

NSW strategic water information and monitoring plan

Water inventory and observation networks in New South Wales



IMPORTANT NOTE

During the preparation of this report, the following administrative changes occurred in the New South Wales Government: the Department of Water and Energy (DWE) was abolished and the functions relating to the administration of water legislation transferred to the Office of Water within the Department of Environment, Climate Change and Water (DECCW), previously the Department of Environment and Climate Change (DECC). The energy functions of DWE were transferred to the newly created Industry and Investment NSW, previously the Department of Primary Industries (DPI). References throughout this report are to the former agencies.

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NSW Office of Water
Level 17, 227 Elizabeth Street
GPO Box 3889
Sydney NSW 2001
T 02 8281 7777 **F** 02 8281 7799
information@water.nsw.gov.au
www.water.nsw.gov.au

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Water inventory and observation networks

Background

This report is a detailed component of the NSW State Water Monitoring Plan (the 'SWIMP'). The SWIMP is a key deliverable for the Bureau of Meteorology's *Modernisation and Extension of Hydrologic Monitoring Program* (M&E Program) of 2008-09. The SWIMP is written in four sections and provides a detailed description of water monitoring activities in NSW rivers, lakes, aquifers and coastal estuaries to support water resources planning and environmental protection.

Section A identifies the important water information drivers for NSW. These underpin the strategic and operational issues and challenges facing water managers in this State.

Section B provides significant detail on the NSW data collection networks and management systems. Descriptions are included of the monitoring network policies that ensure the networks are cost efficient, effective and appropriate for the State's needs.

Section B also includes the *Inventory*. The Inventory is a collation of monitoring network *metadata* provided by key water monitoring agencies. It describes 97 per cent of the surface water and groundwater data being collected in NSW.

Section C describes a *data gaps analysis* of strategically important water monitoring activities. It links the data gaps with the State's *information drivers* and proposed *actions* to address the gaps.

Section D is a strategic overview of the key areas for investment in water monitoring. This section of the report brings together the outcomes of Sections A, B and C, and leads to a list of prioritised actions for which Bureau backing is sought. These actions have been developed into projects by the various water agencies and organisations in NSW and submitted as Funding Applications under the M&E Program 2009.

Because of the amount of detail in Section B, this report has been prepared and presented as a separate report *Water inventory and observation networks in New South Wales*. This report outlines existing water information-related monitoring systems, database infrastructure and water information transfer processes including:

- sites where data is collected
- type of telemetry equipment (if any) at each site
- frequency of measurement/downloading at each site (time series, daily, etc.)
- parameters collected at each site
- length of data record at each site
- indicative data quality standards
- other non-site-specific monitoring activities (e.g. remote sensing etc.)
- how storage of the information occurs within the jurisdiction
- the data transfer processes in place between agencies.

Introduction

Under the Modernisation and Extension of Hydrologic Monitoring Systems Programme, the Bureau of Meteorology (the Bureau) required each State and Territory to develop a State Water Monitoring Information Plan (SWIMP). To support the development of the SWIMP the Bureau funded Strategic Water Information Coordinators (SWICs) in all States and the Northern Territory. The SWICs were engaged to assist the lead water agency in each state to develop a Strategic Water Information and Monitoring Plan (SWIMP) for their jurisdiction.

The Bureau required consistency in the information provided, and specified that the SWIMP should:

1. Document the jurisdiction's existing water information-related monitoring systems, database infrastructure and information transfer processes
2. Provide a gap analysis of what is currently in place and what is required in the jurisdiction in the future to meet the requirement for annual water accounts, water resource assessments, flood warning and long-term water prediction services.
The strategy should also highlight information outcomes to deliver improved water resource management and/or flood forecasting, and to inform policy decisions. It should specifically note opportunities to contribute to regional water sharing plans, the Murray-Darling Basin Plan and the National Water Initiative reform process. Where applicable, it should also refer to the CSIRO Sustainable Yield Project, particularly with regard to areas where deficient monitoring is a source of notable uncertainty in the CSIRO study.
3. Include a strategy for improvement of the jurisdiction's water information network to meet the identified needs. This strategy will be a key input to jurisdictional-based applications in future rounds of the Bureau's Modernisation and Extension of Hydrologic Monitoring Systems Programme.

This report focuses only on existing water information-related monitoring systems, database infrastructure and information transfer processes. A summary is presented in the SWIMP, but this report provides detailed information in two sections, Water Data in NSW and Monitoring Inventory. The first section outlines water monitoring activities while the second section describes monitoring systems in NSW. Appendix one is a sample of the detailed water inventory data that was sent to the Bureau.

Water data in NSW

Within NSW, it has been estimated that over 97 per cent of the water monitoring and data management activities are undertaken by eight State agencies plus the Bureau of Meteorology NSW (Flood Forecasting Division). A further approximately three per cent of water information is collected by Local Government Organisations and the Catchment Management Authorities. The local government data is mainly data collected for the Bureau's NSW flood forecasting activities. In a similar way, Catchment Management Authorities (CMAs) collect water data for the NSW Department of Environment and Climate Change (DECC) State Monitoring and Environmental Reporting Program. The remaining water data is held by companies, trusts, corporations and others both private and public.

Under the *Commonwealth Water Act 2007*, the *Water Regulations 2008* identify 77 organisations or groups in NSW who must provide specified water information to the Bureau as well as the time and format in which it is to be given. In order to develop a complete water data picture, the Regulations do not focus on only the large data managers, but require even the small data holders to transfer their water data to the Bureau.

For the NSW SWIMP it was efficient to focus initially on the organisations that hold the most data, and then incorporate the others. This report therefore focuses only on the larger data manager and it is anticipated that future updates will be more comprehensive.

The following eight principal organisations collect, hold and manage up to 97 per cent of NSW's water information:

- Department of Water and Energy, NSW
- Department of Environment and Climate Change, NSW
- Department of Primary Industries, NSW
- Department of Commerce Manly Hydraulics Laboratory (MHL), NSW
- Hunter Water, NSW
- Sydney Catchment Authority, NSW
- Sydney Water Corporation (Sydney Water), NSW
- State Water Corporation (State Water), NSW
- Bureau of Meteorology NSW – Flood Forecasting Branch

These agencies are the major water monitoring organisations in the state and were contacted by the NSW SWIC to provide information on their monitoring activities. The information they provided is summarised below. There is also a brief description of the water data held by other organisations and groups that influence water management in NSW:

- Catchment management authorities
- Federal agencies including the National Capital Authority, Murray-Darling Basin Commission and Murray-Darling Basin Authority
- Bureau of Meteorology Flood Forecasting, NSW
- Private companies
- Local Government Organisations (councils)
- Department of Water and Energy

The Department of Water and Energy (DWE) was established in April 2007 to coordinate water and energy management in NSW under one cohesive agency. It has been nominated by the Bureau as the NSW lead agency for the Modernisation and Extension of Hydrologic Monitoring Systems Programme.

DWE incorporates most of the functions of the former Department of Energy, Utilities and Sustainability; the water-related functions of the former Department of Natural Resources; and the Metropolitan Water Directorate of the former NSW Cabinet Office.

DWE provides policy, legislative, regulatory, technical and management advice concerning water and energy matters to the NSW Ministers for Water and for Energy. In addition to its advisory role, DWE carries out regulatory and enforcement functions in both water and energy.

The Department is a general government budget-dependent agency working with water management, energy and urban water industries; Commonwealth and other State government agencies; business, environmental and consumer groups; and other stakeholders towards achievement of the following results:

Water management

- Secure and sustainable allocation of water between communities, industry, farmers and the environment.

Urban water utilities

- Reliable and sustainable urban water supplies and well-managed, efficient and equitable services across NSW.

Energy supply and use

- Reliable and sustainable energy supplies, safe and efficient energy services and a robust consumer protection framework, including support for vulnerable customers.

Key services provided by DWE that contribute to achieving these results include:

Water management

- Liaising with other States and the Commonwealth to ensure the interests of NSW are protected in interstate water sharing arrangements.
- Preparing statutory plans to share water between users and the environment
- Administering water licences and approvals, assessing resource availability, allocating available water to licensees, monitoring compliance and, where necessary, taking appropriate enforcement action.
- Developing and implementing water trading rules to support effective market operation.
- Advising on plans and strategies for the protection and enhancement of watercourses, riparian corridors and groundwater dependent ecosystems.
- Monitoring and evaluating water resource quantity and quality, and associated ecosystems.

Urban water utilities

- Planning and policy development for urban water industries
- Coordination and review of the Metropolitan Water Plan
- Facilitating water recycling across NSW
- Leadership, guidance and technical assistance in best-practice management, operation and maintenance for non-metropolitan urban water utilities
- Overseeing and monitoring local water utility performance
- Funding and technical advice for backlog water and sewerage infrastructure and emergency drought assistance.

Energy supply and use

- Promoting and maintaining competition in energy supply markets
- Development of national energy market frameworks in partnership with other States
- Electricity and gas network monitoring
- Licensed pipeline regulation and performance monitoring
- Provision of advice to the Government on greenhouse and low emission generation technologies and policies
- Implementation of consumer protection policies for residential and small business energy customers
- Administration and oversight of energy rebate programs
- Developing and implementing nationally consistent state-level planning, preparation, response and recovery policy and plans for electricity, natural gas, liquid fuels and metropolitan water supply disruptions in NSW.

Monitoring activities

To undertake its water management responsibilities, DWE operates the largest water monitoring system in Australia. In almost all areas, including number of locations, geographical coverage of operations, diversity of water monitoring activities, and number of clients that use water data, DWE is the largest or second largest service provider. To support its water management functions, DWE has maintained networks of monitoring installations, both groundwater and surface water, aimed at measuring the resource and the distribution of surface and sub-surface water within the state.

DWE is responsible for water monitoring programs in both coastal and inland areas of NSW. It operates the monitoring program above the tidal limit, and program activities below the tidal limit are contracted out. The water monitoring programs operated by DWE involve:

- Surface Water (SW) – typically water level, flow and quality
- Groundwater (GW) – water level and quality
- Water Quality (WQ) – includes both continuous data and grab (discrete) samples
- Aquatic Biota – indicators for environmental flow and river/wetland health assessment
- Metering – water usage.
- Access and Compliance – condition setting and compliance monitoring of water extractions.

Data is collected by hydrographic personnel or relayed through telecommunications networks to the regional offices where it is processed and stored onto the corporate HYDSTRA and delivered to clients through a range of channels including the Internet. The data relayed through communications networks are processed automatically in near real-time and updated to the Internet. In the case of some radio systems (such as the Hunter Integrated Telemetry System), real-time data is available online within minutes. This data is known as operational data and is tagged as not being checked nor verified, nor has it gone through the standard hydrographic rigour of analysis and quality coding per the Australian Standard (AS) 9001 series quality assured hydrographic procedures. The streamflow data that is collected during the field visits is merged with the historical stage discharge information to determine whether there has been a change in the calibration characteristics at the specific installation site (e.g. change in the streambed and/or vegetation growth). If a change in either the stream profile or in vegetation variances is seen to have occurred, a new operational stage discharge relationship will be developed for use by the near real-time users.

The data collected by hydrographic personnel through field visits and calibration checks is the same dataset but goes through the rigor of determining its relative accuracy per DWE and Australian Standards (AS 3778) and accordingly quality coded and archived into the historical database. This dataset may vary to the operational data as much more data or evidence has been gathered to better represent what the system is doing. There is also a lag time of up to several years for this process to happen.

The challenges for DWE and its monitoring services are very similar.

- There are increasing demands on water and the need for more precise and timely information on both quality and quantity information.
- There are the concerns that the government's money is used effectively and that water data programs and the provision of hydrographic services must compete against other short-term issues.
- There are the needs to demonstrate the value of water resources information and the need to collate the information collected prior to the emergence of current problems.
- There are the needs to integrate the many separate projects that make up most existing water resource programs to be able to provide an integrated and holistic view of the catchment and its responses.
- There are the challenges of information transfer between a range of internal, external and often interstate authorities.
- There is an increasing need to provide 'real-time' data to operational personnel and increasingly, to a much wider audience.

Department of Environment and Climate Change

The Department of Environment and Climate Change (DECC) is the NSW Government agency responsible for developing, coordinating and delivering policy and programs to deal with environmental, climate change, sustainability, natural resource and cultural heritage issues in NSW.

The Scientific Services Division within DECC undertakes scientific research, investigation, monitoring, analysis, evaluation and reporting on a wide range of natural resource and environmental issues. This helps DECC achieve its corporate goals and responsibilities based on the best available scientific information.

Broadly, the Scientific Services Division has the following functions:

- Provides information and technical support to the other Divisions of DECC, Catchment Management Authorities and other clients.
- Undertakes long-term research to improve knowledge.
- Develops expertise to address immediate priorities.
- Provides links between environment protection and resource management through improved knowledge of catchment processes.
- Develops information management systems to enable multiple uses for departmental data.
- Gathers information to map and assess changes in environmental attributes.
- Assesses the impacts of contaminants on the environment.

Monitoring evaluation and reporting

The NSW Government adopted 13 targets (developed by the Natural Resources Commission in September 2005) to maintain or improve the condition and trend of the State's biodiversity, water, land and community assets. These targets are now a priority in the NSW State Plan.

In August 2006, NSW Cabinet adopted the NSW Natural Resources Monitoring, Evaluation and Reporting (MER) Strategy. The Strategy announced a NSW Monitoring, Evaluation and Reporting Program that would collect data on state-wide resource condition of the assets covered by the 13 targets and the pressures on those assets. The Program is to report at both the CMA regional scale through the production of 13 State of the Catchment (SoC) reports and at the NSW state scale through state-wide assessments published in the NSW State of the Environment (SoE) Report. The SoC reports are designed to provide a science-based analysis of natural resource condition and pressures that will assist CMAs in revising their Catchment Action Plans and refocus their Natural Resource Investment Strategies.

To meet the requirements of the MER Strategy, NSW Natural Resource Agencies have reprioritised their resources to accommodate the MER Program. Additional start-up money has also been made available through the Joint Steering Committee for NAP/NHT2.

