

SYDNEY CATCHMENT AUTHORITY

OPERATIONAL AUDIT 2003/2004

INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

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The Hon. Bob Debus, MP
Minister for the Environment
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Dear Minister

Operational Audit of Sydney Catchment Authority 2003-2004

In accordance with Section 32 of the *Sydney Water Catchment Management Act 1998*, the Tribunal is pleased to submit the independent Operational Audit Report of the Sydney Catchment Authority (SCA) for the period 1 July 2003 to 30 June 2004.

The Audit has found that *"the SCA has performed at a generally high to full level of compliance with the Operating Licence, with some minor exceptions."*

Having considered the audit report, the Tribunal recommends that no penalties be imposed on the Authority.

The auditors have highlighted some significant issues arising from the audit process:

Bulk water quality

The raw water quality from all storages has been very good, and there was full compliance with the health-related parameters of the Operating Licence. The auditor assessed the draft *Water Quality Risk Management Framework* as being impressive. The Framework looks at possible pollution risks to bulk water, the priorities for controlling these risks, and the requirements for treatment and control. The Framework identifies approximately 100 *"very high risk"* hazard events which could arise from pollution sources within the catchments, or incidents such as floods or bush fires.

An important element in the multi-barrier approach to ensuring the quality of Sydney's water supplies lies in the ability of Sydney's water treatment plants to accept and adequately treat the full range of water qualities that can be expected. Therefore, it will be important for SCA to be able to predict the extremes of water quality that may arise under various risk scenarios, so that Sydney Water and SCA's other customers can plan accordingly.

Having considered the auditors' recommendation, the Tribunal recommends that you impose the following Ministerial requirement on the SCA:

SCA should quantify, as far as possible, the variations in water quality that could occur under high risk situations identified in the Risk Management Framework. SCA should confirm that customers are aware of these potential variations, so that treated water supplied in turn by wholesale customers is suitable for required end uses.

Catchment management

The auditor notes a number of achievements for 2003/04 in catchment management, including integration with other agencies and pollution control plans. However timelines endorsed by the Minister for key actions in the special areas have not been met. For example:

- Expenditure on the Wingecarribee Plan appears to have fallen by 20 per cent from the previous year, which does not meet the Ministerial Requirement for 2001/02 to "accelerate action" to implement the Plan. SCA indicates that expenditure across the Wingecarribee catchment as a whole has increased. These types of disagreements could be resolved through clearer financial reporting by the SCA.
- A key action for the Special Areas, the appointment of an "external, independent, scientific body" to provide advice on catchment management, has not been met. SCA advises that more appropriate arrangements have been implemented, however these modified arrangements do not meet the requirements of the Plan as endorsed by the Minister. (Note that under Section 49 of the *Sydney Water Catchment Management Act 1998*, proposed amendments to Plans of Management must be advertised and submissions sought).

The auditor recommended that SCA:

- *increases its resource allocation and improves the transparency of expenditure and reporting to demonstrate that the Special Areas Strategic Plan of Management, and the Wingecarribee Swamp and Special Areas Plan of Management meet the Ministerial requirements, OR*
- *arranges to have the Plans formally amended.* (Recommendations 7.2 and 7.6).

The Tribunal's view is that since there is disagreement between the auditor and the SCA on catchment management issues, these issues should be considered further as part of the end of term review of SCA's Operating Licence, and the Minister's review of the *Sydney Water Catchment Management Act 1998*.

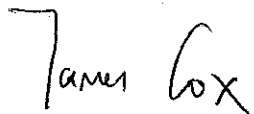
Other issues

The audit has raised a number of issues that should be considered as part of the end of term review of the licence. Areas of the licence which will need to be considered in this review include memoranda of understanding with other regulatory agencies, complaints handling systems, water quality parameters and consultative mechanisms.

I note that some of the issues here have also been raised in the review of the *Sydney Water Catchment Management Act 1998*.

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

Yours sincerely

A handwritten signature in black ink that reads "James Cox". The signature is written in a cursive style, with the first letter of each name being capitalized and prominent.

James Cox
CEO and Full-time Member



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Abbreviations

Acronym	Description
Act	<i>Sydney Water Catchment Management Act 1998</i>
AER	Annual Environment Report
ANCOLD	Australian National Committee on Large Dams
ARMCANZ	Agriculture and Resource Management Council of Australia and NZ
Authority	Sydney Catchment Authority
AWT	Australian Water Technologies Pty. Ltd.
AWWARF	Awwa Research Foundation
BWSA	Bulk Water Supply Agreement
CA	Catchment Area
CE	Chief Executive
CEO	Chief Executive Officer
CRC	Co-operative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSR	Customer/Stakeholder/Regulator
DAR	Development Application Register
DBP	Disinfection by-products
DEC	Department of Environment and Conservation
DEUS	Department of Energy, Utilities and Sustainability
DLWC	Former Department of Land and Water Conservation (NSW)
DoH	Department of Health (NSW)
DIPNR	Department of Infrastructure Planning and Natural Resources (NSW)
DSC	Dam Safety Committee
DUAP	Former Department of Urban Affairs and Planning (NSW) and PlanningNSW, now part of DIPNR
EASI	Environmental Assessment of Sites and Infrastructure
EIS	Environmental Impact Statement
EMS	Environmental Monitoring Services, a division of AWT
EP	Environment Plan
EPA	Former Environment Protection Authority (NSW), now part of DEC
EPPR	Environmental Plan Progress Report
ESD	Ecologically Sustainable Development
ESD&EIR	ESD and Environmental Indicators Report



Acronym	Description
GHD	GHD Pty Ltd
GIS	Geographical Information System (computer mapping)
HNRMF	Hawkesbury-Nepean River Management Forum
HRC	Healthy Rivers Committee
HVRF	Hunter Valley Research Foundation
ICOLD	International Committee on Large Dams
IEP	Independent Expert Panel
IPART	Independent Pricing and Regulatory Tribunal (NSW)
ISF	Institute for Sustainable Futures
JOG	Joint Operational Group
LR	Licence Regulator
ML	Megalitre (1 million litres)
MOU	Memorandum of Understanding
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)
PENGO	Peak Environmental Non-Government Organisation
RCC	Regional Consultative Committee
REP	Regional Environmental Plan
RIS	Regulatory Impact Statement
SASM	Special Areas Strategic Management Group
SASPoM	Special Areas Strategic Plan of Management
SCA	Sydney Catchment Authority
SCADA	Supervisory Control And Data Acquisition (instrumentation)
SEDA	Sustainable Energy Development Authority (NSW)
SEPP	State Environmental Planning Policy
SLG	Strategic Liaison Group
SoE	State of the Environment (report)
SOP	Standard Operating Procedure
Sydney Water	Sydney Water Corporation
TEC	Total Environment Centre



Acronym	Description
WAMC	Water Administration Ministerial Corporation
WFP	Water Filtration Plant
WHO	World Health Organisation
WML	Water Management Licence (under the Water Act 1912)
WSSPoM	Wingecarribee Swamp and Special Area Plan of Management



Glossary/definitions

General terms and definitions

Term	Meaning
Act	<i>Sydney Water Catchment Management Act, 1998.</i>
Audit period	1 July 2003 to 30 June 2004.
Auditor	GHD Pty Ltd
Bulk Water	Water supplied by the SCA to Sydney Water under the Bulk Water Supply Agreement and by the SCA to customers other than Sydney Water.
Bulk Water Supply Agreement	The Bulk Water Supply Agreement between the SCA and Sydney Water.
Commencement Date of Operating Licence	19 April 2000.
End of Term Review	A review of the Operating Licence to be undertaken on or about 1 January 2004.
Environmental Flow	A release of water from storage so as to provide a flow of water in a river or other natural waterway that mimics natural seasonal flows and aims to restore or maintain the ecology of the waterways concerned.
Function	Means a power, authority or duty.
Mid-term Review	A review of the Operating Licence during 2002.
Minister	The Minister responsible for administering the provisions of the <i>Sydney Water Catchment Management Act, 1998.</i>
Operating Licence	The licence under which the SCA operates between 19 April 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 compliance ratings are used to grade compliance achievement.
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 SCA 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, was commissioned by the Independent Pricing and Regulatory Tribunal (IPART) to undertake the 2003/04 Operational Audit of the Sydney Catchment Authority (SCA).

The audit's context is provided by the principal and special objectives of the SCA (under the *Sydney Water Catchment Management Act 1998, Section 14(1) and 14(2)*), which are directed to the protection of water quality, public health and catchment management, and the sound management of infrastructure works. In addition to the requirements of the Operating Licence the assessment included customer services, sustainability of operations in catchment management, and recommendations to improve outcome delivery.

The 2003/04 Operational Audit covers the period from 1 July 2003 to 30 June 2004 and is the fifth audit undertaken since the SCA became operational in July 1999. During the audit period, the SCA has been required to comply with the five-year Operating Licence that took effect from 19 April 2000. Additional compliance requirements were also imposed by the Minister following the 2002/03 Operational Audit.

The audit methodology involved the preparation of an audit plan, inception meetings, application of audit questionnaires, review and reporting. The audit questionnaires directly related to the respective clauses of the Operating Licence conditions. Evidence was assembled through document review, interviews and analysis to determine compliance.

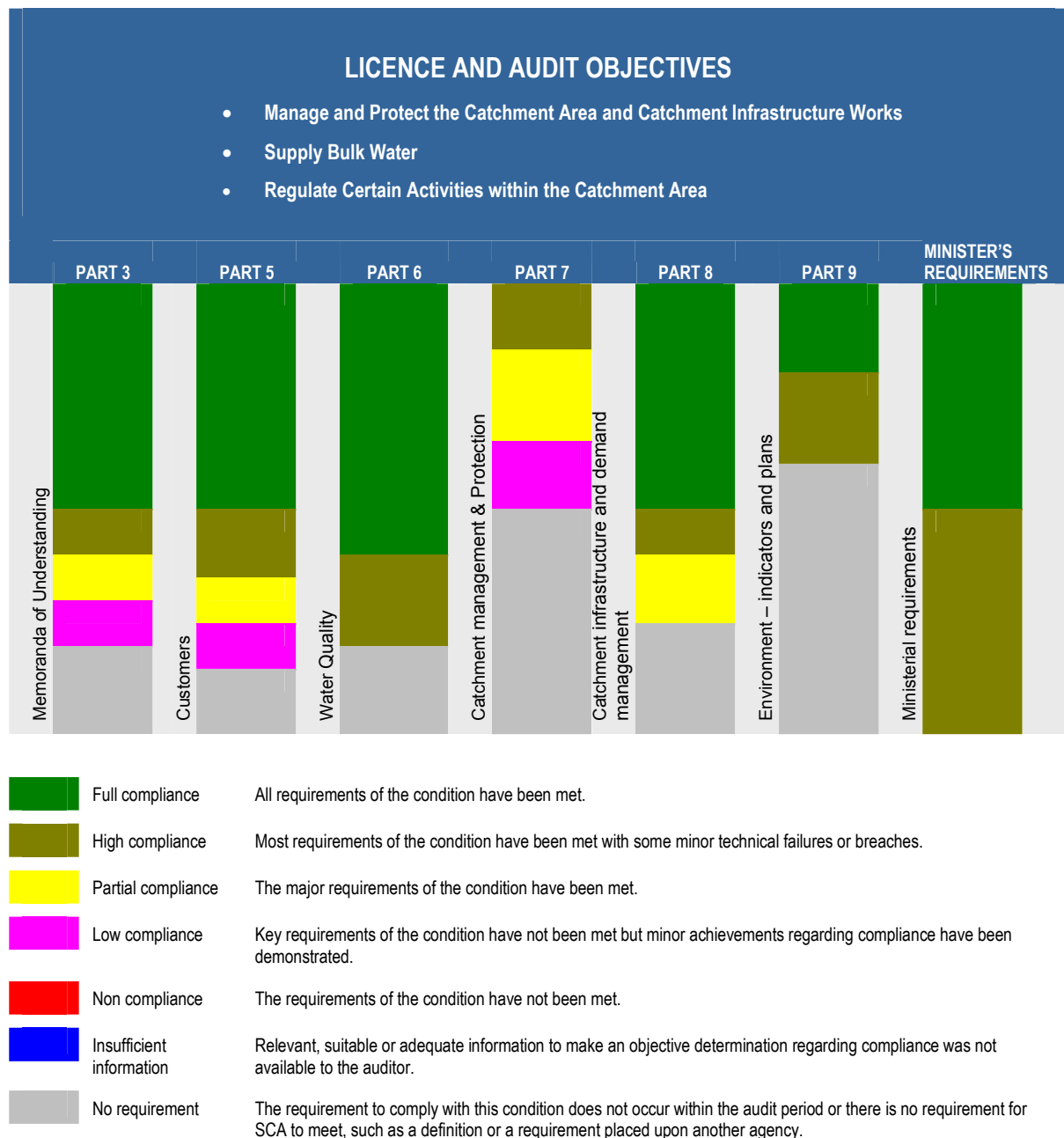
This audit report has been specifically prepared to meet the requirements of the audit brief and Part 10 of the Operating Licence.

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".

Executive Summary

The Sydney Catchment Authority (SCA) has managed its resources to achieve predominantly high to full compliance with the Operating Licence, although some areas of low to partial compliance have been recorded. Figure 1.0 provides an indicative overview of the SCA's level of compliance.

Figure 1.0 Overview of compliance for 2003/04 audit period.



NOTE: Figure is indicative only.



Compliance with each Part of the Operating Licence for the 2003/04 audit period is summarised below.

Memoranda of understanding (Part 3)

The SCA achieved **Full compliance** for maintaining Memoranda of Understanding (MOUs) with the NSW Environment Protection Authority (EPA), the Water Administration Ministerial Corporation (WAMC) and NSW Health, in accordance with the provisions of the SCA's Operating Licence.

During the audit period, changes have occurred to the structure of the major resource agencies within the NSW Government. The WAMC has delegated functions to DIPNR and some of the functions of the former DLWC now reside with the newly formed Catchment Management Authorities (CMAs). The Environment Protection Authority (EPA) is now part of the Department of Environment and Conservation (DEC) whose Chief Executive Officer (CEO) is also responsible for the SCA and the National Parks and Wildlife Service (NPWS).

As a result of these changes, there is evidence that the SCA and the DEC (EPA) are working co-operatively to an extent greater than in previous years, however the level of cooperation with DIPNR remains in question. SCA has endeavoured to undertake a review of the MOU with DIPNR. However, the Strategic Liaison Group (SLG) met only once during the audit period. The formation of the new "super departments" also means that some provisions of the MOUs require amendment and this is reflected in the recommendations.

Customers (Part 5)

SCA received **High to Full compliance** for clauses under the Bulk Water Supply Agreement with Sydney Water and agreements with other customers. These agreements govern the quality of water received by customers. The SCA's performance under the complaint handling clauses was mixed, with rankings from **Low to Full compliance**. The SCA continues to maintain its complaint handling procedure. However, the SCA has not provided the auditor with all complaints to the full extent of its function and the compliance rating was downgraded accordingly.

The SCA received **Partial to Full compliance** for the consultative committees, which were under review during the audit period, resulting in the restructuring of the Regional Consultative Committee (RCC) and the dissolving of the Expert Reference Panel (ERP). The latter has resulted in the lack of involvement across all the relevant stakeholder groups required by the Licence.

Catchment Management Authorities (CMAs) have come into being over the audit period. SCA have responded by pursuing a Memorandum of Understanding to outline respective roles and areas for a cooperative relationship with CMAs.

Bulk water (Part 6)

The SCA has a well established system for managing bulk water quality. A comprehensive and sound risk-based approach to the management of water quality is being taken, consistent with recent developments in the water industry, for providing assurance that the quality of drinking water will be safe and acceptable. SCA was assessed to be in **High to Full compliance** in regard to the quality of the bulk water supplied for water treatment. There is potential for the quality of the bulk water to deteriorate due to falling dam levels or with drought breaking rains.

SCA is undertaking a large body of work that has the objective of properly managing the catchments and ensuring the quality of the water meets the required standards. This has been brought together in a *Healthy Catchments Program*. SCA was assessed as being in **Full compliance** for catchment and system management and for water quality monitoring and reporting.

Catchment management and protection (Part 7)

Over 2003/04 SCA continued to apply its resources and achieve **High compliance** in catchment management and protection. It applied an integrated framework to identify and target higher risk environmental issues, such as pollution sources. **Partial** and **Low compliance** were assessed for coordinating and publishing water quality data and a number of 'implementation' tasks, included within the Special Areas Strategic Plan of Management and Wingecarribee Swamp and Special Area Plan of Management. Despite SCA being in its fifth year of operation, the Regional Environmental Plan, "*Sustaining the Catchments*" (REP) is yet to be gazetted. SCA applied considerable resources to assist DIPNR finalise the REP, however the task of gazettal is outside SCA's responsibility. The continuing failure to gain approval and implement this key Regional Environmental Plan is a major constraint to providing SCA with the tools necessary to redress existing high-risk developments.

Catchment infrastructure works (Part 8)

Based on the current safe yield calculated by the SCA's WATHNET model, the SCA has demonstrated **Full compliance** against the Schedule 2 supply criteria that includes reliability, robustness, security and restrictions. It was noted however, that a number of significant factors require further evaluation before full confidence can be assigned to the estimate of safe yield calculated by the WATHNET model. The SCA has demonstrated **Full compliance** with the requirements of the Dams Safety Committee (DSC).

Environment (Part 9)

The SCA demonstrated **Full compliance** with the annual environmental reporting requirements and generally demonstrated **High to Full compliance** with the strategies and targets of the 5-year Environment Plan. It was concluded that the SCA made limited progress towards full compliance with the Environment Plan, during the audit period.

The SCA has not provided an analysis of overall performance against the environmental and ESD indicators. The auditor has assessed that the environmental indicators are trending towards an overall decline in environmental performance. This is predominantly attributable to the impact of the drought and reduced water flow in waterways. The ESD indicators do not exhibit an overall trend and have been impacted by the significant reduction in Sydney's water demand, attributable to mandatory water restrictions in place during most of the audit period.

The SCA demonstrated **High compliance** regarding the release of environmental flows from storages in accordance with the Water Management Licence issued by DIPNR and demonstrated **Full compliance** regarding cooperation and assistance to the Independent Expert Panel (IEP).

Ministerial requirements

Following the findings and recommendations of the 2002/03 Operational Audit, the Minister for the Environment issued two Ministerial Requirements to the SCA.

The SCA demonstrated **Full compliance** with the Ministerial Requirement (M1), "*the Authority finalises the development of the Risk Management Plan by 1 September 2004 and determine the significance of pollution loads with respect to treated water quality and requirements for control of risk.*"

SCA demonstrated **High compliance** with the Ministerial requirement (M2) to undertake, "*some work to improve the robustness of the model used to provide an estimate of the sustainability of the water supply*". The SCA has undertaken a number of projects towards this end, however the auditor has recommended further issues to improve the ability of the WATHNET model to accurately estimate the safe yield.

'The big picture'

The Sydney Catchment Authority (SCA) has continued to demonstrate a strong commitment to its charter to protect water quality in the catchment areas that provide Sydney, the Blue Mountains and Illawarra with bulk raw water. The SCA's staff is developing a culture of continual improvement and this is evident across the organisation.

The SCA has performed at a generally high to full level of compliance within the Operating Licence, with some minor exceptions. It has established a foundation of management plans and work programs and, overall, demonstrated good performance in the implementation of those plans.

The 2003/04 audit of the SCA has assessed SCA's performance against its Operating Licence and the following key issues are raised as the "*big picture*" items for discussion. In brief:

- ▶ The Sydney Catchment Authority has a contemporary system for the management of bulk water quality, which generated good water quality over the year. Over the past 4 years, no significant water quality issues have arisen. However, a period of drought has assisted in ensuring good water quality.
- ▶ SCA maintained a comprehensive and sound risk based system for bulk water quality, which has identified a large number of high risks to bulk water quality. For example, a reduction in the level of reservoirs below 20% to 40%, can be expected to result in the deterioration of the quality of bulk water. SCA, in cooperation with Sydney Water and NSW Health, has instituted a range of measures to reduce the potential for adverse water quality to occur and to manage such events should they occur.
- ▶ SCA's estimate of "safe yield" (600,000 ML/yr) was within Sydney Water's 2003/04 water demand (563,000 ML/yr) as a consequence of the mandatory restrictions. However, the unrestricted annual demand (620,000 ML/yr) remains above the estimated "safe yield". This estimate is of critical importance to SCA. Opportunities exist to improve estimates by accounting for factors such as the impact of climate on demand.
- ▶ The SCA must apply its "best endeavours" to manage the various sources of pollution and catchment infrastructure, though SCA does not have full control of such factors. As such, its relationship with land and resource managers within the catchment (for example: local councils, DIPNR, DEC and CMA's) are critical and in most instances were demonstrated to have improved over the audit year.
- ▶ Delay in the finalisation of the Regional Environment Plan, "*Sustaining the Catchments*" (REP), is continuing to impact on SCA's ability to protect water quality from existing high risk developments and the application of, for example, "Rectification Plans". The need to finalise and implement the REP requires urgent cooperative action across government. Opportunities also exist to improve public accountability and transparency in SCA's Catchment Management Programs and implementation of Plans of Management.
- ▶ Whilst SCA met its requirements for environmental flow releases from its storage, low flows resulting from the drought are causing a decline in environmental conditions.
- ▶ SCA was successful in establishing agreements with its customers for the supply of bulk water, except for agreements with the Wingecarribee and Shoalhaven Councils, and the status of a further 8 other (potential) customers remains unresolved. SCA's performance in

complaint handling was mixed, with insufficient information or evidence being provided to enable the auditor to fully assess performance. Over the year, SCA restructured its consultative committees, which has reduced the level of involvement of the nominated stakeholder groups as specified by the Licence; for example, Public Health expertise.

Bulk water quality – risk management

SCA has established contemporary systems for the management of bulk water quality, and the current water quality is good. Based on SCA's performance over the past four years, no significant water quality issues have arisen and it may be concluded that SCA is adequately managing the risks associated with bulk water quality. However, there has been a period of drought and this has assisted in ensuring good water quality.

The SCA continues to develop and maintain a comprehensive and sound risk-based system for managing bulk water quality and providing assurance that the quality of drinking water is safe and acceptable. The SCA has undertaken considerable work in this area during the audit period and finalised a draft *Water Quality Risk Management Framework*, which identifies the significance and risks of pollution loads with respect to treated water quality, the priority for controlling these risks and the requirements for control. This process has identified a large number of high risks to bulk water quality and, if these events should occur, water quality could be affected. For example, two factors that could significantly affect future compliance with the requirements of the Licence for bulk water quality are:

- ▶ If the drought should continue, with a continued reduction in the level in reservoirs to below 20–40%, it can be expected that the quality of the bulk water will deteriorate; and
- ▶ The occurrence of major rain events could give rise to a significant decrease in water quality as accumulated pollutants are washed off a bare landscape.

The SCA together with Sydney Water and NSW Health has been undertaking planning for such events, and collectively these organisations have instituted a range of measures to reduce the potential for adverse water quality conditions to occur, and to manage these events should they occur. The high level of cooperation between these three agencies has helped ensure an integrated multi-barrier approach to minimising risk to public health from the catchments to taps.

Because the SCA does not have full control over bulk water quality, the primary control in ensuring that the quality of Sydney's water supplies is satisfactory lies in the ability of Sydney's water treatment plants to accept and adequately treat the full range of water quality that can be expected. As such, it will be important for SCA to be able to predict the extremes of water quality that may arise under various risk scenarios, so that Sydney Water and SCA's other customers can plan accordingly.

The SCA does not have full control of the factors which can give rise to poor water quality, and the practical short term management requirement is to apply "best endeavours" to provide the best water quality to its customers, with the longer term objective being improved management of the various sources of pollution and catchment infrastructure. To this end, the SCA's relationships with other resource managers such as the DEC, DIPNR, local councils and the newly formed CMAs are critical to maintaining safe drinking water for Sydney.

Bulk water quality - other resource managers

The SCA was established to protect water quality in the catchment areas that provide Sydney, the Blue Mountains and Illawarra with bulk water. A critical component of this function is to develop effective

partnerships with other resource managers within the catchments. The SCA's progress in developing these partnerships has been variable.

- ▶ The Department of Environment and Conservation, DEC (the former Environment Protection Authority, EPA), is the sole regulator of all point sources of pollution licensed under the *Protection of the Environment Operations Act* (POEO). The evidence of a cooperative relationship between the two agencies has continued to increase significantly over the past three audit periods and has been further assisted by the structural changes that have resulted in the two agencies being responsible to the same CEO. Continued strengthening of the relationship between the two agencies was demonstrated at strategic level through the development of a Strategic Work Plan and at the operational level, especially in the implementation of the environmental protection regulation, that SCA is required to meet.
- ▶ DIPNR is the primary regulator for land and water management in the catchments. The SCA is maintaining an effective relationship with DIPNR at CEO level with participation in Water CEOs meetings, Drought Executive Group meetings, Urban Water Management, the Metro Water Strategy and other chief executive committees. Considerable work is required however to provide an effective formal forum for senior officers and managers to develop, implement and monitor programs of strategic importance to both agencies. It is vital that the water and land use planning functions of DIPNR complement the programs of the SCA. It would appear there is scope for improvement in this relationship in order to help protect drinking water quality in the catchments.

The delay in the finalisation of the Regional Environmental Plan "*Sustaining the Catchments*" (REP) has impacted on the capability of the SCA to protect water quality in the catchment areas. This needs urgent cooperative action, across Government, to finalise and implement the REP.

- ▶ Further recent changes have occurred to SCA's catchment management framework with the establishment of Catchment Management Authorities (CMA) under the *Catchment Management Authorities Act 2003*. Among other things the Authorities are required to prepare catchment action plans for their specific areas together with annual implementation plans. The development of the links and shared processes between the plans and works of the SCA and the relevant CMA's is important to ensure the effective management and health of the catchment. SCA and the CMAs need to clearly define their respective responsibilities and develop complementary and integrated programs for protecting the health of the drinking water catchments and water quality.
- ▶ Local Councils are the consent authority for most new developments in the catchments, however the SCA has a concurrence or notification, and advisory role for development proposals in the catchment that is likely to have an impact on water quality. Previous audits identified the need for SCA to implement a formal system with Councils to ensure all development applications covered by SEPP 58 are notified to the SCA. This need subsequently became a Ministerial requirement, however it remains to be implemented. SCA continues to rely on Development Applications referred to them by Council, as opposed to, for example, direct links to Council's Development Application Registers. The application of suitable conditions on development consents and the auditing of implementation of conditions is essential to protect the catchments from future impacts from development. Some urgency is now required to implement suitable systems to ensure all developments under SEPP58 are notified to SCA.
- ▶ SCA is becoming increasingly sophisticated in its planning for Catchment Management and has developed "*Healthy Catchment Program 2003-2007*" to target high environmental risks such as



pollution sources. It will enable Rectification Action Plans to be established once the “*Sustaining the Catchments*” REP is gazetted.

- SCA is actively pursuing compliance within its Catchment Management Program and similarly adopts a good systematic approach to the consideration of new Development Applications. However, opportunities exist to increase the transparency, financial accounting and rate of implementation of its Ministerial endorsed Plans of Management and to ensure the continuity and levels of expenditure in Catchment Management Programs are not reduced.

Bulk water quality - The Regional Environmental Plan (REP)

Under Section 53 of the Act, one or more REPs are required to be created, as soon as practicable, after the presentation of the report on the first catchment audit. The first catchment audit was completed in 2001 and a draft Regional Plan was prepared, however as at October 2004, the REP had not been gazetted.

The SCA has been managing the catchment for five years and a fundamental instrument that would provide the SCA with the ability to develop rectification plans for existing developments that pose a risk to water quality has not been created. This has a significant impact on the ability of the SCA to fulfil its charter, particularly in the “Outer” Catchments where management was historically divided between many agencies at State and local government level, as well as by private landholders.

Whilst it is acknowledged that the responsibility for creating the REP is with DIPNR, expediting the REP should be considered a joint priority of Government to ensure that the SCA and other regulators work in a coordinated manner for the protection of the drinking water catchments. More recently, SCA has applied considerable resources to progress the REP and it may well require the matter to be elevated to higher levels of government to achieve gazettal.

Water quantity - “Safe yield”

Safe yield may be defined as the capacity of SCA’s system to supply water within the community’s perception of what is an acceptable risk (of water restrictions). The current “safe yield” for the system has been estimated by the SCA using the WATHNET model. Table A compares the SCA’s estimated “safe yield” with actual water required to meet Sydney’s needs.

Table A Estimated safe yield compared to actual water demand.

Parameter	Quantity (ML/year)	Comparison to “safe yield” (ML/year)
SCA’s current estimated “safe yield”.	600,000	-
Sydney Water’s <i>forecast</i> annual demand for 2004 under the Licence	583,000	Met forecast demand by 17,000
Sydney Water’s <i>actual</i> annual demand for 2003/04 with mandatory restrictions.	563,000	Met actual demand by 37,000
Sydney Water’s unrestricted annual demand for 2000/01, 2001/02, 2002/03 and 2003/04.	618,000 to 630,000	Shortfall by 18,000 to 30,000 on unrestricted demand



It is evident from Table A that the current estimated “safe yield”, can match demand if it continues at the *actual* annual 2003/04 demand rates. It is noted however, that Sydney Water’s *actual* demand for 2003/04 was heavily influenced by mandatory restrictions in response to depleting dam levels. There is a significant shortfall between the current estimated “safe yield” and the unrestricted annual demand over the past four years.

In the short term, this shortfall is not a high-risk situation. However, should the drought sequence continue, this could rapidly increase the chance of more stringent restrictions and need for much greater transfer of water from the Shoalhaven River to the Nepean and Warragamba Reservoirs. The accuracy of the model is critical to determine when to trigger more stringent restrictions and how to manage future supply and demand for increasing population levels.

The SCA has undertaken some further development of its model to improve confidence in predicting future behaviour of the system, although given the current status of the water storages and the fact that mandatory water restrictions have already been imposed, progress in this area needs to be accelerated. Preliminary refinements of the WATHNET model to address the effect of “*climate variability on demand*” has identified that the revised estimate of “safe yield” may be reduced even further (to 580,000ML/yr), thus increasing the gap between estimated “safe yield” and Sydney Water’s unrestricted annual demand. Other factors such as *demand hardening* and the *effect of bushfires on the catchment* may also impact on the SCA’s estimate of “safe yield”. Preliminary work on demand hardening suggests this factor may result in a reduction in safe yield to possibly 540,000 to 580,000 ML/yr. The effect of bushfires has not been comprehensively considered or modelled. A further issue relates to the Hawkesbury-Nepean Management Forum’s environmental flows recommendation, which, if adopted, would reduce the safe yield to about 547,000 ML/yr.

Water quantity - Government initiatives

The SCA’s ability to influence demand management and reduce overall water consumption in its supply areas is heavily dependent on the initiatives taken by the water retailers, particularly Sydney Water. SCA has a stronger control over its other consumers with which it has supply agreements. However, there is the opportunity for SCA to increase its efforts to ensure these consumers are making efforts to reduce their demand for water.

The Metro Water Strategy was announced by the Government in 2004, as the plan to address Sydney’s future needs for water for various purposes including the increasing population in the Sydney Basin. The SCA will have a key role as the plan is implemented in balancing its supply of water against demand for human consumption, and the requirements to maintain environmental quality in rivers and streams.

Comparison of SCA compliance with the previous four years

This section of the report provides a tabular summary of the compliance achieved by the SCA in the 2003/04 audit period compared to compliance levels attained for the four previous audit periods. Table B provides a summary of compliance with each auditable requirement of the Operating Licence.

It is evident from Table B that:

- ▶ The SCA is continuing to work at generally high to full compliance.
- ▶ A clear improvement over the previous year's compliance levels was evident for the water quality planning, and catchment infrastructure;
- ▶ There was some decline in compliance on the customer complaint clause due to the interpretation by SCA on which complaints could be reviewed as part of the audit process;
- ▶ A lower level of compliance is evident in relation to aspects of Special Areas Strategic Plan of Management (SASPoM). This is particularly related to reduced accountability and transparency in reporting and the omission of adequate financial statements. (Note: NPWS expenditure on SASPoM was not available to SCA at the time of auditing);
- ▶ A lower level of compliance was evident in relation to aspects of Demand Management. This is particularly related to no augmentation work being completed by SCA during the audit period;
- ▶ A lower level of compliance was evident in relation to environmental reporting. This particularly related to a lack of data for reporting on ESD and environmental indicators associated with the Environment Plan;
- ▶ Performance against the water quality, consultative committee charter and catchment infrastructure works requirements, continued at or increased to full compliance; and
- ▶ 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 the SCA.

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 B: Operating Licence - summary of compliance over the last four years

Licence Clause	Summary of Requirement	2003/04	2002/03	2001/02	2000/01	1999/00
3 MEMORANDA OF UNDERSTANDINGS						
3.3.1	Maintain MOUs for Licence term	Full	High	High	Full	Full
3.3.2	MOU to form basis of cooperative relationships with: -					
	▶ WAMC (now DIPNR)	Partial	Partial	High	Full	Full
	▶ DoH	Full	Full	Full	Full	Full
	▶ EPA (now DEC)	Full	Full	High	Partial	Full
3.3.3	SCA to enter into additional MOUs as directed by the Minister	NR	NR	NR	NR	NR
5 CUSTOMERS						
5.1	Customer – Sydney Water Corporation					
5.1.1	Supply of Bulk Water to Sydney Water	Full	Full	Full	Full	Full
5.1.2	Review terms of bulk supply to Sydney Water	Full	Full	Full	Full	NR
5.1.3	Best endeavours to gain Sydney Water's agreement	Full	Full	Full	Full	NR
5.2	Customers – other than Sydney Water Corporation					
5.2.1	Best endeavours to customers other than Sydney Water	High	High	Full	High	Partial
5.3	Customer Complaints					
5.3.1	Establish internal complaints handling	Full	Full	High	Full	Full
5.3.2	Complaints handling to be based on Australian Standard	Partial	Partial	Partial	Insufficient information	Partial
5.3.3	Make available customer handling information	High	High	Full	Full	Partial
5.3.4	Provide information and post on website each year	Full	Full	Full	Full	Partial
5.3.5	Report details on complaints handling	Low	Partial	High	Insufficient information	Partial
5.4	Consultative Committees (CC)					
5.4.1	Establish and consult with CC	High	High	High	Full	High
5.4.2	Establish first CC within 3 months (by 19/07/00)	NR	NR	NR	Full	Partial
5.4.3	Appoint CC members consistent with Licence	High	High	Full	Full	Partial
5.4.4	Groups from which CC to comprise	Partial	Partial	Full	Full	Partial



Licence Clause	Summary of Requirement	2003/04	2002/03	2001/02	2000/01	1999/00
5.4.5	Number of CC a member can sit on	NR	NR	NR	NR	NR
5.4.6	Term of appointments for CC members	Full	Full	Full	Full	NR
5.4.7	Replacement of a CC member before term expiry	Full	Full	Full	Full	NR
5.4.8	Establishment of CC charter by 19/10/00	Full	High	NR	Full	NR
5.4.9	Charter required for each CC	Full	High	NR	Full	NR
5.4.10	CC to have possession of information required	Partial	Full	High	Full	NR
5.4.11	CC Charter to be posted on website	Full	High	Full	Full	NR
5.4.12	Effectiveness of CC to be included in end of term review	NR	NR	NR	NR	NR
6 BULK WATER QUALITY						
6.1	Definitions of guidelines and water treatment	NR	NR	NR	NR	NR
6.2	Water Supplied for water treatment					
6.2 (a)	SCA to meet health guideline values under Schedule 4	Full	Full	Full	Full	Insufficient information
6.2 (b)	SCA must comply with specific bulk water standards	High	High	High	Partial	Partial
6.2 (c)	Liaise with water customers on strategies to ensure safe water	High	High	Full	Full	Full
6.3	Water supplied for other uses					
6.3.1	Best endeavours used to reach agreement on water quality standards for water supplied to customers for purposes other than treatment	High	High	Full	High	Partial
6.3.2	Advise customers of potential uses for bulk water and need for treatment if used for human consumption	High	High	High	Partial	Partial
6.4	Catchment and System Management					
6.4	Comply with drinking water relating to catchment and system management.	Full	Full	Full	Full	High
6.5	Review of obligations regarding water quality					
6.5	Licence Review Body to review obligations as part of Mid-term review	NR	NR	NR	NR	NR
6.6	Water Quality Monitoring and Reporting					
6.6.1	Develop a WQ monitoring program	Full	Full	Full	Full	Full
6.6.2	Routine monitoring requirements of program a, b, c, d	Full	Full	Full	Full	Full
6.6.2	e) Representative of bulk water	Full	Full	High	Full	Full



Licence Clause	Summary of Requirement	2003/04	2002/03	2001/02	2000/01	1999/00
6.6.3	Supply of monitoring results to customers and DoH	Full	Full	Full	Partial	NR
6.6.4	Requirements for event based monitoring	Full	Full	Full	High	Full
6.6.5	Develop a database for all monitoring results	Full	Full	Full	Full	Full
6.6.6	Features of monitoring reported by 30/11 each year	Full	Full	Full	Full	Full
6.6.7	Requirements for the monitoring report	High	Full	Full	Partial	Full
6.6.8	Availability of monitoring report	Full	Full	Full	Full	Full
6.7	Water Quality Planning - Risk Management Plan (RMP)					
6.7.1	Risk Management Plan prepared following first audit	Full	High	Full	Full	Full
6.7.2	Identify and assess sources of pollution	Full	High	Full	Partial	Full
6.7.3	Requirements for developing RMP	Full	High	Full	High	Full
6.7.4	Parties to comment during preparation of RMP	NR	NR	Partial	Full	High
6.7.5	Review of RMP following catchment audits	Full	Full	Full	NR	NR
6.7.6	RMP amended only after public consultation	Full	NR	Full	NR	NR
6.7.7	RMP to be reviewed mid-term	Full	Full	Full	NR	NR
6.7.8	IPART audit SCA's required actions under the RMP	High	Full	Full	NR	NR
	Water Quality Planning – Incident Management Plan (IMP)					
6.7.9	Prepare IMP by 1 July 2000	NR	NR	Full	Full	Full
6.7.10	IMP to minimise human health risk	Full	Full	Full	Full	Full
6.7.11	IMP to contain procedures for management of water incidents	Full	Full	Full	Full	Full
6.7.12	Requirements of IMP for advising stakeholders of risk	Full	Full	Full	Full	Full
6.8	Environmental Water Quality					
6.8.1	Meet environmental water quality requirements of EPA or DLWC (now DIPNR)	NR	NR	NR	NR	Partial
7						
CATCHMENT MANAGEMENT						
7.1	Authority to Manage and Protect					
7.1.1	Manage and protect the Catchment Area	High	High	High	High	High
7.1.2	Best endeavours to coordinate collection of data	Low	Low	Partial	High	High
7.1.3	Make unpublished data on river health available	Low	Low	Low	Partial	Partial



Licence Clause	Summary of Requirement	2003/04	2002/03	2001/02	2000/01	1999/00
7.2	Special Areas Strategic Plan of Management (SASPoM)					
7.2.1	Definition of Special Areas Strategic Plan of Management	NR	NR	NR	NR	NR
7.2.2	Consultation with NPWS in giving effect to SASPoM	Partial	High	High	Partial	Partial
7.2.3	Report to Licence Regulator by 01/09 each year on SASPoM	Partial	High	High	High	NR
7.2.4	Review SASPoM with NPWS every 5 years	NR	NR	NR	Full	Full
7.2.5	Minister to be advised of any amendment to SASPoM	Low	NR	NR	Full	Full
7.3	Wingecarribee Swamp & Special Area Plan of Management (WSSPoM)					
7.3.1	Definition of Wingecarribee Swamp and Special Area Plan of Management	NR	NR	NR	NR	NR
7.3.2	Review WSSPoM with NPWS by 1/11/00	NR	NR	NR	Full	Full
7.3.3	New WSSPoM to consider rehabilitation and restoration	NR	NR	NR	Full	Full
7.3.4	New WSSPoM must be put into effect	Partial	Partial	Partial	High	High
7.3.5	Report to Licence Regulator by 01/09 each year on WSSPoM	High	High	High	Full	NR
7.3.6	Review WSSPoM with NPWS every 5 years	NR	NR	NR	Full	NR
7.3.7	Any alteration required to be brought to notice of Minister	NR	NR	NR	Full	NR
7.4	Regional Environment Plan					
7.4.1	Compliance required with REP	NR	NR	NR	NR	NR
7.4.2	Promotion of REP including stakeholder education	NR	NR	NR	NR	NR
7.4.3	Licence Regulator to consider planning instruments in annual audit	NR	NR	NR	NR	NR
7.5	State Environmental Planning Policy					
7.5.1	Comply with SEPP 58	High	High	High	High	High
7.5.2	Licence Regulator to consider SEPP in annual audit	NR	NR	NR	NR	NR
8						
CATCHMENT INFRASTRUCTURE						
8.1	Management of Catchment Infrastructure Works					
8.1.1	Manage infrastructure to minimise human health risks	Full	Full	Full	Full	Partial



Licence Clause	Summary of Requirement	2003/04	2002/03	2001/02	2000/01	1999/00
8.1.2	Catchment infrastructure works designed, operated and managed according to Schedule 2 requirements: -					
	• Reliability	Full	High	Full	Full	Full
	• Robustness	Full	High	Full	Full	Full
	• Security	Full	High	Full	Non	Full
	• Operate within Designated Drought Conditions	Full	High	Full	Full	Full
8.1.3	Schedule 2 performance criteria reviewed mid-term	NR	NR	NR	NR	NR
8.2	Dam Safety					
8.2	Compliance with dam safety requirements	Full	Full	Full	Full	Full
8.3	Demand Management					
8.3.1	Demand management consistent with the Water Management Licence	NR	NR	NR	NR	NR
8.3.2	Water demand managed in accord with Sydney Water's Operating Licence	High	Full	Full	Full	High
8.3.3	Improved demand management by Sydney Water to be considered before augmenting catchment works	Partial	Full	Full	NR	NR
9 ENVIRONMENT						
9.1	Environment Plan (EP)					
9.1.1	Prepare draft EP by 31/12/00, final by 30/06/01	NR	NR	NR	Full	NR
9.1.2	Final EP to be submitted to the Minister for approval. Public consultation required to develop draft and final EP	NR	NR	NR	Full	High
9.1.3	Requirements for the EP	NR	NR	NR	Full	NR
9.1.4	EP must set targets and timetable	NR	NR	NR	Partial	NR
9.1.5	EP to include an energy management policy	NR	NR	NR	Full	NR
9.1.6	EP available from website	Full	Full	High	NR	NR
9.1.7	EP amended following public comment/Minister approval	NR	NR	NR	NR	NR
9.2	Environmental and ESD Indicators					
9.2.1	Prepare a draft list of environmental indicators by 01/07/00 and draft list of ESD indicators by 01/10/00	NR	NR	NR	Full	Full
9.2.2	Environmental Indicators to allow direct monitoring of environment	NR	NR	NR	Full	NR



Licence Clause	Summary of Requirement	2003/04	2002/03	2001/02	2000/01	1999/00
9.2.3	ESD indicators to allow degree of compliance with ESD	NR	NR	NR	Full	NR
9.2.4	Final list of indicators to the Minister by 1 January 2001	NR	NR	NR	Full	NR
9.2.5	Requirements for draft indicators	NR	NR	NR	Full	High
9.2.6	Consistent with other environmental (env.) Indicators	NR	NR	NR	Full	Full
9.2.7	SCA to give consideration to catchment auditor	NR	NR	NR	Full	Full
9.2.8	Public comment for 40 days required for env. Indicators	NR	NR	NR	Full	Full
9.2.9	Monitoring and compiling env. Indicators to start by 01/03/01	NR	NR	NR	High	NR
9.2.10	Sydney Water's environmental indicators to be used in interim period	NR	NR	NR	Full	Full
9.2.11	Draft and final environmental indicators reviewed at end of term	NR	NR	NR	NR	NR
9.2.12	Requirements of ESD indicators	NR	NR	NR	Full	NR
9.2.13	Public comment for 40 days required for ESD indicators	NR	NR	NR	Full	NR
9.2.14	Monitoring and compiling ESD indicators to start by 01/03/01	NR	NR	NR	High	NR
9.2.15	Draft and final ESD indicators reviewed at end of term	NR	NR	NR	NR	NR
9.3	Reporting					
9.3.1	Environment Plan to be reported on annually	Full	Full	Full	NR	NR
9.3.2	Requirements for Environment Plan report	Full	Full	High	NR	NR
9.3.3	Year to year report on environmental and ESD indicators	High	High	Low	NR	NR
9.3.4	Publicly available within 1 month of completion	Full	Full	Full	NR	NR
9.4	Environmental Flows					
9.4.1	Final report on environmental flows by 19/10/01	NR	NR	NR	Full	Full
9.4.2	Requirements for draft report on environmental flows	NR	NR	NR	Non	Non
9.4.3	Minister may appoint independent expert panel	NR	NR	NR	NR	NR
9.4.4	Composition of expert panel	NR	NR	NR	NR	NR
9.4.5	Term of independent expert panel	NR	NR	NR	NR	NR
9.4.6	Review role of independent expert panel	NR	NR	NR	NR	NR



Licence Clause	Summary of Requirement	2003/04	2002/03	2001/02	2000/01	1999/00
9.4.7	Panel to provide socio-economic impact assessment	NR	NR	NR	NR	NR
9.4.8	Cooperation and assistance to expert panel	Full	Full	Full	NR	NR
9.4.9	Environmental flows from water storages prior to Water Management Licence	NR	NR	NR	High	High
9.4.10	Implementation of environmental flow requirements under the Water Management Licence.	High	High	High	High	NR



Table C provides a summary of compliance levels reached by the SCA in the 2003/04 audit period for the Ministerial requirements. As Ministerial requirements are specific to each operational year, yearly comparisons with previous operational audits are not applicable.

Table C: Ministerial requirements for 2003/04 – summary of compliance

Ministerial Requirement		2003/04
M.1	<i>"the Authority finalises the development of the Risk Management Plan by 1 September 2004 and determines the significance of pollution loads with respect to treated water quality and requirements for control."</i>	Full
M.2	<p><i>"some work¹ be undertaken to improve the robustness of the WATHNET model" which is used to provide an estimate of the sustainability of the water supply".</i></p> <p>¹ The recommended work with the model includes running an independently verified 'degree of fit' using historical operating rules and stream/flow/demand scenarios; conducting yield sensitivity analyses for an agreed set of scenarios, for example, environmental flows, evaporation, demand hardening; and modelling the Blue Mountains system for security against demand levels.</p>	High

Summary of key recommendations

The **key recommendations** from the 2003/04 Operational Audit are presented below (grouped by the audited parts of the Operating Licence). The recommendations are made to provide IPART and the Sydney Catchment Authority with a basis for continuous improvement.

Additionally, secondary recommendations are presented in the body of this report. These have been provided to facilitate improved performance and compliance for subsequent audit periods.

Memoranda of understanding

That the SCA:

- R4.1 Reports, and is audited on, its performance under the MoUs with the newly created Catchment Management Authorities.
- R4.2 Proposes to IPART that the MOUs with the Catchment Management Authorities be a requirement of the new Operating Licence to be applied after 2005.
- R4.3 Completes the review of, and renews, the MOU with WAMC (DIPNR) to incorporate recommendations identified in previous audits and to enhance the cooperative relationship between the two agencies.

Customers

That the SCA:

- R5.1 Finalise and sign contracts with Wingecarribee and Shoalhaven Councils for the supply of bulk water.
- R5.2 Finalise and sign contracts with the outstanding six customers identified in association with the DIPNR.
- R5.3 Record all complaints made to the organisation regardless of the source of the complaint and report the detail of all these complaints to the Licence Regulator in a timely manner, on an annual basis; (as per the Australian Standard AS4269-1995).

Bulk water

That the SCA:

- R6.1 Quantify, as far as possible, the variations in bulk water quality that may occur under the high risk situations identified in the *Risk Management Framework* and confirm that SCA's customers are aware of these variations so that they can plan accordingly to ensure that the treated water that they in turn supply to their customers, will comply with the required objectives.
- R6.2 Include in the next Annual *Water Quality Monitoring Report* (that is, for the audit period 2004/2005) information that allows the reader to understand: the requirements for monitoring and compliance; the methods adopted; the extent to which the results can



be relied upon (that is, the conclusions of the quality assurance program); the extent of compliance with the Operating Licence that has been achieved; and the significance of exceedences and incidents where these have occurred.

- R6.3 Develop a considered response to the findings of the *Audit of the Sydney Drinking Water Catchment December 2003* prepared by the Department of Environment and Conservation, particularly with respect to those findings that relate to the quality of water supplied to SCA's customers.

Catchment management and protection

That the SCA:

- R7.1 Secures an agreed timetable with DIPNR to gazette and implement the Regional Environment Plan, "Sustaining the Catchments".
- R7.2 Increases its resource allocation and improves transparency of expenditure (by *Strategy* and *Key Action*) and reporting to demonstrate that implementation of the Special Areas Strategic Plan of Management and Wingecarribee Swamp and Special Areas Plan of Management are meeting the respective Ministerial endorsed timeframes, or formally amend the plans as required.
- R7.3 Advise IPART of any net reduction in expenditure against forward projections in the *Healthy Catchments Program 2003-2007 (Version 3.0 193)* and any likely impact on water quality and catchment health.

Infrastructure

That the SCA:

- R8.1 Ensures, where possible, that cost analysis for options to conserve water and/or consider new supply options be evaluated using the same approach as in the Hawkesbury-Nepean River Management Forum for demand options, (Total Cost by 2021 Present Value \$/kL) and/or using the same approach as Sydney Water (Levelised Cost). In this way "demand side" and "supply side" options can be compared more consistently.

Environment

That the SCA:

- R9.1 Reports on its assessment of overall performance against the environmental and ESD indicators, as part of its Annual Environmental Report.

1. Introduction and objectives

1.1 The Sydney Catchment Authority

The Sydney Catchment Authority (SCA) was established in July 1999 by the NSW Government in response to a series of water quality incidents in Sydney the previous year. The 'McClellan Inquiry' had recommended that an independent agency be established to protect water quality in the catchment areas that provide Sydney and Wollongong with bulk raw water. The water storages, infrastructure and many of the management and operational functions were transferred from the Sydney Water Corporation (Sydney Water) to the SCA. The area of operations for which the SCA is responsible is shown in Figure 1.1. A schematic representation of the water storage and infrastructure under the control of the SCA is shown in Figure 1.2.

The "Inner" Catchments have always been subject to stringent land-use controls in order to protect water quality. However, the "Outer" Catchments have been subjected to increased development in the last 50 years and their management was divided between many agencies at State and local government level, as well as by private landholders. The inter-relationship between the SCA and other connected organisations and stakeholders is shown in Figure 1.3.

The roles and responsibilities of the SCA derive from the *Sydney Water Catchment Management Act, 1998* (the Act) and the Operating Licence issued pursuant to Section 25 of the Act.

1.2 Independent and Pricing Regulatory Tribunal

On 1 November 2000 the Independent Pricing and Regulatory Tribunal and Other Legislation Amendment Act commenced. Under Schedule 1 of that Act, the operating audit function of the Licence Regulator was transferred to the Independent Pricing and Regulatory Tribunal (IPART).

1.3 Scope of Operating Audit

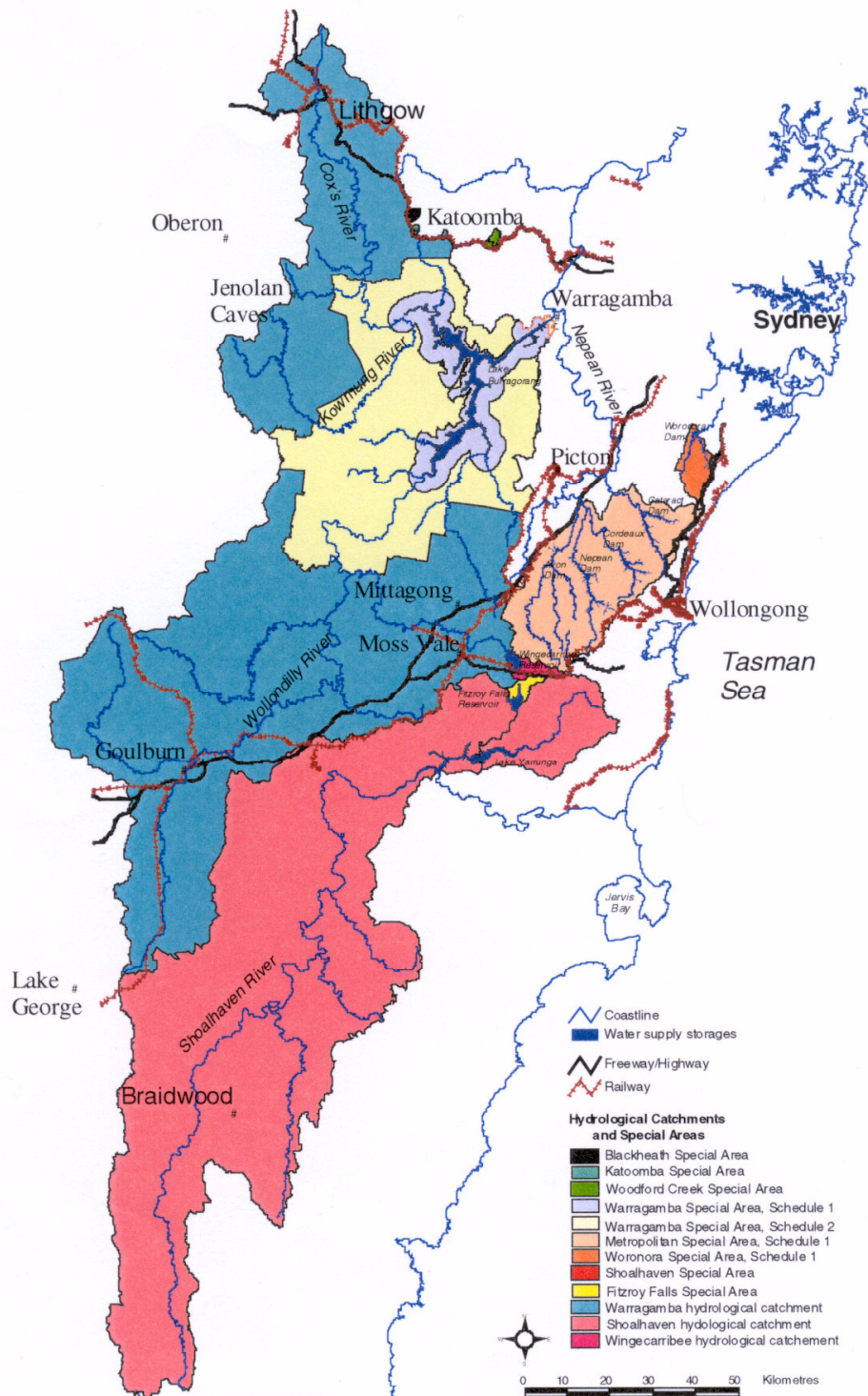
This is the fifth audit of the Sydney Catchment Authority against the requirements of the current Operating Licence. The audit covers the period from 1 July 2003 to 30 June 2004.

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 Ministerial requirements, as presented in the letter from the Minister for the Environment to the SCA dated 19 January 2004, and the identification of factors that have influenced the SCA's compliance.

The detailed audit brief is contained in Appendix A. The Operating Licence and the Minister's requirements are provided in Appendix B and Appendix C, respectively.

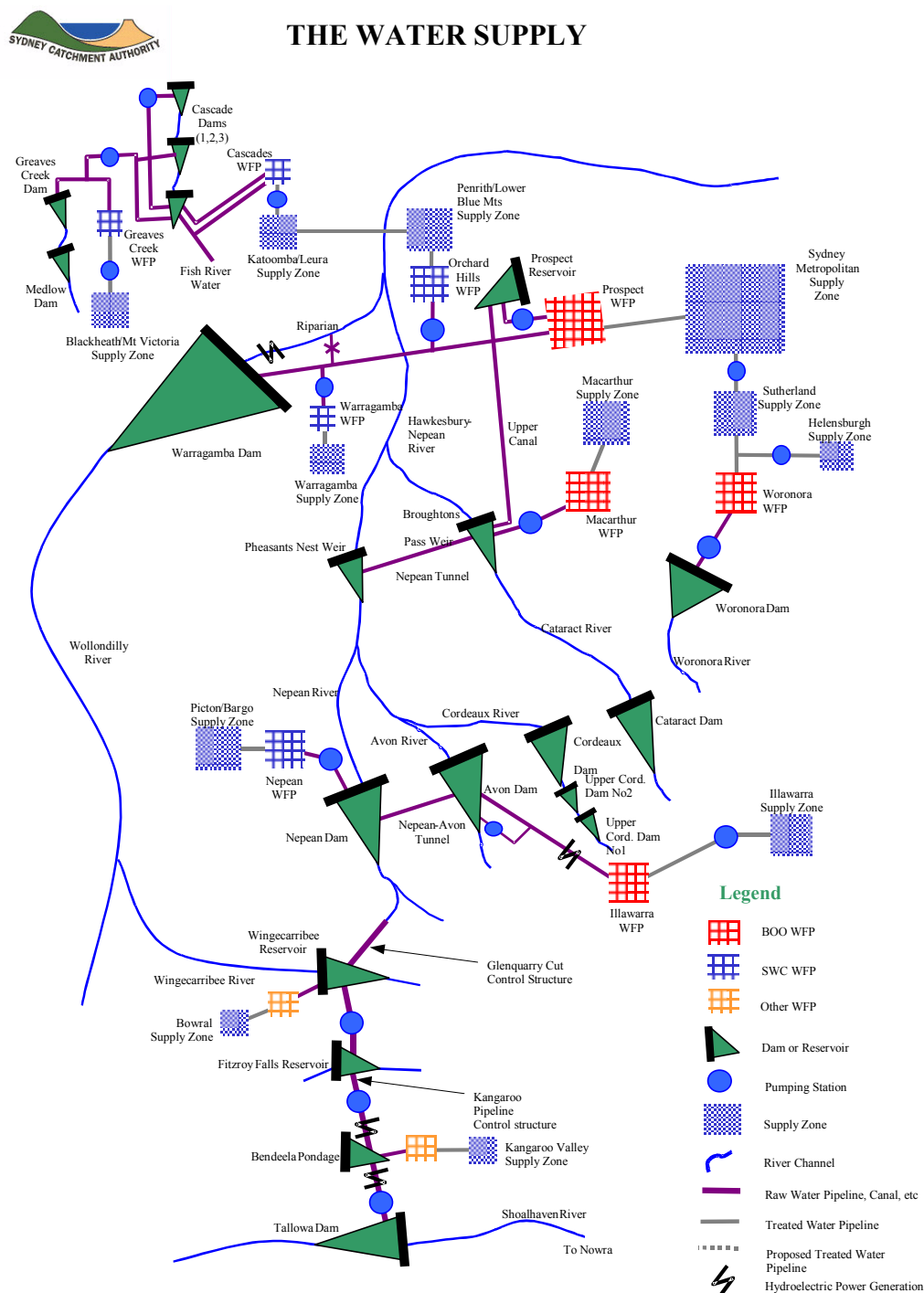
Figure 1.1 Sydney Catchment Authority – catchments and special areas



Source: Sydney Catchment Authority

Note: Areas transferred to NPWS via the SASPoM are not recognised in this figure.

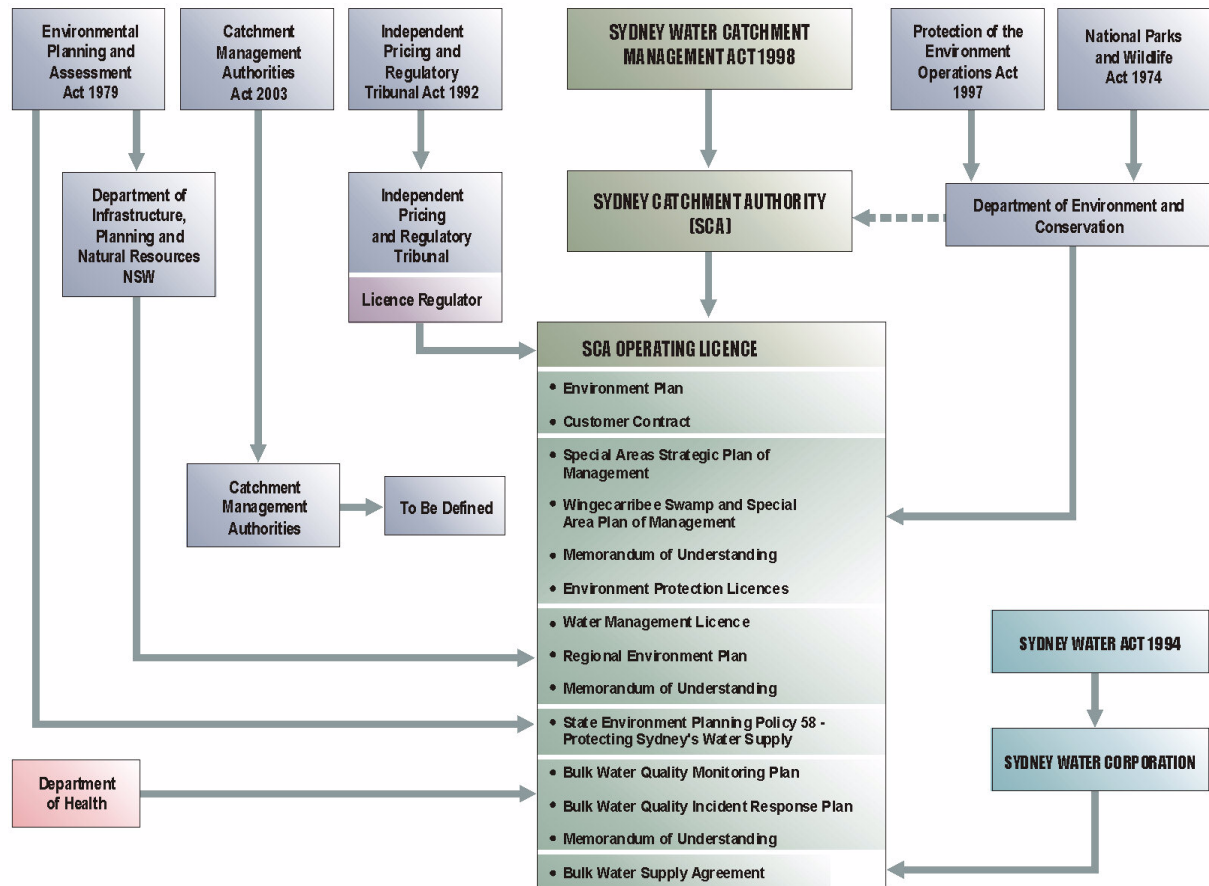
Figure 1.2 SCA schematic of infrastructure and operational control



Source: Sydney Catchment Authority

Note: SCA infrastructure only includes infrastructure upstream of water filtration plants (WFP). Other infrastructure is controlled by organisations other than the SCA.

