infrastructure, from the Sydney Catchment Authority's delivery point to the Corporation to the consumer's point of connection and utilised by the Corporation to supply drinking water in the Licence Area.
- 1.4 'Guideline exceedances' means water quality monitoring results which exceed the *NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996*.
- 1.5 'Significant and major incidents' means those incidents which are required to be reported to the Department through the Corporation's incident management plans.
- 1.6 Headings and numbering are for convenience only and do not affect the interpretation of this Memorandum.

2. Regulatory agency

- 2.1 The Director-General of the Department is specified as a 'regulatory agency' under section 34 of the *Act*. The *Corporation's Act* and Operating Licence requires it to enter into a Memorandum of Understanding with the Department. For clarification, it is agreed that the Department will fulfil the Director-General's responsibilities under the *Act* and the Department shall act as the regulatory agency in accordance with this Memorandum.
- 2.2 The Department's public water supply regulatory program will consist of the requirements contained within this MOU.

3. Term

- 3.1 The term of this Memorandum shall be for the period commencing on the date of execution hereof and remaining in force for the term of the Corporation's Operating Licence.

4. Liaison between the Corporation and the Department

- 4.1 A Strategic Liaison Group consisting of the Director-General of the Department and the Managing Director of the Corporation and senior officers nominated by them shall meet regularly to discuss the broad principles, directions and policies underlying the roles and responsibilities of the parties under this Memorandum and to:
 - annually review progress on the implementation of this Memorandum.
 - consider long term strategic issues and policies and to define and implement processes for the interchange of strategic planning information.
- 4.2 A Joint Operational Group shall meet regularly to:
 - coordinate implementation of this Memorandum.
 - establish data sharing programs.
 - establish programs of investigations, feasibility studies and economic analyses to be undertaken by the Corporation to meet changing public health objectives in relation to drinking water.
 - make recommendations to the Strategic Liaison Group regarding the updating of this Memorandum.
 - facilitate coordination of the collection of data on water quality for use by all relevant agencies.

The Joint Operational Group may establish ad hoc joint working parties to investigate and formulate recommendations on specific and technical issues, as required.

- 4.3 The Membership of the Joint Operational Group (unless otherwise agreed between the parties) will be as follows:

Corporation

- Regulatory management representative
- Water quality management representative
- Water operational management representative
- Corporate representative

Department

- Manager, Water Unit
- Policy Advisers, Water Unit

The Corporation and Department may invite other officers to attend in support of specific issues.

5. Dispute resolution

- 5.1** Where a dispute between the parties cannot be resolved by the Joint Operational Group, or the Strategic Liaison Group, then it should be referred to the Chief Executive Officers for resolution. In the event that the dispute cannot be resolved by the Chief Executive Officers, the view of the Department shall prevail.

6. Amendment

- 6.1** This Memorandum can be amended at any time upon agreement between the parties and in accordance with section 36 of the *Act*. Where agreement is not reached, the view of the Department is to prevail in accordance with section 35(3) of the *Act*.
- 6.2** Where the Corporation's Operating Licence is amended and the effect of the amendment is to create a conflict between the Licence and the Memorandum, then the parties shall meet to discuss the implications of the amendment and steps that can be taken by the Corporation to resolve any public health issues that may arise.

7. Corporation's roles and responsibilities

- 7.1** The Corporation shall ensure that all drinking water it supplies is safe to drink having regard to the health of the public and that it is supplied in accordance with its Operating Licence.
- 7.2** The Corporation's Operating Licence requires it to comply with the following relating to drinking water:
- (a) the *NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996* ('1996 Guidelines') relating to health guideline values
 - (b) any amendments, updates or supplements of the *1996 Guidelines* ('updated Guidelines') relating to health guideline values specified by NSW Health

- (c) the aesthetic guideline values of the *1996 Guidelines* specified by the NSW Minister for Health following consultation with the Minister responsible for the Corporation
- (d) the aesthetic guideline values of any updated Guidelines specified by the NSW Minister for Health following consultation with the Minister responsible for the Corporation.

- 7.2.2** The Corporation's Operating Licence requires that other grades of water supplied by Sydney Water must be supplied according to relevant guidelines and requirements prescribed by EPA, NSW Health, the Department of Land and Water Conservation, the Department of Agriculture, other relevant government agencies and the NSW Recycled Water Coordination Committee.

- 7.2.3** Sydney Water is to have regard to the concepts of risk minimisation practices and system management of public water supplies referred to in the *1996 Guidelines* and any updated Guidelines, when conducting its water supply system activities.

- 7.3** The Corporation shall establish and use an internal complaints handling procedure for receiving, responding to, investigating and resolving customer complaints regarding water quality.

- 7.4** The Corporation shall consult with the Department in relation to planning issues that arise from changes in the *NHMRC and ARMCANZ Australian Drinking Water Guidelines* from time to time.

- 7.5** The Corporation shall prepare, to the satisfaction of the Department, a comprehensive Annual Drinking Water Quality Monitoring Plan for the water supply system by 31 March each year. The Corporation shall submit this Plan to the Department for review and approval no later than 31st January each year. The Department shall determine its approval no later than 28th February each year. The monitoring plan shall:

- a) include the health and aesthetic parameters for which compliance is required under clause 7.2 of this MOU.

- b) monitor drinking water quality for the aesthetic parameters as required in clause 7.2 of this MOU.
- c) be based on a statistically valid sampling program which meets the intent of the *1996 Guidelines* and any updated Guidelines.
- d) include monitoring locations such that the sampling results are representative of water supplied to Customers and Consumers.
- e) require that samples be tested in accordance with the testing requirements of the 20th edition of *Standard Methods for the Examination of Water and Wastewater* published by the American Public Health Association or other established methods as appropriate.

The Corporation shall carry out a monitoring program in accordance with the monitoring plan. Initially, the Corporation must undertake drinking water quality monitoring for the period 1 January 2000 to 30 June 2001 and after that for each subsequent financial year.

- 7.6** The Corporation shall maintain an effective system of quality assurance for monitoring, sampling, testing, reporting and other processes in relation to the water supply system in consultation with the Department.
- 7.7** The Corporation shall submit to the Department:
- a) on a quarterly basis, monitoring results as agreed in the monitoring plan together with an evaluation of the results on an exception basis.
 - b) on a financial-year basis and by 30 November each year:
 - the results of the health and aesthetic parameters for which compliance is required under clause 7.2 of this MOU.
 - the results of the aesthetic guideline values of the *1996 Guidelines* that apply to the physical characteristics of drinking water.
 - the results should be accompanied by the Corporation's analysis of conditions relevant to the interpretation of data or system descriptions indicating potential health-related problems, together with an evaluation of the results on an exception basis.

- a summary of monitoring information (including guideline exceedances), indicating water quality trends and problems, and a summary of significant and major water quality incidents required to be reported to the Department through the Corporation's Drinking Water Quality Incident Management Plan provided under 10.3. The summary is to include action taken to resolve those exceedances with the potential to impact on public health, and information as to how public health was protected during those exceedances.

- c) the fourth quarterly report required in 7.7(a) can be included as a part of the annual report provided under 7.7(b).
- d) by 31 March in each year, unless otherwise specified following the Mid-term review of Sydney Water's Operating Licence, the Corporation must prepare, to the satisfaction of the Department, an Annual Water Quality Improvement Plan for the water supply system. This Plan is to incorporate system and operational changes needed to address problems identified through water quality monitoring data and through periodic system inspections and evaluations.

- 7.8** The Corporation will develop a system to provide on line access to test results for regulatory agencies during incidents.
- 7.9** The Corporation or its authorised agent shall fluoridate all drinking water supplies as required by the *Fluoridation of Public Water Supplies Act 1957*. Fluoride shall be sampled and reported in accordance with the requirements of the *Fluoridation of Public Water Supplies Act 1957*.
- 7.10** The Corporation shall review with the Department its strategies for the comprehensive management of public health issues no less frequently than every five years, or whenever changes occur that substantially alter the basis of the existing strategies. Strategies to be submitted for review include:
- a) The Five-Year Drinking Water Quality Management Plan
 - b) The 20 year Water Strategy
 - c) Wastewater disposal and reuse strategy.

7.11 The Corporation shall provide the Department with all data and all information on the planning, design, maintenance, operation and administration of the Corporation's activities that the Department reasonably requires to make informed judgements regarding matters relating to the protection of public health.

7.12 The Corporation's responsibilities under this Memorandum apply to the whole of the Corporation's operations (including the whole of its water supply system), including those operations which are performed on behalf of the Corporation by a third party. Protocols are to be established between the Corporation and third parties to ensure the effective operation of the requirements of this Memorandum of Understanding. Such protocols are to include, but not be limited to, joint procedures and training for the identification and notification of information and events of public health significance and the responses described in Clause 10.

7.13 The Corporation shall allow officers of the Department to enter any premises under its care and control, including facilities performing water supply, wastewater reticulation, treatment and disposal systems and wastewater reclamation and reuse systems for the purposes of carrying out any inspections or viewing any records which the Department reasonably requires to make informed judgements regarding matters relating to the protection of public health.

7.14 The Corporation, as a service provider, has a role in ensuring public health protection. This role must be recognised in any conflict or matters of mutual concern to both public health and environmental protection approaches, and will require consultation between the Corporation, the NSW Environment Protection Authority and the Department. The Corporation must meet the environmental water quality requirements for any discharges or water releases required by licences issued to it by the EPA or the Department of Land and Water Conservation.

8. Department's role and responsibilities

8.1 The Department shall provide advice to the Corporation on matters regarding the supply of water which is safe to drink and on other public health issues in regard to water which relate to the Corporation's activities.

8.2 The Department shall provide advice to the Corporation on wastewater management activities that impact on public health, where appropriate.

8.3 The Department shall make independent judgements on public health matters related to the Corporation's activities and exercising its powers and functions under the *Public Health Act 1991*.

8.4 Where any drinking water supplied by the Corporation is failing to meet the Drinking Water Guidelines which the Corporation is required by clause 7.2 to meet, or where the provision of drinking water, or the reclamation, reuse, disposal, or treatment of wastewater takes place in such a manner that a hazard to public health may arise, the Corporation shall be responsible for assessing the problem and proposing rectification action. If the Department is of the opinion that it is appropriate to do so, it may provide advice on rectification action that may be taken by the Corporation. Where the Department gives any advice to the Corporation under this clause, it shall be entirely the responsibility of the Corporation to take appropriate rectification action to ensure that: the drinking water it supplies is safe to drink and meets the requirements of the Corporation's Operating Licence and clause 7.2 and that other activities are conducted in a manner that do not pose a potential hazard to public health. For the purposes of this exercise, the Department will use the *1996 Guidelines* or any updated Guidelines in providing such advice in relation to drinking water.

- 8.5** The Department shall report to IPART upon the Corporation's compliance with the provisions of this Memorandum and upon any public health matters related to the Corporation's operations, as required by IPART or as considered appropriate by the Department, to enable IPART to carry out its functions under the *Act*.

9. Emerging public health issues related to water

- 9.1** The parties shall cooperatively exchange information and the Corporation shall participate in appropriate research and development on emerging public health issues related to drinking water so as to enable them to make well informed judgements regarding action to be taken in relation to the Corporation's water supply system to maintain the protection of public health.
- 9.2** The parties shall independently provide input to public discussion and debate on future revisions of the *1996 Australian Drinking Water Guidelines*, and on guidelines for other grades of water.

10. Events of public health significance

- 10.1** The Corporation shall immediately report to the Department any information or event within its drinking water supply system, or within its wastewater reclamation and reuse and wastewater reticulation, treatment and disposal operations which may have significant implications for public health.
- 10.2** The report of information by the Corporation will include maps depicting geographical locations and systems in addition to tables or text if required by the Department.
- 10.3** The Corporation shall, in consultation with the Department and other Government agencies where appropriate, maintain and update the Corporation's Drinking Water Quality Incident Management Plan.

- 10.4** The Corporation shall, in consultation with the Department and other Government agencies where appropriate, develop and deploy incident management plans/protocols covering the Corporation's activities relating to waste water management.

- 10.5** The parties shall nominate a 24 hour incident management contact point for the coordination of responses to any event of public health significance. That contact point will be an officer of each organisation who has been trained in the plans and incident management procedures and protocols thereunder. The incident management plans shall contain or incorporate by reference, procedures and protocols for the coordinated management of incidents including media and stakeholder liaison and any notification of public health advice from the Department.

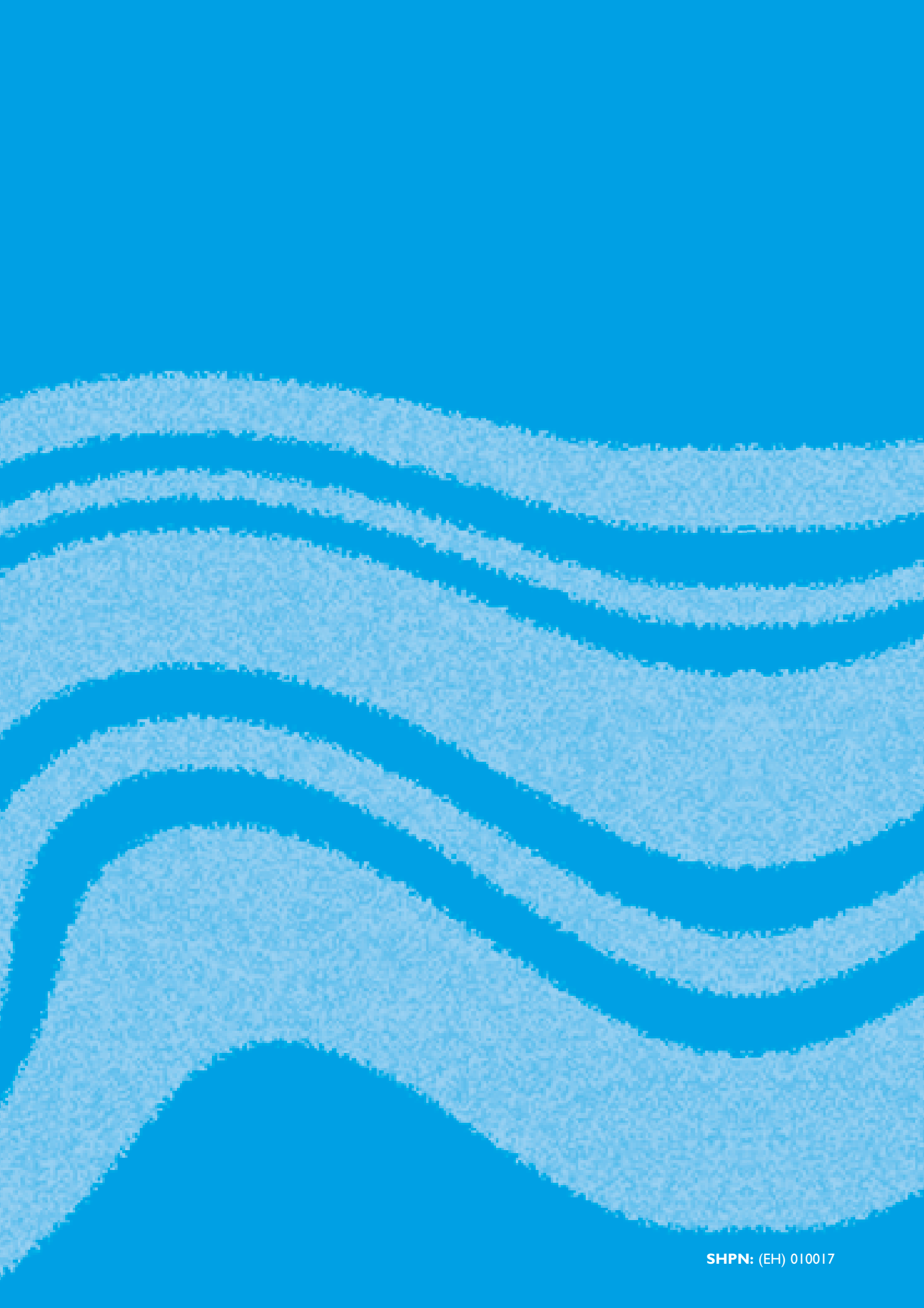
- 10.6** The parties shall ensure that all relevant personnel in their respective organisations are trained to respond to and execute the incident management plans and that appropriate training exercises are jointly developed and conducted.