There is a statutory obligation to publish the next NSW SoE Report at the end of 2009. It will contain the state-wide assessments based on MER data.

In December 2008, draft SoC reports were submitted for each target for all 13 CMAs in the State:

- Native vegetation (led by DECC)
- Native fauna (led by DECC)
- Threatened species (led by DECC)
- Invasive species (led by DPI)
- Riverine ecosystems (led by DWE)
- Groundwater dependent ecosystems (led by DWE)
- Wetlands (led by DECC)
- Estuaries and coastal lakes (led by DECC)
- Marine waters (led by DPI)
- Soil condition (led by DECC)
- Land capability (led by DECC)
- Economic sustainability and social wellbeing (led by DPI)
- Natural resource manager capacity (led by DECC)

The draft SoC reports are now with the Natural Resource and Environment CEO Cluster group, the Natural Resources Commission and the 13 CMAs for review. They will be published later in 2009.

DECC – Coastal and floodplain programs

DECC works closely with local councils, CMAs and communities across the state to ensure the long-term protection, conservation and restoration of coastal, estuarine and floodplain environments by reducing the risks posed by coastal hazards such as extreme tides, sea level rise and floods.

The Coastal and Floodplains Programs Branch of DECC is responsible for the management of the NSW Coastal Environmental Data Network. The provision of coastal/estuary data collection services covering eastern NSW is currently defined in an annual contract between DECC and the Department of Commerce, Manly Hydraulics Laboratory. For historical reasons, environmental data collection west of the Great Dividing Range is undertaken by DWE's Hydrographic Unit, while east of the range in the coastal zone, this function is a DECC responsibility via an annual performance-based contract.

The data collected is primarily used by DECC to underpin the delivery of the floodplain management, coastal management and estuary management programs. The data program aims to minimise risk to life and property due to natural hazards (storm and flood) in the coastal zone of NSW. The real-time data is used extensively by the Bureau, SES and local councils to generate emergency warnings and delivery of services during extreme events.

The historical data archive is used in natural disaster mitigation investigations, environmental studies and to develop land use planning instruments as well as coastal, estuary and floodplain management plans and design. The data network is used to monitor long-term changes in flooding, wave and tidal characteristics because of climate change and associated sea level rise.

The NSW Coastal Environmental Data Network is used for a wide range of purposes. These include:

- predicting tides and storm surges
- monitoring sea level rise
- monitoring of wave heights
- monitoring of river heights
- flood warnings and flood studies
- coastal hazard definition and erosion studies
- estuarine hydrodynamic and water quality modelling
- SoE reporting
- monitoring long-term trends (including climate change) in flooding, wave and tidal characteristics
- determination of Mean High Water Mark used in property definition.

The current network provides data capture, installation, operation and maintenance of 235 river and estuary water level recorders, 72 rain gauges, 17 ocean tide gauges, and four offshore tide and storm surge and seven deep water wave rider buoys. The current performance of the water level network is achieving 99 per cent data recovery. Information is freely made available on the Internet with the database currently servicing over 1,000,000 requests annually.

DECC and MHL are listed in the Regulations (under the *2007 Water Act*) as water data suppliers under Category B and Category H (Flood Warning). MHL currently supplies the Bureau with an extensive amount of near real-time flood warning, severe weather warning and storm surge data in the required format.

Department of Primary Industries

The NSW Department of Primary Industries (DPI) acts in partnership with industry and other public sector organisations to foster profitable and sustainable development of primary industries in NSW.

With a staff of 3500 based at over 130 locations across the state, the department delivers a wide range of services to primary industries and rural communities. There is an emphasis on front-line services.

NSW DPI was formed in July 2004 with the amalgamation of Mineral Resources NSW, NSW Agriculture, NSW Fisheries and State Forests NSW.

All aspects of primary industries are critically dependent on access to and use of water:

- Production levels from both rain-fed and irrigated agricultural and forestry enterprises are directly correlated to the volume of water available to the crops and how efficiently it is used.
- The health and productivity of aquatic ecosystems, including fish, are dependent on total river flows, flow variability and water quality. The health of the catchment environment can be affected by the volume and pattern of overbank flows as well as rainfall and evaporation.
- The coastal marine environment and therefore our coastal fisheries are affected by the quality and volumes of water arising from catchment flows.
- Water is essential to maintain mining operations, and wastewater from mining operations must be handled in a way that minimises impacts on the environment.

NSW DPI provides information and supporting research findings to primary industries to encourage efficient and effective use of water and protection of aquatic ecosystems. It also manages some key legislation concerning fish. The water activities of NSW DPI are often focused at the farm-to-paddock scale. These functions set NSW DPI apart from other natural resource management agencies, which are primarily focused on the larger catchment scale and the use of regulatory approaches.

NSW DPI collects water information to allow efficient use of water, better management of water losses, maximising returns from available water and water quality issues are addressed. DPI also leads research to ensure the impact of land use at the point scale on water is understood, and that recommendations and policy to support new land management systems are based on this knowledge. NSW DPI has statutory responsibility for the management of areas that affect and/or are influenced by (either directly or indirectly) water quality and quantity.

NSW DPI (Mineral Resources) is responsible for water issues as part of the impact assessment of certain activities including exploration and underground mining. Operational focuses include maintaining water quality and quantity for surface and groundwater. For surface mining operations, expertise is focused on rehabilitation. NSW DPI will maintain the role of assessing the impacts of underground mining until the end of 2010 when companies are required to have approval under Part 3A or development consent under Part 4 of the *Environmental Planning and Assessment Act 1979*.

From a fisheries ecosystems perspective, these functions include aquatic habitat protection and rehabilitation, threatened species conservation, management of commercial and recreational fisheries and aquaculture. Key areas of interest include maintaining or improving sustainable flow regimes for aquatic habitats and fisheries resources, including threatened species, in order to maintain or improve aquatic ecosystem health.

Forests NSW is a division of NSW DPI and a public trading enterprise. It is required to monitor and manage water quality to comply with obligations under the Integrated Forestry Operations Approvals. Forests NSW expertise includes water quality monitoring and understanding of the water needs of native forestry (particularly flooding forest types). NSW DPI (both the Forests NSW and Science and Research Divisions) is also involved in projects that monitor plantation usage of water.

From an agriculture perspective, there is no statutory responsibility specifically related to water management. Instead, expertise is focused on applied research, education and training in areas such as improved crops requiring less watering; greater water-use efficiency; recycling and reuse of wastewater; and reduction of salinisation, waterlogging and polluted accessions to surface and groundwater sources.

Water monitoring

Most major rivers in NSW have at least part of their headwaters in NSW state forests. From these forests comes water that is used for town and rural water supplies. Forests filter rainwater and runoff entering watercourses, ensuring good water quality.

Forests NSW has been conducting hydrology research projects for more than 25 years, investigating the impacts of forest management activities on both water quality and quantity. At present Forests NSW operates more than 35 stream gauging and water quality monitoring stations in a number of state forest regions, including North East, Mid North Coast, Hunter, South East, Hume and Macquarie regions in catchments that are between 0.1 and 45 km² in area.

Stage is measured at these stations with a combination of optical shaft encoders and pressure transducers, all upgraded to either Druck pressure transducers or Unidata shaft encoders as a result of the first round of the Bureau's funding. All field data is recorded on dataloggers, which are in the process of being upgraded to Campbell CR800 loggers with Bureau funding. At this stage, all loggers are downloaded at site in the field as none have installed telemetry.

Additionally, Forests NSW operates turbidity probes at its gauging stations. At most sites, stage-activated water samplers (Isco and Gamet) are used to collect water samples for laboratory analysis of turbidity and suspended sediment concentration. Manual storage rain gauges are situated within the majority of catchments that are monitored and supplemented by a smaller number of tipping bucket pluviometers.

All of Forests NSW water information is held within a Hydstra database. Forests NSW has a licence for both the Time Series and Water Quality modules within Hydstra. It has been successfully using the HyBoMexp program since November 2008 for sending the required data to the Bureau via its FTP site.

Weather stations

There are weather stations located at 17 DPI research stations around NSW, some manual, some automatic, and sometimes both. There are various combinations of data being automatically or manually fed into the Bureau, or not linked at all. Five are directly linked to the Bureau's database (Gosford, Grafton, Trangie, Tocal and Yanco) with a further six being manually downloaded to the Bureau. Data collected usually depends on research needs at the site or is based on some community or historical need. The reading can be once or twice daily (0900 and possibly 1500). On most stations, the process is labour intensive and takes a trained operator up to an hour per day, seven days a week. Storage and use of data varies site-to-site.

Six new automatic weather stations have been installed over the past five years and data downloads from these stations via GSM modems is currently a 'manual' operation.

Monitoring impact of land use on water in upland catchments

NSW DPI has a network of 10 highly instrumented upland dryland catchments in NSW, in which components of the water balance are being measured from Wagga Wagga in the south to Quirindi in the North. The project addresses the need for long-term high quality and high resolution hydrological data. The sites are all well described and measurements are being taken at strategic locations within the catchments for up to 15 years.

Traditional hydrology methods are used to monitor soil water with automatic loggers and neutron probes, evapotranspiration by Bowen ratio instrumentation, piezometers for groundwater levels and Electrical Conductivity (EC), stream gauging for streamflow and EC, and climate station. The data is collected by automated dataloggers and manual sampling, especially important for calibration procedures that guarantee data quality and comparability across a range of sites. The data is quality assessed and collated into common datasets and analysed and reported by a small team of research hydrologists with specialised expertise.

In addition to the areas above where NSW DPI is currently registered as a provider of water data with the Bureau, NSW DPI has been collecting water quality and drainage volume data at research sites on farms with coastal acid sulphate soils. The aim of this water monitoring has been to evaluate the effectiveness of management practices to reduce downstream acid export and water de-oxygenation. This research has provided some of the most detailed data of acid drainage processes of any site in Australia. Currently, this monitoring has been suspended due to completion of research grants. However, NSW DPI has considerable skill and investment in equipment to employ in relation to acid drainage monitoring. There is currently a gap in knowledge of water quality processes associated with strategies that aim to retain excess water in wetlands for grazing.

Department of Commerce

MHL (a business unit within the NSW Department of Commerce) works with a range of NSW Government agencies, councils and private organisations to deliver a range of coastal environmental monitoring solutions. Its primary customer is the Coastal and Floodplain group within DECC.

Areas of expertise include:

- investigation of oceanographic, coastal, estuarine and riverine processes
- environmental and water quality studies, data acquisition and field surveys
- design and testing of water engineering structures and equipment
- development and operation of physical and numerical models.

MHL manages and operates the NSW coastal environmental data programs as a service agency for DECC. It also operates a number of monitoring sites for coastal councils and for the Sydney Catchment Authority (SCA). In this capacity, it does not own any of these sites.

Hunter Water Corporation

Hunter Water Corporation (HWC) is a State-owned and provides water and wastewater services for over half a million people in the lower Hunter region. There are 220,600 properties connected to the water network and 208,660 to the wastewater network.

HWC's area of operation covers 5366 km² with a population of 517,273. It includes the local government areas of Cessnock, Lake Macquarie, Maitland, Newcastle, Port Stephens, Dungog and small parts of Singleton.

Figure 1: Map of Newcastle area showing area of operation, major urban areas and major water sources



Bulk water is also supplied to small parts of the Great Lakes area. There is capacity to supply up to 35 megalitres (ML) of water per day to the Central Coast. HWC also provides some stormwater services to the lower Hunter, with 100 km of stormwater channels in Cessnock, Newcastle and Lake Macquarie.

HWC delivers an average 205 ML of water per day with the raw water sources being:

- Grahamstown Dam (190,000 ML capacity)
- Chichester Dam (21,500 ML)
- Tomago Sandbeds (60,000 ML)
- Anna Bay Sandbeds (16,000 ML).

Sydney Catchment Authority

The Sydney Catchment Authority (SCA) is a NSW Government agency created in 1999. The SCA manages and protects Sydney's drinking water catchments and catchment infrastructure, and supplies bulk water to its customers, including Sydney Water and a number of local councils.

The SCA's objectives are to:

- manage and protect the catchment area and catchment infrastructure to promote water quality
- protect public health and safety, and the environment
- ensure that the water it supplies is of appropriate quality
- operate according to the principles of ecologically sustainable development
- efficiently and economically manage catchment infrastructure works.

The SCA's customers then filter the water the SCA supplies and distribute it to households, businesses and other users. More than four million people, about 60 per cent of the NSW population, use water supplied by the SCA.

Water monitoring

As part of its water quality monitoring duties, the SCA works to ensure that water in the catchments and entering the storages meets or exceeds agreed standards. Of particular concern are algae, microorganisms and bacteria as well as the nutrients that promote their growth. Heavy metals from current and disused mining sites are also monitored. To do this, the SCA operates an extensive water quality and quantity monitoring network as part of its catchment and storage management programs, and for customer quality assurance and public health reporting. In addition to routine monitoring, special programs now deal with protozoa and incidents, such as oil spills. SCA also monitors for pesticides and blue-green algae.

Monitoring for the protozoan parasites *Cryptosporidium* and *Giardia* is carried out daily at Warragamba Dam and Broughton's Pass Weir, twice per week in Prospect Reservoir, weekly in Wingecarribee Dam and Werriberri Creek (the nearest inflow to Warragamba Dam), and monthly in the Wollondilly River. Automatic samplers test for protozoa during storm events at seven locations on inflows to Warragamba Dam. The SCA has introduced 'hotspot' protozoa monitoring at targeted sites around the catchments, such as below sewage treatment plants, sale yards and piggeries. Following recommendations of the 1998 Sydney Water Inquiry, additional protozoa testing to complement the existing regime is carried out by an independent laboratory.

The SCA has developed contingency and emergency response plans to deal with incidents such as suspected or actual pollution, major floods or any water quality problems. The SCA is also continuously increasing its scientific knowledge of the behaviour of water in its dams and storages. This ensures that only the highest quality water is drawn off for supply to customers.