Figure 1.3 Inter-organisational structure – Sydney Catchment Authority



** EPA became part of the Department of Environment and Conservation (DEC) on 24 September 2003.

Table 1.1 Scope of the audit

Licence Part		General requirements	Report section
Part 3	Memoranda of Understanding	Memoranda of Understanding with the Department of Health, the Environment Protection Authority and the Water Administration Ministerial Corporation.	Chapter 4
Part 5	Customers	Including: Sydney Water; other customers; customer complaints; consultative committees	Chapter 5
Part 6	Bulk Water Quality	Including: water supply; monitoring; planning and risk management; environmental water quality	Chapter 6
Part 7	Catchment Management and Protection	Including: Catchment management; Special Areas Strategic Plan of Management; Wingecarribee Swamp and Special Area Plan of Management; REP, SEPP 58.	Chapter 7
Part 8	Management of Catchment Infrastructure	Including: catchment infrastructure, dam safety; demand management	Chapter 8
Part 9	The Environment	Including: environment plan, environmental and ESD indicators; reporting; environmental flows	Chapter 9

1.4 Structure of the audit report

This report on the 2003/04 Operational Audit has been presented in a format that provides information directed at different levels of readership to enable an understanding of the SCA's operations and its compliance with specific statutory requirements.

The audit report has been specifically prepared to meet the audit brief and the audit requirements of the Operating Licence. The report is structured in sections that correspond to the key areas (parts) of the Operating Licence (see Table 1.1 above). The findings of the report are not presented in a "prioritised order" or "order of significance". Each section of the report provides the following for each key area:

- ▶ A *compliance summary* addressing the principal compliances and any non-compliances relevant to each area of the audit;
- ▶ A *requirements summary* placing in context and summarising the requirements of the Operating Licence against which the performance of the SCA is assessed; and
- ▶ *Substantive evidence and findings* that support the assessments of compliance and that are presented in a tabular format, breaking each Licence condition into sub-clauses and including:
 - A statement describing the *level of compliance* with the Licence condition; and
 - An appraisal of the *findings* of the audit based on the evidence provided.

There may be up to two compliance tables in each section:

- ▶ The first table presents compliance with the relevant Part of the Licence for the key area, as described above; and
- ▶ A second table presents the assessment of compliance with any Ministerial requirements for the key area.



This is followed by (where required):

- ▶ A discussion or expansion of comments on compliance for each key area;
- ▶ Factors affecting compliance for each key area; and
- ▶ Recommendations for each key area.

The Ministerial requirements are reported in the relevant key areas, Table 1.2 provides guidance on where these are addressed in this report.

Table 1.2 Ministerial requirements for 2003/04

Ministerial requirement		Report table
M.1	<i>"the Authority finalises the development of the Risk Management Plan by 1 September 2004 and determines the significance of pollution loads with respect to treated water quality and requirements for control."</i>	6.2
M.2	<i>"some work¹ be undertaken to improve the robustness of the WATHNET model"</i> which is used to provide an estimate of the sustainability of the water supply". ¹ The recommended work with the model includes running an independently verified 'degree of fit' using historical operating rules and stream/flow/demand scenarios; conducting yield sensitivity analyses for an agreed set of scenarios, for example, environmental flows, evaporation, demand hardening; and modelling the Blue Mountains system for security against demand levels.	8.2

2. Audit methodology

2.1 Standards

The Operational Audit was undertaken adopting a methodology consistent with ISO 14011 and to meet the specific requirements of IPART. ISO 14011, “*Guidelines for Environmental Auditing*”, 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

The audit methodology used in the preparation of this audit is described below.

Draft audit plan

To ensure that the audit requirements outlined in the Operating 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, inception meetings were held with SCA’s Managing Director and other representatives on 12 August 2004. IPART representatives also attended the meetings.

The primary objective of this meeting was to develop working relationships, mutual understandings and expectations relating to the requirements and process of the audit and to provide an opportunity for the SCA to present an overview of compliance and progress since the previous audit period.

Audit questionnaires

Specific audit questionnaires were developed for all requirements within the scope of the audit. These questionnaires were designed to establish *substantive compliance* with the Licence requirements as well as to *identify factors that have, or may have impact on performance in the future*.

The audit questionnaires also assessed the underlying procedures that the SCA has in place relevant to the requirements, and the application of these procedures by the SCA. This was designed to verify that the underlying management processes within the organisation are sound, and there is confidence that work is carried out systematically and in accordance with internal procedures.

Audit questionnaires were, in most cases, provided to the SCA one week prior to the audit interviews to allow the SCA the opportunity to prepare for the interview and collate the necessary documentary evidence.

2.3 Conduct of the audit

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

Both Sydney Catchment Authority and the auditor have generally adhered to the agreed protocols.

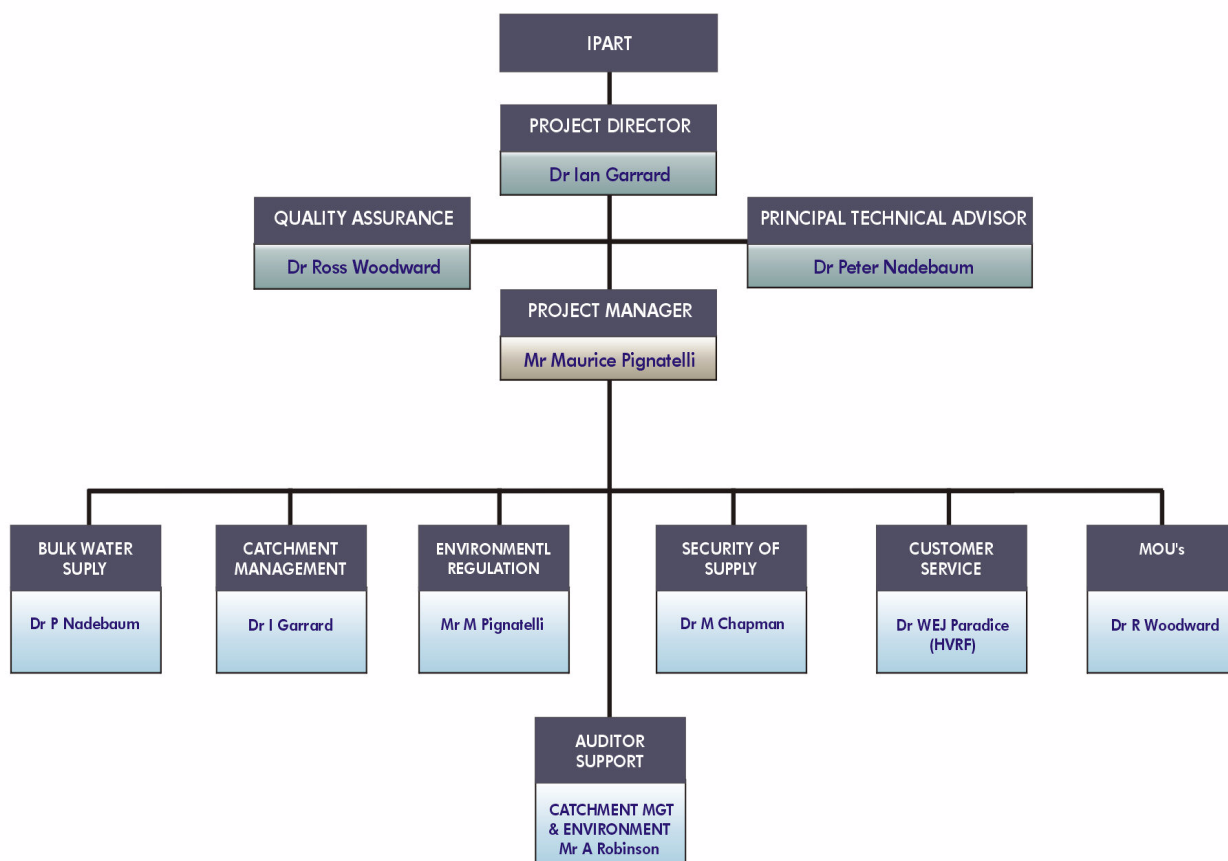
2.4 Audit interviews

Interviews were conducted by the specialist auditors between August and October 2004. The interviews were generally guided, but not limited, by the pre-prepared questionnaires and the SCA was provided the opportunity to present evidence towards demonstrating compliance with the Licence requirements.

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

The role and responsibilities of the SCA is established by the provisions of the *Sydney Water Catchment Management Act 1998* and Regulations. The Act establishes a set of sub-ordinate instruments – the Operating Licence, Memoranda of Understanding (MOUs), Regional Environment Plan (REP), and plans of management – to assist in the operation of the SCA.

Such instruments impose compliance requirements upon the SCA, which are measurable and can therefore be audited.

The regulatory framework, within which the SCA operates, is schematically presented in **Figure 1.3** and briefly described below

3.2 Sydney Water Catchment Management Act 1998

Under Section 14(1) of the Act, the principal objectives of the SCA are as follows:

- ▶ To ensure that the Catchment Areas and the Catchment Infrastructure Works are managed and protected so as to promote water quality, the protection of public health and public safety and the protection of the environment;
- ▶ To ensure that water supplied by the SCA complies with appropriate standards of quality;
- ▶ Where the SCA's activities affect the environment, to conduct its operation 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 manage the SCA's Catchment Infrastructure Works efficiently and economically and in accordance with sound commercial principles.

In addition, the SCA has special objectives under section 14(2) regarding:

- ▶ Minimising risks to human health; and
- ▶ Preventing the degradation of the environment.

The Act also establishes:

- | | |
|--|---|
| ▶ The Sydney Catchment Authority; | ▶ The operating audit (this document); |
| ▶ The functions of the SCA; | ▶ The preparation and implementation of MOUs; |
| ▶ The area of operations; | ▶ Catchment areas and their management; |
| ▶ Arrangements with customers, including Sydney Water; | ▶ Management of infrastructure; |
| ▶ The grant of the Operating Licence; | ▶ Offence provisions; and |
| ▶ The functions of IPART; | ▶ Other miscellaneous matters. |

3.3 Operating Licence

The SCA must conduct its activities in accordance with an Operating Licence issued under Section 25 of the *Sydney Water Catchment Management Act, 1998*. The current Operating Licence has effect from 1 January 2000 until 31 December 2004. The Governor subsequently, extended the effect of the Licence until 31 December 2005.

The nature and scope of the Operating Licence and the period, over which the Licence is applicable, have been presented in Section 1.3. 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 9 of this report.

3.4 SEPP 58 – Protecting Sydney's Water Supply

The State Environmental Planning Policy (SEPP) 58 – Protecting Sydney's Water Supply is an instrument under the *Environmental Planning and Assessment Act, 1979* and commenced on 1 February 1999.

The SEPP aims:

- a) To ensure that development in the hydrological catchment from which Sydney draws its drinking water supply does not have a detrimental impact on water quality;
- b) To provide a concurrence or notification role for the Chief Executive of the Sydney Catchment Authority in relation to development in the hydrological catchment that is likely to have an impact on water quality; and
- c) To ensure that there is a consistent approach to the assessment and control of development in the hydrological catchment that is likely to have an impact on water quality.

In relation to any development or activity proposed to be carried out on land to which this Policy applies, the consent authority must consider the following:

- a) Whether the development or activity will have a *neutral or beneficial effect* on the water quality of rivers, streams or groundwater in the hydrological catchment, including during periods of wet weather;
- b) Whether the water quality management practices proposed to be carried out as part of the development or activity are sustainable over the long term; and
- c) Whether the development or activity is compatible with relevant environmental objectives and water quality standards for the hydrological catchment.

For specified land uses that have a significant potential to pollute waterways and streams and endanger the quality of drinking water supplies, development consent is required from the relevant consent authorities. Applications for these land uses are also reviewed by the SCA as part of the assessment process.

Under SEPP 58, the consent authorities are either DIPNR or the local Councils that include: Blue Mountains, Greater Argyle, East Capital City, Campbelltown, Upper Lachlan, Oberon, Wingecarribee, Kiama, Shoalhaven, Wollondilly, Eurobodalla, Lithgow, Sutherland and Wollongong.

3.5 Regional Environmental Plan

Under Section 53 of the Act, the Minister for Infrastructure, Planning and Natural Resources (previously the Minister for Planning) must ensure that one or more REPs are made as soon as practicable (under Division 3 of Part 3 of the *Environmental Planning and Assessment Act 1979*) after the presentation of the report on the first catchment audit.

A REP is to make provision for the following:

- a) Imposing controls subject to which State agencies and local authorities (including the local Council) may take action and make decisions concerning development of the land to which the plan applies;
- b) Setting water quality objectives for that land;
- c) Requiring consent authorities to refuse to grant development consent to a development application unless the consent authority is satisfied that the carrying out of the proposed development would have a *neutral or beneficial effect* on the quality of water;
- d) Requiring the development of action plans to rectify any development of the land that does not have a *neutral or beneficial effect* on the quality of water; and
- e) Declaring that the REP prevails over a local environmental plan.

The REP had not been made as at October 2004 and remains in a draft form following further review and exhibition over 2003/04.

3.6 Water Management Licence

Water Management Licences are issued by the Department of Infrastructure, Planning and Natural Resources (previously Department of Land and Water Conservation, DLWC) under Part 9 of the *Water Act 1912*, and cover the SCA's water management activities.

A Water Management Licence was issued to the SCA on 23 April 2001 (subsequently reviewed and amended on 11 February 2003) and was current for the 2003/04 audit period. The Licence outlines objectives for the SCA in relation to access to water resources within its area of operations in accordance with ESD principles. The Licence also establishes the platform for environmental flows to be released from SCA infrastructure.

3.7 Memoranda of Understanding

The SCA is required, under Section 36 of the Act and the provisions of the Operating Licence, to enter into Memoranda of Understanding (MOUs) with key regulatory agencies to assist in the formation and development of co-operative relationships between the agencies with a view to furthering the objectives of the Operating Licence and the Act.

In each case, the MOUs are to contain:

- A framework for achieving a co-operative relationship between the parties;
- Consultative processes between the agency and the SCA to consider operating, strategic and licensing issues;
- Agreement to exchange data and information; and
- Dispute resolution mechanisms.

3.7.1 Water Administration Ministerial Corporation

Objectives

- ▶ This MOU outlines the basis for the co-operative relationship between the Corporation (WAMC) as the manager of the water resources for the State (whose responsibilities are now incorporated into DIPNR) and the SCA as a manager and protector of the inner catchment area and the outer catchment area (the catchment areas) and the catchment infrastructure works, a supplier of bulk raw water, and a regulator of activities within catchment areas.
- ▶ The Corporation's objectives include ensuring that water and related resources are allocated and used in ways, which are consistent with environmental requirements and provide the maximum long-term benefit for the State.

Special functions of the MOU

The principles relating to this MOU are largely reflected in Section 9.4 of the Operating Licence. In addition, the MOU provides that the SCA acknowledges that water released from its catchment infrastructure works will be managed as far as reasonably practical to minimise:

- ▶ Adverse riverine impacts;
- ▶ Environmental impacts;
- ▶ Risk to public health and safety; and
- ▶ Damage to property.

Further the SCA and WAMC commit themselves to work co-operatively towards the management and protection of catchment areas in order to enhance water quality.

3.7.2 NSW Department of Health

Objectives

- ▶ The objective of this MOU is to form the basis for a co-operative relationship between the NSW Health and the SCA including agreed areas of study, research and data exchange and to recognise the roles and responsibilities of the parties.
- ▶ NSW Health has responsibilities in relation to the protection of public health under the *Public Health Act 1991* and other relevant legislation. It also has a role in providing advice to Government in relation to drinking water standards.

Special functions of the MOU

Responsibilities and Accountabilities

- ▶ The SCA will ensure that its customers are adequately informed of the quality of the bulk raw water and the appropriateness of any intended uses of such bulk raw water.
- ▶ The SCA will inform the NSW Health in relation to changes to its processes and procedures that may result from any variation of the water quality standards referred to in the SCA's Operating Licence.
- ▶ The SCA must develop and implement a water quality monitoring program, in consultation with NSW Health, and prepare reports for NSW Health as required by Clause 6.6 of the SCA's Operating Licence.



- ▶ Either party may give notice to the other of the need for review, amendment or replacement of the water quality monitoring plan. Upon reviewing such notice, the parties will co-operate in determining a timetable for such review, amendment or replacement.

Events of Public Health Significance

- ▶ The SCA shall, as soon as practicable, report to the NSW Health any events within its catchment infrastructure works or within its area of operations generally, which may have implications for public health.
- ▶ The SCA shall supply such information in relation to such events as is requested by the NSW Health or as is necessary for either party to make appropriate judgements and take appropriate action in relation to protecting the health of the public and exercising its role under this MOU.

Incident Management and Contingency Planning

- ▶ The SCA must prepare and maintain to the satisfaction of the NSW Health an incident management plan, in accordance with Clauses 6.7.9 to 6.7.12 of the SCA's Operating Licence.
- ▶ The SCA and the NSW Health shall negotiate a twenty four hour incident management contact point for the coordination of responses to any event of public health significance.
- ▶ During incidents that involve a public health risk, both parties will share information and resources as required so as to minimise the severity and consequences and extent of the risk.
- ▶ The SCA and the NSW Health agree that it is desirable for respective officers to undertake training in the situations that simulate public health risks and that such training will be organised to take place at a mutually agreed location and time.

3.7.3 NSW Environment Protection Authority

Objectives

- ▶ This MOU outlines the basis for the co-operative relationship between the EPA (now part of the Department of Environment and Conservation) as environmental regulator and the SCA as a manager and protector of catchment areas, the catchment infrastructure works, a supplier of bulk raw water (as referred to in the Bulk Water Supply Agreement between Sydney Water Corporation and the SCA) and a regulator of activities within catchment areas within the SCA's area of operation.
- ▶ The EPA has responsibility to protect the environment in New South Wales, taking into account community values, scientific and expert knowledge, best practice environmental regulation and economic considerations. As such, it develops environmental policy and programmes, carries out regulatory functions and provides environmental education.

Special functions of the MOU

Responsibilities and Accountabilities

- ▶ The EPA and the SCA will manage their activities in a co-operative and transparent manner to meet their obligations as set out in Section 6(1) of the *Protection of the Environment Administration Act 1991* and Section 14 of the *Sydney Water Catchment Management Act 1998*, respectively.
- ▶ By this MOU, the SCA and the EPA commit to working together to reduce activities causing pollution in the catchment areas of the SCA.



Regulatory Framework

The EPA and the SCA will periodically review and make recommendations to Government on their respective regulatory responsibilities and powers to ensure appropriate actions to prevent or mitigate pollution and ensure appropriate clean up occurs after incidents.

4. Memoranda of Understanding

4.1 Summary of findings

► Maintain MOUs

The Sydney Catchment Authority (SCA) achieved **Full compliance** for maintaining Memoranda of Understanding (MOUs) with the NSW Environment Protection Authority (EPA), the Water Administration Ministerial Corporation (WAMC) and NSW Health, in accordance with the provisions of the SCA's Operating Licence.

The purpose of the MOUs is to help ensure co-operative working relationships between the agencies to further the SCA objectives. The relationships have been further strengthened by changes to the structure of the major resource agencies within the NSW Government during 2003/04. The Water Administration Ministerial Corporation (WAMC) has delegated functions to the Department of Infrastructure, Planning and Natural Resources (DIPNR) and some of its functions reside with the newly formed Catchment Management Authorities. These functions previously resided primarily with the Department of Land and Water Conservation (DLWC). The Environment Protection Authority (EPA) is now part of the Department of Environment and Conservation (DEC) whose Chief Executive is also responsible for the SCA and the National Parks and Wildlife Service. The latter has responsibility for large areas of the Inner and Outer Catchments.

As a result of these changes, there is evidence that the SCA and the DEC (EPA) are working co-operatively to an extent that was not evident in the past. The formation of the new "super departments" also means that some provisions of the MOUs require amendment and this is reflected in the recommendations.

► MOU with NSW Health

The SCA's performance in implementing the MOU with NSW Health is assessed as **Full compliance**. The MOU provides the structure and processes for cooperative interaction and communication between the SCA and the NSW Health and continues to be implemented to a high level as evidenced by the sound cooperative working relationship, the Strategic Issues Work Program and joint initiatives in research and management of risks to public health from the catchments and storages.

The implementation of the provisions of the MOU to bring the expertise of both agencies to focus on the protection of public health and the minimisation of risk to drinking water from the catchments is a model that should be aspired to.

► MOU with Water Administration Ministerial Corporation (WAMC)

The SCA's performance in implementing the MOU with the WAMC is assessed as **Partial compliance**. DLWC and SCA initiated a review of the MOU in April 2001 that was initially to be completed by 21 December 2001. In July 2002, the SCA and DLWC agreed to postpone further work until completion of the Mid Term Review of the Operating Licence (30 September 2002). The Review did not recommend any changes to the MOU. As a result of the restructuring of DLWC, slow progress occurred until the Chief Executive of the SCA wrote to the newly formed Department

of Infrastructure, Planning and Natural Resources on 17 June 2003 to revitalise the process and appoint a new Strategic Liaison Group (SLG). Agreement was reached again at a meeting on 21 October 2003 to a review of the MOU. The SCA provided a draft MOU and timetable to DIPNR in December 2003. A formal response has not been received.

The SCA is maintaining an effective relationship with DIPNR at CEO level with participation in Water CEOs meetings, Drought Executive Group meetings, Urban Water Management, the Metro Water Strategy and other chief executive committees.

The failure to provide an effective formal forum for senior officers and managers to develop, implement and monitor programs of strategic importance to both agencies is cause for on-going concern. It is vital that the water and land use planning functions of DIPNR complement the programs of the SCA. Although consultation occurs between officers on specific issues day-to-day, the SLG is a useful and convenient tool for helping to ensure that there is an effective strategic work program addressing areas of mutual interest, of which there are many of critical importance to protecting Sydney's water supply. The regular forum for Water CEOs is not a replacement for a structured forum for other managers, as envisaged by the Operating Licence. The membership of the SLG should be confirmed and a regular schedule of meetings established so that a Strategic Work Program to address priority issues of common interest are progressed.

Catchment Management Authorities have been in existence since early in 2004 and two of the three neighbouring CMAs have already signed MOUs with the SCA.

► **MOU with Environment Protection Authority (EPA)**

The SCA's performance in implementing the MOU with the DEC (EPA) has been assessed as **Full compliance**. The MOU provides mechanisms for interaction on regulatory issues and for the development of strategic approaches to regulation. The Strategic Work Program provides an effective mechanism to address strategic issues of mutual interest. The evidence of a cooperative relationship between the two agencies has continued to increase significantly over the past three audit periods and has been further assisted by the structural changes that have resulted in the two agencies being responsible to the same CEO.

4.2 Summary of requirements

The Operating Licence requires the SCA to maintain Memoranda of Understanding with specified key agencies, refer to Appendix D.

Common to all three MOUs are provisions relating to: cooperative relationships; consultation processes; data and information exchange arrangements; dispute resolution procedures; and procedures for the review and amendment of the MOU.

Each MOU also contains particular provisions that expand on the relationship between the SCA and the other party that derive from the Act, the Operating Licence and the legislative functions and responsibilities of those other parties.



4.3 Details of compliance

Table 4.1 Part 3: MOU licence conditions – summary of compliance

Clause	Requirement	Compliance	Findings
3.3	Memoranda of Understanding		
3.3.1	Maintain MOUs for Licence term in accordance with s36 of the Act	Full compliance	<p>Water Administration Ministerial Corporation (WAMC) – executed MOU sighted. Commencement date 23 December 1999. Agreement for the review and amendment of the MOU was reached 27 April 2001, however the process was not completed. It was again agreed with DIPNR in October 2003 that there was a need to review and amend the MOU. The SCA provided a draft MOU and timetable in December 2003 but DIPNR has not yet formally responded.</p> <p>During the audit period, the SCA also signed MOUs with two of the three Catchment Management Authorities within its area of operations.</p> <p>Director General of NSW Health – executed MOU sighted. Commencement date 28 November 2001, replacing previous MOU dated 30 December 1999.</p> <p>Environment Protection Authority (EPA) – executed MOU sighted. Commencement date 4 December 2001, replacing previous MOU dated 23 December 1999, as directed by the Minister.</p>
3.3.2	MOU to form the basis for cooperative relationships to further the objectives of this Licence and the Act		
	NSW Health MOU	Full compliance	<p>MOU with Director General of NSW Health adequately enhances the cooperative relationship between the two parties and establishes appropriate processes for the management of relevant public health issues. The provisions of the MOU are being implemented to a very high level.</p>



Table 4.1 **Part 3: MOU licence conditions – summary of compliance**

Clause	Requirement	Compliance	Findings
	WAMC MOU	Partial compliance	<p>The WAMC MOU provides the basis for a cooperative relationship that needs to be enhanced by completing a review of the original MOU. The on-going delay to reaching an agreement on the content of an amended MOU is cause for concern. The original MOU established water management principles that were to apply prior to the issue of a Water Management Licence to the SCA. A Water Management Licence was issued on 23 April 2001 and subsequently amended on 11 February 2003. Thus, from April 2001 the MOU needed to be amended to remove obsolete clauses, to add substance and to make commitments to a cooperative relationship between the WAMC and SCA to further the objectives of the Licence and the Act.</p> <p>Agreement was made at the SLG meeting on 21 October 2003 to recommence negotiations of the review of the WAMC MOU. SCA wrote to DIPNR on 22 December 2003 providing a draft MOU and timetable for DIPNR consideration. In a letter dated 31 December 2003 SCA reinforced its concerns about the delay in finalising the MOU. There has been no formal response from DIPNR.</p> <p>The MOU established a Strategic Liaison Group to help progress long term strategic issues of interest to both agencies. However during the audit period, the SLG met only once, on 21 October 2003. It was difficult to see evidence of where the SLG was adding value to the resolution of strategic land use problems and catchment wide water quantity and quality issues that are the responsibility of both agencies.</p> <p>The SCA is negotiating MOUs with the CMAs and has had considerably more success. Two of the three CMAs have signed a MOU with SCA. The CMAs exercise some functions previously undertaken by DLWC.</p>



Table 4.1 Part 3: MOU licence conditions – summary of compliance

Clause	Requirement	Compliance	Findings
	EPA (DEC) MOU	Full compliance	<p>The MOU contains policy statements and structures to facilitate cooperation. The two agencies have developed a Strategic Work Program to address issues of common interest affecting water quality. This Program addresses perceived deficiencies in the MOU and forms the basis of a strong cooperative working relationship. The relationship has subsequently been strengthened with both agencies now responsible to the same CEO.</p> <p>The MOU provides mechanisms for close interaction on regulatory issues and for the development of strategic approaches to regulation.</p> <p>The cooperative working relationship between the two agencies has developed significantly over the past three audit periods. The further development and implementation of the Strategic Work Program, day-to-day compliance activities and other areas of co-operative action should provide significant benefits to the protection of water quality.</p>
3.3.3	Enter into other MOUs at the Direction of the Minister.	No requirement	No direction was made by the Minister for a new MOU.

4.4 Discussion

The tables that detail the SCA's compliance with the specific requirements of the Memoranda of Understanding are presented in Appendix E as follows:

- ▶ Table E1 MOU with the Environment Protection Authority;
- ▶ Table E2 MOU with the Water Administration Ministerial Corporation; and
- ▶ Table E3 MOU with the Director General of NSW Health.

4.5 Other Issues

4.5.1 Amendments to MOUs

Whilst agreement was reached with the WAMC for a review and amendment of the MOU in April 2001, little progress has been made in updating the current WAMC MOU with DIPNR. While the two agencies do retain a strategic relationship, the MOU is no longer an adequate document to fulfil the requirements of the Licence and the Act. It is of concern that over three years have passed and a satisfactory MOU has not been agreed to. An amended MOU between the two agencies should be given a high priority.

The maintenance of the MOU with the EPA is considered to be desirable, notwithstanding that both agencies share a common CEO. The common CEO is more an administrative arrangement than a legislative arrangement and could be changed in the future should a Government wish. The MOU should also be extended to cover SCA's relationship with the NPWS, a component of DEC. NPWS have a significant role in the management and protection of large areas in the Inner and Outer Catchments.

4.6 Factors affecting compliance

SCA applied its best endeavours to review and amend the MOU with the WAMC (DIPNR). However the priority of WAMC was such that an MOU was not completed within the audit period. Hence, the recommendations from previous audits and the need to enhance the relationship between the two parties to work cooperatively to achieve sound water management and water quality outcomes in the catchment areas continue to apply.

It is recognised that some audit findings are affected by actions of the other parties with which the SCA maintains a MOU. For example, the review of the MOU with WAMC has continued to be delayed (see Clause 3.3 in the MOU with WAMC). It is recognised that SCA may not have unilateral control over these matters. SCA could be regarded to have made reasonable efforts to achieve a review and implement a new MOU.

4.7 MOUs outside the Licence requirements

The SCA has entered into MOUs with two of the three Catchment Management Authorities that were recently formed whose areas of responsibility cover the SCA catchments – the Hawkesbury-Nepean Catchment Management Authority and the Southern Rivers Catchment Management Authority. [A small



area of SCA's total catchment that lies upstream of Woronora Dam is located in the area covered by the Sydney Metropolitan CMA.] The CMAs undertake some of the functions previously exercised by DLWC. The principal functions of each CMA include carrying out or funding catchment activities, to develop catchment action plans, to provide loans, grants, subsidies or other financial assistance, to assist landholders to further the objectives of its catchment action plan, to provide educational and training courses, and to exercise any other function relating to natural resource management. The functions of the CMAs are closely aligned to some of the responsibilities of the SCA.

A MOU with each CMA within its area of operations would help ensure that the respective programs of the SCA and CMAs were complementary and working towards similar outcomes. It would also help establish the basis for agreed strategic programs and responsibilities of each agency in achieving outcomes.

SCA provided the Auditor with a copy of the MOU following a formal request and suggested that the MOU was outside the requirements of the Licence. The Auditor acknowledges this position, but in the interests of catchment management and protection of water supplies, IPART needs to be assured that there is a sound working relationship between the CMAs and the SCA.

For this reason, a recommendation has been made to bring the relationship between the SCA and the CMAs under the scope of the Operating Licence.

4.8 Recommendations

4.8.1 Key recommendations

That the SCA:

- R4.1 Reports, and is audited on, its performance under the MOU with the newly created Catchment Management Authorities.
- R4.2 Proposes to IPART that the MOUs with the Catchment Management Authorities be a requirement of the new Operating Licence to be applied after 2005.
- R4.3 Completes the review of, and renews, the MOU with WAMC (DIPNR) to incorporate recommendations identified in previous audits and to enhance the cooperative relationship between the two agencies.

4.8.2 Secondary recommendations

That the SCA:

- R4.4 Reports on the Strategic Work Programs developed between the SCA and the regulatory agencies in its Annual Report.
- R4.5 Proposes to IPART that the Licence requirement for a MOU with the former EPA be amended to require a MOU with DEC that also encompasses the NPWS relationship.

5. Customer, complaints and consultative committees

5.1 Summary of findings

Bulk Water Supply Agreement

SCA received **Full compliance** for clauses under the Bulk Water Supply Agreement with Sydney Water. The Bulk Water Supply Agreement (BWSA) between Sydney Water Corporation (Sydney Water) and Sydney Catchment Authority (SCA) has been agreed by both parties and reported in previous audits. Amendments to the agreement had been made and the amended agreement signed, on 21 August 2002, and was reported in a previous audit. The current agreement continues to be valid until 31 December 2005. Sydney Water and the SCA continue to hold regular strategic operational interface meetings to discuss and manage the relationship and strategic operational issues related to the BWSA.

Agreements with Other Customers

SCA was assessed as **High compliance** for having agreements with other customers. As was reported last year (2002/03) all regular retail customers have signed agreements. Some customer agreements expired during the year and the SCA has a program of renewing these agreements as required. However, signed agreements are still outstanding with the two bulk customers, Wingecarribee and Shoalhaven Councils.

As was the case last year, there are a further eight potential customers who had not signed agreements by the end of the audit period because their customer status remained undetermined (whether they were a customer of the SCA or regulated by the Department of Infrastructure, Planning and Natural Resources (DIPNR)). Legal advice had been obtained by the SCA about the definition of a "customer" of SCA with regard to those drawing water from SCA facilities. Letters have been sighted between the SCA (the SCA indicated that it sent the sighted undated letter on 29 June 2004) and DIPNR (dated July 2004) that seek to clarify the status of these customers. While the SCA claims that the issue is finalised, DIPNR's comments show the matter remains unresolved at this stage. Both these issues were identified in the previous two audits.

Customer Complaints

As has been the case in previous audit periods, the SCA's performance under the complaint handling clauses was mixed, with rankings from **Low compliance to Full compliance**. The SCA did not provide, in a timely fashion, the details of community complaints falling outside the four specific categories of 5.3.5(a); its indication that it does not include all "expressions of dissatisfaction" in its audit reporting; the inconsistencies between its complaints report and the results of the auditor's customer survey (all discussed in Section 5.4.2 of this report); and the lack of any significant discussion of problems of a systematic nature arising from the complaints as required under clause 5.3.5(c), have limited the auditor from obtaining a clear understanding of the SCA's method of complaints handling. In addition, the results of the survey of complainants, which was conducted late in the audit process, suggests a concern with SCA's performance in certain aspects of the complaints process, which are classified in AS4269-1995 as essential elements of effective complaints handling (also discussed in Section 5.4.2).

Consultative Committees

The SCA has been rated from **Partial compliance** to **Full compliance** depending upon the requirement for consultative committees. While the Consultative Committees had been established previously, they have been under review. During the audit period three committees existed. These were:

- ▶ The Local Government Reference Panel (LGRP);
- ▶ The Regional Consultative Committee (RCC); and
- ▶ The Expert Reference Panel (ERP).

While the LGRP and the RCC met during the audit period, the ERP did not meet and was formally dissolved by the Board of the SCA at its 16 July 2004 meeting (outside of the audit period).

The review of the consultative committees resulted in the restructuring of the RCC committee. As part of the review, the SCA also obtained advice on how it should access scientific expertise. As a result the SCA decided to dissolve the ERP and appoint ad hoc scientific committees around specific issues.

While most requirements for consultative committees have been met over time, a key issue has been the lack of involvement of all the relevant stakeholder groups identified in the Licence. Public health experts were originally represented on the Expert Reference Panel. However, this latter group had not been convened during the last two audit periods.

The SCA maintains that the public health expertise is represented through the Joint Operational Group (JOG) and the Strategic Liaison Group (SLG), which is made up of representatives from the SCA, NSW Department of Health and Sydney Water. While it is correct that public health expertise and advice is obtained through these committees, these committees are not established and constituted according to section 5.4 of the Operating Licence. Therefore, either the public health expertise needs to be appointed to these committees in a way, which is consistent with section 5.4 of the Licence, or these committees themselves need to be constituted to comply with section 5.4 of the Licence. Primarily, this would require the development of a committee charter, the appointment of the public health experts for a two year term with a maximum two terms and the publication of the committee charter on the SCA website.

While the Licence specifies the interest groups, who need to be represented on the consultative committees, it specifically mentions two areas of “expertise”, these being public health and catchment management experts. While some individuals on the RCC have been listed as representing “catchment management”, it is unclear whether they are “experts”. To fully comply with this section of the Licence, the SCA needs to appoint recognised “experts” in the areas of catchment management and public health.

5.2 Summary of requirements

The objective of Part 5 of the Licence is to ensure that the SCA maintains a focus on the needs of its customers while being mindful of the requirements and expectations of its other stakeholders throughout the community. To meet the requirements of Part 5 of the Licence, the SCA is to:



- ▶ Enter into an agreement with Sydney Water about the supply of bulk water and the associated review process;
- ▶ Use its best endeavours to enter into agreements with 'Other Customers' about the supply of bulk water;
- ▶ Develop a customer and community complaint handling procedure with appropriate communication and reporting mechanisms including the identification of any problems of a systematic nature; and
- ▶ Develop Consultative Committees to obtain input from the various stakeholder groups relevant to the successful performance of the SCA.



5.3 Details of compliance

Table 5.1 Customers – summary of compliance

Clause	Requirement	Compliance	Findings
5.1	Provide water to Sydney Water Corporation under a Bulk Water Supply Agreement		
5.1.1	Acknowledgment that a Bulk Water Supply Agreement (BWSA) exists between Sydney Water Corporation and Sydney Catchment Authority	Full compliance	The first BWSA commenced on 15 September 1999 with a term expiring on 30 June 2004. Amendments to the Agreement were approved by the Minister on 29 July 2002, and signed on 21 August 2002 by the then Managing Director of Sydney Water and the CE of the SCA. The terms of this agreement expire on 31 December 2005 and will be reviewed in association with the end of term review of the SCA's Licence. The terms as required under the Licence have been included in the Agreement.
5.1.2	The terms of the agreement must be reviewed	Full compliance	The SCA participated in a review process, with Sydney Water, in the 2001-02 audit period resulting in an amended Agreement. The amendments to the Agreement were documented in an attachment to the letter from IPART to the Minister on 24 June 2002. The amended BWSA was approved by the Minister on 29 July 2002 and signed by senior executives of Sydney Water and the SCA on 21 August 2002. Since then the SCA indicates that there have been no changes to the BWSA although both organisations participate in regular operational meetings to address issues relating to the BWSA.
5.1.3	Following the review the SCA must use its best endeavours to obtain agreement to amendments from Sydney Water Corporation	Full compliance	Amendments were agreed to by Sydney Water as indicated by its Managing Director signing the Agreement in the previous audit period. The SCA indicates that no changes have been made to the BWSA in this audit period.
5.2	Agreements with other Customers		
5.2.1	The SCA must use its best endeavours to reach agreement with other customers on the supply of bulk water	High compliance	<p>As reported last year, all retail customers (identified as SCA customers) have signed agreements with the SCA. Evidence was also sighted of SCA's efforts to renew licences that have expired during the audit period. However, the two agreements that were outstanding last year remain unsigned with the two local Councils (Wingecarribee and Shoalhaven) that receive bulk water from the SCA.</p> <p>While the impasse continues with the two Councils, the SCA believes some progress has been made. Although the SCA provided evidence of its ongoing negotiation, there is a need for further effort to achieve a positive outcome, including if necessary, raising the matter higher within</p>



Table 5.1 Customers – summary of compliance

Clause	Requirement	Compliance	Findings
			<p>Government. It is acknowledged that the clause only requires the SCA to use its “best endeavours”. However, it is important that the SCA demonstrates an increased effort each year to resolve this impasse. While the SCA indicates that “it is not considered necessary at this stage to raise the matter higher within Government as the SCA has a good working relationship with both councils and is continuing to use its best endeavours to reach agreement”, the auditor is concerned that the intended outcome of this clause still has not been achieved after several years of assurances from the SCA.</p> <p>There were also eight other properties that have been drawing water from the SCA area and whose legal status was unclear as to whether they were SCA customers or the responsibility of the Department of Infrastructure, Planning and Natural Resources (DIPNR). During the current audit period, legal advice had been obtained by the SCA about the definition of a customer with regard to those drawing water from SCA facilities. An undated letter sent from the SCA to DIPNR (received on 6 July 2004, that is, outside the audit period) was sighted, together with a response from DIPNR. It would appear that the matter should be resolved in the next audit period, with six of the customers to fall in the province of DIPNR while the remaining two are to be considered customers of the SCA. However, at this stage the matter does not appear finalised, given DIPNR’s comment in its letter dated 9 July 2004 that the SCA has not clarified the role of ‘Special Area’ boundaries and the request to SCA to “advise how you would like to bring this matter to conclusion”. The SCA has indicated that work has been done in this area and is continuing.</p>
5.3	Customer Complaints		
5.3.1	Establish a complaints handling procedure for receiving complaints from Customers and the community relating to any of its functions	Full compliance	The SCA has continued with its complaint handling policy and procedure. The policy document has not been revised since the last audit.



Table 5.1 Customers – summary of compliance

Clause	Requirement	Compliance	Findings
5.3.2	Procedure to be based upon AS4269 -1995	Partial compliance	<p>AS4269-1995 defines a complaint as “<i>any expression of dissatisfaction with a product or service offered or provided</i>” and this is the definition used by the SCA in its policy document (that is, “<i>any expression of dissatisfaction received by the Sydney Catchment Authority</i>”). In previous years, SCA’s adherence to this standard was tested through an assessment of complainant’s perceptions concerning the performance of the system. SCA initially only provided one complaint to the auditor due to the SCA’s interpretation of advice from IPART that only complaints under the four specific categories under 5.3.5(a) were relevant, i.e. water quality; continuity of water supply; water pressure and billing. The auditor considered that this interpretation did not acknowledge the requirements of clause 5.3.1, which refers to complaints from customers and the community relating to <u>any</u> of its functions. Late in the audit process, SCA provided the auditor with contact details for 2003-04 complainants and those carried forward from 2002-03. The survey conducted with a sample of these complainants indicated that the survey complainants were generally positive about the simplicity of complaint lodgement; the courtesy of staff; the lack of financial cost and the fairness of the process. However, there was a relatively high level of negativity about the ability of staff to resolve complaints. This was associated with comparatively poor assessments of the commitment of staff to resolving the complaint; the proposal of remedies by staff, and the speed of the process (see Section 5.4.2 of this report).</p> <p>The auditor is left with a series of concerns about the complaints handling process of the SCA. As such, the auditor cannot justify awarding a full or high level of compliance rating for 5.3.2 and suggests that the SCA seek to improve the effectiveness of its complaints handling. The auditor also repeats the recommendation from the previous year that the SCA provides access, in a timely manner, to all complaints received by the organisation in future audit periods.</p>



Table 5.1 Customers – summary of compliance

Clause	Requirement	Compliance	Findings
5.3.3	Provision of information to the community about the complaint handling procedure	High compliance	<p>As in the two previous audits, the auditor was provided with the pamphlet prepared by the SCA titled, <i>'How to make a complaint or offer a compliment'</i>. SCA staff indicated that this pamphlet was sent with an accompanying letter and a reply paid envelope to customers in June 2004. Copies of these letters were provided to the auditor but were undated.</p> <p>Information about the complaint handling process is also available on the SCA website and in the Annual Report. SCA staff indicated that the information was also distributed through brochures in public displays.</p> <p>In a previous audit period the SCA had made a significantly greater effort to contact a wide range of stakeholders including grant applicants, consultative committees, expert panel members, tenants and creditors to inform them about the SCA's complaint handling procedure. Given this clause refers to both customers and the community, a similar effort to inform the community about the complaint handling procedure would need to be implemented to achieve a full compliance rating as was provided in 2001/2002.</p>
5.3.4	Provision of information about the complaint handling procedure to customers once per year and posted on the SCA's website	Full compliance	<p>As mentioned above, the SCA informed the auditor that letters had been sent to its customers with the associated brochure. The auditor was advised that this letter was sent at the end of June 2004. The auditor has also checked the website to verify that the policies and procedures are publicly available.</p>
5.3.5	Provide details and report about complaints made to the SCA	Low compliance	<p>As discussed in Section 5.4.2 of this report, the SCA's refusal to provide details in a timely fashion about community complaints falling outside the four specific categories of 5.3.5(a); its indication that it does not include <u>all</u> expressions of dissatisfaction in its audit reporting; and the inconsistencies between its complaints report and the results of auditor's customer survey, have prevented the auditor from obtaining a clear understanding of the SCA's method of complaints handling and the reliability of its reports. Furthermore, even though the SCA provided contact details for 17 complainants from the 2003-04 period and for 7 carried forward from 2002-03 late in the audit process, this listing did not include any significant discussion of problems of a systematic nature arising from the complaints as required under clause 5.3.5(c).</p>
5.4	Consultative Committees		



Table 5.1 Customers – summary of compliance

Clause	Requirement	Compliance	Findings
5.4.1	Establish and regularly consult with Consultative Committees	High compliance	<p>The Licence requires that the SCA establishes these committees to enable community involvement in issues relevant to the performance of the Authority's obligations under this Licence. A number of Committees have been established. However, over the last 12 months, the SCA has been restructuring its Consultative Committees. SCA now operate one Regional Consultative Committee (RCC) and the Local Government Reference Panel (LGRP).</p> <p>The Expert Reference Panel did not meet during the audit period and was formally dissolved by the Board of the SCA at its 16 July 2004 meeting (outside the audit period). The SCA indicates that it has strong ties to the external scientific community and that the Board has resolved to access independent scientific advice from a range of other sources.</p> <p>The auditor is aware that at least one member of the ERP has not been advised of the Panel's dissolution by the SCA.</p> <p>In terms of public health issues, the SCA has indicated there is extensive consultation as part of the Joint Operational Group and Strategic Liaison Group under the MoU with NSW Health. See Section 4 of this report. SCA also claims to hold wide ad-hoc consultation with other external bodies on public health issues.</p>
5.4.2	The first Committee to be established within 3 months of the commencement date (19 April 2000)	No requirement	This clause was met during the 2000-01 audit period.
5.4.3	Members to be appointed consistent with the Licence	High compliance	While the majority of membership categories listed in the Licence are reflected across the various Consultative Committees, with the decision to dissolve the ERP the category of public health expert is not represented on the other Committees. There is also some doubt about "catchment management experts". While the SCA indicates that it obtains public health advice through other mechanisms (specifically the regular committee meetings with Sydney Water and the NSW Department of Health as part of the MoU), the Licence requires that such expertise needs to be represented on its Consultative Committees. One way to resolve this issue is to have the Committee that involves public health experts comply with the requirements of this section of the Operating Licence. This does not appear to have taken place.



Table 5.1 Customers – summary of compliance

Clause	Requirement	Compliance	Findings
5.4.4	Required groups to be members of the Committee	Partial compliance	Comments as above in clause 5.4.3. The ERP did not meet during the year and was not officially dissolved by the Board until after the audit period. The SCA source gets health advice through these other committees (under the MOU), however these other committees are not structured to comply with Part 5.4 of the Licence.
5.4.5	The SCA may direct members to serve on various Consultative Committees	No requirement	There was no evidence that the clause has been required or undertaken.
5.4.6	Term of Committee membership, 2+2 years	Full compliance	<p>The term of Committee membership is stipulated in the Charter of the Committees. Willing members of various Committees have been reappointed for their next term. However, the Licence specifies that no members can be reappointed for more than one consecutive term.</p> <p>There have been some changes in membership over the audit period with the rationalisation of the RCC and the local government election resulting in changes to the LGRP, however these changes are in accord with the Licence.</p>
5.4.7	Replacement of Committee member	Full compliance	<p>The replacement of Committee members is stipulated in the Charter of the Committees. As mentioned last year, while there has been no conflict to date there is the potential for conflict in requirements between this clause and the previous clause (5.4.6) on the Term of Committee membership. Specifically, if a local Council nominates a representative to the Committee it may prefer that this member stay on the Committee for more than one consecutive term.</p> <p>With the local government election there has been changes in membership due to some members not being re-elected to Council. The new membership of the LGRP and the RCC, together with a sample of appointment letters, have been noted by the auditor.</p>
5.4.8	Development of a Consultative Committee Charter	Full compliance	A new Terms of Reference – to replace the Charter – for the Regional Consultative Committee was prepared in December 2003.
5.4.9	Each Committee must have a Charter	Full compliance.	The Local Government Reference Panel and Regional Consultative Committee both have current Charters / Terms of Reference (dated May 2003 and December 2003).



Table 5.1 Customers – summary of compliance

Clause	Requirement	Compliance	Findings
5.4.10	Provision of information to the Committee by the SCA	Partial compliance	<p>A small number of Committee members have been contacted from the LGRP and the RCC and given the opportunity to comment on the provision of information. While only a few members took the opportunity to make comments, there continues to be a view among members that the Committees have been developed to comply with the Licence rather than as a genuine attempt to involve the community in the SCA decision making process. While information is provided at the Committee meetings, the community members perceive the information as providing the justification for decisions made by the SCA rather than the Consultative Committees having a role to provide feedback and guide the decisions of the SCA.</p> <p>Furthermore, one Committee member who had also served on the ERP, had requested the minutes of the last meeting of the ERP and it had not been provided. The member was unaware that the ERP had been dissolved.</p>
5.4.11	A copy of each Charter must be posted on the SCA's website and at offices	Full compliance	<p>Charters for the Local Government Reference Panel and the Expert Reference Panel are posted on the website. The SCA has posted the Regional Consultative Committee's Terms of Reference rather than a Charter. The SCA has also indicated that copies of these documents are available at all main office fronts.</p>
5.4.12	Report on the effectiveness of the Committees and compliance with their Charters	No requirement	<p>As mentioned in the previous audit reports, this requirement relates to the end of term review and as such there is no requirement for this audit period.</p> <p>While the SCA has undertaken a review of its consultative committees, restructured the Community Committees and dissolved the ERP, it would appear worthwhile that, as part of the end of term review, an independent assessment be undertaken to assess the role and value of the consultative framework. Most critically, it should assess how the SCA and its consultative mechanisms will effectively integrate with the consultative mechanisms, which will be established by the Catchment Management Authorities.</p>

5.4 Discussion

5.4.1 Agreements with customers

To ensure liaison between SCA and Sydney Water on operational matters, the Strategic Operational Interface Committee (SOIC) continues to meet every six weeks to consider issues relevant to the two organisations. Copies of selected minutes of these meetings were sighted by the auditor. The auditor also contacted Sydney Water to obtain comment on its ongoing relationship with the SCA and obtained its views.

To further assess compliance with its Licence, 38 customers were randomly selected from a list provided by the SCA of those with signed agreements (21 with customers who had renewed their licence and 17 with non-renewing customers) and a brief survey was conducted to obtain their perceptions about the SCA and their relationship with the organisation, (see Table 5.2). NB: The list from the SCA contained a total of 60 contacts which the SCA indicated represented all 2004 customers other than those on short term arrangements.

Table 5.2 Summary of customer's responses to auditor's questionnaire

Item	Customers responding "Yes"		
	2001/02	2002/03	2003/04
Number of respondents	25	26	38
Have you or your company had any need to contact the SCA over the last 12 months?	52.0%	44.0%	42.1%
Have you or your company negotiated or renegotiated an agreement with the SCA on the supply of water to your property? **	54.2%	45.8%	18.4%
Have you or your company signed an agreement with the SCA on the supply of water to your property? **	56.5%	80.0%	78.9%
Have you or your company experienced any customer service problems in relation to the SCA in the last 12 months?	24.0%	28.0%	15.8%
Do you believe the SCA could improve the services it provides to you as a customer?	24.0%	40.0%	15.8%
Have you received any material about the SCA over the last 12 months?	84.0%	68.0%	81.6%
Are there any other issues relating to customer service you believe should be raised with the SCA as part of the audit of its licence?	12.5%	12.0%	2.6%

** The question regarding the negotiation / renegotiation of an agreement concerns the process of agreement building between the SCA and its customers while the question regarding a signed agreement relates to whether a signed-off agreement exists. Some customers may be in the process of negotiation and not yet have a signed agreement.

There was a decline in the level of customer service problems as compared with previous years. In the current survey, a minority of customers (15.8%) had experienced customer service problems during the last 12 month period while the same proportion believed that the SCA could improve its services. The most common customer service problem identified related to water supply interruptions while a major theme for service improvement was better management of canal closures. While the auditor acknowledges that the agreements between the SCA and customers do not guarantee *"the continuity of*

water in the Authority's works", it does indicate that the SCA *"shall use its best endeavours to inform the Licensee of reactive and planned interruptions to the supply of water"*.

There was a decline in the proportion of customers who stated that they had negotiated or renegotiated an agreement with the SCA for the supply of water (18.4% relative to 45.8% in the previous period). This is a concerning result given that 21 of the 38 surveyed customers (representing 55%) had renewed their licence and suggests that the SCA's renewal process may not be clear from a customer perspective.

The Auditor noted the comment from one customer who claimed: *"All we want is to have water provided to allow us to draw - we want a consistent supply. I was threatened with the cessation of my license unless I signed the agreement. Management is too tough on clients"*.

5.4.2 Complaints

During the period of the 2002-03 audit, the SCA indicated that the only complaints data that could be audited were those relating to complaints received from customers who were receiving bulk water and that no complaints received from the general community should be reported for auditing purposes. IPART advised the SCA on 7 May 2004 that Clause 5.3.5 required the SCA to report on complaints received from the *"wider community as well as customers"*. However, in discussions with the auditor, the SCA indicated that it had interpreted this advice to refer only to complaints that under Clause 5.3.5(a) are classified into the four specific categories, i.e. water quality; continuity of water supply; water pressure and billing.

The SCA reported that for 2003-04 there are no complaints in these categories but provided summaries of 17 community complaints that fall outside the above categories. However, with the exception of one complaint from a customer, SCA did not initially provide contact details regarding the other complainants so that the auditor could check the process of handling the complaint. SCA suggested that as these complaints were outside the reporting requirements of Clause 5.3.5(a), it does not have to provide this information. SCA also suggested that Clause 5.3.5(b) and (c) follow on from (a) and should, therefore, only refer to complaints reported in (a).

SCA initially provided the auditor with contact details for one customer only (no members of the community) to validate the complaint handling process. In discussions with the SCA, the auditor was also informed that if the SCA received a complaint on certain issues, such as the regulatory function of the SCA, this is not reported to the auditor. For example, a complaint received on some aspect of a requirement for a development approval, which may be an expression of *"dissatisfaction"* (the SCA's definition of a complaint and in accord with the standard), would not be recorded as a complaint but would be regarded as an appeal. This has the affect of further limiting the complaints that are reported by the SCA.

A number of factors have raised doubts about the accuracy of the SCA's reporting of complaints.

- The auditor was not initially able to conduct a complaints survey as only one contact had been provided by the SCA. However, this customer was randomly selected in the customer survey and their comments indicated that they remained unsatisfied with the progress of the complaint. This is inconsistent with the comment made by the SCA in its report that *"with the agreement of the complainant, the complaint was closed on 30/01/04. The complainant indicated that he was satisfied with the complaint process and commented that he preferred a quicker solution"*.

- During the process of the customer survey, respondents were asked whether they had experienced any customer service problems in relation to the SCA in the last 12 months; those who answered affirmatively were asked whether they had complained to the SCA about this problem. Three customers indicated they had complained to the SCA about their problems in the last 12 months while one further customer stated they had complained "*but not officially*". Given that the SCA indicated it had received only one customer complaint during the audit period, there is some concern about the inconsistency between the reported results and the outcome of the audit survey. (Although, due to the possible faulty recollection of respondents, it is acknowledged that complaints identified in the above survey process may relate to matters outside the audit period). However, there is also some concern about whether staff correctly record complaints: the SCA indicated in discussions with the auditor that all staff, including field officers, had been trained to record all complaints.

Late in the audit process, the SCA provided contact details for 17 complainants from the 2003-04 period and for 7 carried forward from 2002-03. The auditor attempted to contact all of these parties for a brief survey to assess their perceptions about the SCA's complaints handling process, (see Table 5.3). A total of 13 complete interviews were collected (six potential respondents could not be contacted on the telephone numbers provided by the SCA, four parties refused to take part in the survey and one contact was a repeat, that is, SCA complaint numbers 4282 and 4283 were received from the same person on the same day).

Table 5.3 Summary of complainant's responses to auditor's questionnaire

Statement	Agree / Strongly agree	Disagree / Strongly disagree	Don't know
The way the complaint was handled indicated that SCA staff were committed to resolving the complaint	53.8%	46.2%	-
The way the complaint was handled was fair	76.9%	23.1%	-
The staff member you dealt with was able to make the necessary decisions to resolve your complaint	46.2%	53.8%	-
It was simple to lodge a complaint with the SCA	92.3%	7.7%	-
Assistance was available from SCA staff to lodge the complaint	61.5%	30.8%	7.7%
The complaint was dealt with quickly	61.5%	38.5%	-
The complaint was dealt with courteously	92.3%	7.7%	-
There were no financial charges on lodging a complaint	92.3%		7.7%
Remedies to resolve the complaint were proposed by the SCA	53.8%	38.5%	7.7%
Satisfaction rating	Very satisfied / Satisfied	Very dissatisfied / Dissatisfied	Neither satisfied nor dissatisfied
Overall satisfaction with the way complaint was <u>handled</u>	53.8%	30.8%	15.4%

The survey responses indicate that the survey complainants were generally positive about: the simplicity of complaint lodgement; the courtesy of staff; and the lack of financial cost and the fairness of the

process. However, there was a relatively high level of negativity about the ability of staff to resolve the complaint: more than half of the respondents disagreed that the SCA staff member they dealt with was able to make the necessary decisions to resolve the complaint. This was associated with comparatively poor assessments of the commitment of staff to resolve the complaint as well as the proposal of remedies by staff. In addition, more than one-third of surveyed complainants also expressed dissatisfaction with the speed of the process.

The auditor is left with a series of concerns about the complaints handling process of the SCA. The apparent reluctance of the SCA to be open in its reporting leads to concerns that the present process of reporting to the auditor is not transparent and could under-report the broad range of complaints actually received by the SCA. Furthermore, the results of the survey, which was eventually conducted, suggest that some areas of the process, which are classified in AS4269-1995 as essential elements of effective complaints handling – particularly resources and commitment – are not being performed in a consistently satisfactory manner. The lack of any significant discussion of problems of a systematic nature arising from the complaints as required under clause 5.3.5(c) is an additional concern. As such, the auditor cannot justify awarding a full or high level of compliance rating for clauses 5.3.2 and 5.3.5 and suggests that the SCA seek to improve the effectiveness of its complaints handling. The auditor also repeats the recommendation from the previous year, that the SCA provides access in a timely manner to all complaints received by the organisation.

5.4.3 Consultative Committees

While the Consultative Committees had been established previously, the Committees have been under review. During the audit period three committees existed. These were:

- The Local Government Reference Panel (LGRP)
- The Regional Consultative Committee (RCC)
- The Expert Reference Panel (ERP)

While the LGRP and the RCC met during the audit period, the ERP did not meet and was formally dissolved by the Board of the SCA at its 16 July 2004 meeting (outside of the audit period). The LGRP has met five times during the period.

The Licence specifies a number of groups, which need to be represented on the Consultative Committees. As well as a range of groups it also specifies two areas of “expertise”, these being public health experts and catchment management experts. In previous audits it was assumed that these experts would be accessed through the ERP, however with the dissolution of the ERP, these experts need to be formally recognised for the SCA to be able to comply with the Licence. While some individuals on the RCC have been listed as representing “catchment management” it is unclear whether they are “experts”. To fully comply with the Licence, the SCA needs to appoint the experts to a Committee, which complies with the Licence.

The formation of the Catchment Management Authorities under the Catchment Management Authorities Act 2003 will require close liaison between authorities to ensure that a whole of government approach is applied to catchment protection and community consultation throughout the catchment.

Some members of the Consultative Committee indicated that they felt it was too early for them to offer a view about the co-operation and integration between the CMAs and the SCA. The CMAs were announced in the last 6 months of this audit period and are still developing their structures and staffing.

Furthermore there is nothing presently in the SCA's Licence that requires integration between the SCA and the CMAs. The CMAs are charged under legislation with the development of a Catchment Action Plan (CAP), Investment Strategy and Annual Implementation Plan, which is to guide natural resource management throughout the catchment. These CAPs will be required to be consistent with the standards and targets determined by the Natural Resources Commission.

To avoid duplication it appears that a challenge exists to ensure the integration of the plans and programs of the various Authorities and to ensure that the community perceives a "whole of government" approach, particularly through the various community consultation mechanisms. This will need to be addressed in the end of term licence review.

It would appear that the CMA's will be a source of expertise for the SCA in catchment management. Given the CMA's responsibility to develop the CAP and the apparent intention by the NSW Government to require a linkage between the CAP and other planning instruments such as Local Environment Plans (LEP's) and other regional plans it would appear necessary for these changes to be considered and incorporated in the review of SCA's Operating Licence. Each of the CMA's with an interest in the SCA's area of operation should be specifically asked to comment on the SCA's Operating Licence as part of the review process.

The auditor contacted a sample of members of the RCC and the LGRP. The respondents expressed dissatisfaction with the authenticity of consultation with the Committee. They claimed that there was no genuine two-way flow of information between the SCA and the Committee but, rather, that the SCA informed the Committee, typically after an event had occurred or a decision had been taken, but did not proactively consult with the members. As such, those members expressed some doubt as to whether the operation of the RCC properly enabled community involvement in issues relevant to SCA's obligations under the License.

5.5 Factors affecting compliance

5.5.1 Customers

The SCA have signed agreements with most of the outstanding groups drawing water from the SCA. While the SCA obtained a full compliance rating in 2001/02, there were still two outstanding issues from the 2001/02 and the 2002/03 audits that have not been addressed. Specifically, the signing of agreements with the two Councils and the resolution (in the audit period) of whether a small group of "customers" are the responsibility of the SCA or DIPNR

Given these issues were outstanding at the end of 2001/02 and 2002/03 and remain to be addressed, they will need to be resolved prior to the SCA improving its compliance rating.

5.5.2 Complaints

The SCA's refusal to initially provide – in a timely fashion and contrary to Clause 10.5 of its Licence – complaint details (including contact details) about: community complaints falling outside the four specific categories of Clause 5.3.5(a); its indication that it does not include all expressions of dissatisfaction in its audit reporting; the inconsistencies between its complaints report and the results of the auditor's customer survey (all discussed in Section 5.4.2 of this report); and the lack of any significant discussion of problems of a systematic nature arising from the complaints as required under Clause 5.3.5(c), have prevented the auditor from obtaining a clear understanding of the SCA's method of complaints handling.

Furthermore, the results of the survey of complainants, which was conducted late in the audit process, suggest the need for some concern about SCA's performance in certain aspects of the complaints process, which are classified in AS4269-1995 as essential elements of effective complaints handling (also discussed in Section 5.4.2). The auditor repeats the recommendation from the previous year that to improve compliance performance, the SCA should provide access - in a timely manner - to all complaints made by both the community and customers to the organisation, and that all complaints are recorded in accordance with the Australian Standard AS4269-1995.