11. Data exchange

- 11.1** The Department will provide the Corporation with reports and studies it undertakes which are relevant to those activities of the Corporation which impact on public health.
- 11.2** The Corporation will provide reports and studies undertaken by the Corporation as part of its business which are relevant to public health.

12. Public education and information

- 12.1** The Department and the Corporation shall jointly undertake a public education program relating to the health aspects of drinking water.
- 12.2** The Corporation shall report to the public in accordance with section 6.4 of its Operating Licence.





Appendix E
MOU compliance tables



Table A MOU EPA compliance

Clause	Requirement	Comment
"Introduction"	A new Sydney Water – EPA MOU was executed on 16 October 2002 to provide a foundation for "cooperative relationships" between the organisations. The "Introduction" sets out the environmental protection role and legislation of EPA, including its regulatory and licensing role of Sydney Water. It outlines the structures and process for this cooperation (viz: Strategic Liaison Group and Operational Policy Committee) and Sydney Water commitment to ongoing environmental improvements. It includes Sydney Water's role in the provision of drinking water, wastewater and some stormwater services.	Two MOUs covered the 2002/03 year: from 1 July 2002 to 15 October 2002 being the MOU executed on 26 November 1996; and the second from 16 October 2002 to 30 June 2003. The later MOU reflects the current legislative base and operational roles of both EPA and Sydney Water. The Operational audit has been structured on the later MOU.
1. Parties to this memorandum	The Memorandum is in conformance with Section 35 of the <i>Sydney Water Act 1994</i>	No requirement. The MOU carries the signature of the Director General of EPA and Chief Executive Sydney Water as well as witnesses and is dated 16 October 2002.
2. Functions and objectives of the parties		No requirement.
2.1. Functions of Sydney Water.	Relating to the supply of water, sewerage, and storm water drainage services as well as the disposal of wastewater.	No requirement.
2.2. Principal Objectives of Sydney Water	Principle objectives of Sydney Water being: <ul style="list-style-type: none"> to be a successful business; to protect the environment; and to protect public health by supplying safe drinking water. 	No requirement.



Table A MOU EPA compliance

Clause	Requirement	Comment
2.3. Special Objectives of Sydney Water	<p>Special Objective of Sydney Water being to:</p> <ul style="list-style-type: none"> to reduce the risk to human health; and prevent degradation of the environment 	No requirement.
2.4. Functions of the EPA	Functions of the EPA are to <i>work with business, industry, government and community organisations to achieve and maintain a healthy environment</i>	No requirement.
2.5. Objectives of the EPA.	<p>Objectives of the EPA:</p> <ul style="list-style-type: none"> <i>to protect, restore and enhance the quality of the environment in NSW in regard to the needs to maintain ecological or sustainable development; and</i> <i>to reduce the risk to human health and the degradation of the environment.</i> 	No requirement.
3. Principles	It is acknowledged as a significant alignment in objectives between the EPA and Sydney Water, which provides a strong basis for a cooperative relationship. This relationship is reflected in the “Environment Plan” for Sydney Water and the MOU will assist in facilitating environmental improvement. Further, the parties recognised the role of alternate stakeholders and the need to apply innovation and full integration of water services.	No requirement.



Table A MOU EPA compliance

Clause	Requirement	Comment
4. Term	MOU is to run from the date of commencement and remain in force until amended or replaced.	<p>The new MOU was on public exhibition (advertised through Sydney Morning Herald on 17 August 2002) from 17 August to 16 September 2002. No public comments were received and upon an exchange of letters (Sydney Water CEO to EPA CEO 14 October 2002) the MOU was signed.</p> <p>No further amendments were made during the year.</p>
5. Structures and Processes		
5.1. Chief Executive Officer (CEO) Meetings.	Chief Executive Officer (CEO) Meetings will take place on a regular basis not less than once per financial year and may be initiated by either party.	<p>Sydney Water has had three persons fulfil the CEO role over the operating year, which did not assist the orderly scheduling of CEO's meetings. No formal meetings held under the MOU were minuted. However, the CEOs meet regularly (for example, Water CEOs meeting) and Sydney Water advised a CEO diary notation indicates the CEOs met 27 August 2002 to discuss the WaterPlan 21.</p> <p>No issues (from SLG or OPC – see Clauses 5.2 and 5.3 below) were elevated for CEO resolution.</p>



Table A MOU EPA compliance

Clause	Requirement	Comment
5.2. Strategic Liaison Group (SLG).	Strategic Liaison Group (SLG) is to consider issues particularly in regard to long-term strategic issues and policy, implementation of EPA's objectives for Sydney Water, strategic issues of a scientific nature and areas for cooperative research and joint ventures.	<p>The SLG met on three (3) occasions being: 16 September and 2 December 2002 and 11 March 2003. Membership includes the CEO's and both CEO's attended the meetings on 16 September 2002 and 11 March 2003.</p> <p>A review of the SLG minutes (30 September 2002, 2 June 2003 sighted) indicated the SLG was focused on:</p> <ul style="list-style-type: none">• new MOU;• Water Plan 21, and Capital Works program;• Sydney Water's pollution licences;• Drought response, Emerging Pathogens, North Head STP performance (11 March 2003 – for example); and• Integrated Effluent Management Strategy for the Hawkesbury - Nepean. <p>Also Sydney Water's advice (13 August 2003) to EPA on its review of the POEO Act was sighted. Whilst out of the audit period, the advice identifies the role of the MOU as a means to address many of the issues raised.</p>



Table A MOU EPA compliance

Clause	Requirement	Comment
5.3. Operational Policy Committee (OPC).	<p>Operational Policy Committee (OPC) will continue to consider issues set by the strategic agenda of the SLG including:</p> <ul style="list-style-type: none"> Operational and Regulatory issues; Sydney Water's commitment to environmental improvement; Unresolved Sydney Water operation matters; and Requirement of the sewerage treatment system licence. <p>OPC reports to the SLG, has an agreed membership, meets at least 4 times per year and is driven by an "annual work program".</p>	<p>The OPC met on 6 occasions being: 22 August, 3 October and 28 November 2002 and 25 February, 8 May and 20 June 2003.</p> <p>Copies of a selection of OPC meetings minutes, as well as a copy of the OPC Annual Work program (endorsed by both Sydney Water and EPA) were reviewed and the main matters addressed included:</p> <ul style="list-style-type: none"> Pollution Reduction Program and Sydney Water's future Capital Expenditure program; Sydney Water submission (25 February 2003 letter sighted) regarding the review of the POEO Act (meeting 25 March 2003); EPA briefed (30 June 2003) Sydney Water on its principles for the review of licence monitoring; and Sydney Water convened a workshop (10 March 2003) in regard to the Implementation of Water Plan 21. <p>An annual work program (for OPC endorsed by the SLG at its meeting 25 February 2003) formed the basis of the OPC agendas during 2002/03.</p>
5.4. Joint Forums	<p>Joint forums would be convened by Sydney Catchment Authority or other stakeholders and Sydney Water and EPA would consider developing joint programs and initiatives in regard to research of the respective organisations.</p>	<p>Sydney Water and EPA participated in a number of joint forums including development of an Integrated Effluent Management Strategy for the Hawkesbury Nepean (reported in SLG Item 7.6, 11 March 2003). Sydney Water and EPA developed joint programs and initiatives to undertake Water Conservation Research (SLG minutes 2 December 2003).</p>
5.5. Exchange of Information and Data	<p>EPA and Sydney Water would share or supply relevant data or information in regard to their statutory functions though this exchange should not constrain the regulatory responsibility of EPA. Further, data and information should be on such basis agreed by the parties to ensure an open and honest exchange of information.</p>	<p>A broad range of information exchange took place between EPA and Sydney Water though, in particular, the following items illustrate the implementation of this clause:</p> <ul style="list-style-type: none"> Pollution Reduction Program Working Group through exchange of wet weather overflow performance by letter 26 August 2003 (though out of the 2002/03 audit period related to actively within the period); and Scientific Working Group Inaugural Agenda (17 January 2003) sighted as were minutes 16 June 2003.



Table A MOU EPA compliance

Clause	Requirement	Comment
6. Dispute Resolution	Any disputes arising between the parties be addressed at the lowest management level and referred to more senior officers for consideration and resolution. Further matters unresolved at the SLG would be referred to the CEOs of the two parties.	The following matter was referred to the SLG for consideration and resolution, viz: a review of Sydney Water's monitoring efforts under its Operating Licence to confirm necessary information monitoring was being addressed. The matter is progressing at officer level and through the Scientific Working Group with regular updates provided to the SLG.
7. Amendment of the MOU	Is available by giving notice of the need to review amend or replace the MOU, gaining an agreement to the timeframes for any process of review or amendment and finally any amendment or replacement should be exhibited in accordance with Section 36 of the Sydney Water Act 1994.	No requirement as no notices in regard to the review, amendment or replacement of the MOU were issued by either Sydney Water or EPA.



Table B MOU NSW Health compliance

Clause	Requirement	Comment
Context	This section outlines the particular responsibilities of the Department of Health, the Director General of Health, the Sydney Water Corporation, the role of IPART and establishes the objective of the memorandum, (viz: to set out the terms for a cooperative relationship between the parties, establish the roles, facilitate fulfilment of each party's functions in relation to the protection of public health and fulfil the requirements of Section 35 of the Act and the Corporation's Operating Licence).	No requirement.
1	Interpretation, which sets out the meanings of specific terms under the Act or Operating Licence.	No requirement.
2	The Director General of the Department is specified as a regulatory agency.	The Water Legislation Amendment (Drinking Water and Corporate Structure) Bill 1998 amended the <i>Sydney Water Act</i> and the Health Act to effectively strengthen and clarify NSW' Health's powers concerning the safety of drinking water and establish Sydney Water as a Statutory State Owned Corporation.
3.1	The term of this MOU will be from the date of execution (viz: 21 November 1997) and remain in force for the term of the Operating Licence.	Performance requirement met. Current MOU signed by Sydney Water and NSW Health on 21 November 2000.
4.1	A Strategic Liaison Group shall meet to discuss broad principles of directions and policy underlying the roles and responsibilities of the party and to: <ul style="list-style-type: none"> annually review progress on the implementation of this Memorandum; consider long term strategic issues and policies in defined implemented processes for the interchange of strategic planning information. 	Performance requirement met. SLG met 4 times in the audit period: 30 September 2002; 16 December 2002; 13 February 2003; and 2 June 2003. Meeting minutes were sighted. SLG endorsed a strategic work program for 2002/03 on 13 June 2002, which was reviewed / updated at each of its subsequent meetings (viz: Agenda Item II, June 2003 meeting reviewed). The SLG is providing an active forum to systematically identify and coordinate strategic public health issues, including those of catchment management through the participation of SCA. Minutes of 30 September 2002 and 2 June 2003 reviewed. Similar SLG's report (30 September 2003) reviewed performance against MOU.



Table B MOU NSW Health compliance

Clause	Requirement	Comment
4.2	A Joint Operational Group shall meet to discuss implementation of MOU, data sharing programs, feasibility studies and economic analyses, make recommendations to the SLG and facilitate coordination of water quality data.	<p>Performance requirement met.</p> <p>JOG met 6 times in the audit period: 19 August 2002; 14 October 2002; 2 December 2002; 24 January 2003; 7 May 2003. Meeting minutes (August, October 2002 and May and June 2003) sighted.</p> <p>Issues discussed include: implementation of MOU; Sydney Water Drinking Water Quality Plan; Water Quality Monitoring Program and ongoing implementation of strategic issues. As detailed above the JOG prepared a Strategic Issues list and provided it to the SLG. The JOG provides the forum for data sharing and information transfer.</p>
4.3	Membership of the joint operational committees should include Sydney Water (Regulatory Manager, Water Quality Manager, Water Operations Manager, Corporate Representatives) and Departmental (Manager Water Quality Unit and Policy Advisor Water Quality Unit) members.	<p>Membership of Committee noted.</p> <p>Sydney Water: (Titles of SLG members has changed over the audit period):</p> <ul style="list-style-type: none"> • Manager, Regulation & Compliance (now known as Regulatory Affairs); • Manager, Water Filtration (now Process Leader, Water Operations, Water Filtration); • Manager, Product Delivery Water (now Process Leader, Water Operations, Networks); and <p>Corporate Representatives (via Manager Regulatory Affairs)</p>
5.1	Disputes between the parties not resolved by the Joint Operational Group or the Strategic Liaison Group should be referred to the CEOs for resolution and if this is unsuccessful the views of the Department shall prevail.	<p>No requirement.</p> <p>No disputes recorded.</p>
6.1	The MOU can be amended at any time upon agreement of the parties. Where agreement is not reached the Department's view shall prevail.	<p>No requirement.</p> <p>No amendments were made.</p>
6.2	Where the Sydney Water's Operating Licence is amended and creates a conflict between the Operating Licence and the MOU then the parties should meet to discuss the implications and steps to resolve any public health issue.	<p>No requirement.</p> <p>No conflicts identified in current audit period, and none indicated in Minutes sighted.</p>



Table B MOU NSW Health compliance

Clause	Requirement	Comment
7.1	Sydney Water must ensure all drinking water it supplies is safe for drinking having regard to public health and supplied in accordance with its Operating Licence.	Performance requirement met. Refer to "Part 6 – Water Quality" for discussion.
7.2.1	The Corporation's Operating Licence requires it to comply with nominated drinking standards.	Performance requirement met. Refer to "Part 6 – Water Quality" for discussion.
7.2.2	The Corporation's Operating Licence requires that other grades of water supplied by Sydney Water must be supplied in accordance with relevant guidelines and requirements as prescribed.	Performance requirement met. Refer to "Part 6 – Water Quality" for discussion.
7.3	The Corporation shall establish internal complaints handling procedures for resolving customer complaints regarding water quality.	Refer to "Part 12 – Dispute Resolution" for discussion.
7.4	Sydney Water will consult with the Department in relation to planning issues arising from changes to NHMRC and ARMCANZ Australian Drinking Water Guidelines from time to time.	Performance requirement met. Meeting minutes sighted: JOG, 24 January 2003, Item 6; Australian Drinking Water Guidelines Revision.