Sydney Water

Sydney Water provides drinking water, recycled water, wastewater services and some stormwater services to more than four million people in Sydney, Illawarra and the Blue Mountains. Drinking water is sourced from a network of dams managed by the Sydney Catchment Authority, then treated and delivered to customers' homes and businesses by Sydney Water.

Sydney Water is Australia's largest water utility with over 3,200 staff and an area of operations covering 12,700 km².

Water monitoring

Sydney Water's Five-Year Drinking Water Quality Management Plan 2005-2010, developed in September 2005, was endorsed by NSW Health on 29 November that year.

This Plan provides a framework to ensure the continued supply of safe drinking water in Sydney, Illawarra and the Blue Mountains. It also ensures that Sydney Water is well positioned to effectively deal with and manage emerging water quality issues that could affect the water industry.

The Five-Year Plan is a component of Sydney Water's long-term strategy for sustainable water, wastewater and stormwater services.

Sydney Water and the SCA, with the support of an independent expert panel and endorsement by NSW Health, have modified the monitoring program in the following ways:

- Under the SCA's 'hot spot' monitoring program, more monitoring in the catchments at points where there are greater risks of contamination.
- Continuous monitoring of other water quality characteristics that can provide early indication of the presence of *Cryptosporidium* and *Giardia*.
- 'Event' monitoring on sites leading into Lake Burragorang during storms or other events that cause a rise in streamwater levels and could influence water quality.
- Continuation of monitoring of treated water for *Cryptosporidium* and *Giardia* at Warragamba, Orchard Hills and Prospect Water Filtration Plants, six days per week.

Monitoring Services section delivers Sydney Water's environmental and water monitoring programs and hydrometric services to help Sydney Water achieve its objectives of protecting the environment and public health.

Water information is collected and managed in the following critical areas of Sydney Water.

Hydraulic Systems Services

Hydraulic Systems Services is responsible for the delivery of integrated hydraulic and telemetry operations services of the water and wastewater systems. This includes:

- Operation of the System Operations Centre, which monitors and controls 1,100 of Sydney Water's water assets ranging from dams, reservoirs, river and rain gauging stations, pumping stations, major valves and water quality and pressure monitoring stations in the water reticulation network
- optimisation of the trunk water and wastewater systems operation to achieve least \$/ML cost (including energy management)
- management of monitoring and control systems such as IICATS and SCADA.

Supervisory Control And Data Acquisition (SCADA) allows operators at a central site to remotely monitor and control equipment in the plant.

Sydney Water Corporation (SWC) uses the Integrated, Instrumentation, Control, Automation and Telemetry (IICATS) System for efficiently monitoring and controlling its operating facilities. IICATS is not regarded as an archival system, but rather as a real-time data display system.

The majority of the sewer and rainfall data collected by Sydney Water is stored and managed by the Hydstra system.

Monitoring Services

Monitoring Services role is to deliver approved monitoring programs and to support the delivery of Research and Development projects. It is responsible for sampling, field testing, laboratory analysis, and associated data and information management of Sydney Waters environmental and water monitoring and hydrometric services. It also delivers some external environmental and water monitoring programs, primarily for the Sydney Catchment Authority and local government.

Sydney Water's Monitoring Process Management System (MPMS) is certified to Australian Standard ISO 9001. Analytical and field services are accredited by NATA to ISO 17025 in the fields of biological and chemical testing and sampling. The MPMS is included in Sydney Water's certification under ISO 14001 for its Environmental Management System.

Business Intelligence

Business Intelligence (BI) encompasses a broad range of applications, technologies and processes that support the analysis and interpretation of information to better understand and manage the business. By integrating the data from a variety of Sydney Water's operational applications into one central repository (the Enterprise Data Warehouse), Sydney Water is able to gain better awareness of its assets and business processes. From this awareness comes the ability to incorporate changes that will improve efficiency while minimising risks. BI provides:

- a single, **centralised and trusted source of quality business information** that eliminates the need for individual, unsupported applications that have limited availability and usability
- an **integrated view of the business** so that analysis can be made across functional areas of information
- **self-service from the desktop** so that individuals throughout the business can conduct their own analysis and reporting rather than having to rely on people in other business units
- **more timely information** as the data will be current as at close-of-business on the previous day.

There are four BI projects that have been completed to date. These projects have seen the following information captured in the Enterprise Data Warehouse (EDW):

1. IICATS (**telemetry information** from IICATS including events, alarms, flow rates, water pressure levels).
2. Monitoring (**biological, chemical and other sampling and testing information** from LIMS and other monitoring applications).
3. EKAMS (**effluent sampling and testing information**).
4. Finance (**financial information** from FMIS & AURION).

Environmental monitoring includes all influent into wastewater, stormwater or 're-use' systems; effluent from those systems; and the measure of impacts on receiving environments. Water monitoring includes raw water, treated water and recycled water that is reticulated for residential, commercial or industrial purposes.

Sydney Water has its own purpose-built laboratory. It is one of the leading analytical laboratories in Australia managing a diverse spectrum of analyses and research and development programs.

State Water Corporation

State Water Corporation (SW) is a NSW State-owned corporation. The principal objectives of the Corporation are to capture, store and release water in an efficient, safe and financially responsible manner, with SW core functions being bulk water delivery operations, asset management and customer services. SW owns and operates dams, weirs, land and other assets, and uses natural river channels to supply water to consumptive users, the community and the environment in regional and rural NSW.

SW incorporates all of NSW bulk water delivery functions outside of the areas of operation of the Sydney Catchment Authority, Sydney Water Corporation, Hunter Water Corporation and other water supply authorities. State Water is NSW rural bulk water delivery corporation, annually delivering more than 5,500 gigalitres (GL) of water to regional NSW on average, along 7,000 km of rivers. In accordance with water sharing plans, SW also delivers about 9,000 GL of water for the environment.

SW manages and operates 20 dams and more than 280 weirs and regulators to deliver the water for town water supplies, industry, irrigation, stock and domestic use, riparian and environmental flows. It also monitors water usage, manages customer accounts, and bills and collects bulk water charges.

SW has a workforce of about 350 people operating from 43 offices throughout NSW. Staff work closely with water users and Customer Service Committees to set asset management priorities and improve water delivery efficiencies in regulated river valleys.

State Water has developed an Environment Management Plan (EMP) 2006-2011 that primarily focuses on the land and assets owned and operated by the organisation. Despite SW being closely associated with river management and river health throughout NSW, it does not act unilaterally in water resource management. Various statutory bodies, regulatory authorities and adjoining landholders, both urban and rural, play their part in resource management. SW recognises that broader environmental benefits will be achieved through cooperation between all stakeholders.

SW has identified 11 objectives in their EMP:

1. Improve the instream and riparian environment
2. Monitor water quality in storages
3. Manage storage releases to optimise water quality
4. Improve fish passage at weirs
5. Provide responsible asset management
6. Manage energy consumption and investigate alternative sources
7. Minimise and manage waste
8. Manage and improve the foreshore land environment
9. Protect cultural heritage
10. Undertake effective stakeholder engagement and communication
11. Establish strategic partnerships with CMAs

Several agencies share the responsibility for achieving the outcomes of some of the initiatives outlined in the EMP. These initiatives will be implemented in cooperation with agencies such as DWE, DECC, DPI, Department of Planning (DoP) and CMAs. These initiatives may also be part of another agency's program and have been included in this EMP to ensure effective integration between programs.

Catchment Management Authorities

The Bureau has named all 13 Catchment Management Authorities (CMAs) in NSW:

1. Border Rivers-Gwydir CMA, NSW (Category G)
2. Central West CMA, NSW (Category G)
3. Hawkesbury-Nepean CMA, NSW (Category G)
4. Hunter-Central Rivers CMA, NSW (Category G)
5. Lachlan CMA, NSW (Category G)
6. Lower Murray-Darling CMA, NSW (Category G)
7. Murray CMA, NSW (Category G)
8. Murrumbidgee CMA, NSW (Category G)
9. Namoi CMA, NSW (Category G)
10. Northern Rivers CMA, NSW (Category G)
11. Southern Rivers CMA, NSW (Category G)
12. Sydney Metropolitan CMA, NSW (Category G, Category H)
13. Western CMA, NSW (Category G)

CMAs were established across NSW to ensure that regional communities have a say in how natural resources are managed in their catchments.

Thirteen CMAs are working with farmers, LandCare and other local groups, Aboriginal communities, local government, industry and state agencies to respond to the key natural resource management (NRM) issues facing their catchments.

With direction from a board of local community members, CMAs have prepared and are now implementing their Catchment Action Plans (CAPs) and investment programs. State and federal funding supports projects and activities that help communities restore and improve the natural resources in their catchments.

All this work contributes to achievement of Priority E4 of the NSW State Plan, which aims to better protect and restore the state's native vegetation and biodiversity, land, rivers and coastal waterways. Healthy and resilient natural resources and systems are the basis of our primary industries and tourism and recreation activities as well as providing habitat for our unique native flora and fauna.

The majority of CMAs are not yet actively engaged in water monitoring. DECC and other NSW natural resource agencies provide CMAs with advice, information, scientific expertise and technical assistance in delivering their CAPs.

Federal agencies

There were three federal agencies named in the list for NSW. They are:

1. Murray-Darling Basin Authority, NSW (Category A, Category D)
2. Murray-Darling Basin Commission, NSW (Category A, Category D)
3. National Capital Authority, NSW (Category B, Category D, Category H)

Missing from the list is the Bureau, although it has responded to the request for inventory information and its data is included in this report.

National Capital Authority

The National Capital Authority (NCA) manages the Australian Government's continuing interest in the planning, promotion, enhancement and maintenance of Canberra as the nation's capital, on behalf of all Australians.

The NCA is responsible for Lake Burley Griffin and surrounds as well as the city of Canberra. It is questionable as to whether this should be regarded as a NSW named person.

Lake Burley Griffin is Canberra's centrepiece and a significant number of national institutions and public places are located on or near its shores. The administration of the lake is governed by the Lakes Ordinance 1976. The NCA administers powerboats, moorings, major events, abstraction of water for irrigation, and various other matters associated with use of the lake.

The NCA concentrates on protecting the quality of the water and promoting greater and more diverse use of the lake. Lake Burley Griffin and Scrivener Dam are managed and maintained through service delivery contracts.

Water body, jetties, and other lake infrastructure are routinely cleaned and repaired to ensure safe use and function. The cleaning includes the removal of floating and submerged objects, and hazardous materials such as oil and grease. During the cleaning process, care is taken for the protection of injured birds and animals.

The environmental state of the lake is monitored through physical, chemical, and biological testing of the lake water. These parameters are measured across the lake and analysed to identify any change and, if required, appropriate management responses are proposed. Bacterial levels are monitored weekly in the summer months and analysed and reported in accordance with the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC 2000) via weekly lake reports, which are published online.

A licensing and charging scheme for the abstraction of water for irrigation was introduced on 1 July 2001. This is in accord with the reforms to water management in Australia under the 1994 Council of Australian Governments agreement.

The NCA also administers powerboats, moorings, major events and various other matters associated with use of the lake.

The Authority's fish management program comprises biennial monitoring of the fish population and stocking of the lake with fish of selected species. The objective is to maintain a balanced ecosystem containing native predatory species such as Murray Cod and Golden Perch and a mixed recreational fishery. Over the years, the Authority has stocked with different fish species.

Part of the lake maintenance includes monitoring of the growth of submerged and emergent aquatic plants. Aquatic plants, though serving an important role in the lake's ecology, can interfere with recreational activities. The Authority monitors and controls excessive plant growth in the lake.

Under this program, the excessive growth of plants is controlled by harvesting materials from selected recreational areas such as Yarramundi rowing course, swimming areas, and boat launching and mooring areas. This is normally carried out in early summer months with the harvested weed removed to avoid affecting water quality.

Murray-Darling Basin Commission/Authority

The Murray-Darling Basin covers parts of four States and has a total area of about one million square kilometres of south-eastern Australia, about one-seventh of the whole continent. It is the nation's most important agricultural region and holds many of Australia's most significant natural features.

Half of Australia's cropland, half its sheep, and a quarter of its beef and dairy cattle are in the basin. It also contains three-quarters of the irrigated farmland and produces about 90 per cent of the nation's irrigated field crop value and 70 per cent of the fruit crop. It has a largely arid climate.

Initial efforts to manage and plan the basin go back to 1870. There was no 'federation' of Australia before 1900; each of the six states was a separate entity with sovereign rights to control its own land and water resources.

The most downstream state used the river for extensive navigation while the upper states were increasing the amount of irrigation and wanted to build large dams to regulate what was a very variable flow regime resulting from the arid climate.

More dams and greater river flow regulation meant less water for navigation. To avoid severe conflict it was agreed to establish what was then known as the River Murray Commission, whose task was to regulate and share the waters of the main river in the basin to meet both water conservation and navigation goals. Its role did not, at that stage, extend to all of the river basin, only to the main stem (the River Murray).

Supported by good legislation and a very clear definition of water sharing, it continued this role with very few changes until the 1960s, when severe changes in water quality due to salinity impacts from irrigated areas meant that quality, not just quantity, became a real issue.

A whole range of basin-wide issues were beginning to affect all the rivers of the basin, not just the River Murray. These include:

- Over allocation of available water resources.
- Rising salinity and nutrient levels and blue-green algae blooms.
- Increasing sewage effluent to rivers.
- Severely damaged river ecosystems.
- Declining fish numbers.
- Sedimentation and high river turbidity.
- Land degradation.

At the same time, the National Government decided to introduce a whole range of micro-economic reforms in the service industries (e.g. gas, electricity, water, telecommunications and transport) and the need to change approaches and attitudes to water management became a priority from both a basin and political point of view.

The Murray-Darling Basin Agreement was initially signed by the governments of the Commonwealth, NSW, Victoria, and South Australia in 1987, and revised in 1992. Queensland became a signatory in 1996, with the Australian Capital Territory being added in 1998. There are thus six formal partner governments in the Agreement, with many departments and agencies involved.