5.5.3 Consultative Committees

While the Consultative Committees have been restructured, the key issue affecting compliance has been the way public health expertise has been accessed by the SCA. While there is no doubt that public health expertise is included in the deliberations of the SCA, it is not undertaken in accordance with the Operating Licence's requirements for public involvement and the inclusion of this expertise on Consultative Committees as defined by the Licence. The SCA provided evidence that its inclusion of scientific expertise into SCA decision making, however these were not as required by the Licence. With the dissolution of the Expert Reference Panel, which was established in accord with the Licence, the SCA does not appear to have community involved "experts" in public health or catchment management on committees, which comply with Clause 5.4 of the Licence. Furthermore at least one member of the Expert Reference Panel claimed that he was unaware that it had been dissolved and was still waiting to receive copies of the minutes of the last meeting, which had occurred some years previously.

5.6 Recommendations

5.6.1 Key recommendations

That the SCA:

- R5.1 Finalise and sign contracts with Wingecarribee and Shoalhaven Councils for the supply of bulk water.
- R5.2 Finalise and sign contracts with the outstanding six customers identified in association with the NSW Department of Infrastructure, Planning and Natural Resources.
- R5.3 Record all complaints made to the organisation regardless of the source of the complaint and report the detail of all these complaints to the Licence Regulator in a timely manner, on an annual basis; (as per the Australian Standard AS4269-1995).

5.6.2 Secondary recommendations

That the SCA:

- R5.4 Include Public health experts and catchment management experts in Consultative Committees, either by appointing such experts to the present Consultative Committees or ensuring the Committees on which they presently serve comply with the Operating Licence.



- R5.5 Review its Community Consultative mechanisms and planning instruments in association with the Catchment Management Authorities to ensure integration and eliminate duplication for natural resource management in the catchment.
- R5.6 That the Licence Regulator specifically request the relevant Catchment Management Authorities to comment on the SCA's Operating Licence as part of the licence review process.

6. Bulk water quality

6.1 Summary of findings

▸ Water quality supplied for water treatment

The Sydney Catchment Authority (SCA) has a well established system for managing bulk water quality. A risk-based approach to the management of water quality is being taken, consistent with recent developments in the water industry for providing assurance that the quality of drinking water will be safe and acceptable. SCA was assessed to be in **Full or High compliance** in regard to the quality of the bulk water supplied for water treatment. There is potential for the quality of the bulk water to deteriorate, for example, with falling dam levels or with drought breaking rains.

▸ Water quality supplied for other uses

High compliance was assessed for water quality supplied for other (than water treatment) uses.

▸ Catchment and System Management

SCA is undertaking a large body of work that has the objective of properly managing the catchments and ensuring the quality of the water meets the required standards. This has been brought together in a *Healthy Catchments Program 2003 – 2007*. SCA was assessed as being in **Full compliance** for catchment and system management and for water quality monitoring and reporting.

▸ Water quality monitoring and reporting

SCA undertakes a program of water quality monitoring in accordance with an Annual Water Quality Monitoring Program that has been developed in consultation with Sydney Water and NSW Health and was assessed as **Full compliance**.

SCA complied with metals and pesticides levels at the inlet to the Water Filtration Plants (WFP) to protect human health.

SCA undertakes routine monitoring of certain aesthetic water quality characteristics of the bulk water supplied to the Water Filtration Plants. The results indicated that some parameters did not comply with the requirements of the Bulk Water Supply Agreement; the most significant of these were exceedences of the numbers of algae in supplies, particularly to the Cascades and Greaves Creek Water Filtration Plants. Sydney Water advised that these exceedences did not cause difficulties with the quality of its supply to customers.

SCA liaises closely with Sydney Water and NSW Health regarding water quality issues. Sydney Water advised that the bulk water quality was acceptable to it and the quality of the treated water supplied to customers by Sydney Water was in accordance with requirements.

In addition to routine monitoring, SCA undertakes a program of pathogen monitoring (particularly *Cryptosporidium* and *Giardia*), and other investigative monitoring. As in previous years, SCA has appointed a Project Manager to ensure that the water quality monitoring program requirements are met. An Annual Water Quality Monitoring Program Report was completed and made available on the web. This Report provides an excellent discussion of water quality in the supplies, relevant

issues and measures that SCA has taken to address these issues.

► **Water quality planning – Risk Management Plan**

In meeting the requirements for the development of a five year Risk Management Plan, SCA has developed a draft Water Quality Risk Management Framework that builds on its previously completed Pollution Source Risk Management Plan, Bulk Raw Water Quality Management Plan, and Environmental Assessment and Site Infrastructure reports which identify pollution sources in the catchments. The development of the Framework, which involved Sydney Water and NSW Health, complements Sydney Water's five year Drinking Water Quality Improvement Plan in achieving an integrated multi-barrier approach to minimising risk to public health from the catchment to customers' taps. The development of the Framework has involved considerable work by SCA, and is an excellent body of work. The Plan identified a large number of high risks to the quality of the bulk water, and SCA has outlined a broad program of existing controls and actions. SCA has now to complete the analysis in conjunction with Sydney Water showing how each of these high risks will be controlled and reduced to an acceptable level with respect to the quality of water supplied to Sydney Water's customers. **Full compliance** was assigned to preparing the Risk Management Plan. SCA has prepared an Incident Management Plan in accordance with the requirements of the Operating Licence and has tested and reviewed the Plan during the period.

6.2 Summary of requirements

The objective of Part 6 of the Operating Licence is to ensure that the quality of the water supplied by Sydney Catchment Authority meets the requirements for use. Two categories of use apply:

- Bulk water supplied to Sydney Water Corporation, Shoalhaven City Council and Wingecarribee Shire Council for treatment by these organisations and supply to their customers for general purposes including drinking; and
- Bulk water supplied to *other customers*, for uses that have to be agreed with the SCA.

To meet the requirements of Part 6, the SCA is expected to undertake the following tasks.

- Supply bulk water to Sydney Water, Shoalhaven City Council and Wingecarribee Shire Council which meets certain health guideline values for substances which may not be removed in their treatment processes (such as pesticides and certain metals).
- Supply bulk water to Sydney Water that has a quality consistent with the capacity of each water treatment facility to meet the applicable treated water quality standards specified in the Bulk Water Supply Agreement.
- Agree on water quality standards with other customers and advise regarding the need for treatment.
- Manage the catchments in accordance with the requirements of the Australian Drinking Water Guidelines.
- Develop and implement a water quality monitoring program that comprises both routine monitoring and investigative monitoring, and provide the results of the routine monitoring to the customers supplied. The water quality monitoring programs must incorporate effective quality assurance and must be agreed with the relevant stakeholders.



- ▶ Develop a database of monitoring results, and prepare a Monitoring Program Report by 30 November each year and place this on the SCA's web site.
- ▶ Prepare a 5 year Risk Management Plan that will identify and assess sources of pollution, and reduce or remove the pollution. In the 2002/2003 audit it was noted that the Plan had been well advanced but was still to be completed. Following that audit, the Minister issued a requirement that the SCA finalise the development of the Risk Management Plan by 1 September 2004 and determine the significance of pollution loads with respect to treated water quality and requirements for control. The Plan is to be reviewed every 2 years, following catchment audits.
- ▶ Prepare an Incident Management Plan to minimise the risk to human health from the Bulk water supplied by the SCA to customers.
- ▶ Meet environmental water quality requirements for any discharges or water releases required under licences issued to the SCA by the DEC or the DIPNR.



6.3 Details of compliance

Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
6.1	Interpretation		
6.1	Definitions: NHMRC/ARMCANZ 1996 Australian Drinking Water Guidelines, health guideline value; water treatment	No requirement	No requirement for the SCA.
6.2	Water supplied for Water Treatment		
6.2(a)	Meet health guideline values in Schedule 4 (for characteristics which may not be removed by subsequent treatment; these include pesticides, selected metals and radiological parameters).	Full compliance	<p>SCA carried out monitoring of the water supplied to customers for treatment, over the audit period, as outlined in the Annual Water Quality Monitoring Program, with pesticides being analysed on a monthly basis over the period, and metals being analysed quarterly or annually. The pesticides include all of those listed in Schedule 4, plus glyphosate and metasulfuron at Wingecarribee WFP. NSW Health had not requested additional pesticides to be added for monitoring.</p> <p>The results of the monitoring indicated that all of the analyses reported for the health related parameters complied with the health-based targets listed in the Australian Drinking Water Guidelines.</p> <p>SCA undertook a Catchment Pesticide Monitoring Program in February – May 2004 involving 75 samples from 24 sites. This showed that most samples were below the limits of detection, and where detections occurred, these were well below the respective guideline values. The detection limits for the analytes were sufficiently low to confirm that the health-related Drinking Water Guideline values for pesticides were met and were generally better than the detection limits specified in the Drinking Water Guidelines. Because these sampling results pertain to raw water (that is, before treatment), and some further reduction can be expected in the drinking water treatment process, the Program provides important additional evidence confirming that pesticides do not pose a concern to Sydney's drinking water supply.</p> <p>SCA advised that it had not had any complaints from customers regarding the quality of the water supplied.</p>



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
6.2(b)	Comply with Bulk Water Supply Agreement (for aesthetic characteristics such as turbidity, colour, hardness, algae).	High compliance	<p>SCA carried out monitoring of the water supplied to Sydney Water for treatment for the characteristics required under the Bulk Water Supply Agreement (BWSA), with sampling and analysis being carried out monthly. The operators of the water filtration plants separately undertake operational monitoring necessary for the proper operation of their treatment plants. The Bulk Water Supply Agreement does not specify monitoring frequency. The SCA's monitoring program specifies monitoring on a monthly basis and this has been agreed by Sydney Water.</p> <p>The results of the monitoring indicated that raw water supplied to the Sydney Water's water filtration plants had a reduced level of compliance with the requirements of the Bulk Water Supply Agreement (BWSA) than that achieved in the previous year (2002/2003). Full compliance was achieved for turbidity, colour, iron and aluminium, and a high level of compliance for temperature and algae. There was a reduced level of compliance for hardness, alkalinity and pH; these latter parameters are related to one another and have a low significance in terms of water treatment. Further information on the results is provided in Section 6.4.2 of this report.</p> <p>In assigning a compliance grade, the auditor has considered:</p> <ul style="list-style-type: none">• Whether, because a high percentage of the combined supplies have been in compliance, a higher grade may therefore be applicable. This is not considered to be the case, because in water supply it is usual to consider water quality issues on a system basis rather than averaging water quality across many systems.• For some supplies the level of non-compliance with the BWSA appears to be more than just a minor failure; however, SWC (the customer potentially most affected) advises that in its view the non-compliances were minor. Because of this, the auditor has assigned a "high" compliance rather than a "partial" compliance. <p>Because non-adherence to the BWSA standards does not appear to cause significant problems, it raises the question as to whether the standards should be changed and the auditor understands that such a review is proposed. Previous advice from SWC suggests that:</p> <ul style="list-style-type: none">• The main requirement of SWC is that SCA should provide the best available quality of water from storages.



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> SWC views the standards as useful indicators and thresholds above which increased scrutiny should apply, rather than as indicators, which if exceeded, indicate immediate concern. <p>As such, it appears that the BWSA standards are useful in focusing SCA on achieving its “best endeavours”. The development of the Risk Management Plan by SCA in conjunction with SWC should result in a better understanding of the bulk water quality requirements, and may result in an improved definition of bulk water quality objectives and indicators such as nutrients.</p>
6.2(c)	Liaise with customers to which SCA supplies bulk water for treatment and agree on strategies for treatment to protect human health	High compliance	<p>SCA liaises with Sydney Water regarding water quality and strategies to protect water quality. SCA and Sydney Water continue to hold bi-monthly Joint Operational Group meetings in conjunction with NSW Health at which wide ranging discussions on water quality issues, activities involving each organisation and requirements for management and improvement of water quality are discussed. The minutes from these meetings indicate excellent liaison between the parties.</p> <p>In addition, SCA and Sydney Water hold regular Strategic Liaison Group meetings that provide a higher-level forum for discussing issues, which include water quality, and for developing appropriate strategies for dealing with these issues. SCA and Sydney Water also hold other interface meetings at which specific issues relating to the bulk water quality supplied by SCA to Sydney Water (that is, at the interface) are discussed.</p> <p>SCA also holds regular meetings with the Shoalhaven and Wingecarribee Councils. Water quality results are sent to these Councils as they become available (refer to Clause 6.6.3). SCA advised that it has been negotiating agreements with these Councils during the period, but these negotiations had not been concluded with agreed strategies for treatment. The negotiations are presently at an impasse.</p> <p>The auditor notes that this is the third year that SCA has not been able to finalise an agreement with these councils. As indicated also under Part 5: Customers, SCA needs to use its “<i>best endeavours</i>”, which have not resolved this long-standing impasse. As noted in the previous audit, resolution of this issue may well require SCA to seek higher-level Government intervention.</p>



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
6.3	Water supplied for other uses		
6.3.1	Best endeavours to reach agreement on water quality standards to apply to water supplied to customers for purposes other than treatment	High compliance	<p>This clause is associated with Clause 5.2, which specifies the need for the SCA to reach agreement with customers on the supply of bulk water. However this clause is more specific in that it relates to the quality of the water supplied. As indicated previously all retail customers (identified as SCA customers) have signed agreements with the SCA. Evidence was also sighted of SCA's efforts to renew licences that have expired during the audit period.</p> <p>Agreements have been sighted and these contain a section which describes the "quality of water" supplied.</p> <p>However, the two agreements that were outstanding in previous years remain unsigned with the two local Councils (Wingecarribee and Shoalhaven) that receive bulk water from the SCA. There is therefore no signed agreement addressing water quality standards to apply to water supplied.</p> <p>As also mentioned in Clause 5.2 there were eight other properties that have been drawing water from the SCA area and whose legal status was unclear as to whether they were SCA customers or the responsibility of the Department of Infrastructure, Planning and Natural Resources (DIPNR). During the current audit period, legal advice had been obtained by the SCA about the definition of a customer with regard to those drawing water from SCA facilities. An undated letter sent from the SCA to DIPNR (received on 6 July 2004, i.e. outside the audit period) was sighted, together with a response from DIPNR. It would appear that the matter should be resolved in the next audit period, with six of the customers to fall in the province of DIPNR while the remaining two are to be considered customers of the SCA. However, at this stage the matter does not appear finalised, given DIPNR's comment in its letter dated 9 July 2004 that the SCA has not clarified the role of 'Special Area' boundaries and the request to SCA to "advise how you would like to bring this matter to conclusion". The SCA has indicated that work has been done in this area and is continuing. The SCA therefore does not have a signed agreement with these two customers, which describes the quality of the water to be supplied.</p>
6.3.2	Advise customers of the potential uses for bulk water and need for treatment if used for human consumption	High compliance	<p>As was noted over previous years, all customers who had signed agreements could be said to have been advised about the potential uses for bulk water and the need for treatment if used for human consumption. The SCA was not given a full compliance rating because of the continuing impasse with the two local councils. As the signed agreement appears to be the only time that</p>



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
			customers are advised of the potential uses for bulk water and the need for treatment, if used for human consumption, it may be appropriate for the SCA to remind customers annually of this information along with information about the complaint handling process. SCA does provide information on the results of water quality monitoring to the Councils as the results become available; this would also be a time at which the Councils could be advised of the need for treatment.
6.4	Catchment and System Management		
6.4	Comply with 1996 Guidelines relating to catchment management and system management of public water supplies	Full compliance	<p>The 1996 Guidelines have the following major requirements regarding catchment management and system management: understand the individual water supply systems and the ways in which water quality can be affected through the system; provide multiple barriers to entry and transmission of contaminants and minimise the risk of contamination to raw water supplies; and monitor to confirm compliance. There are also a number of specific requirements such as controlling particular polluting activities, such as cattle feedlots, and other point sources.</p> <p>The SCA has now prepared a draft <i>Water Quality Risk Management Framework</i> (August 2004), which incorporates the <i>Bulk Raw Water Quality Management Plan</i> (June 2001) and the <i>Pollution Source Risk Management Plan</i> (2000). The <i>Framework</i> is a major work that describes the SCA's overall water quality risk management framework and the various programs and actions already in place to minimise the risks to public health. The <i>Framework</i> provides information that shows that SCA is complying with the requirements of the 1996 Guidelines relating to catchment management and system management of public water supplies. Further discussion on the SCA's systems for catchment management is included under Clauses 6.7, 8.1.1 and Part 7 of this report.</p>
6.5	Review of obligations regarding water quality		
6.5	Licence Review Body to review obligations as part of Mid-term review	No requirement	This has been completed by the Licence Regulator.
6.6	Water quality monitoring and reporting		
6.6.1	Develop and implement a water quality monitoring program that comprises:	Full compliance	Details of the water quality monitoring program are included in the SCA document " <i>Water Quality Monitoring Program, July 2002 to December 2004</i> ". This Program remains current for



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
	(a) routine monitoring for compliance with clause 6.2 (b) targeted, investigative and event-based monitoring to better define the occurrence of particular characteristics and contaminants in water		<p>the audit period.</p> <p>The Program was reviewed in previous audits and provides information on: water quality standards; monitoring and reporting requirements; routine monitoring programs, targeted, investigative and event-based monitoring; databases; reporting requirements; and assessment of performance. The Program proposed for the forthcoming years is of a high standard and has been endorsed by NSW Health. The Department of Environment and Conservation (DEC) advised the auditor that it defers to NSW Health with respect to monitoring under this clause, but notes that DEC is not aware of any limitations or lack of compliance. DIPNR noted that it provided detailed comments to SCA during the development of the <i>Water Quality Monitoring Program 2002 – 2004</i>, and endorsed the <i>Program</i> in a letter dated 29 May 2002. DIPNR advises that it considers SCA has complied with the requirements of the Licence, but considers that the Licence should include the requirement that DIPNR and other government agencies verify proper implementation of the water quality monitoring program through assessment of SCA's Annual Monitoring Program. Sydney Water advised the auditor that it is satisfied with SCA's performance of water quality monitoring and reporting.</p> <p>This program includes routine monitoring for compliance with Clause 6.2 and targeted, investigative and event-based monitoring to better define the occurrence of particular characteristics and contaminants in water.</p> <p>SCA advises that it is reviewing the water quality monitoring program for the period following December 2004, and it will be important for the next audit to confirm that this has been completed. It can be expected that the program will consider any changes that may be made to the Operating Licence, the requirements for monitoring that arise from actions under the <i>Water Quality Risk Management Framework</i>, and the observations of the Expert Panel on Water Quality. As noted in the previous audit, "<i>Monitoring has largely focussed on pathogens (including viability and genotype), reflecting the main area of concern following the 1998 Cryptosporidium event and the program should be reviewed to ensure an adequate balance between pathogens, nutrients, and disinfection by-products (DBP) precursors.</i>"</p>
6.6.2	Monitoring Plan to include monitoring: (a) against health guideline values (b) aesthetic characteristics under Clause 6.2(b)	Full compliance	<p>The <i>Water Quality Monitoring Program 2002 – 2004</i> includes monitoring for the nominated parameters for health guidelines and aesthetic characteristics. NSW Health was involved in the development of the Program, and has not nominated additional parameters.</p> <p>SCA compares the results of the monitoring program (outlined in Clause 6.6.1) with:</p>



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
	(c) other characteristics nominated by NSW Health		<ul style="list-style-type: none"> ▶ Australian Drinking Water Guidelines health related guidelines (in case of Clause 6.2(a)); and ▶ Targets related to the aesthetic quality and the performance of WFPs as nominated in Clause 6.2(b).
6.6.2	Monitoring Plan to include monitoring: (d) with effective QA	Full compliance	<p>As noted in previous audits, the quality assurance program includes a level of detailed auditing of laboratories that is beyond the practices of other Australian water authorities.</p> <p>An outline of the QA Program, including the use of independent experts, was included in the 2002/2003 audit, and is still current.</p> <p>It was recommended in the 2001/2002 audit that the Project Manager include a reporting item on the verification of the performance of the laboratories. This recommendation has not been acted upon. The 2002/2003 audit of the Operating Licence included reporting on a detailed review of the laboratory undertaken by the auditor for NSW Health. This had indicated that there were QA/QC programs being undertaken that, as a whole, provided good information on the performance of the laboratory and would be useful to report on. SCA advises the auditor that it is reviewing the previous recommendation and will consider requiring a more direct commentary on performance of the laboratory by the Project Manager.</p>
6.6.2	Monitoring Plan to include monitoring: (e) representative of bulk water	Full compliance	<p>As in the previous year, the monitoring program for Bulk Water involves monthly and quarterly sampling, and this can be expected to provide a reasonably representative characterisation of bulk water in situations where the reservoir is large and well mixed and the measured substance is uniformly distributed throughout the water column (for example, for dissolved substances). Sydney Water advised that the monitoring program meets its requirements.</p> <p>In respect of algae, SCA undertakes frequent inspections during periods when algal blooms are likely and reports to customers on this basis. As noted in previous audits, the SCA also undertakes studies of nutrient loads and advanced investigative studies of algal occurrence in some reservoirs. The auditor concludes that the algal monitoring program meets the Licence requirement.</p> <p>In respect of pesticides, SCA undertakes monitoring in accordance with the requirements of NSW Health. SCA also carried out a <i>Catchment Pesticide Monitoring Program</i> (report dated</p>



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
			July 2004). Further information on this report is noted under Clause 6.2(a) and Section 6.4.2 of this report.
6.6.3	Provide results of routine monitoring as soon as practicable to (a) customers under clause 6.2. (b) NSW Health	Full compliance	<p>SCA provides results of routine monitoring for health related parameters and aesthetic parameters to Sydney Water, Shoalhaven City Council, Wingecarribee Shire Council, NSW Health and DIPNR on a monthly basis, and Cyanobacteria monitoring on a weekly (summer) or monthly (winter) basis. If there are any exceedences, then the customers are duly informed. Any detections of pathogens are advised immediately to the customers.</p> <p>There was a major incident involving a cyanobacterial toxin in December 2003 (Wingecarribee Reservoir and Fitzroy Falls Reservoir), and a review of the communication of results associated with this incident supported the conclusion that the requirements of this clause are being complied with.</p> <p>As noted in the previous audit, a comprehensive set of Bulk Water Supply Protocols has been developed by SCA and Sydney Water. These Protocols specify requirements for transfer of water quality data as it becomes available. SCA has appointed a Project Manager for water quality data acquisition, transfer and reporting, and this includes auditing to ensure that the requirements are being met. SCA has authorised the laboratory to send water quality results electronically as they become available to Sydney Water, and other relevant customers and stakeholders. In the previous audit the laboratory's reporting procedures were reviewed by the auditor, and it was confirmed that the procedures will provide rapid transfer of monitoring results. Sydney Water has advised the auditor that it is satisfied with SCA's water quality reporting.</p> <p>In regard to the provision of routine monitoring results to NSW Health, as previously noted, SCA provides monitoring information as follows: pathogen monitoring six days per week; Cyanobacteria concentrations at locations and during periods when recreational Guidelines have been exceeded; and Schedule 4 analytes when Guideline exceedences have occurred. NSW Health has advised that SCA provides the results of routine monitoring to NSW Health in the format and frequency requested by NSW Health.</p>
6.6.4	Provide investigative monitoring under 6.6.1(b): (a) with effective QA to the satisfaction of NSW Health, EPA (now DEC) and former DLWC (now DIPNR).	Full compliance	<p>The SCA has developed a significant program of investigative monitoring as noted under Clause 6.6.1(b) and this is further outlined in the <i>SCA Water Quality Monitoring Program 2002 - 2004</i>.</p> <p>In regard to QA, a detailed review of the quality assurance procedures adopted for analysis was undertaken in the previous audit, and it was determined that the laboratory has a well developed</p>



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
	(b) with sampling frequencies and locations that produce information to better define the occurrence and factors contributing to water quality, to the satisfaction of NSW Health, EPA (now DEC) and former DLWC (now DIPNR).		<p>QA/QC program. It is concluded that the reported results can be expected to provide an adequate characterisation of bulk water quality for use by SCA's customers. With regard to the sampling frequencies and locations, similar comments apply as for Clause 6.6.2 and it is concluded that the sampling frequencies and locations are adequate. NSW Health, and DEC have confirmed their agreement with the Program. DIPNR has provided detailed comment to SCA on reporting, and has suggested improvements in reporting (refer to Clause 6.6.7).</p> <p>The comments under Clause 6.6.1 are relevant. SCA should, in conjunction with Sydney Water and NSW Health, review the water quality monitoring program in the light of the findings of the Expert Panel issued in the previous audit period, the priorities identified in the <i>Water Quality Risk Management Framework</i> and the sub-catchment rectification plans that will flow from the <i>Framework</i>, and the requirements for characterising the bulk water for treatment. It is noted, for example, that the Expert Panel suggested that the monitoring program could be modified to provide a better balance between the various key water quality characteristics (for example, pathogens, nutrients (as they affect algae), and organics (as they affect DBPs).</p>
6.6.5	Develop and maintain database of monitoring results	Full compliance	SCA stores all of the routine monitoring data obtained in the <i>Water Quality Monitoring Program</i> in a " <i>Water Quality Database</i> ". This includes both routine and targeted, and investigative monitoring results. The laboratory also maintains a primary database of all results.
6.6.6	Prepare Monitoring Program Report by November of each year.	Full compliance	A <i>Water Quality Monitoring Report 2002-2003</i> was prepared and forwarded to the Minister on 28 November 2003 and placed on the SCA website shortly thereafter. SCA advises that it is preparing a <i>Water Quality Monitoring Report</i> for 2003-2004.
6.6.7	<p>The Monitoring Program Report must include the results of routine monitoring and:</p> <p>(a) Summary of monitoring information</p> <p>(b) Description of water quality trends and problems</p> <p>(c) Summary of water quality incidents and action taken to resolve, eliminate or mitigate those incidents or their effect;</p> <p>(d) Steps taken to protect human health.</p>	High compliance	<p>The <i>Water Monitoring Program Report 2002-2003</i> comprises a separate summary report, and a section on Monitoring for the Operating Licence. Details of the monitoring results are included as Appendices; these are on the SCA web site and are not included in hard copy form in the report.</p> <p>The Summary Report includes:</p> <ul style="list-style-type: none"> ■ Helpful background information on the catchments, monitoring program and water quality standards adopted; ■ Key findings, including results of monitoring and summaries of water quality issues and trends by system; and



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
			<p>Information on exceedences of water quality guidelines.</p> <p>The auditor considers that the Report is helpful in providing information to the public on bulk water quality and the results of monitoring and the water quality issues, but can be significantly improved.</p> <p>The Summary Report does not provide:</p> <ul style="list-style-type: none"> Sufficient information to understand the extent of compliance with the requirements of the Operating Licence, and appendices available through the SCA web site must be referred to for this information. As this is key information, the auditor considers that summary information on compliance should be provided in the summary report. A summary of water quality incidents and the actions taken to resolve, eliminate or mitigate those incidents or their effect. The report does provide information on many instances where exceedences occur; however, it is difficult for the reader to judge the significance of these issues. A conclusion as to whether the results can be relied upon. In this regard, the 2001/2002 audit suggested that sufficient information be provided to enable the reader to reach a conclusion regarding the integrity of the data (that is, overall findings of QA work), and a section on this has been included in the 2002-2003 report. However, this section notes that audits were carried out and indicates that there were a number of deficiencies and omissions, but does not reach a conclusion as to how serious these deficiencies were and whether the monitoring results can be relied on. <p>It is concluded that the Water Monitoring Report has omissions and can be improved to better meet all of the requirements of the clause. High rather than Full compliance has been assigned.</p> <p>DIPNR has provided detailed comment to SCA on the <i>Annual Water Quality Monitoring Report 2002-2003</i> regarding further improvements that can be made to the report (letter to SCA dated 16 April 2004). These include, for example, improving the sequence and level of information to allow the reader to better understand the requirements for monitoring, the methods adopted, and showing in a clear and transparent way the extent of compliance that has been achieved with the specific requirements of the Operating Licence.</p> <p>The auditor considers DIPNR's suggestions to be constructive and will improve the quality of the Report. It is recommended that SCA carefully consider DIPNR's suggestions in its preparation</p>



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
			of the next Report. It may be helpful in this process to have a workshop involving SCA and the various stakeholders (eg DIPNR, NSW Health, SWC, DEC and IPART) to consider the suggestions and confirm what information and level of detail may be best included in the published summary report, and what may be included in Appendices available on the web, but not in the summary.
6.6.8	Place on SCA's website and made available at its offices free of charge	Full compliance	The report has been placed on the website and is available at SCA offices, if requested.
6.7	Water Quality Planning – Risk Management Plan		
6.7.1	Use findings of Catchment Audit to prepare five-year Risk Management Plan	Full compliance	The SCA has prepared a draft <i>Water Quality Risk Management Framework</i> (August 2004); this incorporates the " <i>Bulk Raw Water Quality Management Plan</i> " June 2000 and the <i>Pollution Source Risk Management Plan</i> 2000. The <i>Framework</i> is a major work that describes the SCA's overall water quality risk management framework and the various programs and actions already in place to minimise the risks to public health.
6.7.2	<p>The Risk Management Plan must:</p> <p>(a) identify and assess pollution sources, how these are modified between source and water storage, and evaluate impact of pollution on quality of bulk water (as this information becomes available through the Authority's long term research)</p> <p>(b) identify improvements to operation of catchment infrastructure works</p> <p>(c) prepare an action plan to improve bulk water quality</p> <p>(d) identify arrangements to address issues outside the power of the SCA</p>	Full compliance	<p>The draft <i>Water Quality Risk Management Framework</i> incorporates the <i>Pollution Source Risk Management Plan</i> 2000, and draws on a series of source pollution investigations (comprising nine <i>Environmental Assessment of Sites and Infrastructure Reports</i>). A review of the framework is discussed in Section 6.4.6. The following outlines the specific requirements of the Operating Licence.</p> <ul style="list-style-type: none"> • The <i>Framework</i> identifies and assesses in qualitative terms the various pollution sources, considers how these are modified between the source and water storage, and a qualitative assessment is undertaken of the impact of the pollution on the quality of the bulk water. <i>Water Quality Hazard Process Maps</i> have been developed that indicate the significance of the various causal factors and control points, and the certainty of the various assessments. • The <i>Framework</i> identifies approximately 100 "very high risk" hazard events; such events are regarded as not acceptable and requiring urgent action. These generally fall into three categories: pollution sources within the catchments; management of the water supply storages or delivery systems that may give rise to or aggravate pollution problems; and incident events such as bush fires, floods or spills.



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> The <i>Framework</i> outlines the existing controls for each area of high risk, and also outlines the management initiatives and actions that are planned over the period 2002 – 2007. Performance indicators and targets for the various initiatives are outlined. At this time the detail of some of the action plans is still being defined; for example, Regional Action Plans still need to be developed for the various catchments. SCA has also undertaken a cost-benefit analysis of the broad strategies: <i>The Costs and Benefits of Action under the Water Quality Risk Management Plan 2004</i>. This analysis provides an overview of the broad areas of risk, and assesses the ability to provide future benefits that outweigh the current and future costs of projects. Specific consideration is given to the benefit of adopting strategies that address the underlying cause of poor water quality, some of which involve investment by organisations other than SCA. <p>Finalising SCA's <i>Plan</i> will require SCA to consult further with SWC, because the controls for many of the risks will be achieved through SWC's water filtration plants. This will, in turn, require SWC to update its risk management plan taking into account the new information from SCA on the risks to bulk water quality.</p> <p>It is concluded that SCA has made good progress on the preparation of the <i>Risk Management Plan</i> with the preparation of an excellent draft <i>Water Quality Risk Management Framework</i>. Full compliance has been assigned to this clause.</p>
6.7.3	<p>In developing the Risk Management Plan, the SCA must:</p> <ul style="list-style-type: none"> (a) apply AS/NZS 4360:1999 to develop risk action plans (b) consider catchment management principles in the Drinking Water Guidelines (c) consider benefits and costs of different management options 	Full compliance	<p>The development of the draft <i>Water Quality Risk Management Framework</i> has:</p> <ul style="list-style-type: none"> utilised the principles of AS/NZS 4360:1999 in the identification and assessment of risks and in the development of action plans; and taken into account the catchment management principles in the Drinking Water Guidelines in the development of the action plans. <p>The benefits and costs of different management options have been considered in the development of the <i>Framework</i>. This analysis is included in a separate document, <i>The Costs and Benefits of Action under the Water Quality Risk Management Plan 2004</i>.</p>
6.7.4	Engage in public consultation in developing the Risk Management Plan, including comment from NSW Health, EPA and DLWC, exhibit draft Plan for public	No requirement	The initial development of the Risk Management Plan (that is, the <i>Pollution Source Risk Management Plan</i>) prior to 2001 included consultation in accordance with the requirements of the Licence. Refer to comment under clause 6.7.6.



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
	comment. The Plan must be finalised by 1 January 2001.		
6.7.5	Review the Risk Management Plan following future catchment audits	Full compliance	<p>DEC has carried out an audit (<i>Audit of the Sydney Drinking Water Catchment December 2003</i>), and SCA advises that it has considered the findings of this audit in the preparation of the <i>Framework</i>.</p> <p>The <i>Audit</i> had only been available to SCA part way through the 2003/2004 audit period, and it is recommended that SCA develop a considered response to the findings of the audit, particularly with respect to those findings that relate to the quality of water supplied to SCA's customers. These include, for example:</p> <ul style="list-style-type: none"> ▶ SCA develop a catchment model for estimating nutrient pollution loads; ▶ SCA identify the cause of exceedences of the Bulk Water Supply Agreement; ▶ SCA identify the cause of the "high" incidences and long duration of algal blooms in its storages; ▶ SCA investigate the reasons for occurrences of <i>Cryptosporidium</i> and <i>Giardia</i> observed in monitoring; ▶ SCA set specific time frames for progressing and completing risk assessment processes for activities identified as "sites of pollution and potential contamination"; and ▶ Relevant agencies commission the development of methods and tools to indicate the effectiveness of management practices applied to reduce water impacts from different land uses for use in nutrient export and erosion modelling.
6.7.6	At other times the Risk Management Plan may only be amended following public consultation	Full compliance	<p>The development of the draft <i>Water Quality Risk Management Framework</i> has involved SCA's customers and NSW Health. SCA advises that further consultation with other bodies, such as EPA, DIPNR, the Catchment Management Authorities and the public, will be carried out in finalising the <i>Framework</i>.</p> <p>It is concluded that the work underway is consistent with meeting this Licence requirement, and full compliance has been assigned.</p>
6.7.7	Need for Risk Management Plan to be reviewed at the	Full compliance	The Pollution Source Risk Management Plan was reviewed at the Mid-term review, and SCA



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
	Mid-term review in 2002.		concluded that the Plan was required as part of its normal operational requirements.
6.7.8	Audit performance against actions the SCA is to undertake under the Risk Management Plan	High compliance	<p>SCA provided a listing of risk actions to be undertaken under the Risk Action Implementation Program – 2001 Projects. The Bulk Water Division Work Plan outlines actions to be taken and assigns budgets for this work. These actions include steps to improve bulk water quality, identified from the <i>Pollution Source Risk Management Plan</i>. Progress is reported in monthly production reports, and SCA prepares a separate summary of performance against the timing of actions required under the Pollution Source Risk Management Plan.</p> <p>Of 28 actions listed as projects under the Pollution Source Risk Management Plan for which the estimated timing was completion in 2001, the situation is similar to that reported in the 2002/2003 audit report:</p> <ul style="list-style-type: none"> • 6 were listed as completed (<i>cf</i> 4 listed as completed in 2002/2003); • 4 were listed as deleted because it was determined that the action was not the responsibility of SCA; and • 18 were listed as “commenced, ongoing”. <p>A similar situation applies to actions listed to be completed in the years following 2001; there are approximately 20 of these, all of which were listed as “commenced, ongoing”.</p> <p>Listing projects as “ongoing” reflects that many of the actions involve setting up programs which are ongoing. Because the reporting lists activities as “ongoing” and not as “completed”, this reporting does not now provide a good measure of whether actions are being progressed satisfactorily. It can be expected that a more current set of actions and priorities will be identified now that the <i>Framework</i> is being finalised.</p> <p>A review of the projects listed as “commenced, ongoing” with a focus on the more significant larger programs suggests that most of these programs and projects have been well advanced, although the information provided by SCA on progress has not provided a clear picture in this respect. SCA has not had direct control of projects (that is, the projects are carried out through other entities such as Councils) and there have been delays in many projects. With respect to some of the larger programs:</p> <ul style="list-style-type: none"> • An Accelerated Sewerage Scheme is being implemented to improve performance of Sewage Treatment Plants and reduce loads discharged. A Catchment Sewerage Needs



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
			<p>Project was completed by SCA in July 2001 and is being used to guide the Scheme. The Scheme commenced in 2001, and SCA advises that specific projects for 2005-2007 are in place for 5 of the 11 municipal STPs in the catchment: Goulburn, Lithgow, Wallerawang, Bowral, Bundanoon. SCA also advises that there are projects in place for unsewered areas at Robertson, Kangaroo Valley and Taralga. Information was not provided by SCA that would allow an assessment of the recommendations of the Catchment Sewerage Needs Project with the work that has been completed to date. An analysis of loads of nitrogen and phosphorus in the 2003 Catchment Audit by DEC indicates that the load of nitrogen and phosphorus has generally not significantly reduced for the STPs at Lithgow, Bowral, Bundanoon, Moss Vale and Warragamba (the STPs for which this information is available), although the loads have reduced significantly at Goulburn STP. The latter STP has had the greatest pollution loads. The Catchment Audit notes that the initiatives to reduce pollution from a number of the STPs have failed to achieve earlier milestones despite being the subject of pollution reduction programs (this has applied, for example, to the Bowral, Lithgow and Wallerawang STPs). Note that these actions are the responsibility of the relevant Council and are the regulated under Environment Protection Licences; as such they are not under the control of SCA.</p> <p>SCA is also using the review period for DEC Pollution Control Licences to comment on STP Licence conditions. Comments have been made on a number of STP Licences, and also on Pollution Control Licences.</p> <ul style="list-style-type: none"> <p>A program of projects to develop sites to demonstrate best practice stormwater management, including reuse of stormwater, are being implemented. SCA advises that projects are selected for funding on the basis of potential impacts on water quality and the strategic importance to each Council. For example, SCA funding assisted in the installation of stormwater pollution control measures (sub-surface wetlands, sediment basins and, pollution traps) and monitoring and community awareness campaign as part of the Wollondilly Council's multi-faceted stormwater management program to improve water quality in the Werriberri Creek. Funding to Catchment Councils by SCA has been in the order of \$500,000 per year over the years 2000/2001, 2001/2002, 2002/2003 and \$140,000 in the year 2002/2004. Information on expenditure provided by SCA indicates that for 18 projects initiated over in the periods 2000/2001 – 2001/2002 with a value of \$1,100,000, approximately 40% of the funds budgeted have been expended. It can be concluded that the stormwater Improvement Program is achieving some progress although, as noted in the Catchment Audit, the upgrading of existing stormwater services, many with few or no</p>



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
			<p>controls, will be a long-term process. With respect to new urban developments, there has been significant improvement in the design and performance of stormwater controls through a 1998 requirement of NSW Councils to prepare and implement stormwater management plans for new urban areas.</p> <ul style="list-style-type: none"> ▶ An Environment and Resource Planning Contaminated Sites Program for SCA lands is being carried out. This has involved the completion of 30 Phase 1 and 8 Phase 2 contaminated site assessments, and a number of other projects. ▶ With respect to a program to encourage best management practices in the intensive livestock industries, a communication strategy was prepared in 2003 as part of the SCA's Education Strategic Plan. Information on recommended practices are being developed under the future Regional Plan. <p>It can be concluded that SCA is progressing on actions that have been listed under the Pollution Source Risk Management Plan, although it has been difficult to obtain a clear picture on progress and the extent to which the objectives of actions have been achieved. Progress on some projects and programs has been delayed, and in some cases only the initial stages of a program has been completed with much left to do. Many of these programs involve other organisations and are not under the direct control of SCA.</p>
6.7.9	Develop an Incident Management Plan by 1 July 2000 in agreement with NSW Health and in consultation with customers	No requirement	A Bulk Water Quality Incident Response Plan was finalised on 28 June 2000. This Plan was prepared in consultation with customers and was agreed with NSW Health. The SCA has reviewed and revised the Plan with input from NSW Health at various times since its preparation. The date of the last review was April 2004.
6.7.10	Purpose of the Incident Management Plan is to minimise the risk to human health from the bulk water supplied by the SCA to customers	Full compliance	The stated aim of the Bulk Water Quality Incident Response Plan is to <i>"minimise the impacts of a bulk water quality event on SCA's customers, ..."</i> . The formulation of the Plan includes triggers that are based on the potential for an incident to give rise to impacts on human health of customers.
6.7.11	Incident Management Plan to provide for the coordinated management of water incidents including media and stakeholder liaison and notification of public health advice received from NSW Health to customers.	Full compliance	The Bulk Water Quality Incident Response Plan provides for the coordinated management of water incidents and includes procedures for media and stakeholder liaison. The Plan includes provision to notify NSW Health immediately upon certain triggers being exceeded, and to provide water quality monitoring results to NSW Health. If NSW Health assesses a risk to public health, NSW Health is to liaise with the customers and issue a boil water notice, if necessary,



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
			<p>and to provide input to communications advice issued by the SCA for staff, customers, media and the Minister.</p> <p>The Plan has been revised during the audit period (April 2004), with revisions including changes to the levels for <i>Cryptosporidium</i> and algal counts triggering an event, and notification requirements for NSW Health.</p> <p>SCA, SWC and NSW Health consult regularly through the forum of the Strategic Liaison Group on matters relating to incident management. For example, in 2003-04 this included discussions on:</p> <ul style="list-style-type: none"> ▶ Interagency preparedness for major incident management, including planning for a test exercise; ▶ Improvements in protocols, such as the Incident Notification System used between NSW Health and SWC (SCA to consider using same system); the Shoalhaven System Operating Protocols for water transfer during cyanobacterial events; and the NSW Health Response Protocol; ▶ The underlying causes of actual incidents and the performance of the Plan, such as the Giardia water quality incident at Warragamba WFP in July 2003 and the microcystin toxicity event that occurred in Wingecarribee and Fitzroy Falls Reservoirs in the preceding audit period, and the amendment of agency protocols; ▶ The results of risk assessment work carried out by the agencies, such as the “Catchment to Tap” risk assessment undertaken by SWC; and ▶ Potential major incidents, such as may occur with drought breaking rains. <p>The Incident Response Plan was subjected to the following tests and incidents during the period.</p> <ul style="list-style-type: none"> ▶ “Exercise Camel” conducted in May 2004 with Sydney Water, Australian Water Services and NSW Health. This exercise involved the simulation of drought breaking rains giving rise to extreme concentrations of <i>Cryptosporidium</i> oocysts in the bulk water. The Incident Response Plan was found to work effectively, although some areas of improvement were indicated such as improving the operational interaction between the various organisations,



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
			<p>and in communications. SCA has developed a set of actions with nominated responsibilities for addressing the findings of <i>Exercise Camel</i>.</p> <ul style="list-style-type: none"> Wingecarribee and Fitzroy Falls Reservoirs, 22 December 2003, involving the detection of cyanobacterial toxins at levels greater than the trigger level for a major incident. The report on this incident indicated that NSW Health had been notified and there was close liaison between the various stakeholders, and appropriate action was undertaken (despite the difficult time of this incident). SCA notes that the cyanobacteria issue is being addressed through a Cyanobacteria Management Strategy. Warragamba Dam, Pipeline & Prospect Reservoir, 26 February 2004 and 1 March 2004; Detection of <i>Cryptosporidium</i> oocysts in raw water; NSW Health was notified and appropriate actions were undertaken. Greaves Creek, 18 November 2003, detection of pesticides; NSW Health was notified and appropriate actions were undertaken. <p>SCA advises that a full review of the Incident Management Plan will be undertaken in the next audit period, in accordance with the requirements to review the Plan every two years.</p> <p>Review of the debrief reports from various incidents indicates that it is important that staff are trained in the requirements for incident management, as otherwise the notification and response requirements outlined in the Plan may not be understood and complied with. SCA advises that it runs staff awareness training. This included, for example, a staff awareness road show following revision of the Plan and prior to <i>Exercise Camel</i>. Similar staff awareness training was noted in the previous audit period.</p>
6.7.12	Incident Management Plan to include requirement for the SCA to advise customers if the bulk water it supplies may be a risk to human health	Full compliance	<p>The Bulk Water Quality Incident Response Plan includes an Initial Action Checklist that includes the requirement to notify customers of the incident. The Plan also has the requirement in the event of a minor incident/major incident/emergency to prepare communications advice for staff, customers, media and the Minister. The Bulk Water Supply Protocols discussed above are also relevant to this clause.</p>
6.8	Environmental water quality		



Table 6.1 Part 6: Bulk water quality – summary of compliance

Clause	Requirement	Compliance	Findings
6.8.1	Meet the environmental water quality requirements for discharges or water releases required under EPA or former DLWC (now DIPNR) licences	No requirement	SCA has no licences with the EPA. The Water Management Licence issued by DIPNR has no requirements in relation to water quality, only water quantity.

Table 6.2 Bulk Water Quality – Ministerial Requirements

ID	Requirement	Compliance	Findings
M1	"the Authority finalises the development of the Risk Management Plan by 1 September 2004 and determines the significance of pollution loads with respect to treated water quality and requirements for control."	Full compliance	<p>With respect to the various aspects of the Minister's requirements, the following were determined.</p> <ul style="list-style-type: none">▶ The <i>Risk Management Plan</i> be finalised by 1 September 2004: the SCA prepared a draft <i>Water Quality Risk Management Framework</i> in August 2004. The <i>Framework</i> encompasses the requirements of the <i>Risk Management Plan</i>. Further information is provided in Table 6.1 Clause 6.7, and Section 6.4.5. Although the <i>Framework</i> is in draft, the auditor considers that it meets the requirements of the Minister.▶ Determines the significance of pollution loads with respect to treated water quality: the <i>Water Quality Risk Management Framework</i> determines the significance of the pollution loads and the resulting risk, and therefore the priority for controlling these risks. It is concluded that this part of the Minister's requirement is met.▶ Determines the requirements for control: the <i>Framework</i> outlines the various controls and further initiatives that are proposed. It is concluded that this part of the Minister's requirement is met. <p>It is concluded that SCA has satisfied the Minister's requirement with the preparation of an excellent <i>Risk Management Framework</i>, and Full compliance has been assigned.</p>

6.4 Discussion

6.4.1 Performance against the requirements of the Operating Licence

The raw water quality from all storages has been very good with respect to the requirements of the Operating Licence, and there was full compliance with the health-related parameters (Schedule 4) of the Operating Licence.

6.4.2 Performance against the Bulk Water Supply Agreement

In general, the raw water quality from all storages has been good with respect to the requirements of the Bulk Water Supply Agreement. Turbidity and colour levels have been low and SCA advises that there has been sufficient depth in storages to allow selective withdrawal from levels where iron and manganese levels are low. SCA advises that there has been no substantial evidence of abnormal algal blooms other than in the Shoalhaven storages where management strategies are being developed.

The SCA, monitoring against the requirements of the Bulk Water Supply Agreement (BWSA) demonstrated it attained high compliance for the most important parameters.

The results were:

- ▶ Turbidity, colour, iron, manganese, aluminium: 100% compliance for 9 supplies;
- ▶ Hardness: 100% compliance for 5 of 9 supplies, 30 – 50% compliance for 3 supplies, and 0% for 1 supply;
- ▶ Range of pH: 100% compliance for 4 of 9 supplies, with variable compliance for the remaining supplies (ie 15, 33, 69, 81 and 92%); and
- ▶ Algae: 100% compliance for 7 supplies, and 85% and 92% compliance for the other two supplies. SCA has advised that the algae measured were of the filter blocking type, and did not represent a risk to human health (refer to further comment below).

In understanding the level of compliance, it can also be noted that there was, averaged across all supplies:

- ▶ 94% compliance (flow weighted average of all parameters); this is down from 98% in the previous year; and
- ▶ 49% compliance (average of the time any one parameter for a supply was in non-compliance, not flow weighted); this is down from 79% in the previous year.

In general, the reduced compliance reflects reduced compliance for hardness, alkalinity and pH. These parameters relate to the aesthetic quality of the water and its treatability, and do not relate to human health. It is not clear as to the causes for this reduced compliance, although it appears to result from natural processes associated with the drought and lower storage levels. The observed extent of non-compliance in these parameters is not expected to give rise to significant issues in terms of treatment or adverse impacts on water quality following treatment.

SCA advised:

- ▶ SCA has not received any complaints from Sydney Water regarding the quality of the water supplied; and
- ▶ To SCA's knowledge, the exceedences had not caused difficulties in treatment.

The auditor confirmed with Sydney Water that the non-compliances did not cause difficulties for the WFPs, and did not result in non-compliances with regard to the treated water.

It is concluded that these non-compliances would not be expected to adversely affect the quality of water that Sydney Water supplied to customers.

Of the exceedences, those relating to algae are considered to be the most significant. In this audit period compliance with the algal target levels has improved compared with the previous audit period.

In terms of the significance of the algal levels, SCA has advised that the potential problems concerning algae in the supplies to the Sydney Water WFPs are operational (such as filter blocking) rather than the presence of toxins associated with the algae. Incidents involving toxic algae are the subject of separate monitoring and reporting under the SCA's Incident Response Plan. Sydney Water confirmed this situation, but noted that water from the Shoalhaven scheme, where blue-green algae has been observed, is being pumped into systems which supply Sydney Water's WFPs, and Sydney Water is monitoring whether this could give rise to cyanobacteria in the bulk water to Sydney Water's WFPs. Sydney Water advised that to date this has not been a problem.

SCA advises that it proposes to seek a change to the BWSA criteria, because many of the parameters are outside of the SCA's control and do not adversely affect the quality of the treated water.

6.4.3 Water quality monitoring and reporting

The SCA's water quality monitoring program comprises:

- ▶ routine monitoring of metals and pesticides at the inlets to the WFPs to ensure that toxicant concentrations do not pose a risk to human health, in accordance with Clause 6.2(a);
- ▶ routine monitoring of physical and chemical water quality parameters at the inlets to WFPs to ensure physical and aesthetic quality of the supply comply with Clause 6.2(b);
- ▶ routine pathogen monitoring at the inlets to WFPs, dams and other likely dry weather sources to determine pathogen concentrations for operational and planning purposes (this, in particular, includes monitoring for *Cryptosporidium* and *Giardia*);
- ▶ targeted and investigative monitoring, including for example investigation into pesticides in catchments, nutrient release of sediments, specialist analyses for trace organic compounds; and
- ▶ event-based monitoring (for example, investigations into certain algal events).

Over the 2003/2004 period, the outputs of the SCA sampling and analysis program included approximately 250 operational reports, 110 algal reports, 130 exception reports, 12 monthly reports, and 50 requests for sampling and analysis responding to unplanned specific issues. The management of this program involves a significant undertaking, and SCA has retained a specialist contractor for this.

A Water Quality Monitoring Workshop involving the SCA's Water Quality Program Manager, SCA staff and staff from a range of Government agencies was held in December 2002. The outcomes of this workshop included a number of actions and recommendations regarding, for example:

- ▶ Further monitoring to address the needs of the Regional Environmental Plan;

- ▶ Additional pesticide monitoring during periods of high pesticide use, and at water filtration plants;
- ▶ Changed monitoring reflecting changed environmental flows;
- ▶ Recommence monitoring at Middle Cascade and Lake Medlow Dams; and
- ▶ Potential for changed alert levels for algal monitoring.

SCA provided a status report dated October 2004 on the Workshop actions and recommendations. This indicated that most of the workshop actions had been completed, and most of the recommendations had been completed or were proposed to be considered or implemented when new water quality monitoring contracts are let.

SCA advises that it is reviewing the requirements for water quality monitoring beyond the current program (that is, following December 2004), and is currently preparing a *Water Quality Monitoring Report* for the next period. It will be important for the next audit to confirm that this has been completed. It can be expected that the program should consider: any changes that may be made to the Operating Licence; foreshadowed changes in the *Australian Drinking Water Guidelines*; the requirements for monitoring that flow from actions under the *Water Quality Risk Management Framework* and obtaining a better understanding of the likelihood and implications of these risk events; and the observations of the Expert Panel on Water Quality. As noted in the previous audit, the Expert Panel concluded, “*Monitoring has largely focussed on pathogens (including viability and genotype), reflecting the main area of concern following the 1998 Cryptosporidium event and the program should be reviewed to ensure an adequate balance between pathogens, nutrients, and disinfection by-products (DBP) precursors.*”

It is recommended that the *Water Quality Monitoring Report* for the next period include; a detailed review of the future requirements for routine and investigative monitoring, taking into account changes that may be made to the Operating Licence and the *Australian Drinking Water Guidelines*; the findings of the risk assessments undertaken by SCA and SWC; the conclusions of the Expert Panel on Water Quality; and the requirements of SCA's customers.

6.4.4 Monitoring for Pesticides

SCA has undertaken an investigation for pesticides in the waters of various catchments. This work is reported in a draft report dated July 2004 *Catchment Pesticide Monitoring February – May 2004*.

This work involved analysing 75 samples from 24 sites. Trace levels of pesticides were detected, as could be expected. Of the pesticides detected, triclopyr and MCPA were detected most frequently. Other pesticides detected occasionally included picloram, atrazine, Mecoprop, and 2,4 D, and MCPA. The results of most of the samples were below the level of detection, and all detected results in water supply systems were below the respective guideline and health values.

Previous studies have shown the presence of similar pesticides, together with diazinon, endosulfan, and 2,4,5 T. The *Audit of the Sydney Drinking Water Catchment December 2003* by the Department of Environment and Conservation noted that the discharges of treated effluent from sewage treatment plants can exceed the NHMRC drinking water guidelines (eg diazinon (nine samples) and 2,4,5T (one sample)), and also noted that it has been suggested that the cleansing properties of the catchments and storages reduce these to very low levels at the water filtration plants.

There was little rainfall during the sampling period of the July 2004 SCA investigation, and the report recommended that wet weather sampling be undertaken in the future.

These results are important in providing more detailed evidence than has been obtainable through the routine monitoring program that pesticides are not present at levels of concern in the bulk water supplied to water filtration plants. SCA advises that it now includes the pesticides that were detected (eg MCPA, Mecoprop, MCPA and diazinon and 2,4,5 T) in the routine analysis program.

6.4.5 Development of the Water Quality Risk Management Framework

The draft *Water Quality Risk Management Framework* is an impressive undertaking. A review of the documentation indicates that:

- ▶ The *Framework* identifies and assesses in qualitative terms, the various pollution sources, considers how these are modified between the source and water storage, and a qualitative assessment is undertaken of the impact of the pollution on the quality of the bulk water. SCA has developed a series of *Water Quality Hazard Process Maps* that indicate the significance of the various causal factors and control points, and the certainty of the various assessments. These *Maps* provide a good understanding of the various issues and their significance; this is an impressive undertaking in view of the complexity and inter-related nature of the various factors that can affect the quality of the bulk water.
- ▶ The *Framework* includes an assessment of the results of water quality monitoring to assist in quantifying the risk priority.
- ▶ In developing the *Framework*, SCA has considered the confidence level of the assessments and the research that has been or is being undertaken to better understand and quantify the issue. This approach will be important in allowing SCA to better direct and prioritise its research and investigations on water quality matters.
- ▶ The *Framework* identifies approximately 100 “*very high risk*” hazard events; such events are regarded as not acceptable and requiring urgent action. These generally fall into three categories: pollution sources within the catchments; management of the water supply storages or delivery systems that may give rise to or aggravate pollution problems; and incident events such as bush fires, floods or spills.
- ▶ As noted in Table 6.1, the *Framework* outlines the existing controls for each area of high risk, and also outlines the management initiatives and actions that are planned over the period 2002 – 2007. Performance indicators and targets for the various initiatives are outlined, and the SCA Divisions responsible for the various initiatives have been nominated. Many of the initiatives outlined are major programs in their own right, and the planning documentation associated with these programs provides the detail on these programs. Some of these programs, such as the Accelerated Sewerage Scheme, have been the result of significant investigations and are well developed. Some of the other action plans are still being defined; for example, Regional Action Plans still need to be developed for the various catchments.
- ▶ SCA has also undertaken a cost-benefit analysis of the broad strategies: *The Costs and Benefits of Action under the Water Quality Risk Management Plan 2004*. This analysis provides an overview of the broad areas of risk, and assesses the ability to provide future benefits that outweigh the current and future costs of projects. Specific consideration is given to the benefit of adopting strategies that address the underlying cause of poor water quality, some of which involve investment by organisations other than SCA. Because the detail of the programs has not yet been defined, the

analysis has been performed at a high level, considering typical projects that fall into the various categories, rather than an assessment of well defined projects. This has included, for example, assessment of the following actions aimed at providing barriers to pollution in the catchments:

- Rehabilitation of on-site septic systems;
- Improvement of urban sewerage systems;
- Protection of riparian zones;
- A program for improvement of the management of rural lands; and
- Capacity building for SCA's stakeholders.

Finalising the *Framework* will require SCA to consult further with SWC, because the controls for many of the risks will be achieved through SWC's water filtration plants. This will, in turn, require SWC to update its risk management plan taking into account the new information from SCA on the risks to bulk water quality.

6.4.6 Poor Water Quality arising through Drought-Breaking Rains

SCA advises that if the drought progresses, the area of exposed foreshores of storages will increase and there is likely to have been a build-up of organic (including faecal matter) and inorganic matter on catchment lands. Bushfires have caused loss of vegetation filtering potential in some areas of the catchments. These factors pose future risks to water quality. Water quality may deteriorate at storage levels below 20-40%. The degree of deterioration will depend on the particular characteristics of each storage. The ability to optimise raw water quality by selective withdrawal will diminish and the probability of algal blooms will increase.

If there are heavy rains in the catchments, then this can give rise to poor and rapidly changing water quality. Most water quality parameters (microbiological, organic, inorganic) are likely to get worse after rainfall, and it is possible that high levels of microbiological organisms could be experienced in raw water provided to the WFPs.

SCA, SWC and NSW Health have recognised these issues, and have undertaken careful analysis and planning to reduce the risk of such an event. Briefings have taken place through the Strategic Liaison Group, and a Drought Executive Committee and Drought Expert Panel has been formed.

Various initiatives have been put in place, including the following.

- ▶ Development of a systems approach to managing the risks associated with water quality: SWC has and the SCA is introducing risk and quality management systems that align with this new direction.
- ▶ Systematic Planning and Improvement: short, medium and long-term plans have been developed for water quality improvements. The SCA has developed the Water Quality Risk Management Framework that covers short, medium and long-term initiatives. SWC has a long-term water strategy (Waterplan 21), a Five Year Drinking Water Quality Management Plan, and produces an Annual Water Quality Improvement Plan.
- ▶ Improved Risk Management: SCA has prepared the Water Quality Risk Management Framework, and will develop action plans. SWC has carried out *catchment to tap* risk assessments for each delivery system including WFPs and distribution systems, with risks prioritised and appropriate mitigation projects included in the short, medium and long-term plans.

- ▶ **Effective Monitoring and Transparent Reporting:** both SWC and the SCA monitor water quality in accordance with annual water quality monitoring plans that are approved by NSW Health. Regular reports on performance are produced and systems are in place to immediately report any major non-conformances to NSW Health. Drinking water quality results from *Cryptosporidium* and *Giardia* testing are published daily on Sydney Water's website. NSW Health has engaged an Independent Laboratory to verify protozoa measurement, as the accuracy of measurement was a major cause of concern in 1998. A Consumer Confidence Report (CCR) of monitoring results for all parameters is produced quarterly.
- ▶ **Communication to stakeholders** has also been improved in a number of areas. Water quality results are published in an Annual Drinking Water Quality Report. Customer relations staff have been trained in handling water quality inquiries and scientific experts are available to manage water quality including technical queries from stakeholders. An education program for health care professionals has been conducted.
- ▶ **Improved Catchment Management:** the formation of the SCA in 1999 has enabled an increased focus to be placed on catchment and storage enhancement and protection programs. SEPP58 and the proposed REP provide for improved controls by the SCA for new and existing developments. The SCA has worked with the DEC, local councils and SWC to improve stormwater, sewerage and roadwork programs within catchments to minimise adverse effects on water quality. Catchment protection schemes are being implemented and joint management plans are being developed for special areas. Standard operating procedures (SOPs) have been developed for destratification and source selection and operators have been trained. Lake monitoring and modelling allows an early warning to be given of potential adverse water quality events. Prospect Reservoir can be used for short-term raw water supply (4 to 8 days) in conjunction with the Upper Canal should the Warragamba supply become contaminated. Bulk Water Supply Protocols are in place to ensure ongoing good communication between the SCA, SWC and the WFP operators.
- ▶ **Optimised Treatment Processes:** the WFPs have been optimised to target a treated water turbidity of 0.1 NTU, an objective recognised by the US Partnership for Safe Water/Australian Water Treatment Alliance as being a best-practice surrogate for having a high confidence that *Cryptosporidium* and *Giardia* removal will be maximised. The WFPs currently meet this objective 99% of the time under good raw water conditions. Capital projects have been completed to install improved particle monitoring systems and improve the operation of the filtration plant at Prospect WFP and improve control of inflow and outflow from WFPs.
- ▶ **Distribution System Management:** the operational management and control of distribution systems has been improved by the introduction of standard operating procedures, and measures have been introduced to improve microbiological performance. All in-system storages after filtration are now fully enclosed.
- ▶ **Research and Development:** research and development projects carried out over the last four years by the SCA, SWC and via CRCs or Awwa Research Foundation (AWWARF) have enabled some significant gains to be made in terms of management of water quality issues. This includes improved analytical techniques, development of a lake water quality predictive tool to provide for early warning of water quality events and improve decision making, optimisation of filtration plant and disinfection performance.
- ▶ **Reliable Emergency Risk Management:** emergency risk management/incident management plans have been developed and staff trained in their use. Emergency control rooms are now available.

NSW Health has been involved in this work and has an Expert Panel available to provide advice to government and for management of the event.

- ▶ Effective Communication Protocols: protocols for communication within and between the three agencies and with media, stakeholders and politicians have been developed, tried and tested through real and mock situations.

It is concluded from the above that SCA, together with SWC and NSW Health, is now much more prepared for managing adverse water quality events that can arise through events such as heavy rains in the catchments.

However, SCA advises that it is not possible to provide a guarantee that raw water conditions will not deteriorate to a level at which available treatment processes and barrier protections become sub-optimal, although the measures taken for preparedness should significantly decrease the likelihood of an emergency event in treated water.

6.5 Factors affecting compliance

SCA has achieved a generally high level of compliance in the field of bulk water quality, and the current water quality is good. However, the Bulk Water Supply Agreement sets criteria that are difficult to meet, and these are not being achieved at present. Some of the supplies have poor compliance for some parameters, with algae being the most significant of these parameters. To date this has not caused difficulties to SWC, as its water filtration plants have been able to accept and treat the water. Practically, to achieve full compliance would require the criteria to be changed, and this has been noted in previous audits.