Table B MOU NSW Health compliance

Clause	Requirement	Comment
7.5	<p>The Corporation shall prepare, to the satisfaction of the Department, a comprehensive Annual Drinking Water Quality Monitoring Plan for the water supply system by 31 March each year. The Corporation shall submit this plan to NSW Health for review and approval no later than 31 January each year. NSW Health shall determine it's approval no later than 28 February each year. The monitoring plan shall:</p> <ul style="list-style-type: none"> include Health and aesthetic parameters Monitor drinking water quality for aesthetic parameters Be based on a statistically valid sampling Include monitoring locations such that the sampling results are representative of water supplied Require samples be tested in accordance with testing requirements. <p>Sydney Water shall carry out a monitoring program in accordance with the monitoring plan for the period 1 January 2000 to 30 January 2001 and after that for each subsequent financial year.</p>	<p>Performance requirement met.</p> <p>The audit findings are detailed in Table 6.4 (Clauses 6.3.1, 6.3.3, 6.3.4 and 6.3.5) of this report.</p> <p>The 2003/2004 Drinking Water Quality Plan was prepared in consultation with NSW Health, a draft was submitted on 31 January 2003, comments received from NSW Health on 26 February 2003 (letter was sighted by the auditor), Sydney Water made changes and submitted a final Plan to NSW Health on 31 March 2003, and the Plan was signed off by NSW Health on 22 April 2003.</p> <p>Whilst this constitutes a technical non-compliance with the requirement for approval by NSW Health to be determined by no later than 28 February, Sydney Water has complied with the requirement for submission to NSW Health. It appears that the current process, similarly adopted last year, creates the technical non compliance. Both organisations should coordinate the process to ensure that final approval by NSW Health is achievable by no later than 28 February.</p> <p>The MOU requirement is not consistent with the Operating Licence Clause 6.3.1, which requires preparation of the Plan to the satisfaction of NSW Health by the 31 of March. Both organisations have complied with the Licence requirement.</p>
7.6	<p>Corporation shall maintain an effective system of quality assurance for monitoring, sampling, testing and reporting and other processes in relation to water quality system in consultation with the Department.</p>	<p>Refer to "Part 6 – Water Quality, Clause 6.3.2" for discussion.</p> <p>Sydney Water has a Water Quality Management System certified against AS/NZS ISO 9001:2000, with the registration covering the Quality Management System for the supply of quality drinking water.</p>
7.7a	<p>Sydney Water shall submit to the Department on a quarterly basis monitoring results as agreed in the monitoring plan together with an evaluation of the results on an exceptions basis.</p>	<p>Sydney Water provided drinking water quality monitoring reports to NSW Health for each quarter. Sighted fourth quarter monitoring report.</p>



Table B MOU NSW Health compliance

Clause	Requirement	Comment
7.7b	<p>On a Financial year basis and by the 30 November submit to the Department:</p> <ul style="list-style-type: none"> results relating to health and aesthetic parameters; guideline values applying to drinking water; the Corporation's analysis of conditions relevant to interpretation of data or systems indicating potential health problems and an evaluation of results on an exceptions basis; a summary of monitoring information indicating water quality trends, problems and significant and major water quality incidents (reported through the Corporation's Drinking Water Quality Incident Management Plan); and a summary of actions to be resolved with respect to exceedences with a potential to impact public health. 	<p>Performance requirement met.</p> <p>The Annual Drinking Water Quality Report for the 2001/2002 year was provided to NSW Health on the 29 November 2002 (sighted transmittal).</p> <p>Audit findings are detailed in Table 6.4 Clause 6.4 of this report.</p>
7.7c	The fourth quarterly reports required in 7.7a can be included as part of the annual report provided under 7.7b	<p>Performance requirement met.</p> <p>Quarterly summary reports for period 1 July 2002 – 30 June 2003 and Annual Report for 2002 – 2003 were sighted.</p>
7.7d	By the 31 March each year, unless otherwise specified following the Mid Term Review of Sydney Water's Operating Licence, Sydney Water must prepare an Annual Water Quality Improvement Plan for the water supply system to the satisfaction of the Department and to incorporate systems and operational changes to address problems identified through the water quality monitoring data and periodic system inspection and evaluations.	<p>Performance requirement met.</p> <p>Sydney Water prepared an Annual Drinking Water Quality Improvement Plan 2003/2004. The Plan was submitted to NSW Health on 31 March 2003 and NSW Health endorsed the Plan on 15 May 2003. NSW Health advised in their letter noting that "SWC had addressed all water quality improvement needs as identified by proposed action to address water quality issues through optimisation of WFP performance, improvement of chemical dosing reliability, and continued reservoir dosing".</p> <p>The audit findings, being assessed as Full compliance, are detailed in Table 6.2, Clauses 6.5.3 and 6.5.4.</p>



Table B MOU NSW Health compliance

Clause	Requirement	Comment
7.8	Sydney Water will develop a system to provide on-line access to test results for regulatory agencies during incidents.	<p>Performance requirement met. 'Drinking Water Quality On-Line Notification & Reporting Systems to NSW Health' outlines procedures for gaining access to, and operating the on-line notification and reporting system. The system was approved as fully commissioned at Joint Operational Group (JOG) meeting on 8 October 2001.</p> <p>The system has been in operation and is now being used during incidents for providing access to testing results.</p> <p>The Incident Management System has been tested and found to work effectively, although some areas of improvement have been indicated. The testing has included, for example, a joint training exercise "Mary" involving Sydney Water, SCA, NSW Health, and Australian Water Services. In addition, there were actual incidents: a fire broke out in the electrical switch room at the Prospect Water Filtration Plant on 12 September 2002, and a bushfire burnt down power lines supplying the Nepean Water Filtration Plant in November 2002.</p>
7.9	Sydney Water will fluoridate all drinking water supplies as well as sample and report upon such fluoridation in regard to the <i>Fluoridation of Public Water Supply Act 1957</i> .	<p>Performance requirement met.</p> <p>Fluoridation monitoring is reported in Quarterly Annual reports on drinking water quality.</p> <p>Sydney Water fluoridates all water supplies, and samples and reports on the fluoridation. The determination of compliance with the requirements of the <i>Code of Practice for Fluoridation of Public Water Supplies (2002)</i> is determined through the Chief Dental Officer (who chairs the Fluoridation of Public Water Supplies Advisory Committee). A target of 95% of sample results between 0.90 and 1.5 mg/L and no results were greater the 1.5 mg/L has been agreed between Sydney Water and NSW Health as the appropriate performance requirement.</p> <p>Sydney Water reports the results of the fluoridation monitoring on a monthly basis to NSW Health. The monitoring results for 2002/03 show that there has been full compliance with these requirements.</p>



Table B MOU NSW Health compliance

Clause	Requirement	Comment
7.10	<p>Sydney Water shall review with the Department its strategy for comprehensive management of public health issues no less frequently than every five (5) years or whenever substantial change exists. Strategy to be submitted for review include:</p> <ul style="list-style-type: none"> ▶ Five (5) year drinking water quality management plan ▶ Twenty (20) year water strategy ▶ Waste water disposal and reuse 	<p>Performance requirement met.</p> <p>A draft Status Report No 6 for period to 30 June 2003 was provided to the auditor, detailing ongoing progress and reporting of progress with the plan. The Status Report shows that most of the actions and projects that Sydney Water has control over are completed or are well progressed. The Report provides an excellent overview of the comprehensive program of work that Sydney Water is undertaking related to drinking water quality, and provides evidence that Sydney Water is undertaking a program of work which can be expected to achieve Sydney Water's goal of continuing to deliver high quality safe drinking water to customers.</p> <p>The Twenty Year Water Strategy has been integrated in <i>Waterplan 21</i> that was reviewed and presented to NSW Health and SCA at JOG on 6 February 2002, and was finalised. This Strategy has included inputs from NSW Health. Review of the Strategy indicates that one of its goals is <i>clean, safe drinking water</i>. The direction indicated to achieve this is: "<i>continue to deliver high quality, safe drinking water to our customers</i>".</p> <p>Wastewater disposal and reuse has been incorporated into <i>Waterplan 21</i>. A major thrust of the Strategy is to achieve sustainable water supplies, including demand management and use of alternative supplies such as stormwater and recycled water. Reducing the environmental impact of wastewater disposal (particularly reducing sewer overflows) is also an important component of the Strategy.</p>
7.11	<p>Sydney Water shall provide to the Department all information on the planning, design, maintenance, operations and administration of the Corporation activities that the Department reasonably requires to make a judgement regarding matters relating to the protection of public health.</p>	<p>No requirement in connection with this clause during the audit period. Information transfer mostly occurs through SLG and JOG. NSW Health has on-line access to monitoring results during incidents and monthly reports. (Also see MOU Clause 7.8, above).</p>



Table B MOU NSW Health compliance

Clause	Requirement	Comment
7.12	Sydney Water's responsibilities under this MOU apply to the whole of the Corporation's operations (including the whole of its water supply system), including those which are performed on behalf of the Corporation by a third party. Protocols are to be established between the Corporation and third parties to ensure the effective operation of the requirements of the MOU. Such protocols are to include joint procedures and training for the identification and notification of information and events of public health significance as described in clause 10.	<p>Sydney Water did not update or amend its previous year's protocols for contractors/consortia running the Water Filtration Plants.</p> <p>Sydney Water operates under a <i>Bulk Water Supply Protocol Raw Water Quality Monitoring Plan</i> which contains details of the actions and activities to be undertaken by the SCA, Sydney Water and the contractors of the BOO water filtration plants in the delivery of raw and treated bulk water.</p>
7.13	Sydney Water must allow NSW Health officers entry into any premises for the purpose of carrying out inspections or viewing records to enable judgements regarding matters relating to the protection of public health to be made.	NSW Health officers did not request access to any Sydney Water premises during the audit period.
7.14	Corporation has a role to ensure public health protection. This role must be recognised in any conflict or matters of mutual concern to both public health and environmental protection approaches and will require consultation with the EPA and the Department of Health. The Corporation must meet the environmental water quality requirements for any discharges or water releases required by licence issued to it by the EPA or the DLWC (now DIPNR).	<p>No requirement.</p> <p>Sydney Water reported that there were no conflicts or matters of mutual concern during the audit period and therefore no consultation was required.</p> <p>See Clause 6.6 of Operating Licences (Table 6.4 of this report) regarding Clause L.3 EPA Protection Licence.</p>
8.1	NSW Health to provide advice to Sydney Water on matters regarding the supply of water which is safe to drink and other public health issues.	<p>No requirement.</p> <p>Sydney Water reported that no advice was provided by NSW Health in regard to the supply of water which is safe to drink and other public health related issues during the audit period.</p>
8.2	NSW Health shall provide advice to Sydney Water on waste water management activities impacting public health.	<p>No requirement.</p> <p>Sydney Water reported that no advice was provided by NSW Health in regard to waste water management activities impacting public health.</p>



Table B MOU NSW Health compliance

Clause	Requirement	Comment
8.3	NSW Health shall make independent judgement on public health matters and exercise its powers and functions under the <i>Public Health Act 1991</i> .	No requirement. Requirement of NSW Health. An example of a judgement made by NSW Health was in regard to the inappropriateness of inclusion of test results for <i>epichlorohydrin</i> for compliance assessment purposes. Letter from NSW Health sighted. (See Section 6.3.3 of this report for further discussion of epichlorohydrin).
8.4	Where Sydney Water fails to meet Drinking Water Guidelines or where the provisions of drinking water, or the reclamation, reuse, disposal or treatment of wastewater takes place in such a manner that a hazard to public health may arise, Sydney Water is responsible for assessing the problem and proposing rectification action. NSW Health may provide advice on the rectification action although Sydney Water shall be entirely responsible to take appropriate rectification action, ensuring the supply of drinking water is safe and meets the requirements of the Sydney Water's Operating Licence and clause 7.2 and that other activities do not pose potential health hazard to public health.	Sydney Water reports that there were no incidents where a hazard to public health arose. Sydney Water provided data detailing a Summary of Events for 2002/03. There are regular incidents, which are managed in accordance with the Drinking Water Quality Management System and Incident Management Plan.
8.5	NSW Health to report to IPART on Sydney Water's compliance with the MOU, upon any public health matter or as considered appropriate.	No requirement. NSW Health does not provide Sydney Water with copies of reports sent to IPART. SLG 5 September 2001, NSW Health indicated it would liaise directly with IPART in relation to last years Operational Audit of Sydney Water.
9.2	Sydney Water shall make independent input to public discussion debate on revisions of the <i>1996 Australian Drinking Water Guidelines</i> or other grades of water	Sydney Water reported that staff attended public discussion, which had direct input into NHRMC.