The Murray-Darling Basin Commission (MBDC) covered the entire basin with the mandate of policy development, promoting, coordinating and planning for the integrated river basin as well as water resources management for the whole basin. It does not intrude into the operation and direct management of water resource issues within the States, although it has retained its role of providing water shares (and operating two dams) on the River Murray itself.

The Commission was the executive arm of the Murray-Darling Basin Ministerial Council and was responsible for:

- managing the River Murray and the Menindee Lakes system of the lower Darling River
- advising the Ministerial Council on matters related to the use of the water, land and other environmental resources of the Murray-Darling Basin.

The Commission was an autonomous organisation equally responsible to the governments represented on the Ministerial Council as well as to the Council itself. It was neither a government entity nor a statutory body.

The main functions of the Commission, specified in clause 17 of the Murray-Darling Basin Agreement, were to:

- advise the Ministerial Council in relation to the planning, development and management of the basin's natural resources
- assist Council in developing measures for the equitable, efficient and sustainable use of the basin's natural resources
- coordinate the implementation of, or where directed by Council to implement, those measures
- give effect to any policy or decision of the Ministerial Council.

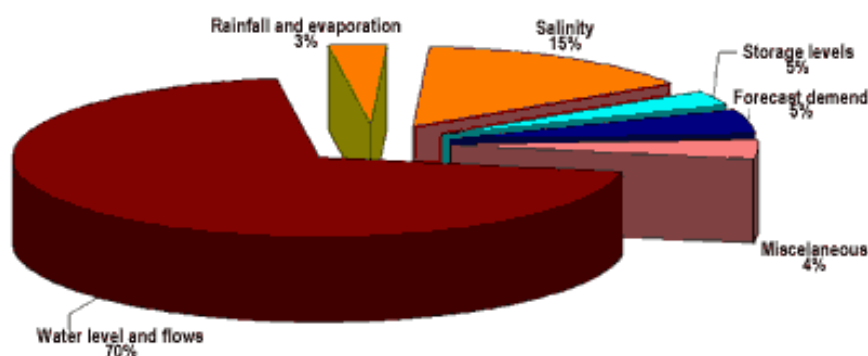
The Commission was also required to equitably and efficiently manage and distribute the water resources of the River Murray in accordance with the Murray-Darling Basin Agreement to obtain the highest achievable quality and efficiency of use of such resources

The primary services provided by River Murray Water are:

- water storage and delivery
- salinity mitigation (operation of salinity mitigation schemes)
- navigation
- recreation and tourism
- other, including hydro-power.

Each day, more than 350 items of data are received from points along the River Murray and tributaries to facilitate operation of the River Murray system. This data comes from agencies in NSW, Victoria and South Australia. The split between various types of data is provided in Figure 1 below.

Figure 2: MDBC data requirements



This data is input to a computer database as well as manually recorded on 'operations sheets'. A computer-based model uses data from the previous few weeks to predict flows at key points along the river system. The model takes into account the time it takes for water to flow between points, the magnitude of diversions of tributary inflows (River Murray Water obtains forecasts from each of the states), irrigation water, 'loss' of water due to evaporation and seepage, and the change in volume of storages and weir pools. The model also estimates future requirements for water.

After consideration of downstream demands, losses and tributary inputs, releases are determined for each major storage to ensure efficient delivery of water to downstream users. Staff at the river structures are then instructed to implement the releases.

These water monitoring activities have been rolled into the new Murray-Darling Basin Authority, the organisational structure of which is still being determined.

Bureau of Meteorology Flood Forecasting, NSW

The primary function of the Hydrological Section's Flood Warning Service Program is the provision of an effective flood forecasting and warning service in each Australian state and territory. This service is provided in cooperation with other government agencies such as state and territory emergency management agencies, water authorities and local councils, coordinated through Flood Warning Consultative Committees and established cooperative working arrangements in each state and territory.

However, the Bureau's Hydrological Services Program is undergoing a major transformation because of the Bureau's expanded water information role. The Australian Government's \$12.9 billion 'Water for the Future' program, announced in April 2008, aims to secure the long-term water supply of all Australians. This investment includes \$450m for the 'Improving Water Information Program' administered by the Bureau, and is backed by the *Commonwealth Water Act 2007*. The functions

within the Hydrological Services Program have been expanded to include a set of new statutory water information responsibilities:

- Issuing national water information standards.
- Collecting and publishing water information.
- Conducting regular national water resources assessments.
- Publishing an annual National Water Account.
- Providing regular water availability forecasts.
- Giving advice on matters relating to water information.
- Enhancing understanding of Australia's water resources.

The previous components of the Hydrological Services Program, the hydro-meteorological advisory service, flood warning services, and water resources assessment, have been incorporated into this broadened water information role.

All components of the Hydrological Services program depend heavily on the basic national meteorological observation networks. The flood forecasting and warning service also operates a special purpose network of rainfall and river level stations in cooperation with state and local government agencies. The amount of data is expected to significantly increase as the Bureau finalises systems to receive water data from various agencies and other sources throughout Australia.

In NSW, real-time rainfall, river and tidal data water information is required to underpin the Bureau's flood forecasting service to 175 specific locations across NSW as well as other warning services. This information is currently published by the Bureau online at <http://www.bom.gov.au/hydro/flood/nsw/>.

Key stakeholders and clients of this data include:

1. Bureau's NSW Flood Warning Centre (NSW FWC).
2. Bureau's Regional Weather Forecasting Centre – severe thunderstorm and severe weather warning services utilise rainfall data. Marine and tsunami warnings rely on MHL tide data.
3. NSW SES.
4. Government agencies, e.g. local councils, RTA, DECC.
5. Recreational users, e.g. canoeists, school groups, campers.
6. Landholders for property access, lifting of pumps, access to water.
7. Boat operators, oyster farmers.
8. Media.
9. Consultants.
10. General public interest.

This list of stakeholders is based on experience and email feedback and is by no means exhaustive.

The NSW Flood Forecasting section operates a number of data collection/collation systems:

1. EnviroMon – collects ALERT radio telemetry data – 40 EnviroMon base stations across NSW.
2. FTP – inter agency data transfer mainly from telephone polled sites.
3. Timestudio – collects data from the Bureau's telephone telemetry rain stations.

Table 1: NSW Flood Warning Network

SYSTEM/agency	Rain	River
ENVIROMON ALERT DATA – Bureau and Councils	305	198
FTP – Sydney Catchment Authority	34	16
FTP – ACT Ecowise	28	30
FTP – Hunter Integrated Telemetry System	12	58
FTP – Manly Hydraulics Lab.	61	150
FTP – Department of Water and Energy	85	389
TIMESTUDIO – Bureau	116	
Totals	641	841

Additional rainfall data is collected in real-time from 109 Bureau owned automatic weather stations. The distribution of all these rain and river stations can be viewed online at <http://www.bom.gov.au/hydro/flood/nsw/>.

Private companies

The Bureau has named nine private companies/corporations in their list for NSW.

1. Country Water, NSW (Category D)
2. Country Energy, NSW (Category F)
3. Delta Electricity, NSW (Category D)
4. Eraring Energy, NSW (Category C, Category D)
5. Macquarie Generation, NSW (Category D)
6. Coleambally Irrigation Co-operative Limited, NSW (Category E)
7. Murray Irrigation Limited, NSW (Category E)
8. Murrumbidgee Irrigation Limited, NSW (Category E)

Conspicuous by their omission from the list of named persons in the private category are Snowy Hydro and Ecovise (as the agent for ACT power and water, which operates a number of sites in NSW) as well as a number of mining companies that are known to operate (or at least have operated for them) monitoring systems in the state.

Energy companies

This group generally encompasses those companies that operate their own power stations. Significant amounts of water are required for cooling towers, etc. and these companies have a stake in knowledge about water availability.

Most members of this group use external agencies to operate their monitoring activities.

Country Water

Country Water is part of Country Energy's Networks & Infrastructure division and provides water supply services to over 20,000 homes, businesses and industries in Broken Hill, Menindee, Sunset Strip and Silverton. In addition, sewerage services are provided to Broken Hill.

The service area is the most arid in the state and experiences extreme climatic variations including more frequent drought than coastal areas. For eight years out of 10, town water supply is dependent on water sourced from the Darling River and pumped over 120 km of pipeline to Broken Hill. These unique operational circumstances combined with drought conditions cause salinity and other water quality problems in the raw water that Country Water must treat.

Country Water is an end water user and is licensed to extract 10 GL of water per year from the Menindee Lakes Scheme, on the Darling River. There are three other sources of water. These are managed by Country Water:

- Stephen's Creek – capacity 19,000 ML
- Umberumberka – capacity 8,000 ML
- Imperial Lake (emergency water supply) – capacity 600 ML.

These act as stores for water from rainfall over the local catchment area. Stephens Creek also acts as a terminal storage for water from the Menindee Lakes Scheme before it is pumped to Mica Street Treatment Plant. The reservoirs supply 30-90 per cent of annual water needs. This is highly variable dependent on the level of rainfall received in the local catchment area, and can be critical in times of drought.

Country Water operates:

- eleven water service tanks
- two reservoirs (Stephens Creek Reservoir, Umberumberka Reservoir)
- one emergency dam supply (Imperial Lake)
- seven water pumping stations
- two water treatment plants
- 577 km of water and sewer mains
- two sewerage treatment plants
- eleven sewerage pumping stations.

The average daily water consumption ranges from about 10 ML/day in winter to 30 ML/day in summer.

Irrigation companies

Irrigation infrastructure services in NSW are provided by over 1,000 operators (all private entities) and tend to be organised in one of the following ways:

- Irrigation corporations.
- Private irrigation districts.
- Private water trusts.
- Joint water supply authorities.

Schedule 1 of the *Water Management Act 2000* (NSW), lists NSW irrigation corporations as follows:

- Coleambally Irrigation Limited
- Jemalong Irrigation Limited
- Western Murray Irrigation Limited
- Murray Irrigation Limited
- Murrumbidgee Irrigation Limited.

There are two other irrigation corporations that were not named: Jemalong and Western Murray.

Schedule 1 of the *Water Management Act 2000* (NSW), lists the following Private Irrigation Districts:

- Buddah Lake Irrigators Association
- Eagle Creek Pumping Syndicate
- Hay Private Irrigation District
- Moira Private Irrigation District
- West Corugan Private Irrigation District
- The Narromine Irrigation Board of Management.

There are also a number of Private irrigation Districts (PIDs) of varying size. Some may have only two or three members while others may have more than 20 or 30. These private irrigation districts are defined by Section 140 of the *Water Management Act 2000* (NSW) as 'a private water supply district or a private water supply and irrigation district constituted under Division 2'.

PID operations are governed by the conditions on their water access licence, works and use approvals issued by DWE. (Note: these private irrigators order their water from State Water, which manages their water accounts and bills them).

Schedule 1 of the *Water Management Act 2000* (NSW), lists NSW Private Water Trusts (PWTs) as follows:

- Bama Irrigation Trust
- Brangan Irrigation Trust
- Bullatale Creek Waters Trust
- Bungunyah Koraleigh Irrigation Trust
- Glenview Irrigation Trust
- Goodnight Irrigation Trust
- Little Merran Creek Water Trust
- Pomona Irrigation Trust
- West Cadell Irrigation Trust

Section 221 of the *Water Management Act 2000* (NSW) defines a PWT as 'a trust constituted under Part 3 of the former *Water Act 1912* (NSW). Private trusts may be formed by landholders with three or more holdings upon lodgement of a petition with the Minister'. There is little difference between the Districts and the Trusts. They are constituted under different parts and provisions of the legislation and as far as delivery is concerned, they have few differences. Basically, a PID is a registered company with a Board, and a PWT is a registered Trust that is run by the Trustees.

Joint Water Authorities were issued under the *Water Act 1912* primarily to facilitate supply of water to multiple properties through a jointly operated supply work(s). They are held by two or more parties. Some Authorities related to over 200 properties.

Authorities specify a total entitlement, location and type of jointly operated works, water use purpose (e.g. high security, general security, stock and domestic) and conditions for operating works and using water. Each holder's entitlement is expressed in the Authority conditions in terms of volume (ML) and purpose. Supply and delivery of water within the scheme is subject to private treaty arrangements between the members.

There are still 245 joint water supply schemes under the *Water Act 1912*. They account for 259,758ML of entitlement in regulated water sources, 93,163ML of entitlement in unregulated rivers and 4,929 of domestic and stock entitlement.

Irrigation corporations

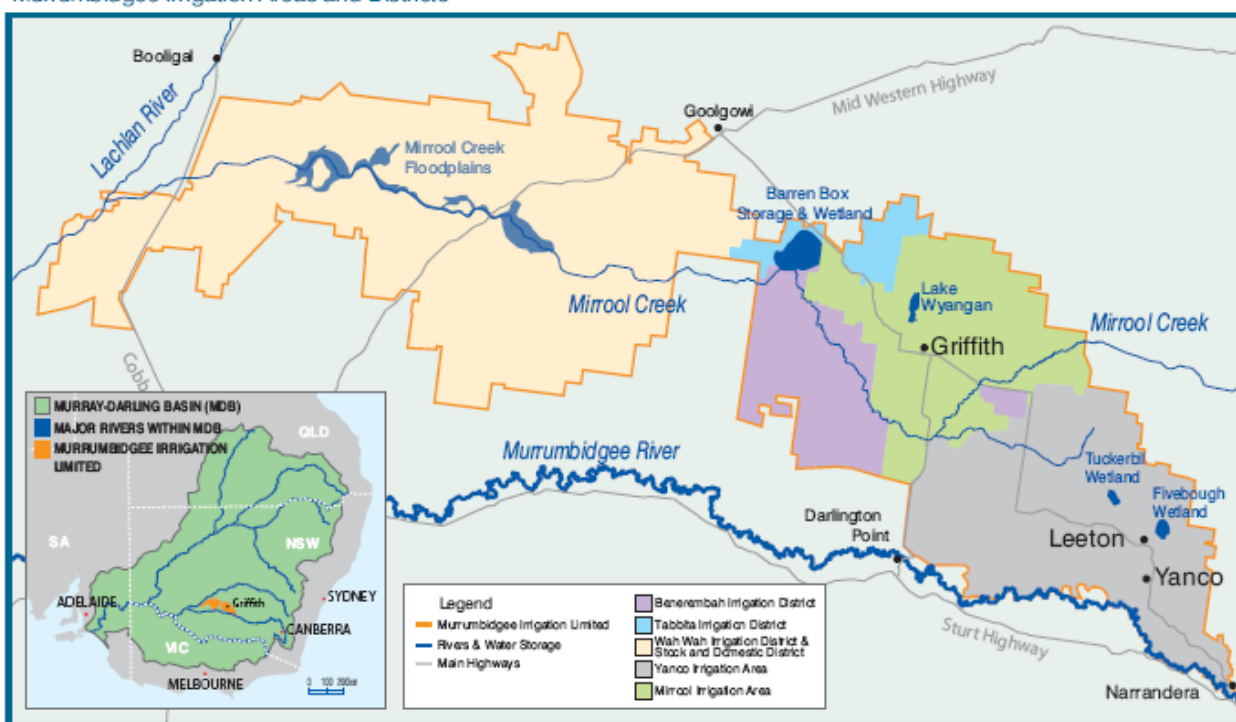
Irrigation corporations divert water from rivers at bulk water offtakes and then distribute the water to their clients within their schemes.