SCA does not have full control of the factors which can give rise to poor water quality, and the practical short term management requirement is to apply “best endeavours” to provide the best water quality to its customers, with the longer term objective being improved management of the various sources of pollution and catchment infrastructure.

SCA has identified a large number of risks to bulk water quality and, if these events should occur, compliance could be affected. For example, two factors that could significantly affect future compliance with respect to achieving the objectives for bulk water quality are drought and a major rain event.

- ▶ There has been a drought, and this has resulted in generally improved bulk water quality. If the drought should continue, with a continued reduction in the level in reservoirs to below 20 – 40% it can be expected that the quality of the bulk water will deteriorate. The degree of deterioration will depend on the particular characteristics of each storage, and may involve for example increased turbidity resulting from wind and wave action, increased potential for algal blooms, increased potential for dirty water problems arising from iron and manganese, and a diminished ability to optimise raw water quality by selective withdrawal.
- ▶ The occurrence of major rain events could give rise to a significant decrease in water quality. This has been discussed under Section 6.4.6.

As outlined in Section 6.4.6, SCA together with SWC and NSW Health has been undertaking planning for such events, and collectively these organisations have instituted a range of measures to reduce the potential for adverse water quality to occur, and to better deal with these events should they occur.

Because SCA does not have full control over bulk water quality and will not have in the future, it appears that the key factor in ensuring that the quality of Sydney’s water supplies is satisfactory lies in the ability

of Sydney's water treatment plants to accept and adequately treat the full range of water quality that can be expected. As such, it will be important for SCA to be able to predict the extremes of water quality that may arise under various risk scenarios, so that Sydney Water and SCA's other customers can plan accordingly.

6.6 Recommendations

6.6.1 Key Recommendations

It is recommended that SCA:

- R 6.1 Quantify, as far as possible, the variations in bulk water quality that may occur under the high risk situations identified in the *Risk Management Framework* and confirm that SCA's customers are aware of these variations so that they can plan accordingly to ensure that the treated water that they in turn supply to their customers, will comply with the required objectives.
- R 6.2 Include in the next Annual *Water Quality Monitoring Report* (ie for the audit period 2004/2005) information that allows the reader to understand: the requirements for monitoring and compliance; the methods adopted; the extent to which the results can be relied upon (that is, the conclusions of the quality assurance program); the extent of compliance with the Operating Licence that has been achieved; and the significance of exceedences and incidents where these have occurred.
- R6.3 Develop a considered response to the findings of the *Audit of the Sydney Drinking Water Catchment December 2003* prepared by the Department of Environment and Conservation, particularly with respect to those findings that relate to the quality of water supplied to SCA's customers.

6.6.2 Secondary Recommendations

It is recommended that SCA:

- R 6.4 Incorporate, upon review, DIPNR's suggestions in its preparation of the next *Water Quality Monitoring Report*.
- R 6.5 Require a more direct commentary on performance of quality assurance and quality control by the laboratory in the report of the Project Manager of the water quality monitoring contract.

7. Catchment Management and Protection

7.1 Summary of findings

► Manage and protect the catchments

During 2003/04, SCA continued to apply its resources and achieved **High compliance** in Catchment Management and Protection. SCA applied an integrated framework (viz: *Healthy Catchment Program*) so higher risk environmental issues, such as pollution sources, are being identified and targeted. This Program also: provides a transition to Rectification Action Plans once the draft Regional Environmental Plan (*Sustaining the Catchments*) is gazetted; integrates catchment programs that have previously stood alone; and is a positive initiative. However, opportunities to provide sufficient resources to meet the Ministerial endorsed implementation “Timeframes”, for SASPoM and WSSAPoM, and improve transparency, remain. Transparency has been reduced, as at the time of the audit, SCA had not received information from DEC on its Special Areas Strategic Plan of Management expenditure.

No requirement applied to many Licence clauses relating to catchment management in 2003/04, as the planning targets had been met in earlier years. **High compliance** was assessed for many of the remaining tasks, however, **Partial** and **Low compliance** were assessed for coordinating and publishing water quality data and for a number of these ‘implementation’ tasks, contained in the Special Areas Strategic Plan of Management and Wingecarribee Swamp and Special Area Plan of Management.

SCA’s existing catchment management and protection programs were expanded through improved enforcement activities under the Sydney Water Catchment (*Environmental Protection*) Regulation, 2001. SCA is to be congratulated for actively applying this catchment management tool in 2003/04 following low implementation levels in earlier years.

Enforcement activity under the Sydney Water Catchment Management (*General*) Regulation increased (to 79 Penalty Infringement Notices (PINS), valued at \$20,700) compared to the previous year’s level (69 PINS).

SCA’s “*best endeavours*” to coordinate and collect data on water quality in the catchment continues at a **Low compliance** level (particularly in regard to data collected by other relevant bodies) as this remains a low priority for SCA.

SCA demonstrated an increased effort to make unpublished river health data available to the public.

SCA expanded its liaison with Councils including coordination of compliance and inspection, however the establishment of a formal link to advise SCA of development commencement, as directed by the Minister in 2000/01, was again assessed as a **Low compliance**.

► Special Areas Strategic Plan of Management

SCA finalised an agreement in 2001 with NPWS to implement the Special Areas Plan of Management (SASPoM) through *program plans*. Application of a strategic framework and performance reporting is evident. However, many Key Actions are behind the timetable contained in the Ministerial endorsed Plan of Management (2001). A number of Key Actions and *performance indicators* continued not to be met over 2003/04, particularly the appointment of an

“external, independent, scientific body” to provide advice on managing Special Areas regarding the ecological health of the catchments and the quality of raw water in the storages.

► **Wingecarribee Swamp and Special Area Plan of Management**

SCA's implementation of the Wingecarribee Swamp and Special Area Plan of Management is well organised, reported and the commitment of staff is clearly evident. SCA ceased a number of 'Key Actions' over 2003/04, such as willow control in the catchment, but rather applied its resources to further willow control planning and investigation. Numerous Key Actions have not met the Ministerial requirement (2001/02) to “accelerate action” to implement the Plan and expenditure. In 2003/04, the expenditure specifically on the Wingecarribee Swamp Plan of Management would appear to have fallen by some 20% over the previous year. SCA have indicated that such expenditure has not decreased when taking into account SCA's expenditure across the wider Wingecarribee catchment as a whole. Improved clarity in financial reporting should prevent further confusion in future audit years.

► **Regional Environmental Plan**

Despite SCA being in its fifth year of operation, the Regional Environmental Plan, “*Sustaining the Catchments*” is yet to be gazetted. SCA, with Ministerial agreement, provided the major impetus and resource for a further round of public exhibition and to trial tools (for example, land and water capability assessments) to move towards Gazettal and implementation. However, the continuing failure to gain approval and implement this key environmental plan is a major constraint to SCA addressing existing high risk developments.

► **State Environmental Planning Policy**

SCA has continued to develop and apply a professional approach to its catchment planning role (under SEPP 58) and is doing so in partnership with Councils.

7.2 Summary of requirements

The objective of Part 7 of the Operating Licence is to enable (through regulatory powers) and require SCA to manage and protect the Catchment Area. The inner catchment comprises lands gazetted as Special Areas largely managed by the SCA and the DEC (National Parks and Wildlife Service), and the outer catchment comprises a variety of land uses mostly in private ownership.

The requirements of Part 7 may be summarised as follows:

- Manage and protect the Catchment Area to the full extent to which it is empowered;
- Co-ordinate and collect data available on water quality in the Catchment Area, including data collected through Memoranda of Understanding, as well as by other relevant persons or bodies;
- Make unpublished data on river health available to the public;
- Develop, implement and maintain the currency of the Special Areas Strategic Plan of Management;
- Develop, implement and maintain the currency of the Wingecarribee Swamp and Special Area Plan of Management;
- Comply with the requirements, and promote the implementation, of the Regional Environmental Plan (“*Sustaining the Catchments*”); and



- ▶ Comply with the requirements of SEPP 58, *“Protecting Sydney’s Water Supply”*.



7.3 Details of compliance

Table 7.1 Part 7: Catchment management and protection – summary of compliance

Clause	Requirement	Compliance	Findings
7.1 Authority to manage and protect			
7.1.1	Manage and protect the catchment area	High compliance	<p>SCA has continued to demonstrate high compliance over 2003/04 through the following actions:</p> <ul style="list-style-type: none">Actively managed compliance resources to target high risk proposed developments (SEPP 58), identified (biannual Catchment Audit, Pollution Source Data, and Risk Management Plan) pollution sources, and integrated with Corporate management development (Development Assessment Register, DAR) programs and records.Developed a "Healthy Catchments Program (HCP)" which is a framework to identify pollution sources, risk and impacts, and implement strategies (for example, sewerage, stormwater, land management and compliance, coordination and information) to mitigate these risks. The HCP is integrated to facilitate the forthcoming Rectification Action Plan of the draft Regional Environmental Plan. The 2003/04 HCP indicates (relative to HCP's 2002/03 (Version 3.0 193) forward projections): a proposed fall in expenditure under the Sewerage and Rural Lands Strategy. Also removal of forward projects for the Riparian, Stormwater, Compliance, and Land Management and Catchment Strategies, reduced the overall transparency to the public by the removal of forward projections and total program expenditures.Integrated with DEC a response to chemical spill management, (for example, the Mt. Victoria tanker truck spill) through predicting the likely impact of a spill and managing remediation accordingly.Undertook Road, Bushfire and Derelict Mine Maintenance in the Special Areas.Developed MoUs with two of the three newly created Catchment Management Authorities.Adjusted fines relating to non-compliance.



Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> Developed scenarios to prevent (through the Bushfire Management Plan, and Section 62A Performance Audit) and then contain drought breaking rain (auditor sighted the prescribed burn Plans of Operation, Metropolitan SA Proposal No.6 as evidence). Implemented an active and well-managed compliance program to provide catchment protection. Actions included: amendment to Protection of the Environment Operations (Penalty Notices) Amendment Regulation 2003 to address illegal dumping; surveillance and access control to Special Areas; Development compliance (SEPP 58) integrated with other regulators (local Councils, DEC, DIPNR); aerial survey programs; and Trail Bike Education programs. Enforced the Sydney Water Catchment (<i>Environmental Protection</i>) Regulation through: staff training; issue of eight clean up Notices, four Information Documentation s192 Notices, seven Littering Penalty Notices (\$1600); and 190 littering reports referred to (EPA) DEC. Compliance also targeted pig hunting, illegal fishing and land clearing. (Copies of Notices and warning letters sighted). Enforced the "Sydney Water Catchment Management (<i>General</i>) Regulation 2001", which enabled: Penalty Infringement Notices to be issued against illegal actions (for example, access, trespass, pollution within the special areas). SCA issued seventy nine (79) PIN's under the General Regulation totalling \$23,700; and pursued one (1) court prosecution. Applied resources, through appropriate conditions of consent, to implement State Environmental Planning Policy 58 and Special Areas Plan of Management (see Clauses 7.2 and 7.3). <p>Further improvement is available:</p> <p>SCA is undertaking a diverse and comprehensive range of programs, commonly risk driven. The 2002/03 audit questioned how SCA ensured that these programs were effective and delivered improved catchment health. SCA has recognised this need and indicated it was seeking to answer this question via its "<i>Healthy Catchment Program (HCP)</i>, 2003-2007". The <i>HCP</i> has provided an integrated and transparent framework for SCA to apply its resources to achieve catchment management. The <i>HCP</i> appears to be an interim framework pending the adoption of Rectification Action Plans (under the REP) though it provides positive</p>



Clause	Requirement	Compliance	Findings
			<p>steps to bridge the transition to the REP. Transparency of HCP strategies decreased in 2003/04, as the previous 2002/03 program provided details on proposed funding breakdown (by 7 strategies) as to how SCA intended to allocate \$65.8 million over the five financial years to 2006/07. Restoration of this transparency in 2004/05 is recommended.</p> <p>▮ Whilst SCA has active programs of coordination with Councils, it has not established a formal notification link with Councils to advise development commencement, conditions of approval and compliance. (Note: this need was also a Ministerial Requirement in the 2001/02 audit, which was assessed in that year as 'Low compliance'). SCA is reliant on Councils to provide such information, though has not surveyed or audited the validity of the information supplied.</p>
7.1.2	Use its best endeavours to coordinate and collect data on water quality in the catchment area including data collected as a result of the MOUs as well as data collected by other relevant persons or bodies.	Low compliance	<p>SCA does not assign a priority to this clause, but rather focuses on its own needs, which includes water quality data from a "whole of government" approach. SCA provides water quality monitoring data through its own programs and is establishing MoUs with two of the three Catchment Management Authorities, which may assist to coordinate catchment health data. However, SCA did not coordinate nor collect data on water quality from <i>other relevant persons or bodies</i>.</p> <p>SCA had indicated, in the 2002/03 audit, that it intended to identify its current data sets through a "Knowledge Audit" and identify information gaps and stakeholder and custodian needs. Whilst the "Knowledge Audit" identified how decisions were made and the flow of data, it did not provide a definitive list of water quality data collected by other bodies nor were the audit outcomes incorporated into the SCA's Catchment Information System. SCA has generated a Catchment Information Strategy and this has the capacity to interface with stakeholders and the community. However, water quality is not part of the information layers at this stage.</p> <p>A "Register of River Health Data and Publication Status" was prepared (sighted by Auditor) but has not been completed.</p> <p>SCA has a link to the streamwatch website, though does not coordinate or integrate such water quality data.</p> <p>Water quality data exchanged through MoUs or other relevant persons or bodies, occurs in response to the needs of each program and not in a broad, coordinated</p>



Clause	Requirement	Compliance	Findings
			<p>manner.</p> <p>Consistent with previous years, SCA has not:</p> <ul style="list-style-type: none"> Developed or applied a framework to identify, inventory, record or coordinate the collection of data produced by “<i>other relevant persons or bodies</i>” within its catchment area. Advanced its earlier initiative with Councils to identify water quality data collections and needs, though data for incident driven events is exchanged; or Demonstrated its best endeavours by encouraging “<i>other relevant persons or bodies</i>”, who collect water quality data or by coordinating results, which could be available to SCA and others interested in the catchment area. <p>Rather, SCA’s priorities for water data rests with meeting its internal and “<i>whole of government</i>” requirements and SCA believes this performance demonstrates its “<i>best endeavours</i>”.</p> <p>In DEC’s comments (see Appendix F) in relation to SCA’s performance under this clause, it advised:</p> <ul style="list-style-type: none"> DEC previously provided extensive information on: licensed activities to SCA to assist in an assessment of pollution sources within the catchment; and ecological health of waterways; SCA has not asked DEC to provide data over 2003/04; and Described SCA’s performance under ‘<i>manage and protect the catchment</i>’ (Clause 7.1, 7.2 and 7.3) as ‘<i>satisfactory</i>’.
7.1.3	Make unpublished data in relation to river health publicly available and do so in accord with Government policies about information.	Low compliance	<p>SCA’s performance has remained at a Low compliance, despite increased effort. However this effort has largely been directed to internal processes which were not evident to the public which are the primary focus of this clause.</p> <p>Document (D2003/10100) identified the process to establish unpublished River Health Data, and was sighted by the auditor.</p> <p>SCA demonstrated increased effort through the following actions.</p> <ul style="list-style-type: none"> Established a listing of SCA unpublished data. Whilst this list has not been released to the public, SCA anticipates being able to do so prior to the end of



Clause	Requirement	Compliance	Findings
			<p>2004.</p> <ul style="list-style-type: none"> Developed a Catchment Information Strategy and, in particular, Program Six – which is focused towards Community Access to Information and Interpretation. However, this strategy or Program does not, at this stage, address 'unpublished data'. Developed a package for SCA's Executive consideration to identify and make available unpublished river health data in December 2003. The Executive decision on the matter remains pending over the audit period. The list of unpublished river health data was provided to SCA's Executive in September 2004 (that is, outside the audit period). Did not advise the public of the unpublished data on river health it holds, SCA discontinued the draft policies viz: - draft policy Publication of River Health Data (Policy No. 66) and draft policy Release of Information (Policy No. 070). SCA did replace these draft policies with new processes, which took into account relevant Government policies. Responded to requests for data from the Hawkesbury Nepean River Management Forum. <p>Further action is required to:</p> <ul style="list-style-type: none"> Complete and make available to the public a consolidated list of unpublished river health data via its website and other means.
7.2	Special Areas Strategic Plan of Management		
7.2.1	Definition of Special Areas Strategic Management Plan	No requirement	
7.2.2	Give effect to the Special Areas Strategic Plan of Management in consultation, and wherever possible, collaboration with NPWS.	Partial compliance	<p>The Special Areas Strategic Plan of Management (SASPoM) was given Ministerial endorsement on 9 May 2001. SCA and NPWS (now part of DEC) have subsequently applied an implementation model ("<i>Special Areas Strategic Plan of Management Implementation Model</i>") to coordinate the resources within both SCA and NPWS under all five SASPoM strategies.</p> <p>SCA has demonstrated compliance through the following actions.</p> <ul style="list-style-type: none"> Continued to consolidate its management and collaboration with NPWS in program delivery, driven through the Special Areas Strategic Management



Clause	Requirement	Compliance	Findings
			<p>(SASM) group, (see Table 7.2 for details).</p> <ul style="list-style-type: none"> Strengthened management, through clearer programs, performance monitoring and reporting, and improved NPWS communications. Fully consulted with NPWS on SASPoM and implemented joint management initiatives, however, NPWS's financial management of grant funds has not been to the rigor sought by SCA and NPWS's expenditure on SASPoM is not included in the annual SASPOM report (Clause 7.2.3). <p>Further improvement is required to improve public accountability and transparency including the following:</p> <ul style="list-style-type: none"> Adequate Financial Statement (viz Total Expenditure or NPWS expenditure by strategy and program) have not been provided preventing assessment of Plan implementation and yearly trends (Note: the provision of NPWS expenditure is dependent upon the cooperation of NPWS to supply this information in a timely manner); SCA's decision not to establish the External Independent Scientific Body is inconsistent with the Ministerial approval of the Plan of Management (particularly Key Actions 2.7 and 5.7) and is preventing 5 of the 8 Performance Indicators being met. Further, the lack (since 2001) of an "<i>external, independent scientific body</i>" has meant that, to a large extent, the performance indicators, program direction, priorities and reporting are not being independently endorsed. No evidence was provided that SCA's decision not to appoint such a body was brought to the Minister's attention (as required by Clause 7.2.5); and Many reported achievements do not relate solely to the Special Areas but rather apply across broader catchments, whole of government or national level programs.
7.2.3	Report on compliance with the Special Areas Strategic Plan of Management by 1 September each year	Partial compliance	<p>The <i>Special Areas Strategic Plan of Management Annual Report 2003/04</i> and covering letter were sighted (though undated). The SCA administration support system indicated that the required 1 September 2003 date was met. The report is more comprehensive and better presented than in early years. However, accountability and transparency has been reduced, as financial reporting omits NPWS expenditure (see note under Clause 7.2.2); expenditure under the Funding Agreement (\$2.9m) by Strategy / Program has been omitted; and five of the eight Performance Indicators have not been reported through an "<i>external, independent</i>"</p>



Clause	Requirement	Compliance	Findings
			<i>scientific body</i> ", as required by SASPoM. Note: NPWS expenditure on SASPoM was not available to SCA at the time of auditing.
7.2.4	Review the Special Areas Strategic Plan of Management every 5 years	No requirement	There is no requirement for this audit period (as this clause was fully complied with during the 2000/01 audit period). SCA focused on revising the Joint Management Agreement with DEC (NPWS) in 2003/04.
7.2.5	Proposed amendments to the Strategic Plan of Management must be brought to the Minister's attention for consideration	Low compliance	No proposed amendments to the plan were brought to the Minister's attention during 2003/04. However, SCA management decided to substitute the role of the "external, independent scientific body" by ad hoc individual experts, panels and workshops on an "as needed" basis (SCA Board Meeting 16 July, 2004).
7.3	Wingecarribee Swamp and Special Area Plan of Management		
7.3.1	Definition of WSSPoM	No requirement	
7.3.2	Review the Wingecarribee Swamp and Special Area Plan of Management and develop a new plan by 1 December 2000 with NPWS	No requirement	The current plan was adopted by the Minister on 1 May 2001 and no formal review was undertaken during 2003/04, however adjustments to the priorities or timetables for Key Actions were made. The Clause was fully complied with during the 2000/01 audit period.
7.3.3	The new or amended Wingecarribee Swamp and Special Area Plan of Management must consider rehabilitation and restoration of the swamp and objectives and strategies consistent with those in the Special Areas Strategic Plan of Management	No requirement	This clause was complied with during the 2000/01 audit period. The Plan provides a set of objectives and strategies consistent with the Special Areas Strategic Plan of Management. In 2003/04, SCA recorded its achievements against the Ministerial endorsed Plan of Management, (as opposed to SCA's "Implementation Plan" timetable, adopted in earlier Annual Reports). A positive improvement.
7.3.4	Give effect to the Wingecarribee Swamp and Special Area Plan of Management.	Partial compliance	SCA has demonstrated sound performance as it has: <ul style="list-style-type: none"> Considered the 2002/03 Audit recommendations; Reviewed and prepared a submission to SCA Executive on the provision of reports/scientific information on Wingecarribee Swamp on the SCA's website. However, the Executive is yet to decide on the submission, and the information is yet to be placed on the SCA website; Improved presentation of the Annual Report 2003/04; Completed a Charter of Public Disclosure;



Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> Completed a study on Robertson Field Study Centre; Progressed hydro-geological investigation of the swamp; Prepared a business case for an enhanced multimillion dollar Willow control program over four years; Participated in wider catchment programs assisting in swamp management, including public education and awareness on the draft REP; and Increased transparency, through independent peer review, (though not through an independent expert panel, as required by Plan of Management). <p>However, 'Partial compliance' is assigned because:</p> <ul style="list-style-type: none"> Expenditure on WSSAPoM Specific Programs (see Table 7.4) continues to fall over previous years; No weed control was undertaken in the swamp, however aerial mapping and development of a draft weed management plan were undertaken and SCA advised willow control contractors are to be engaged by January 2005; and Some (flood) water quality monitoring ceased (due to end of contract). <p>Further, a number of 'Key Actions', though described by SCA as 'completed' status remain uncompleted:</p> <ul style="list-style-type: none"> Key Action – provide land access agreements, Wingecarribee Shire Council minimum subdivision size, extension of access agreement to cover SCA's freehold ownership; W2 Noxious Weed classification for Salix Cinerea; threatened species recovery plan preparation and implementation plan appears to have made little or no progress since 2002/03 Annual Report (Key Action 2.2, part); Classification of Wingecarribee Shire as part of Land Review under S45(2) SWCMA Act not undertaken (Key Action 2.7, part); SCA has not provided interpretive signs as per 2001 timeframe, and are yet to complete conservation (RAMSAR) nomination criteria though this issue appears to lie with NPWS (DEC); SCA has not sought to amend WSSAPoM, though SCA considers numerous Key Actions not to be applicable (2.8, 2.7 various 2.9, 2.10 Fire Permit, 3.4 re



Clause	Requirement	Compliance	Findings
			<p>NPWS); and</p> <ul style="list-style-type: none"> Extension of time required to satisfy "Performance Indicators". <p>Further improvement is available to SCA through:</p> <ul style="list-style-type: none"> Establish an "independent expert reference panel" (or amend plan); Enhance rate of implementation; and Implement Ministerial Requirements in accord with the Plan of Management timetable. The 2002/03 Annual Report indicates a third of Key Actions as being "Partly Complete" or "Pending"; and a further two thirds as being "Completed", though some require "ongoing" actions. Alternatively, SCA may wish to amend the Plan via Clauses 7.5.2/7.3.6 with respect to redundant Key Actions.
7.3.5	Report on compliance with the Wingecarribee Swamp and Special Area Plan of Management by September each year	High compliance	<p>SCA demonstrated High compliance as it:</p> <ul style="list-style-type: none"> Provided a compliance report by 1 September 2003 covering the period 2002/03; and Provided the Wingecarribee Swamp Special Areas Strategic Plan of Management Annual Report 2003/04, covering the period to 1 July 2004, and forwarded to IPART by 1 September 2004. <p>See also Clause 7.3.4 for further details..</p>
7.3.6	Review the Wingecarribee Swamp and Special Area Plan of Management every five years	No requirement	<p>Wingecarribee Swamp and Special Area Plan of Management was to be developed by 1 December 2000 (clause 7.3.2). The Plan was subsequently adopted by the Minister on 1 May 2001 and, as such, a revised plan is not scheduled until 1 December 2005. SCA continues its efforts to provide a "sustainable" swamp as a basis for future.</p>
7.3.7	The outcomes of the review in 7.3.6 must be brought to the Minister's attention, for consideration.	No requirement	<p>See Table 7.1, Clause 7.3.6 above.</p>
7.4	Regional Environmental Plan		
7.4.1	Comply with the Regional Environmental Plan (REP)	No requirement	<p>The Regional Environmental Plan, "<i>Sustaining the Catchment</i>", has continued to be a draft plan throughout 2003/04. SCA, with Ministerial agreement, undertook a</p>



Clause	Requirement	Compliance	Findings
			further exhibition and review process on behalf of DIPNR and has applied considerable resources and effort in preparing for the REP; for example, <i>Strategic Land and Water Capability Assessments</i> (SLWCA's) to assess the impact on water quality, and developed and implemented communication strategies.
7.4.2	Promote implementation and awareness of the REP	No requirement	To prepare for the implementation of the REP once it is gazetted, SCA has undertaken projects in 2003/04 including: further developing the guidelines for 'Neutral or Beneficial Effect on water quality'; application of the methodology for Strategic Land and Water Capability Assessment to Wingecarribee and Nattai sub-catchments (developed further from its earlier application in the Wollondilly, Upper Wollondilly and Mulwaree sub-catchments); and developing a Decision Support System for applying Rectification Action Plans across the catchments.
7.4.3	Consider and report on matters in 7.4	No requirement	See Table 7.1, Clause 7.4.2 above.
7.5	State Environmental Planning Policy		
7.5.1	SCA to comply with SEPP 58	High compliance	<ul style="list-style-type: none"> SCA has demonstrated High compliance as it has: Developed an effective relationship with local councils (some of which amalgamated over 2003/04); Maintained the currency of SEPP58 through a minor road amendment; Assessed some 714 Development Applications (DA's) and REF's (192 for concurrence; 382 for notification and 134 Part V) in a systematic manner, via SCA's: <i>Development Application Register</i> 2002/03; Reviewed some 134 Part V matters (list sighted) including SCA and developments including: DA 2003/02573 (Mulwaree Shire) for high temperature protein and vermiculture facility (file reviewed) and an onsite disposal facility, Greater Argyle Council DA2003/04 (file sighted); Processed 56% of notified DAs within the defined time limits and applied a "Stop the Clock" process on 15-32% of DA assessed per month. Two DA's were refused concurrence in 2003/04. Completed compliance inspections on 139 (20%) of DA's compared to 105 (14%) in 2002/03 and of these 14 were determined as non compliance (16 in 2002/03).



Clause	Requirement	Compliance	Findings
			<p>Note: In addition to the above, a further 12 DA assessments (03400, 03500, 04100, 041601, 03317, 03639, 02643, 03553, 03552, 03824, 03356, 03365) were reviewed by the auditor (for a variety of developments, primarily effluent disposal), and found to be in compliance with SCA's responsibilities.</p> <p>Ministerial Requirement (M6J 2001/02) required a formal link be established with Councils to ensure SCA receives all SEPP 58 DAs and advice on commencement to improve compliance inspections. SCA advised such a formal link was not established, due to resourcing difficulties, though it is seeking such links through developing an electronic registration of DAs in concert with Councils. SCA intended to establish such a link as Stage 3 of its Development Application Register (DAR). However SCA did not proceed with Stage 3 over 2003/04, though it has sought to foster closer working relationships with Council.</p> <p>Further improvement is available to:</p> <ul style="list-style-type: none"> Establish a formal system of direct advice to SCA of all DAs submitted to Council (to meet 2001/02 Ministerial Requirement M6J). Establish a system of direct advice from Councils with regard to commencement of developments to facilitate compliance inspections. Monitor "effectiveness and compliance of development consent conditions". Note: SCA had made budgetary provisions to: monitor effectiveness of DA conditions and check compliance of Councils' DA registers with SEPP 58 in the 2002/03 Financial Year, however this program was not undertaken. Rather, SCA further developed communication and support to Councils (viz its DAR, and compliance staff).
7.5.2	Licence Regulator to consider and report on matters in clause 7.5	No requirement	This condition does not invoke a requirement on SCA.

7.4 Discussion

7.4.1 Management and Protection of the Catchment

Catchment area management and protection is covered by Part 7 of the Operating Licence and contains some five clauses.

Clause 7.1.1 requires the “*Authority to manage and protect*” the catchment area and is a broad but important Licence condition. The auditor has relied on indicators to assess the SCA’s compliance in catchment management and protection, “*to the full extent to which it is empowered to do so*”.

A variety of ownership and land uses gives rise to at least three operational frameworks in which the SCA must discharge its catchment obligations.

Operational frameworks

In respect of the Special Areas (or “inner catchment”), two operational frameworks apply. Firstly, the SCA has direct catchment management responsibility for land to which it has title. Secondly, where the Special Area is also reserved under the National Parks and Wildlife Act 1974, SCA’s responsibility is focussed on matters of water quality and catchment protection.

In the “outer catchment”, a third operational framework applies where the SCA is monitoring, responding to and regulating a variety of public and private land uses in so far as they may affect water quality and catchment protection.

Regulations

SCA’s catchment management powers largely stem from two Regulations. The first, the Sydney Water Catchment Management (*General*) Regulation 2001, enables Penalty Infringement Notices (PINs) to be issued for illegal actions (for example, access, trespass, pollution etc.) within the Special Areas. The procedure for enforcement under this Regulation is familiar to SCA’s authorised officers and is actively implemented.

Secondly, the Sydney Water Catchment Management (*Environment Protection*) Regulation 2001 applies across the entire catchment and gives SCA’s authorised officers powers equivalent to EPA (DEC) officers under the Protection of Environment Operations Act but only for activities not licensed by the DEC. Although this regulation came into force on 1 March 2001, SCA’s enforcement commenced in earnest over 2002/03, through expanded programs of training and compliance, such as the issuing of Penalty Infringement Notices.

Enforcement of the Environment Protection Regulation was the focus of a Ministerial Direction in 2002/03 and SCA has responded with improved performance, particularly compliance activity. SCA has demonstrated continuing effort, through a comprehensive compliance strategy and actions, which was evident in 2003/04.

Achievement in Catchment Management Protection

SCA’s achievements for 2003/04 in Catchment Management have included the following:

- Increased integration recognising the changes within NSW’s Government structures and organisations (now that SCA is a member of DEC and interfaces with other DEC members such as

EPA and NPWS) as well as changes within the broader catchment management framework (including the establishment of MoUs with two of the three newly formed Catchment Management Authorities);

- In particular, improved integration with Councils and DEC with respect to development control and compliance management;
- Successful incident control and the application of SCA's mapping software to assist in the mitigation of pollution spills;
- Conducted surveillance flights to identify illegal activities, such as quarries and clearing, which identified some 70 matters;
- Management of the Special Areas in regard to bushfire risk, roads and surveillance including improvement of infrastructure lost through earlier bushfires;
- Application of resources to heritage sites (for example, Appin Heritage and Windmill Hill);
- Continued programs to address high risk derelict mine sites;
- Development conditions for the management of the Woodlawn Mine Site, in cooperation with appropriate mining regulations;
- Undertook reviews of environmental assessments associated with major utilities and exploration, and developed appropriate catchment management conditions and compliance requirements;
- Improved the Braidwood lands through soil conservation measures and enhanced some 22,000ha via enhanced lease arrangement;
- Participated in public education and community shows, including those in Robertson, Moss Vale and Goulburn;
- Completion of the priority prevention program targeting dairies involving the last four dairies (Note: all nineteen dairies identified in the program have now been addressed to enhance water quality and water conservation);
- Improved integration of programs for the Healthy Catchment Program; and
- Undertook an active program of compliance, management and surveillance.

Coordination of water quality data

Clause 7.1.2 requires SCA to use *"...its best endeavours to coordinate and collect data on water quality"*. However, SCA's focus is almost exclusively on water quality data collected under its own or *"whole of Government"* programs. Thus, the need to exercise a 'coordinate and collect' role for water quality data by other groups across its Catchment Area remains outstanding.

SCA's performance to coordinate water quality data (Clause 7.1.2) has been assessed as 'partial' and then over the last three years, 'low' compliance. Thus, this requirement warrants review as part of the end of term Licence review to ensure an alignment of Government and SCA priorities.

As in previous years, the opportunity remains for SCA to identify data on water quality, and collect and coordinate data consistent with its *"best endeavours"*, including data collected by *other relevant persons or bodies*.

SCA is required to make its unpublished data on river health publicly available (Clause 7.1.3), and had, in previous years identified a number of programs (such as the Knowledge Audit and Catchment Information System) as the means of identifying such data. A listing of such unpublished data has been

prepared. SCA advised that its Executive approved making this list available on SCA's website, however, the data was not available during the audit period. The website information is to describe how members of the public can request this data.

7.4.2 Special Areas Strategic Plan of Management.

Section 45 of the Act required the Minister to undertake a review of the Special Areas lands to determine whether the objectives of the SCA would be more effectively attained if the land concerned was vested in the Minister administering the *National Parks and Wildlife Act*. The review of these lands was completed over previous audit years and SCA has successfully transferred a total of 18,000ha of land to NPWS.

SCA provided Annual Reports on the implementation of the *Special Areas Strategic Plan of Management*, and the *Wingecarribee Swamp and Special Area Plan of Management*.

Special Areas Strategic Plan of Management (SASPoM).

SCA developed in 2001/02, a SASPoM Implementation Model to coordinate both SCA and NPWS under all five SASPoM strategies. A *program plan* has been developed (for each area of *research and data, operations, policy and government relations, joint management, and public scrutiny, public education and awareness*) and achievements in 2002/03 were reviewed. The *program plans* are directed to delivery outcomes between 2002 and 2007 and thus represent a planning tool for current and future years.

Some *program plans* do not involve financial allocations (for example, *policy and government relations program plan*) but rather provide a structure to indicate how strategic priorities for the special areas are being managed. It is further noted that the *program plans* do not directly relate to, but rather form a matrix across, the five SASPoM strategies (*whole of catchment management; ecosystem management; public education and awareness; joint management; and public scrutiny*). SCA reports implementation of the SASPoM against the five key strategies inherent within the Operating Licence in a clear and concise manner.

Table 7.2 provides an assessment of the Ministerial endorsed implementation of SASPoM Key Actions timeframe, and performance indicators over 2003/04.

The 2003/04 *Annual Reports on the Implementation of SASPoM* (see Table 7.2) indicated a number of changes in program priority, as described below:

- ▶ **General Observations:** The SASPoM is a well organised and executed joint SCA-NPWS program to manage Sydney's drinking water catchments. The Special Areas Strategic Plan of Management Annual Report 2003/04 is better presented, compared to previous reports and outlines achievements including:
 - Extensive catchment management programs (bushfire and weed management);
 - Active joint management (SASM Minutes sighted);
 - NPWS financial acquittal in earlier years resolved;
 - Strong program planning is evident (work plans);
 - Comprehensive vegetation survey completed; and
 - Joint Management Agreement reached.

Yet, many of the "*Notable achievements*" are more general and reflect SCA's broader catchment management program as opposed to being Special Areas specific.

Unlike previous years, it is not possible to fully assess the extent of implementation as the 2003/04 Financial Statement:

- ▶ Does not contain NPWS expenditure, rather readers are advised that “*NPWS financial information will be provided at a later date*” (Note: SCA advised NPWS (DEC) had not provided this information by the date required to produce the annual SASPoM Annual Implementation report.);
- ▶ Does not provide a breakdown of the “*Funding Agreement*” – normally some 40% of SASPoM expenditure – by *strategy* or *Project / Component*; and
- ▶ Does not provide “*Total Expenditure*” for individual *strategy* or *Project / Component*.

Implementation continues to run behind the Ministerial approved timetable (2001), or in some cases, remains incomplete. For example, an Expert Independent Scientific Body has yet to be established. SCA has indicated it has adopted an alternate approach, that is, as needed selected peer reviews, though no such amendment would appear to have been raised with the Minister (as required by Clause 7.2.5).

Of further concern is an apparent fall in expenditure on the Special Areas Plan of Management. Table 7.3 provides a comparison of the Financial Statements for the Special Areas Strategic Plan of Management expenditure over the last four years. However, the exclusion in the 2003/04 report, of the National Parks expenditure (some \$1 million in 2002/03) and the funding agreement (expenditure of \$2.8 million in 2002/03) hinder a more definitive comparison.

- ▶ An apparent decrease in total expenditure for “*on ground*” expenditure program;
- ▶ “*Whole of Catchment*” expenditure, primarily on the REP, was just below \$700,000 in 2003/04;
- ▶ “*Ecosystem Management System*” expenditure dropped with falls in fire management, pest and weed management and other “*on ground*” management;
- ▶ “*Public Education*” expenditure has increased over the years;
- ▶ “*Joint Management*” expenditure has fluctuated significantly over the years; and
- ▶ “*Public scrutiny*” expenditure has generally decreased over the years.

Table 7.2 provides a status assessment of SASPoM *Key Actions* and *Performance Indicators* over 2003/04.

Wingecarribee Swamp and Special Area Plan of Management

The SCA’s 2003/04 Annual Report on implementation, provides an improved presentation over earlier reports, and is clear and comprehensive. The format, scope and nature of the report provide an outline of Key Actions and SCA’s performance against these Actions.

Progress in 2003/04 has plateaued with expenditure on WSSAPoM specific programs again declining (see Table 7.4), being some 85% of 2002/03, which, in turn was some 80% of 2001/02. Notably, expenditure on weed control, which had been significant in earlier years, ceased due to end of contract. SCA did advise that a comprehensive weed control program is being planned for the following years. Timelines on a number of “Key Actions” were extended (see Table 7.5), compared to specific timeframes specified in the Ministerial endorsed Plan of Management 2001. Expenditure on Wingecarribee Swamp specific programs (that is “*Expenditure on Swamp Only*” and “*WSSAPoM Specific*” expenditure in Table 7.4) has fallen progressively over the last four years ago.

SCA have indicated it has actually increased expenditure due to broader whole of catchment programs, however much of the *“Catchment Collective”* (Table 7.4) expenditure, related to advancing the Regional Plan, is far wider than the management of the Wingecarribee Swamp.

SCA has directed its energies to enhanced planning and the preparation of a business case for a significantly expanded Willow control program, nominally for 2004/05. Approval and implementation of this plan were not available for the audit and will require assessment in the 2004/05 audit year. The SCA indicated that success of the three year Willow control up to 2002/03 and the time required for juvenile plants to reach sexual maturity has provided SCA the opportunity to review and redirect this significant program.

SCA reported its performance against the timetable endorsed by the Minister’s “Implementation Plan” dated November 2001 as opposed to an internal adjusted timetable.

The opportunity is available (through Clause 7.4.1) to advise the Minister of changes and request a revised timetable, if considered necessary. The opportunity remains for SCA to increase the rate of implementation and to achieve the Ministerial endorsed timetable, prior to the plan’s completion date in December 2005.

A Ministerial requirement in 2001/02 was for SCA to *“accelerate action”* to give effect to the plan. Whilst SCA has used 2003/04 to review its direction and undertake program planning and approval, the rate of implementation has not increased and some key programs, for example, active weed control in the Swamp, ceased due to the contract coming to a close.

The opportunities for improvement in reporting lies in meeting the original timeframes identified in the Plan of Management and providing a clear outline of expenditure specific to WSSPoM over the operating year. SCA has, through its actions, timetables and resource allocation, identified some “Key Actions” that are deemed to no longer apply or are assigned a low priority.

The current Plan of Management was originally required by 1 December 2000, and the Operating Licence calls for a review and renewal every five years (Clause 7.3.6), which nominally would be by December 2005. The process of review, redrafting, consultation with National Parks and Wildlife Service and broader stakeholders and referral to the Minister (in accord with Clause 7.3.7) is likely to take some time.

SCA has made some positive gains in *“Public Scrutiny”* through, for example, establishing a *“charter of public disclosure”* and identifying information on Wingecarribee Swamp that it can make available on its website. SCA has also identified a number of studies for external and independent peer review. However, a “Key Action” (5.2) was the establishment and resourcing of an external, independent scientific body for all Special Areas, to:

1. *Provide advice on feedback to SCA and NPWS regarding the ecological health of the catchment and the quality of raw water in the storages, and*
2. *Publish a report annually regarding the ecological health of the catchments and the quality of raw water supply.*

Despite the Implementation Plan indicating this Key Action is “completed”, neither actions (1 and 2) would appear completed.

The lack of an external, independent, scientific body, constrains the transparency of decision making in implementing the overall Plan.



SCA's staff are clearly committed to implementing the Plan and SCA needs to ensure adequate resources are made available to do so.



Table 7.2 Performance in Implementing the Special Areas Strategic Plan of Management, by Strategy and Key Actions as at 2003/04

Strategy One: A 'whole-of-catchment' Management Approach			
Key Action	Description	SASPoM: Ministerial Endorsed Timeframe	SCA's 2003/04 Status
1.1	Assist implement REP (Note: DIPNR responsible for REP)	Complete by Dec 2001	Remains a draft.
1.2	Secure agreements with Lands, DIPNR, Councils etc	Secure agreements by June 2001	MoUs in place or progressing.
1.3	Seek Agreements with Agriculture Organics etc.	Secure agreements by June 2002	Negotiations envisaged to continue.
1.4	Undertake Education Programs	Commence Annual Program 2002	Conducting programs; ongoing.
1.5	Commitment to specific initiatives	Set up program by October 2001	SCA cites REP and D.A Programs.
1.6	SCA and NPWS jointly resource programs to reduce threat to water quality.	Implement in 2001	Active SCA program with utility agencies.
1.7	Seek regulatory changes	Seek changes by July 2001 and ongoing as required.	Regulations established; ongoing.
1.8	Jointly promote applications of water quality objectives (with NPWS / Healthy Rivers Commission)	Promote in annual reports from 2001	Link to draft REP; ongoing.
1.9	NPWS ensure outer catchment management	Review procedures by June 2001; commence to amend by Dec 2001	Status of review / amendment unclear. Ongoing catchment management programs.
Strategy Two: An Ecosystem Management Approach			
Key Action	Description	SASPoM: Ministerial Endorsed Timeframe	SCA's 2003/04 Status
2.1	Jointly implement access control etc	2001	Strict control; ongoing
2.2	Jointly implement threat abatement	Commence immediately (2001)	One plan approved (2003). Many commenced but not finalised. Active pest control.



Strategy Two: An Ecosystem Management Approach			
Key Action	Description	SASPoM: Ministerial Endorsed Timeframe	SCA's 2003/04 Status
2.3	Action consistent with ecosystem, health and integrity standard ETS health	Commence immediately (2001)	SCA reviewed environmental impact. NPWS's actions not reported.
2.4	Water Quality monitoring by SCA	Ensure baseline data available June 2001	Extensive monitoring; ongoing.
2.5	SCA/NPWS develop special database	Develop ongoing scoping and program by October 2001	Establishment progressing.
2.6	SCA / NPWS establish an ecological data modelling program	Commence immediately, scope and program developed by October 2001	Program still under development.
2.7	SCA/NPWS accelerate research under independent expert scientific body	Commence immediately (2001)	Scientific body not established nor programmed
2.8	SCA/NPWS resource external long term independent research	Establish in 2001	Process to resource external, independent scientific research not established nor resourced, though SCA uses independent scientific peer review for some projects.
2.9	SCA/NPWS 'whole of government' approach to development approval	Initial forum within 3 months of Plan launch (August 2001), ongoing until achieved.	REP not gazetted.
2.10	SCA/NPWS review threatening activities eg. Mines	Commence immediately (2001)	Control (SEPP58) and mining working group.
2.11	Examine abandoned mines / rehabilitation programs	Commence now, final scope and program by October 2001	Rehabilitation ongoing.
2.12	Less significant impacting actions	Commence immediately (2001)	Ongoing risk approach.
2.13	Grant lease only if have neutral / beneficial effect	Commence immediately (2001)	Criteria developed; ongoing assessment.
2.14	SCA / NPWS update fire management	Commence immediately (2001)	Updated following 2001/02 and 2002/03 bushfires.
2.15	SCA/ NPWS protect spiritual / cultural sites	Commence immediately (2001)	Manage via conservative plans; ongoing.



Strategy Three: Public Education and Awareness Campaign			
Key Action	Description	SASPoM: Ministerial Endorsed Timeframe	SCA's 2003/04 Status
3.1	SCA/NPWS implement info program	Establish scope by May 2001, program by September 2001	Numerous programs; ongoing.
Strategy Three: Public Education and Awareness Campaign			
Key Action	Description	SASPoM: Ministerial Endorsed Timeframe	SCA's 2003/04 Status
3.2	SCA/NPWS coordinate briefing to elected decision makers	Provide biannually on establishment then annually	Briefing to local Government staff via SCA's Local Government Reference Panel, which includes a number of, elected decision makers.
3.3	SCA / NPWS: K –12 education on Water Quality	Establish program by September 2001 then run on ongoing basis	Active program demonstrated.
3.4	SCA/NPWS: report results of studies / research in respective (SCA & NPWS) Annual Reports	Commence immediately (2001)	SCA's Annual Report advises approximated expenditure on research though does not provide details of its results
3.5	SCA / NPWS: report results publicly available	Make available by 2001 then update quarterly	SASPoM website established.
3.6	SCA/NPWS research public awareness	Conduct 1 st Survey within 3 months (July 2001) of release of plan then biannually.	SCA contributed to national research and some site specific research regarding fire management and ecological assessment within the special areas though a systematic approach building on the previous surveys and the biannual survey was not evident.
Strategy Four: Effective Joint Management Process			
Key Action	Description	SASPoM: Ministerial Endorsed Timeframe	SCA's 2003/04 Status
4.1	SCA / NPWS: implement Joint Management Agreement (JMA)	Commence immediately (May 2001)	Active JMA in previous years. Reviewed in 2003/04
4.2	SCA/NPWS: conduct staff education session	Commence immediately (2001)	Awaiting revised JMA, though SCA conducted a number of workshops and staff education sessions in 2003.



4.3	SCA/NPWS advise Licence Regulator	Commenced 2001, ongoing thereafter as per the requirements of SCA Operating Licence.	Annual reports provided.
Strategy Five: Public Scrutiny (to demonstrate transparency)			
Key Action	Description	SASPoM: Ministerial Endorsed Timeframe	SCA's 2003/04 Status
5.1	SCA / NPWS establish Charter of Public Disclosure	Establish by June 2001	Charter established over 2003/04.
5.2	Establish and resource external independent scientific body (EISB)	May 2001	Not established as at 2003/04, and no EISB annual report.
Strategy Five: Public Scrutiny (to demonstrate transparency)			
Key Action	Description	SASPoM: Ministerial Endorsed Timeframe	SCA's 2003/04 Status
5.3	SCA / NPWS: Place SASPoM on website	Publish information initially by May 2001, then at least quarterly.	SASPoM website being prepared over 2003/04.
5.4	SCA and NPWS publish annual statements	Publish annually as per requirements of the SCA Operating Licence, September 2001	Completed annually.

Performance Indicators		
PI 1	Implement Key Actions consistent with Plan of Management timeframe.	Whilst SCA indicates "Completion of Key Actions For all 37 Key Actions", numerous actions are yet to be completed or have delayed timetables (see above).
PI 2	Water Quality at Strategic Sites as advised by Expert Independent Scientific Body (EISB)	Water Quality is measured but not in accord with Expert Independent Scientific Body (EISB).
PI 3	Water Quality upstream of Special Areas as advised by EISB	Water Quality is measured but not in accord with EISB.
PI 4	Flora and Fauna data as advised by EISB	Vegetation report in 2002/03 but not in accord with EISB. Fauna yet to be undertaken.
PI 5	Ecosystem degradation. Indices as advised by EISB	Vegetation in report in SCA's Annual Environment Plan but not in accord with EISB.
PI 6	Measure use of Special Area website	Special Areas website not established (proposed late 2004).



PI 7	Assess research by EISB	Not assessed by EISB, though some research peer-reviewed.
PI 8	Public Awareness	Broad national survey support but not for Special Areas.

Note: Provisions are available to SCA to amend the Special Areas Plan of Management if considered warranted.



Table 7.3 Financial Statements on implementation of the Special Areas Strategic Plan of Management over the last four years, as per SCA's Annual Reports on Implementation

Strategy	Project description	Expenditure 2000/01 (\$,000)	Expenditure 2001/02 (\$,000)	Expenditure 2002/03 (\$,000)	Expenditure 2003/04 (\$,000)
Strategy One: "Whole of Catchment"					
	Preparation of REP	231	364	386	395
	Salary and Vehicles		1,434	203	292
Strategy Two: "Ecosystem Management"					
	Fire Management	1,567	859	1,267	188
	Water Quality	435	265	100	100
	Pest and Weed Management	1,092	353	117	26
	Soil Conservation	593	92	153	325
	Unauthorised Access Management	692	360	269	240
	Ecological Assessments	246	456	12	0
	Cultural Heritage Management	490	168	33	173
	Geographic Information System	205	125	50	177
	Rehabilitation	-	79	70	91
	Research	587	388	1,234	426
	Miscellaneous	168	334	9	185
	Salaries and Vehicles	1,092	1,155	2,632	690
Strategy Three: "Public Education"					
	Education and Awareness Projects	62	79	65	177
	Salary and Vehicles		150	50	282
Strategy Four: "Joint Management"					
	SASM Secretariat	64	112	387	0
	Management Overheads		115		38
Strategy Five: "Public Scrutiny"					
	Public Disclosure		10	12	18
	Web Site	75	5	9	9



Strategy	Project description	Expenditure 2000/01 (\$,000)	Expenditure 2001/02 (\$,000)	Expenditure 2002/03 (\$,000)	Expenditure 2003/04 (\$,000)
	Annual Report		5	42	5
Total		7,851	7,133	7,125	3,837 ⁽¹⁾

⁽¹⁾ Expenditure excludes NPWS contribution (\$1m in 2002/03) or 'Funding Agreement' (\$2.888 million in 2002/03)

Sources:

- ▶ SCA and NPWS's Special Areas Strategic Plan of Management Annual Reports on Implementation 2001/02, 2002/03, 2003/04
- ▶ Advised to Auditor 2000/01



Table 7.4 Expenditure on Wingecarribee Swamp and Wingecarribee Catchment 2000/2001 to 2003/04

Strategy	2000/2001 ^(a)		2001/02 ^(b)		2002/03 ^(c)		2003/04 ^(d)	
	Expenditure on Swamp only	Expenditure on Planning and REP	Expenditure on Swamp only	Expenditure on Planning and REP throughout Wingecarribee Catchment	Expenditure on Swamp only	Expenditure on Planning and REP throughout Wingecarribee Catchment	WSSAPoM Specific	Catchment Collective
1. Whole of Catchment Management Approach	-	SCA Labour cost	-	\$1,160,060 + SCA Labour costs	-	\$75,000	\$100,000 (Robertson Sewerage Treatment)	Regional Plan \$636,216
2. Ecosystem Management Approach	\$565,000	-	\$572,087	-	\$451,134	-	\$278,592	LGA Willow Control \$81,552
3. Public Education and Awareness Campaign	-	SCA Labour costs	SCA Labour costs	-	SCA Labour costs	-	-	\$327,950 + SCA Labour Cost
4. Effective Joint Management Processes	\$20,000	SCA Labour costs	SCA Labour costs	-	SCA Labour costs	-	SCA NPWS Labour Costs	-
5. Public Scrutiny	-	SCA Labour costs	SCA Labour costs	-	SCA Labour costs	-		SCA Labour Cost
TOTAL (+ Labour Costs)	\$585,000	SCA Labour costs	\$572,087	\$1,160,060	\$451,134	\$75,000	\$378,592	\$1,045,718

Source: Financial Statements for Implementation of WSSAPoM contained in:



- (a) SCA (2001), Wingecarribee Swamp and Special Areas Plan of Management 2000/2001 Annual Report on the Implementation, Sydney
- (b) SCA (2002), Wingecarribee Swamp and Special Areas Plan of Management 2001/2002 Annual Report on the Implementation Plan, p26, Sydney
- (c) SCA (2003), Wingecarribee Swamp and Special Areas Plan of Management 2001/2002 Annual Report on the Implementation Plan, p34, Sydney
- (d) SCA (2004) Wingecarribee Swamp and Special Areas Plan of Management Annual Report 2003-2004, p34, Sydney



Table 7.5 SCA's Performance against Strategic Priorities for 2003 – 2007 for Wingecarribee Swamp Special Areas Plan of Management

STRATEGIC PRIORITY.	SCA'S NOMINATED TARGETS (2002/03 ANNUAL REPORT: "PERFORMANCE INDICATOR").	SCA's PERFORMANCE OVER 2003/04 (AS REPORTED IN 2003/04 ANNUAL REPORT ON IMPLEMENTATION).
Maintain and maximise the effectiveness of the weed control program with specific focus on <i>Salix cinerea</i> (willow) and <i>Rubus</i> spp. (Blackberry). Write and tender a new contract based on the planning outlined within the Pest and Weed Management Plan for Wingecarribee Swamp.	<ul style="list-style-type: none"> ▶ Tender completed and contractor(s) engaged by January 2004. ▶ Weed infestation controlled and reduced in priority areas. 	<ul style="list-style-type: none"> ▶ Now January 2005 for tender release (ie. 12 months later). ▶ No weed control was undertaken in 2003/04 though significant planning and business case preparations were undertaken.
Complete the Wingecarribee Swamp Weed and Pest Management Plan by:- <ul style="list-style-type: none"> ▶ Undertaking research trials on chronic toxicity of aquatic organisms to trichlopyr. ▶ Completion of stakeholder consultation. 	<ul style="list-style-type: none"> ▶ Research trials completed by March 2004. ▶ Stakeholder consultation completed by end March 2004. 	<ul style="list-style-type: none"> ▶ 2002/03 Plan required research results to be completed by October 2004 (some 7 months late). ▶ Now March 2005:(one year later).
Use the completed Wingecarribee Swamp Weed and Pest Management Plan with an application to Australian Pesticides and Veterinary Medicine Authority (AP and VMA) to acquire approval of an off-label permit to use Garlon as the preferred chemical for willow seedling control.	<ul style="list-style-type: none"> ▶ Approval acquired by end September 2004. 	<ul style="list-style-type: none"> ▶ Now Approval required by end of June 2005 (9 months later).
Undertake a research program of Wingecarribee Swamp and Special Area with major emphasis on understanding and potentially modelling the hydrology/hydrogeology associated with its catchment area.	<ul style="list-style-type: none"> ▶ Field mapping and geophysical survey completed by February 2004. ▶ Initial boreholes drilled, piezometers installed, and hydraulic testing completed by end June 2004. 	<ul style="list-style-type: none"> ▶ Now: end June 2005 (ie. 12 months later).
Complete a feasibility study for the establishment of a Regional Field Study Centre for Wingecarribee Swamp and Special Area.	<ul style="list-style-type: none"> ▶ Complete by August 2003. 	<ul style="list-style-type: none"> ▶ Strategic Priority removed from 2003/04 Annual Report.
Ensure Wingecarribee Swamp and Special Area is included with the terms of reference for an Expert Independent Scientific Body established under SASPoM.	<ul style="list-style-type: none"> ▶ SASPoM will establish in 2003/04. ▶ WSSAPoM included with terms of reference. 	<ul style="list-style-type: none"> ▶ SCA did not establish an Expert Independent Scientific Body but use a scientific peer review when required. Whilst this approach may be appropriate, the amendment to the Plan of Management should be



STRATEGIC PRIORITY.	SCA'S NOMINATED TARGETS (2002/03 ANNUAL REPORT: "PERFORMANCE INDICATOR").	SCA's PERFORMANCE OVER 2003/04 (AS REPORTED IN 2003/04 ANNUAL REPORT ON IMPLEMENTATION).
		formally endorsed through the amendment process.
Participate in the finalisation of the REP and implement actions as they relate to the Authority.	<ul style="list-style-type: none"> REP gazetted and actions underway. 	<ul style="list-style-type: none"> The REP is the responsibility of DIPNR however, it was not gazetted in the 2003/04 year.
Continue with the water quality-monitoring program for Wingecarribee Swamp and Special Area.	<ul style="list-style-type: none"> Data collected included with SCA Water Quality monitoring database, 	<ul style="list-style-type: none"> Flood water quality program suspended for 2003/04.
Continue development of the SCA Geographic Information System (GIS).	<ul style="list-style-type: none"> Field mapping completed to validate satellite imagery of Wingecarribee Swamp by end June 2004. 	<ul style="list-style-type: none"> Now: end June 2005 (ie. 12 months later).
Ensure WSSAPoM is included with the Public Charter for the SASPoM.	<ul style="list-style-type: none"> Implement by December 2003. 	<ul style="list-style-type: none"> The Wingecarribee Swamp has been included in the Special Areas Strategic Plan of Management Charter of Public Disclosure established on the SCA Website.
Seek access agreement with a neighbouring property owner in an attempt to acquire access to the south eastern section of Wingecarribee Swamp.	<ul style="list-style-type: none"> Access Agreement signed by November 2004. 	<ul style="list-style-type: none"> Annual Report 2003/04 indicates that under key action 1.2 that the status was completed for private landowners to allow SCA access to the Swamp. However, the 2003/04 Implementation Plan (page 7) indicates that one of the formal agreements was terminated.
Maintain and maximise effective joint management working relationships between NPWS and the Authority.	<ul style="list-style-type: none"> Meetings held. Steering Committee forum maintained. 	<ul style="list-style-type: none"> It is difficult when one agency is dependent upon another for overall performance. It is noted NPWS's involvement in Wingecarribee include: <ul style="list-style-type: none"> failure of NPWS representatives to attend one (08/08/03) of the two Wingecarribee Swamp Steering Committee meetings held throughout the year; and Rate of progress in the development of threatened species recovery plans appears slow.
Maintain and maximise public education and awareness of Wingecarribee Swamp and Special Area.	<ul style="list-style-type: none"> Attend three regional public events on environment. Complete two public media documents related to Wingecarribee Swamp and Special Area. 	<ul style="list-style-type: none"> Attended three regional public events on environment.
Develop signage for Wingecarribee Swamp and Special Area based on the recently completed SCA Corporate	<ul style="list-style-type: none"> Signs completed and installed by June 2004. 	<ul style="list-style-type: none"> Now: June 2005, (12 months later).



STRATEGIC PRIORITY.	SCA'S NOMINATED TARGETS (2002/03 ANNUAL REPORT: "PERFORMANCE INDICATOR").	SCA's PERFORMANCE OVER 2003/04 (AS REPORTED IN 2003/04 ANNUAL REPORT ON IMPLEMENTATION).
Signage Manual.		
Seek extension of the Wingecarribee Special Area to cover the full extent of SCA's freehold ownership of the swamp.	<ul style="list-style-type: none"> NOTE: Under the 2001 Management Plan the timetable assigned for this was "already underway". 	<ul style="list-style-type: none">
Seek scientific advice on all WSSAPoM performance indicators.	<ul style="list-style-type: none"> The original 2001 Plan of Management required "all these performance indicators would be subject to periodic independent review." It is noted that the "independent" component is no longer contained within SCA's performance indicator 8 (page 32). 	<ul style="list-style-type: none"> Scientific Review of relevant WSSAPoM performance indicators achieved by 30 June 2005.

7.4.3 Regional Environmental Plan.

The REP “*Sustaining the Catchments*” remains as a draft document during 2003/04. SCA took the lead in the public consultation process, which is a precursor to gazettal. SCA’s positive initiative in this regard is acknowledged. The SCA also continued to be an active participant in the development of the Regional Environmental Plan.

SCA continues to develop and apply catchment protection planning tools (for example, advice to Councils regarding development control, pilot rectification plans, Strategic Land and Water Capability Assessments, and a decision support system to underpin rectification action planning).

Initiatives SCA has taken include:

- ▶ Developed and applied the methodology for Strategic Land and Water Capability Assessment, for example, piloting the assessment in Wingecarribee and Nattai sub catchments;
- ▶ Decision Support Systems for the catchment Rectification Action Plan;
- ▶ Further developed guidelines on the application of the “*neutral or beneficial effect on water quality*” requirements; and
- ▶ Linked the Development Application Register (DAR) with a GIS and provided tools to assist local government.

The finalisation and gazettal of the REP is long overdue and is a requirement for improved catchment management.

7.4.4 State Environmental Planning Policy 58

SCA has continued to apply and implement a comprehensive Development Application Register (DAR) and planning (DA Module) capability. SCA’s efforts have also been directed to develop cooperative programs with Councils to process Development Applications in an efficient manner.

A sample of 12 DAR registrations were audited consisting of Development Applications and Part V environmental assessments. They were reviewed for timeliness, clarity of assessment and whether the council’s consents were consistent with the concurrence advice provided by SCA. The results were mixed. The registration and tracking system was found to be effectively managed with clear and concise summaries, checklists and records of compliance. Of the twelve assessments sampled, SCA had met compliance with the statutory assessment time on five samples, had exceeded on a further three and timing was not advised on the “*DAR Application Summary*” for the balance. In regard to “*Consent consistent with SCA advice*”, the DAR Application Summary sheets recorded: yes, once; no, five times; and was not advised for the balance (6).

Similarly, an SCA prepared Review of Environmental Factors (REF) for remedial road work (DAR 03452, file 2003/02017) was reviewed and whilst an independent review by SCA’s Statutory Planning area was undertaken, the status of the determination was unclear as the following documents had not been signed:

- ▶ SCA Determination; and
- ▶ RTA’s Certification of Amendments; or SMEC’s REF.

The approval for the *Determination of Activity* for the Warragamba Stop Log Rail Refurbishment (DAR 03365, file 2003/01156) was also not signed, and so its status is also unclear.

Thus, while the sampled Development Application registrations indicated SCA was applying systematic, independent and comprehensive environmental assessments, the final SCA decision to be made by the SCA delegates was omitted from the files in numerous REFs samples.

The sampled assessments demonstrated that SCA applies both model (standard) and site specific conditions, as required. It also confirmed the need for SCA to ensure its concurrence conditions are being applied by Council and in the development, itself. For example, SCA included conditions to ensure “*neutral or beneficial effects*”, commonly relating to the capacity of on-site water treatment plants. Compliance with such requirements is fundamental to SCA achieving protection of water quality.