Table B MOU NSW Health compliance

Clause	Requirement	Comment
10.1	Sydney Water shall immediately report to NSW Health any information or event within drinking water supply system or wastewater reclamation and reuse and wastewater reticulation, treatment and disposal operations which may have significant implications for public health.	<p>Performance requirement met.</p> <p>Sydney Water has a Drinking Water Incident Management Plan for Significant and Major issues (in accordance with Clause 6.5.6 of the Operating Licence). The Plan details the procedures to be followed and a requirement to report to NSW Health once an incident has been identified. The 'Drinking Water Quality On-line Notification & Reporting Systems to NSW Health' has been established and will act as a reporting tool to notify NSW Health of water quality incidents and will contain monthly reports.</p> <p>See Clause 10.3 (below) re discussion of update of Sydney Water Drinking Water Quality Incident Management Plan.</p>
10.2	Sydney Water report of information will include maps depicting the geographical location and systems in addition to tables or text if required by NSW Health.	Information is reported to NSW Health via the 'Drinking Water Quality On-line Notification & Reporting System to NSW Health'. NSW Health has all relevant information and maps to identify location of a reported incident.
10.3	Sydney Water, in consultation with NSW Health and other agencies shall maintain and update its Drinking Water Quality Incident Management Plan.	<p>Performance requirement met.</p> <p>The <i>Drinking Water Quality Incident Management Plan</i> was prepared and approved by the Department in 1999. The Plan was due to be updated by 30 June 2002. Sydney Water prepared a draft <i>Drinking Water Quality Event Management Plan</i> that was provided to NSW Health (and SCA) for comment on the 3 June 2002. The new Plan streamlines the former <i>Drinking Water Quality Incident Management Plan</i> and incorporates the latest <i>Emergency Risk Management Manual</i> and <i>Standard Operating Procedure – Drinking Water Quality Event Management Plan</i>. (NSW Health approved the new Event Management Plan on the 12 August 2002).</p>



Table B MOU NSW Health compliance

Clause	Requirement	Comment
10.4	Sydney Water, in consultation with NSW Health or other government agencies shall, where appropriate, develop and deploy incident management plans / protocols covering Sydney Water's activities relating to waste water management.	<p>Sydney Water advised that the 'Emergency Risk Management Guide and Policy Manual' was updated and distributed in July 2001 and includes incident management plans/protocols covering Sydney Water's activities relating to waste water management. The Guide provides a process for Sydney Water to manage risks associated with its activities, which may adversely affect the Corporation achieving its statutory objectives.</p> <p>NSW Health has established a protocol for overflow notifications (Appendix 8), and Sydney Water has established a procedure consistent with this protocol within the IMS for <i>"Notification and Reporting of Sewage Overflows to Regulators"</i> (approved 28 April 2003). In order to improve the notification system, Sydney Water set up in January 2003 a paging and faxing system that notifies Health of overflows, allowing Health to choose whether to follow up regarding an overflow or not. Sydney Water has established a training program for its staff involved in the notifications process so that the basis for notification can be better understood by those involved. A Training Assessment Form, Training Plan 2002/03 and Training Records from the Waste Water Integrated Management System were sighted.</p>
10.5	NSW Health & Sydney Water shall nominate a 24hr incident management contact point for coordinating responses to events of public health significance. The contact point will be an officer of each organisation who is appropriately trained. The incident management plan shall contain references, procedures and protocols for coordination of incident management including media and stakeholder liaison and notification of some NSW Health of public health advice.	<p>Performance requirement met.</p> <p>A 24 hour contact number is detailed in the <i>Standard Operating Procedure Drinking Water Quality Event Management Plan</i>. Media and stakeholder liaison procedures are detailed in the Emergency Risk Manual. Both document are incorporated into the <i>Drinking Water Quality Incident Management Plan</i>.</p>



Table B MOU NSW Health compliance

Clause	Requirement	Comment
10.6	NSW Health & Sydney Water shall ensure all relevant personnel are trained to respond and execute the incident management plan and the appropriate training exercise are jointly developed and conducted.	<p>The Incident Management System has been tested and found to work effectively, although some areas of improvement have been indicated. The testing has included, for example, a joint training exercise "Mary" involving Sydney Water, SCA, NSW Health, and Australian Water Services. In addition, there were actual incidents: a fire broke out in the electrical switch room at the Prospect Water Filtration Plant on 12 September 2002, and a bushfire burnt down power lines supplying the Nepean Water Filtration Plant in November 2002. The "Windstorms Incident" (declared as major incident on 26 August 2003) was outside the audit period, but the debrief indicated some areas for improvement. These included:</p> <ul style="list-style-type: none"> • The incident should have been declared earlier to assist prioritisation, resourcing and communication; • The full resources of the Emergency Coordination Centre were not deployed (OPS, Logistics, Planning, Communications). Resource listings were not complete. Generator sizes were not specified correctly; • OHS issues; and • Unreliability of paging system. <p>Sydney Water advised that debriefs are carried out for all incidents, and the results of the debriefs are included as Action Plans. It is concluded that the Incident Management System is now well developed, and can be expected to work effectively.</p>
11.1	NSW Health will provide Sydney Water with reports and studies, which are relevant to those activities of Sydney Water impacting on public health.	<p>No formal reports were provided.</p> <p>Relevant information is provided through the SLG and JOG.</p>
11.2	The Sydney Water will provide reports and studies to NSW Health undertaken as part of it's business relevant to public health	<p>No formal reports were provided. Relevant information is provided during the SLG and JOG meetings.</p> <p>Examples of Sydney Water providing reports to NSW Health include:</p> <ul style="list-style-type: none"> • SLG June 2002 – Case Study of Singapore's use of recycled water; • SLG 13 February 2003 – Drought breaking rains contingency actions; and • JOG October 2002 - Management of Dialysis Facilities.



Table B MOU NSW Health compliance

Clause	Requirement	Comment
12.1	Sydney Water and NSW Health shall jointly undertake public education programs relating to health aspects of drinking water.	<p>Sydney Water at interview, identified SLG 30 September 2002 as containing an Agenda Item on "Education Achievement Program":</p> <p>Additionally information including daily, monthly, quarterly and annual water quality reports are placed on Sydney Water's web-site and quarterly compliance reports are provided to customers with their bills.</p>
12.2	Sydney Water shall report to the public in accordance with Section 6.4 of its Operating Licence.	<p>Sydney Water's web-site has daily, monthly, quarterly and annual water quality testing results and reports for access by the public. Also includes daily <i>Cryptosporidium/Giardia</i> testing results. Reports are audited in Operating Licence Clause 6.4.</p> <p>The <i>Annual Drinking Water Quality Report for 2002/2003</i> had been prepared by Sydney Water on 11 September 2003 and was made available for the audit, in October 2003. Sydney Water advises that this report will be posted on the website before 30 November 2003.</p> <p>The Annual Drinking Water Quality Report for 2001/2002 was posted on the website on 30 November 2003 in accordance with the requirement of this clause.</p>



Table C MOU WAMC compliance

Clause	Requirement	Comment
"Introduction"	<p>A new Sydney Water - Water Administration Ministerial Corporation (WAMC) – MOU was executed on 28 June 2002 to provide a foundation for a cooperative relationship between the organisations. The "Introduction" sets out the water extraction, operation of works, activities on waterfront lands, water use (including demand management) role of WAMC and the role of Sydney Water and specifically Sydney Water's facilities including the North Richmond Water Filtration Plant, Manly Dam and Botany Wetlands.</p> <p>The MOU also recognises the relevance and objectives, and role of the SCA, namely to ensure the catchment areas and catchment infrastructure works are managed to protect and promote water quality, public health and the protection of the environment.</p>	<p>In addition to the requirements of the Operating Licence, Sydney Water is required to enter into a MOU with WAMC to meet the obligations of the Sydney Water Act 1994.</p> <p>However the MOU has not been actively implemented, in part due to the broad interaction between Sydney Water and DIPNR, through joint involvement of issues of mutual concern such as: Hawkesbury Nepean management; development of a Drought Response Protocol; and Water CEO activities. A further reason for the low level of activity under the MOU has been the structure changes within DLWC (now DIPNR), which reduced its involvement and Sydney Water advised, that MOU activities were not seen by DIPNR as a priority or need.</p>
1. Parties to the Memorandum		No requirement.
2. Functions and objectives		
2.1 Functions of Sydney Water	<p>The functions of Sydney Water are identified as, "in the areas of operations, to provide, construct, operate, manage or maintain systems or services for:</p> <ul style="list-style-type: none"> ▀ the supply of water, or; ▀ providing sewerage services, or; ▀ providing stormwater drainage services, or; ▀ disposing of waste water. 	No requirement.



Table C MOU WAMC compliance

Clause	Requirement	Comment
2.2 Principal Objectives of Sydney Water	Being to: <ul style="list-style-type: none"> be a successful business; protect the environment; protect public health by supplying safe drinking water. 	No requirement.
2.3 Special Objectives of Sydney Water	Includes: <ul style="list-style-type: none"> reduce risk to human health; and prevent the degradation of the environment. 	No requirement.
2.4 Functions of the Department of Land and Water Conservation.	Including policy development, planning, databases, asset management, financial and technical support and management of the town and country water supply and sewerage programs.	No requirement. DLWC is now a part of DIPNR.
2.5 Objects Of The Department	Are listed which are directed to provide the sustainability and integrated management of the water sources, crown land and native vegetation.	No requirement.
3. Principles	Include: <ul style="list-style-type: none"> The principles of ecologically sustainable development, relating to urban water use and integrated urban water cycle; Recognition of the role of community and stakeholders; and Agreements between the organisations will be in the public domain. 	No requirement.



Table C MOU WAMC compliance

Clause	Requirement	Comment
4. Term		
	The term of the MOU is from 28 June 2002 until it remains in force until amended or replaced.	No notices were given by either party to amend or review the MOU.
5. Structures and Processes		
5.1 Chief Executive Officer (CEO) Meetings	The CEOs or respective deputies shall meet to discuss matters of mutual concern and those referred to it by the Strategic Liaison Group (SLG) on a regular basis, but not less than one per financial year. The meeting initiated by either party.	<p>A foundation meeting took place on 18 October 2002 (draft minutes / agenda reviewed), which lead to a joint workshop on 2 April 2003 to identify the issues and direction for the SLG. However, these issues have not been pursued through the MOU due to the restructuring within the former DLWC. A number of the issues have, however, been advanced through broader inter-agency forces.</p> <p>No matters were referred by the SLG to a CEO meeting.</p>



Table C MOU WAMC compliance

Clause	Requirement	Comment
5.2 Strategic Liaison Group (SLG)	<p>The MOU requires:</p> <ul style="list-style-type: none"> ▶ establishment of the SLG; ▶ consideration of issues to be determined by the group, including: ▶ long-term strategic issues and policies; ▶ issues arising from the operation of catchment management boards etc.; ▶ implication of DLWC objectives including water quality etc.; ▶ areas for co-operative research and joint initiatives. <p>SLG will:</p> <ul style="list-style-type: none"> ▶ report to the CEOs; ▶ have a membership agreed between the parties; and ▶ agreed meeting frequency. 	See comment 5.1.
5.3 Joint Forums	The clause notes stakeholders will convene joint forums on issues relevant to integrated urban water cycle in the catchment of Sydney Water's area of operation.	Both Sydney Water and WAMC participated in joint forums (for example, Water CEO's, Drought Committees, which included executive, management, expert panel and working groups), though these were not driven by the MOU.
5.4 Exchange of Information and Data.	Each party would supply and share relevant data and information as necessary and to do so on terms as agreed between the parties.	Similar to comment under 5.3, the exchange of information and data over 2002/03 was not driven by the MOU and no formal agreement exists. Rather, data is transferred if, and when, needed.
5.5 Joint Programmes and Initiatives.	Joint programs and initiatives will be developed including the undertaking of research.	No specific joint programs, were developed under the MOU, though both organisations participated in broad programs (for example, Integrated Management Strategy for Hawkesbury Nepean).



Table C MOU WAMC compliance

Clause	Requirement	Comment
6. Dispute resolution		
	Any disputes between the parties would be resolved at the lowest level or alternately the SLG and if still unresolved to the CEOs. Finally, ultimate arbitration will be with the relevant ministers.	No disputes were raised at SLG, CEO or Minister levels.

Appendix F

Customer contract compliance table

Table D Customer contract compliance table

Clause	Requirement	Compliance	Findings
1	Introduction	No requirement	
2	What is a Customer Contract and who is covered by it?	No requirement	Clause provides background information, a definition of the Customer Contract and who is covered.
3	What service does Sydney Water provide?		
3.1	Water supply services	High compliance	Sydney Water is required to provide customer's with drinking water within the terms of clause 3.1, which includes consideration of water quality, water pressure, supply of recycled water and health or special needs. While the physical characteristics of the water are reviewed in detail elsewhere, the results of the customer surveys and the Operating Licence Compliance Report (OLCR) were used as indicators of compliance. Water continuity information is provided for planned and unplanned events and for the number of households impacted. There were 6,135 unplanned events impacting water continuity, which affected 272,912 households during the period. The majority of these households (93%) were affected for less than 5 hours. There was a further 1,334 planned events affecting 96,494 households with 79% of households affected for less than 5 hours. Of those customers reporting a problem in the customer survey, 5% indicated interruption to flow as the problem.
	3.1.1 Supply of drinking water		
	3.1.2 Drinking water quality	High compliance	Sydney Water is required to maintain a Memorandum of Understanding (MOU) with the NSW Department of Health (NSW Health), and this audit has determined that the MOU has been maintained and fully operational during the year. The quality of water supplied to customers is generally of an excellent standard and complies with the health related requirements of the Australian Drinking Water Guidelines and the aesthetic related requirements set by NSW Health and the Minister.
	3.1.3 Drinking water pressure	High compliance	The OLCR indicates that 2,357 properties did not receive the required continuous water pressure during the audit period. It was also reported that 5,769 properties had less than the required pressure more than once during the period. There were also 2,317 complaints about pressure representing 4.0% of the total number of complaints for the year. Of those customers reporting a problem, 11% indicated it was a water pressure problem.

Table D Customer contract compliance table

Clause	Requirement	Compliance	Findings
	3.1.4 Supply of recycled water	High compliance	Recycled water pressure and water continuity results are reported in the OLCR and are mainly relevant to the Rouse Hill Development Area. There were no properties affected by water pressure problems with 10 unplanned and 37 planned events impacting water continuity. The largest proportion of properties 1,999 were affected by unplanned events between 1-5 hours. Before the commissioning of zones customers are sent letters and information kits. Further to this an information pack is issued with Section 66 certificates (Sydney Water Act – rates and charges).
	3.1.5 Health or special needs	No requirement	In the context of greater consultation leading to better understanding of the needs and preferences of those with special needs with respect to continuous water, in particular people using dialysis machines, it is no longer required for Sydney Water to record personal details of these people. Regular consultation meetings with a group including the Renal Physicians indicates that other arrangements can be made by patients in the case of interruption to the water supply. Privacy concerns have led to a need for Sydney Water to change the procedure for contacting patients and painting their water meters blue. This information was confirmed through two sets of minutes of meetings with the Renal Dialysis group within the audit period.
3.2	Sewerage services		
	3.2.1 Supply of sewerage services	High compliance	No evidence was sighted that Sydney Water had refused to provide sewerage services to customers who were entitled to receive such services. The customer survey asked people to rate their satisfaction with Sydney's sewerage system. Only 10% of customers said they were <i>"Not very satisfied"</i> or <i>"Not at all Satisfied"</i> compared to 12% in the previous year and 15% in the year prior to that.
	3.2.2 Sewage overflow	High compliance	The OLCR reports sewage overflows as part of the performance indicators. The number of dry weather uncontrolled sewage overflow events attributed to chokes was reported as 18,968. The response time to high priority sewer incidents was also reported in the OLCR. Sewer overflow generated the highest number of complaints with 28,272 reported during the audit period accounting for 49% of all complaints. The Emergency Contacts survey has other information including that 82% of customers had their expectations met, or exceeded, with respect to Sydney Water's approach to dealing with wastewater problems. The survey also asked customers how the area was left after the repair work and reported 86 % customers agreeing with the statement, "The service people left the area clean and tidy" for customers where the problem was fully or partly fixed. Customers who felt their problem had not been fixed were generally dissatisfied.