For example, since 1999 Murrumbidgee Irrigation has been a public company with its customers (over 3,000) as shareholders. The company operates under licences issued by the DWE that regulate the distribution and management of water from State Water, the river operating division of DWE.

Water is diverted from the river at Berembah Weir upstream of Narrandera and Gogeldrie Weirs near Leeton. Flows continue through a network of supply channels to each farm where it is measured onto the property.

Figure 3: Murrumbidgee irrigation areas and districts

Murrumbidgee Irrigation Areas and Districts



Company employees adjust the channel flows to meet the changing needs of customers. Drainage channels collect storm runoff from farms and take it to Barren Box Storage and Wetland just west of Griffith, which serves as an en-route storage for customers further down the system

Councils

The Bureau has named 44 councils in NSW:

1. Albury City Council, NSW
2. Armidale Dumaresq Council, NSW
3. Ballina Shire Council, NSW
4. Bathurst Regional Council, NSW
5. Bega Valley Shire Council, NSW
6. Bellingen Shire Council, NSW
7. Byron Shire Council, NSW
8. Cabonne Shire Council, NSW
9. Central Tablelands Water, NSW
10. Clarence Valley Council, NSW
11. Coffs Harbour City Council, NSW
12. Cooma-Monaro Shire Council, NSW
13. Dubbo City Council, NSW
14. Eurobodalla Shire Council, NSW
15. Gloucester Shire Council, NSW
16. Goldenfields Water County Council, NSW
17. Gosford City Council, NSW
18. Goulburn Mulwaree Council, NSW
19. Great Lakes Council, NSW
20. Inverell Shire Council, NSW
21. Kempsey Shire Council, NSW
22. Lismore City Council, NSW
23. Liverpool Plains Shire Council, NSW
24. MidCoast Water, NSW
25. Mid-Western Regional Council, NSW
26. Nambucca Shire Council, NSW
27. New England Weeds Authority, NSW
28. Orange City Council, NSW
29. Parkes Shire Council, NSW
30. Port Macquarie-Hastings Council, NSW
31. Queanbeyan City Council, NSW
32. Riverina Water (Riverina Water County Council), NSW
33. Rous Water (Rous County Council), NSW
34. Shoalhaven Water (Shoalhaven City Council), NSW
35. Tamworth Regional Council, NSW
36. Tenterfield Shire Council, NSW
37. Tumbarumba Shire Council, NSW
38. Tweed Shire Council, NSW
39. Wagga Wagga City Council, NSW
40. Warrumbungle Shire Council, NSW
41. Wingecarribee Shire Council, NSW
42. Wollongong City Council, NSW
43. Wyong Shire Council, NSW
44. Yass Valley Council, NSW

There are 152 local councils in NSW, which provide services and facilities to their local communities. They range in size, population, structure and in the services they provide. A council can be made up of a group of suburbs, a town or a rural area.

Councils operate within the legislative framework laid down by the NSW State Government. Their powers and responsibilities derive mainly from the *Local Government Act 1993*, however there are many other Acts and regulations that affect the way in which councils operate.

Local Government is a significant employer in NSW with about 50,000 direct staff.

Councils provide a range of services to people within their management areas. Water supply and flood and local environmental management are some of these services. These management requirements lend themselves to a range of water monitoring activities the level of which varies from council to council. Many councils outsource some of the more complex water monitoring activities to organizations like the Bureau (for flood warning), MHL for water monitoring in the coastal areas, and DWE for water monitoring in non-tidal areas.

Table 2: List of NSW Councils

Council type	Num.	Councils
Metro	37	Ashfield; Auburn; Bankstown; Baulkham Hills; Blacktown; Botany Bay; Burwood; Campbelltown; Canada Bay; Canterbury; Fairfield; Holroyd; Hornsby; Hunters Hill; Hurstville; Kogarah; Ku-ring-gai; Lane Cove; Leichhardt; Liverpool; Manly; Marrickville; Mosman; North Sydney; Parramatta; Penrith; Pittwater; Randwick; Rockdale; Ryde; Strathfield; Sutherland; Sydney; Warringah; Waverley; Willoughby; Woollahra
Country	37	Albury; Armidale Dumaresq; Bathurst; Blue Mountains; Broken Hill; Byron; Camden; Cessnock; Clarence Valley; Coffs Harbour; Dubbo; Eurobodalla; Gosford; Goulburn Mulwaree; Greater Taree; Great Lakes; Hawkesbury; Kiama; Lake Macquarie; Lismore; Lithgow; Maitland; Mid Western; Muswellbrook; Newcastle; Orange; Port Macquarie-Hastings; Port Stephens; Queanbeyan; Shellharbour; Shoalhaven; Tamworth; Wagga Wagga; Wingecarribee; Wollondilly; Wollongong; Wyong
Shire	78	Ballina; Bellingen; Kempsey; Kyogle; Nambucca; Richmond Valley; Tweed Glen Innes Severn; Gunnedah; Guyra; Gwydir; Inverell; Liverpool Plains; Moree Plains; Tenterfield Bogan; Coonamble; Gilgandra; Narrabri; Narramine; Walgett; Warren; Warrumbungle Dungog; Gloucester; Singleton; Upper Hunter; Walcha Blayney; Cabonne; Cowra; Forbes; Lachlan; Oberon; Parkes; Weddin Berrigan; Carrathool; Conargo; Deniliquin; Griffith; Hay; Jerilderie; Leeton; Murray; Murrumbidgee; Narrandera; Wakool Bland; Coolamon; Cootamundra; Corowa; Greater Hume; Gundagai; Junee; Lockhart; Temora; Tumbarumba; Tumut; Urana Bega Valley; Bombala; Boorowa; Cooma-Monaro; Harden; Palerang; Snowy River; Upper Lachlan; Yass Valley; Young Balranald; Bourke; Brewarrina; Central Darling; Cobar; Wentworth
Total	152	

Council type	Num.	Councils
County	12	Hawkesbury River; MidCoast Water ; Rous Far North Coast; Richmond River New England Weeds Authority Castlereagh-Macquarie Central Tablelands ; Upper Macquarie Central Murray Goldenfields Water ; Riverina Water
Overall total	164	

*Note: Named agencies are in **bold***

The Bureau has named 44 of the 152 councils. From Figure 4 below it can be seen that a number of local government areas as well as a large area of the state are not covered by the named agencies in this category.

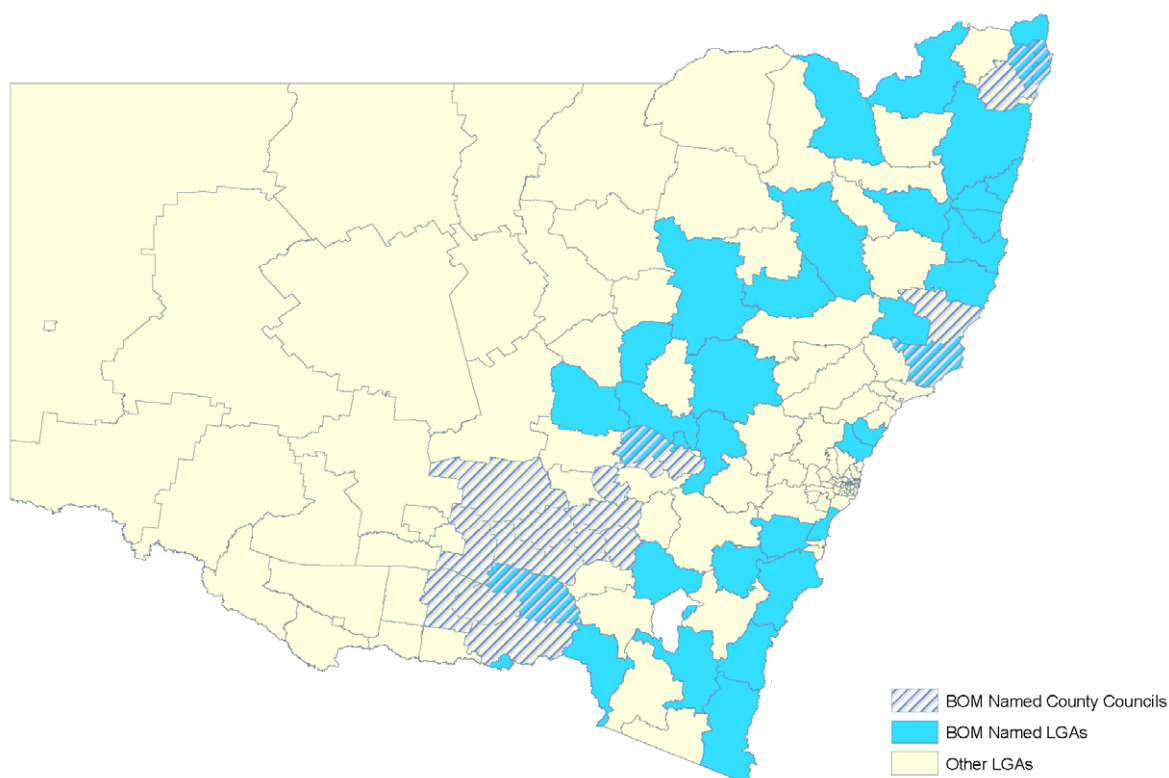
It would appear from the map and from other information that the number of Councils regarded as named persons could increase. For example, additions could include:

Richmond River County Council – its prime purpose is Floodplain Management

There are also a number of Councils for which DWE operates monitoring sites:

- Moree Plains Council
- Forbes Shire Council
- Wellington Shire Council

Figure 4: Named council locations



Monitoring inventory

In the SWIMP Framework Guidance document provided by the Bureau, it requested that Section B of the SWIMP:

“... should outline the current investment in water information assets within the Jurisdiction. The section should be a snapshot of the existing situation, and should detail relevant water measurement and observation networks, metadata and ICT infrastructure. It is expected that the inventory which is currently being developed in each Jurisdiction will be a component of this section.”

Output: a description of water monitoring networks and technologies, data management systems, etc. in place within the Jurisdiction.

Introduction

DWE as lead agency worked with the NSW SWIC to seek information from the named agencies to assist with compiling the inventory. The information requested from agencies was in two major areas.

1. Monitoring site locations

The first area is information about the sites within NSW monitoring groundwater, surface water and water quality data that [your] organisation manages.

The information requested is outlined in the table below but for HYDSTRA users this would equate to supplying copies of the SITE, STATION and PERIOD databases or using the Australian Water Resources Commission (AWRC) REP program. This will extract the data from databases and place it into a format similar to that used for the Bureau's Water Resource Station catalogue.

Table 3: Summary of site information requirements

Information required		Comments
Site number		
Site name		
Site type	SW/GW/WQ	Surface water, groundwater/water quality.
Site commence		
Site cease		
Easting		Either/or/both can be supplied.
Northing		Please use MGA/GDA 94 projection.
Zone		
Latitude		Preferably to minimum five decimal places.
Longitude		
Projection		
Catchment area	Sq km	If applicable.
Owner	Y/N	Y= your organisation funds the site.
Telemetered	Y/N	Y = some form of telemetry present.
Classification	WR	Tick as many as applicable.

Information required	Comments
	OP
	EN
	CP
	IN
Type of data collected.	
Time period data is available.	Repeat as necessary.
Data quality during period.	

Note: This table was later extended at the request of the Bureau and spreadsheets with the requested fields were sent to the various agencies to be filled in and returned to DWE.

2. Network classification

As well as site location information, the plan will attempt to derive the main purpose for the monitoring being undertaken at the site.

The data collected from most sites can and will have many uses. What we are trying to establish is the primary and secondary purposes for the site.

To assist with the classification of the primary use and to ensure state-wide consistency, a five classification system has been developed (see Table 3).

This information can be supplied as an additional field with the Site location information or the HYDSTRA HYNRS program can be used. After discussion about the suitability of the classification system, DWE will distribute copies of this database structure, which can be merged with existing data and the HYNRS tool used to enter and review the data.

Table 4: Sample network classification questions for inventory

Classification	Code	Example monitoring activities
Water Resource Assessment Monitoring	WR	Log term monitoring primarily concerned with water quantity, availability and sustainability. Water availability Climate change Flood assessment Meteorological Modelling purposes
Operational Monitoring	OP	Long-term monitoring primarily concerned with day to day decisions making Dam Safety Tidal Monitoring River Operations Water Supply/Water Treatment Flood Warning

Classification	Code	Example monitoring activities
Environmental Monitoring	EN	Primarily long-term monitoring associated with modelling health Estuary Integrated Monitoring of Environmental Flows Water Quality Salinity Strategy Wetlands Sustainable Rivers Audit
Compliance Monitoring	CP	Primarily long-term monitoring where data is required for Water Sharing Plans Hunter Integrated Telemetry Scheme Outfall Licences Interstate Agreements International Agreements
Investigative Monitoring	IV	Short-term primarily incident monitoring (1-10 years) Pollution Spill Algal Bloom Public Health Scare Specific Issue Management

Responses were received from the seven major state agencies, four councils and two private organisations. This information is contained in two spreadsheets, which have been supplied to the Bureau.