Previous audits (2000/01, 2001/02, and 2002/03) highlighted the opportunity for a formal notification link with councils to advise SCA of development commencement, conditions and compliance. This issue has also been the subject of a Ministerial Directive in 2001/02. Whilst compliance inspections are targeted to areas of greatest risk, formal notification links with Council are yet to be established, rather a quarterly report from Councils is received by SCA. SCA made a budgetary provision in 2002/03 to monitor the effectiveness of development consent conditions and an audit of Council’s DA registers for SEPP58 compliance. However, this did not proceed and the development of improved compliance monitoring, was postponed to 2004/05.

7.5 Factors affecting compliance

The key factors affecting compliance in ‘Catchment Management and Protection’ are twofold. The first is SCA applying its resources in a manner that meets the intent and nominated time lines in its catchment management programs and Plans of Management. The second factor the participation, priority and resources applied by other government agencies. In the case of the latter, responsibility lies with DIPNR to complete the REP “Sustaining the Catchment”, which remains in draft form. Similarly, responsibility lies jointly with NPWS (now DEC) to realise agreed programs, such as the Special Areas Strategic Plan of Management, and with councils in regard to notification, consent and compliance with Development Application conditions.

However, catchment management involves coordination of a diverse array of bodies influencing planning and management and if SCA is to deliver the outcomes required by its enabling legislation, it needs to achieve the necessary relationships with such agencies. This is even more important now, with the establishment of the CMAs.

7.6 Recommendations

7.6.1 Key recommendations

That the SCA:

- R7.1 Secures an agreed timetable with DIPNR to gazette and implement the Regional Environment Plan, “Sustaining the Catchments”.



- R7.2 Increases its resource allocation and improves transparency of expenditure (by *Strategy* and *Key Action*) and reporting to demonstrate that implementation of the Special Areas Strategic Plan of Management and Wingecarribee Swamp and Special Areas Plan of Management is meeting the respective Ministerial endorsed timeframes, or formally amend the plans as required.
- R 7.3 Advise IPART of any net reduction in expenditure against forward projections in the *Healthy Catchments Program 2003-2007 (Version 3.0 193)* and any likely impact on water quality and catchment health.

7.6.2 Secondary recommendations

That the SCA:

- R 7.4 Includes in the 'End of Term Review' of its Operating Licence the need for SCA to coordinate the collection of data on water quality, throughout the catchments.
- R 7.5 Implements an effective program to make available unpublished river health data (in 2004/05).
- R 7.6 Appoints an Expert Independent Scientific Body as required by the Special Areas Strategic and Wingecarribee Plans of Management, or amend the Plans.
- R 7.7 Ensures that all Development Applications falling under State Environmental Planning Policy 58, are received by SCA, and establish a formal link with Councils so that SCA field officers are advised when such developments have commenced to facilitate compliance inspections and coordination with local councils.
- R 7.8 Publishes SCA data and information on the Wingecarribee Swamp and the implementation of the Plan of Management on the SCA website, as required by the Plan of Management.
- R 7.9 Commence the formal 5-year review of the Special Areas Strategic Plan of Management and the Wingecarribee Swamp and Special Areas Plan of Management, in 2004/05.



8. Catchment infrastructure and demand management

8.1 Summary of findings

Catchment Infrastructure - Risk to Human Health

SCA has developed an excellent Catchment Infrastructure management system for managing bulk water quality. This system has been audited in previous audit periods. Although the system is in place and fully functional, additional integration is still to take place with other risk management activities being developed in SCA (for example, the Water Quality Risk Management Framework discussed under Clause 6.7) and underway in Sydney Water.

Security of supply

Based on the current safe yield calculated by the SCA's WATHNET model, the SCA has demonstrated **Full compliance** against the (Schedule 2) supply criteria. It was noted however, that a number of significant factors require further evaluation before full confidence can be placed in the estimate of safe yield calculated by the WATHNET model:

- ▶ The impact of allowing demand variations for normal changes in climate, (for example, demand is higher in dry periods and lower in wet periods) may reduce safe yield from 600,000 ML/yr to 580,000 ML/yr;
- ▶ Operating rules used in the model for storage drawdown/transfer, and demand allocated to each of the 10 demand centres in the WATHNET model, have not been revised for over 10 years and may now be incorrect; and
- ▶ The impact of possible reduction in discretionary demand when mandatory restrictions are implemented ('*demand hardening*') may be a reduction in safe yield from 600 000 ML/yr to 540 000 ML/yr.

In addition, the auditor is concerned that the following safe yield affecting factors have not yet been fully explained or investigated by the SCA:

- ▶ Effect of major bushfires across the catchments, which may reduce runoff during forest regrowth period (10 to 30 years after the fire) and hence reduce safe yield; and
- ▶ Explanation of the anomalies found in the WATHNET model and "corrected" by the SCA in 2001/02, which saw the safe yield estimate rise from 580,000 ML/yr to 600,000 ML/yr. No technical documents outlining what the problem was and how it was resolved have been provided.

Dam safety

The SCA has demonstrated **Full compliance** with the requirements of the Dams Safety Committee (DSC). Minor slippage has occurred against SCA's programs for production of five yearly surveillance reports, Operational and Maintenance Manuals and the finalisation of the Dam Safety Emergency Plans. However, the SCA has obtained written confirmation from the DSC that progress on these reports, manuals and plans is within its requirements.



Demand management

Partial compliance was given for progress against the requirement to consider, in augmentation of catchment infrastructure works, any additional scope for cost effective demand management strategies by Sydney Water. This rating is based on lack of evidence that SCA has applied a levelised cost/benefit and non-economic factors scoring approach like that used by Sydney Water. No documents provided by SCA allowed ranking of future possible catchment infrastructure for improving security of supply (for example, access to dead storage) against Sydney Water's demand management options so that a judgement could be made about relative cost effectiveness. Also, costing assumptions for such options as desalination, based on information provided by SCA, require further support.



8.2 Summary of requirements

The conditions of Part 8 of the Operating Licence address the Management of Infrastructure, Dam Safety and Demand Management. The requirements of Part 8 may be summarised as follows:

- ▶ Ensure that catchment infrastructure works such as the dams, pipe work, canals and pumping stations are managed to provide minimum long-term standards of service and minimal risk to human health from bulk water supplies; and
- ▶ Comply with the statutory requirements of NSW Dam Safety Committee (DSC) and the guidelines of the Australian National Committee on Large Dams (ANCOLD).

It is noted that the NSW Dams Safety Committee adopts the ANCOLD guidelines, except for some circumstances where, on a case-by-case basis, the DSC requirements may deviate from the requirements of the ANCOLD guidelines. The DSC is the regulatory authority for large dams in NSW; hence in those circumstances where its requirements deviate from the requirements of the ANCOLD guidelines, the auditor has assessed the SCA's compliance on SCA's ability to satisfy the requirements of the DSC.

It is further noted, that ANCOLD produced new Guidelines on Dam Safety Management in August 2003 that were adopted by the DSC in December 2003. These guidelines took account of the new categorisations system adopted for dams and resulted in changes being required to the inspection and monitoring procedures at most SCA dams. These changes were not implemented during this audit period and were fully adopted by the SCA on 30 August 2004.

SCA is also required to comply with the statutory requirements under the Water Management Licence (issued under Part 9 of the *Water Act 1912*).



8.3 Details of compliance

Table 8.1 Part 8: Management of catchment infrastructure works and demand management – summary of compliance

Clause	Requirement	Compliance	Findings
8.1	Management of Catchment Infrastructure Works		
8.1.1	Manage and operate the Catchment Infrastructure works to minimise risk to human health from the bulk water it supplies	Full compliance	<p>SCA has developed an excellent Catchment Infrastructure management system for managing bulk water quality. Although the system is in place and fully functional, some additional integration is still to take place with other risk management activities being developed in SCA (for example, the <i>Water Quality Risk Management Framework</i> under Clause 6.7) and underway in Sydney Water.</p> <p>SCA has developed an Asset Management Strategy for managing Catchment Infrastructure in line with the NSW Government's Total Asset Management (TAM) Manual. The documents that make up the management system were reviewed by the NSW Department of Public Works and Services in 2003, and it was confirmed that the <i>“documents are consistent with the TAM guidelines and will provide the Division with the framework for effective asset planning and management”</i>.</p> <p>In regard to risk management, the management framework has been reviewed in previous audits and is discussed in greater detail in Section 8.3.1 of this report.</p> <p>SCA advised that all of the System Management Plans and supporting management systems are now in place for catchment infrastructure. These include the above Plans and Procedures, O&M Manuals, Maintenance Management Manuals, Asset Maintenance Management Strategy, and a 5 year Capital Works and Renewals Program.</p> <p>SCA has continued improving its asset management with a variety of actions. These include, for example: participating in benchmarking with WSAA, periodic third party reviews and audits, and improved internal processes for project justification.</p> <p>SCA advised that a major review of the Asset Management Framework is scheduled for completion by 30 June 2005. This will improve transparency, incorporate WSAA benchmarking findings, incorporate the outcomes of the <i>Metropolitan Water Strategy</i> and meet Treasury template requirements.</p>



Table 8.1 Part 8: Management of catchment infrastructure works and demand management – summary of compliance

Clause	Requirement	Compliance	Findings
8.1.2	<p>Ensure catchment infrastructure works are designed, operated and managed to provide Sydney Water with long-term standards of service according to Schedule 2 of the Operating Licence.</p> <p><u>Schedule 2 criteria:</u></p> <p>Reliability of not less than 97%;</p> <p>Robustness of not less than 90%;</p> <p>Security of not less than 5% for more than 0.001% of the time (or 1 month in (99,996 months) 8,333 years);</p> <p>Operate within designated drought conditions; and</p> <p>Sydney Water's Forecast average annual demand of 583,000 ML/year for 2004.</p>	Full compliance	<p>The safe yield of the SCA system was calculated using the current WATHNET model (based on current Schedule 2 criteria and WATHNET operating rules) and continued to be reported as 600,000 ML/yr (+/- 5 to 10%). This figure is above Sydney Water's <i>forecast</i> average annual demand of 583,000 ML/year for 2004 and is also above the <i>actual</i> demand for the Sydney Water system of about 563,000 ML/yr in 2003/04. Based on the current model estimate therefore, the system is in full compliance with the requirements of this clause.</p> <p>The SCA has also undertaken preliminary "runs", subject to verification, of WATHNET using climate corrected monthly demand patterns. Based on current Schedule 2 criteria and WATHNET operating rules, the calculated safe yield was 580,000 ML/yr, which approximately equals Sydney Water's <i>forecast</i> average annual demand of 583,000 ML/yr for 2004 and therefore, would still be considered in full compliance.</p> <p>It is noted however, that Sydney Water's actual demand is about 72,000 ML less than in the previous year but is heavily influenced by mandatory restrictions in response to depleting dam levels. The unrestricted annual demand over the period 2000 to 2004 has been around 618,000 to 630,000 ML/yr, which exceeds the calculated safe yield, using the current WATHNET model, by 18,000 to 30,000 ML/yr. However, if normal climate variations in monthly demands is included in the WATHNET model then the safe yield reduces to about 580,000ML/yr. Hence, the shortfall between unrestricted annual demand for the past 4 years and safe yield would increase to 38,000 to 50,000ML/yr. In the short term, this exceedence may not a high-risk situation. However, should the drought sequence continue, this could rapidly increase the chance of more stringent restrictions and need for much greater transfers from the Shoalhaven River to the Nepean and Warragamba Reservoirs.</p> <p>Further, the SCA has commenced modelling other factors that have the potential to further reduce the SCA's calculated safe yield, in order to attain greater confidence in the WATHNET model's calculation of safe yield. This is discussed further in Table 8.4.2, M2.</p>



Table 8.1 Part 8: Management of catchment infrastructure works and demand management – summary of compliance

Clause	Requirement	Compliance	Findings
8.1.3	Review performance criteria as part of mid-term review	No requirement	SCA contributed to this review directly through its submission of 5 April 2002 and by cooperation with IPART in a report, <i>“Review of the Performance Criteria in Sydney Catchment Authority’s Operating Licence”</i> (June 2003). As the review was managed by IPART, no compliance rating is relevant to SCA. IPART provided its report on the outcomes of the mid-term review to the Minister in September 2003.
8.2	Dam Safety		
8.2	Comply with the requirements of the NSW Dams Safety Committee (DSC) and the guidelines of the Australian National Committee On Large Dams (ANCOLD).	Full compliance	<p>The management of dams has demonstrated full compliance with the requirements of the NSW DSC. The SCA provided a copy of the 2003/04 Annual Report on dam safety. This summarised the management activities and the status of dam safety for all the SCA’s dams. A review of the report and SCA’s files for Wingecarribee Dam was undertaken.</p> <p>Whilst there was minor slippage in the program for the production of these documents, the SCA has obtained written confirmation, where required, from the DSC that progress on these reports, manuals and plans is within its requirements. Further discussions of the findings are presented in Section 8.4.4 of this report.</p>



Table 8.1 Part 8: Management of catchment infrastructure works and demand management – summary of compliance

Clause	Requirement	Compliance	Findings
8.3	Demand Management		
8.3.1	Manage demand management consistent with the requirements in the Water Management Licence, issued under Part 9 of the <i>Water Act 1912</i>	No requirement	The Water Management Licence does not have any requirements relating to demand management.
8.3.2	As much as SCA is able, manage water conservation consistent with the demand management requirements in the Sydney Water Operating Licence	High compliance	<p>The SCA has contributed to the:</p> <ul style="list-style-type: none"> Final report of the Hawkesbury – Nepean River Management Forum. This report includes preliminary cost assessment of alternative “demand side” options such as improving efficiency of irrigation using town water supply. This may impact on SCA activities. It is noted that cost assessments of “demand side” options in both SCA’s draft Bulk Water Supply Plan and Hawkesbury-Nepean River Management Forum do not use the levelised cost/benefit approach developed by SWC. Development of the Metropolitan Water Plan by an inter-government group overseen by a Cabinet Sub-Committee. SCA’s work has mainly been on the “supply side”. It includes assessment of relevant measures such as access to dead storages and use of groundwater. <p>SCA has undertaken the following actions:</p> <ul style="list-style-type: none"> Negotiated amendments to its Water Management Licence to reduce environmental releases from Woronora Dam and increase bulk water transfers from Tallowa dam. These are temporary amendments associated with the current drought. Written to its retail customers emphasising the need to reduce consumption during the current drought. Reviewed the status of its water supply meters but has yet to embark on checking the calibrations of these meters or installing additional meters to confirm leakage estimates. (Note: SCA has yet to develop a Standard Operating Procedure for calibration of these meters). Developed an issues paper “<i>Meeting Sydney’s Future Supply Needs</i>”, which contained a well constructed summary of community views likely to be important in review of water conservation matters such as reservoir volume that triggers water restrictions.



Table 8.1 Part 8: Management of catchment infrastructure works and demand management – summary of compliance

Clause	Requirement	Compliance	Findings
			<p>The SCA advised the Auditor that SCA's supporting documents, provided over 2003/04 for the Water CEO's, Strategic Water Planning, Drought Executive Meetings, Demand Reduction Working Group and Water Strategy Meetings, continue to be unavailable as they are deemed "Cabinet in Confidence". Based on the uncertainty about the extent of SCA contribution to the Metropolitan Water Plan and lack of work done on flow measurement to define and eliminate leakage, but significant work completed on encouraging its customers to conserve water and on interpreting community surveys, a High compliance is given.</p>
8.3.3	In considering augmentation of the Catchment Infrastructure Works, consider any additional scope for cost effective demand management strategies by Sydney Water.	Partial compliance	<p>During the audit period no relevant major augmentation work was completed by SCA.</p> <p>SCA estimates that at least one additional staff member and the equivalent of another existing staff member (in terms of time spent by the CEO, Bulk Water GM and Executive Officer) have been committed to considering water supply augmentation/conservation strategies.</p> <p>The SCA and Sydney Water have been working together via a number of forums including the Water CEO's, Drought Management Committee, Demand Reductions Working Group, and Water Strategy meetings. Documents outlining the outcome of these forums and meetings were not available to the Auditor on the basis that they were "Cabinet in Confidence".</p> <p>Summaries of several options for augmentation of catchment infrastructure are included in the Metropolitan Water Plan and Bulk Water Supply Plan (for example, access to dead storage, desalination, increased Shoalhaven pumping). However, in some cases no detail was provided in the Bulk Water Plan (for example, increased transfers from Fish River) and the document provided on desalination had costing and delivery time information that required further support. Again, "levelised cost/benefit" analysis consistent with Sydney Water's approach was not completed for any augmentation options in reports submitted to the Auditor by the SCA, so no comparison could be made against SWC demand management strategies. No evidence of additional demand management ideas originating from SCA was provided.</p> <p>Further detail in relation to the SCA management of water conservation is presented in Section 8.4.4 of the report. A partial compliance rating has been given. This assessment is based on the lack of support documents that verify the extent of SCA work done on this subject, lack of levelised cost/benefit analysis and assumptions regarding desalination.</p>



Table 8.2 Ministerial requirements relating to demand management

ID	Requirement	Compliance	Findings
M2	<p><i>"Some work¹ be undertaken to improve the robustness of the WATHNET model" which is used to provide an estimate of the sustainability of the water supply". The Minister requires the SCA to provide an update on progress by 1 September 2004</i></p> <p>1 The recommended work with the model includes running an independently verified 'degree of fit' using historical operating rules and stream/flow/demand scenarios; conducting yield sensitivity analyses for an agreed set of scenarios eg environmental flows, evaporation, demand hardening; and modelling the Blue Mountains system for security against demand levels.</p>	High compliance	<p>SCA provided a progress report to the Minister by 1 September 2004.</p> <p>The SCA has undertaken a number of projects, during the audit period, directed towards demonstrating that <i>the WATHNET</i> model accurately estimates the safe yield for each system operated by SCA. The SCA's internal Quarterly Compliance report identified these projects, (budget \$200,000). The 2002/03 Annual Report also noted "<i>fine tuning</i>" work on the WATHNET model was estimated to cost \$250,000 to \$300,000 over 2003/04. However, details of actual expenditure over 2003/04 were not provided.</p> <p>During the audit period SCA undertook the following actions.</p> <ul style="list-style-type: none"> SCA initiated analysis to determine the impact on safe yield from climate variability on demand. The preliminary finding, subject to further validation, is that including climate variability for demand in the modelling may reduce safe yield from 600,000 ML/yr to 580,000 ML/yr. SCA initiated a check of the degree of fit of WATHNET with recent history including the current period of drought and restrictions. A preliminary finding, subject to further validation, is that the WATHNET model output shows a good "fit" to actual historical data over 1999/2004 for total system storage volume except in 2003 when the model predicted a lower volume than actually occurred. However, the 'fit' for individual storage volumes was poor. This indicates operating rules used in the model for storage drawdown/transfer and possibly demand allocation across the 10 demand centres in the model may be different to reality. This issue is discussed in greater detail in Section 8.4.2 of this report.



Table 8.2 Ministerial requirements relating to demand management

ID	Requirement	Compliance	Findings
M2 (cont)			<ul style="list-style-type: none"> ▶ The SCA initiated work on the WATHNET model to incorporate Blue Mountains towns. The model indicates that this system does not achieve compliance with Schedule 2 criteria as its average day demand of 30.5 ML/d exceeds the safe yield of its supply reservoirs of around 20.5 ML/d. Therefore transfers from Orchard Hills and Fish River to the Blue Mountains system are essential. Accurate analysis of this system may require a WATHNET model using a daily timestep instead of the monthly one current used. ▶ Evaluation of various environmental flow regimes was completed for the Hawkesbury – Nepean River Management Forum and showed a reduced safe yield would occur for scenarios developed by the Forum (485 000 to 585 000 ML/yr). ▶ Preliminary assessment of possible future “demand hardening” effects as Demand Management impacts increase showing ‘safe yield’ may decrease to around 540 000 to 575 000 ML/yr. <p>Two other issues which may potentially impact on the WATHNET models ability to accurately estimate the safe yield are:</p> <ul style="list-style-type: none"> ▶ The impact of major bushfires across the catchments on yield in the long term (that is 10 to 30 years after regrowth commences); and ▶ Resolution of the anomalies found in the WATHNET model and corrected by the SCA in 2001/02, which saw the safe yield estimate from the WATHNET model rise from 580,000 ML/yr to 600,000 ML/yr with no documented justification. <p>SCA did not provide relevant documents that demonstrated significant action on these subjects.</p> <p>A high compliance rating has been allocated, as there was significant progress against this requirement. However, some basic model accuracy issues remain that mean there is uncertainty in results obtained when the model is used in scenario or yield sensitivity analysis.</p>



8.4 Discussion

8.4.1 Catchment infrastructure – management of risk to human health

SCA has developed an excellent system for managing catchment infrastructure. Several issues were noted in previous audits where further improvement was possible.

The main outstanding issue noted in the previous audit was the completion of the SCA Water Quality Risk Management Plan, and its integration with the other risk management tools that SCA uses (such as the Corporate Risk Management Plan and the Catchment Infrastructure Risk Management Plans). This will be satisfied by the development of the *Water Quality Risk Management Framework*, which is now in the final stages of development, as noted in Section 6.4.5.

A review of the Bulk Water Division Capital Works Program for 2004/5 – 2008/9 indicates that works related to water quality improvement are well represented, with expenditure approved and works underway in most cases. The projects in the works program are clearly linked to Key Risk Actions, outcomes and strategies.

In reviewing the documentation and in discussing the approach to asset management, the auditor noted that the asset management program is clearly focussed on the assets and the delivery of major new works. While water quality is included as a key risk area, it does not figure prominently in the documentation compared with other attributes (such as, Occupational Health and Safety and “*reliable and secure supply*”). It is sometimes difficult to confirm that water quality has, in fact, been specifically considered. It is recommended that the asset management documentation be reviewed to confirm that water quality considerations are being adequately included as a priority area.

In regard to risk management, the management framework has been reviewed in previous audits, and includes:

- ▶ Qualitative Risk Assessments for each of the seven supply systems. These assessments take a systematic approach to the identification of risks, including water quality, and presents action plans for managing the risks. These risk assessments are qualitative, take an overview of issues, and provide a listing of the actions that can be applied to control the risks.
- ▶ Failure modes, effects and criticality analysis (FMECA) studies for each of the seven supply systems for non-mechanical/electrical assets. These identify failure modes and actions required to avoid failure. These focus on the safe and reliable operation of catchment infrastructure, and include water quality as a key performance area. This has resulted in an Asset Improvement and Reliability Program, running to 30 June 2005.
- ▶ System Management Plans for all seven water supply systems. These plans, among other things, contain actions to minimise and manage all risks (not only water quality) and meet customer stakeholder and regulator requirements. These Plans include all the main risks identified in the Granherne Qualitative Risk Assessments, integrating these operational requirements with other operational requirements in a convenient form for SCA’s operators. SCA had a workshop planned for September 2004 to review these Plans.
- ▶ A large number of Standard Operating Procedures. The procedures reviewed for this audit were current. The Procedures include the findings from scientific studies (for example, lake modelling studies) to ensure the best quality bulk raw water is supplied to customers.



- ▶ A Bulk Raw Water Incident Response Plan addresses bulk water quality issues that may occur.

It is concluded that SCA has a well developed system for managing and operating its catchment infrastructure works to minimise risk to human health from the bulk water it supplies.

8.4.2 Safe yield

Evaluating Schedule 2 criteria

The SCA has completed an evaluation of the impact of altering the Schedule 2 criteria on calculated safe yield. A summary has been published in the final report of the Hawkesbury – Nepean River Management Forum.

Historical Comparison

A preliminary comparison of actual water supply system behaviour from 1999 to 2004, and that calculated by the WATHNET model, was completed by the SCA. It showed a reasonable degree of fit between actual and calculated total system storage volume except during 2003. The actual total volume was up to 10% higher than that calculated by WATHNET.

The poor fit in 2003 is thought to be due to errors in the part of the model calculating pump transfers from the Shoalhaven River during low storage volume conditions. As indicated by other sensitivity analysis work on this aspect of the model, changes in Shoalhaven transfer criteria have a significant impact on 'safe yield'. Also comparison of traces of storage volume for individual reservoirs showed a relatively poor fit suggesting operating rules used in the WATHNET simulation are different to real time operating rules. It is also possible that the split of demand between the 10 demand centres in the WATHNET model, set in 1991, now differs significantly from the current reality.

Estimating the safe yield for each system operated by SCA

SCA holds the view that Schedule 2 criteria only apply to the water supply system as a whole and not to individual systems within it (for example, Greaves Creek and Medlow storages, supplying some Blue Mountains townships or the supply to the Illawarra region). The Auditor believes this is not consistent with the intent of the Operating Licence.

Whether individual parts of the water supply system should have the same or similar level of compliance with Schedule 2 criteria is not a simple issue. The essential objective is however that no part of the system should be at significant risk of running out of water or triggering restrictions (which would be system wide). Restrictions can in the real world be unnecessarily triggered if one of the reservoirs, that is the only supply to a demand centre, gets too low and transfers between storages cannot recover the situation. The SCA's Draft Bulk Water Supply Plan puts it well:

"It is important to note that, despite the SCA storages having different levels of drought susceptibility and several demand zones being supplied by only one source, all major parts of the system enjoy a relatively uniform security of supply. This is achieved by the interconnection between various parts of the system and the tailored reservoir operating rules".



Adoption of this approach is, in the Auditor's view, important as it will focus attention on ensuring that the split of demand between demand centres, optimising each reservoir's drawdown rule curve, and the accurate definition of all transfer pipe systems in the WATHNET model, are achieved. All these features of the model can influence the safe yield estimate.

It is further noted that the growth rates in demand have been, and are predicted to continue to be, different in each demand centre. Changes in the way the WATHNET model splits the demand between its demand centres may also be important to consider in the future. The current split up is based on conditions in 1991. Similarly, current reservoir drawdown rule curves were established in 1994.

Evaluation of Environmental Flow Scenarios

Environmental flow scenarios were assessed for the Hawkesbury-Nepean Management Forum by SCA. The range in calculated "safe yield" values for these different scenarios ranged from about 460 000 to 600 000 ML/yr depending on factors such as mix of transparent and translucent environmental flows and the extent of pumping from Shoalhaven permitted. The Forum preferred option reduces the "safe yield" to around 547 000 ML/yr but also assumes the Schedule 2 reliability criteria is lowered from 97% to 95%, increased transfers from Shoalhaven and access to dead storage in Avon dam. Without these assumptions the "safe yield" would be around 473 000 ML/yr.

Demand Hardening

A preliminary assessment of possible impacts of demand hardening on "safe yield" calculated by WATHNET was completed by SCA.

To simulate the impact of reduction in discretionary water that can be saved when mandatory restrictions are applied, SCA prevented implementation of level 4 and level 5 restrictions in WATHNET model calculations. Level 4 restrictions assume 30% reduction in demand occurs and level 5 restrictions assume 50% reduction in demand occurs. The outcomes are summarised below.

WATHNET Model Set Up	"Safe Yield" ML/yr	Basis for "Safe Yield"
Current	600 000	Reliability criterion
Level 5 restrictions have no effect on demand	575 000	Security criterion
Level 4 & 5 restrictions have no effect on demand	540 000	Security criterion

As can be seen the impact of demand hardening is significant. It is likely that "safe yield" would decrease even further if normal variation in demand with dry/wet conditions were also included in the WATHNET model.

Anomalies in the WATHNET model corrected by the SCA in 2001/02

SCA did not provide details on what the anomaly was, how it was dealt with and why its rectification resulted in calculated safe yield rising from 580 000 ML/yr to 600 000 ML/yr. These details are also not in the 2001/02 Audit report.

This outcome suggests SCA may not have a systematic way to document changes to the model when anomalies arise. As the WATHNET model is a major driver in decisions regarding Demand Management



and Environmental Flow it is most important that the base model set up is as accurate as possible and that good Quality Control procedures for documenting changes to the model are in place.

Training and Responsibilities

There is limited evidence of training regarding how SCA incorporates Schedule 2 criteria into its design, operation and management decisions. For example, the Operating Licence is referred to in SCA's General Induction Information, but the Schedule 2 criteria are not explained. SCA's Business Plan (Section 2) identifies the General Management Bulk Water as having lead responsibility for design, operation and management decisions to ensure reliable supply in terms of Schedule 2 criteria of Clause 8.1.2 of the Operating Licence. However, there does not appear to be a specific section of SCA's Authorisation Manual that allocates responsibility for compliance with Clause 8.1.2 of the Operating Licence to specific SCA employees. Also, there does not appear to be a complete Standard Operating Procedure for reservoir operation that includes the Drawdown rule curves used in the WATHNET model. These matters should be addressed by SCA.

Programming Projects

The SCA has an Operating Licence Quarterly Compliance reporting process that lists SCA's responses or projects being carried out relevant to each clause of the Licence to address issues raised in previous IPART audits. It is noted however, that several projects relevant to Clause 8.1.2 did not have due dates or budget allocations. This matter needs to be addressed by SCA.

The SCA lists, in its Annual Report 2002/03, research on climate and streamflow forecasting. The focus of this proposed work is improvement in understanding of variation in streamflow. It is interesting to note that the long term time series of rainfall and streamflow for the Warragamba catchment (refer Meeting Sydney's Future Water Supply Needs Issues Paper, May 2004) identifies a long period (1910 – 1947) of low rainfall/streamflow. Also, over 1992-2004 a significant decrease in rainfall/streamflow has arisen. If this flags a return to the 1910-1947 type climate it would have a significant lowering effect on 'safe yield'.

8.4.3 Dam safety

The SCA provided a copy of the 2003/04 Annual Report on Dam Safety. This report summarises management activities and the status of dam safety for SCA dams. A summary table of the key requirements and SCA performance in relation to the Dams Safety Committee (DSC) and Australian National Committee on Large Dams (ANCOLD) guidelines is presented as Appendix H. A summary of findings is presented below.

Five-yearly surveillance reports

Eight surveillance reports were due during the audit period and four of these reports were completed. Minor slippage from the original due dates, set by the DSC, occurred however the DSC has since endorsed the submitted reports or approved the revised dates for submission. Revised due dates for the outstanding surveillance reports are summarised in Appendix G.

SCA has prepared programs for the implementation of recommendations from the surveillance reports and the DSC has endorsed these programs. However in the case of Tallowa Dam, the DSC required the



SCA to increase the frequency of inspections and the monitoring of seepage to comply with the new ANCOLD guidelines. The SCA has complied with this request (effective August 2004).

Assessments, Inspections, Reviews and Monitoring

SCA reported that all routine inspections and monitoring were undertaken in compliance with DSC requirements. A targeted review of monitoring records for Wingecarribee Dam confirmed that these have been undertaken in accordance with the inspection program. The completion of the Annual Inspection and Monitoring Reports for 2003/04 was completed by 20 October 2004.

A Risk Assessment Study and an Earthquake Stability Review Study of Wingecarribee Dam were due in the 2002/03 audit period. The studies continued into 2003/04 and an external expert panel reviewed the findings of these studies in September 2003. In order to fully assess the level of risk associated with the dam and the extent of remedial measures, the expert panel recommended the following additional work be undertaken (programmed to be completed by March 2005):

- ▶ Finalising event trees;
- ▶ Performing consequence category analysis studies; and
- ▶ Assessing the social acceptability of risk to life.

This additional work was progressed by the SCA during the audit period.

Special monitoring of post-tensioned anchors was due in the 2002/03 audit period at Cataract, Nepean and Warragamba Dams but was not undertaken as the monitoring equipment was damaged during the bushfires at Warragamba. Monitoring was deferred until 2003/04 to allow the equipment to be replaced/repared. The SCA experienced problems with the commissioning of the new equipment and monitoring has again been rescheduled to 2004/05 for Warragamba and 2005/06 for Cataract and Nepean.

Dam Safety Emergency Plans

The SCA updated and prepared new Dam Safety Emergency Plans (DSEPs) for all of its high hazard and significant hazard dams during the 2001/02 audit period. In March 2002, the DSC updated its requirements, including modified DSEPs for prescribed dams where non-itinerant persons are not at risk, but where itinerant persons may be at risk. To comply with this requirement, SCA prepared modified DSEPs for its four low hazard dams during the 2002/03 audit period. DSEPs have now been prepared by the SCA for all SCA prescribed dams.

All DSEPs were updated towards the end of 2002/03 to take account of new external notification protocols, which were finalised by the State Emergency Service (SES) in collaboration with the State Emergency Management Committee, the DSC and Police on 30 April 2003. The DSEPs were issued, internally and externally, in September 2004.

SCA tested the DSEP for Wingecarribee Dam as part of an interagency exercise "*Exercise Camel*" in May 2004. The SCA has also developed a program for exercising the remaining DSEPs over years 04/05, 05/06 and 06/07. SCA advised that exercising of the DSEPs has been delayed due to the finalising of the DSEP's and negotiations with SES regarding long term plans for exercises. The exercises will be undertaken in groups to maximise resource efficiencies from all the agencies.



Operation and Maintenance Manuals

The SCA has finalised and issued all Operation and Maintenance (O&M) Manuals for extreme and high consequence category dams and four significant category dams. The remaining O&M Manuals for significant category dams have been re-scheduled for completion by 2005.

8.4.4 Demand management

Table 8.3 summarises the relevant findings of this audit in relation to the SCA's management of water conservation with respect to Clause 8.2.4 of Sydney Water's Operating Licence.

Table 8.3 SCA demand management with respect to Sydney Water's Operating Licence

Clause 8.2.4 of Sydney Water Operating Licence (abridged)	Findings in Relation to SCA Management of Water Conservation
(a) Estimate of past, current and projected water use and distinguish between residential, commercial and government use, and projected water uses under these categories.	<p>SCA has not considered:</p> <ul style="list-style-type: none">• Scenarios of how future demand projections based on forecasts of population; industry, water habits, demand management (etc) affect reliability, security and robustness of supply over time;• The impacts of "demand hardening";• Possible changes in the split (current split based on 1991 data) of demand across the 10 demand nodes in the WATHNET model; and• The optimising of reservoir drawdown rule curves (current curves were defined in 1994). It is noted that SCA has commenced this work aimed at incorporating both quality and quantity issues.
(b) Frequency and magnitude of expected supply deficiencies, including those arising as a result of wastage and loss, drought or emergency.	<p>SCA has completed a substantial amount of work to assess and respond to the current drought event. This has included analysis of the impact of increases in environmental flow. However, over 2003/04 there does not seem to be evidence of a "proactive" approach by SCA to look for or evaluate possible innovative ways to reduce wastage and losses, (for example, reservoir aeration to reduce evaporation loss).</p>
(c) Conservation measures currently adopted and being produced.	<p>In response to the drought, SCA has notified all its retail customers by letter urging them to look at ways to reduce consumption and water wastage.</p> <p>A survey, commissioned by Sydney Water, of community views on sustainable water resources focussed on community response to voluntary water restrictions and motivation for people to save water. It found that, although a majority said saving water to make sure it doesn't run out in the future was the most important motivating factor, some 46% of respondents did not. The other important motivating factor (29%) was 'caring for the environment'.</p> <p>The survey indirectly started consideration of the more complex subject of the Schedule 2 criteria in terms of gauging attitudes to more severe restrictions. For example, the results suggest more frequent strong restrictions would be acceptable to most people. However, this view is in the context of the current mandatory restrictions due to a major drought event across the Sydney catchments and may not hold after the reservoirs recover and restrictions are lifted.</p>



Table 8.3 SCA demand management with respect to Sydney Water's Operating Licence

Clause 8.2.4 of Sydney Water Operating Licence (abridged)	Findings in Relation to SCA Management of Water Conservation
(d) Cost and evaluate additional conservation measures	<p>SCA included preliminary costing and evaluation of options for alternative water supplies in its draft Bulk Water Plan. However, the auditor expresses concern regarding some of the ways options have been assessed. For example, the desalination option for drought recovery has the following potential problems.</p> <ul style="list-style-type: none"> ▶ The feasibility of constructing a 500 ML/d capacity plant in 200 days is questioned. It is more likely to be 2 to 5 years depending on factors such as whether the site has been selected and pilot plant work has been completed. ▶ A capital cost is likely to be closer to \$1,000m rather than the quoted value of \$750m for this size plant. ▶ The cost of \$850-\$1500/ML would occur only if the plant is almost fully utilised over its entire life not intermittently for drought recovery. ▶ Levelised cost/benefit or Total Cost by 2021 or Present Value (\$/kL) is not given. <p>Both the final report of the Hawkesbury – Nepean River Management forum and SCA's Bulk Water Plan provide details covering many of the issues raised in (d) to (h).</p>
(e) Future plans for water conservation and strategies to alter water use practices, including those relating to the installation of more efficient water appliances and devices by users	
(f) Evaluate plans in terms of the cost, and contrast with the cost of alternative water supplies	
(g) Prioritise and schedule the implementation of the course of action found to be cost effective	
(h) Strategies to reduce unaccounted for water losses	

Recommendations

8.5.1 Key recommendations

That the SCA:

- R8.1 Ensures, where possible, that cost analysis for options to conserve water and/or consider new supply options be evaluated using the same approach as in the Hawkesbury-Nepean River Management Forum for demand options, (Total Cost by 2021 Present Value \$/kL) and/or using the same approach as Sydney Water (Levelised Cost/Benefit and non-economic factors). In this way "demand side" and "supply side" options can be compared more consistently.

8.5.2 Secondary recommendations

That the SCA:

- R8.2 Continues, in coordination with Sydney Water, to develop and implement community education / communication programs focused on providing an understanding of level of service criteria in Schedule 2 (for example, reliability, robustness, and security) so that informed views on relevant issues such as critical storage levels triggering restrictions and changes to supply side risk (for example, greater chance of very severe restrictions) can be obtained.
- R8.3 Defines the likely extent of reduction in stream flow following bushfires in SCA catchments and the recovery over time of stream flow from bushfire-affected catchments. If the extent is significant, bushfire impact should be included in the scenario assessment using WATHNET.
- R8.4 Improves its staff induction manual and staff training and develop Standard Operating Procedures (for example, operating reservoirs to WATHNET drawdown rule curves) and written statements of



responsibilities to ensure Schedule 2 criteria are considered in design, operation and management activities.

R8.5 Includes in its assessment of the WATHNET model over 2004/05, a review of both the split of demand between the 10 demand centers and the reservoir drawdown rule curves.

9. Environment

9.1 Summary of findings

Environmental reporting

The SCA demonstrated **Full compliance** with the annual environmental reporting requirements of this Licence. The SCA has modified its format for environmental reporting in order to meet the detailed requirements of the Licence whilst working towards corporate goals of broader triple-bottom-line reporting. The SCA's annual environmental reporting comprises three components:

- *Annual Environmental Report 2003/04 (AER);*
- *ESD and Environmental Indicators Report 2003/04 (ESD&EIR); and*
- *Environment Plan Progress Report 2003/04 (EPPR).*

The ESD&EIR and EPPR will be available on the SCA web-page, or in hard copy by request.

Compliance with the Environment Plan

Generally, the SCA demonstrated **Full to High compliance** with the strategies and targets of the Environment Plan. The compliance level has not changed since the previous year. The SCA did not provide any significant new evidence to demonstrate movement towards full compliance for any of the strategies. It is therefore concluded that the SCA has made limited progress towards full compliance with the Environment Plan during the 2003/04 audit period.

Performance against the environmental and ESD indicators

The SCA has not provided an interpretation of overall performance against the environmental and ESD indicators. Performance is the auditor's interpretation based on the reported data. The environmental indicators are trending towards an overall decline in environmental performance. This is predominantly attributable to the impact of the current drought conditions.

The ESD indicators do not show an overall trend and have been impacted by the significant reduction in Sydney's water demand, attributable to mandatory water restrictions in place during the audit period. This applies particularly to a number of economic indicators that are a function of water supplied.

The SCA does not collect data (or report historical data) on a number of indicators, due to the associated resource and cost implications. SCA has not liaised with IPART on this unilateral decision.

Environmental flows

The SCA demonstrated **High compliance** regarding the release of environmental flows from storages in accordance with the Water Management Licence issued by DIPNR.

Independent expert panel

The SCA demonstrated **Full compliance** regarding cooperation and assistance to the Independent Expert Panel in its charter related to the Hawkesbury Nepean environmental flows. During this audit period, the Hawkesbury Nepean River Management Forum publicly released its final report. The role of the Independent Expert Panel has been concluded.



9.2 Summary of requirements

The objective of Part 9 of the Operating Licence is to ensure that the SCA conducts its operations in an environmentally responsible manner. This includes developing a plan that coordinates the activities of its different business units such that environmental issues are appropriately managed, resourced and reported. Further, the SCA is to ensure that the quality of waters are monitored and measured using environmental and ESD indicators and that the flow of water released from its storages is suitable for maintaining ecological health in receiving waters.

The requirements of Part 9 that apply to this audit period may be summarised as follows:

- ▶ provide regular and accountable annual reporting that allows year to year comparisons and details the performance of the SCA with respect to targets and timetables set, and compliance with environmental and ESD indicators;
- ▶ cooperate with, and provide reasonable assistance to, the Independent Expert Panel which is required to provide advice to Government on the environmental flow regime for the SCA's water supply system ; and
- ▶ release environmental flows in accordance with the requirements of the Water Management Licence.

The requirements of Part 9 also includes:

- ▶ establish a monitoring and reporting system to support the measure of compliance against the Environment Plan and performance against the environmental and ESD indicators.

It is noted however that the SCA developed the monitoring and reporting systems associated with the Environment Plan and the environmental and ESD indicators in previous audit periods hence the assessment of the SCA's performance against this requirement does not form part of this audit.



9.3 Details of compliance

Table 9.1 Part 9: The environment – summary of compliance

Clause	Requirement	Compliance	Findings
9.1	Environment Plan		
9.1.1 to 9.1.5	Development of an Environment Plan	No requirement	No requirement this audit period. This clause was fully complied with during the 2000/01 audit period.
9.1.6	The Environment Plan is to be readily available on the website, at offices, public libraries and environment centres. Access to the report to be free of charge.	Full compliance	A review of the SCA website confirms that the Environment Plan is available on the website. The Plan is also available from other public offices of the SCA including Penrith, Moss Vale and Goulburn.
9.1.7	Amendments to the Environment Plan may only be made following public consultation.	No requirement	No requirement this audit period. There have been no amendments to the plan.
9.2	Environmental and ESD Indicators		
9.2.1 to 9.2.15	Environmental and ESD Indicators	No requirement	No requirement this audit period. These clauses were complied with during the 1999/00 and 2000/01 audit periods.
9.3	Reporting		
9.3.1	SCA to report annually on the Environment Plan	Full compliance	During the audit period, the SCA published the <i>2002/03 Annual Environment Report (AER)</i> . The AER for the 2003/04-audit period was under development.



Table 9.1 Part 9: The environment – summary of compliance

Clause	Requirement	Compliance	Findings
	Report to enable Licence Regulator to consider and report on the matter as part of the Annual audit	Full compliance	<p>The SCA has modified the annual report format for this audit period. The SCA's annual environmental reporting comprises three components:</p> <ul style="list-style-type: none"> ▶ <i>Annual Environmental Report 2003/04 (AER)</i> which presents a summary of the SCA's environmental performance; ▶ <i>ESD and Environmental Indicators Report 2003/04 (ESD&EIR)</i>, which presents performance against the ESD and Environmental indicators; and ▶ <i>Environment Plan Progress Report 2003/04 (EPPR)</i>, which presents detailed compliance on the implementation of the Environment Plan. <p>The SCA provided copies of the draft ESD&EIR and the Draft EPPR to enable the Licence Regulator to consider and report on the matter as part of the Annual audit. These reports were tabled at a Board meeting on 12 October 2004, and approved by the Executive, subject to endorsement by the CEO</p>
9.3.2	Report SCA progress on meeting the Plan. In particular:		
	a) Compliance with the targets and timetables of Clause 9.1.4	Full compliance	<p>Compliance with the targets and timetables of the Environment Plan is presented in the draft EPPR. The draft EPPR provides detail on outcomes specifically related to the timelines and targets of the objectives and strategies.</p> <p>The auditor's review of the draft EPPR is discussed in Section 9.4.1.</p>
	b) Performance in relation to environmental and ESD indicators in the past 12 months.	High compliance	<p>The draft ESD&EIR presents the SCA's performance in relation to most environmental and ESD indicators in the past 12 months. The SCA's performance against five environmental and one ESD indicators were not reported due to lack of data.</p> <p>The SCA advised that it is not viable to collect annual data for some indicators hence performance in relation to these indicators has not been reported. The SCA has not provided any evidence to suggest that the SCA Executive endorsed this decision or that IPART have been consulted with regard to this decision.</p> <p>The auditor's review of the SCA's performance against the environmental and ESD indicators is discussed in Section 9.4.2.</p> <p>For the 2003/04-audit period, SCA advised that an independent verifier would be engaged to</p>



Table 9.1 Part 9: The environment – summary of compliance

Clause	Requirement	Compliance	Findings
			<p>verify the data and content of the ESD and environmental indicators report. This review was proposed for November 2004.</p> <p>Similarly, for the previous year, an independent verifier reviewed the 2002/03 Annual Audit Report (which reported on the ESD and environmental indicators). The independent verifier was satisfied with the AER and associated systems. The independent verifier did however recommend that some site level data from contractors be checked in 2003/04, that in depth review of parts of the data management system be continued, and quality assurance mechanisms be established to provide a framework for minimising potential human error, inappropriate assumptions or spreadsheet errors.</p>
9.3.3	<p>Report on environmental and ESD indicators must enable a year-to-year comparison.</p> <p>In particular comparisons are to be made, where possible, using indicators with historical yearly values over at least the previous ten years</p>	High compliance	<p>SCA's reporting on ESD indicators provides a yearly comparison for most of the indicators, with the exception of indicators for '<i>Extent and condition of native vegetation on SCA-owned and managed lands</i>' and the '<i>extent and type of erosion on SCA-owned land</i>.' For those indicators with a year-to-year comparison, generally four years of data were provided, from 2000/01 to 2003/04.</p> <p>For a number of indicators (for example, <i>occurrences of Cryptosporidium and Giardia for streams and major storages, the number of weirs with effective fishways, and intersection of transport routes and utility easements with watercourses in the water supply catchment area</i>) qualitative comparisons have been made (that is, "<i>no significant change</i>" or "<i>unchanged</i>") and no data has been provided. Therefore, actual performance for the past 12 months cannot be adequately verified.</p> <p>The SCA has also considered 10 years comparable data available from Sydney Water and, for the first time, reported 10 years of data for indicators such as <i>temperature of water releases, flora and fauna species, level and variability of stream flow, storage volumes and variability and incidents of algal blooms</i>.</p> <p>The SCA undertook a limited assessment of the extent to which the indicators have been fully reported. The assessment found that a number of indicators (such as <i>water quality performance</i>) are not fully reported due to the costs associated with analysis of such data. The SCA has not provided any evidence that the SCA Executive endorses this decision or that IPART have been consulted with regard to this decision.</p>
9.3.4	The report to be made available on the website within one month of completion, at SCA premises and at	Full compliance	<p>2002/03 Annual Report</p> <p>Within the audit period, the SCA completed the 2002/03 Annual Environment Report. The</p>



Table 9.1 Part 9: The environment – summary of compliance

Clause	Requirement	Compliance	Findings
	libraries and environment centres free of charge		<p>report was made available on the website within one month of completion, at SCA premises and at libraries and environment centres free of charge. The AER referenced the 2002/03 Environment Plan Compliance Report (EPCR) and noted that it was available on the SCA web site.</p> <p>The EPCR was available on the SCA web page. Whilst hard copies of the EPCR were not commercially printed, the SCA advised that hard copies would be produced for interested parties upon request.</p> <p>2003/04 Annual Report As outlined under Clause 9.3.1, the report will be published in three components. The summary document (AER), will be available on the website within one month of completion, at SCA premises and at libraries and environment centres free of charge.</p> <p>The ESD&EIR and EPPR components will be available on the SCA's web page. The SCA advised that these components of the report will be referenced in the AER report and be made available in hardcopy to interested parties upon request.</p>
9.4	Environmental Flows		
9.4.1	SCA to produce a report on trial environmental flows	No requirement	The SCA fully complied with this requirement in the 1999/00 and 2000/01 audit periods.
9.4.2	Report to include environmental flow information from EIS process for the Hawkesbury - Nepean, Woronora and Shoalhaven Rivers.	No requirement	No requirement this audit period. This requirement relates to the draft and final reports required as part of 9.4.1.
9.4.3 to 9.4.7	Independent expert panel on environmental flows may be appointed by the Minister for the Environment.	No requirement	This requirement is not imposed on the SCA.
9.4.8	SCA to cooperate with, and provide reasonable assistance to, the independent expert panel to enable it to perform the tasks assigned to it.	Full compliance	The independent expert panel supports the Hawkesbury-Nepean River Management Forum towards achievement of its terms of reference. The SCA demonstrated cooperation and reasonable assistance to the Expert Panel (and the Forum). The SCA provided a list of all 19 of the Independent Expert Panel (IEP) requests (including nature of request and date received and date met) during 2003/04 to the auditor. The auditor sighted a sample of these requests and responses during the audit interview. All 19 requests were met.



Table 9.1 Part 9: The environment – summary of compliance

Clause	Requirement	Compliance	Findings
			<p>The auditor contacted:</p> <ul style="list-style-type: none"> the Chairman of the Independent Expert Panel who advised that the SCA's cooperation has been excellent. The SCA made information available and assisted in the development of various models; and the Independent Chairman of the Forum who advised that the SCA was an absolutely vital resource for the Forum. The SCA regularly attended Forum meetings and played a pivotal role in the Forum's ability to deliver on its Terms of Reference. The Chairman confirmed that the SCA provided all possible support to the Forum. <p>Affirmations from the two Chairs were further supported by:</p> <ul style="list-style-type: none"> Forum Minutes of Meeting No.23 dated 15 March 2004, a motion was adopted that, <i>"The forum expresses its appreciation of the diligent support of Ms Jacqueline Flynn of the Sydney Catchment Authority"</i>. Letter from the Independent Chairman of the Forum to the SCA dated 18 June 2004, the Chairman formally thanked the SCA for, <i>"your valued participation in the work of the Hawkesbury-Nepean Management Forum since its inception in July 2001."</i> <p>The final report of the Forum was publicly released on 18 May 2004 (Media release DIPNR Sydney/South Coast Regional Office). The role of the independent expert panel has concluded.</p>
9.4.9	Until such time as the SCA is issued with a Water Management Licence, the SCA must meet the environmental flow requirements specified in its Operating Licence.	No requirement	This clause is not invoked during this audit period. The Water Management Licence (WML) was issued to the SCA on the 23 April 2001, prior to the commencement of this audit period. Environmental flows are addressed in Clause 9.4.10.
9.4.10	Implement any environmental flow requirements in the Water Management Licence (WML) issued under Part 9 of the <i>Water Act 1912</i> .	High compliance	<p>The Department of Infrastructure, Planning and Natural Resources (DIPNR) administer the Water Management Licence (WML). SCA reported that it has met all the environmental flow requirements of the WML with the exception of the following non-compliance events and exemptions from DIPNR:</p> <ul style="list-style-type: none"> Warragamba Dam: Non-compliance between 6–9 June 2004. The issue was being resolved with DIPNR at the time of this audit.



Table 9.1 Part 9: The environment – summary of compliance

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> ▶ Tallowa Dam: Non-compliance between 4 August and 24 September 2003. During this period, a shortfall environmental flow of 549.3 ML occurred. These events were promptly reported by the SCA to DIPNR. The auditor sighted correspondence between the SCA and DIPNR in this regard. ▶ Woronora Dam: Exemption was received from DIPNR with regard to variability in environmental flows from Woronora Dam until such time as the modification to outlet works was complete. The auditor sighted correspondence between the SCA and DIPNR in this regard. ▶ Woronora Dam: DIPNR granted a temporary suspension of Clause S4.3(4) of the WML, which meant that high flow releases from the Dam were not required for the 2003/04 summer season. This suspension was granted by DIPNR on the presumption of continued decline in total drinking water storage volumes. The auditor sighted correspondence between the SCA and DIPNR in this regard. <p>The WML requires the SCA to provide monthly environmental flow data to DIPNR. The auditor contacted DIPNR, which confirmed that based on the data it has received from the SCA, no other non-compliances with environmental flow requirements occurred during the audit period.</p> <p>It is further noted that an annual assessment of performance against the SCA's WML was undertaken by DIPNR within the audit period and included:</p> <ul style="list-style-type: none"> ▶ Site verification of relevant data provided by the SCA under the Licence; ▶ Assessment of relevant data against established tolerances and error limits; ▶ Sighting of selected works; ▶ Familiarisation with methods used by SCA; and ▶ An exploration of opportunities to improve licence implementation. <p>DIPNR prepared a report entitled <i>SCA Water Management Licence Annual Site Inspection 2003/04, Revised Final Report - October 2004</i>. The report confirmed that the SCA, at the time of the inspections was meeting all of the requirements for environmental flows, transfers and other releases in accordance with the Licence with the exception of Warragamba Dam. The issues related to this incident were being resolved between the SCA and DIPNR at the</p>



Table 9.1 Part 9: The environment – summary of compliance

Clause	Requirement	Compliance	Findings
			time of this audit. DIPNR also reported other observations where there was a shortfall of information provided by the SCA however, the majority of these had been supplied by the SCA prior to finalisation of the DIPNR report.

9.4 Discussion

9.4.1 Compliance with the Environment Plan

Section 10.2.1(i) of the Operating Licence requires the auditor to assess compliance of the SCA with the Environment Plan. For this purpose, the SCA provided a draft copy of the 2003/04 Environment Plan Progress Report (EPPR).

This assessment was based on the information provided by the SCA in the draft report. Assessment of compliance with the 5 year Environment Plan, for purposes of this audit, was undertaken by grouping the targets and timelines under the ten environmental objectives of the Environment Plan. This enables an objective assessment of the SCA's progress towards meeting the stated objectives of the Environment Plan.

This review has indicated that the SCA targets for 2003/04 are generally being delivered although not always within the specified timeframes. Generally, compliance is full to high and has not changed since the previous year. The SCA did not provide any significant new evidence to demonstrate movement towards full compliance for any of the strategies.

It is therefore concluded that whilst general compliance with the 5-year plan is full to high, during the 2003/04 audit period, the SCA has made limited progress towards full compliance with the Environment Plan.

Achievement of targets under each of the environmental objectives are summarised in **Appendix H**.

9.4.2 Performance in relation to the environmental and ESD indicators

Environmental indicators have been designed to monitor the direct impact of the SCA's activities on the environment. The ESD indicators have been designed to indicate the degree to which the SCA's activities comply with the principles of Ecologically Sustainable Development.

Measuring performance against these indicators is a task of comparing performance against previous years. This is the fourth year the SCA has collected data against the majority of these indicators, and this has allowed comparison from previous years. For the majority of indicators, data relevant to the indicator is reported. For some indicators it has not been possible to define a performance trend due to the lack of data in the draft ESD&EIR for 2003-2004. Table 9.2 represents a summary of the available trends related to the environmental and ESD indicators.

It is the auditor's interpretation that, based on the reported data, the environmental indicators are trending towards an overall decline in environmental performance. This is predominantly attributable to the impact of current drought conditions causing a continued increase in energy consumption (and greenhouse gas emissions) due to pumping of bulk water from the Shoalhaven, reduction in the level and variability of stream flow, deterioration in the condition of wetlands and continued reduction in the volume of bulk water in storage.

The ESD indicators have been impacted by the significant reduction in Sydney's water demand, attributable to mandatory water restriction in place during the audit period, particularly a number of economic indicators that are a function of water supplied. Further analysis of these indicators using forecast water consumption (as defined by the Operating Licence) would provide a more meaningful indicator of performance.



The SCA does not attempt to interpret the environmental and ESD indicators in the draft ESD&EIR. It is important that a considered assessment of the SCA's overall performance against the environmental and ESD indicators is reported by the SCA in future years.

A summary of performance against each indicator is presented in **Appendix I**.

Table 9.2 Summary of the trends related to the environmental and ESD indicators.

Group of Indicators	Summary of trends for 2003/04
Environmental Indicators	
Operational Performance indicators (for SCA activities)	<p>The SCA has demonstrated:</p> <ul style="list-style-type: none"> ▶ No change or nominal improved performance in relation to impacts on water; ▶ Performance in relation to impacts on land could not be determined with the information provided; and ▶ Reduced performance in relation to energy and resources (predominantly due to continued pumping from the Shoalhaven).
Environmental Condition Indicators	<p>The environmental indicators demonstrate:</p> <ul style="list-style-type: none"> ▶ No change and a deterioration in stream condition (predominantly due to drought impacts); ▶ Reduced storage; and ▶ Performance in relation to land condition could not be determined with the information provided, although the indicators where information was available indicated a trend toward improved performance.
ESD Indicators ¹	
Environmental	Overall downward trend in performance relating to the environmental ESD indicators.
Social	Overall positive trend in performance relating to the social ESD indicators.
Economic	Overall neutral trend in performance for economic ESD indicators.

¹ It is noted that the SCA's ESD indicators should be considered collectively to determine an overall assessment on the SCA performance relating to ESD.



9.5 Recommendations

9.5.1 Key recommendations

That the SCA:

- R9.1 Report on its assessment of overall performance against the environmental and ESD indicators, as part of its Annual Environmental Report.

9.5.2 Secondary recommendations

That the SCA:

- R9.2 Reports to IPART the extent to which, and reasons why, it is not collecting data in order to report against each of the environmental and ESD indicators.
- R9.3 Reports to IPART the extent to which, and reasons why, it is not collecting or analysing 10 years of comparable environmental and ESD indicator data that is available from other sources.



Appendix A

Audit brief



INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

I N V I T A T I O N T O T E N D E R

THE SYDNEY CATCHMENT AUTHORITY
2003/04 OPERATIONAL AUDIT

1 BACKGROUND

The Independent Pricing and Regulatory Tribunal of New South Wales (the Tribunal) is seeking suitably qualified auditors to conduct an audit of the Sydney Catchment Authority's (SCA's) performance against its Operating Licence.

The SCA was established to manage water supply and protect catchments, supply bulk water and regulate activities within the catchments to improve water quality, protect public health and protect the environment. It has primary responsibility for Sydney's bulk water supply, which is drawn from the catchments of four major river systems – the Warragamba, Upper Nepean, Woronora and Shoalhaven. These catchments extend over 16,000 square kilometres and surround the Greater Sydney Metropolitan Region.

In accordance with Sections 25 and 26 of the *Sydney Water Catchment Management Act 1998*, the NSW Government has granted an Operating Licence to the SCA. A requirement of the Operating Licence is that the Tribunal conduct an annual Operational Audit of the Authority's performance against its licence obligations.¹ A copy of the Operating Licence can be found under the Publications menu at www.sca.nsw.gov.au.

Information gathered as part of the Audit is used to report on the SCA's performance and make recommendations to the Minister for the Environment on:

- a) the granting, amendment or cancellation of the Operating Licence;
- b) the imposition, amendment or cancellation of conditions in relation to the Operating Licence;
- c) action to be taken, and sanctions to be applied, in respect of a contravention of the Operating Licence; and
- d) remedial action that may be warranted as a result of a contravention of the Operating Licence.²

The Department of Environment and Conservation, Department of Infrastructure, Planning and Natural Resources and NSW Health continue to regulate the SCA's activities concerning the environment, use of the water resource and public health respectively.

¹ Section 31 (1) (a) *Sydney Water Catchment Management Act 1998*.

² Section 30A *Sydney Water Catchment Management Act 1998*.

2 OBJECTIVES OF CONSULTANCY

The objective of the consultancy is to advise and report to the Tribunal on the SCA's performance against its Operating Licence for the period from 1 July 2003 to 30 June 2004. In undertaking this task the auditor must:

1. review and assess the level of compliance achieved by the Authority against the Operating Licence;
2. assess and report on progress by the Authority in addressing the comments made by the Minister (Attachment 1);
3. identify any factors that have affected the SCA's performance for the period from 1 July 2003 to 30 June 2004;
4. based upon the performance assessment, make recommendations on how the SCA can improve its performance in the future.

The audit process must take account of public submissions and the views of 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. Notwithstanding this, the audit report should reflect the emphasis of the *Sydney Water Catchment Management Act 1998* and the Operating Licence on water quality, system performance and environmental issues.

2.1 Outputs

The main outputs from this consultancy are:

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

The draft reports should be provided in one bound copy, a loose-leaf copy and an electronic copy in MS Word. The final written report should be provided in two bound copies and one loose-leaf copy, as well as in two electronic forms (MS Word, and PDF format suitable for web publication).

The auditor should note that the final report will be tabled in the NSW Parliament and publicly released. The report should be clearly and logically set out and written in plain English. On completion of the audit, the auditor's reports, working papers and advice provided to the Tribunal will become the property of the Tribunal.

2.2 Format of the Final Report

The Tribunal has a preferred format for the final report that includes:

- a summary of compliance with the requirements of the Operating Licence and Ministerial Requirements and a summary of key recommendations.
- a summary of the key audit findings providing a performance overview in the context of the SCA organisation, its legislated objectives, and its regulatory environment.
- for each section of the Licence and for any Ministerial Requirements:
 - a summary of requirements,
 - a summary of findings,
 - details of compliance,
 - a discussion of any relevant factors affecting compliance, any opportunities for improvement, and other relevant issues.

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

3 CONDITIONS OF TENDER

3.1 Timing

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

Contract Program

Month	Date	Activity
August	Tue 10	Start of contract
September	Thu 23	Delivery of first draft Audit Report
October	Tue 5	Discussion of first draft with Tribunal Secretariat
	Thu 28	Delivery of second draft Audit Report
November	Tue 2	Discussion of second draft with Tribunal and/or Secretariat
	Thu 18	Delivery of final Audit Report
	Thu 25	Discussion of final Audit Report with Tribunal and/or Secretariat

The dates in the table for discussion of drafts and the final report will be subject to negotiation between the Tribunal Secretariat and auditor. Weekly, written progress updates should be provided to the Secretariat. Progress meetings in addition to those in the above table 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 auditor may wish to outline a draft payment schedule.

A detailed breakdown of the consultancy costs 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. Costs should allow for presentation to the Tribunal, discussion and meetings with staff of the Tribunal, and stakeholder meetings as required.

3.3 Proposal

The consultancy proposal should demonstrate an appreciation for the task as well as describe the intended approach for carrying it out. The personnel to be involved, including resumes detailing their experience should be listed. A detailed work plan is also required. Details of previous clients who can be contacted are also desirable.