Table D Customer contract compliance table

Clause	Requirement	Compliance	Findings
	3.2.3 Blockage of sewer system	High compliance	<p>As reported above, the major indicator associated with dry weather uncontrolled sewage overflow events were sewer chokes. This area is one that can create confusion between the customer and Sydney Water about the appropriate responsibility for fixing the problem based on where the choke is in the sewer occurs.</p> <p>The Emergency Contacts Survey reports 17% of respondents indicated that Sydney Water did not take responsibility for a particular wastewater problem .However Sydney Water disputed the figure. The possible different expectations between customers and Sydney Water on blocked sewers can be a potential area for dissatisfaction and will always require ongoing education of property owners about the delineation of responsibility between the property owners sewer system and that maintained by Sydney Water.</p>
	3.2.4 Trade waste	Full compliance	<p>Sydney Water provided copies of its trade waste agreement along with information provided to customers and available on its web site. There was information relevant to different industries and information provided in other languages. The Auditor also sighted Sydney Water's trade waste policy and management plan.</p>
3.3	Stormwater drainage services	High compliance	<p>Properties within the stormwater drainage areas are provided with a service through the transportation of stormwater and are charged a fee of \$6.00 per quarter under Section 66 of the Sydney Water Act. Maps are available in the customer service centre to show the properties that are serviced by Sydney Water because they are in a declared stormwater drainage area. Further declaration of stormwater areas is unlikely to occur.</p>
3.4	Factors affecting service		
	3.4.1 Repairs and maintenance	High compliance	<p>The Emergency Contacts survey reports on the satisfaction of customers with repair work undertaken at their property. Asked to agree with statements with respect to repair work undertaken, 85% with respect to water and 86 % with respect to wastewater agreed with the statement <i>"the service people left the area clean and tidy"</i>. There was similar numbers agreeing with the statements <i>"Sydney Water did all it could to fix the problem"</i> and <i>"the problem was fixed quickly."</i> It can be assumed that many of those who did not believe that the affected area and surrounds were left as near as possible to their previous state are those also upset because of the timing or the actual fixing of their problem.</p>

Table D Customer contract compliance table

Clause	Requirement	Compliance	Findings
	3.4.2 Unplanned interruptions	High compliance	<p>A 24 hours emergency telephone service is available and clearly advertised through the 24 hour emergency number section in the front of the white pages of the telephone book.</p> <p>The OLCR provides information on system performance concerning unplanned interruptions. 19,580 properties had unplanned interruptions to water supply exceeding 5 hours which is less than 50% against the maximum for the system performance standard. A further 253,332 properties were effected for less than 5 hours.</p>
	3.4.3 Planned interruptions	High compliance	<p>A copy of the notice issued to households in the case of a planned interruption to water supply and sewerage services was sighted. This notice provides for indication of the time and duration of any interruption.</p> <p>The OLCR indicates that 20,230 properties had a planned and warned shutdown of water supply exceeding 5 hours, which is below the stated maximum allowance of 32,000 properties. No evidence related to the advance notice of 2 days for residential customers and 7 days for commercial customers.</p>
	3.4.4 Restrictions in drought	No requirement	<p>No restrictions had been placed on users due to drought within this period. A notice of voluntary restrictions was issued in the billing notice for November 2002. From 1 October 2003 there will be mandatory restrictions and these have been, and will continue to be notified via press releases and advertisements in the newspaper and radio. In addition the voluntary restrictions notified in the quarterly bill will be notified as mandatory and further advice of the restriction will also be indicated in a bill insert in the January quarter.</p>
4	What you pay		
4.1	Responsibility to pay account	No requirement	Responsibility of customer.
4.2	Publication of charges	Partial compliance	<p>In the past there has been a brochure published with easy to read information on charging policies and current charges. This information continues to be available on the web site through a very clear two-page document 'Service Charges 2003-2004'. When requested, the pricing brochure on the website is printed and provided to customers in the same manner as the Ancillary Pricing Brochure. It is considered that the intent of the wording of the Contract in suggesting that charging policies and charges be 'published' is more in line with the production of a brochure as has been the practice of the past. There needs to be consideration of the fact that not all customers have regular access to the web nor would they necessarily be aware that they could request the brochure through a customer service centre.</p>

Table D Customer contract compliance table

Clause	Requirement	Compliance	Findings
4.3	Concessions	High compliance	<p>Pensioner rebate pamphlet sighted and information provided on accounts.</p> <p>The customer bill clearly shows the pensioner rebate.</p> <p>It is understood that information on concessions will be provided in languages other than English when people contact Sydney Water and request such information and that the availability of an interpreter service is indicated in the Customer Contract pamphlet. Further to this arrangement, there may be value in indicating on the pensioner rebate pamphlet that such information is available in languages other than English given that the Contract makes specific reference to this information being available in languages other than English.</p>
4.4	Your account	Full compliance	Example accounts sighted.
4.5	Undercharging	High compliance	<p>If Sydney Water undercharges in one quarter and that undercharging is the result of Sydney Water error then this amount is not recouped in the next billing quarter.</p> <p>If the undercharging is due to provision of false information this amount will be raised and will appear as a separate item on the account . There was no example bill sighted.</p> <p>There were 7,798 complaints about accounts/ rating/ billing (13.5% of all complaints) however no information was sighted as to the specifics of the billing complaints although there is reference to the increased complaints being a result of the shortening of the meter reading cycle in the July-September quarter, which led to an increase in meter reading errors.</p>
4.6	Overcharging	High compliance	There was no evidence that in situations of overcharging that this had not been successfully resolved through appropriate adjustment to bills.
4.7	Account disputes	High compliance	<p>An action is placed in the system to stop billing occurring on the disputed amount.</p> <p>There was no evidence that in situations of an account dispute that Sydney Water sought the amount from the customer prior to the matter being resolved in its favour.</p>
4.8	How prices are determined	No requirement	For customers' information.
4.9	Notification of price variations	Partial compliance	It is understood that while water price increases are notified through the bill issued in the quarter prior to the increase, increases in service charges that occur are not in fact notified in writing in advance as is the requirement of the Contract. Customers should be notified in writing of any increase in charges including service charges. This situation should be rectified by notification in

Table D Customer contract compliance table

Clause	Requirement	Compliance	Findings
			advance of the next increase in service charges.
4.10	Other costs and charges	Full compliance	Publication of charges sighted including ancillary service charges.
5	What can I do if I am unable to pay my account		
5.1	Payment difficulties	Full compliance	The pamphlet titled " <i>Experiencing financial hardship?</i> " was sighted. Information is also located on the account sent to customers. This was sent to all customers in the April 2003 billing period. It was also noted that 4,699 people were assisted under the Payment Assist Scheme (PAS).
5.2	Account relief	Full compliance	As above.
6	Disconnection or restriction of water and sewerage Services		Much of the evidence used to evaluate this section relates to Clause 5.3 of the Operating Licence (Code of practice and procedure on debt and disconnection).
6.1	Disconnection or restriction of supply for non-payment	Full compliance	No evidence was sighted that supply had been restricted without providing notices under clause 6.2 of the Customer Contract. The OLCR indicates 3,382 properties were disconnected or had flow restriction for non-payment on properties in the audit period. This represents 2.07 events per 1,000 properties.
6.2	Notice of disconnection or restriction of supply of water	Full compliance	Sample notices as stipulated in this clause have been sighted.
6.3	Disconnection or restriction for other reasons	No requirement	No figures showing the number of properties disconnected for other reasons were sighted.
6.4	Minimum flow rate during restriction	No requirement	Information provided to the customer. There were no complaints to this effect ie that peoples health was impacted.
6.5	Limitations on disconnection or restriction	No requirement	No evidence to suggest that this has not happened.
6.6	Disconnection by a customer	No requirement	No evidence to suggest that customers have not been able to disconnect.
6.7	Restoration of supply after restriction or disconnection	No requirement	No evidence to suggest that restoration of supply was not in accord with this clause.
7	Redress		
7.1	Notification	Full compliance	Notice of service interruptions as provided to households was sighted. Customer Contract has rebate information and this is sent to all customers annually.

Table D Customer contract compliance table

Clause	Requirement	Compliance	Findings
7.2	Rebates	Full compliance	The OLCR indicates the number and dollar value of rebates issued. Rebates related to water continuity- planned and un-planned is provided with further breakdown for recycled water. Further sub categories and breakdown of rebates was provided for water pressure, sewer overflows, dirty water and boiled water alert. A total of \$3,620,162 has been paid as rebates in the 12 month ending 30 June 2003 with an average amount of \$12.10 being paid per customer.
7.3	Rebates for recurring sewerage service disruption or internal overflows	No requirement	This has occurred and is paid automatically.
7.4	Redress	No requirement	No evidence was sighted concerning the implementation of this clause.
7.5	Claim for damages	No requirement	<p>During the last 12 months there has been a total of 1,969 notifications of incidents that may give rise to a claim where Sydney Water could be legally liable for damage, injury or death to a third party. At the time of the audit 74% of these developed into an actual claim on Sydney Water. This includes many (about 60%) that are small claims not necessarily where Sydney Water is legally liable but where they were paid in the interest of Public Relations. About 36% (of the 74%) were rejected.</p> <p>In addition when a customer's premise is flooded due to a water main break or an internal sewage surcharge the Incident Response Plan involves Sydney Water visiting the customer well within 12 hours. The customer is notified and the incident acknowledged in writing including information on how to make a claim and how this will be handled.</p> <p>The letter of acknowledgement in the case of an incident and the letter sent within 5 days acknowledging the receipt of a written claim were both sighted.</p>
7.6	Limitation of liability	No requirement	No evidence has been sighted that is relevant to this clause.
8	Responsibilities for maintenance		
8.1	Water pipes	No requirement	Primarily for the information of customers although no relevant evidence sighted.
8.2	Your sewer system	No requirement	Primarily for the information of customers.
8.3	Joint private water or sewer system	No requirement	As above.

Table D Customer contract compliance table

Clause	Requirement	Compliance	Findings
8.4	Conserving water	No requirement	As above. Pamphlets produced by Sydney Water on this subject have been sighted including information provided in languages other than English.
8.5	Defective work	No requirement	Notice of work as part of the Sewerfix program was sighted.
8.6	Giving notice of system failure	No requirement	Primarily for the information of customers although it should be noted that many customers notifying of system failures have these recorded as complaints.
8.7	Building work	No requirement	Primarily information for the customer.
8.8	Altering and unauthorised connection or use	No requirement	As above.
8.9	Removal of trees	No requirement	As above.
9	Entry onto a customer's property for maintenance		
9.1	Access to Sydney Water's system	No requirement	Primarily information for the customer.
9.2	Identification	No requirement	On the notification of interruption to service it clearly indicates that "Sydney Water employees are required to wear identification".
9.3	Notice of access	No requirement	Sewerfix notice sighted.
9.4	Impact on customer's property	High compliance	As noted, previously the Emergency Contacts survey indicated a high level of satisfaction by customers if Sydney Water had in fact, in the customer's opinion, fixed the problem.
10	Water meter installation, testing and maintenance		
10.1	Measuring water supplied	High compliance	Sydney Water reports 1.21% of metered accounts not being read throughout one year therefore the number of readings relying on estimates is very low.
10.2	Water meter installation and maintenance	High compliance	Meters are provided. Sydney Water reported only 58 complaints about meters. The previous high number of complaints was a result of damage such as being hit by motor vehicles.
10.3	Meter testing	High compliance	As testing is expensive and this cost needs to be met by the customer (if the meter is not faulty) effort is made to negotiate with the customer prior to sending the meter for testing. If testing is the

Table D Customer contract compliance table

Clause	Requirement	Compliance	Findings
			course of action the meter will be replaced (to send the meter for testing). If the meter is found to be faulty Sydney Water will refund the money for the test via an adjustment in the account.
10.4	Access to the water meter	No requirement	Primarily for the information of the customer.
10.5	Meter replacement	Full compliance	Sydney Water advised of its ongoing meter replacement program. 90,000 meters are replaced each year based on 3,500 kilolitre usage, and some 10,000 are replaced based on damage or failure.
11	Who can I speak to if I have any questions or want to make enquiries?		
11.1	Telephone enquiries	Full compliance	Enquiries are responded to immediately in that they are answered and directed to the relevant section. The customer is informed of any action taken. The contact number is advertised as indicated.
11.2	Written enquiries	High compliance	It is understood that an interim written response or phone call is provided within 5 days of receipt of a written enquiry. There is no indication of non compliance with this promise in the Contract.
11.3	Emergency enquiries	Full compliance	The appropriate phone numbers have been sighted in the phone book, pamphlet and on the account.
11.4	Interpreter and TTY service	Full compliance	These services are listed on Sydney Water's account.
12	If I am unhappy with the service provided by Sydney Water what can I do?		Detailed analysis of compliance concerning complaints is covered in Chapter 10 Dispute Resolution.
12.1	Customer complaints	High compliance	Sydney Water reports as part of the OLCR that 100% of complaints were responded to within the required time frame, and between 74% and 79% of customer complaints received a "substantive" response within 2 days meaning that the there was at least advice of the strategy for action if not resolution of the complaint.
12.2	Complaints review	High compliance	There is a procedure for the escalation of complaints to a Manager and this is documented electronically. The process for dealing with and escalating complaints for external review is discussed in detail under Chapter 10.
12.3	Resolution of disputes	No requirement	Primarily for the information of customers.

Table D Customer contract compliance table

Clause	Requirement	Compliance	Findings
12.4	External dispute resolution	High compliance	External dispute resolution is reviewed in Chapter 10.
13	Consultation, information and privacy		
13.1	Involving customers in service planning	High compliance	Customer Councils are discussed under the review of Clause 5.4.
13.2	Provision of information	No requirement	While responses to complaints have been assessed no assessment has been made concerning requests for information of a more general nature.
13.3	Privacy	Full compliance	Discussions with the privacy coordinator at Sydney Water indicate that there is ongoing review of privacy and personal information issues as part of the day-to-day operations of Sydney Water. In addition the coordinator indicated that the production of training material is in progress, there is ongoing review of Sydney Water brochures with a view to ensuring public awareness and the inclusion of privacy messages. A public email address has been established to alert privacy issues and a Privacy Management Plan has been produced. In addition policies and procedure are on the internal Sydney Water Intranet and a policy statement is publicly available on the web site.
14	When does my customer contract with Sydney Water terminate?	No requirement	Primarily for the information of customers.
15	Dictionary and interpretation	No requirement	Primarily for the information of customers.



Appendix G

Comments from Government agencies



From: "Salim Vhora" <Salim.Vhora@dipnr.nsw.gov.au> on 26/11/2003 02:58:32 PM
Repository: 2112170 SWC 2002/03 Operational Audit
To: <Maurice_Pignatelli@ghd.com.au>, <Richard_Blume@ghd.com.au>
cc:
Subject: Re: Comments on SWC performance for the operational audit

Richard

DIPNR comments as requested

Part 3.3 MoU

An MoU between DIPNR and SWC was signed in Jun 2002 and a meeting of the Strategic Liaison Group was held in Oct 2002. I am not aware of any other SLG meeting since then.

Part 6 Water Quality Clause 6.6 Environmental Water Quality

This clause is not relevant to the Department. Any water quality requirement under a DIPNR licence will be administered by the department independent of the operating licence. This clause is unnecessary and could be removed from Op licence.

Part 6 Water Quality, Clause 6.7 other grades of water

DIPNR has no such guidelines or requirements on SWC Reference to DIPNR should be removed from this clause.

Other/General comments

DIPNR has issued a water management licence to SWC for Manly Dam, Botany Wetlands and surface water extractions from Hawkesbury River at North Richmond. The licence acknowledges the rehabilitation works at Botany Wetlands. SWC is required to report on the progress each year. DIPNR is satisfied with the rehab work and supportive of the SWC's actions.