The summary of the responses is presented in the Sections below.

Water monitoring

“Accurate information on the condition and trends of a country’s water resource—surface and groundwater, quantity and quality—is required as a basis for economic and social development, and for maintenance of environmental quality through a proper perception of the physical processes controlling the hydrological cycle in time and space ... almost every sector of a nation’s economy has some requirement for water information, for planning, development, or operational purposes.”

WMO/UNESCO Report on Water Resources Assessment, p.16.

We can use water without depleting its supply, but water is a fundamental component of a complex ecosystem. Its maximum sustainable yield depends on how we exploit it within the system. Evidence of over-exploitation and environmental stress is abundant. Pollution from human activities destroys aquatic life and threatens human health. Misuse of the water resource causes widespread degradation of soils, disrupts the supply of potable water, and generates massive economic losses. To be aware of the extent of these problems and to manage them, we need baseline data.

As well, the hydrological cycle is being modified quantitatively and/or qualitatively in most river basins. Human activities such as land use change, urbanisation, water storage, inter-basin transfer, irrigation and drainage have major impacts on both the quality and quantity of the resource. It is probable that global climate change is having an impact on water resources throughout the world. Thus, it may no

longer be assumed that information collected in the past is a sufficient or reliable indicator of recent or future conditions.

Evidence also suggests that not only is Australia among the driest continents in the world, it also exhibits runoff variability greater than on any other continent. Finlayson and McMahon (1991) argued that this variability is not just a product of the variable rainfall, but also a product of our unique vegetation and its evapotranspiration strategies.

Table 5: World-wide flow variability

Area	Annual flow variation	Peak flow variation
World	0.43	0.28
Northern Africa	0.31	0.18
Asia	0.38	0.24
North America	0.35	0.25
South America	0.35	0.14
Europe	0.29	0.17
Southern Pacific	0.25	0.22
Southern Africa	0.78	0.46
Australia	0.70	0.45

From Finlayson and McMahon, 1991

The former Australian Water Resources Council (AWRC) stated that:

“... with regard to water resources – the flat topography, aridity, spatial and temporal climatic variability and biological distinctiveness have produced an aquatic environment to which much overseas research is inapplicable.”

Finlayson and McMahon 1991

On the driest continent in the world with among the highest variability in the world, water knowledge is essential. NSW is also the largest state in Australia in terms of population and has the largest range of water resource problems. The impact of these resource problems has only become apparent in the last 20 years and has caused NSW to introduce, in year 2000, new water management legislation to give better policy direction and legal power to address the problems.

NSW is a large, covering many different geographical and climatic regions. As a result, the hydrologic characteristics vary significantly across the state. Water and environmental issues are directly related to the hydrologic and socioeconomic conditions of each region. The management of those issues therefore requires an understanding of the regional hydrology. Measurements are the only reliable indicator of the status and trends of the available surface water. So monitoring of the state's water resources is of critical importance.

However, there is some disagreement what is meant by the term 'monitoring'. The Bureau has provided a definition of monitoring:

Monitoring

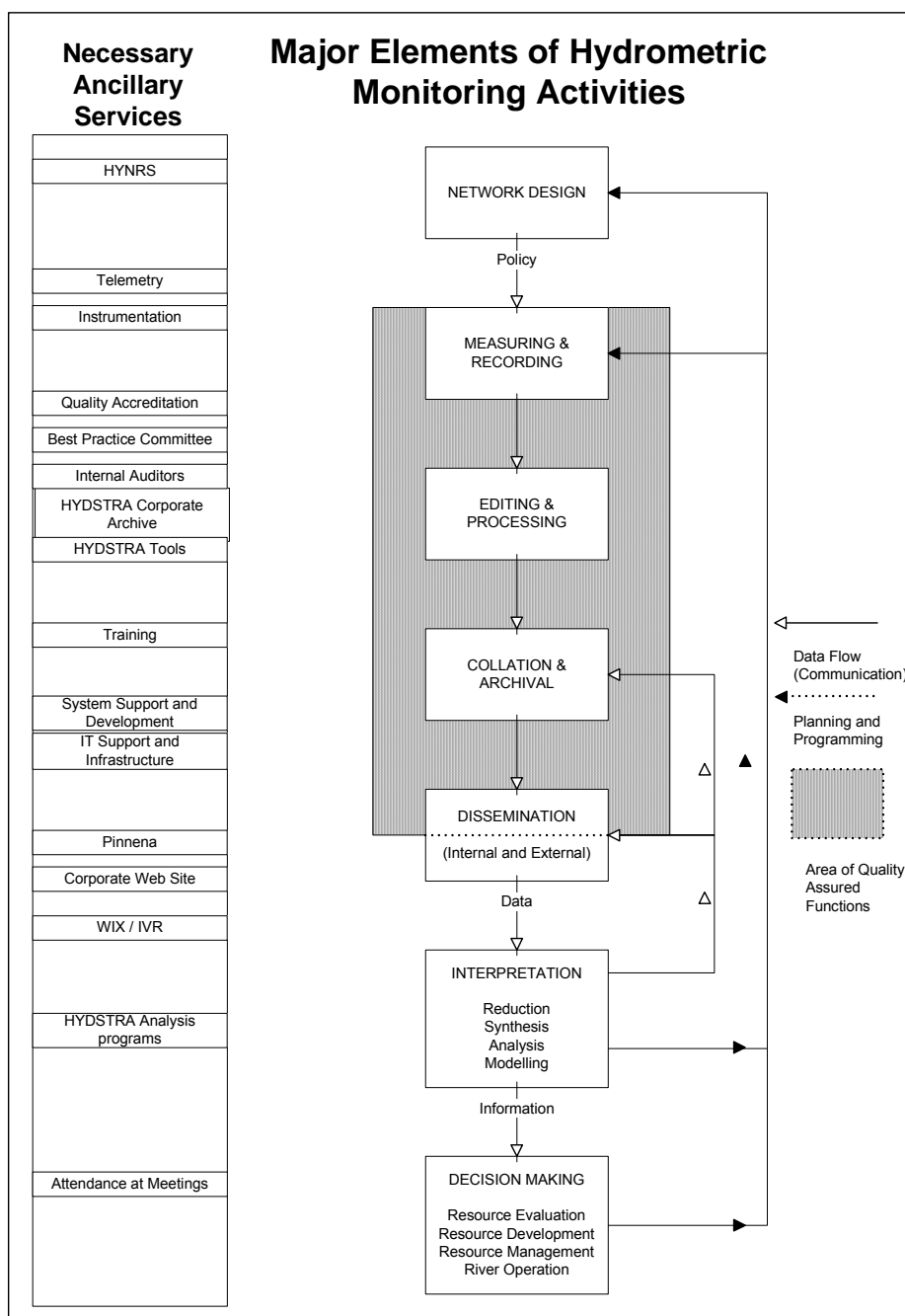
The observation and measurement of assets, equipment and capital works on-ground at a measurement site. This would incorporate supporting site infrastructure, telemetry hardware, repeater

stations, etc. It is acknowledged that some may consider this only part of the full description of the term 'monitoring'.

It is recognised as possibly being only a partial description of the term. DWE, the lead agency in NSW, recognises seven key areas to monitoring of which the Bureau's definition is only one part. The seven key areas are:

1. Network Design
2. Measuring and Recording
3. Editing and Processing
4. Collation and Archival
5. Dissemination
6. Interpretation
7. Decision-making

Figure 5: Elements of water monitoring



Even this is a simplistic view of a complex process. It ignores corporate overheads, which includes project management, budgeting, procurement, timesheets, etc. More importantly, it does not embrace a range of important activities such as research and development of new field techniques, site construction and installation, and instrumentation calibration and maintenance.

Fundamental datasets

One of the problems with data has always been that the real value of the data is unknown and unknowable at the time it is collected. The value cannot be verified until after the data has been used. Indeed, it may be months or years later that the full value of the data is apparent. Thus, the value of data continues to elude attempts at its precise calculation.

The conundrum is that if the value of the data has been established after the fact, it is generally impossible to go back and collect that data.

Owning data costs any organisation money, as does creating the data, storing the data and retrieving the data. Extracting, verifying, fixing, merging, purging, cross-referencing and validating that data will cost even more.

It is therefore essential that the best possible value be obtained. It is recognised that coherently organised data that is easily accessible can immediately lead to more timely, informed and precise decision-making. Data can then follow the equation to value: Data → Information → Knowledge → Better Decisions. As this happens, possession of the data changes from being a cost into an asset.

It must be recognised that the collection of the data is not an end to itself. The value of data increases both with time and use. The end of the long process of collection, processing, evaluation and interpretation of hydrographic data and information is its presentation in a cohesive manner so that others can not only understand the data as presented, but also make interpretative evaluations of their own about that data.

Fundamental dataset is a dataset that cannot be derived from another dataset and is used in a number of agencies; or a dataset that cannot be derived from another dataset and other agencies derive significant benefit from using it.

A dataset is a structured collection of (preferably, but not necessarily, digital) information that describes certain common properties of entities using an agreed set of attributes and standards. A dataset can be a (spatial) database, inventory, index, map, collection of models, photographs or other images, or a separately available layer in, or component of, a layer system.

Datasets in a Water Resources Information Management System are:

- structured, with at least one set of attributes
- at least partly digital
- preferably with spatial linkages
- primary information (not an end product such as a report, for example, a Basin Plan, as it is an output from analyses of many datasets)
- related to a certain entity or properties of that entity (e.g. dam, water quality, soil type, flora species)
- describe common properties, but not necessarily all properties (a dataset for trees might have species and height as attributes, but not diameter)
- not an activity that produces information (e.g. wetland monitoring) nor a system (Red River Telemetry System).

Datasets must:

- contain **sufficient detail** so that clients, even years later, can understand how the results flow from the raw data, without having to make interpretations or, worse still, investigations of their own. Unless this objective is achieved, the custodian has not done their job properly
- include an **assessment of their quality that describes the accuracy and precision with which the data has been collected and/or modelling** data quality assessments will allow secondary users to 'weed' out questionable data more easily
- include a description of the data collection, recording, and analysis methodology or protocols. **Having this information in-hand allows for the most comprehensive and appropriate use of data** by others. Without this information, a dataset's utility to a secondary user is greatly restricted.

Data users and uses

Many groups and individuals require data from water monitoring activities. Some of the main users for these services are detailed below.

Government

Many of the state and federal government's responsibilities depend on accurate surface water and sediment data for proper execution. For example, activities associated with fisheries, forestry, navigation, interstate relations, agriculture, Crown lands, and water rights and allocation all rely on water data and information. State governments, as the actual owners and stewards of the resource, operate programs such as irrigation, pollution control and licensing that are even more dependent on surface and groundwater data.

Water management

Federal and state government agencies, control boards, conservation authorities and private and public hydropower agencies all use water data to operate discharge structures, to control reservoir levels, to divert water into irrigation canals and to control town water supply withdrawals and sewage discharge. These activities have serious and far-reaching financial and social implications, and should be based on the best possible data and information. Flow forecasting is a major use of water level and streamflow data, enabling maximum hydroelectric power generation and flood warning and protection.

Planning

Scientific, engineering, and planning professionals use streamflow and sediment data to analyse problems, project future conditions, determine impacts, assess alternatives and set policy for planning of a variety of large-scale water and other resource projects.

Environmental assessment

Environmental consultants and interest groups often need surface-water and sediment data and information. While some require only a general indication of water availability in an area, others need precise records to assess critical concentrations of pollutants and toxic chemicals.

Research

Professionals and scientists engaged in water-related research use water data as the basis of understanding fundamental hydrologic relationships and water balance. This research is vital to NSW long-term interests and cannot be carried out using approximations. High quality, accurate information is essential. Research into evaporation processes, for example, is important in water-short western regions of NSW, and research into the effects of bushfires and other land-use changes on catchment runoff is necessary for flood hazard reduction programs throughout the state. As well, the potential

impacts of climate change on water supplies need to be understood so that appropriate changes can be made in water management.

Interstate

The exchange of water-related and technology data between states helps water agencies to accurately determine the effects of meteorological and land-based disturbances; make technological improvements to their individual data-gathering methods and systems; facilitate discussion of events and advances by having comparable measurements; and allocate water, when necessary, between the states.

Public uses

Many private citizens and citizens' groups want access to water-related information for a wide range of situations, from planning recreational activities to preventing property damage caused by erosion or flooding. General information on the state of a region's surface water conditions as well as site-specific data is extremely important to this client group.

Design and construction

Professional engineers must have accurate water data for a variety of hydraulic design projects such as dams, reservoirs, pipelines, and canals. Safety during project construction and economic performance during their lifespan are important criteria for these clients, who depend on site-specific data supplemented by regional information to meet their needs.

The data from these monitoring sites can perform one of several tasks (or indeed a combination of tasks) that may or may not require the archival of data. The uses of the data include such things as:

Table 6: Water data uses

Water data uses	
Aquatic ecosystem research	Insurance studies
Biodiversity research and monitoring	Inter-jurisdictional water apportionment
Catchment studies	Irrigation and drainage
CAP audits	Operation of storages and weirs
Climate change research	Risk analysis and management (especially in urban areas)
Economic infrastructure development	Recreation (e.g. boating, fishing, etc.)
Engineering design (bridge and water design)	Regional resource inventories
Environmental impact studies	Regional water management
Environmental flow monitoring	Salinity management strategies
Fisheries management	Sediment studies
Flood forecasting	Transportation/navigation
Floodplain management	Water quality studies
Forest management	Water resource assessment/inventory
Hydro-electric power generation	Water resources research
Infrastructure planning and design	Water supply studies

Part of the problem in collecting this range of hydrographic data is that people from different professional backgrounds tend to view water resources data differently.