3.4 Presentation

Shortlisted tenderers may 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 the areas encompassed in the Operating Licence (ie. bulk water supply, bulk water quality, catchment management, environmental regulation and customer service)
- extent of knowledge about bulk water supply management and environmental regulation
- experience in similar auditing projects
- understanding of the SCA's regulatory framework
- proposed consultancy fee
- adequate resourcing and ability to provide results within the stated time frame
- proposed audit and quality assurance procedures
- guaranteed availability of key staff
- demonstrated ability to enlist the agencies' cooperation whilst engendering a sense of acceptance of the relevant outcomes.

The successful tenderer will be able to put together an audit team with specific experience in each of the core auditable areas (bulk water supply, bulk water quality, catchment management, environmental regulation and customer service) and will include in its consultancy proposal details of the audit team structure having regard to these categories. Tenderers may form a consortium with other firms or consultants to achieve the required set of skills in the areas of water science, engineering, environment and customer and consumer service issues.

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; or
- 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.

The Tribunal has a consultancy contract that covers issues including, but not limited to:

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

The Tribunal reserves the right to modify contract terms for the final contract as it considers appropriate. A copy of the Tribunal's 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 is:

Ms Anne Kelly	Research Analyst
	Ph: (02) 9290 8499
	Email: anne_kelly@ipart.nsw.gov.au

The primary contact point for the auditors within the SCA will be:

Mr Graham Giddey	Regulatory Affairs Manager
	Ph: (02) 4725 4720
	Email: graham.giddey@sca.nsw.gov.au

5 LODGEMENT OF TENDER

3 bound copies and 1 loose-leaf copy of the tender should be lodged in a sealed envelope marked '2003/04 SYDNEY CATCHMENT AUTHORITY OPERATIONAL AUDIT' and addressed to:

Ms Meryl McCracken
General Manager
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

so that it is received by no later than 5.00 pm Sydney time, on Friday 2 July, 2004.

ATTACHMENT 1 SUMMARY OF THE MINISTER'S COMMENTS ON THE 2002/03 OPERATIONAL AUDIT

Issue	Comment
Risk Management	The Minister endorsed the auditor's recommendation requiring that: <i>"the Authority finalises the development of the Risk Management Plan by 1 September 2004 and determines the significance of pollution loads with respect to treated water quality and requirements for control."</i>
Safe Yield	The Minister endorsed the auditor's recommendation requiring that: <i>"some work³ be undertaken to improve the robustness of the WATHNET model"</i> which is used to provide an estimate of the sustainability of the water supply.

³ The recommended work with the model includes running an independently verified 'degree of fit' using historical operating rules and stream/flow/demand scenarios; conducting yield sensitivity analyses for an agreed set of scenarios eg environmental flows, evaporation, demand hardening; and modelling the Blue Mountains system for security against demand levels.



Appendix B

Operating Licence

Sydney Catchment Authority

Operating Licence

under the
Sydney Water Catchment Management Act 1998

NEW SOUTH WALES



SYDNEY WATER CATCHMENT MANAGEMENT ACT 1998

OPERATING LICENCE AMENDED UNDER SECTION 27 OF THE
SYDNEY WATER CATCHMENT MANAGEMENT ACT 1998

With the advice of the Executive Council, I, the Honourable Gordon Samuels AC, CVO, Governor of New South Wales, hereby amend the operating licence of Sydney Catchment Authority under section 27 of the Sydney Water Catchment Management Act 1998 in the manner set out below.

A handwritten signature in dark ink, appearing to read 'Gordon Samuels'.

Governor of New South Wales

Signed at Sydney, this 19th day of April 2000.

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Introduction

Introduction

- A. The operating licence granted to the Sydney Catchment Authority on 2 July 1999, under section 25 of the *Sydney Water Catchment Management Act 1998*, was renewed on 22 December 1999 for the period from 1 January 2000 until 31 December 2004.
- B. The operating licence renewed under paragraph A is amended with effect from 19 April 2000 (“**Commencement Date**”) by deleting the existing provisions in their entirety and substituting the following:

Part 1

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Definitions and Interpretation

1.1 Definitions

In this Licence:

Act means the *Sydney Water Catchment Management Act 1998* and any regulations in force under it.

Annual audit means the annual operational audit of the Authority as defined in clause 10.1.1.

Area of Operations means the area of operations specified in Schedule 1, which is set out in accordance with section 20 of the Act.

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

Authority means the Sydney Catchment Authority constituted under the Act.

Bulk Water means water supplied by the Authority to Sydney Water Corporation under the Bulk Water Supply Agreement and by the Authority to customers other than Sydney Water Corporation.

Bulk Water Supply Agreement means the Bulk Water Supply Agreement between the Sydney Catchment Authority and Sydney Water Corporation signed on 15 September 1999 and any amendment or replacement of that Agreement.

Catchment Area means Land for the time being declared under the Act to be or be part of the inner catchment area or the outer catchment area.

Catchment Infrastructure Works means the Authority's:

- (a) Water Storages, water mains, or connected or associated works, or
- (b) monitoring devices in, under, over or near any works referred to in paragraph (a), or
- (c) any works ancillary or antecedent to any works referred to paragraph (a) or (b),

and includes anything prescribed by the regulations as being within the definition of "Catchment Infrastructure Works" under the Act, but excludes anything prescribed by the

regulations as being outside the definition under the Act.

Commencement Date means the date specified in paragraph B of the Introduction.

Consultative Committee means a committee referred to in Part 5.4 of this Licence.

County Council means a county council under the *Local Government Act 1993*.

Customer means any person who is supplied water by the Authority, that is,

- (i) Sydney Water Corporation,
- (ii) water supply authorities, prescribed Local Councils or prescribed County Councils, or
- (iii) other persons and bodies, but under terms and conditions that prevent the person or body concerned from supplying the water for consumption by others within the State unless the person or body is authorised to do so under an Act.

Environmental flow means a release of water from storage so as to provide a flow of water in a river, stream, or other natural waterway that:

- (a) mimics natural seasonal flows, and
- (b) restores and maintains the ecology of the waterway concerned.

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].

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

ESD indicators means indicators of ecologically sustainable development practices and principles.

Function includes a power, authority or duty.

Hawkesbury Nepean River Management Forum means the body established to make recommendations to the Minister for Land and Water Conservation and the Minister for the Environment on Environmental flow provisions for inclusion in the Authority's Water management licence.

Healthy Rivers Commission means the Commission established under section 23 of the *Pollution Control Act 1970* to conduct public inquiries and to publish its findings into the health of those NSW river systems referred by the NSW Government.

IPART means the Independent Pricing and Regulatory Tribunal of New South Wales constituted by the *Independent Pricing and Regulatory Tribunal Act 1992*.

Land includes the following:

- (a) the sea or an arm of the sea,
- (b) a bay, inlet, lagoon, lake or body of water, whether inland or not and whether tidal or non-tidal,
- (c) a river, stream or water course, whether tidal or non-tidal,
- (d) a building erected on the land.

Licence means this operating licence granted under section 25 of the Act to the Authority or any renewal or amendment of it, and as in force for the time being.

Licence Regulator means the Sydney Water Corporation Licence Regulator constituted by section 30 of the *Sydney Water Act 1994*.

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 or the Authority) who, in the opinion of the Minister, has suitable qualifications and experience for undertaking a Mid-term review or an End of term review.

Local Council means a council within the meaning of the *Local Government Act 1993*.

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.

NHMRC means National Health and Medical Research Council.

NSW Government 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.

NSW Health means the NSW Department of Health.

Raw water has the same meaning as Bulk water.

Regional Environmental Plan means the plan or plans referred to in section 53 of the Act.

SEDA means the Sustainable Energy Development Authority constituted by the *Sustainable Energy Development Act 1995*.

State Environmental Planning Policy 58 (SEPP 58) means the SEPP entitled “Protecting Sydney’s Water Supply” issued under the *Environmental Planning and Assessment Act 1979* as gazetted on 14 December 1998 and as amended, supplemented or replaced from time to time.

Sydney Water Corporation means Sydney Water Corporation constituted as a corporation under the *Sydney Water Act 1994*.

Water Storages means the Authority’s dam walls, pumps and other works used for or with respect to the extraction, and storage, of:

- (a) water in rivers and lakes;
- (b) water occurring naturally on the surface of the ground; and
- (c) sub-surface waters.

Water management committee means a committee established by the Minister for Land and Water Conservation that includes representatives of the community, State and Local government agencies, for purposes including the provision of advice to Government on the management of surface water and groundwater supplies.

Water management licence means a water management licence granted under Part 9 of the *Water Act 1912*.

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, licences, orders, permits and directions;
- (d) a reference to a law, regulations, guidelines, any Memorandum of understanding, plans, policies 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 function of the Authority includes a function which is conferred or imposed on the Authority by or under the Act or any other Act or law;
- (f) 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;
- (g) a reference to a year means a calendar year that ends on 31 December. "Yearly" has a corresponding meaning; 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; and
- (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 the Authority 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 the Minister or a person appointed by the Minister.

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, the Authority 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 (including any interpretation of any provision), or between this Licence and the Bulk Water Supply Agreement (including any interpretation of any provision), this Licence will prevail to the extent of the inconsistency.

Part 2

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Information about this Licence

2.1 Objectives of this Licence

- 2.1.1 The objectives of this Licence are to enable and require the Authority to:
- (a) manage and protect the Catchment Area and Catchment Infrastructure Works;
 - (b) supply Bulk water; and
 - (c) regulate certain activities within the Catchment Area.
- 2.1.2 Consistent with the objectives in clause 2.1.1, this Licence requires the Authority 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; and
 - (c) be subject to the Annual audit of compliance with this Licence.

2.2 Duration of Licence

- 2.2.1 This Licence is for a term that will expire on 31 December 2004.
- 2.2.2 The Governor may renew this Licence in accordance with the Act.

[Note: Section 28 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 Licence Review Body's report must be made available to the public by the Authority at the direction of the Minister (which direction must be given within 2 months after the Minister receives the report). Copies are to be placed on the Authority's website on the internet for downloading by the public free of charge and also made available at its offices for access or collection by any person, also free of charge.
- 2.3.6 The Minister may accept or reject any recommendation made by the Licence Review Body.
- 2.3.7 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 27 of the Act.
- 2.3.8 Any recommendation made by the Licence Review Body that is not accepted by the Minister is of no force or effect.

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 Licence Review Body's report must be made available to the public by the Authority at the direction of the Minister (which direction must be given within 2 months after the Minister receives the report). Copies are to be placed on the Authority's website on the internet for downloading by the public free of charge and also made available at its offices for access or collection by any person, also free of charge.
- 2.4.6 The Minister may accept or reject any recommendation made by the Licence Review Body.
- 2.4.7 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 27 of the Act.
- 2.4.8 Any recommendation made by the Licence Review Body that is not accepted by the Minister is of no force or effect.

2.5 Licence amendment

2.5.1 This Licence may be amended by the Governor in accordance with the Act.

[Note: Section 27 of the Act provides that the Governor may amend the operating Licence.]

2.6 Contravention of Licence

The Authority acknowledges that, if the Minister is of the opinion that the Authority has contravened this Licence, the Minister may take action against the Authority under section 29 of the Act.

[Note: Section 29 of the Act provides that, where the Minister is of the opinion that the Authority contravenes this Licence, the Minister may serve a notice on the Authority requiring it to rectify the contravention; or, the Governor may direct that the Authority is to pay a monetary penalty in an amount determined by the Governor.]

2.7 Cancellation of Licence

This Licence may be cancelled by the Governor in the circumstances described in section 30 of the Act.

[Note: Section 30 sets out the circumstances in which the Governor may cancel the licence. These are where the Authority ceases, otherwise than as authorised by the operating licence, to carry out its responsibilities in accordance with the licence or any of them in the area of operations of the Authority for any reason; or where the Authority, in the Minister's opinion, is 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 the Authority is convicted on more than three occasions within a twelve month period of criminal offences punishable by at least a \$10,000 fine or twelve months' penal servitude or imprisonment if the Authority were a natural person.]

Part 3

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Sydney Catchment Authority's Responsibilities

3.1 Responsibilities of the Authority under this Licence and other laws

The Authority must comply with this Licence and all applicable laws.

[Note: The Authority has obligations under a number of laws including:

- *Protection of the Environment Operations Act 1997;*
- *Public Health Act 1991;*
- *Water Act 1912;*
- *Water Administration Act 1986;*
- *Environmental Planning and Assessment Act 1979;*
- *Independent Pricing and Regulatory Tribunal Act 1992;* and
- *Dams Safety Act 1978.*]

3.2 Responsibility of the Authority under the Sydney Water Catchment Management Act

3.2.1 The Authority acknowledges that its principal objectives under section 14(1) of the Act are:

- (a) to ensure that the Catchment Area and the Catchment Infrastructure Works are managed and protected so as to promote water quality, the protection of public health and public safety, and the protection of the environment;
- (b) to ensure that water supplied by it complies with appropriate standards of quality;
- (c) where its activities affect the environment, to conduct its operation in compliance with the principles of ecologically sustainable development contained in section 6(2) of the *Protection of the Environment Administration Act 1991*;
- (d) to manage the Authority's Catchment Infrastructure Works efficiently and economically and in accordance with sound commercial principles.

3.2.2 The Authority acknowledges that its special objectives under section 14(2) of the Act are:

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

3.3 Memorandum of understanding

3.3.1 In accordance with section 36 of the Act, the Authority must maintain a Memorandum of understanding with each of the Water Administration Ministerial Corporation, Director-General of NSW Health, and EPA for the term of this Licence.

[Note: Section 36 of the Act requires the Authority enter into separate memoranda of understanding with certain regulatory agencies, being the Director-General of NSW Health, the Water Administration Ministerial Corporation, and EPA. If the Authority and those regulatory agencies are not able to enter into, or agree on a term of, a memorandum of understanding, the memorandum is to be entered into in accordance with procedures determined by the Premier or is taken to be entered into in such terms as are determined by the Premier. A memorandum of understanding entered into by the Authority under section 36 is to be reviewed, and amended or replaced, at such times and in such circumstances as are agreed upon between the Authority, the agency concerned, or as are determined by the Minister. Section 38 deals with public exhibition of memoranda of understanding.]

3.3.2 The purpose of a Memorandum of understanding is to form the basis for cooperative relationships between the parties to the Memorandum with a view to furthering the objectives of this Licence and the Act.

3.3.3 The Authority acknowledges that it may be required by direction of the Minister to enter into a Memorandum of understanding with a person, body or agency under section 37 of the Act.

[Note: Section 37 of the Act provides that the Minister may direct the Authority to enter into memoranda of understanding with the Director-General of National Parks & Wildlife, the Director-General of the Department of Agriculture, local councils, county councils, or any persons, bodies or agencies nominated by Ministerial order communicated to the Authority. The Minister may specify the matters to be dealt with in a memorandum of understanding and the period (within 6 months of the direction) within which the memorandum is to be entered into. Where the Authority and the relevant body are unable to agree, the Premier may determine the terms of the memorandum. Section 38 deals with public exhibition of memoranda of understanding.]

3.3.4 The Authority must consult with the Minister in the six months following the Commencement Date, with a view to the Minister considering exercising his powers under section 37(1) of the Act to direct the Authority to enter into Memoranda of understanding with regulatory agencies referred to in section 35(b) of the Act.

[Note: The regulatory agencies in section 35(b) of the Act are the Director-General of National Parks and Wildlife, the Director-General of the Department of Agriculture, local councils, county councils, and any persons, or bodies or agencies for the time being nominated by order of the Minister communicated to the Authority.]

3.3.5 The Licence Regulator must consider and report on the Authority's implementation of the Memoranda of understanding referred to in clause 3.3 and any other requirements in clause 3.3.

3.3.6 As part of the Mid term review, the Licence Review Body must advise the Minister on whether any obligations in the Memoranda of understanding referred to in clause 3.3 should be incorporated into this Licence.

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Licence Authorisation and Area of Operations

4.1 What the Licence authorises and regulates

- 4.1.1 For the purpose of section 15(1) of the Act, this Licence enables the Authority to exercise any function conferred or imposed on it by or under the Act or any other Act, regardless of whether any such function is conferred or imposed on the Authority by or under the Act or any other Act before or after the Commencement Date.
- 4.1.2 This Licence enables and requires the Authority to provide, construct, operate, manage and maintain efficient and coordinated viable systems and services for supplying Bulk water.
- 4.1.3 The Authority must ensure that the Catchment Infrastructure Works 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 the Authority's power to carry out any functions conferred or imposed under any applicable law.

4.3 Area of Operations

- 4.3.1 This Licence enables the Authority to exercise its functions in or in respect of an area in or outside the Area of Operations.
- 4.3.2 The Area of Operations may only be varied in accordance with section 20 of the Act.

[Note: The Area of Operations for the Authority is listed in Schedule 1 of this Licence. Section 20 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.]

4.4 Non-Exclusive Licence

The Licence does not prohibit a person (the "Supplier") from supplying water (whether Bulk water or otherwise) to a person (including a person that is a Customer) in the Area of Operations, if the Supplier is lawfully entitled to do so.

Part 5

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Customers

5.1 Customer - Sydney Water Corporation

5.1.1 The Authority acknowledges that it has entered into a Bulk Water Supply Agreement with Sydney Water Corporation in compliance with its obligations under section 22 of the Act to enter into an arrangement with Sydney Water Corporation. The terms of the Agreement are as provided for in the Act and include:

- (a) the standard of the quality of the water supplied;
- (b) the continuity of water supply;
- (c) the maintenance of adequate reserves of water by the Authority; and
- (d) the cost to be paid by Sydney Water Corporation for the supply of water to it.

[Note: Division 4 of Part 3 (sections 22 to 24) of the Act specify the arrangements which are to be made with Sydney Water Corporation.]

5.1.2 The Authority must review the terms of the Bulk Water Supply Agreement from time to time in consultation with Sydney Water Corporation to determine its compliance and consistency with:

- (a) the Act;
- (b) this Licence; and
- (c) the operating licence for Sydney Water Corporation.

5.1.3 Following the review in clause 5.1.2, but subject to sections 22(4), 22(5), and 22(8) of the Act, the Authority must use its best endeavours to procure Sydney Water Corporation's agreement to amendments to the Bulk Water Supply Agreement that are necessary to address identified areas of non-compliance or inconsistency with:

- (a) the Act;
- (b) this Licence; and
- (c) the operating licence for Sydney Water Corporation.

[Note: The public consultation requirements set out in section 22(8) of the Act apply to any amendment of the Bulk Water Supply Agreement.]

5.2 Customers - other than Sydney Water Corporation

- 5.2.1 The Authority must use its best endeavours to reach agreement with its other Customers, on the arrangements to apply in relation to Bulk water that the Authority supplies to those Customers. The terms of the arrangements must at minimum include:
- (a) the standard of the quality of the water supplied;
 - (b) the continuity of water supplied;
 - (c) any other terms agreed by the parties; and
 - (d) the costs to be paid by Customers for the supply of water to them.

5.3 Customer complaints

- 5.3.1 The Authority must establish internal complaints handling procedures for receiving, responding to and resolving complaints it receives from Customers and the community, relating to any of its functions.
- 5.3.2 The internal complaints handling procedures of the Authority must be based on the Australian Standard *AS4269-1995 Complaint Handling*.
- 5.3.3 The Authority must make available to Customers and the community information concerning its internal complaints handling procedures which explains how to make a complaint and how the complaints handling procedure works.
- 5.3.4 The Authority must provide information of the nature described in clause 5.3.3 to Customers at least once each year. The Authority must also post this information on its website on the internet for downloading free of charge.
- 5.3.5 The Authority must report each year to the Licence Regulator as part of the Annual audit on the following details concerning complaints made against the Authority which are handled by its internal complaints handling procedures:
- (a) the number and types of complaints received classified into one or more of the following categories:
 - (i) water quality, including health and aesthetic characteristics;
 - (ii) continuity of water supply;
 - (iii) water pressure; and
 - (iv) billing.
 - (b) the number and type of complaints resolved or not resolved 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;
 - (c) any problems of a systematic nature arising from the complaints.

5.4 Consultative Committees

- 5.4.1 The Authority must establish and regularly consult with one or more Consultative Committees to enable community involvement in issues relevant to the performance of the Authority's obligations under this Licence.
- 5.4.2 The first Consultative Committee under this Licence in respect of the period after the Commencement Date must be established within three months of the Commencement Date.

- 5.4.3 The Authority must appoint the members of a Consultative Committee, consistent with this Licence.
- 5.4.4 At all times, the membership of one or more Consultative Committees must between them include a representative from at least each of the following:
- (a) local environment groups;
 - (b) peak environment groups;
 - (c) catchment management experts;
 - (d) public health experts;
 - (e) business groups;
 - (f) farming interests;
 - (g) local government; and
 - (h) Customers.
- 5.4.5 The Authority may require a representative under clause 5.4.4 to serve on so many Consultative Committees as it considers it appropriate to best discharge the tasks assigned to him or her.
- 5.4.6 The term of a member of a Consultative Committee will expire two years after his or her appointment. A member will be eligible for re-appointment for one further consecutive term.
- 5.4.7 If a member's place becomes vacant before the expiration of his or her term, the Authority may appoint a suitable replacement for the remainder of that member's term.
- 5.4.8 Within three months of establishing Consultative Committee(s), the Authority must develop in consultation with members of the Consultative Committee(s) a Consultative Committee Charter that addresses the following issues:
- (a) the role of the Consultative Committees;
 - (b) selection criteria on how members will be drawn from the community;
 - (c) information on how the Consultative Committee will operate;
 - (d) a description of the type of matters that will be referred to the Consultative Committee;
 - (e) procedures for the conduct of Consultative Committee meetings, including the appointment of a chairperson;
 - (f) communicating the outcome of the Consultative Committee's work to the Authority;
 - (g) procedures for tracking issues raised and ensuring appropriate follow-up of those issues; and
 - (h) funding and resourcing of the Consultative Committee by the Authority.
- 5.4.9 There must be a Consultative Committee Charter for each Consultative Committee. However, a single Consultative Committee Charter may be expressed to apply to more than one Consultative Committee.
- 5.4.10 The Authority must provide a Consultative Committee with information within its possession or under its control necessary to enable the Consultative Committee to discharge the tasks assigned to it, other than information or documents over which the Authority or another person claims confidentiality or privilege.

- 5.4.11 A copy of each Consultative Committee Charter must be posted on the Authority'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.
- 5.4.12 As part of the End of term review, the Licence Review Body must evaluate and report on the effectiveness of Consultative Committees and compliance with the Consultative Committee Charter.

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Bulk Water Quality

6.1 Interpretation

In this Part:

Drinking Water Guidelines means the NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 and any amendment, update and supplement of these guidelines from time to time.

health guideline value means the concentration or measure of a physical characteristic of water quality (a physical, 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.

Water Treatment means treating water by substantially removing or reducing certain contaminants and characteristics prior to the water being used or supplied for use by business and household consumers for human consumption.

6.2 Water supplied for Water Treatment

The following provisions apply to Bulk water supplied by the Authority to Customers for Water Treatment:

[Note: Customers to whom the Authority supplies water for Water Treatment include: Sydney Water Corporation, Shoalhaven City Council and Wingecarribee Shire Council.]

- (a) the Authority must meet the health guideline values in the Drinking Water Guidelines for those characteristics of water that are set out in Schedule 4;

[Note: The characteristics of water that are listed in Schedule 4 are those that may not be substantially removed or reduced through water treatment processes used by the Authority's Customers at the Commencement Date.]

- (b) the Authority must comply with the site specific standards for Bulk water in the Bulk Water Supply Agreement; and

[Note: The site specific standards in the Bulk Water Supply Agreement relate only to the aesthetic characteristics of water, such as turbidity, colour, hardness and alkalinity.]

- (c) the Authority must liaise with Customers to whom it supplies Bulk water for Water Treatment, to cooperate and where possible agree on cost-effective strategies (and the timing of their implementation) to ensure treated water consumed by humans is not harmful to human health.

6.3 Water supplied for other uses

- 6.3.1 The Authority must use its best endeavours to reach agreement with Customers and other persons as to the water quality standards that are to apply to the Bulk water that the Authority supplies to those Customers, or other persons, for purposes other than Water Treatment.

[Note: See clause 5.2.1 of this Licence.]

- 6.3.2 The Authority must advise Customers of the potential uses for the Bulk water it supplies and of the need for Water Treatment if the water is to be used for human consumption.

6.4 Catchment and system management

The Authority must comply with the Drinking Water Guidelines relating to catchment management and system management of public water supplies.

[Note: The Drinking Water Guidelines include catchment and system management practices to minimise the risk of contamination to raw water supplies, for example, the catchment management practices required to minimise the risk of contamination by Cryptosporidium and Giardia.]

6.5 Review of obligations regarding water quality

As part of the Mid term review, the Licence Review Body must review the obligations imposed on the Authority under clause 6.2 and make recommendations as to whether those obligations should be amended and if so the nature of the amendments.

6.6 Water quality monitoring and reporting

- 6.6.1 The Authority must develop and implement a water quality monitoring program (the “Monitoring Program”) that comprises:
 - (a) routine monitoring of the quality of Bulk water supplied to Customers for Water Treatment and the Authority’s compliance with clause 6.2; and
 - (b) targeted, investigative and event based monitoring of the water in the Catchment Area, to better define the occurrence of particular characteristics and contaminants in water.
- 6.6.2 The Monitoring Program must include at least the following in relation to the routine monitoring required by clause 6.6.1(a):
 - (a) monitoring against health guideline values for characteristics of water as required by clause 6.2(a);
 - (b) monitoring for the site specific standards as required by clause 6.2(b);
 - (c) monitoring for any other characteristics of water nominated by NSW Health;
 - (d) an effective system of quality assurance in the monitoring, sampling, testing and reporting processes it employs, which must be to the satisfaction of NSW Health; and
 - (e) sampling frequencies and locations that produce results which are representative of the quality of Bulk water supplied to Customers for Water Treatment.

6.6.3 The Authority must provide:

- (a) the results of the routine monitoring required by clauses 6.6.2(a), 6.6.2(b) and 6.6.2(c) to the Customers that it supplies Bulk water for Water Treatment, as soon as practicable, in order that these Customers may adjust their Water Treatment processes to manage incoming pollutants; and
- (b) the results of the routine monitoring required by clauses 6.6.2(a) and 6.6.2(c) to NSW Health, as soon as practicable.

6.6.4 The Monitoring Program must include at least the following in relation to the targeted, investigative and event based monitoring required under clause 6.6.1(b):

- (a) an effective system of quality assurance in the monitoring, sampling, testing and reporting processes, which must be to the satisfaction of NSW Health, the Environment Protection Authority and the Department of Land and Water Conservation; and
- (b) sampling frequencies and locations that produce information to better define the occurrence and factors contributing to the presence of the characteristics in the water, which must be to the satisfaction of NSW Health, the Environment Protection Authority and the Department of Land and Water Conservation.

6.6.5 The Authority must develop and maintain a database(s) of monitoring results for the routine, targeted, investigative and event based monitoring.

6.6.6 The nature, features and results of the Monitoring Program must be reflected in a report to be prepared by the Authority by 30 November of each year of this Licence (the “Monitoring Program Report”).

6.6.7 The Monitoring Program Report must (in addition to the information required under clause 6.6.3) also contain the following information:

- (a) a summary of the monitoring information of the Authority;
- (b) a description of water quality trends and problems identified as part of the Monitoring Program;
- (c) a summary of water quality incidents identified since the previous Monitoring Program Report and action taken to resolve, eliminate or mitigate those incidents or their effect; and
- (d) steps taken by the Authority to protect public health.

6.6.8 The Monitoring Program Report must be placed on the Authority’s website on the internet for downloading by the public free of charge and also made available at its offices for access or collection by any person, also free of charge.

6.6.9 The Licence Regulator must consider and report on the Monitoring Program and the Monitoring Program Report as part of the Annual audit.

6.7 Water quality planning

Risk Management Plan

6.7.1 After completion of the first catchment audit referred to in Part 5 of the Act, the Authority must use the findings of the audit to prepare a five-year Risk Management Plan.

[Note: Section 42(2) of the Act requires catchment audits at intervals of no more than two years.]

6.7.2 The purpose of the Risk Management Plan is to identify and assess sources of pollution in the Catchment Area and to reduce or remove the pollution so as to improve the quality of Bulk water supplied to Customers. To achieve this purpose the Plan must:

- (a) identify and assess pollution sources in the Catchment Area, how pollutants are modified between source and water storage, and evaluate the impact of pollution on the quality of Bulk water supplied to Customers (as this information becomes available through the Authority's long term research);
- (b) identify opportunities to improve the operation of Catchment Infrastructure Works;
- (c) set out actions within the Authority's power to improve the quality of Bulk water supplied to Customers. These actions must be developed as part of the risk action plans in clause 6.7.3(a) and have clear timeframes; and
- (d) identify where the Authority needs to enter into arrangements with agencies to address those problems outside its powers.

[Note: Ideally the Risk Management Plan should form part of a Government catchment planning process. The requirement to produce the Risk Management Plan may be satisfied by plans developed under the Regional Environmental Plan to the extent they incorporate the requirements in clauses 6.7.2 and 6.7.3.]

6.7.3 In developing the Risk Management Plan, the Authority must:

- (a) apply Australian Standard Risk Management: AS/NZS4360:1999 to the quality of Bulk water supplied by the Authority to its Customers. In particular, the Authority must apply this Australian Standard to develop risk action plans referred to above at clause 6.7.2(c);
- (b) have regard to the catchment management principles in the Drinking Water Guidelines; and
- (c) consider the benefits and costs of different management options.

[Note: The Australian Standard on Risk Management provides the generic framework for establishing the context, identification, analysis, evaluation, treatment, monitoring and communication of risk. As the framework in the standard is generic it can be applied to the quality of Bulk water supplied by the Authority to its Customers.]

6.7.4 The Authority must engage in public consultation in developing the Risk Management Plan, and must specifically seek comments from NSW Health, the Environment Protection Authority and the Department of Land and Water Conservation. A draft plan must be exhibited for public comment, with finalisation by 1 January 2001.

6.7.5 On completion of future catchment audits, the Authority must review its five-year Risk Management Plan and make amendments following public consultation.

6.7.6 At other times, the Risk Management Plan may only be amended following public consultation.

6.7.7 The need for this Risk Management Plan must be reviewed at the Mid term review in light of the requirements under the Regional Environmental Plan.

6.7.8 As part of the Annual audit, the Licence Regulator is to audit the Authority's performance against the actions that the Authority is to undertake under the Risk Management Plan.

Incident Management Plan

- 6.7.9 The Authority must prepare, to the satisfaction of NSW Health, an Incident Management Plan, by 1 July 2000 which must remain in place until any new plan is developed in agreement with NSW Health. The Authority must consult with Customers to whom it supplies Bulk water for Water Treatment in relation to the development of the Incident Management Plan.
- 6.7.10 The purpose of the Incident Management Plan is to minimise the risk to human health from the Bulk water supplied by the Authority to Customers.
- 6.7.11 The Incident Management Plan must contain, or incorporate by reference, procedures and protocols for the coordinated management of water incidents including media and stakeholder liaison and any notification of public health advice received from NSW Health to Customers.
- 6.7.12 The Incident Management Plan must include a requirement for the Authority to advise Customers to whom it supplies Bulk water for Water Treatment and NSW Health, if the Bulk water it supplies may be a risk to human health.

6.8 Environmental water quality

- 6.8.1 The Authority must meet the environmental water quality requirements for any discharges or water releases required under licences issued to the Authority by the EPA or the Department of Land and Water Conservation.

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Catchment Management and Protection

7.1 Authority to Manage and Protect

- 7.1.1 The Authority must manage and protect the Catchment Area to the full extent to which it is empowered to do so.
- 7.1.2 The Authority must use its best endeavours to coordinate the collection of data on water quality in the Catchment Area, including data collected as a result of the Memoranda of understanding referred to in Part 3.3 of this Licence between the Authority and each of EPA, Director-General of NSW Health and the Water Administration Ministerial Corporation as well as data collected by other relevant persons or bodies.
- 7.1.3 The Authority must make its unpublished data in relation to river health publicly available, in accordance with Government policies about access to information. The Authority may charge for value adding and the processing and servicing of information requests.

Plans of Management for Water Storage Catchments

7.2 Special Areas Strategic Plan of Management

- 7.2.1 In this clause:

***Special Areas Strategic Plan of Management** means the Special Areas Strategic Plan of Management as adopted by the Minister from time to time in accordance with section 49 of the Act.*

[Note: The Authority exhibited the Special Areas Strategic Plan of Management and supporting background document in September 1999.]

- 7.2.2 The Authority must give effect to the Special Areas Strategic Plan of Management. In doing so, the Authority must consult, and where possible, collaborate with the National Parks and Wildlife Service.
- 7.2.3 By no later than 1 September each year, the Authority must report to the Licence Regulator on its compliance with the Special Areas Strategic Plan of Management for the previous twelve months, to enable the Licence Regulator to consider and

report on the matter as part of the Annual audit.

- 7.2.4 The Authority must review the Special Areas Strategic Plan of Management with National Parks and Wildlife Service every five years.
- 7.2.5 Where the Authority or National Parks and Wildlife Service considers that an amendment, alteration, or substitution of the Special Areas Strategic Plan of Management may be warranted, the Authority must bring the matter to the Minister's attention and request that the Minister consider amending, altering or substituting the Special Areas Strategic Plan of Management in accordance with section 49 of the Act.

[Note: Section 49(7) and (8) of the Act provide that the relevant Ministers may amend, alter or cancel the Special Areas Strategic Plan of Management, or substitute a new plan, at any time. Before so doing, the relevant Ministers may consult with any person or body that the Ministers think fit.]

Section 49(2) to (4) apply to plans of management as well as amendments and alterations to plans of management. In relation to amendments, the joint sponsors must give notice of any proposed amendment or alteration in a newspaper circulating throughout NSW specifying the address of the place of which copies of the plan of management may be inspected, and any proposed amendments, and the address to which representations may be forwarded. Any person may, within 30 days or such longer period as may be specified in the notice, make representations to the joint sponsors concerning the proposed amendment, alteration or substitute plans. The joint sponsors must, on the expiration of that period and before submitting the amendments, alterations or substitution to the relevant Ministers, consider any representations made under that section.]

7.3 Wingecarribee Swamp Plan of Management

- 7.3.1 In this clause:

Wingecarribee Swamp Plan of Management means the plan of management for the area known as Wingecarribee Swamp, developed by Sydney Water Corporation and National Parks and Wildlife Service.

- 7.3.2 The Authority must review the current Wingecarribee Swamp Plan of Management, and must use its best endeavours to develop a new or amended Plan with National Parks and Wildlife Service by 1 December 2000.
- 7.3.3 The new or amended Wingecarribee Swamp Plan of Management must consider rehabilitation and restoration of the swamp. The objectives and strategies in the new or amended Wingecarribee Swamp Plan of Management must be consistent with objectives and strategies in the Special Areas Strategic Plan of Management referred to in clause 7.2.
- 7.3.4 The Authority must give effect to the new or amended Wingecarribee Swamp Plan of Management and where reasonably possible, in conjunction with other appropriate persons.
- 7.3.5 By no later than 1 September each year, the Authority must report to the Licence Regulator on its compliance with the Wingecarribee Swamp Plan of Management for the previous twelve months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.
- 7.3.6 The Authority must review the new or amended Wingecarribee Swamp Plan of Management in consultation with National Parks and Wildlife every five years for the purpose of advising the Minister whether any amendments are required to the Plan.

- 7.3.7 After such review, where the Authority or National Parks and Wildlife Service considers that an amendment, alteration, or substitution of the Wingecarribee Swamp Plan of Management may be warranted, the Authority must bring the matter to the Minister's attention and request that the Minister consider amending, altering or substituting the Wingecarribee Plan of Management in accordance with section 49 of the Act.

[Note: See the Note under clause 7.2.5.]

Catchment Planning Instruments

7.4 Regional Environmental Plan

- 7.4.1 The Authority must comply with any obligations on it under the Regional Environmental Plan consistent with its functions under the Act and this Licence.
- 7.4.2 The Authority must promote implementation and awareness of the Regional Environmental Plan including education of public authorities and other relevant parties in the Catchment Area.
- 7.4.3 The Licence Regulator must consider and report on the matters in clause 7.4 as part of the Annual audit.

7.5 State Environmental Planning Policy

- 7.5.1 The Authority must comply with State Environmental Planning Policy 58, (or if that Policy is supplemented or replaced, that Policy as supplemented or replaced) consistent with its functions under the Act.
- 7.5.2 The Licence Regulator must consider and report on the matters in clause 7.5 as part of the Annual audit.

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Management of Catchment Infrastructure Works and Demand Management

8.1 Management of Catchment Infrastructure Works

- 8.1.1 The Authority must manage and operate the Catchment Infrastructure Works to minimise risk to human health from the Bulk water it supplies.
- 8.1.2 The Authority must ensure that Catchment Infrastructure Works are designed, operated and managed to provide Sydney Water Corporation with a long-term standard of services which accords with the performance criteria set out in Schedule 2.
- 8.1.3 The performance criteria set out in Schedule 2 are to be reviewed as part of the Mid term review.

8.2 Dam Safety

The Authority must comply with the guidelines of the Australian National Committee on Large Dams and the NSW Dams Safety Committee.

8.3 Demand Management

- 8.3.1 The Authority must manage demand management consistent with the requirements in the Water management licence issued to the Authority under Part 9 of the Water Act 1912.
- 8.3.2 To the extent which the Authority is able, it must manage water conservation consistent with the demand management requirements in Sydney Water Corporation's operating licence.
- 8.3.3 In considering any augmentation of the Catchment Infrastructure Works, the Authority must consider as a priority, whether there exists any additional scope for cost-effective demand management strategies by Sydney Water Corporation.

Part 9

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The Environment

9.1 Environment Plan

- 9.1.1 The Authority must prepare a draft five-year Environment Plan by 31 December 2000, and a final five-year Environment Plan by 30 June 2001. After that, the Authority must produce further five-year Environment Plans every five years.
- 9.1.2 The Authority must engage in public consultation in developing both the draft and final Environment Plan referred to in clause 9.1.1. The final Environment Plan must be submitted to the Minister for approval.
- 9.1.3 The Environment Plan must:
- (a) contain details of the Authority's strategies relating to the Catchment Area and the Catchment Infrastructure Works as well as the environmental aspects of its other activities such as heritage;
 - (b) comply with principles of ecologically sustainable development; and
 - (c) be recognised in the Authority's business plans.

[Note: One of the principal objectives of the Authority in the Act is to conduct 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.]

- 9.1.4 The Environment Plan must set targets and timetables for compliance by the Authority with those targets over the term of the Environment Plan. These targets must utilise the environmental and ESD indicators in clause 9.2.
- 9.1.5 The Environment Plan must:
- (a) include a policy of the management of energy used within the Authority for the performance of its functions in accordance with this Licence;
 - (b) apply the following targets in accordance with the NSW Government Energy Management Policy for energy consumption of buildings:
 - (i) 15% reduction from the 1995 level by 2001;
 - (ii) 25% reduction from the 1995 level by 2005; and
 - (iii) any subsequent targets set by Energy Management Policy; and

(c) include environmental and ESD indicators.

9.1.6 The Environment Plan must be posted on the Authority'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.

9.1.7 Amendments may only be made to the Environment Plan following public consultation and the approval of the Minister.

9.2 Environmental and ESD indicators

9.2.1 The Authority must prepare:

(a) a draft list of environmental indicators by 1 July 2000; and

(b) a draft list of ESD indicators by 1 October 2000.

9.2.2 The environmental indicators must allow the Authority to monitor the direct impact of its activities on the environment, whether such activities are carried out by or on behalf of the Authority.

9.2.3 The ESD indicators must indicate the degree to which the Authority's activities comply with the principles of ecologically sustainable development.

9.2.4 The Authority must present final lists of the environmental and ESD indicators to the Minister by 1 January 2001 for the Minister's approval, and if approved, for publication in the NSW Government Gazette.

Environmental indicators

9.2.5 The draft list of environmental indicators must:

(a) include any environmental indicators, from the current list of indicators developed by Sydney Water Corporation, that are relevant to the Authority's functions;

(b) address the ecological health of the Catchment Area (with particular reference to the vegetation cover, riparian zones and water quality) and the impact of the Authority's activities (including polluting activities) on the Catchment Area, in accordance with section 26(1)(c) of the Act;

(c) have regard to physical, biological, chemical and ecological factors, as appropriate, and may include: nutrients; toxic chemicals including heavy metals and organochlorines and flora and fauna species diversity.

9.2.6 The Authority must ensure that its environmental indicators are consistent with any other environmental indicators being prepared for the Catchment Area, for example, indicators to evaluate the outcomes of the Special Areas Strategic Plan of Management.

9.2.7 In preparing the draft list of indicators, the Authority must give consideration to any environmental indicators recommended by the person nominated to conduct catchment audits under s.42 of the Act.

9.2.8 The draft list of environmental indicators developed by the Authority must undergo public consultation where the public has at least 40 days to provide its comments. Specific comments must also be invited from EPA, National Parks and Wildlife Service, Department of Land and Water Conservation, NSW Fisheries, NSW Health, the person nominated to conduct catchment audits under s.42 of the Act, and peak environment non-government organisations.

- 9.2.9 The Authority must commence monitoring and compiling data on the environmental indicators in clause 9.2.4 from 1 March 2001.
- 9.2.10 The Authority must continue monitoring and compiling data from the current list of environmental indicators developed by Sydney Water Corporation, that are relevant to the Authority's functions, until such time as the Authority commences monitoring and compiling data under clause 9.2.9.
- 9.2.11 The environmental indicators developed under clause 9.2.4 are to be reviewed as part of the End of term review.

ESD indicators

- 9.2.12 The draft list of ESD indicators must have regard to:
- (a) corporate management (including corporate policy and planning, and corporate asset management);
 - (b) management of the Catchment Infrastructure Works; and
 - (c) the planning, design and construction of:
 - (i) new Catchment Infrastructure Works;
 - (ii) the upgrading of existing Catchment Infrastructure Works; and
 - (iii) depots.
- 9.2.13 The draft list of ESD indicators developed by the Authority must undergo public consultation where the public has at least 40 days to provide its comments. Specific comments must also be invited from EPA, National Parks and Wildlife Service, Department of Land and Water Conservation, NSW Fisheries, NSW Health, SEDA, the person nominated to conduct catchment audits under s.42 of the Act, and peak environment non-government organisations.
- 9.2.14 The Authority must commence monitoring and compiling data on the ESD indicators from 1 March 2001.
- 9.2.15 The ESD indicators developed under clause 9.2.4 are to be reviewed as part of the End of term review.

9.3 Reporting

- 9.3.1 The Authority must report annually on the Environment Plan to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.
- 9.3.2 The report must detail the Authority's progress in meeting the Environment Plan. In particular, how the Authority:
- (a) has complied with the targets and timetables in clause 9.1.4; and
 - (b) has performed in relation to the environmental and ESD indicators compiled under clause 9.2.4 for the previous twelve months.
- 9.3.3 The report in clause 9.3.2(b) on the environmental and ESD indicators must provide information which enables a year to year comparison in relation to the Authority's performance in this area. In particular, the Authority is to use the indicators with historical yearly values over at least the previous ten years where comparable data permits such a compilation.
- 9.3.4 Within one month of its completion, the report must be posted on the Authority'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.

9.4 Environmental flows

9.4.1 The Authority must produce a draft report on trial Environmental flows within one month from the Commencement Date. The Authority must produce a final report on trial Environmental flows within six months from the Commencement Date. The final report must be placed on the Authority'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.

9.4.2 The report is to include information from the environmental impact statement process regarding Environmental flows for the Hawkesbury-Nepean, Woronora and Shoalhaven rivers and any other information on any other trial Environmental flows in respect of those rivers.

[Note: The Authority is involved in trial releases of water from dams on the Hawkesbury-Nepean River and the monitoring and assessing of the effects of these releases. The results from the trial water release program are due in early 2000.]

9.4.3 An independent expert panel on Environmental flows may be appointed by the Minister for the Environment in consultation with among other persons, the:

- (a) Minister responsible for the Department of Land and Water Conservation; and
- (b) Healthy Rivers Commission.

9.4.4 The independent panel may include experts from relevant fields including, but not limited to aquatic ecology, resource economics, socio-economic assessment, geomorphology and hydrology. The panel may be convened by an independent chair appointed by the Minister for the Environment in consultation with the Minister for Land and Water Conservation. Executive support for the independent expert panel is to be provided by the Department of Land and Water Conservation.

9.4.5 The Minister for the Environment may continue the independent expert panel until such time as Environmental flows are incorporated into the Water management licence issued to the Authority under the *Water Act 1912*, or until such other time that the Minister determines.

9.4.6 The Minister for the Environment may require that the independent expert panel on Environmental flows review the trial monitoring data and the report in clause 9.4.2 and recommend on future trial Environmental flows to the Hawkesbury-Nepean River Management Forum and any Water Management Committee conducting flow trials in the Catchment Area.

9.4.7 If requested by the Minister for the Environment, the independent expert panel must include a socio-economic impact assessment of its environmental flow options in any report.

9.4.8 The Authority must cooperate with and provide reasonable assistance to the independent expert panel to enable it to perform the tasks assigned to it.

9.4.9 Until such time as the Authority is issued a Water management licence, the Authority must:

- (a) operate its Water Storages with the aim of ensuring the flow for riparian purposes of 50 megalitres per day over Penrith Weir;

- (b) release sufficient water from the Tallowa Dam storage to enable the Shoalhaven City Council to meet its actual requirements for water at Burrier, or the amount that would be available if Tallowa Dam did not exist, whichever is the lesser;
- (c) release five thirds (5/3) of the inflow to Wildes Meadow Creek from the Fitzroy Falls Reservoir; and
- (d) release one megalitre per day from the Wingecarribee Reservoir to the Wingecarribee River.

9.4.10 The Authority must implement any Environmental flow requirements in the Water management licence issued to the Authority under Part 9 of the *Water Act 1912*.

[Note: The recommendations of the independent expert panel will be considered by the Hawkesbury Nepean River Management Forum and any Water management committees that are responsible for conducting environmental flow trials in the Catchment area.]

Environmental flow requirements are implemented by their incorporation into the Authority's Water management licence, which is issued by the Water Administration Ministerial Corporation under the Water Act 1912. The Minister for Land and Water Conservation will seek the views of the Minister for the Environment prior to the Water Administration Ministerial Corporation issuing the Water management licence.]

Part 10

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Annual Audit of this Licence

10.1 Commission of audits

10.1.1 The Licence Regulator must initiate an operational audit of the Authority as soon as practicable after 30 June each year covering the preceding 12 months, as required by this Part (the “Annual audit”).

[Note: The Licence Regulator is to arrange for the conduct of the Annual audit covering the year to 30 June 2000.]

10.1.2 The Annual audit must be conducted by the Licence Regulator or by a person, other than the Authority, 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) the Authority’s performance of its obligations under Memoranda of Understanding, with each of the Water Administration Ministerial Corporation, NSW Health and EPA;
- (b) the effectiveness of the Authority’s complaint resolution scheme under clause 5.3;
- (c) compliance by the Authority with its obligations under clause 5.4 on Consultative Committees;
- (d) compliance by the Authority with its obligations under Part 6 of this Licence; including the preparation of the Risk Management Plan and the Incident Management Plan;
- (e) compliance by the Authority with its obligations under Part 7, including obligations in clauses 7.2 and 7.3 relating to plans of management for water storage catchments;

- (f) compliance by the Authority with the provisions of any Regional Environmental Plan, and of SEPP 58 “Protecting Sydney’s Water Supply” under clauses 7.4 and 7.5;
- (g) compliance by other public authorities with the provisions of any Regional Environmental Plan;
- (h) compliance by the Authority with its obligations under Part 8;
- (i) compliance by the Authority with the Environment Plan under clause 9.1 and reporting obligations under clause 9.3;
- (j) the Authority’s performance in relation to the environmental indicators and ESD indicators compiled under clause 9.2;
- (k) compliance by the Authority with obligations in relation to Environmental flows under clause 9.4;
- (l) 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 the Authority’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 the Authority’s response, of any investigation of the matter by the EPA, NSW Health or the Department of Land and Water Conservation; and
- (c) request the Authority 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) any failure of the Authority to meet operational standards or any other requirements imposed on the Authority under this Licence;
- (b) areas in which the Authority’s performance under this Licence may be improved;
- (c) any changes to the Licence that the Licence Regulator considers necessary;
- (d) any penalties or remedial action required as a result of the Authority’s performance under the Licence;
- (e) whether the Minister should recommend that the Authority’s Licence be cancelled by the Governor under section 30 of the Act for reasons identified in the Annual audit report; and

- (f) 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 If the Annual audit report has identified areas of non-compliance with this Licence, in addition to whatever other action is taken or required to be taken, the Authority must comply with any requirement that may be imposed on the Authority by the Minister to do the following:
 - (a) advertise publicly and notify Customers of the areas in which its performance has not complied;
 - (b) provide reasons for the non-compliance; and
 - (c) identify the measures that will be taken by the Authority to address the non-compliance.

10.4 Additional audits

- 10.4.1 The Licence Regulator must initiate additional audits of the Authority 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 The Authority 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 10.5.5) 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 the audit, the Authority 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 the Authority;
 - (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 the Authority that are maintained in relation to the performance of the Authority's obligations in accordance with this Licence; and

- (e) to discuss matters relevant to the audit with the Authority's employees.
- 10.5.4 If required by the Licence Regulator for the purpose of an audit, the Authority must provide the Licence Regulator with information of any person who performs one or more functions on behalf of the Authority (the third party) under clause 10.5.6, to the extent that the agreement between the Authority and that third party (read together with clause 10.5.5) so permits.
- 10.5.5 The information to be provided by the Authority under clauses 10.5.1, 10.5.3 and 10.5.4 will include information over which the Authority or a third party claims confidentiality or privilege. The Licence Regulator, or the person appointed by the Licence Regulator, must enter into reasonable arrangements with the Authority or such third party to ensure that:
- (a) the confidential information is kept confidential; and
 - (b) the privilege attaching to the information is not waived or prejudiced, or not waived or prejudiced without the prior consent of the person who has the benefit of that privilege.
- 10.5.6 If the Authority is lawfully entitled to have one or more of its functions performed by another person and the Authority chooses to have one or more of its functions so performed by another person (the third party), the Authority must use its best endeavours to ensure that:
- (a) it is able to obtain information from the third party for provision to the Licence Regulator under clause 10.5.4; and
 - (b) the third party does the things specified in this Part that extend to the Authority as if that third party were the Authority.

Part 11

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Pricing

11.1 Sydney Water Corporation

The Authority must set the level of fees, charges, and other amounts payable by Sydney Water Corporation for the Authority's provision of water subject to:

- (a) the Act and any other applicable law;
- (b) this Licence;
- (c) any pricing arrangements in the Bulk Water Supply Agreement; and
- (d) any maximum prices and methodologies for the Authority's supply of water determined from time to time by IPART.

11.2 Other Customers

The Authority must use its best endeavours to reach agreement with its Customers (other than Sydney Water Corporation, because of the application of clause 11.1), as to any pricing arrangements that are to apply in relation to water that the Authority supplies to those Customers. Any such pricing arrangements are subject to:

- (a) the Act and any other applicable law;
- (b) this Licence; and
- (c) any maximum prices and methodologies for the Authority's supply of water determined from time to time by IPART.

Part 12

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Liability Issues

12.1 Performance of Functions by Person other than Authority

If the Authority is lawfully entitled to have some of its functions performed by another person, the Authority continues to be liable for the performance of those functions by that person, as if those functions were performed by the Authority itself, insofar as the performance of those functions is the subject of this Licence.

12.2 Damage And Compensation to Persons

The Authority is required by section 58 of the Act to do as little damage as practicable in exercising its functions under Part 6 of the Act, and in circumstances specified in that provision, to compensate persons who suffer damage by the exercise of those functions.

Part 13

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.

Area of Operations

The Area of Operations of the Sydney Catchment Authority is the inner catchment area and the outer catchment area, as declared by the Governor in accordance with section 41 of the Act.

[Note: On 30 June 1999, the Governor declared that:

The inner catchment area of the Sydney Catchment Authority is:

- (i) The area of land within all the special areas of the Sydney Catchment Authority except the area of land within the Richmond, Windsor, Penrith, O'Hares Creek and Devines Weir special areas; and*
- (ii) the hydrological catchment of the Prospect Reservoir.*

The outer catchment area of the Sydney Catchment Authority is the area of land within the hydrological catchments of:

- (i) the Warragamba River and its tributaries which drain to Lake Burragorang;*
- (ii) the Shoalhaven River and its tributaries which drain to Lake Yarrunga; and*
- (iii) Greaves, Whipcord, Woodford and Cascades Creeks;*

but excluding the inner catchment area described above.

(NSW Government Gazette No. 76, p. 4649)

Special Area

The term Special Area first appeared in the Water Board Act 1987. That Act defined a "Special Area" as land declared under section 21 to be a Special Area.

Section 21(2) of the Water Board Act 1987 provided that "A Proclamation" of a catchment area in force immediately before the commencement of this Act shall be deemed to be an order in force under this section declaring the area to be a "Special Area".

Prior to the enactment of the Water Board Act 1987, the Metropolitan Water Sewerage and Drainage Act 1924 provided a mechanism under section 55 and section 56A for the establishment of inner catchments and outer catchments respectively. Catchment areas, following the enactment of the

Water Board Act 1987 became known as Special Areas. Catchment areas proclaimed under the Metropolitan Water Sewerage and Drainage Board Act were:

- *Warragamba (Inner and Outer Catchments);*
- *Metropolitan (Cataract, Cordeaux, Avon and Nepean storages);*
- *Woronora;*
- *O'Hares Creek;*
- *Shoalhaven;*
- *Wingecarribee;*
- *Fitzroy Falls;*
- *Devines Weir;*
- *Penrith;*
- *Richmond; and*
- *Windsor.*

It is understood only three Special Areas have been proclaimed under the Water Board Act 1987. These Special Areas were:

- *Blackheath;*
- *Katoomba; and*
- *Woodford Special Areas.]*

Catchment Infrastructure Works performance criteria

- (a) Reliability is to be not less than 97%, and is defined as the percentage of months, on average, that the Authority will meet in full Sydney Water Corporation's Forecast Average Annual Demand requirements referred to in paragraph (f) below. This means it is estimated that, on average, restrictions will not need to be applied more often than 30 months in 1,000 months. ("Reliability")
- (b) Robustness is to be not less than 90%, and is defined as the percentage of years, on average, that the Authority will not require a reduction in Sydney Water Corporation's Forecast Average Annual Demand for Bulk Raw Water referred to in paragraph (f) below. This means it is estimated that, on average, not more than 10 years in 100 years will be affected by restrictions. For the purposes of this clause, a "year" is each period of 12 months commencing on 1 July and a year will have been affected by restrictions if in any day of that year a restriction has been applied. ("Robustness")
- (c) Security is to be not less than 5%, and is defined as the level of the Authority's operating storage below which actual storage is not to fall, on average, more often than 0.001% of the time. This means it is estimated that, on average, the level of operating storage will not fall below 5% more often than one month in 100,000 months. ("Security") (Reliability, Robustness and Security together comprise the "System Criteria")
- (d) During drought the System Criteria assume that, contingent upon the Authority giving Sydney Water Corporation reasonable prior written notice of the need to do so, Sydney Water Corporation will reduce its demand for water from the Authority in accordance with the following restriction levels:-
 - Level I. at least a 7% demand reduction, not more than 3% of time;
 - Level II. at least a 12% demand reduction, not more than 1% of time;
 - Level III. at least a 20% demand reduction, not more than 0.5% of time;
 - Level IV. at least a 30% demand reduction, not more than 0.3% of time;
 - Level V. at least a 50% demand reduction, not more than 0.05% of time.("Drought Restrictions")

- (e) Subject to the Authority giving Sydney Water Corporation the reasonable prior written notice referred to above in paragraph (d) the System Criteria may vary to the extent that the variation is caused or contributed to by Sydney Water Corporation not reducing its demands for water from the Authority, during a period of drought, in accordance with the above Drought Restrictions.
- (f) Based on population projections and projected trends in per capita consumption, Sydney Water Corporation’s current Forecast Average Annual Demand is estimated to be:-

	Year				
	2000	2001	2002	2003	2004
Forecast Average Annual Demand ('000 ML/yr)	595	588	586	584	583

Schedule 3

Address for Notices

Sydney Catchment Authority

Chief Executive
Level 2, 311 High Street,
Penrith NSW 2750

Licence Regulator

The Licence Regulator
Level 6, 29-57 Christie Street,
St Leonards NSW 2065

Schedule 4

Health related water quality standards

Pesticides

Aldrin	DDT	Lindane
Amitrole	Dieldrin	Molinate
Atrazine	Diquat	Paraquat
Chlordane	Diuron	Picloram
Chlorpyrifos	Endosulfan	Propiconazole
Clopyralid	Heptachlor	Temephos
2,4-D	Hexazinone	Triclopyr

Chemical

Arsenic	Iodide	Selenium
Barium	Mercury	Silver
Boron	Molybdenum	

Radiological

Gross alpha	Gross beta
-------------	------------

[Note: This list has been derived from the NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 (Drinking Water Guidelines). This list represents characteristics that the Drinking Water Guidelines indicate can be monitored in raw water, but are representative of water quality at the consumer's tap. They are characteristics that may not be substantially removed or reduced through water treatment processes used by the Authority's Customers at the Commencement Date.

The pesticides listed are those which the Drinking Water Guidelines indicate have either been detected on occasions in Australian drinking water, or their likely use would indicate that they may be occasionally detected.

Other pesticides identified as being used in the Catchment area may also be required to be added to the routine monitoring program by NSW Health under clause 6.6.2(c).

The radiological quality of drinking water should be assessed by screening for gross alpha and gross beta activity concentrations. If either of these activity concentrations is exceeded, specific radionuclides should be identified and their activity concentrations determined in accordance with the Drinking Water Guidelines.]



Appendix C

Ministerial requirements



MINISTER FOR THE ENVIRONMENT

19 JAN 2004

Mr John Whitehouse
Chair
Sydney Catchment Authority
PO Box 323
PENRITH BUSINESS CENTRE NSW 2751

Dear Mr Whitehouse,

Operational Audit of Sydney Catchment Authority 2002-2003

I am writing to you in relation to the Operational Audit of Sydney Catchment Authority for the period from 1 July 2002 to 30 June 2003. As the Minister responsible for overseeing the Sydney Catchment Authority's performance against the requirements of the Operating Licence, I have considered the advice provided by the Independent Pricing and Regulatory Tribunal on the audit findings.

I will table the audit report and a copy of this letter in Parliament.

I am pleased that the independent auditor found that the Authority achieved high or full compliance with most of the requirements of the Operating Licence.

On the basis of the audit report and advice from the Tribunal, I have decided that no penalties will be imposed on the Authority. However, I note that there are some Licence obligations for which the Authority has only attained low to partial compliance. With respect to these matters, I make the following comment.

Risk Management

The Authority's Risk Management Plan is intended to be one of the Authority's key tools for protecting bulk water quality, by identifying and prioritising pollution risks, and developing and implementing strategies to mitigate or eliminate these risks.

Previous operational audit reports have commented that the plan being developed is ambitious and is in advance of current water quality risk management practice used by Australian water authorities. These reports, however, advised the Authority to consider the level of detail in the plan to ensure that the approach being taken was practical and capable of being completed in a reasonable time frame.

This year, the auditors have noted that although the Authority continues to develop the plan and advance other catchment management tools, important aspects of the RMP are not yet complete. Given that the Regional Environment Plan and associated rectification action plans have not yet been finalised, it is vital that the Risk Management Plan be completed as soon as possible to provide the Authority with a good overview of the relative importance of the various risks in each catchment and areas where efforts may be best focussed.

To this end, I endorse Audit recommendation (R6.4) requiring that the Authority finalises the development of the Risk Management Plan by 1 September 2004 and determines the significance of pollution loads with respect to treated water quality and requirements for control.

"Safe yield"

The demand for water within the Sydney basin currently exceeds the estimated "safe yield" which can be drawn from the Authority's storages on an ongoing basis. The Authority uses the WATHNET computer model which extrapolates past climatic and stream flow data to provide an estimate of this "safe yield."

The auditors have noted that there are considerable uncertainties inherent in the modelling process and have suggested some work be undertaken to improve the robustness of the WATHNET model (Audit recommendation R8.1). Given that the "safe yield" is used by the Authority to estimate its capacity to provide water on an on-going basis under given circumstances, I endorse this recommendation and require the Authority to provide an update on progress by 1 September 2004.

Please pass on my appreciation to the Authority's staff for their efforts over the past year. I look forward to seeing a continuation of the trend of improvement in future audits.

Yours sincerely,



Bob Debus



Appendix D

Memoranda of Understanding



MEMORANDUM OF UNDERSTANDING

between

SYDNEY CATCHMENT AUTHORITY

and

**THE WATER ADMINISTRATION
MINISTERIAL CORPORATION**

INTRODUCTION

This Memorandum of Understanding (MOU) is entered into by the Sydney Catchment Authority (Authority) and the Water Administration Ministerial Corporation under Section 36 of the Sydney Water Catchment Management Act 1998 (the Act).

In accordance with the requirements of the Authority's Operating Licence, the Authority acknowledges that the purpose of this MOU is to form the basis for co-operative relations between the Water Administration Ministerial Corporation (Corporation) and the Authority, including agreed areas of study and data exchange.

The MOU outlines:

- A framework for achieving a co-operative relationship between the parties;
- Consultative processes between the Corporation and the Authority to consider operational, strategic and licensing issues;
- The exchange of data and information; and
- Dispute resolution mechanisms.

MEMORANDUM OF UNDERSTANDING

between

SYDNEY CATCHMENT AUTHORITY

and

**WATER ADMINISTRATION MINISTERIAL
CORPORATION**

1. Objectives

- 1.1 This MOU outlines the basis for the co-operative relationship between the Corporation as the manager of the water resources for the State of New South Wales and the Authority as manager and protector of the inner catchment area, outer catchment (catchment areas) and the catchment infrastructure works, a supplier of bulk raw water, and a regulator of activities within catchment areas within the Authority's area of operation.
- 1.2 The Corporation's objectives include that it ensure that water and related resources are allocated and used in ways which are consistent with environmental requirements and provide the maximum long-term benefit for the State.
- 1.3 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, and the protection of public health, public safety and 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 principles of ecologically sustainable development. In complying with its objectives, the Authority must comply with its Act and its Operating Licence and any water management licence issued by the Corporation from time to time.

2. Purpose

- 2.1 The purpose of this MOU between the Authority and the Corporation is:
 - (a) To facilitate and encourage effective interaction between the parties;
 - (b) To set out effective processes and co-operative arrangements between the Authority and the Corporation to achieve sound water management and water quality outcomes in the catchment areas within the Authority's area of operations.
- 2.2 Nothing in this MOU is to be read in diminution of any obligation imposed on the Authority by common or statute law or any instrument made thereunder.