Please ring me on 4722 1116 if you have any queries or need further information.

Salim

Salim Vhora
Corporate Licence Development Manager
Department of Infrastructure, Planning and Natural Resources
L1 308 High Street
PO Box 651
Penrith NSW 2751

02 4722 1116 (Tel)
02 4721 0181 (Fax)

Your Reference : 21/12170// EPA letter.doc
Our Reference : SR689/HO3455; EXP27087
Contact : Tim Gilbert, 9995 6860



Deputy Director General

Mr Maurice Pignatelli
Project Manager
GHD Pty Ltd
57 Herbert Street
ARTARMON NSW 2064

Maurice
Dear Mr Pignatelli

2002/03 OPERATING LICENCE AUDIT OF SYDNEY WATER CORPORATION

I refer to your letter dated 13 October 2003 requesting comment from the Department of Environment and Conservation (DEC) (incorporating the Environment Protection Authority) for the 2002/03 independent audit of the Sydney Water Corporation. I note that the audit covers the period 1 July 2002 to 30 June 2003.

Your letter requests comments on Sydney Water's performance, where the Operating Licence refers to DEC's requirements, or where Licence requires the DEC to be consulted. The Department's comments are presented in the attachment to this letter, in the order of the clauses presented in your letter.

If the DEC can be of further assistance to you in relation to any of these matters, please contact Mr Tim Gilbert on (02) 9995 6860.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'Simon Smith'.

21/11/03

SIMON SMITH

**Deputy Director General
Environment Protection and Regulation Division
Department of Environment and Conservation**

Attachment: DEC comments on Sydney Water.

The EPA is part of the Department of Environment and Conservation

Environment Protection Authority
PO Box A290 Sydney South NSW 1232 Australia
59-61 Goulburn Street Sydney NSW 2000

Telephone 61 2 9995 5000

Facsimile 61 2 9995 6999

ABN 43 692 285 758
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ATTACHMENT**2002 - 2003 OPERATING LICENCE AUDIT OF SWC****PART 3 SYDNEY WATER'S RESPONSIBILITIES****3.3 Memorandum of Understanding**

A revised and updated Memorandum of Understanding (MoU) between the EPA and SWC came into effect early in the audit period, and is working satisfactorily. Consultative mechanisms required by the MoU, including Chief Executive Officer (CEO) meetings, Strategic Liaison Group (SLG) and Operational Policy Committee (OPC) meetings, enable strategic and operational issues to be discussed.

PART 6 WATER QUALITY**6.6 Environmental Water Quality****Licence Limit Exceedances****(a) Sewage Treatment Systems****(a1) Sewage Treatment Plants**

During 2002/2003, Sydney Water's coastal and inland sewage treatment plants (STPs) generally complied with licence limit requirements.

However, there were exceedances of the Total Residual Chlorine (TRC) concentration limit at the Blackheath, North Richmond, Riverstone and Warragamba STPs. The Department will require Sydney Water to undertake a further investigation to better understand the cause of the TRC exceedances.

Sydney Water also reported that monitoring requirements were not fully complied with at a number of STPs. Sydney Water undertook prompt and appropriate action to remedy the problem(s) that were caused by samples not being taken. The Department considers these non-compliances to be minor, and is taking no further action on these non-compliances.

(a2) Reticulation Systems

Sydney Water reported non-compliances relating to individual small dry weather overflows of its reticulation systems (resulting mainly from tree root and debris blockages and broken mains). The Department accepts Sydney Water's explanation that the extended drought in Sydney during the period 2002/2003 was responsible for a large number of tree root blockages. The Department will not take separate action over each non-compliance, but will continue to drive Sydney Water's performance on sewer overflow abatement through the Pollution Reduction Programs in the licences.

Condition O5.1 in the licences requires no deterioration and ongoing improvement in system environmental performance, when compared to 1994 performance levels. To determine whether Sydney Water's system environmental performance has deteriorated, condition O5.2(c) requires Sydney Water to compare the number of wet weather overflows per 10 years as predicted by hydraulic sewer system models for 1994 to the number of wet weather overflows per 10 years as predicted by the hydraulic sewer system model for the reporting period. Sydney Water reported non-

compliance with licence conditions O5.1 and O5.2(c) for most sewage treatment systems. Non-compliances resulted from either:

- i) increased wet weather overflows compared to the frequencies in the 1994 benchmark year. The Department's response in this circumstance is to add new Pollution Reduction Programs to the relevant licences by the end of 2003 requiring investigations, works and activities in agreed timeframes to reduce wet weather overflow frequencies; or
- ii) the 1994 benchmark year not being able to be established by the hydraulic sewer system model because of lack of data to develop/calibrate the model to a standard that conformed with the agreed modelling protocols. For these systems, the Department's response is to change the benchmark year in the relevant licences to the earliest year for which Sydney Water has been able to develop and calibrate a conforming model. The licences will be varied by the end of 2003 to accommodate changed benchmark years.

Sydney Water reported that the Works Program (PRP105.5) for upgrading specified sewage pumping stations (SPSs) by 30 June 2003 to 'no dry weather discharge' standard was not completed, resulting in non-compliances with PRP105.5 across a number of licences. The EPA did not agree to a request from Sydney Water late in the reporting year to vary the licences to accommodate the reduced program done by Sydney Water. The Department's response is to revise PRP105.5 in relevant licences by the end of 2003 to require delivery of the upgrade program over 2003/2004 and 2004/2005.

(b) Water Filtration Plants

Sydney Water complied with licence conditions at its water filtration plants during the period 2002/2003.

6.7

Other Grades of Water

Recycled Water/Effluent Reuse

Sydney Water supplies effluent for commercial irrigation and industrial purposes. Recycled water is provided to the Rouse Hill development area for non-potable uses such as flushing toilets and watering gardens. The Picton STP and the Gerringong - Gerroa sewerage schemes both provide recycled water for local agricultural use. The licences for these sewage treatment systems include conditions that control the quality of the treated effluent provided for reuse. Sydney Water complied with these licence conditions in 2002/2003.

The Illawarra Wastewater Strategy includes a 20ML/day reverse osmosis water treatment plant to be constructed at the Wollongong STP. The plant will provide water for reuse at the BHP Steel Mill at Port Kembla and is expected to result in the conservation of 20 percent of the region's water sourced from Avon Dam. The Strategy is expected to be completed in June 2005.

Sydney Water is continuing to implement the Upper Georges River Wastewater Strategy. This Strategy involves the upgrading of the Liverpool, Glenfield and Fairfield STPs to take account of increased wastewater flows from projected growth in the Southern Suburbs sewage treatment system. It will provide wet weather overflow abatement at the STPs. It will also make recycled water available to industrial and commercial customers along the route to Malabar STP, with the balance of flows being discharged to the ocean via the deepwater outfall.

Page 3

PART 9 ENVIRONMENT – INDICATORS & PLANS**9.6 Pollution Reduction Targets**

Sydney Water complied with the requirements in its sewage treatment system licences to submit a report on the sampling of the wide range of specified chemicals undertaken in the period. Sydney Water reported a small number of "spikes" (high values) in the measurements of total residual chlorine (TRC) at two sewage treatment plants. Discharges of effluent at the levels in question would have the potential to cause significant environmental harm. The Department's response is to require Sydney Water to undertake an investigation and report by the end of 2003.

ENVIRONMENTAL HEALTH BRANCH

Mr M Pignatelli
Project Manager
GHD Pty Ltd
Locked Bag 2727
ST LEONARDS NSW 1590

GHD - LONGMAC Pty Ltd		
REF:		
RECEIVED BY:		
27 NOV 2003		
DISTRIBUTION:		

Dear Mr Pignatelli

I refer to your letter regarding the audit of the Sydney Water Corporation Operating Licence. Thank you for the opportunity to provide input to the audit process.

The NSW Department of Health enjoys an effective and open relationship with Sydney Water at officer and strategic levels. The Department is satisfied that Sydney Water has met or is making good progress towards meeting its obligations under the Operating Licence and Memorandum of Understanding.

I refer you to the draft water quality audit report that was prepared by GHD on behalf of the Department. The report addresses most requirements of the Operating Licence of interest to the Department. The report concludes that the quality of water supplied to customers is generally of an excellent standard and complies with the health-related requirements of the *Australian Drinking Water Guidelines*. In addition, the Department receives monitoring reports of effluent reuse and is satisfied that Sydney Water Complies with the relevant guidelines.

In April this year, officers of the Department met with members of the International Expert Panel reviewing the management of Sydney's water supply. The Panel's report demonstrates the good progress made by Sydney Water and Sydney Catchment Authority in protecting and improving the water supply.

Also during the audit period the Department worked with Sydney Water to review incident response protocols, drinking water quality education and to progress other strategic issues.

I trust that this information will assist with the audit process. Should you require further information, please contact Dr Paul Byleveld on 9816 0589.

Yours sincerely



Vicky Sheppeard
A/Director Environmental Health

21-11-03



Appendix H

Environmental indicators compliance table



Appendix H Environmental indicators monitoring compliance

Environmental indicator	Monitored	Complied year to year	Number of years of data	2002 – 2003	Performance reported
Sewerage Effluent Discharges to Ocean					
<i>Discharge Quality</i>					
Effluent Quality including schedule 10 chemicals	✓	<p>Schedule 10 chemicals are monitored for the ocean STPs.</p> <p>Glenfield, Fairfield and Liverpool STPs (which discharge in dry weather to Malabar STP) commenced monitoring some schedule 10 chemicals in 2000/01 and continued monitoring for the 2001/02 and 2002/03 period.</p>	<p>Generally the tables in section 2 of Volume 3 provide data for the previous 8 years i.e. Data from 1995/96 – 2002/03.</p> <p>Data for Fairfield, Glenfield and Liverpool is for the previous 2 years (from 2000/01).</p>	<p>Discharge quality is reported for the 13 STPs for 2002/03.</p> <p>Glenfield, Liverpool and Fairfield monitor the following schedule 10 chemicals: aluminium, ammonia, copper, cyanide, diazinon, un-ionised hydrogen sulphide, zinc.</p> <p>This is not the entire schedule 10 chemical list.</p>	<p>Performance is discussed in Volume 1, section 2, from page 24. Details of effluent quality are provided in Volume 3.</p> <p>Schedule 10 chemicals are also discussed in the Sydney Water Pollution Reduction Targets Report.</p>
Nutrients, grease, suspended solids	Monitoring of oil and grease and nutrients is not recorded for Fairfield, Glenfield and Liverpool.	Data compiled year to year since 1999/2000.	1993/94 – 2002/03 (10 years).	Volume 1 of the EICR, Table 2.2 tabulates oil and grease volumes discharged from 1999/00 to 2002/03.	<p>Phosphorus and total nitrogen are recorded in Volume 3. Performance is also recorded in Table 2.13 of Volume 1 of the EICR.</p> <p>Table 2.2 of the EICR 2003 shows a 6% decrease in suspended solids discharged since the 20001/02 audit period.</p> <p>Oil and grease discharges have increased by 2.2% since last year.</p> <p>Performance is not discussed for individual STPs and is presented in Volumes 2 and 3 eg. data are presented for Bellambi from 1993/94 – 2002/03</p>



Appendix H Environmental indicators monitoring compliance

Environmental indicator	Monitored	Complied year to year	Number of years of data	2002 – 2003	Performance reported
STP discharge volume	✓	Presented in Figure 2.1 and 2.2 of Volume 1 of the EICR 2003.	Discharge volumes are shown for all 10 ocean outlets for 1993/94 – 2002/03 (10 years).	For Warriewood, North Head, Bondi, Malabar, Cronulla, Bellambi, Wollongong, Port Kembla, Shellharbour and Bombo for 2002/03	A total of 392,200 ML of treated sewage was discharged to the ocean in 2002/03. Volume discharged has generally increased since 1993/94.
<i>Water quality</i>					
Water quality concentrations of schedule 10 chemicals, nutrients, grease, suspended solids based on effluent measurements and measured/modelled dilution rates	✓ Receiving water quality is monitored.	Receiving water quality is presented in numerical form in section 2 of Volume 3 in the last column titled 'receiving water quality median concentration'.	Random samples were chosen by the Auditor to determine compliance with this indicator. eg. oil and grease results for Malabar are presented for 1993/94 to 2002/03 ie 10 years. Cronulla 1993/94 (10 years) and Port Kembla 1993/94 (10 years). Suspended solids was monitored from 1993/94 – 2002/03 ie. 10 years for most STPs. Nutrients, total nitrogen and phosphorus are mostly monitored from 1993/94 – 2002/03 (10 years). Schedule 10 chemicals were monitored from 1995/96 – 2002/03 (previous 7 years) for most STPs.	Random samples were chosen by the Auditor to determine compliance with this indicator. Oil and grease have only been reported for 1996/97 for Bombo and Warriewood. Data have not been compiled for 2002/03. Data for 2002/03 were available for other STPs that were randomly checked.	Data are provided in Volume 3 section 2 of the EICR. A statement at the beginning of the Volume provides a brief introduction to understanding the tabulated and graphical data. However, these data are primarily used for planning and operational purposes by Sydney Water and are not intended for the average person.
Beach water quality including faecal coliforms and enterococci bacteria at	✓	✓ From 1993/94 to 2001/02	The EICR 2003 provides data for all sites for the previous 10 years	✓	Performance is reported in Table 2.4 and Table 2.5 which show the



Appendix H Environmental indicators monitoring compliance

Environmental indicator	Monitored	Complied year to year	Number of years of data	2002 – 2003	Performance reported
Sydney Beaches (by EPA Beachwatch) and Illawarra beaches (by Sydney Water)			including Illawarra beaches. Enterococci results are shown in Tables 2.6 and 2.7 from 1993/94 to 2002/03		<i>percentage of time suitable for swimming at Sydney Beaches according to faecal coliform criteria</i> (summer and winter). Faecal coliforms are used as a primary indicator and enterococci as a secondary indicator. This is presented in a manner for interpretation by the lay person. The number of days suitable for swimming have generally increased over the last 10 years.
<i>Biota</i>					
For shoreline discharges summarise and report on existing data as basis for ongoing monitoring	No requirement				
For ocean outfall discharges, evaluate results of NSW EPA investigation of biota as basis for ongoing monitoring.	No requirement				
<i>Sediment</i>					
Schedule 10 chemicals	No monitoring	No	Nil	No	No monitoring conducted. In accordance with the recommendations of the 'Environmental Indicators Monitoring for Sydney Water', Sydney water do not measure and report schedule 10 chemicals in ocean sediments. However, this