To the ecologist, water resources data is often connected with reversing the effects of the deterioration of ecosystems, land degradation, pollution and destruction of wetlands.

To the water engineer, water resources data is about dams, reservoirs, flood protection, diversions, river training, water treatment and reclamation.

To the lawyer, the main issues in water resources data is the ownership of water, systems of water rights, the priority of use, water markets, water legislation, and international water law.

To the economist, water resources management is connected with economic efficiency, cost recovery and the attainment of national objectives.

To the irrigator, water resources data is connected to the amount and timing of bulk water delivery, and license compliance requirements.

The need for water resources data has grown out of competition for the use of water and the fact that Mother Nature does not supply water at a constant or predictable rate. This scarce resource requires some form of management. The old axiom then applies: *'you cannot manage what you do not measure'*.

In the early days, the primary focus for hydrographic discipline was to gather surface water data to develop long-term trends and get an understanding of the distribution of the resource throughout the state. The primary aim was to bolster the state's water storage to support primary industry and provide reserves for both the expanding irrigation areas and town water supplies during dry times. Since the implementation of the *Water Act 2000* more emphasis has been placed on more equitable sharing of both surface and groundwater resources, which requires a change in philosophy from long-term trends and assessment, to the supply of real-time and near real-time streamflow knowledge. This requirement and the need to accurately monitor low flow conditions have led to a much more focused and intense monitoring of lower flow conditions in support of equitable sharing of the limited resource.

Whether for irrigation, town water supply, other human use, recreation or habitat, there are many demands placed on this relatively scarce resource. In order to manage our water resources properly, we must have the means to measure them. Hydrographic stream gauging installations exist to measure the quantity and variability of our surface water resources. In addition, the analysis of streamflow and groundwater data helps us to understand the relationships of the hydrological cycle. When flooding occurs, the hydrographic stream gauging installations are indispensable as tools for flood forecasting and warning along rivers and streams.

Measurement and recording of water level and for those stream installations converting the water levels to streamflow are still the core products or deliverables for the hydrographic discipline. These processes involve measuring and recording water levels ranging from daily staff gauge readings, gas purge pressure and float well water level recording systems, to analogue recording charts, to sophisticated electronic pressure sensors and computers (loggers) recording and transmitting the water levels from remote installations. DWE has the full range of these systems with the majority of the installations managed by computers (loggers) and telecommunications access to and from them.

For the majority of the networks, the generation of streamflow is a requirement. This is achieved by performing streamflow gauging and developing a stage discharge relationship for each installation. The merger of this stage discharge relationship and the collected water level results in a time series set of streamflow characteristics for that location in the stream. Regular streamflow gauging is required to confirm the calibration or recalibrate the stage discharge relationship of the specific installation.

The seven major data collection programs and clients are:

1. Assessment Stations
 - General Assessment
 - Catchment Studies
 - Dam Safety
 - Drought Monitoring
 - Evaporation Network (associated with network for environmental and storage monitoring)
 - Rainfall Network (associated with the network for flow forecasting and storage monitoring)
 - Urban Water Supplies
2. Flood Management
 - Floodplain Management
 - Bureau of Meteorology – Global Warming
 - Bureau of Meteorology – Flood Warning
 - NSW Flood Warning Consultative Committee (FWCC)
 - State Emergency Services (SES)
 - Urban Flooding
3. River Health Programs
 - Integrated Monitoring of Environmental Flows (IMEF)
 - Sustainable Rivers Audit (MDBC)
 - Wetlands Monitoring
4. Water Quality programs
 - DECC State Water Monitoring Strategy
 - Key Sites – Long-term trend Analysis
 - MDBC – Basin Salinity Strategy
 - NSW Salinity Strategy
 - Water Quality projects
5. Water Management
 - Surface and Groundwater Modelling Purposes
 - Interstate Water Sharing – Border Rivers, Intersecting Streams – NSW-QLD
 - Interstate Water Sharing – Murray-Darling Basin Agreement – NSW-VIC-SA-QLD
 - Water Sharing Plan development and implementation
 - MDB Ministerial Council Cap on diversions – auditing NSW compliance
 - The Living Murray Project (NWI)
 - Water Recovery and accounting (NWI)
 - Snowy Water Savings (Water for Rivers)
 - Land and Water Management Plans
 - CMA Catchment Action Plans
6. Paying Clients
 - Local Councils
 - Dumaresq Barwon Border Rivers Commission (DBBRC)
 - Murray-Darling Basin Commission (MDBC)
 - Mines Salinity Trading
 - Power Authorities
 - State Water Corporation
7. Water Sharing Plans
 - Access management (water licensing)
 - Community and recreation activities

Data dissemination

DWE operates a range of systems to provide access to the data depending on client needs.

These are:

1. Direct contact with the department's regional and head office staff
2. **WaterInfo** website (**WaterInfo** web hits for last 12 months are greater than six million)
3. Direct file transfer protocol (ftp) delivery of data through the Internet (to organizations such as State Water, MDBA and for the Bureau's flood forecasting)
4. Pinneena Continuous Monitoring DVD – over 100 clients. Every major east coast university, major consultant, and government department has purchased a copy of this data system
5. Pinneena Groundwater CD – the Department's groundwater database is also now available on CD
6. Direct Telemetry Access to gauging stations (typically SES, State Water and the Bureau are provided with direct telephone access for flood warning and/or operational purposes)
7. HYDSTRA database – allows DWE and State Water direct access to archived data
8. Fax and mail-out of data to clients (over 90 clients) on a regular basis
9. Interactive voice response (IVR) systems to allow clients real-time access to data.

Technical Network Design

All tiers of Government and NSW local communities make considerable investments in the management of the natural resources of NSW. These investments include resourcing of the management, maintenance and repair of natural resources across the state. Investment comprises funds, labour, intellectual capital, voluntary community activities and social capital. Such a large investment has an inherent community expectation that appropriateness, cost efficiency and effectiveness will be measured and reported to them. Appropriate network design is an integral part of this process.

Gilbert and Buchanan (1982) defines Monitoring Network Design is (commonly abbreviated to Network Design) as:

“... a process for determining the locations at which data is to be collected, the types of data that are to be collected at each site, the frequency of collection of each type of data at each site and the duration of each data collection activity.”

Technically, there are two basic samplings that a hydrometric station network tries to achieve.

1. Temporal sampling, where long-term trends and the statistical analysis of the time series are sampled. This allows for stochastic modelling and prediction of hydrometric events including floods and droughts.
2. Spatial sampling, where the effects of vegetation, land use, geology, elevation, slope, meteorology, catchment dimensions, etc. are sampled. This sampling provides data for regional analysis and for correlation or interpolation on ungauged streams.

According to Linsley et al. (1985), there are also several practical issues that a discharge monitoring network should handle as well:

“Every major stream [...] should be gauged near its mouth and a number of tributaries as well. [...] those streams which may pose present or future flood problems as well as those streams which may be used for power, irrigation, etc. The network should sample catchments of all sizes larger than the specified minimum and should also sample the range of hydrologic and geologic characteristics in the region.”

This is in its most simplistic form. However, life is generally not that simple. In NSW, there are many additional considerations.

1. There are a number of organisations involved within the Murray-Darling Basin and there are a number of individual basins with the whole basin, each with its own set of issues.
2. The states are signatories to various management agreements.
3. The gauging stations need to be able to provide information for the various state and federal programmes as well provide information to a wide range of non-government clients.
4. Funding to stations is not consistent. Some are funded by irrigators, some by councils, some by the state through recurrent funding, some by specific MDBA programmes, and some by DDBRC programmes.

This all acts to complicate the development of appropriate water level and discharge monitoring strategies.

Summary of Traditional Network Design strategies

The simplest form of a network design model is that proposed by the World Meteorological Organisation (WMO). This model is based on the idea of station density and physiographic-climatic zones. Table 6 shows WMO network densities.

Table 7: WMO Minimum Network Density (km² per station)

Climatic zone	Mountains and ranges	Flat terrain
Mediterranean Zone (Winter Rainfall)	300 to 1,000	1,000 to 2,500
Temperate Zone (uniform Rainfall)	300 to 1,000	1,000 to 2,500
Tropical Zone (Summer Rainfall)	300 to 1,000	1,000 to 2,500
Transition Zone (Semi Arid)	600 to 2,000	2,000 to 5,000
Arid Zone	3000 to 7000	7,000 to 20,000

AWRC, 1989

It is generally recognised that this network design model ignores some important features that are country-specific. Probably the most important factor, at least initially, is that this model ignores various socio-economic groupings. Factors such as current and projected population, current and projected development, and current and projected environmental problems should have a major impact on the siting and densities of gauging stations.

The later attempts at network design originated in the USA. Moss et al. (1982) developed the first 'automated' network design model, NARI (Network Analysis of Regional Information). This was superseded by NAUGLS (Network Analysis Using Generalised Least Squares) (Tasker 1986). Both models use a regression model of streamflow parameter against physiographic and climatic characteristics, but NAUGLS conceptually improves on NARI by using the generalised least squares regression. This permits NAUGLS to weight the individual values of the computed streamflow characteristics in inverse relation to the accuracy of estimation. In most cases, estimation of the mean annual discharge is chosen as the streamflow parameter and the objective is to minimise the expected mean squared error of estimation at ungauged sites in a homogeneous region. Both these models have been used in network design, with the latter model being preferred after comparative studies done in the USA (Moss & Tasker 1990).

More recently, other approaches have included Watt and Wilson (nd), who debated the use of accuracy conditions in network design. They contended that the collection of data is not an end in itself and that the requirements for the data's use should govern network design.

Davar and Brimley (1990) used an 'audit' approach where user, technical and socio-economic concerns were balanced to determine network objectives to assess network performance. Burn and Goulter (1991) developed a two-phase process: firstly, a hierarchical clustering technique was used to identify groups of similar stations and secondly, a single station from each identified group is selected for retention in the rationalised network. The station selection phase is inherently heuristic, incorporating information about the stations and allowing user judgment to be incorporated.

The World Meteorological Organisation has also been running a study comparing various network design methods (Moss & Tasker nd), yet no recommendations as to a preferred method have been forthcoming.

Use of GIS for Network Design

While information models are an increasingly important source of decision-making, they are seldom complete, rarely certain and should never be a substitute for the judgment of experienced planners (Loucks 1992).

Even bearing Loucks' warning in mind, the use of computers and models is the primary source of decision-making for most hydrologists and water resource planners. Whether or not particular plans or programs are implemented, the modelling process forces people to think about what they are or should be doing to address a particular problem or need. Since so much of hydrology and water resources are linked to processes on the earth's surface, it would seem logical to link the models used by the hydrologists and planners with the topographic/spatial properties of a GIS.

Considerable advances have been made in acquiring hydrologic data using remote sensing and from non-traditional remote sources such as weather radar. These advances have coincided with advances in digital array processing and geographic information systems allowing for effective extraction of both temporal and spatial information. These relatively recent advances have changed the way hydrologic and water resources models are being used.

GIS would appear to have applications in network design, for example, Majure and Soenksen (1988) used three cartographic datasets (basin boundaries, streamlines and contours) to derive 16 basin characteristics including:

- drainage area characteristics – total, contributing and non-contributing areas, basin perimeter
- basin characteristics – slope, width, shape factor
- length characteristics – main stream, basin, total stream length
- stream characteristics – slope, drainage density, drainage frequency
- elevation characteristics – ruggedness, basin relief, relative relief.

GIS also offers the opportunity to also include a wide range of other ancillary data that should be considered in a modern network design/review. This includes information like:

- proximity of areas of special interest such as national parks, wetlands, reserves, etc. to streams
- locations of areas of high value land use
- locations of swinging/marginal electorates
- relationships between urban areas and stations.

However, for all of these supposed advantages, GIS systems are not commonly used for network design activities.

Network Matrix

The **Network Matrix** indicates station activity, the users and uses of the data at a site. The matrix includes each station on the network and indicates both the users, i.e., the individuals and agencies who use the data from that station and the uses, i.e. which data collection programs require data to be collected at that station. The major data collection programs are explained in Appendix 1. There may also be several sub-programs grouped under the one major program heading, for example, the Assessment Program has seven sub-programs. This is also reflected in the activity at a station, for example, the Barwon River at Mungindi (416001) is collecting data for five programs and 10 sub-programs.

Major users are also asked to allocate a level of importance, or priority, to each station to assist decision-making when attempting to discriminate between stations. Some practical examples of priority are given in Appendix 4. When a station is fully funded by a user, it is automatically treated as a Priority 1 station, where 1 = Essential, 2 = Important, 3 = Desirable, 4 = Beneficial and 5 = Redundant.

Note: DWE operates on the principle that unless explicitly stated by the user, data collected from a fully funded station will be made available to all other users and uses.

Regional hydrographic staff are responsible for updating the matrix. The major users of the data remain constant and changes are predominantly related to station establishments and closures, and to changes in the program or sub-program details.

Matrix operation

The matrix quickly highlights those stations that are only contributing to the requirements of a small number of programs. The operation of these stations can then be reviewed and options for amalgamating stations or substituting data from another suitable location can be negotiated with the users. A correlation method is used to justify closure or relocation of stations with few programs. The relative importance of the programs and sub-programs is also taken into consideration. A Program Priority Matrix is used to easily identify sites that are servicing lower priority programs and sub-programs. As programs and sub-programs may change priority over time or be replaced with new programs, the review process is ongoing.

Close relationships are maintained with the data users who can advise DWE on their changing priorities. Whenever there is a request for a new gauging station, the existing network is reviewed carefully to avoid duplication of data. This can include a review of the priority of existing stations that could be replaced by the new station or could provide the data required by the user. The locations of the stations from the networks of other organisations operating in the state are also taken into account. At the end of the review, negotiations are undertaken with each major client regarding the relocation of the station.

To be able to populate and query the 'Network Matrix', DWE instigated the development of specialised software. This software leveraged the data in DWE's existing surface water archive and data collection processes. The program was integrated into the existing data archive software package HYDSTRA. The software has been made available to all HYDSTRA users as the program HYNRS – Site Network Review.