3. Term

- 3.1 Subject to clauses 3.2 and 3.3 this MOU commences on the date of endorsement by the respective parties.
- 3.2 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.
- 3.3 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.

4. Principles

4.1 Water Management

- 4.1.1 The Water Act 1912 and the Act provide for the Authority to be subject to a Water Management Licence granted by the Corporation.
- 4.1.2 Until the Authority is granted a Water Management Licence by the Corporation, the Authority has the right to the use and flow and to the control of waters on behalf of the Corporation for the purposes referred to in Section 25(1) of the Act and for the purposes of extraction and transportation of water.
- 4.1.3 Pending the grant to the Authority of a Water Management Licence, and thereafter subject to and in accordance with the terms of that Licence, the Authority shall release sufficient water from the Tallowa Dam storage to enable the Shoalhaven City Council to meet its actual requirements for water at Burrier, or the amount that would be available if Tallowa Dam did not exist, whichever is the lesser.
- 4.1.4 Pending the grant to the Authority of a Water Management Licence, and thereafter subject to and in accordance with the terms of that Licence, the Authority shall release five thirds (5/3) of the inflow to Wildes Meadow Creek from the Fitzroy Falls Reservoir and 1 megalitre per day from the Wingecarribee Reservoir to the Wingecarribee River
- 4.1.5 Without limiting any obligation it may have under the Act, or any Water Management Licence granted to it, the Authority acknowledges that in carrying out its functions, water released from the Authority's catchment infrastructure works will be managed as far as reasonably practical to minimise:
 - Adverse riverine impacts;
 - Environmental impacts;
 - Risk to public health and safety;
 - Damage to property.

4.2 Catchment Areas and Water Quality

- 4.2.1 The Authority and the Corporation recognise the importance of the management and protection of catchment areas in order to enhance water quality. The parties commit themselves to work co-operatively towards this objective in the application of their various functions and powers.

5. Structures and Processes

5.1 Chief Executive Officer (CEO) Meetings

- 5.1.1 The Chief Executive of the Authority or his deputy and, on behalf of the Corporation, the CEO of Department of Land and Water Conservation, or his deputy, shall meet on a regular basis, but in any event, not less than twice per calendar year to discuss matters of mutual concern and which may include matters referred by the Strategic Liaison Group.
- 5.1.2 CEO meetings may be initiated by either party as required.
- 5.1.3 All agreements entered into between the Authority and the Corporation will be in the public domain.

5.2 Strategic Liaison Group (SLG)

- 5.2.1 The Department of Land and Water Conservation, on behalf of the Corporation, and the Authority will, as soon as practicable after the execution of this MOU, establish a SLG.
- 5.2.2 The role of the SLG will be to consider those issues determined by the group to be relevant, but must include long-term strategic issues and policies with regard to water management and allocation, catchment areas management' licensing issues and to identify areas for co-operative research and joint initiatives.
- 5.2.3 5.2.3 The SLG shall report to their respective CEOs on significant issues in the catchment areas of the Authority that relate to the functions of the parties.
- 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.

6. Exchange of Information and Data

- 6.1 In recognition of the spirit of co-operation embodied in this MOU and so as to enable both parties to more effectively carry out their statutory functions, each party must share or supply relevant data and information and provide updated information where necessary.
- 6.2 In addition to requirements specified in any water management licence supplied to the Authority, the Authority will provide the Corporation with adequate notification of any planned activity which is likely to impact upon the Corporation's activities or, in case of a reactive unplanned activity, as soon as possible thereafter.

- 6.3 Data and information shared or supplied by the parties under this MOU shall be on such terms as agreed between the parties.
- 6.4 Disputes between the Authority and the Corporation in relation to data and information sharing and exchange arising from the implementation of this MOU shall be referred to the SLG for consideration and resolution.

7. Joint Programmes And Initiatives

- 7.1 The Authority and the Corporation will develop joint programmes, initiatives and undertake research to meet their respective objectives as referred to in Clause 1.

8. Dispute Resolution

- 8.1 Any difference or dispute which arises between the parties under this MOU may be referred by either party to the SLG for consideration and resolution.

9. Amendment

- 9.1 Any amendments to this MOU shall be exhibited in accordance with the requirements of the Act.

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is made between the Department and the Sydney Catchment Authority on the

day of 1999.

SIGNED for and on behalf of the **Water Administration Ministerial Corporation**

.....
Bob Smith, Director-General, Department of Land and Water Conservation

.....
Witness to the above signature

.....
(Print name)

.....
(address)

SIGNED for and on behalf of the **Sydney Catchment Authority**

.....
Jeff Wright, Chief Executive

.....
Witness to the above signature

.....
(Print name)

.....
(address)

**Memorandum of Understanding
between the
Sydney Catchment Authority
and the
Environment Protection Authority**



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1. INTRODUCTION

This Memorandum of Understanding (MOU) was prepared by the Environment Protection Authority (the EPA) and the Sydney Catchment Authority (the SCA) to fulfil their obligations under Section 36 of the Sydney Water Catchment Management Act 1998.

The purpose of the MOU is to serve as the basis for co-operative relations between the EPA and the SCA in fulfilling their responsibilities to protect catchment areas, water quality, public health and the environment.

The MOU outlines:

- A framework for achieving a co-operative relationship between the parties;
- Consultative processes between the EPA and the SCA to consider operational, strategic and regulatory issues;
- The exchange of data and information; and
- Dispute resolution mechanisms.

2. Objectives

- 2.1. This MOU outlines the basis for the co-operative relationship between the EPA as environmental regulator and the SCA as manager and protector of catchment areas, the catchment infrastructure works, a supplier of bulk raw water and a regulator of activities within catchment areas within the SCA's area of operation.
- 2.2. The EPA has responsibility to protect the environment in New South Wales, taking into account community values, scientific and expert knowledge, best practice environmental regulation and economic considerations. As such, it develops environmental policy and programmes, carries out regulatory functions and provides environmental education.
- 2.3. The SCA's objectives are to ensure that the catchment areas and catchment infrastructure works are managed and protected so as to promote water quality, protect public health, public safety and the environment, and to ensure that water supplied by it complies with appropriate standards of quality. The SCA is also obliged to manage its infrastructure works efficiently and economically, and in accordance with sound commercial principles and in conformity with principles of ecologically sustainable development. In complying with its objectives, the SCA must comply with the Sydney Water Catchment Management Act and its Operating Licence.

3. Purpose

- 3.1. The purpose of this MOU between the SCA and the EPA is:
 - 3.1.1. To facilitate and encourage effective interaction between the parties;
 - 3.1.2. To set out effective processes and co-operative arrangements between the SCA and the EPA to achieve sound environmental and water quality outcomes in the catchment areas of the SCA;
 - 3.1.3. To form the basis for co-operative relationships between the parties with a view to furthering the objectives of relevant legislation administered by both agencies as well as the Sydney Catchment Authority's Operating Licence.
- 3.2. This MOU accords with the requirements of the EPA's and the SCA's governing legislation. Nothing in this MOU alters any legislative obligations imposed on the EPA or the SCA.

4. Term

- 4.1. Subject to clauses 4.2 and 4.3 this MOU commences on the date of endorsement by the respective parties.
- 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.

5. Principles

5.1. Responsibilities and Accountabilities.

- 5.1.1. The EPA and the SCA will manage their activities in a co-operative and transparent manner to meet their obligations as set out in Section 6(1) of the Protection of the Environment Administration Act 1991 and Section 14 of the Sydney Water Catchment Management Act 1998, respectively.
- 5.1.2. The SCA acknowledges the EPA as the primary environmental regulator for the State of New South Wales.
- 5.1.3. The EPA acknowledges that the SCA has a role in the regulation of activities in catchment areas, which affect water quality and are likely to impact on public health and safety and the environment.
- 5.1.4. The EPA is the appropriate regulatory authority under the Protection of the Environment Operations Act 1997 for activities undertaken by the SCA, as a public authority.
- 5.1.5. By this MOU, the SCA and the EPA commit to working together to reduce activities causing pollution in the catchment areas of the SCA.
- 5.1.6. The SCA acknowledges that it must meet any obligation imposed on it by the EPA or by environment protection legislation in regard to discharges to the environment from water transportation systems within its control.

5.2. Regulatory Framework

- 5.2.1. The EPA and the SCA will periodically review and make recommendations to Government on their respective regulatory responsibilities and powers to ensure appropriate actions to prevent or mitigate pollution and ensure appropriate clean up occurs after incidents.

5.2.2. Compliance monitoring and reporting by the SCA is to be undertaken as specified in regulatory instruments issued by the EPA. Compliance with relevant environmental protection legislation and requirements in environment protection licences and other regulatory instruments will be assessed and independently audited where appropriate by the EPA where the EPA is the appropriate regulatory authority.

5.2.3. The EPA will take into account any unforeseeable emergency conditions when considering regulatory action in relation to the SCA.

5.3. Water Quality and Quantity

5.3.1. The EPA and the SCA recognise the importance of having water quality objectives which are linked to river flow objectives which set the context for the formulation of both catchment management plans and environmental regulation.

6. Structures and Processes

6.1. Chief Executive Officer (CEO) Meetings

6.1.1. The CEOs of both the EPA and the SCA shall meet on a regular basis, but in any event, not less than twice per calendar year to discuss matters of mutual concern and which may include matters, which are referred by the Strategic Liaison Group.

6.1.2. CEO meetings may be initiated by either party as required.

6.2. Strategic Liaison Group (SLG)

6.2.1. The EPA and the SCA will maintain a SLG.

6.2.2. The role of the SLG is to consider longer term strategic issues and policies and innovative regulatory solutions to pollution in the SCA's catchment areas and to identify areas for co-operative research ventures In addition, the SLG will explore avenues for co-operation in areas including but not limited to: environmental education, enforcement, training, data acquisition, monitoring and policy development.

6.2.3. The SLG shall report to their respective CEOs significant issues in catchment areas that relate to the functions of the parties.

6.2.4. The membership of the SLG will be as agreed between the parties from time to time.

- 6.2.5. The SLG shall determine the frequency and procedure for calling meetings and the manner in which business is conducted at those meetings.

7. Exchange of Information and Data

- 7.1. In recognition of the spirit of co-operation embodied in this MOU and so as to enable both parties to more effectively carry out their statutory functions, each party agrees to share or supply the data and information to protect water quality in the catchment areas.
- 7.2. Other data and information gathered or collected by the SCA may also be made available to the EPA on such terms as agreed between the parties.
- 7.3. The EPA, in relation to licenced premises, as defined in the Protection of the Environment Operations Act (PoEO) and within the catchment areas of the SCA's area of operations will provide the SCA with the following information:
- 7.3.1. Copies of all licences issued or amended;
 - 7.3.2. Copies of any notices served;
 - 7.3.3. Notification of significant pollution incidents;
 - 7.3.4. Notification of legal proceedings instituted by the EPA;
 - 7.3.5. Particulars in relation to penalty notices issued by EPA Officers;
 - 7.3.6. Details of notifications of pollution incidents under Part 5.7 of the PoEO Act; and
 - 7.3.7. Where relevant the above information will be provided via the EPA's Public Register as required under Section 308 of PoEO Act.
- 7.4. The SCA, in relation to non-scheduled activities, as defined in the Protection of the Environment Operations Act (PoEO) and within the catchment areas of the SCA's area of operations will provide the EPA with the following information:
- 7.4.1. Copies of any notices served;
 - 7.4.2. Notification of significant pollution incidents;
 - 7.4.3. Notification of legal proceeding instituted by the SCA;
 - 7.4.4. Particulars in relation to penalty notices issued by SCA Officers; and
 - 7.4.5. Details of notifications of pollution incidents under Part 5.7 of the PoEO Act.

8. Dispute Resolution

- 8.1. Any difference or dispute, which arises between the parties under this MOU, is to be referred to the SLG for resolution. Such matters unresolved by the SLG will be referred to the CEOs for resolution.

9. Amendment

- 9.1. Any amendments to this MOU are required to be placed on public display pursuant to Section 38 of the Sydney Water Catchment Management Act 1998.

This Memorandum of Understanding is made between the **Environment Protection Authority** and the **Sydney Catchment Authority** on the

day of 2001.

SIGNED for and on behalf of the Environment Protection Authority

.....

Lisa Corbyn, Director-General

.....

Witness to the above signature

.....

(Print name)

.....

(address)

SIGNED for and on behalf of the Sydney Catchment Authority

.....

Graeme Head, Acting Chief Executive

.....

Witness to the above signature

.....

(Print name)

.....

(address)

**Memorandum of Understanding
between the
Sydney Catchment Authority
and
New South Wales Health**



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1. Introduction

This Memorandum of Understanding (MOU) was prepared by NSW Health and the Sydney Catchment Authority (the SCA) to fulfil their obligations under Section 36 of the Sydney Water Catchment Management Act 1998.

The purpose of the MOU is to serve as the basis for a co-operative relationship between NSW Health and the SCA in fulfilling their responsibilities to protect water quality and public health and to outline each agencies roles and responsibilities.

The MOU outlines:

- A framework for achieving a co-operative relationship between the parties;
- Consultative processes between NSW Health and the SCA to consider operational and public health issues;
- The exchange of data and information;
- Dispute resolution mechanisms; and
- A consultative process to identify agreed areas of study.

2. Context

- 2.1 The objective of this MOU is to form the basis for a co-operative relationship between NSW Health and the SCA including agreed areas of study, research and data exchange and to recognise the roles and responsibilities of the parties.
- 2.2 NSW Health has responsibilities in relation to the protection of public health under the Public Health Act 1991 and other relevant legislation. It also has a role in providing advice to Government in relation to drinking water standards.
- 2.3 The SCA is a statutory authority representing the Crown. The role of the SCA is to manage and protect catchment areas and catchment infrastructure works; to be a supplier of bulk raw water to Sydney Water Corporation and other customers within the SCA's area of operations.
- 2.4 The SCA acknowledges that it is committed to supplying bulk raw water having regard to the health of the public.

3. Interpretation

- 3.1 "Act" means the Sydney Water Catchment Management Act 1998.
- 3.2 Operating Licence means the operating licence granted to the SCA under Section 25 of the Act or any renewal of it in force for the time being.
- 3.3 Unless otherwise specified, terms in this MOU shall have the same meaning as provided by the Act and the Operating Licence.
- 3.4 "Bulk Raw Water" means the water supplied by the SCA to Sydney Water Corporation under the Bulk Water Supply Agreement.
- 3.5 The Director-General of the NSW Department of Health is specified as a "regulatory agency" under section 35 of the Act. The SCA's Operating Licence requires it to enter into a Memorandum of Understanding with the Director-General of NSW Health. For clarification, it is agreed that NSW Health will fulfil the Director-General's responsibilities under the Act and shall act as the regulatory agency in accordance with the Memorandum.

4. Purpose

- 4.1 The purpose of this MOU between the SCA and NSW Health is:
 - 4.1.1 To facilitate and encourage effective interaction between the parties;
 - 4.1.2 To set out effective processes and co-operative arrangements between the SCA and NSW Health to achieve fulfilment of each party's statutory obligations in relation to the protection of public health.
- 4.2 Nothing in this MOU is to be read in diminution of any obligation imposed on the SCA by common or statute law or any instrument made thereunder.

5. Term

- 5.1 Subject to clauses 5.2 and 5.3 this MOU commences on the date of endorsement by the respective parties and remains in force for the term of the SCA's Operating Licence.
- 5.2 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, or on the renewal of the SCA's Operating Licence.
- 5.3 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.

6. Principles

- 6.1 Responsibilities and Accountabilities
 - 6.1.1 NSW Health shall provide advice to the SCA on the supply of bulk raw water and on other public health issues in regard to water quality.
 - 6.1.2 NSW Health acknowledges that the SCA is a supplier of bulk raw water from its catchment infrastructure works to the SCA's customers.
 - 6.1.3 The SCA is responsible for supplying bulk raw water to Sydney Water Corporation and such other organisations and persons referred to in Section 16 of the Sydney Water Catchment Management Act 1998 to the water quality standards referred to in the SCA's Operating Licence.

- 6.1.4 The SCA will ensure that its customers are adequately informed of the quality of the bulk raw water and the appropriateness of any intended uses of such bulk raw water.
- 6.1.5 The SCA will inform NSW Health in relation to changes to its processes and procedures that may result from any variation of the water quality standards referred to in the SCA's Operating Licence.
- 6.1.6 The SCA must develop and implement a water quality monitoring program, in consultation with NSW Health and, prepare reports for NSW Health as required by Clause 6.6 of the SCA's Operating Licence.
- 6.2 Either party may give notice to the other of the need for review, amendment or replacement of the water quality monitoring plan. Upon reviewing such notice, the parties will co-operate in determining a timetable for such review, amendment or replacement.

7. Events of Public Health Significance

- 7.1 The SCA shall, as soon as practicable, report to NSW Health any events within its catchment infrastructure works or within its area of operations, which may have implications for public health.
- 7.2 NSW Health shall, as soon as practicable, inform the SCA of any events within the SCA's area of operations, which may have implications for public health.
- 7.3 The SCA and NSW Health shall supply such information in relation to such events as is requested by either party or as is necessary for either party to make appropriate judgements and take appropriate action in relation to protecting the health of the public and exercising its role under this MOU.

8. Incident Management and Contingency Planning

- 8.1 The SCA must prepare and maintain to the satisfaction of NSW Health an incident management plan, in accordance with Clauses 6.7.9 to 6.7.12 of the SCA's Operating Licence.
- 8.2 The SCA and NSW Health shall negotiate a twenty four hour incident management contact point for the coordination of responses to any event of public health significance.

- 8.3 During incidents that involve a public health risk, both parties will share information and resources as required so as to minimise the severity and consequences and extent of the risk.
- 8.4 The SCA and NSW Health agree that it is desirable for respective officers to undertake training in the situations that simulate public health risks and that such training will be organised to take place at a mutually agreed location and time.

9. Structures and Processes

9.1 Strategic Liaison Group (SLG)

- 9.1.1 The SCA and NSW Health will maintain a SLG.
- 9.1.2 The SLG consists of senior officers nominated by their respective Director-General or Chief Executive. The SLG shall meet regularly to discuss those issues determined by the group to be relevant, including long term strategic issues and policies with regard to catchment management and protection of raw water. As required, the SLG will define and implement processes for the exchange of strategic information.
- 9.1.3 The Director-General of NSW Health and the Chief Executive of the SCA will from time to time attend meetings of the SLG to discuss issues of mutual concern. At least two SLG meetings per year must be attended by the Director-General and the Chief Executive.
- 9.1.4 The SLG shall report to the Director-General of NSW Health and the Chief Executive of the SCA, significant issues in drinking water catchments that relate to the functions of the parties.
- 9.1.5 Where appropriate, tripartite meetings with Sydney Water Corporation and other customers will be held.
- 9.1.6 The SLG shall determine the frequency and procedure for calling meetings and the manner in which business is conducted at those meetings.

9.2 Joint Operational Group (JOG)

- 9.2.1 The SCA and NSW Health will maintain a JOG.
- 9.2.2 The role of the JOG will be to consider those issues determined by the SLG to be relevant, but must include strategic and operational issues. The JOG will also be responsible for developing data and information sharing programs and proposing collaborative initiatives including research and community

education to be undertaken to meet contemporary public health objectives in relation to catchment management.

- 9.2.3 The JOG shall report to the SLG significant issues that relate to the functions of the parties.
- 9.2.4 The membership of the JOG will be as agreed between the parties from time to time. Where appropriate, tripartite meetings with Sydney Water Corporation and other customers should be considered.
- 9.2.5 The JOG shall establish its own procedures to determine the frequency and procedure for calling meetings and the manner in which business is conducted at those meetings.

10 Exchange of Information and Data

- 10.1 In recognition of the spirit of co-operation embodied in this MOU, and so as to enable both parties to carry out their statutory functions, each party must share or supply the data and information referred to in clauses 10.2 and 10.3.
- 10.2 The SCA and NSW Health will exchange any information, data, reports and studies that are relevant to both parties' activities and relate to raw water quality and public health.

This may include:
 - 10.2.1 Information required by the SCA's Operating Licence.
 - 10.2.2 Information required by the SCA's and NSW Health's Incident Management Plan.
 - 10.2.3 NSW Health's information related to public health issues relevant to the SCA's operations.
 - 10.2.4 Any agreement reached between the parties.
- 10.3 The parties shall co-operatively exchange information.
- 10.4 The SCA shall participate in appropriate research and development on emerging public health issues related to drinking water so as to enable informed judgements to be made regarding action to be taken in relation to the SCA's activities.

11 Dispute Resolution

- 11.1 Any difference or dispute which arises between the parties under this MOU is to be referred to the Director- General and Chief Executive for resolution.

12 Amendment

- 12.1 Any amendments to this MOU are required to be placed on public display pursuant to Section 38 of the Sydney Water Catchment Management Act 1998.

This Memorandum of Understanding is made between the **Director-General of NSW Health** and the **Sydney Catchment Authority** on the _____ day of _____ 2001.

SIGNED by the Acting Director-General of NSW Health

Robert McGregor, Acting Director-General

Witness to the above signature

(Print name)

(address)

SIGNED for and on behalf of the Sydney Catchment Authority

Graeme Head, Acting Chief Executive

Witness to the above signature

(Print name)

(address)



Appendix E

MOU compliance tables



Table E.1 Environment Protection Authority (EPA) MOU

Clause	Requirement	Compliance	Findings
3.1	Purpose of the MOU is to facilitate effective interaction and cooperative arrangements to achieve sound environmental and water quality outcomes.	High compliance	<p>The MOU provides a foundation, albeit somewhat limited in specific detail, for a cooperative relationship to achieve sound environmental and water quality outcomes.</p> <p>More significantly, during the audit period structural changes were made to NSW Government agencies that gave rise to the formation of the Department of Conservation (DEC); the CEO of the Department was also made CEO of the SCA. This has helped ensure further strengthening of the co operative relationship between the SCA, the former EPA and the former National Parks and Wildlife Service.</p>
4.1	Date of MOU commencement.	Full compliance	The Government Gazette and signed MOU that commenced on 4 December 2001 were sighted.
4.2	Review and amendment of the MOU.	No requirement	<p>The amended MOU was signed on the 4 December 2001.</p> <p>The SLG meetings on 4 December 2003 and 18 May 2004 discussed relationship issues following the formation of the DEC including a need to amend the existing MOU.</p>
4.3	Review and amendment of the MOU must be within an agreed timeframe.	No requirement	No formal agreement was made to amend the MOU.
5.1.1	Manage activities in a cooperative and transparent manner to meet legislative obligations.	Full compliance	<p>Cooperation between both parties is coordinated formally through the Strategic Liaison Group (SLG) as detailed below. Transparency was achieved through discussion of strategic issues and projects at SLG meetings and through collaboration on joint projects. Progress has been achieved in meeting legislative obligations through joint involvement on regulatory issues.</p> <p>Strategic issues identified for SLG consideration included:</p> <ul style="list-style-type: none"> • Sewage management; • Mining impacts; • Enforcement of compliance; • Legislative changes; • Water quality management;



Table E.1 Environment Protection Authority (EPA) MOU

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> Joint research; Planning (land use); Diffuse sources of pollution; and Education.
5.1 5	Commit to work together to reduce activities causing pollution in the catchment areas.	Full compliance	<p>Evidence of cooperative work was sighted from SLG minutes and from programs outside the SLG. Examples of cooperation to reduce pollution included: assistance from EPA Legal Services; Blue Mountains Urban Runoff Control Program; SCA Water Quality Risk Management Strategy stakeholder input; SCA/DEC Woodlawn Mine inspection and strategy development; and a joint program of inspections of 15 mine and quarry "Hot Spot" site was developed and commenced. Collaboration is also evident through joint meetings, inspections, training; research and review; and comment on pollution related initiatives.</p> <p>A Strategic Work Program has been developed that identifies strategic issues to be considered in a structured program.</p> <p>SCA assisted in the EPA prosecution of Goulburn Woolscour, Lithgow STP, Goulburn Pump Station failure and Oakdale Mine illegal waste dumping.</p> <p>The SCA completed the 3-year program of chemical collections, including agricultural hazardous wastes, in conjunction with local Councils and in liaison with the EPA.</p> <p>The SCA and EPA collaborated on the assessment of major development proposals in the catchments including Proposed Vermiculture and Protein Recovery Facility in Goulburn; Boen Boe Piggery in Joadja; Proposed Grease Trap and Oily Waste Facility in Goulburn; and Minda Landfill proposal at Windellama.</p> <p>DEC provided information for the 2003 catchment audit that assessed the state of the catchments.</p> <p>The SCA has also undertaken a number of education initiatives in co-operation with DEC.</p>



Table E.1 Environment Protection Authority (EPA) MOU

Clause	Requirement	Compliance	Findings
5.1.6	Meet any obligation imposed by the EPA or environmental legislation for discharges from water transportation systems.	Full compliance	<p>The SCA has no discharges licensed by the EPA.</p> <p>For releases from SCA assets, SCA has developed Standard Operating Procedures (SOPs) that include a section on aspects and impacts.</p> <p>The SCA uses gaseous chlorine to disinfect water in the Upper Canal at Broughtons Pass; the chlorine is completely dissipated by the time this water reaches Prospect Reservoir. The SCA also hypochlorinates water supplied to its picnic areas. The SCA prepares an REF for any major discharges, for example, dewatering Warragamba Pipelines, if it is being dosed with chlorine at the time.</p> <p>SCA has adopted the Sydney Water 'Discharge Protocols' for the discharge of chlorinated water to the environment or receiving waters from maintenance activities on the water supply system.</p> <p>The SCA prepares a Review of Environmental Factors before undertaking any major release of water. Measures to mitigate any environmental impacts are submitted to DEC for its concurrence.</p>
5.2.1	Regulatory responsibilities and powers to be periodically reviewed and recommendations made to Government to prevent pollution and ensure clean up after incidents.	Full compliance	<p>SCA sought additional Penalty Infringement Notices powers for illegal dumping. Additional powers were incorporated into the POEO (Penalty Notice) Regulation gazetted on 1 August 2003.</p> <p>Proposed amendments to regulatory responsibilities and powers are being considered in the current review of the SWCM Act.</p> <p>DEC undertook an audit of the SCA's compliance with the pesticides reporting regulation. The audit identified a number of areas that required improvement regarding the recording of pesticide use. These issues have been rectified.</p>
5.2.2	Compliance monitoring and reporting to be undertaken as required in EPA regulatory instruments.	No requirement	SCA reports that no regulatory instruments have been issued by the EPA to the SCA.
6.1.1	CEOs to meet at least twice per calendar year and discuss matters of mutual concern and which may include matters referred by the Strategic Liaison Group (SLG).	Full compliance	<p>As a result of changes to government agencies, the Chief Executive Officer of SCA and DEC is the same position.</p> <p>SCA Managing Director and DEC Director-General are both members of the DEC Executive that</p>



Table E.1 Environment Protection Authority (EPA) MOU

Clause	Requirement	Compliance	Findings
			<p>meets fortnightly. Minutes from the meetings were not made available.</p> <p>No significant issues were reported (beyond normal reporting requirements) by the SLG to the MD and the D-G.</p> <p>Note that the clause requirement is over a calendar year, which is not consistent with the Audit period.</p>
6.2.1	Strategic Liaison Group to be maintained.	Full compliance	<p>The SLG was maintained and minutes were sighted from the five meetings held over the audit period. Meetings were held on 10 July 2003, 28 August 2003, 4 December 2003, 25 February 2004 and 18 May 2004.</p> <p>DEC prepared and presented options paper on future SLG arrangements between the SCA and DEC at 25 February 2004 SLG meeting. The SCA indicated it will review the paper and provide comments.</p>
6.2.2	Strategic Liaison Group to consider long term strategic issues and policies and innovative regulatory solutions to pollution; to identify cooperative research ventures; to explore avenues for cooperation in area's including but not limited to: environmental education, enforcement, training, data acquisition, monitoring and policy development.	Full compliance	<p>The Strategic Work Program has been a significant step in focussing joint activities to help ensure the protection of water quality in the storages. The elements of the Strategic Work Program have been identified above.</p> <p>The strategic issues considered by the SLG include: mining impacts, enforcement compliance, legislative environment, water quality management, research, land use planning, diffuse source pollution, education, relationships with local government and the catchment audit.</p> <p>Other issues considered by the SLG included: SCA Water Quality Risk Management Plan, rehabilitation of derelict mines, SCA's Healthy Catchments Program, Wingecarribee Sewage Strategy, progress on the draft Regional Environmental Plan, compliance update and protocols, SCA Education Strategy 2003-2006, strategic local government issues and links with the new CMAs.</p>
6.2.3	Strategic Liaison Group to report to respective CEOs any significant issues in the catchment areas.	Full compliance	<p>No significant issues were reported (beyond normal reporting requirements) by the SLG to CEOs. The MD of SCA now reports on issues to the CEO of DEC as part of regular business reporting.</p>
6.2.4	Strategic Liaison Group membership to be agreed	No requirement	<p>The membership was agreed outside the audit period and was under review during the audit period in</p>



Table E.1 Environment Protection Authority (EPA) MOU

Clause	Requirement	Compliance	Findings
	between the parties.		order to reflect the new administrative arrangements to include the former NPWS.
6.2.5	Strategic Liaison Group to determine the frequency and meeting procedures.	Full compliance	Meeting procedures were consistent with those determined previously. Five meetings were held in the audit period; the meeting program was established in December 2003 for the following year.
7.1	Parties agree to share or supply data and information to protect water quality in the catchments.	Full compliance	Data and information were shared between the agencies. The extent and frequency of information exchange has increased as a result of operational requirements. Information is exchanged through document transfer, SLG meetings, presentations and through joint projects. Operational information and event reporting are regularly communicated to the EPA, with ensuing action from both parties. Examples include: information sharing as part of the 2003 Catchment Audit; water quality test results; education; joint inspections; enforcement and prosecutions; incidents; joint management of the Special Areas; Warragamba Auxiliary Spillway Project.
7.2	Other SCA data may be made available to the EPA on terms as agreed.	Full compliance	Each request from DEC for spatial data is covered by a new standard SCA Spatial Data Licence Agreement.
7.4	In relation to non-scheduled activities, the SCA will provide the EPA with; copies of Notices served; notification of significant pollution incidents and legal proceeding instituted by the SCA; particulars in relation to penalty notices issued by SCA officers; and details of notifications of pollution incidents under Part 5.7 of the POEO Act.	Full compliance	<p>Copies of Environment Protection Notices and Penalty Infringement Notices (PIN) issued by the SCA under the <i>Sydney Water Catchment (Environment Protection) Regulation 2001</i> for the audit period were provided to the DEC in July 2004. This included seven Penalty Infringement Notices, ten Notices for Clean-up action and four Requests for Information under s192 <i>POEO Act 1997</i>.</p> <p>There were no significant pollution incidents to report requiring notification under Part 5.7 of the <i>POEO Act 1997</i> during the audit period.</p> <p>No legal proceedings were commenced by SCA during the audit period.</p>
8.1	Differences or disputes under the MOU are to be referred to the Strategic Liaison Group, and if unresolved by SLG will be referred to the CEOs.	No requirement	No disputes were reported by the SCA.
9.1	Any amendment of the MOU is to be publicly displayed.	No requirement	No amendments were made.



Table E.2 The Water Administration Ministerial Corporation [WAMC] MOU

Clause	Requirement	Compliance	Findings
2.1	Purpose of the MOU is to facilitate and encourage effective interaction and processes and cooperative arrangements to achieve sound water quality and management.	Partial compliance	<p>The MOU, when originally developed, laid the basis for cooperative relationships and the requirements for certain water management regimes including flows and water use. The Water Management Licence incorporated these latter matters into its provisions. The MOU no longer provides a mechanism for the effective interaction and cooperative arrangement to manage water quality to the extent it could.</p> <p>The review and amendment of the MOU should better reflect the cooperative relationship between the agencies and enhance their ability to manage the strategic issues in relation to the catchments and water quality. Recommendations to achieve this end were made in the 1999/2000 audit, but remain to be realised. Also, the development of a Strategic Work Plan would enable efficient use of resources to prioritise and address strategic issues shared by the agencies.</p> <p>The changes to the structure of the resource agencies over the last audit period has resulted in an improved co-operative relationship despite the absence of an adequate MOU. SCA is involved with DIPNR on a range of strategic level issues, such as the Cabinet Ad Hoc Committee on Urban Water, the Expert Water Panel, the Water Chief Executive Officers group and the Hawkesbury Nepean River Management Forum. These groups are examining high level issues that include a sustainable water balance for Sydney, environmental flow requirements, drought planning and long-term water management.</p> <p>The formation of the Catchment Management Authorities and the SCA initiative to develop MOUs with those in its area will add to the level of cooperation.</p>
3.1	MOU commences on date of endorsement.	No requirement	The executed MOU commenced on 23 December 1999 and was sighted.
3.2	Either party may give notice to review, amend or replace the MOU.	Full compliance	Agreement for the review and amendment of the MOU was reached in an earlier audit period on 27 April 2001. It was again agreed on 21 October 2003 that the MOU required review. On 22 December 2003 the SCA provided DIPNR with a draft MOU and a timetable for its establishment by August 2004. SCA has not yet received a formal response from DIPNR.
3.3	Review of the MOU must be undertaken to an	Low compliance	SCA and DLWC agreed to a timeframe for the review: public exhibition to commence 29



Table E.2 The Water Administration Ministerial Corporation [WAMC] MOU

Clause	Requirement	Compliance	Findings
	agreed timetable agreed at the commencement of the process.		<p>September 2001 and implementation to commence 21 December 2001.</p> <p>SCA prepared a draft MOU and submitted it to DLWC for review on 8 June 2001. DLWC presented a revised draft on 23 October 2001, with considerable changes, and provided another draft on the 15 February 2002, following discussion with SCA.</p> <p>In July 2002, the SCA and DLWC agreed to postpone further work until completion of the Mid Term Review of the Operating Licence (30 September 2002). The Review did not recommend any changes to the MOU. As a result of the restructuring of DLWC, slow progress occurred until the Chief Executive of the SCA wrote to the newly formed Department of Infrastructure, Planning and Natural Resources on 17 June 2003 to revitalise the process and appoint a new SLG.</p> <p>It was agreed at the SLG meeting on 21 October 2003 to recommence negotiations for a new MOU. SCA wrote to DIPNR on 22 December 2003 providing a draft MOU and timetable for DIPNR consideration. In a letter dated 31 December 2003 SCA reinforced its concerns about the delay in finalising the MOU.</p> <p>Little progress has been made finalising a new MOU between SCA and DIPNR as other Government initiatives have taken priority.</p> <p>The establishment of DIPNR and the CMAs provides the opportunity to develop new MOUs prior to the Licence renewal in 2005.</p>
4.1.1 & 4.1.2	Legislation provides for the SCA to be subject to a Water Management Licence. Until the Licence is issued the SCA has the right to the use, flow and control of waters on behalf of the WAMC.	No requirement	A Water Management Licence was in place for the entire audit period, being issued on 23 April 2001 and following a review was subsequently amended on 11 February 2003 and 16 February 2004.
4.1.3	Release of water from Tallowa Dam for use of Shoalhaven City Council.	High compliance	Release of water is now subject to the Water Management Licence. This requirement is found in Clause 9.4.10 of the Operating Licence and was audited under that provision. The audit findings are detailed in Table 9.1, Clause 9.4.10 of this report.
4.1.4	Until a Licence is granted, SCA to release 5/3 of the inflow into Wildes Meadow Creek from Fitzroy	Full compliance	This requirement is found in Clause 9.4.10 of the Operating Licence and was audited under that provision. The audit findings are detailed in Table 9.1, Clause 9.4.10 of this report.



Table E.2 The Water Administration Ministerial Corporation [WAMC] MOU

Clause	Requirement	Compliance	Findings
	Falls Reservoir and 1 ML/day from Wingecarribee Reservoir into Wingecarribee River, and then in accordance with the Water Management Licence.		
4.1.5	Water released from SCA infrastructure will be managed as far as reasonably practicable to minimise adverse riverine impacts, environmental impacts, risks to public health and safety, and damage to property.	High compliance	<p>Water releases from SCA infrastructure must be in accordance with the conditions of the Water Management Licence (WML) issued by the WAMC on 23 April 2001. The objective of the Licence is to manage the SCA's access to water resources within its area of operations in accordance with the principles of ESD, therefore providing a sound framework for managing releases to minimise environmental impacts.</p> <p>The SCA provided DIPNR with an independent assessment of environmental impacts of bulk water supply releases from the Upper Nepean storages by 17 May 2003, as required by clause 2.1 of the Water Management Licence. The report concluded that the current bulk water release regime is not having major negative impacts on the downstream environment of these dams.</p> <p>The SCA prepares a review of environmental factors prior to water releases from its infrastructure. This identifies impacts and ensures necessary steps are taken to minimise any impact on the environment or surrounding property. As part of the environmental assessment, monitoring is carried out before, during and after releases.</p> <p>As required in the WML, ramp up and down procedures are followed in case of transfers from the Shoalhaven. An REF is prepared for any dewatering to ensure minimal impact to the environment and to minimise riverine impacts.</p> <p>Monitoring of the Shoalhaven transfers to assess impacts on water quality were undertaken during 2003/04 and SCA reported there were no issues relating to public health and safety identified from water quality.</p> <p>Investigations into the impact of bulk water transfer through Glenquarry conduit was undertaken which indicated erosion issues which were related to drought conditions and tree trunks within the river corridor. The SCA proposes to assess these impacts during further transfers.</p> <p>SCA advised that physical inspection of the river is routinely undertaken prior to, and during releases to identify potential for property damage. There was indication of back flooding of one property along the Wingecarribee River at releases of 600ML/day. The property owner was</p>



Table E.2 The Water Administration Ministerial Corporation [WAMC] MOU

Clause	Requirement	Compliance	Findings
			<p>compensated for the cost of fodder for cattle until the grazing area regenerated.</p> <p>SCA monitors water quality in its storages and there were no occasions when releases had to be stopped due to poor water quality that could give rise to public health and safety issues.</p> <p>SCA includes environmental aspects in Standard Operating Procedures (SOPs) so that due consideration is given to environmental impact when operating a particular asset.</p> <p>SCA has received a low compliance in previous years in demonstrating how water releases are managed to minimise 'risks to public safety' and 'damage to property'. SCA's recent work on monitoring of bulk water transfers and flow regimes downstream of Woronora, Cataract, Cordeaux, Nepean and Avon dams and for transfers from the Shoalhaven have assisted in identifying the magnitude of the impacts and the required operational changes to minimise impacts.</p>
4.2.1	Parties commit to cooperative work to manage and protect the catchments in order to enhance water quality.	Full compliance	<p>Cooperative work is undertaken as evidenced by:</p> <ul style="list-style-type: none"> ▶ High level representation on various committees reviewing water management for Sydney, see Clause 2.1 above; ▶ The Catchment Protection Scheme; ▶ Assistance with exhibition documents for the draft REP which was exhibited from 29 March 2004 to 30 July 2004; ▶ Assistance with the Site Procedures and Works Inspection (conducted 31 May 2004 to 4 June 2004); ▶ The Blue Green Algae Risk Management Strategy (completed in January 2004); and ▶ SCA is working with DIPNR on the development of daily flow models for the Hawkesbury-Nepean and Shoalhaven catchments. <p>Note: The Accelerated Sewerage Program continues but is now an agreement between SCA and the Department of Energy, Utilities and Sustainability (DEUS) and not DIPNR.</p>



Table E.2 The Water Administration Ministerial Corporation [WAMC] MOU

Clause	Requirement	Compliance	Findings
5.1.1	CEOs to meet at least twice per calendar year and consider matters referred by the Strategic Liaison Group (SLG).	Full compliance	<p>A number of meetings took place between the CEO or MD of SCA and CEO or D-DG of DIPNR as follows:</p> <ul style="list-style-type: none"> Water CEOs meetings (10/7/03, 13/8/03, 10/12/03, 25/2/04, 28/4/04, 23/6/04); REP for Sydney's drinking water catchments (5/8/03); Urban water management (22/8/03, 9/2/04, 28/5/04, 4/6/04, 21/6/04); Drought Executive Committee meetings (25/8/03, 15/3/04, 6/4/04, 20/4/04, 15/6/04, 28/6/04); and Metro Water Strategy (8/3/04, 17/3/04, 11/5/04). <p>Note that the clause requirement is over a calendar year, which is not consistent with the Audit period.</p>
5.1.2	CEO meeting to be initiated by either party as required.	No requirement	See clause 5.1.1.
5.1.3	All agreements entered into between the Authority and the Corporation will be in the public domain.	No requirement	No agreements were entered into.
5.2.1	Strategic Liaison Group to be established as soon as possible after execution of the MOU.	No requirement	SLG was established in a previous audit period. The SLG was maintained in the current audit period, however it met only once on 21 October 2003, at which only two representatives from DIPNR were present. The previous meeting was 5 February 2003.
5.2.2	Strategic Liaison Group must consider long-term strategic issues and policies with regard to water management and allocation, catchment areas management, licensing issues, and identify cooperative research ventures and joint initiatives.	Low compliance	<p>The SLG considered some long-term strategic issues but it made little progress on these. Issues considered at the SLG included:</p> <ul style="list-style-type: none"> A paper was tabled on the future Strategic Issues Work Program which includes: Management of subdivision of land with riparian rights; cooperative programs on water conservation education; a review of the MOU; potential for joint DIPNR/SCA initiatives; research; water sharing plans; implementation of the Water Management Act 2000; licensing issues; Implementation of the REP for the drinking water catchments;



Table E.2 The Water Administration Ministerial Corporation [WAMC] MOU

Clause	Requirement	Compliance	Findings
			<p>environmental flows; and planning and land use issues;</p> <ul style="list-style-type: none"> ▶ The progress of the draft REP was discussed, but there was conflicting information on the current situation; ▶ Cooperative programs on water conservation education; and ▶ Drought and drought management issues. <p>There was no further progress on the development of the Strategic Issues Work Program. Completion of the actions from the 21 October 2003 SLG meeting remains uncertain.</p> <p>DIPNR has yet to confirm it's SLG representation and the formation of the CMAs may require further review of the strategic issues as responsibilities and work programs are clarified.</p> <p>The lack of a properly functioning SLG is not a healthy sign that there is a cooperative relationship between senior managers of the two agencies. It is vital that the water and land use planning functions of DIPNR complement the programs of the SCA. The SLG is a useful and convenient tool for helping to ensure that there is an effective strategic work program addressing areas of mutual interest, of which there are many of critical importance to protecting Sydney's water supply. Although consultation occurs between officers on specific issues day-to-day, the SLG is a useful and convenient tool for helping to ensure that there is an effective strategic work program addressing areas of mutual interest, of which there are many of critical importance to protecting Sydney's water supply. The regular forum for Water CEOs is not a replacement for a structured forum for other managers, as envisaged by the Operating Licence. The membership of the SLG should be confirmed and a regular schedule of meetings established so that a Strategic Work Program to address priority issues of common interest can be progressed.</p>
5.2.3	SLG to report to respective CEOs any significant issues in the catchment areas.	No requirement	<p>No significant issues reported to CEOs.</p> <p>The Managing Director (MD) of the SCA and the Deputy Director General (D-DG) of DIPNR are nominated to attend the SLG.</p>
5.2.4	Strategic Liaison Group membership to be agreed	High compliance	<p>Following representations from the MD of SCA in June 2003, the DG of DIPNR advised SCA of amended membership in a letter dated 24 July 2003. At the SLG meeting on 21 October 2003,</p>



Table E.2 The Water Administration Ministerial Corporation [WAMC] MOU

Clause	Requirement	Compliance	Findings
	between the parties.		it was agreed DIPNR representation should include planning and land use representatives. The SCA wrote to DIPNR on 31 December 2003 requesting re-consideration of its SLG membership. The SCA has not received a formal response and it is understood that of the four officers nominated, only one still works for DIPNR.
5.2.5	Strategic Liaison Group to determine frequency of meetings and meeting procedures.	Partial compliance	The frequency of meetings and procedures was agreed earlier in the life of the SLG but is now in urgent need of review and commitment.
6.1	Parties must share or supply and update relevant data and information.	Full compliance	<p>Information sharing and/or supply have occurred throughout the audit period through the SLG meeting, joint involvement on projects and/or direct information requests. Examples include: information provided by DIPNR as part of the 2003 Catchment Audit; information on environmental monitoring for environmental flow releases and Shoalhaven transfers through the Water Management Licence Working Group; Rectification Action Plans for Wingecarribee pilot, information for the Hawkesbury-Nepean River Management Forum/Expert Panel, water quality data as part of WML; refining the suite of draft REP documents for exhibition; and exchange of spatial data and cooperation for DIPNR's land use study for the South Eastern section of NSW.</p> <p>The SCA continues to contribute to the Integrated Water Monitoring Framework and CANRI Framework (information database).</p>
6.2	Notification of planned and unplanned activities likely to impact on the WAMC.	Full compliance	<p>The SCA advised the WAMC of the following non-compliance events:</p> <ul style="list-style-type: none"> On 31 August 2004, SCA advised that releases from Warragamba Dam between 6 June and 9 June 2003 when flow at Magarritys Creek Outlet was 18 ML/day and below 47 ML/day required by the WML clauses s4.1 and s5.1; and On 26 September 2003, SCA advised that releases from Tallowa Dam between 4 August 2003 and 24 September 2003 were 5% of the total required (180 ML/day). <p>The SCA initiated remedial actions and suggested that neither event caused any environmental harm.</p>
6.3	Data to be shared on such terms as agreed by the parties.	Full compliance	While there are no formally agreed terms for data sharing between the parties, data is shared on an "as requested" basis. Data issues are being considered as part of a review of science and research within the SCA.



Table E.2 The Water Administration Ministerial Corporation [WAMC] MOU

Clause	Requirement	Compliance	Findings
			DIPNR has direct access via telemetry to temperature and flow monitoring in the Shoalhaven River by SCA.
6.4	Disputes regarding data and information sharing and exchange to be referred to SLG.	No requirement	No disputes reported or referred to the SLG.
7.1	Joint programs, initiatives and research to be undertaken.	Full compliance	<p>A joint agreement on how to measure inflows to each storage has been finalised.</p> <p>Joint programs and initiatives include the Blue Green Algae Management Strategy; Statements of Joint Intent for the Hawkesbury Nepean River System, Shoalhaven River and Georges River Botany Bay System; Catchment Protection Scheme; and development of daily flow models for the Hawkesbury Nepean and Shoalhaven Catchments.</p> <p>SCA provided \$620K to the Catchment Protection Scheme.</p> <p>The agencies also collaborated on the delivery of outcomes arising from the Hawkesbury Nepean River Management Forum.</p> <p>The SCA is the Chair of NSW Environmental Education Coordinating Network Sub Group with DIPNR and other key water agencies to provide a whole of Government focus on water education programs.</p> <p>Collaborative research programs include:</p> <ul style="list-style-type: none"> ▶ An extensive program for validation of cyanobacterial toxicity genetic testing; ▶ Australian Water Quality Centre (AWQC) cyanobacterial skin irritation project; and ▶ A collaborative project with Co-operative Research Centre for Freshwater Ecology (CRCFE) on connectivity.
8.1	Differences or disputes under the MOU may be referred to the Strategic Liaison Group.	No requirement	No disputes reported or referred.
9.1	Any amendment of the MOU to be exhibited.	No requirement	No amendments were made. Negotiation for review and amendment of the MOU was initiated



Table E.2 The Water Administration Ministerial Corporation [WAMC] MOU

Clause	Requirement	Compliance	Findings
			in an earlier audit period. To date a draft MOU has not been agreed upon and it is not ready for exhibition. See Clause 3.3 for further detail.



Table E.3 NSW Health MOU

Clause	Requirement	Compliance	Findings
4.1	The purpose of the MOU is to facilitate effective interaction and set out effective processes and cooperative arrangements in relation to the protection of public health.	Full compliance	The MOU provides the structure and processes for interaction and communication between the SCA and the NSW Health. Formal interaction is achieved through the SLG and JOG meetings and informally through cooperative arrangements coordinated in these forums. The implementation of the Strategic Work Plan further demonstrates sound cooperation to address issues related to public health.
5.1	MOU commences on date of endorsement by the parties.	No requirement	The amended MOU was executed on 28 November 2001 and was sighted.
5.2	Either party may give notice to review, amend or replace the MOU or it must occur on the renewal of the Operating Licence.	No requirement	No amendments notified.
5.3	Review and amendment of MOU must be undertaken within an agreed timeframe.	No requirement	No amendments notified.
6.1.3	SCA is responsible for supplying bulk raw water to its customers to the water quality standards referred to in the SCA's Operating Licence.	Full compliance	This requirement is found in the Operating Licence and was audited under that provision. The audit findings are detailed in Table 6.1 Clause 6.2 and 6.6 of this report.
6.1.4	Customers are adequately informed of the quality of the bulk raw water and the appropriateness of any intended uses of such bulk raw water.	High compliance	This requirement is found in the Operating Licence and was audited under that provision. The Audit findings are detailed in Table 6.1, Clauses 6.3.2 and 6.6.3.
6.1.5	SCA to advise NSW Health of changes in processes and procedures that may result from variations to water quality standards in the Operating Licence.	No requirement	There were no variations to the Water Quality Standards over the Audit period.
6.1.6	SCA must develop and implement a water quality monitoring program in consultation with	Full compliance	The Water Quality Monitoring Program 2002-2004 was developed by SCA with input from Sydney Water and NSW Health. NSW Health receives monthly summaries of results from the SCA.



Table E.3 NSW Health MOU

Clause	Requirement	Compliance	Findings
	NSW Health and prepare reports for NSW Health as required by Clause 6.6 of the Operating Licence.		This was audited as a requirement of the Operating Licence, refer to Table 6.1, Clause 6.6.1 and 6.6.6.
6.2	Either party may give notice to review, amend or replace the water quality monitoring plan; upon such notice a timetable is to be prepared.	No requirement	The Water Quality Monitoring Program 2002-2004 was reviewed in anticipation of the draft REP being implemented. The draft REP was on exhibition for public comment from 29 March until 30 July 2004. Implementation of the review of the WQMP is dependent on the gazettal of the REP.
7.1	SCA to report to NSW Health any events within its works or area of operations with public health implications.	Full compliance	<p>The Bulk Water Quality Incident Response Plan (BWQIRP) identifies trigger levels, includes a provision to notify NSW Health immediately when triggers are exceeded and requires water quality monitoring results be provided to NSW Health. The Plan was revised during the audit period.</p> <p>The Bulk Water Incident Notification Register summary for 2003/04 and details of specific incidents were provided. The incidents reported to NSW Health were:</p> <ul style="list-style-type: none"> Greaves Creek Water Filtration Plant, 18 November 2003, detection of pesticides 2,4-D and 2,4,5-T at inflow, NSW Health were notified and remedial actions implemented; Wingecarribee and Fitzroy Falls Reservoirs, 22 December 2003, high levels of cyanobacteria (blue/green algae) toxin; NSW Health was notified and remedial actions implemented by SCA and Wingecarribee Shire Council; and Warragamba Dam, Pipeline & Prospect Reservoir, 26 February 2004 and 1 March 2004; detection of <i>Cryptosporidium</i> oocysts in raw water supply; NSW Health was notified and remedial actions were implemented. <p>SCA provides Sydney Water with an annual Monitoring Program Report, inclusive of water quality incidents, issues and the steps being taken to address issues as discussed in Section 6, Table 6.1, Clause 6.6.7.</p>
7.3	SCA to supply such information in relation to such events as is requested by NSW Health or as is necessary for either party to make appropriate judgements; and take appropriate	Full compliance	The Bulk Water Quality Incident Response Plan includes procedures for media and stakeholder liaison. The Plan includes provision to notify NSW Health immediately upon certain triggers being exceeded, to provide water quality monitoring results to NSW Health. If NSW Health assesses a risk to public health, NSW Health is to liaise with the customers and issue a boil water notice, if



Table E.3 NSW Health MOU

Clause	Requirement	Compliance	Findings
	action in relation to protecting the health of the public and exercising its role under this MOU.		<p>necessary, and to provide input to communications issued by the SCA for staff, customers, media and the Minister. Refer to audit findings in Table 6.1, clauses 6.7.11 and 6.7.12.</p> <p>The SCA has developed a significant program of investigative monitoring as noted under Clause 6.6.1(b) which is outlined in the SCA 'Water Quality Monitoring Program'.</p> <p>SCA has regularly informed NSW Health of results of blue green algae monitoring in storages and NSW Health has approved the Annual Water Quality Monitoring Plan and Pathogen Monitoring Plan.</p> <p>Sydney Water endorses the SCA incidence response and contingency plans in response to any incidents that could affect the quality of water supplied to Sydney Water.</p>
8.1	Prepare and maintain an Incident Management Plan to the satisfaction of NSW Health and in accordance with Clauses 6.7.9 and 6.7.12 of the Operating Licence.	Full compliance	The Plan was previously developed in June 2000 and reviewed and updated in June 2001. This was audited as a requirement of the Operating Licence; refer to Table 6.1, Clause 6.7.9 and 6.7.12.
8.2	A 24 hour incident management contact point is to be negotiated.	Full compliance	Contained in the Incident Response Plan and the Corporate Incident Management Manual. The Corporate Incident Manual was reviewed in Dec 2003 and approved.
8.3	Information and resources will be shared during incidents involving a public health risk.	Full compliance	These procedures are identified in the Incident Response Plan and the Corporate Incident Management Manual. Occurrences are detailed in the Incident Register. The Incident Register reports that information was provided to NSW Health for three incidents.
8.4	Training in situations that simulate public health hazards is to be organised at agreed location and time.	Full compliance	<p>Some 17 SCA staff undertook the 5-day Australian Inter-agency Incident Management System training (AIIMS) in September 2003 and a further 62 staff attended the 1-day incident awareness session. The register of staff undertaking the AIIMS training was sighted.</p> <p>An emergency risk exercise, "Exercise Camel", was conducted on 20-24 May 2004 in conjunction with other agencies to test response to an incident posing threats to drinking water quality. The exercise highlighted a need for some systems and procedures to be refined.</p>
9.1.1	SCA and NSW Health will maintain a Strategic Liaison Group (SLG).	Full compliance	SCA maintained a tripartite SLG with Sydney Water and NSW Health. There were five SLG meetings in the audit period on 24 September 2003, 4 November 2003, 10 March 2004, 20 April



Table E.3 NSW Health MOU

Clause	Requirement	Compliance	Findings
			2004 and 2 June 2004. The meeting minutes were sighted.
9.1.2	SLG to consist of senior officers nominated by their respective Director General or Chief Executive. SLG to meet regularly to discuss relevant and long term strategic issues and policies. SLG will define and implement processes for the exchange of strategic information.	Full compliance	<p>SLG members consist of senior officers as evidenced in the minutes. SLG considered long term strategic issues such as:</p> <ul style="list-style-type: none"> • Agreement on a revised NSW Health Cryptosporidium and Giardia Response Protocol; • Inter-agency paper on the International Expert Panel (IEP) Report that considered issues including the accelerated sewerage program, improved alert systems for incidents, and longer term supply security; • Discussions on the new Australian Drinking Water Guidelines; • Monitoring and related quality assurance procedures for water quality; • Discussions on scenarios for “<i>When the drought breaks</i>” to avoid any water quality incidents; • Review of the wastewater reuse guidelines and other recycled water initiatives; and • Risk of Severe Acute Respiratory Syndrome (SARS) from water and sewage. <p>The SLG Strategic Work Program was maintained and actioned throughout 2003/04. The SLG endorsed the Strategic Issues Agenda at the 4 November 2003 SLG meeting. Matters on the Strategic Issues Agenda included:</p> <ul style="list-style-type: none"> • Whole of Government Approach to public health and water quality; • Water conservation and re-use schemes; • Public health implications of alternative servicing solutions; • Risk Management; • Research agenda for water quality (including overseas developments); • Water quality management;



Table E.3 NSW Health MOU

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> Water quality monitoring programs; Wastewater management; Refining the regulatory environment; and Communication. <p>A number of actions relating to each of these issues were completed satisfactorily during the audit period.</p>
9.1.3	Director General of NSW Health and Chief Executive of SCA will attend at least two SLG meetings per year to discuss issues of mutual concern.	High compliance	<p>Representation of the SCA has been transferred from the Chief Executive Officer to the Managing Director (MD) of SCA. The MD attended 4 of the 5 meetings held.</p> <p>The Director General of Health delegated the role to the Chief Health Officer. The Chief Health Officer attended 3 of the 5 meetings, with the Director General of Health attending 1 of the 5 meetings.</p> <p>The agencies agreed by exchange of letters to amend the MOU to reflect these changes at the next available opportunity.</p>
9.1.4	SLG to report to respective CEOs significant issues in drinking water catchments that relate to functions of the parties.	No requirement	No significant issues were reported outside the SLG.
9.1.5	Where appropriate, tripartite meetings with Sydney Water Corporation and other customers will be held.	High compliance	<p>All SLG meetings are tripartite with SCA, Sydney Water and NSW Health. There is no evidence of other customers being involved in meetings with SCA and NSW Health.</p> <p>Additionally, the Drought Executive Committee continued to meet throughout the audit period. The SCA, SWC, DIPNR and NSW Health met 6 times during the audit period to discuss drought management.</p>
9.1.6	Strategic Liaison Group to determine meeting frequency and procedures.	Full compliance	The SLG is administered by Sydney Water. Procedures are in place; and a schedule of meetings is prepared for each calendar year in advance.



Table E.3 NSW Health MOU

Clause	Requirement	Compliance	Findings
9.2.1	SCA and NSW Health will maintain a Joint Operational Group (JOG).	Full compliance	SCA maintained a tripartite JOG with Sydney Water and NSW Health. There were five JOG meetings in the year on 4 August 2003, 13 October 2003, 8 December 2003, 9 February 2004 and 18 May 2004. Minutes of the meetings were sighted.
9.2.2	Role of Joint Operational Group (JOG) is to consider those issues determined by the SLG to be relevant but must include strategic and operational issues. The JOG is also responsible for developing data and information sharing programs and proposing collaborative initiatives including research and community education.	Full compliance	<p>The JOG considered strategic and operational issues that included:</p> <ul style="list-style-type: none"> • Water quality monitoring, pathogen monitoring and related quality assurance; • “<i>When the Drought Breaks</i>” communication protocols; • The impact of transfers from the Shoalhaven on water quality; • Pesticides in Greaves Creek Dam and an education response; • Drinking Water Quality Education paper/communications package; • Water Safety Plan; • Incident management; • “<i>Catchment to tap</i>” risk assessment; • Protocols for water transfer during Cyanobacterial events; • Amended NSW Health Response Protocol; • Use of Prospect Reservoir for recreational purposes; • SCA Catchment indicators; • SLG Strategic Issues Agenda/Work Plan; • Collaborative research and development; and • A range of operational issues



Table E.3 NSW Health MOU

Clause	Requirement	Compliance	Findings
			Data and information were shared and collaborative initiatives discussed. Emerging issues are also investigated and are an on-going item on the agenda.
9.2.3	Joint Operational Group shall report significant issues to the Strategic Liaison Group.	Full compliance	The JOG minutes indicate that strategic issues for SLG are considered regularly. A number of JOG members are also on the SLG and present feedback from the JOG meeting at each SLG meeting.
9.2.4	Joint Operational Group membership is to be as agreed between the parties and where appropriate tripartite meetings with Sydney Water to be considered.	Full compliance	Confirmed by correspondence sighted; Sydney Water is a member of the Group.
9.2.5	Joint Operational Group to establish meeting frequency and procedures.	Full compliance	The JOG is administered by Sydney Water. Procedures are in place and an annual schedule of meetings is identified. A change in the frequency of JOG meetings from 6 to 5 annually was agreed during the audit period.
10.1	Parties must share or supply the data and information referred to in 10.2 and 10.3.	Full compliance	See 10.2 and 10.3.
10.2	Data and information is to be exchanged relating to raw water quality and public health arising from the Operating Licence; Incident Management Plan; DoH public health information and as agreed.	Full compliance	Data and information are provided regularly through the SLG and JOG and routinely between officers on an 'as needed' basis. Procedures are set out in the Incident Management Plan for information transfer during an incident. A Strategic Issues Agenda has been developed to look at strategic issues over the longer term that will allow for further information sharing – see 9.1.2 above for an overview. Examples of information sharing have been described above and further examples include: <ul style="list-style-type: none"> • Drinking Water Quality Education; • Completion of the lake limnology project; • Discussion on incidents reported to NSW Health; and



Table E.3 NSW Health MOU

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> Results from "Exercise Camel".
10.3	Data to be exchanged cooperatively by the parties.	Full compliance	As for 10.2.
10.4	SCA shall participate in appropriate research and development on emerging public health issues related to drinking water.	Full compliance	<p>SCA and NSW Health work closely on research programs with respect to potential public health impact from the catchments. There has been considerable progress with the pathogen component and physical-chemical water quality component of the SCA research program initiated in September 2002. Projects include:</p> <ul style="list-style-type: none"> Source quantification project - to estimate and model human and animal sources of pathogens and their fate in the catchments; AWWARF/CRCWQT funded "<i>Fate and transport of surface water pathogens in watersheds</i>"; the project was due for completion in August 2004. A joint Australian Water Quality Centre (AWQC) study of effects from Cyanobacteria during recreational exposure; The Cyanobacterial Risk Management Strategy for the SCA reservoirs was completed in January 2004; and Drinking Water Safety Plans were finalised for water supplies in SCA picnic areas. <p>Agreements for 14 collaborative research projects as part of SCA's Collaborative Research Program were signed in 2003/04 with various research institutions. Project areas include pathogens, nutrient and sediment, fire, climate forecasting and best management practices. The SCA has allocated \$3.5M over three years to the program.</p>
11.1	Differences or disputes arising under the MOU to be referred to CEOs.	No requirement	No disputes were reported.
12.1	Any amendment of the MOU is to be publicly displayed.	No requirement	No amendments were made.



Appendix F

Comments from Government authorities



Department of
Environment and Conservation (NSW)

Our reference : EXF28891
Contact : Tim Gilbert

Mr M Pignatelli
Project Manager
GHD Pty Ltd
Locked Bag 2727
ST LEONARDS NSW 1590

Dear Mr Pignatelli

**SYDNEY CATCHMENT AUTHORITY - AUDIT OF OPERATING LICENCE –
1 JULY 2003 to 30 JUNE 2004**

I refer to your letter dated 3 September 2004 regarding the audit of the Sydney Catchment Authority (SCA) Operating Licence.