Appendix H Environmental indicators monitoring compliance

Environmental indicator	Monitored	Complied year to year	Number of years of data	2002 – 2003	Performance reported
					contravenes the requirements of the Licence. Conclusions from Sydney Water's Ocean Sediment Program, in general, are in agreement with the EPA monitoring are identified on page 36.
Sewerage effluent discharges to rivers and streams					
<i>Discharge Quality</i>					
Effluent Quality including Schedule 10 Chemicals,	✓	From 1995/96 to 2002/03	In general 8 years	✓	Effluent quality for inland STPs including schedule 10 chemicals is provided in Volume 2 and is discussed in Volume 1 for nutrient levels. Data are provided on Schedule 10 chemicals in Volume 2 of the EICR 2003. Interpretation of data for effluent quality and quantity for 17 STPs is reported in Volume 1 from page 38.
Nutrients, grease, suspended solids, faecal coliforms	✓ except oil and grease	Random samples were chosen by the auditor. Data for the Hornsby Heights plant is recorded for oil and grease only for 1996/97 to 1997/98; phosphorus 1993/97 to 2002/03; total nitrogen 1993/94 to 2002/03; faecal coliforms 1993/94 to 2002/03.	1993/94 – 2002/03 (previous 10 years)	Oil and grease was not reported for 8 STPs	



Appendix H Environmental indicators monitoring compliance

Environmental indicator	Monitored	Complied year to year	Number of years of data	2002 – 2003	Performance reported
STP discharge quality	✓	✓	<ul style="list-style-type: none"> For 15 STPs data are provided from 1993/94 to 2002/03 (previous 10 years) Picton for 2000/01 and 2002/03 Rouse Hill for 1994/95 – 2002/03 	✓ with the exception of Picton	Volume 1 reports on the values and percentage contribution of each STP for discharge volumes, phosphorus and nitrogen.
<i>Water Quality</i>					
Nutrients	✓	✓	1993/94 to 2002/03	✓	Nutrients, chlorophyll-a, faecal coliforms are discussed in Volume 1 of the EICR 2003.
Chlorophyll a	✓	✓			
Faecal coliforms	✓	✓			
Enterococci bacteria	No				
Oxygen	No				
pH	No				
Light intensity	No				
Conductivity	No				
Schedule 10 Chemicals	No	No	1994/95	No	No monitoring conducted. In accordance with the recommendations of the 'Environmental Indicators Monitoring for Sydney Water', Sydney Water does not measure and report schedule 10 chemicals. However, this contravenes the requirements of the Licence.
<i>Biota</i>					
Macro invertebrate surveys	✓	✓			Algal blooms and freshwater macroinvertebrate data are illustrated
Algal species					



Appendix H Environmental indicators monitoring compliance

Environmental indicator	Monitored	Complied year to year	Number of years of data	2002 – 2003	Performance reported
identification					and discussed in Figure 2.12 of Volume 1 of the EICR 2002.
<i>Sediment</i>					
Schedule 10 chemicals	No	No	1995/96	No	Schedule 10 chemicals were recorded in 1995/96 as part of the Ecological and Human Health Risk Assessment of chemicals discharged in sewerage treatment plant effluent into the Hawkesbury Nepean. Monitoring of Schedule 10 chemicals has ceased. In accordance with the recommendations of the 'Environmental Indicators Monitoring for Sydney Water', Sydney Water does not measure and report schedule 10 chemicals in sediments. However, this contravenes the requirements of the Licence.
Sewerage Reticulation System					
<i>Discharge Quality</i>					
Effluent Quality including Schedule 10 Chemicals	No ✓	1-2 years	1993 and 1996	✗	The CSIRO review of the EIMP (covers Hawkesbury-Nepean only), recommended no further sampling and as such no monitoring has been conducted
Effluent Quality including nutrients	✓ for dry weather				
Effluent Quality including faecal coliforms					



Appendix H Environmental indicators monitoring compliance

Environmental indicator	Monitored	Complied year to year	Number of years of data	2002 – 2003	Performance reported
Effluent Quality including enterococci bacteria at representative sites					<p>since 1996</p> <p>EICR states no ongoing requirements to sample wet weather sewer overflow discharge quality.</p> <p>In accordance with the recommendations of the 'Environmental Indicators Monitoring for Sydney Water', Sydney Water does not measure and report schedule 10 chemicals in overflows. However, this contravenes the requirements of the Licence.</p> <p>Faecal coliforms, algal blooms and nutrients are discussed.</p>
<i>Water Quality</i>					
Characterise Schedule 10 chemicals	No	✗	One	✗	No monitoring has been conducted since 1996
<i>Biota</i>					
Complete current studies on settlement panels and intertidal rock platform communities as a basis for ongoing monitoring	No				Estuarine and freshwater biota are reported for some discharge points.
<i>Sediment</i>					
Schedule 10 chemicals, nutrients in sediments at representative sewer overflow sites			1995/96		No monitoring has been conducted since 1996
Air and Land Impacts - Odour and Emissions from Sewerage Treatment Process					



Appendix H Environmental indicators monitoring compliance

Environmental indicator	Monitored	Complied year to year	Number of years of data	2002 – 2003	Performance reported
<i>Odour and emissions for sewage treatment process</i>					
Emission quality of chemical scrubbers for compounds such as hydrogen sulphide, chlorine and amines	For plants that have chemical scrubbers			Chemical scrubbers from Rouse Hill and Castle Hill STPs have been converted to biological scrubbers.	Emissions of hydrogen sulphide and chlorine from STPs with chemical scrubbers are reported in Volume 1 and were below Clean Air Regulation levels.
Odour complaints lodged with NSW EPA	✓	✓	1992/93 to 2002/03	✓	Section 4 of the EICR 2003 indicates complaints (made to both Sydney Water and EPA) were documented in the EICR. Odour complaints have increased by 6%.
Disposal of water treatment sludges	✓	✓	1997/98 to 2002/03	✓	Quantities pf residuals are reported in Table 4.1 from 1997/98 to 2002/03. 100% of biosolids were beneficially reused.
Disposal volume and re-use percentage	✓	✓	1997/98 to 2002/03	✓	Quantities of residuals and the proportion beneficially reused are reported in Tables 4.1 from 1997/98 to 2002/03 and in Table 4.2 from 1993/94. 100% of biosolids were beneficially reused.
<i>Land application of biosolids</i>					
Reporting of volume applied, compliance with EPA code of	✓ Volume and location	✓ (Volume only)	Volume data recorded for 10 years.	✓	Reporting of volumes produced and



Appendix H Environmental indicators monitoring compliance

Environmental indicator	Monitored	Complied year to year	Number of years of data	2002 – 2003	Performance reported
practice and application location.			Location data for the previous 12 months		volumes beneficially reused. Reporting of bio-solid use by industry 'type'. Location of application of biosolids is presented for 2002/03. Biosolids are handled in accordance with the EPA's Environmental Guidelines: Use and Disposal of Biosolids Products.



Appendix I
Environment Plan compliance table



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
1. Conserve water supplies and prevent the need for new dams.	1.1 Finalise Water Strategy component of Water Plan 21.	Water Strategy component of WaterPlan 21 to be finalised by December 2001	Non compliance	The water strategy has not been finalised due to external constraints. However a draft Water Strategy has been submitted to NSW Health. Sydney Water will continue consulting with stakeholders regarding the goals and directions for water management contained in WaterPlan 21.
	1.1.1 Implement Demand Management Program.	Reduction of the quantity of water drawn from all sources to 364 litres per capita per day by 2004/2005. This represents a reduction of 142 litres per capita per day or 28% from the 1990/91 baseline.	No requirement	Observed per capita consumption is 416 litres per person per day (12 months to 30 June 2003), which is a small increase from 414 litres per person per day for the same period in 2002. (It is noted that this is a significant reduction from 506 L in 1991/92). Sydney Water will require significantly greater effort to achieve the target by April 2005. Sydney Water indicated at this stage the target of 364 L per person per day is unlikely to be met. Unaccounted for water is 13.2% of total water use (or 84,874 ML). To address the loss of water through leakage, Sydney Water continues to implement the Leakage Reduction Program as part of the Demand Management Program. This involves using acoustic devices to scan for and repair leaks in the water reticulation system.
	1.1.2 Implement Recycled Water Strategy.	Increase of between 4 and 59 ML/day in the projected amount of effluent reused, intercepted or otherwise prevented from discharge by 30 June 2005.	No requirement	Multiple water recycling schemes in place with several more in various stages of development. The Water Recycling Strategy was developed in December 1999 to manage demand and reuse wastewater whenever it is beneficial to the community and when it has environmental and economic advantages.
		Effluent reuse schemes to be implemented for St Marys, Rouse Hill & West Camden STPs by end of 2003.	Partial compliance	Sydney Water has implemented reuse schemes for St Marys and Rouse Hill (August 2001) but the reuse scheme for West Camden is now due for completion in 2004/05.



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
		Majority of effluent to be re-used by irrigation in the Gerringong Gerroa and Picton Sewerage Schemes by mid 2002.	Full compliance	For Gerringong Gerroa, the majority of effluent 72% (125.6 ML) had been beneficially recycled between August 2002 and June 2003. The remainder was released to sand dunes and/or wetlands at the STP site south of Gerroa under strict licence conditions. For Picton, 100% dry weather flows are irrigated and excess wet weather flows are stored for later use or discharged to receiving waters under exceptional circumstances.
2. Provide beneficial and environmental ly acceptable management of effluent.	2.1 Undertake Overflow Abatement Program in accordance with licence requirements (agreed priorities with the EPA):	Reduction in the number of odour complaints* lodged with the EPA and Sydney Water. <i>*validated as coming from Sydney Water's infrastructure.</i>	Non compliance	The total number of odour complaints increased from 899 in 2001/02 to 955 in 2002/03. Odour complaints from the sewerage transport system make up 88.7% of complaints.
	2.1.1 Implement SewerFix.	Reduction in both wet and dry weather overflows from our sewage systems.	No requirement	The total number of dry weather overflows has increased from to 15,331 (2001/02) to 19,012 (2002/03) – a 24% increase. Sydney Water suggests that the dry weather in 2002/03 contributed to an increase in sewer chokes. Sydney Water is not able to accurately estimate the number of wet weather overflows, although improved system modelling will assist in future. SewerFix resulted in the relining of 118 km of sewer mains and 580 km of private sewers, and the upgrade of 150 sewer pumping stations.
	2.1.2 Implement SPS Overflow Risk Reduction Program.	On an annual basis 96% of customers connected to Sydney Water's sewerage systems will not experience an overflow on their land from a sewer owned or operated by Sydney Water.	Full compliance	In 2002/03 98.7% of customer's properties were unaffected by sewage overflows. This is above the minimum level of 96%.



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
	2.1.3 Implement Sydney Harbour Wastewater Planning.	Northside Storage Tunnel to be operational by end of 2000.	High compliance	The tunnel was completed in September 2001 and became fully operational in July 2002. The operation of the Tunnel has continued to significantly reduce the volume of sewage overflows from four key overflow points that discharge to Sydney Harbour.
	2.2 Improve wastewater treatment in accordance with Wastewater Strategy:	Compliance with Pollution Reduction Targets (PRT) set by the EPA.	High compliance	Most PRTs relating to STPs were met except for total residual chlorine at Blackheath, North Richmond and Warragamba.
		Compliance with all PRPs and licence conditions for STP discharges.	High compliance	Sydney Water is on track for meeting all but one of the STP related PRP requirements for 2002/03. Most PRTs relating to STPs were met except for the target for total chlorine at three plants.
	2.2.1 Improve wastewater treatment at minor ocean plants.	Upgrade of Cronulla STP to tertiary treatment including disinfection to be completed by October 2001.	No requirement	Upgrade of Cronulla STP to tertiary treatment including disinfection completed in April 2001. It achieves a 98% reduction in solids through the provisions of full tertiary treatment including filtration and UV disinfection.
		Shellharbour STP upgrade to be completed by end 2003.	Full compliance	Work completed June 2003. Sydney Water is proposing to further upgrade the Shellharbour STP by December 2005. At the end of June 2003 the upgrade works were at the environmental assessment stage.
	2.2.2 Implement Illawarra Wastewater Strategy.	Consolidate flows from Bellambi, Port Kembla and Wollongong STPs and upgrade to tertiary treatment at Wollongong STP by June 2004.	No requirement	The delivery of the Illawarra Wastewater Strategy is programmed for mid-2004 and is expected to reduce suspended solids loads discharged from ocean STPs. Stage 1 will involve the upgrade of the Wollongong STP from secondary to full tertiary treatment and the transfer of flows from Bellambi and Port Kembla STPs to the Wollongong STP. The target has been revised to 2005



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
	2.2.3 Upgrade of Hawkesbury-Nepean sewage treatment plants.	Reduce nutrients discharged from Hawkesbury-Nepean STPs by end of 2003.	No requirement	Since 1995, phosphorus and nitrogen discharges in the catchment have been reduced significantly and further significant progress was made in 2002/03. A 56% reduction in phosphorus discharged was achieved (from 17.7 tonnes in 2001/02 to 7.77 tonnes in 2002/03). A 28% reduction in nitrogen discharged has also been achieved for the 2002/03 period (611 tonnes in 2001/02 to 438 tonnes in 2002/03).
	2.2.4 Develop strategy to encourage re-use, address population growth and reduce sewer overflows in the Georges River area and reduce flows from the Georges River STPs to Malabar STP.	Upper Georges River Wastewater Strategy developed, being implemented by 2005.	No requirement	During 2002/03 Sydney Water has progressed in implementing the Georges River Strategy. An EIS was prepared and exhibited for a recycled water pipeline. The target has been extended out to 2006/07.
	2.3 Provide sewerage services to currently unsewered areas in accordance with agreed government priorities and funding arrangements.	Sewerage services to be provided to the twelve high priority areas on the Priority Sewage Program by end of 2004.	No requirement	Twelve (12) schemes within Sydney Water's area of operations have received, or are in the process of receiving, improved sewer services. Stage 1 will be completed by 2007 and Stage 2 will be completed by 2010.
		Effluent management plans for the South Ck (via an Interdepartmental Working Group to be set up by another Agency), Richmond and West Camden STPs developed.	No requirement	Effluent Management Plans for West Camden and Richmond STPs have been prepared. Strategies for Penrith, St Mary's, Quakers Hill and Riverstone STPs have recently been completed.



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
3. Maximise beneficial reuse of by-products from Sydney Water's treatment processes	3.1 Implement Long term Biosolids Management Strategy.	Strategy for the transport and handling of biosolids from the major coastal STPs to be resolved by January 2001 (pending advice from DUAP).	Non compliance	Strategy was submitted to PlanningNSW in August 2000. A Legislative Council Inquiry on the strategy reported to Parliament in November 2001. The recommendations made by the inquiry have been considered in the project to improve the North Head Sewerage Treatment Plant. Planning approval for this project is to be sought by mid 2004.
	3.2 Maximise beneficial reuse of water treatment residuals.	Report annually on where water treatment residuals are disposed and on beneficial reuse component.	Full compliance	Sydney Water has recycled (60%) or stored for later use (40%) of water treatment residuals from 9 water filtration plants. Residuals are mixed with or applied to soil for horticultural or agricultural purposes.
	3.3 Investigate opportunities and technologies to recover energy value (including methane) from sewage treatment processes.	No target set	No requirement	In June 2002 Sydney Water and Brightstar trialled the feasibility and benefits of processing biosolids, grit and screenings at Wollongong Solid Waste Energy Recovery Facility (SWERF) as an energy recover option. Unfortunately this was not successful due the high moisture content of biosolids. Other opportunities such as Autothermal Thermophillic Aerobic Digestion as a biosolids processing option and a trial of dewatering technologies were investigated.
4. Manage stormwater systems under Sydney Water's control to minimise pollution	4.1 Implement Sydney Water's responsibilities under Stormwater Management Plans as adopted in the SEIP 2000 – 2005.	Stormwater Environment Improvement Program to be delivered to schedule.	Partial compliance	In March 2001 Sydney Water's Stormwater Environment Improvement Program (SEIP) was submitted to the EPA and subsequently approved. The first year of the SEIP has been delivered to schedule. The second year was slightly behind schedule. The third year is behind schedule due to project and budget issues.
		GPTs and trash racks to be maintained as per schedule.	Full compliance	All traps were inspected and cleaned as per schedule. 1615 cubic metres of rubbish and 2990 tonnes of sediment were removed from GPTs.