The Department of Environment and Conservation (DEC) has considered your request for comments on the SCA's auditable obligations to the former EPA and NPWS, including those which may affect compliance with the SCA's Operating Licence ("the Licence"), against the four headings specified in your letter, namely:

- 1 – Compliance with requirements;
- 2 – Progress to meeting requirements;
- 3 – Adequacy of actions being taken; and
- 4 – Adequacy of the requirements of the licence and MoU in light of recent experience.

These comments are included as Attachment 1.

I trust that you find the information provided helpful in response to your request for information. DEC officers would be happy to meet with you to clarify or expand on any of the matters covered in this letter. If you require any further information about this matter please contact Tim Gilbert, Manager Sydney Catchments on 9995 6860.

Yours sincerely

- 8 OCT 2004

STEVE BEAMAN
Acting Director Metropolitan Branch
Environment Regulation and Conservation Division

Att.

ATTACHMENT 1

Section 3.3 – Memorandum of Understanding (MoU)

As advised last year, the MoU between the former EPA and SCA was reviewed during 2001 and placed on public exhibition in accordance with the requirements of section 38 of the *Sydney Water Catchment Management Act*. The DEC believes that the MoU fulfils its purpose in forming the basis for a cooperative relationship to assist in furthering the objectives of the Licence and the Act. The DEC believes that the MoU, together with the collaborative actions arising from the MoU, including those actions agreed by the EPA/SCA Strategic Liaison Group (SLG), provide a sound basis for achieving the aims of the Licence and the Act and both Agencies have a philosophy of making continuing progress to improve catchment protection. The DEC believes that the work of the SCA and the collaborative arrangements outlined above, indicate that the MoU is fulfilling its purpose – namely to assist in the protection of catchment areas, water quality, public health and the environment. The DEC's comments on the four headings specified in your letter are bolded below for Section 3.3 – Memorandum of Understanding.

- 1 – Compliance with requirements. - **Satisfactory**
- 2 – Progress to meeting requirements. - **N/A**
- 3 – Adequacy of actions being taken. - **Satisfactory**
- 4 – Adequacy of the requirements of the licence **Satisfactory**.

Part 6 - Bulk Water Quality

Part 6.6 Water Quality Monitoring and Reporting

As advised in previous correspondence in respect of this Part, NSW Health is better placed to provide expert comment on this aspect, as we believe the primary purpose of Part 6.6 of the Licence is for the protection of public health. Despite this, and to the extent of DEC's role, there are environmental health considerations in respect of aspects of SCA's water quality monitoring activities. The DEC's comments on the four headings specified in your letter are bolded below for Part 6.7 – Bulk Water Quality.

- 1 – Compliance with requirements.- **The DEC is not aware of any non-compliance.**
- 2 – Progress to meeting requirements - **The DEC has not been made aware of any lack of progress.**
- 3 – Adequacy of actions being taken.- **The DEC has not been advised of any inadequacy in actions taken.**
- 4 – Adequacy of the requirements of the licence and MoU in light of recent experience. - **The DEC has not been advised that the licence or the MoU is inadequate in relation to Bulk Water Quality.**

Part 6.8 Environmental water quality

The SCA does not hold any licences issued by the EPA to discharge pollutants to the environment. The SCA does, however, routinely notify, and seek comment from the DEC, of its intention to undertake works or activities which have the potential to adversely impact the environment, for example, dewatering of pipelines and repairs to water storage structures. The DEC's comments on the four headings specified in your letter are bolded below for Part 6.8 – Environmental Water Quality.

- 1 – Compliance with requirements. - **Satisfactory**
- 2 – Progress to meeting requirements. - **see above**
- 3 – Adequacy of actions being taken. - **see above**
- 4 – Adequacy of the requirements of the licence and MoU in light of recent experience. **see above**

Part 7.1 – Catchment Management and Protection: Authority to manage and Protect

The DEC understands that the SCA has recently conducted an environmental assessment of selected pollution sources in its area of operation in an attempt to prioritise these risks. The former

EPA provided extensive information on licensed activities within the catchment to assist with this project. In addition, the DEC continues collaboration with SCA on a number of issues relating to catchment health including work on ecological health of waterways using macro invertebrates. The DEC understands that the SCA has previously provided water quality data to the Community Access to Natural Resources Information (CANRI) project (Hawkesbury-Nepean Integrated Data Management System) however SCA has not been asked to provide data in the last year.

- 1 – Compliance with requirements.- **Satisfactory.**
- 2 – Progress to meeting requirements. - **Satisfactory**
- 3 – Adequacy of actions being taken. - **Satisfactory**
- 4 – Adequacy of the requirements of the licence and MoU in light of recent experience. **Satisfactory.**

Part 7 Catchment Management and Protection

In relation to 7.2.2 Special Areas Strategic Plan of Management (SASPoM) has been effected and successfully implemented from a DEC perspective. In particular some excellent progress has been achieved in relation to furthering our understanding of the distribution and significance of biodiversity values within the Special Areas and of addressing the threats to those values. Strategic operational plans relating to the management of weeds, pests and fire have been developed and implemented by DEC for the Special Areas.

Regular consultation between DEC and the SCA occurs via monthly Special Areas Senior Management (SASM) meetings and other ad hoc meetings between joint agency staff. SASM continues to oversight the implementation of the SASPoM and associated funding arrangements between the Agencies. SASM is advised by the Land Management, Research and Data, Policy and Government Relations, Joint Management & Public Scrutiny and the Public Education and Awareness program groups. These groups operate to co-ordinate the joint management of the reserves, bring forward major research and survey projects relevant to the Special Areas, co-ordinate the Agencies efforts in public education and to streamline the Agencies environmental impact assessment processes and policies. In relation 7.2.3, the DEC reviewed and made contributions to this report in relation to the DEC's implementation of the SASPoM. DEC is continuing to work with SCA to implement the SASPoM. The work of SASM is fully detailed in the report required by 7.2.3.

Work has commenced on reviewing the joint management arrangements between the joint sponsors in preparation particularly for future compliance with 7.2.4.

7.3 Wingecarribee Swamp Plan of Management (WSPoM) - The DEC's interest in this Plan of Management (PoM) relates to threatened species. The PoM provides for DEC involvement via a multi-species threatened species Taskforce. This Taskforce gives technical advice to the SCA on the management of threatened species. This group meets yearly and commenced in 1998. DEC reviewed and contributed to the draft WSPoM 2003-04 Annual Report.

Note: Items 7.2.4, 7.3.6 and 7.3.7 are not due till 2005. Items 7.3.2, 7.3.3 have already been fully complied with. In relation to 7.3.5 the DEC (ex NPWS) has had no involvement in this project.

The DEC's comments on the four headings specified in your letter are bolded below for Part 7 Catchment Management and Protection.

- 1 Compliance with requirements.- **Satisfactory.**
- 2 Progress to meeting requirements. - **Satisfactory**
- 3 Adequacy of actions being taken. - **Satisfactory**
- 4 Adequacy of the requirements of the licence and MoU in light of recent experience. **Satisfactory.**

Richard Birrell
Sydney Water
115-123 Bathurst Street
Sydney 2000

Mr Maurice Pignatelli
Lead Auditor
GHD Pty Ltd
Locked Bag 2727
St Leonards NSW 1590

15 October 2004

Dear Mr Pignatelli,


I refer to your letter of 3 September 2004, requesting comments in relation to the Sydney Catchment Authority Operating Licence audit. I have attached Sydney Water's comments for SCA Licence clauses to this letter.

You would be aware that the NSW Government and stakeholders have acknowledged that the demand/ supply balance for Sydney is a whole of Government issue and cannot be solved by one agency. As such, a strong focus during the audit period was for Sydney Water and the SCA to participate in forums to resolve demand/supply issues, which ultimately have fed into the development of the Metropolitan Water Strategy, due for release by the Department of Infrastructure, Planning and Natural Resources (DIPNR) in 2004. Additional detail of these forums is included in the attached comments.

In relation to the SCA's WATHNET model, it should be noted that while Sydney Water is involved in the provision of demand data, the SCA owns the WATHNET model and conduct the modelling process, so any questions about its operations are best directed to the SCA.

If you have any queries, please do not hesitate to contact me on 9350 6336 or email richard.birrell@sydneywater.com.au.

Yours sincerely,



A/g Manager, Business Assurance

Comments from Sydney Water Corporation on the 2003-04 Audit of the Sydney Catchment Authority's Operating Licence

5.1 Customers – Sydney Water Corporation

A range of regulatory instruments governs the quality of water supplied by the SCA to Sydney Water and the quality of water supplied by Sydney Water to its customers. These include the Bulk Water Supply Agreement (Clauses 5.1, 5.3, 5.5, 5.6, 7.1, 7.2, 10.2, 11.3, and Schedules 1 Parts B & D, and Schedule 2), Sydney Water's and the SCA's Operating Licences and Memoranda of Understanding (MOUs) with NSW Health.

These water quality obligations are monitored and reported to Sydney Water through various plans and protocols eg: the SCA & SWC Annual Water Quality Monitoring Plans, SCA Bulk Water Quality Management Plan and Bulk water Supply Protocols agreed between SCA & Sydney Water.

The performance of the implemented systems is monitored at every level through water forums, interface meetings, meeting of the Joint Operational Group etc. Further arrangements are in place for periodic reporting of operational and performance data, events and incident management, maintenance coordination and capital works development and implementation.

Overall, the performance of the implemented systems and processes are in full compliance with Sydney Water's requirements.

5.3 Customer complaints

Clause 5.3 of the SCA's Operating Licence relates to the customer complaints handling procedures and reporting of the complaints against the SCA. This clause does not apply to Sydney Water. The Bulk Water Supply Agreement contains dispute resolution procedures and it is this mechanism that is utilised in the event of a disagreement between Sydney Water and the SCA rather than the SCA's customer complaints mechanism. Sydney Water is therefore not in a position to comment in relation to clause 5.3.

6.2 Water supplied for Water Treatment

A system is in place to track adherence by the SCA to the water quality aspects of the Bulk Water Supply Agreement.

Water supplied by SCA complied fully with the requirements for water quality parameters specified in the Bulk Water Supply Agreement, except for two parameters, total hardness and pH, at two supply sources. This resulted the overall compliance reaching 94.1%. However, the requirements of the Schedule 4 of the SCA's Operating Licence were complied fully (100%).

6.3 Water supplied for other uses

Sydney Water receives water at agreed supply points (inlet to Water Filtration plants) for the purpose of treating and supplying to its customers. The Bulk Water Supply Agreement provides cost recovery clauses (Clause 18&19) for the water used for bush fire fighting and flushing out contamination within Networks, if contamination is caused by the water supplied by SCA.

6.6 - Water quality monitoring and reporting

The SCA is required to develop and implement a water quality monitoring program and to report the results. This clause specifies a range of requirements relating to the monitoring program. Monitoring plans are periodically reviewed and agreed with SCA. The water quality test results reported by the analysing laboratory as and when it become available. In addition SCA provide event reports and monthly performance reports. Sydney Water is satisfied with the performance of monitoring and reporting.

6.7 Risk Management Plan

Nil comment.

6.7 Incident Management Plan

Nil comment.

8.1 Management of Catchment Infrastructure Works

This clause relates to the management of Sydney's water supply in relation to health and the maintenance of an adequate supply. Sydney Water believes that the SCA is complying with this clause, noting also the comments below relating to the demand/ supply balance.

8.3 Demand Management

Government and stakeholders have acknowledged that the demand/ supply balance for Sydney is a whole of Government issue and cannot be solved by one agency. Progress made by Sydney Water and the SCA, both before and during the audit period, is demonstrated by participation in and outcomes from the following forums:

- Water CEOs' Taskforce and Demand Management Working Group (demand and supply options);
- Hawkesbury Nepean Forum (environmental flow regime);
- SCA & SWC Strategic Water Forum;
- Feb 2002 Minister Yeadon letter noting Water CEO's is the appropriate place to address water reliability;
- March 2003 Premier announced the establishment of the Expert Water Panel supported by the Project Control Group (advice to Government on engineering and non engineering priorities for delivering a sustainable water balance);
- Senior Executive Group chaired by DIPNR (responsible for considering the outcomes from the various forums and in the development of the Metropolitan Strategy Water).

Other connected processes demonstrating joint interaction between Sydney Water and the SCA during the audit period, include:

- DEUS/SCA/SWC working group - demand forecasts;

- SCA issues paper – on meeting Sydney's future water supply needs;
- Review of SCA and Sydney Water Operating Licences (SCA - effectiveness of the criteria, expressing and changing the criteria and increasing the yield by changing the criteria; and Sydney Water – demand management targets).
- Joint community research by Sydney Water & SCA:
 - Community views on sustainable water resources
 - Community views on water restrictions and water conservation, including price reform
 - Pricing for demand management
- Drought Executive Committee, Management Committee and Expert Panel (desalination, groundwater, dead storage, recycled water, system configuration)



Department of
Infrastructure, Planning and Natural Resources

Contact: Marion Bennet
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Maurice Pignatelli
Lead Auditor - 2003/04 SCA Operational Audit
GHD Pty Ltd
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ST LEONARDS NSW 1590

Our ref: SCAL12 56/04
Your ref: 21/12946/Govt authorities
DIPNR.doc
File: Letter to Maurice Pignatelli re
2003_04 audit DIPNR info_.doc

15 October 2004

Dear Mr Pignatelli

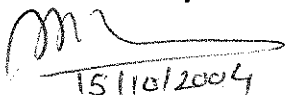
Subject: SCA Operational Licence Audit 2003/04 - DIPNR Comments

I refer to your letter of 3 September 2004 requesting comments from the Department of Infrastructure, Planning and Natural Resources (Department) in relation to Sydney Catchment Authority's (SCA) auditable obligations.

The Department's comments are provided in the report accompanying this letter (Tag A). We have previously (27 Sept 2004) written to you about SCA's performance in meeting environmental flow requirements under its Water Management Licence.

Please contact Mr Salim Vhora of the Department's Penrith Office on (02) 4722 1116 to for any further enquiries with regard to the Department's submission.

Yours sincerely


15/10/2004

Marion Bennett
Director, Metro Water Sharing Directorate
Infrastructure Coordination

DIPNR Audit Comments on Relevant Areas of SCA Operating Licence: October 2004

Clauses 3.3.1 and 3.3.2

SCA must maintain a MOU with the Water Administration Ministerial Corporation for the term of the Operating Licence; and

The MOU is to form the basis for a cooperative relationship between the parties with the view to furthering the objectives of the Operating Licence and the Sydney Water Catchment Management Act 1998.

Compliance with requirements

This is a redundant licence condition, which was complied with during 2000/01.

Progress to meeting requirements

The SCA has endeavoured to progress a review of the MOU in 2003 however, due to the changing circumstances within DIPNR this has not been possible. Both parties have continued to work cooperatively under the current MOU.

SCA is required to provide relevant data/information under provisions of its Water Management Licence. During the last year the SCA has worked cooperatively with DIPNR to achieve the transfer of SCA's hydrological information to DIPNR.

Active consultation with SCA has continued through other whole-of-Government forum's such as Water CEO's, Senior Executive Committee for development of Metro Strategy: Water which negated the need for having regular meetings of the Strategic Liaison Group between DIPNR and SCA.

Adequacy of actions being taken

Adequate

Adequacy of the requirements of the Licence and MoU

Adequate

Clauses 6.6.1 (a) and (b) and 6.6.4 (a) and (b)

SCA to design (sampling frequency and locations) the monitoring program to the satisfaction of the Department; and

SCA to include an effective system of quality assurance in the monitoring, sampling, testing, data management and reporting processes to the satisfaction of the Department.

The SCA is now operating under the Annual Water Quality Monitoring Program 2002-2004 (Attachment A). The department provided significant comments on the program during its development and finalisation.

Compliance with requirements

Complied with the requirement to develop and implement a water quality monitoring program, although the Operating Licence requirements should also reflect the ongoing assessment of the reports produced by the monitoring program. The department provided extensive comments on the Annual Water Quality Monitoring Report 2002-2003 (Attachment B).

Progress to meeting requirements

Satisfactory.

Adequacy of actions being taken

Adequate.

Adequacy of the requirements of the Licence and MoU

Inadequate. This is a one-off licence condition only. There is no requirement for ongoing involvement of this and other departments to verify proper implementation of the monitoring program through assessment of the SCA's Annual Monitoring Program.

Clause 6.8

SCA must meet the environmental water quality requirements for any discharges or water releases required under the Water Management Licence.

The Water Management Licence issued to the Authority by the Water Administration Ministerial Corporation does not identify specific water quality requirements. However, Clause S6:1(1) of the Water Management Licence does require the Authority to provide to DIPNR all water quality monitoring data as detailed within the "Sydney Catchment Authority Water Quality Monitoring Program July 2002 to December 2004", or any other subsequent monitoring programs developed in accordance with the requirements of its Operating Licence.

Compliance with requirements

Complied.

Progress to meeting requirements

Satisfactory.

Adequacy of actions being taken

Adequate.

Adequacy of the requirements of the licence and MoU

Adequate – DIPNR will consider inclusion of water quality requirements for the environmental flow purposes into Water Management Licence at the time of converting existing licence into access licence and approval under the Water management Act following commencement of a Metro Water Sharing Plan.

Clause 7.1.1 & 7.1.2

Catchment Management and Protection – SCA must manage and protect the Catchment Area to the full extent to which it is empowered to do so; and

SCA must use its best endeavours to coordinate the collection of data on water quality in the Catchment Area with other Govt agencies.

Note - The Catchment Protection Scheme aims to contribute to the maintenance and improvement of the quality of waters yielded from the water storage catchments of the Sydney, Illawarra and Blue Mountains regions. The Scheme is now a result of a Partnership Agreement between the Sydney Catchment Authority (SCA), the Hawkesbury Nepean Catchment Management Authority (HNCMA)) and landholders. DIPNR has no further involvement in this program and therefore compliance with the clause can't be assessed by DIPNR.

Compliance with requirements

N/A

Progress to meeting requirements

N/A

Adequacy of actions being taken

N/A

Adequacy of the requirements of the licence and MoU

N/A

Clause 8.2

The SCA must comply with the guidelines of the Australian National Committee on Large Dams (ANCOLD) and the NSW Dams Safety Committee (DSC)

N/A

Compliance with requirements

N/A.

Progress to meeting requirements

N/A

Adequacy of actions being undertaken

N/A.

Adequacy of the requirements of the licence and MoU in light of recent experience

N/A.

Clause 8.3

The SCA must manage demand management consistent with the requirement in the Water Management Licence (WML) issued under Part 9 of the Water Act 1912.

Compliance with requirements

This question is not applicable under the current regulatory arrangements as the Water Management Licence for the SCA does not specifically address demand management. Demand management is presently regulated via the Operating Licence issued to Sydney Water Corporation.

Progress to meeting requirements

N/A

Adequacy of actions being taken

N/A

Adequacy of the requirements of the licence and MoU

The governance aspects of Demand Management and Sydney's Water supply in general are being considered as part of the Metro Strategy: Water.

Clause 9.4.10

SCA to implement any Environmental flow requirements in the Water Management Licence issued under Part 9 of the Water Act 1912

The department has already provided some information to the auditor on this issue. On the 27 September 2004, a letter was provided to GHD confirming that the information provided to GHD by the SCA was correct.

Delivery of environmental flows is a requirement under the Water Management Licence and the Department has a regulatory role in respect to the management of the Water Management Licence.

Compliance with requirements

There were two non-compliance events during the last year, with respect to the release of environmental flows.

The non-compliance events included:

- Warragamba Dam on 4 June 2004 where the environmental release from the Megarrity's Creek valve was measured by DIPNR below 43.3 ML/day as required by WML Schedule 5.1(2). The issues related to cause and duration of the non-compliance is still being resolved between DIPNR and the SCA; and
- Tallowa Dam between 4 August 2003 and 24 September 2003. During this period, a shortfall of 5% in the total required environmental flow occurred.

Progress to meeting requirements

Generally satisfactory.

Adequacy of actions being taken

Adequate.

Adequacy of the requirements of the licence and MoU

Adequate.

Further Comment

SCA's preparedness to address reform in regard to the creation of Catchment Management Authorities (CMAs).

SCA have put significant effort into developing a good working relationship with the various CMAs that cover the catchment area. A Memorandum of Understanding has been developed between the CMAs and the SCA which outline the work they are doing in partnership. Regular monthly meetings have also commenced as part of there ongoing partnership.

SCA's preparedness to implement the REP (currently a draft, for example, assessment of any transitional matters that may have been discussed with DIPNR.

Relationships with SCA on the release of the latest draft of the REP have been very good. SCA have provided the resources to print and promote the plan; they have also run the consultation process for the REP and organised over 40 meetings with interested community groups within the catchment. This has enabled DIPNR to remain at a distance so it can objectively review the submissions made on the plan before providing its advice to the Minister. The work has been directly supervised by the General Manager Planning and Science at SCA and some 4 staff have been engaged full time on this work. DIPNR has been impressed with SCAs willingness to work closely with DIPNR on the REP so that we share a common view of the various issues.

Assessment of SCA's progress in regard to the evaluation of the impact of environmental flows on the safe yield of water.

DIPNR is aware that the SCA has prepared a issues paper " Meeting Sydney's Future Water Supply Needs" in May 2004. DIPNR provided comments on the paper, which were in general positive. The issues paper included detailed analysis of the impacts of various environmental flow and supply options on the safe yield. The paper and the analysis has provided key inputs to the preparation of the Metro Strategy: Water.

FAXED

LAND & WATER
CONSERVATION

Ian Tanner
General Manager, Bulk Water
Sydney Catchment Authority
PO Box 323
PENRITH NSW 2751

COPY

Contact: Salim Vhora
Phone: 02 4722 1116
Fax: 02 4721 0181
e-mail: svhora@dlwc.nsw.gov.au

Our Ref: SCAL 12/02

[GARAPIRGIECOMGTWATERINDI
CORPORAT Sydney Catchment
Authority Lic Misc Issues/sca
WQMP 2002-04 approval
let.doc]

Your Ref: 2001/229

29 May 2002

Attention: Amir Deen/Raman Charan

Dear Ian

Re: SCA - Water Quality Monitoring Program 2002-2004

I am pleased to endorse Sydney Catchment Authority's Water Quality Monitoring Program 2002-2004, as provided to the Department on 22 May 2002. I have been advised that the Program has evolved to its current state after interactions with staff of the Department and it now addresses the comments made by the Department. In particular, the Program now identifies the objectives and attempts to integrate of the monitoring requirements of the SCA's Water Management Licence.

I understand that the Program will evolve to accommodate any changes arising from the regulatory processes such as the mid-term review of the Operating Licence and the six-monthly mandatory review of the Water Management Licence.

A list of comments concerning the most recent Program is attached for your consideration and action. It is suggested that the highlighted comments are addressed immediately prior to the official release of the Program, while other comments be considered as part of the continual improvement of the Program.

For more information, please contact Salim Vhora, telephone 02 4722 1116, fax 02 4721 0181, e-mail svhora@dlwc.nsw.gov.au.

Yours sincerely

Brian Dooley
Manager Water Access and Compliance, Sydney/South Coast
NSW Department of Land and Water Conservation

ENCL:

1. Signed Endorsement Form
2. Comments on the most recent Program



Department of
Infrastructure, Planning and Natural Resources

Contact: Richard Nevill
Phone: (02) 4722 1115
Fax: (02) 4721 0181
Email:
Richard.Nevill@dipnr.nsw.gov.au

Ian Tanner
General Manager Bulk Water
Sydney Catchment Authority
PO Box 323
PENRITH NSW 2750

Our ref: SCAL3 25/04
Your ref: D2004/00940
File: Comments on SCA Annual WQ
Mon Rpt 2002-03.doc

COPY

16 April 2004

Dear Mr Tanner

Subject: SCA's Annual Compliance Report and Water Quality Monitoring Report 2002-2003

I refer to your letter dated 2 February 2004, which provided the department with an electronic version of the Sydney Catchment Authority's (SCA) Annual Water Quality Monitoring Report 2002-2003 (AWQMR). The AWQMR is provided to the department as a supplement to the SCA's Annual Monitoring and Compliance Report 2002-2003, submitted in accordance with Schedule 6 of the SCA's Water Management Licence (Licence).

You will recall that the department has already submitted comments on the SCA's Annual Monitoring and Compliance Report 2002-2003, in a letter dated 18 March 2004. Accordingly, this letter specifically addresses comments on the AWQMR 2002-2003.

It is pleasing to note that the SCA has incorporated most of the department's comments on last year's AWQMR (2002-2002) into the current report (2002-2003). However, the department has a number of comments that it believes will further improve the AWQMR in the future. These comments are attached to this letter for your consideration.

The department is willing to meet with IPART and SCA staff to discuss the comments in detail, if necessary. Should you wish to meet to discuss the issues raised in our letter, please contact me on telephone (02) 4722 1115 or email Richard.Nevill@dipnr.nsw.gov.au to determine suitable meeting arrangements.

Yours sincerely

Richard Nevill
A/Manager Corporate Licence Development
Metro Water Sharing Directorate

Cc: Michael Sedwell, IPART – PO Box Q290, QVB Post Office, Sydney NSW 1230

COMMENTS AND SUGGESTIONS FOR IMPROVEMENTS ON THE SCA's WATER QUALITY MONITORING REPORT 2002-2003

Corporate Licensing Unit (Infrastructure Coordination Branch), Penrith
and Resource Assessment Unit (Sydney South Coast Region), Penrith

Background

The Sydney Catchment Authority (SCA) has prepared the Water Quality Monitoring Report 2002-2003 (Report) which provides an overview of the SCA and its water quality monitoring activities and results for the year July 2002 to June 2003. The comments in this paper are constructive suggestions to the SCA, identifying ways in which the Department of Infrastructure, Planning and Natural Resources (department) believes the reporting process can be improved for the upcoming year.

Rationale

The reporting process is a compliance requirement under the Operating Licence and Water Management Licence.

The Operating Licence in Section 6.6.4 (a) states that the Monitoring Program must include *an effective system of quality assurance in the monitoring, sampling, testing and reporting processes, which must be to the satisfaction of ... the Department of Land and Water Conservation*. Section 6.6.7 of the Operating Licence also lists that the Monitoring Program Report must contain:

- (a) *A summary of the monitoring information of the Authority*
- (b) *A description of the water quality trends and problems identified as part of the Monitoring Program*
- (c) *A summary of water quality incidents identified since the previous Monitoring Program Report and action taken to resolve, eliminate or mitigate those incidents or their effect.*

Objective 1.2 (d) of SCA's Water Management Licence is to provide for *a monitoring and reporting regime to measure the impacts of the Sydney Catchment Authority's water extraction and associated activities on the long-term sustainable health of the rivers affected by its operations*.

The department considers the analysis and reporting processes to be of extreme importance in producing an accurate and clear summary of the water quality monitoring program. Excellence in data analysis ultimately determines the quality of future management actions undertaken in response to the results reported in the Report. The department considers that monitoring is the most appropriate tool for improved management and service delivery in this context. Accordingly, the water quality monitoring report must present a high level of data analysis.

Recommendations

General Comments

The report requires re-organisation and re-writing; it does not follow a logical sequence and is confusing. Importantly too, some results are not presented. Of the results that are presented, it is not obvious, even after extended review, as to which monitoring components satisfy statutory or operational requirements. A section addressing this is required – see **Attachment A** for an example of how this may be presented.

Basic information about the water quality monitoring program is not provided in summary form. This is required for clarity. It is obvious that the SCA has expended many resources to undertake monitoring and collect data. This needs to be clearly explained and presented, so that the reader may understand the extent of SCA's commitments in monitoring to provide secure water supplies. **Attachments B and C** provide examples of how this may be presented in tabular form; they provide obvious summaries of monitoring scope and intensity.

Below is a suggested new report structure with the view for presenting information more clearly, and in a logical sequence. This is of the form of many existing water quality reports. However, the department acknowledges that a departure from this format may be adopted to satisfy various compliance or operational requirements.

Executive Summary – highlight main outcomes in a non-technical manner, from most important findings to the least. Should not exceed 5 pages maximum for a report of this size;

Introduction – explain the background to the program/study, reasons for undertaking, present objectives. Text should proceed from the general to the specific. Limited references to explain background;

Methods – establish scientific validity and adequacy of techniques used. To provide sufficient detail so that the program/study may be repeated if required. May be placed in an appendix if highly detailed;

Results – summarise the data generated, without detailed interpretation. Statistical summaries and analyses should be presented, not raw data. Text should be concise, and not voluminous. Particular results may be interpreted, but general interpretations should be in the discussion;

Discussion – interpret, compare, relate results to existing information to draw conclusions. Text should proceed from the specific to the general issue of interest. References should be used extensively to help interpret results. Figures and tables should be used to summarise comparisons with other data;

Conclusions/Recommendations – summarise the discussion and develop recommendations for management action or further investigation. Text should be specific and definite, avoiding vague statements;

Acknowledgments – acknowledge contributors to any relevant aspect of the program;

References – articles, books (and book chapters) and reports require an author or agency, year, title, and some of the following editors, journal name, volume, pages, edition, publisher, place;

Appendices – data summaries, tables, plots, maps, etc., which are too much for the body of the report.

Other general comments include:

- The existing maps do not define the sub-catchment/system boundaries;
- The box and whisker plots need to be re-drawn; use full plot area wherever possible with readable tick marks on all axes; presentation order should be re-considered;
- ANZECC advocates FPP, NO_x, NH₃ and biological monitoring – there are no statements about this;
- There is no rationale for monitoring of Hawkesbury-Nepean sites;
- The results of the Schedule 4 monitoring have not been presented; and
- There are no management actions presented, particularly in response to poor water quality results.

Specific Comments

Executive Summary

This section should not be a copy of existing text in the body of the report. It should progress from the most important to the least important findings. The current summary is far too long. There is no interpretation of the data, leaving the reader with more questions than answers. There should not be a glossary in an executive summary.

Section 2 – Sydney's Water Catchments and Supply Network

The five systems are initially presented: Warragamba, Upper Nepean, Woronora, Shoalhaven, and Blue Mountains, but sub-sections do not follow this order – needs consistency.

There is no information as to the reasons for inclusion of Hawkesbury-Nepean sites in the monitoring program.

Section 3 – Water Quality Monitoring

This section does not describe the water quality monitoring, as stated on page 2 of the report. The current section describes the SCA's network and the nature of its network components, not the monitoring program. Program details should include:

- Program design – objectives, rationale, position/role in business & management requirements, components;
- Geographical extent/sites – number, location and relevance in network and relationship re. service delivery, justification for management;
- Analytes/Indicators – number, type, reason for inclusion, description (or reference), use/limitations in interpretation; and
- Data – frequency, relevance for analysis & reporting.

Also, statements regarding the monitoring program's place in data management, analysis and reporting and evaluation would aid the reader's understanding about the entire water management framework.

Finally, perhaps most importantly, this section should document how the monitoring satisfies requirements of the Operating Licence, Water Management Licence and Bulk Water Supply Agreement, as opposed to that monitoring conducted to ensure high quality service delivery:

1. Statutory Responsibility - Operating Licence
 - (a) Manage & protect the catchment;
 - (b) Supply bulk water;
 - (c) Regulate catchment activities;
2. Statutory Responsibility - Water Management Licence
 - (a) Environmental flow releases;
 - (b) Monitor effect of releases;
3. Statutory Responsibility - Bulk Water Supply Agreement
 - (a) Provide water to 9 SWC WFPs;
 - (b) Meet ANZECC & NHMRC guidelines;
 - (c) Set and meet site-specific guidelines for 9 WFPs;
4. SCA Operations
 - (a) Early detection of contaminants;

- (b) QA to BWS (ensuring high quality of WFP inflows);
- (c) Identify and target contamination sources in catchments and storages;
- (d) Identify emerging issues for future planning.

Section 4 – Water Quality Guidelines

National guidelines advocate the use of biological monitoring, yet there is no mention of this anywhere. The distinction between national, State, and Regional guidelines needs to be explained – e.g. how they integrate to provide a framework for risk assessment. Similarly, explanation is required for guidelines applicable to catchment, storage, and reticulated system, together with how this relates to creation of site-specific thresholds at WFPs, e.g. is there an ability for managers to review values to assess quality (and thus service provision)?

Further explanation is required about the focus on 'guidelines for cyanobacteria' and 'metals in lake waters' – these sections have no context.

Discussion is required for biovolumes – what methods were used?

Section 5 – Monitoring for the Operating Licence

This section is very confusing – there is no clear flow of information or results. It should be a results and discussion section only; methods should be presented earlier. The entire section needs rewriting to present results, and an interpretation of their meaning in terms of catchment health, operations and management.

Where are the results' summaries for Schedule 4 indicators?

Section 5.2 should be moved to Section 3, as it is a description of what was done.

Further explanation is required about the inclusion of the section on trend analysis. It would be better placed in a 'Monitoring SCA operations' section – undertaking of trend analysis isn't specifically required in the Operating Licence.

'Results and Discussion' should be numbered, and logically sub-divided. There must be references to results. There needs to be a summary presentation of how results satisfied (or otherwise) various thresholds – this is not currently evident. There is no reference to any of the box and whisker plots prepared – interpretation is required.

Maps should include results.

Section 5.4 – Trend Analysis

References to plots are required. Why has the author separated trend results by analytes (as opposed to systems/sites, as before)?

Section 5.5 – Quality Assurance and Quality Control

This section needs rewriting as it does not present any QA or QC information, results or interpretation. This section does not satisfy statutory requirements, please see the ANZECC (2000) publication entitled "*Australian Guidelines for Water Quality Monitoring and Reporting (National Water Quality Management Strategy, Number 7)*" for details.

Requirements include adequately addressing:

- QA/QC in the field;
- QA/QC in the laboratory;
- QA/QC in data management.

Section 5.6 – Special investigations

The author has made no attempt to explain why these studies should be reported in the context of this report.

Impacts of fires on water quality – inadequate presentation; there is insufficient information about program design, objectives, protocols used, data generated, data analysis and reporting. there are no references to support (or otherwise) findings. Findings are generalised and unsubstantiated.

Fate and transport of surface water pathogens in the catchment – same comment as above. Insufficient information about collaborative programs.

Hydrodynamic distribution of pathogens in reservoirs - same comment as above, without any findings (general or specific) presented.

STP effluent characterisation study - same comment as above. The section explains work undertaken in 2001! The whole section is unclear.

Impacts of operational discharges on creeks - same comment as above. Some statements are generalised and well-accepted concepts in catchment management theory.

Section 6 – Monitoring for WML

Move to Section 5, as sub-section.

Plots presented have little meaning and incorrectly infer continuity of data. Re-present data. Refer to referred journal articles for ideas on data analysis, presentation and reporting.

Requires different presentation techniques/approach to further interpret results. Suggest literature review on current theory.

Section 7 – Monitoring for Ops. & Planning

While the objectives have been stated, there is no attempt to demonstrate how the monitoring programs have satisfied those objectives, or otherwise.

Section 7.2 – Methodology

This section is too general – there is insufficient detail or justification of techniques used.

Section 7.3 – Catchment Monitoring

Move to Section 5, as sub-section – suggest integration into general 'Results and Discussion' section.

There has been no attempt at interpretation of the results - text should be separated by tables that demonstrate an interpretation.

Section 7.4 – Reservoir Monitoring

Move to Section 5, as sub-section – suggest integration into general 'Results and Discussion' section.

There has been no attempt at interpretation of the results - text should be separated by tables that demonstrate an interpretation.

Section 7.5 – Hawkesbury River Sites

Inadequate presentation; there is insufficient information about program design, objectives, protocols used, data generated, data analysis and reporting.

Section 7.6 – Picnic Area tap monitoring

Inadequate presentation; there is insufficient information about program design, objectives, protocols used, data generated, data analysis and reporting.

Section 7.7 – Cyanobacteria monitoring

Inadequate presentation; there is insufficient information about program design, objectives, protocols used, data generated, data analysis and reporting.

Section 7.8 – Wet weather events

Inadequate presentation; rainfall plots should be presented. It is stated that limited sampling occurred – what are the details of this sampling?

Section 7.9 –Pesticides

Inadequate presentation; there is insufficient information about program design, objectives, protocols used, data generated, data analysis and reporting. there are no references to support (or otherwise) findings.

Summary

The format and content of the SCA's Annual Water Quality Monitoring Reports should be significantly overhauled prior to the release of the 2003-2004 report. The reports should also be peer-reviewed within the SCA (particularly by biometrics staff) prior to being forwarded to DIPNR for consideration and their ultimate release into the public arena.

Attachment A – How monitoring satisfies various statutory & operational obligations

Objectives of the 2002-03 WQMP

Task:	Monitoring component(s):			
<u>Statutory Responsibility - Operating Licence</u>				
Manage & protect the catchment	Routine & event catchment monitoring			
Supply bulk water	BWSA flow data?			
Regulate catchment activities	??			
<u>Statutory Responsibility - Water Management Licence</u>				
Environmental flow releases				
Monitor effect of releases	impacts of discharges	H-N monitoring		
<u>Statutory Responsibility - Bulk Water Supply Agreement</u>				
Provide water to 9 SWC WFPs	routine retic. monitoring + BWSA flow data?			
Meet ANZECC & NHMRC guidelines	routine retic. monitoring	BGA monitoring in storages	distribution of pathogens in reservoirs	
Set and meet site-specific guidelines for 9 WFPs	routine retic. monitoring			
<u>SCA Operations</u>				
Early detection of contaminants	impacts of bushfires	fate & transport of pathogens	distribution of pathogens in reservoirs	STP effluent characterisation
QA to BWS (ensuring high quality of WFP inflows)	routine storage and retic. monitoring	BGA monitoring in storages		
Identify and target contamination sources in catchments and storages				
Identify emerging issues for future planning	Trend analysis	impacts of bushfires	STP effluent characterisation	

Attachment B – 2002-03 SCA AWQM Report monitoring components

Components of the 2002-03 WQMP

<u>Routine Monitoring</u>	Catchment sites	Storage Sites	Reticulation sites (incl. WFPs)	H-N	Picnic Taps
Warragamba	12	9		6	
Upper Nepean	2	4		2	3
Woronora	1	1		1	
Shoalhaven	9	7		2	2
Blue Mountains	0	3		2	
				12	5
<u>Analytes</u>					
DO (sat.)	yes	yes		yes	
EC	yes	yes			
pH	yes	yes		yes	yes
Alkalinity		yes			
Turbidity	yes	yes			yes
Colour (t)		yes			yes
SS	yes			yes	
temperature					yes
TP	yes	yes		yes	
TN	yes	yes		yes	
Total Al	yes	yes			
Filt. Al	yes				
Total Fe	yes	yes			
Filt. Fe	yes				
Total Mn	yes	yes			
Filt. Mn	yes				
SiO ₂	yes	yes			
Chlorine					yes
BOD	yes				
Thermo Coliforms	yes	yes			yes
Enterococci				yes	
Total Coliforms					yes
chl-a	yes	yes			
BGA				yes	
Toxic BGA		yes		yes	
BGA biovol.				yes	
Toxic BGA biovol.				yes	
HPC (20C/7d)					yes
HPC (35C/2d)					yes

Attachment C – 2002-03 reservoir monitoring

Monitoring Algae in reservoirs

[illegible]

Mr Maurice Pignatelli
GHD Pty Ltd
Locked Bag 2727
ST LEONARDS NSW 1590

Dear Mr Pignatelli

I refer to your letter to the Director-General regarding the audit of the Sydney Catchment Authority (SCA) Operating Licence.

The Department maintains an effective and open relationship with the SCA at officer and strategic levels. Regular meetings provide opportunity to discuss matters of mutual concern and ensure the provisions of the Operating Licence and Memorandum of Understanding are met. The SCA has recently revised the timing and format for reporting monitoring results to better meet the needs of the Department. The Department has also worked with the SCA to improve response to the detection of pesticides in the catchments.

The Department acknowledges that the SCA has satisfactorily met its obligations under the Operating Licence and Memorandum of Understanding (MoU). The Department is also satisfied that the requirements of the Operating Licence and MoU are adequate and provide a sound basis for a cooperative relationship between the organisations.

This year the Department has collaborated with the SCA and Sydney Water Corporation (SWC) to review preparedness for an event similar to the 1998 Sydney Water Incident. The review also involved a mock incident exercise. The review and mock incident exercise were completed successfully and highlighted some areas for improvement, which are being addressed jointly.

Thank you for the opportunity to provide input to the audit process. If you have any enquires please contact Leslie Brodlo at the Department's Water Unit on 9816 0521.

Yours sincerely



Dr GREG STEWART
Deputy Director-General Population Health
and Chief Health Officer

15/10/04



Appendix G

Dam Safety Committee and Australian National Committee on Large Dams – Guideline Summary



Table 1 Appendix G - DSC and ANCOLD Guideline Summary

Dam	5-yearly Surveillance Report			Annual Inspection Report	Routine Inspections ³	Dam Safety Emergency Plan			O&M Manual
	Date of Last Report	Due Date for Next Report ¹	Submissions to DSC Year 2003/04			Issued Internally & Externally	Desk Top Exercise ⁸	Comprehensive Exercise ⁷	Date Finalised and Issued
Avon Dam	09/00	09/05		Completed 18 Aug 2004	Daily (Daily)	09/04	03/98 11/98	5/99 Due for year 04/05	31 July 02 (C)
Bendeela Pondage	04/99	04/04 (11/04) ²		Completed 20 Oct 2004	Twice weekly (Tri weekly)	09/04	11/98	5/99 Due for year 06/07	06/03 (C)
Broughtons Pass Weir	02/00	02/05		Completed 18 Oct 2004	Daily (Tri weekly)	09/04		Due for year 04/05	08/01 (D) Draft for Upper Canal (includes the weir) under review in 2002/03.
Cascade Dam 1 (Middle)	11/02	11/07		Completed 9 Aug 2004	Twice weekly (Weekly)	09/04		Due for year 05/06	08/01 (D) Draft under review in 2002/03 & scheduled for completion Feb 05.
Cascade Dam 2 (Lower)	11/02	11/07		Completed 9 Aug 2004	Twice weekly (Weekly)	Modified DSEP prepared in 2002/03		Due for year 05/06	Scheduled for 2003 Rescheduled for completion by 30 June 05.
Cascade Dam 3 (Upper)	11/02	11/07		Completed 9 Aug 2004	Twice weekly (Weekly)	09/04		Due for year 05/06	08/01 (D) Draft under review in 2002/03 & scheduled for completion Mar 05.
Cataract Dam	09/01	09/06		Completed 20 Oct 2004	Daily (Daily)	09/04	11/98	5/99 Due for year 04/05	31 July 02 (C)
Cordeaux dam	09/01	09/06		Completed 6 Oct 2004	Daily (Daily)	09/04	03/98 11/98	5/99 Due for year 04/05	31 July 02 (C)



Table 1 Appendix G - DSC and ANCOLD Guideline Summary

Dam	5-yearly Surveillance Report			Annual Inspection Report	Routine Inspections ³	Dam Safety Emergency Plan			O&M Manual
	Date of Last Report	Due Date for Next Report ¹	Submissions to DSC Year 2003/04			Issued Internally & Externally	Desk Top Exercise ⁸	Comprehensive Exercise ⁷	Date Finalised and Issued
Fitzroy Falls Dam	03/99	03/04 (06/04) ⁴ (07/04) ⁵	3 Aug 04	Completed 29 Jun 2004	Twice weekly (Tri weekly)	09/04	03/98 11/98	5/99 Due for year 06/07	Issued June 2003 (C)
Glenquarry Cut Cont: Str:	03/99	03/04 (06/04) ⁴ (07/04) ⁵	3 Aug 04	Completed 20 May 2004	Twice weekly (Weekly)	09/04			Issued June 2003 (C)
Greaves Creek Dam	06/03	06/08	28 July 03	Completed 14 Oct 2004	Twice weekly (Weekly)	09/04		Due for year 05/06	04/02 (D) Draft under review in 2002/03 & scheduled for completion Dec 04.
Kangaroo P/L Cont: Str:	04/01	07/09		Completed 9 Aug 2004	Twice weekly (Weekly)	09/04		Due for year 06/07	Issued June 2003 (C)
Lake Medlow Dam	06/03	06/08	25 July 03	Completed 9 Aug 2004	Weekly (Monthly)	Modified DSEP prepared in 2002/03		Not required	Scheduled for 2003 Rescheduled for 2005/06.
Nepean Dam	02/00	09/05		Completed 20 Oct 2004	Daily (Daily)	09/04	11/98	5/99 Due for year 04/05	31 July 02 (C)
Prospect Dam	03/03	03/08		Completed 9 Aug 2004	Daily (Daily)	09/04	Not recorded on file	5/99 Due for year 04/05	31 July 02 (C)
Tallowa Dam	09/98	09/03 (02/04) ⁶	5 Jan 04	Completed 9 Aug 2004	Twice weekly (Tri weekly)	09/04	11/98	5/99 Due for year 06/07	31 July 02 (C)
U/Cordeaux Dam No.2	05/99	05/04 (11/04) ²		Completed 18 Oct 2004	No requirement (Monthly)	Modified DSEP prepared in 2002/03		Not required	Scheduled for 2003 Rescheduled for 2005/06.



Table 1 Appendix G - DSC and ANCOLD Guideline Summary

Dam	5-yearly Surveillance Report			Annual Inspection Report	Routine Inspections ³	Dam Safety Emergency Plan			O&M Manual
	Date of Last Report	Due Date for Next Report ¹	Submissions to DSC Year 2003/04			Issued Internally & Externally	Desk Top Exercise ⁸	Comprehensive Exercise ⁷	Date Finalised and Issued
Warragamba Dam	06/02	06/07		Completed 20 Oct 2004	Daily (Daily)	09/04	11/98	5/99 Due for year 04/05	06/99 (C) Updated by the contractor in 2002/03
Wingecarribee Dam	04/01	04/06		Completed 13 Aug 2004	Daily (Daily)	09/04	11/98	5/99 Exercise Camel in 05/04	Issued June 2003 (C)
Woodford Creek Dam	06/03	06/08	25 July 03	Completed 11 Oct 2004	Weekly (Weekly)	Modified DSEP prepared in 2002/03		Due for year 05/06	Scheduled for 2003 Rescheduled for 2005/06
Woronora Dam	10/02	10/07		Completed 20 Oct 2004	Daily (Daily)	09/04	03/98 11/98	5/99 Due for year 04/05	31 July 02 (C)



Table 1 Appendix G - DSC and ANCOLD Guideline Summary

Dam	5-yearly Surveillance Report			Annual Inspection Report	Routine Inspections ³	Dam Safety Emergency Plan			O&M Manual
	Date of Last Report	Due Date for Next Report ¹	Submissions to DSC Year 2003/04			Issued Internally & Externally	Desk Top Exercise ⁸	Comprehensive Exercise ⁷	Date Finalised and Issued

¹ Refer DSC approval to revised Surveillance Report Program (email dated 23 September 2004)

(C) – Complete

² DSC Approved Extension (DSC email 9 September 2004)

(D) – Draft

³ Refer letter to DSC dated 20 September 2004 showing compliance of new inspection frequencies with revised ANCOLD 2003 guidelines. Frequencies in brackets are those from 30 August 2004 onwards.

⁴ DSC Approved Extension (DSC email 1 April 2004)

⁵ DSC Approved Extension (DSC email 18 June 2004)

⁶ DSC Approved Extension (DSC email 4 August 2003)

⁷ Exercising of DSEPs has been delayed due to finalising of DSEPs and negotiations with SES regarding a long-term plan for exercises. Agreed to be done in groups. Upper Nepean and Warragamba dams have been programmed for 2003/04 in conjunction with exercise of SES Hawkesbury Nepean flood plan.

⁸ A generic Desktop exercise will be carried out on all DSEPs in 2004/05 as implementation training on the newly updated and issued DSEPs.



Appendix H

Environment Plan compliance table

Table 1 Appendix H - Environment Plan Compliance Table 2003/04

Environmental Objective	Compliance with targets and timeframes	Finding
1. The SCA will provide strong and effective leadership on catchment protection and assist community understanding of this issue.	High compliance	<p>The SCA achieved the majority of the targets set for this environmental objective including the approval of the education strategy for 2003-06, continuation of interactive education programs and school programs, and continued public consultation with DIPNR on the draft Regional Environmental Plan and ongoing media strategies.</p> <p>The SCA did not meet full expenditure of the annual Catchment Protection Improvements grant budget (\$154,582 of the \$164,000 budget was allocated).</p> <p>The SCA Education Strategy no longer includes a mobile education unit.</p>
2. The SCA will involve the community in its strategic decision making.	Partial compliance	<p>The majority of targets for this environmental objective were satisfied during previous audit periods.</p> <p>During this audit period, the SCA continued to consult PENGOS on matters of joint interest and continued public consultation with DIPNR on the draft Regional Environmental Plan and ongoing media strategies.</p> <p>A target that has not been achieved, and is key to the satisfactory achievement of this objective, is the SCA Consultation Protocols. This protocol was due for completion on July 2001 and is still in draft form. This protocol is required to "...identify the need for consultation and determining the most appropriate form of consultation" (Environment Plan P11).</p>
3. The SCA will encourage and support the culture and practice of environmental responsibility within its staff and pursue greater environmental standards and performance from its contractors and suppliers.	Partial compliance	<p>The majority of targets for this environmental objective were satisfied during previous audit periods.</p> <p>During this audit period, environmental training and energy management training was held for SCA staff. The SCA however, has not reported, or met, the following targets, which are key to the satisfactory achievement of this objective:</p> <ul style="list-style-type: none"> Not reported the percentage of SCA staff whom have undertaken environmental awareness training (target is <u>all</u> staff); and Commenced providing formalised induction packages to contractors (target is training to be provided to all construction contractors).
4. The SCA will optimise the use of its existing water resources and infrastructure to achieve an ecologically sustainable bulk water supply that meets current and future needs.	Full compliance	<p>The SCA has met water supply requirements for Sydney Water, Wingecarribee Shire Council and Shoalhaven Council and achieved environmental flows as designated by its Water Management Licence (WML).</p> <p>The SCA developed an Energy Management Policy in the previous audit period.</p> <p><i>Note: The Environment Plan targets do not address performance issues related to SCA's long-term bulk water supply capability. This issue is discussed in Section 8 of this report.</i></p>
5. The SCA will manage its infrastructure, Special Areas and other land holdings for the provision of high quality	High compliance	<p>During this audit period, the SCA continued to demonstrate:</p> <ul style="list-style-type: none"> A high level of implementation of the Wingecarribee Swamp and Special Area Plan of Management, and the Special Areas Strategic Plan of Management;

Table 1 Appendix H - Environment Plan Compliance Table 2003/04

Environmental Objective	Compliance with targets and timeframes	Finding
raw water and for the conservation and enhancement of ecological health and natural cultural values.		<ul style="list-style-type: none"> Compliance with health guidelines in relation to raw water quality; Ongoing implementation of the Healthy Catchment Program, although budgets were not fully allocated for the Protection and Improvements Grants; Compliance with the environmental flow requirements of its WML and trial environmental flows; Progress in the preparation of conservation management plans and the condition of the State Heritage items remains stable; and Aquatic ecosystem health indicators have been recommended but not yet endorsed by the SCA (original due date - January 2003).
6. SCA will minimise any adverse environmental impacts from infrastructure operation, maintenance and construction.	Partial compliance	<p>During this audit period, the SCA:</p> <ul style="list-style-type: none"> Conducted environmental audits on 100% of projects during the 2003/04 capital works program. <p>The SCA however, has not reported or met, the following targets, which was key to the satisfactory achievement of this objective:</p> <ul style="list-style-type: none"> undertake a complete environmental assessment of the SCA's major infrastructure by July 2002; report overall compliance with environmental legislation requirements for 2003/04; and report the percentage of SCA staff whom have undertaken environmental awareness training (target is <u>all</u> staff).
7. SCA will reduce consumption of resources and minimise the generation of waste and pollution.	Low compliance	<p>The SCA reported the following statistics on energy, waste management and resource consumption during the audit period, compared to the previous year:</p> <ul style="list-style-type: none"> 2.9% increase in the energy used by SCA buildings (the SCA attributes the increase in energy consumption to expansion of its Penrith Head Office); Nearly 4-fold increase in greenhouse emissions (the SCA attributes the increase in greenhouse emissions to pumping of water transfers from the Shoalhaven system to the Warragamba and Nepean storages); Reduction in waste (kg/employee/yr) sent to landfill (except plastics); and Reduction in office paper purchased. <p>Only 0.2% of total electricity consumed was green power (reduced considerably, due to the need to pump water from the Shoalhaven).</p> <p>The SCA also reported that the waste reduction and purchasing policy and plan was endorsed in August 2002.</p> <p>The SCA undertook further sampling of Warragamba Dam depot and finalised a Remedial Action Plan. Site cleanup for Prospect waste dump was also undertaken.</p> <p>Overall, it is evident that the SCA demonstrated reduced performance against this environmental objective, compared to the previous year.</p>

Table 1 Appendix H - Environment Plan Compliance Table 2003/04

Environmental Objective	Compliance with targets and timeframes	Finding
8. The SCA will improve its scientific knowledge of catchment protection, water quality and environmental management and utilise this knowledge to enhance its operational and environmental decision making.	High compliance	<p>In 2003/04, the SCA expenditure on research and scientific catchment monitoring was 2.9% of operating costs. Work was undertaken on themes including pathogens, nutrients, sediment, fire and catastrophic events, climate and flow variability and best management practices.</p> <p>A total of \$3.5M has been allocated over the next three years (from 2002/03) and the SCA has developed cooperative research agreements with other parties.</p> <p>The SCA advised that an assessment of the impact of recreational access on ecology and water quality <i>commenced</i> during the 2003/04 year, although this was originally due to be completed by 2002.</p> <p>The SCA cited some recent examples where the findings of the research are being used to inform management decisions.</p>
9. The SCA will achieve water quality protection through environmental planning, land use management and planning control in the catchment.	No requirement	<p>Targets related to the Regional Environmental Plan have not been triggered, as the Regional Environmental Plan has not been gazetted. However, the SCA advised:</p> <ul style="list-style-type: none"> ▮ The SCA has not undertaken additional Strategic Land and Water Capability assessments (11% undertaken as of 2002/03) of its sub-catchments (against a target of 75% by July 2002); and ▮ A Catchment Information System has been expanded to become part of an overarching catchment information strategy under the Healthy Catchments Program. Stage 1 was completed in July 2003.
10. The SCA will monitor and report on its environmental performance, as part of a policy of continuous improvement.	High compliance	<p>This review has indicated that the targets in the Environment Plan are generally being achieved although not always within the specified timeframes. Achievement of targets under each of the environmental objectives are summarised in this table.</p> <p>Generally compliance is high to partial and has not changed since the previous year. The SCA did not provide any significant new evidence to demonstrate movement towards full compliance for any of the strategies. It is therefore concluded that the SCA has made limited progress towards full compliance with the Environment Plan, during the 2003/04 audit period.</p> <p>A verifier "independently" reviewed the 2002/03 AER. The independent verifier was satisfied with the AER and associated systems. The independent verifier did, however, recommend that some site level data from contractors be checked in 2003/04, that in depth review of parts of the data management system be continued, and quality assurance mechanisms be established to provide a framework for minimising potential human error, inappropriate assumptions or spreadsheet errors.</p>

Key:

- Improvement on previous year's performance
- No change from previous year's performance
- Deterioration on previous year's performance



Appendix I

Performance against environmental and ESD indicators



Table A Appendix I - Performance against environmental indicators

Environmental Indicator	SCA performance against the indicator in relation to previous year	Comment
OPERATIONAL PERFORMANCE INDICATORS (FOR SCA ACTIVITIES)		
Impacts on Water		
▶ Volume of water released from the SCA's major storages.		Mandatory water restrictions have reduced demand
▶ Temperature of water released from the SCA's major storages as compared to the temperature of receiving water or inflow waters.		
▶ Effluent management systems owned by the SCA performing to specification.		
Impacts on Land		
▶ Extent and intensity of hazard reduction burns on SCA owned and managed lands		Intensity could not be determined.
▶ Extent and condition of native vegetation on SCA owned and managed lands	Not determined	Extent identified, condition not reported, year to year comparison not reported.
▶ Extent of feral pigs on SCA owned and managed lands.	Not determined [#]	Management activities reported but extent not reported.
▶ Extent of serrated tussock, willow and blackberry on SCA owned and managed lands.	Not determined [#]	Management activities reported but extent not reported.
Energy and Resources		
▶ Amount of energy (kWh) used by the SCA per megalitre (ML) of bulk water supplied.		
▶ Annual greenhouse gas emissions related to electricity consumption by the SCA		
▶ Estimated volume and type of waste annually sent to landfill from SCA activities.		
ENVIRONMENTAL CONDITION INDICATORS		
Streams		
▶ Level and variability of streamflow		
▶ Physico-chemical measures of water quality.		
▶ Occurrences of <i>Cryptosporidium</i> and <i>Giardia</i> .		
▶ The number of discharges of untreated sewage from licensed sewage treatment plants		
▶ The number of weirs with effective fishways		



Environmental Indicator	SCA performance against the indicator in relation to previous year	Comment
▶ Extent and condition of wetlands on SCA owned and managed lands		
▶ Status of macroinvertebrate populations to family level.		
Storages		
▶ Storage volumes and variability of the SCA's major storages.		
▶ Physico-chemical measures of water quality from the SCA's major storages.	Not determined	There is lack of commentary on comparison with previous years.
▶ Occurrences of <i>Cryptosporidium</i> and <i>Giardia</i> within the SCA's major storages		Long term trend showing improvement.
▶ Incidence of freshwater algal blooms in the SCA's major storages.		
Lands		
▶ Extent and type of land use in the water supply catchment area	Not determined [#]	Land uses expressed as a % do not total 100%.
▶ Estimated number of unsewered properties in the water supply catchment area.		
▶ Extent and condition of native vegetation in the water supply catchment area.		
▶ Extent and condition of riparian vegetation in the water supply catchment area.	Not determined	There is lack of commentary on comparison with previous years.
▶ Extent and type of erosion in the water supply catchment area.	Not determined	There is lack of comparable data for year to year comparison.
▶ Intersection of transport routes and utility easements with watercourses in the water supply catchment area.		
▶ Area of the water supply catchment area affected by salinity	Not determined [#]	Data is limited and dated.
▶ Flora and fauna species of conservation significance in the water supply catchment area.	Not determined [#]	Data was not available at the time of the audit.
▶ Total area burnt by wildfire in the water supply catchment area.		

Key:

Improvement on previous year's performance

No change from previous year's performance

Deterioration on previous year's performance

[#] Data on this indicator is not collected by the SCA



Table B Appendix I - Performance against ESD indicators

ESD Indicator	Performance towards sustainability in relation to previous year	Comments	Extent of year to year comparison
ENVIRONMENTAL			
Volume of water released from SCA's major storages.		There is no discussion in the report as to the levels of riparian and environmental releases deemed to be "sustainable" for the river systems based on findings of the Hawkesbury Nepean River Forum.	Comparison provided with releases since 2000/01. Total riparian and environmental releases have reduced compared to previous years although total volumes released to rivers has increased.
Extent and condition of native vegetation on SCA owned and managed lands		The report discusses improved mapping and the extent of species and sites.	There is no indication whether there has been <u>change</u> in the extent and condition of native vegetation.
Extent and type of erosion on SCA owned and managed lands.	Not determined	The report discusses improved mapping and quantifies the areas of the catchment subject to erosion.	There is no indication whether there has been <u>change</u> in the extent and type of erosion.
Water quality performance in the SCA's major storages in comparison with ANZECC and NHMRC Guidelines		SCA reported water quality as "good" however nutrient levels declined from previous levels (see appendix showing detail for each site - compared to 2001/02)	General comment on results being comparable to 2000/01 and 2001/02.
Amount of energy (kWh) used by the SCA per megalitre of bulk water supplied		There has been a significant increase in energy consumption due to the pumping of water from the Shoalhaven system to the Warragamba and Nepean Storages.	Comparison provided with energy consumption since 2000/01.
Annual greenhouse gas emissions related to electricity consumption by the SCA		See above	See above
Estimated volume and type of waste annually sent to landfill from SCA activities.		There has been an overall reduction waste/ employee/ year with the exception of plastics (compared to 2002/03 but not compared to 2001/02).	Comparison provided with waste annually sent to landfill since 2000/01.
SOCIAL			
Percentage annual staff retention		SCA reported continued high staff retention.	Comparison provided with percentage annual staff



ESD Indicator	Performance towards sustainability in relation to previous year	Comments	Extent of year to year comparison
			retention since 2000/01. A sustainability benchmark has also been provided, which the SCA falls within. The SCA should reference the benchmark quoted.
Community perception with regard to the state of the catchment	Not determined [#]	SCA did not undertake wide-ranging survey work this year and proposes triennial surveys. Some targeted surveys undertaken.	No comparison with community perceptions from previous years.
Number of hits per annum on the SCA's website		Hits increased by 155%	Comparison with hits since 2000/01
Total number of hours spend by staff in environmental training		Hours spent on training increased since 2002/03 but was lower than 2003/04.	Comparison with hours spent by staff in environmental training since 2000/01
Condition of Stage Heritage Items owned by the SCA.		No change in conditions reported including for buildings and Wingecarribee swamp previously identified as being in poor condition.	Comparison on condition of Stage Heritage items since 2000/01
ECONOMIC			
Reliability in meeting Sydney Water Corporations' Forecast Average Annual water requirements.		Due to mandatory water restrictions, Sydney's water demand fell significantly during this audit period to below the forecast annual average water requirements as detailed in the Licence.	Comparison data since 2000/01.
Operating costs per megalitre of bulk water supplied.		Operating costs per ML/water increased due to the reduced demand in water.	In its draft report, the SCA claimed improvement in this indicator as overall costs have reduced. This approach is not consistent with the intent of the indicator.
Percentage of capital improvement projects on schedule and within budget.		SCA advise that expenditure was below budget, but budget figures were not available in time for consideration in the audit process.	Comparison data for capital improvements and budget provided since 2000/01, although <i>budget</i> for 2003/04 was not available.
Asset value per megalitre of bulk water supplied.		Asset value increased per unit of water supplied due to the dramatic reduction of water supplied.	Comparison of Asset value per megalitre of bulk water supplied since 2000/01
Percentage of operation budget assigned to research and scientific catchment monitoring.		Minor increase since last year	Comparison of percentage of operation budget assigned to research and scientific catchment monitoring only



ESD Indicator	Performance towards sustainability in relation to previous year	Comments	Extent of year to year comparison
			provided for the previous year
Percentage of operating budget assigned for skills development of staff.		Decrease since 2002/03, although it is higher than the 2001/02 year	Comparison of percentage of operating budget assigned for skills development of staff. Since 2000/01

Key:

Improvement on previous year's performance
No change from previous year's performance
Deterioration on previous year's performance

Data on the indicator is not collected by the SCA



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