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
		Water quality improvements within the Alexandra Canal sub-catchment of the Cooks River catchment to be delivered as determined by Project Management Committee.	No requirement	Negotiations with stakeholders occurred in the 2002/03 audit period and agreement reached to undertake a catchment audit to address pollution sources in the catchment and the construction of five gross pollutant traps.
		Maintenance practices such as land management, noxious weed control, cleaning of pollution control devices & stormwater channels to be reviewed by June 2001	No requirement	Review completed in June 2002.
		Botany Wetlands Plan of Management to be implemented.	No requirement	Botany Wetlands Environmental Management Plan completed in 1997. Actions under the plan have been progressively implemented. Some 57 of the 69 actions originally included in the Plan of Management have been implemented or are ongoing.
		Plan of Management for Trunk Drainage lands in Rouse Hill Development Area to be prepared and implemented.	No requirement	Draft Plans of Management have been completed and a pilot community bush regeneration project is being undertaken around Smalls Creek.
	4.2 Develop stormwater strategy component of WaterPlan 21	Contribution to integrated stormwater management.	No requirement	Sydney Water's Stormwater Environment Improvement Program collates and prioritises actions relating to stormwater assets and is Sydney Water's mechanism for integrating stormwater management into WaterPlan 21. It is scheduled for completion by 2005.



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
5. Encourage waste minimisation and cleaner production in the commercial and industrial sectors	5.1 Implement Trade Waste Policy and Management Plan:	No target set	No requirement	A Trade Waste Program, which includes a Trade Waste Policy has been implemented. 871 agreements are in place for all known major industrial customers. See 5.1.2.
	5.1.1 Implement Source Control Education Program.	Quality specifications (with respect to trade waste contaminants) for achievement of Sydney Water targets for biosolids reuse to be met.	No requirement	Education programs such as 'Pets, Pests and Pesticides' have alerted homeowners to the fact that pesticides in garden products and pet anti-flea rinses can harm the environment. Other community education programs ran in 2002/03 included encouraging householders to consider what they dispose of to the drain; and wastewater education displays. Overall trade waste quality was satisfactory. Most contaminant loads have risen marginally from 2001/02 with the exception of cadmium, chromium and lead. 100% of captured biosolids were beneficially reused.
	5.1.2 Implement Trade Waste Agreements.	Quality requirements (with respect to trade waste contaminants) for implemented recycled water schemes to be satisfied.	No requirement	The total number of commercial and industrial agreements in 2002/03 was 16,571, up from 16,158 in 2001/02. More than 15,700 commercial customers have agreements and 871 industrial customers have industrial agreements. Trade waste contaminants in the Rouse Hill catchment have not exceeded recycled water guidelines. Total dissolved solids is higher than the guideline but is not expected to cause soil stability problems.
	5.2 Assist Sydney Water to meet relevant environmental regulations.	Compliance with Pollution Reduction Targets (PRT) for trade waste pollutants (following setting of targets by the EPA).	Full compliance	All PRT and licence conditions, with respect to trade waste, were met. The Mass model helps Sydney Water meet Environment Protection Licence requirements and protect water quality.



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
		Compliance with EPA licences with respect to contaminants from trade waste sources.	Full compliance	All PRT and licence conditions with respect to trade waste were met.
6. Minimise waste and maximise re-use, recovery and recycling waste products	6.1 Implement the Waste Minimisation Strategic Plan through the development and implementation of Annual Waste Minimisation Plans.	Mechanism for minimisation of construction and demolition waste to be included in all capital works projects by end of 2005.	No requirement	Contract clauses are the mechanism for enforcing waste minimisation in all capital works projects. The contracts are currently being modified to include such clauses.
		Recycling rate for paper of 80% for Head Office by January 2001	High compliance	Paper recycling rate of 80% was achieved in July 2001. However, in 2002/03 this was slightly lower at 79%.
		Waste minimisation awareness program to be completed in Head Office by January 2001 and to be completed across Sydney Water by July 2005.	No requirement	The Waste Minimisation Communications Plan aims to ensure that all Sydney Water employees are aware of waste minimisation and their responsibilities by 2005.
		Program for incorporating waste minimisation into purchasing for major products and services to be developed by January 2001.	No requirement	A procurement program has been developed which is consistent with the NSW Government's Waste Reduction, Recycling and Purchasing Policy (WRAPP). The program addresses waste minimisation and supplier's environmental performance.



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
		Commence setting quantitative targets for waste and recycling from July 2001.	Full compliance	<ul style="list-style-type: none"> Recycling rate for paper in Head Office of 80% by January 2001 – achieved July 2001; 79% for 2002/03. 90% of water filtrations residuals removed from onsite storage are to be beneficially reused – this target was met in 2000/01, 2001/02, and 2002/03. A general recycling target of 55% for Head Office was established - in 2002/03 56.6% of waste was recycled in Head Office. In March 2003, an interim target was set for 70% of excavation waste to be recycled, to be included in the new waste management contract for Water Services Division. This will be reviewed December 2003. Performance in 2002/03 was 79% of excavation waste recycled or re-used.
7. Responsibly manage all Sydney Water's land and water assets.	7.1 Develop, maintain and implement policies for responsible management of the natural and cultural heritage values of Sydney Water assets.	E-Guide policies to be appropriately scoped and maintained.	Non compliance	Environment policies contained in the internal E-guide will be converted into EMS procedures while other policy content will be superseded by detailed management plans contained in overarching natural resources management plans.
		Policy to be established for Movable Heritage.	Full compliance	The Moveable Heritage Policy and Procedures Manual were completed in 2002/03.
		Policy to be established for Aboriginal Heritage by 2001.	No requirement	The Policy was established in November 2001.



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
	7.2 Develop and maintain natural and cultural heritage inventories to inform Sydney Water's planning, asset management, maintenance and construction activities.	Heritage and Conservation Register (s170) to be established by January 2001.	No requirement	<p>Sydney Water's Heritage and Conservation Register was completed and endorsed by the Heritage Council in June 2002.</p> <p>Fifty-nine (59) items are listed on the State Heritage Register and 163 items of local significance are now part of the register.</p>
		Natural Resources Inventory to be developed with entry of existing assessments and data by June 2001. Assessments for all sites to be completed and entered into inventory by December 2001.	High compliance	<p>EIA records for 200 sites were entered by June 2002. Entry of natural resources data has continued. As advised by Sydney Water 'A link between NRI data and the Sydney Water MapInfo GIS platform is being investigated and a pilot of the link is being developed, however, the pilot has not progressed further as it would require specialist information technology (IT) development which at this stage has not been resourced.</p> <p>Investigations into sourcing specialist IT resources from within Sydney Water are being made. Currently Group Property are developing a project brief to align grounds maintenance contracts with MapInfo, (a readily available GIS application) this project has been identified as a direct parallel to what is required for updating and maintaining the Sydney Water NRI and investigation as are currently underway to link the Group Property project and the NRI in a more consistent and coherent manner which will aid in the responsible management of all Sydney Water's land and water assets'.</p>
		Manage State Heritage Register items in accordance with gazetted Heritage Council guidelines.	No requirement	<p>New Heritage Council guidelines for the management of State Heritage items will be used to manage all of Sydney Water's heritage items of state and local significance when they are finalised. Currently State Heritage Register items are managed in accordance with <i>Heritage Act</i> requirements.</p> <p>Of Sydney Water sites on the State Heritage Register, 13.5% are covered by Conservation Management Plans. No Sydney Water activities required a consent to disturb or destroy.</p>



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
	7.3 Contaminated Land Management Plan implemented.	All land acquisitions and disposals to be investigated for contamination risks.	Full compliance	All properties for acquisition or disposal in 2003/03 were assessed for potential contamination issues. None of the sites were identified as posing a 'significant risk of harm'.
	7.4 Implement and review Botany Wetlands Plan		High compliance	A Plan of Management is progressively being implemented and continues to be monitored by the Botany Wetlands Environmental Management Steering Committee. See clause 9.5.2 in Chapter 9.
8. Minimise the environmental impact of Sydney Water's use of energy.	8.1 Increase generation of renewable energy resources.	A minimum of 2.5% of total electricity consumption to be purchased as Green Power.	Full compliance	Sydney Water purchased 2.6% of total electricity consumption as Green Power in 2002/03. Sydney Water generated 3.8% of its energy consumption from its own facilities in 2002/03.
	8.2 Implement the objectives of Sydney Water's Energy Management Plan to reduce energy use.	Subsequent reduction targets set by the NSW Government Energy Management Policy to be adopted.	No requirement	No additional targets set
		Co-generation plant at Cronulla STP to be commissioned by 2002.	No requirement	The Cronulla co-generation plant began operation in 2001/2002 and last year contributed 998,868 kWh of electricity.
		Reduce the energy consumption of Sydney Water's buildings, where cost effectively feasible, by: 15% of the 1995 level by 2001 25% of the 1995 level by 2005	Full compliance	By 2001/02 energy consumption in buildings had been reduced by 16.1% compared to 1995 levels. Energy consumption is now 18% below the 1995/96 level. [Buildings represent 5% of total energy use. In 2002/03 there was an increase of 2.2% in total energy consumption for all purposes.]



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
		Review fleet operational procedures to ensure provision of fuel reduction incentives.	Full compliance	To reduce fuel usage, Sydney Water increased the number of LPG fuelled cars from 10 to 11, achieved a 6.4% reduction in the consumption of unleaded fuel and amended Sydney Water's procurement policy for senior manager's vehicles to promote smaller engine capacity vehicles and to discourage the use of large 4WDs.
9. Continue to improve environmental management practices in Sydney Water.	9.1 Develop a Sydney Water-wide Environmental Management System complying with ISO 14001.	Sydney Water EMS developed in accordance with ISO 14001 by June 2001.	No requirement	<p>Sydney Water EMS was developed in 2000/01 in accordance with ISO 14001.</p> <p>Implementation commenced with awareness and procedures training for targeted staff from September to December 2001.</p> <p>One of the outputs of the Sydney Water EMS is an overall assessment of progress against the 10 environmental objectives in the Environment Plan. Sydney Water suggests it is on track to achieve 80% of the Environment Plan objectives for the 2002/03 review; down from 90% in 2001/02.</p> <p>The second phase of the EMS continued during 2002/03 – a gap analysis was completed and a pre-certification audit was being planned for later in 2003. The Noise Management Plan has also been integrated under the EMS.</p>
		Program to provide training, advice and regular information to staff on environment management and ESD to be developed	Full compliance	<p>The ESD Awareness Program was launched in October 2001. The program raises staff awareness in understanding issues relating to ESD. This is mandatory for all staff.</p> <p>By the end of June 2003 1,647 employees completed the online component of the program (6 hours). Of these, 723 staff completed the one hour face to face component in 2002/03.</p> <p>Participatory Action Research Evaluation of ESD Awareness program commenced in March 2003 and completion is expected by December 2003.</p> <p>Other programs and information are available to the staff.</p>



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
	9.2 Review internal planning and EIA process to achieve better environmental and community outcomes.	EIA process to be reviewed by June 2001	No requirement	Sydney Water has completed a review of its EIA process. The review was completed in December 2001. Outcomes from the review such as the development of EIA procedures for the options and approval phase of major projects have been applied.
		Incorporate the principles of ESD into decisions and planning.	Full compliance	During 2002/03 the EIA Process model was adopted as part of an enhanced procedure for capital investment that will facilitate integrated decision making across disciplines and phases of the project. Other means of incorporating ESD into decisions and planning include contracts with standard clauses regarding environmental obligations; environmental management plans; Environmental Management Representatives (EMR); and environmental audits
	9.3 Implement Environmental Audit Program.	No target set	No requirement	Sydney Water operates an environmental audit program. Scheduled and random audits are undertaken for construction and maintenance activities as part of this program.
	9.4 Develop and implement environmental due diligence requirements for contractors.	Environmental due diligence requirements for contractors to be implemented.	Full compliance	EIA, contract shells, disclosure of contractor's prior environmental performance, EMPs, EMRs, environmental auditing, specific actions for major capital works projects, contractor performance database and regulatory compliance are mechanisms in place to ensure environmental due diligence in 2002/03.
	9.5 Ensure compliance with environmental regulatory requirements.	Compliance with Protection of the Environment Operations Act 1997.	Full compliance	Sydney Water did not receive any Tier 1, 2, and 3 prosecutions under the <i>Protection of Environment Operations Act</i> for pollution of the environment.
		Compliance with all Environment Protection Licence discharge conditions.	High compliance	Sydney Water is on track for meeting all but one of the STP related PRP requirements for 2002/03. Most PRTs relating to STPs were met except for the target total residual chlorine at Blackheath, North Richmond and Warragamba.



Table 1 Environment Plan Compliance with Targets for 2003

Objective	Actions	Target	Compliance with targets in 2003	Findings
		Environment Management Plans and conditions of approval in EIA to be complied with.	Partial compliance	<p>Ninety-three (93) site inspection audits were undertaken for a variety of projects. As a result 50 action requests were issued due to contractors' non-conformance with the requirements of EMPs. As a result, Sydney Water did not fully meet the target of complying with EMPs and conditions of approval identified in EIAs.</p> <p>However, Sydney Water did not record any unauthorised disturbances of threatened flora and fauna species or any Tier 1, 2 or 3 prosecutions under the Protection of Environment Operations Act.</p>
		Reduction in the number of noise complaints validated as coming from Sydney Water's activities.	Non compliance	Noise complaints rose from 94 in 2001/02 to 153 in 2002/03. This was a result of an increase in construction work, emergency works and an increase in the number of complaints relating to Sydney Water assets.
10. Contribute to collaborative research to improve the environmental performance of assets.	10.1 Implement Research & Development Strategy.	Programs to be developed under Research and Development Strategy over five year timeframe	No requirement	<p>The research and development program includes a range of projects from improving process control at STPs to community based urban water cycle management. Sydney Water is a member of, and funds, several cooperative research organisations. A strategic driver for R&D is the improved environmental performance of assets. Sydney Water aims to measure benefits of R&D portfolio over the long term.</p> <p>Sydney Water also won Federal Government funding for a number of collaborative research projects under the Australian Research Council Linkage Grant Scheme.</p>