The fields in the matrix were initially derived from the information available in existing databases in DWE's surface water archive and from information gathered from interviews with the major data 'users' as identified by the regions.

The major programs were selected according to the first network review report prepared by the Department of Land and Water Conservation (DLWC) in 1995 (which precipitated the development of the Network Matrix software). The initial programs identified were Water Resource Assessment, Flood Management, Water Quality, Regions, Clients and Water Reform Programs.

Other information obtained from old reports was added to the matrix and sent to the regions and identified users for verification for prioritising the stations. Responses from the regions and users were collated and further visits were undertaken to the regions and users to confirm the collated information and discuss initial conclusions.

A review is carried out annually to ensure that the network is efficient and resources are optimised. Normally stations with many uses and users would be expected to operate for an indefinite period unless the uses/user number falls below a critical threshold. Reasons for numbers falling include lack of adequate funding to continue the station's operation; an alternate station is found from which to obtain data; the program/sub-program has ceased as sufficient data has been collected; or the accuracy goal at the station has been reached.

Using the matrix to assess the network

The initial network review using the Network Matrix was carried out in 1999 and this review identified approximately 70 stations as suitable for closure. Review of the network includes the following processes:

1. Identification of all Secondary Principal/Minor Stream Stations that have reached accuracy goals.
2. Identification of Project Stations that have minimum number of users (one or two) and low priority.
3. Identification of any Primary Stations that have a very high correlation with other primary stations and have low priority and low number of users.
4. Identification of all other stations that have low priority from users.
5. Negotiation with all related major users regarding relocation/closure of the station.

Secondary Principal/Minor Stream Stations that have reached accuracy goals

All secondary stations both Minor Stream and Principal Stream stations were checked for accuracy goals. Flow data from these sites were correlated with nearby Primary Stations (see Appendix 2 for more information on the Network Classification system) using the IQQM program developed by the DWE.

The desire for accurate estimates of hydrologic characteristics has to be balanced against the time required to achieve them and the resulting cost, i.e. accuracy goals need to be realistic as to time span and economics (Watson 1976).

As recommended by Watson (1976), 22.5 Cv (where Cv = coefficient of variation – see Appendix 1 for more detail) was used as a guide for secondary stations. If the correlation was more than 0.75, then the Primary station is accepted as a suitable station to be considered as a base station for the Secondary station. Further analysis was also undertaken to determine the minimum time required for both stations to have a common period of record.

Project Stations that have few users

A list of all project stations that have few users was identified. An accuracy goal analysis was carried out for these stations to see if they should be regraded or discontinued.

Primary Stations with low priority by other users

A correlation analysis between Primary Index Stations was undertaken to identify any excess base stations in any basin. Primary stations are normally meant to operate indefinitely. If they have a very good correlation with another Primary station in the same basin, then to optimise the efficiency (benefits obtained per station), the primary station could be considered for closure.

Other stations with low priorities

Apart from the stations mentioned in the previous categories, any other stations with generally low priorities were identified. The stations are then considered for closure.

Negotiation with all users including regions regarding relocation of the station

All the stations identified from the review of the current stations were taken up with all major stakeholders such as the Bureau, SES, State Water, a range of local councils, and DWE's, Catchment Processes Branch, Surface Water Data Custodian and regional offices.

During negotiations, stations with generally low priority but rated as high by a few users were identified. Stations throughout the state that were rated as high priority by the same user were also identified. Negotiations were then held with the clients to see whether it was possible to use alternative stations. Only after considerable consultation was the decision made to discontinue, relocate or downgrade a station.

Summary

The Network (User/Uses) Matrix is now available as part of DWE's Surface Water Database system on a central Citrix server accessible from any DWE office in the state. Regional hydrographic staff, hydrologists and modellers are progressively being trained to maintain the matrix, and regional managers are being trained in using the data on the matrix effectively. Both the User/Uses information and the Priority information is updated by regional hydrographic staff as and when the information changes.

The data in the matrix enables regional managers, who are in charge of the hydrographic activities in their areas and often in the closest contact with a range of data users, to identify stations that are less important and are candidates for changes in status. This enables them to maintain the relationships with users while still achieving the most effective use of their staff and the network.

How much surface water does NSW have?

NSW is located between the summer monsoon rainfall system of northern Australia and the winter cold front rainfall system of southern Australia. River flows in NSW show distinct variations in time, with streamflow showing both a seasonal pattern and substantial year to year variability in discharge.

The inland Murray and Murrumbidgee Rivers in southern NSW experience most of their runoff in the late winter/spring period, with about 58 per cent of the average annual natural flow in the Murrumbidgee River occurring in the four month period from July to October. The seasonal pattern in the northern inland rivers is less obvious, with 36 per cent of the average annual natural flow in the Gwydir River occurring in the four month period from July to October, and 31 per cent in the three month period from January to March. The annual flow in the southern inland rivers is less variable than in the northern rivers, with the minimum and maximum annual natural flows for the Murrumbidgee being 12 and 392 per cent of the average annual natural flow, while for the Gwydir River the range is five to 480 per cent. The Macquarie River, located in the central inland part of NSW, demonstrates the most variability of the western flowing rivers with minimum and maximum annual natural flow ratios of three and 780 per cent.

The inland rivers with the lowest average annual flows are those flowing from Queensland and crossing the border west of Mungindi. Therefore, it is not unexpected that the Darling River is subject to extreme variability with minimum and maximum annual natural flow ratios of seven and 300 per cent.

For coastal streams, the catchment size and distance from the coast are the main factors influencing the flows. The large coastal catchments of the Clarence, Hunter and Hawkesbury-Nepean Rivers have proportionally low rates of flow. The exception is the Snowy River, which benefits from snow melt, although a large part of its flow is now diverted inland.

Available resource

The total average annual surface water resource for NSW is 42,000 GL. This information has been determined from a combination of water resource system models and historical flow analysis.

The total annual divertible surface water resource for NSW is based largely on the volumetric water entitlements issued for the large regulated river systems, combined with the rules that have been developed as part of the NSW Water Sharing Plans (WSPs). The combination of observed streamflows and WSP rules create a Plan limit, which is a long term average diversion limit. Where close connectivity between surface and groundwater exists, part of the groundwater recharge that replenishes these aquifers comes from surface water as well. The major groundwater systems are also covered by Water Sharing Plans, which also have long term average diversion limits, which is essentially a portion of the average recharge, thus providing a buffer to protect environmental assets as well as aquifer integrity.

Priority for Water Planning in NSW was originally placed on water sources where the major diversions were occurring and where significant environmental assets required protection. However, there is also a considerable level of activity developing water sharing arrangements for a large number of minor unregulated surface water and aquifer systems. Consequently, NSW has placed a high priority on the management of the unregulated rivers. Management plans for the most highly stressed unregulated rivers have been prepared. Plans for other stressed and high conservation unregulated rivers are being covered by macro water sharing plans which are nearing completion.

With respect to the regulated streams, most of these occur inland and are part of the Murray-Darling basin. As this basin is subject to a cap on diversions, NSW has assumed that there will be no further infrastructure development in the basin that would increase diversions. In the valleys, where NSW has implemented environmental flow rules, average annual diversions have been designed to be lower than the long term Murray-Darling Basin Cap values. Hence, the specific river health rules that have been developed in the WSPs have been used by NSW to maintain compliance with the MDB Cap.

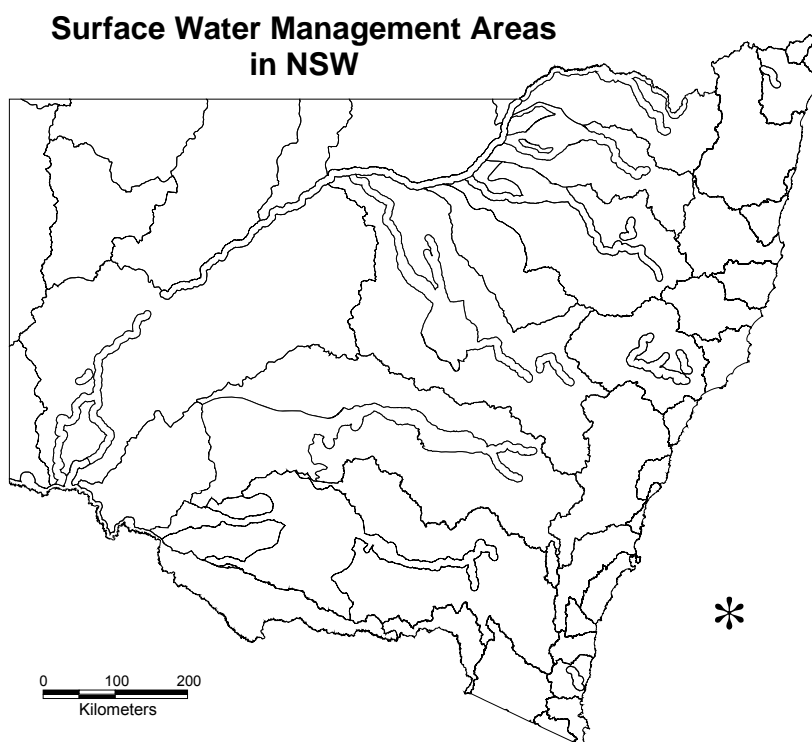
For a range of federal reporting purposes, 55 SWMAs as designated by the NSW DWE have been adopted as the reporting units for NSW. These SWMAs largely coincide with the old AWRC basins. The only exceptions are the basins in which major storages are operated by the State Water and the Barwon Darling management area. The SWMA boundaries are shown in Figure 4 below.

In those basins with major storages, the AWRC basin has been subdivided to distinguish between those parts of the basins in which State Water storages control part of the river system to assure supply (regulated SWMAs) and those parts where it does not (unregulated SWMAs). In a number of the other basins such as the Hawkesbury-Nepean, the Shoalhaven and the Snowy, significant regulation is carried out by other agencies, but these basins have not been included in the regulated category. All other catchments where no major storages exist are also regarded as unregulated SWMAs.

The boundary of the regulated SWMAs has generally been obtained by buffering the main stream downstream of the storages and including major irrigation areas and districts and areas of major groundwater usage. It has been assumed that there is little or no contribution to resources from these regulated areas.

The regulated SWMAs include the Murray-Riverina, Lower Darling, Murrumbidgee, Lachlan, Macquarie, Namoi, Gwydir and Border Rivers within the Murray-Darling Basin, and the Bega, Hunter and Richmond Rivers in coastal NSW. DWE has also defined the Barwon-Darling River between Wilcannia and Mungindi as a separate SWMA to distinguish between the specific management of the water resources in this area and other unregulated flow areas.

Figure 6: Surface Water Management Areas in NSW



How much groundwater does NSW have?

NSW has enough groundwater to cover the whole of the state to a depth of 11.5 metres. Its availability is unevenly spread across the state with some rocks being impermeable so any bores sunk are 'dry' while other units yield over 30 ML/day to suitably constructed bores. The quality of the groundwater varies greatly ranging from rainfall quality in some coastal areas to over 200,000 mg/L TDS (seven times saltier than sea water).

The dominating influences on the location and magnitude of groundwater resources in NSW are geology, geomorphology and climate. The runoff divide formed by the Great Dividing Range separates the short, steep, eastwards flowing rivers that flow directly into the Pacific Ocean from the western flowing rivers that have a much longer and more circuitous course to the Southern Ocean as tributaries of the Murray River.

The eastern flowing rivers have had a relatively short period, since the last major sea level changes, in which to develop, with only limited development of alluvial deposits. Where such deposits occur, they commonly grade laterally into unconsolidated estuarine and marine deposits. Consequently, the highly productive aquifer systems often associated with alluvial deposits are generally not available in association with these eastern flowing rivers. Extensive, but shallow, alluvial deposits are associated with the Hunter and Richmond Rivers. The other coastal river systems have only limited groundwater resources associated with their alluvial deposits, but are used extensively as a stock and domestic source of water, especially during droughts.

The most productive aquifer systems in the eastern coastal region are the coastal dune deposits, which have been extensively developed along some parts of the coast during a succession of sea level changes. They provide a water supply source for most urban settlements north from the Shoalhaven River at Nowra. Of particular importance are the Tomago Sand Beds and associated Tomaree and Stockton deposits, which provide an important part of the water supply for Newcastle and surrounding areas.

The western flowing rivers have a much longer route to the sea, with lower gradients across the western slopes and plains. Alluvial deposits have formed extensively along their valley systems and, in the case of the southern rivers, in delta areas where in past times they debouched into the eastern marginal areas of the lakes and swamps of the Murray Basin. A large proportion of these deposits formed during periods when the climate was very humid, resulting in chemical deposition of the products of erosion from the highlands. Under these conditions, quartz grains remain as an inert residual product, while all other products of decomposition are soluble and removed as part of the salt load of the rivers. The outcome of this process is the accumulation of thick and extensive deposits of clean quartz gravel and sand, and it is these deposits that form the main aquifers in the westerly flowing river systems in NSW.

Highly permeable sediments associated with the western flowing rivers have developed extensive aquifers containing significant volumes of lower salinity (less than 800 mg/L TDS) which yield in excess of 1,100 GL in the last water year. These aquifer include the Gwydir Valley (downstream of Moree), Murrumbidgee Valley (upstream of Narrandera downstream from Wagga Wagga), Namoi Valley (generally downstream from east of Gunnedah) and Lachlan Valley (downstream from Hillston and between Cowra and Condobolin), Murray Valley (downstream of Howlong), Macquarie Valley (downstream from Wellington). In all these areas, it is possible to construct bores with very large supplies. Pumping rates of 20 ML/day are not uncommon and water salinity is as low as 300 mg/L. Less substantial resources are available in all the other westward flowing rivers, to a varying degree.

The alluvial deposits described above are, in terms of their geological character, superficial, i.e. they form a thin veneer on some parts of the landscape, obscuring the underlying basement rocks. These are of varying character and have a very wide range of water storage and transmitting capacity. Sandstone, with residual intergranular porosity, is generally the most highly productive, occurring in a number of large sedimentary basins. From a groundwater sense, the Great Artesian Basin (GAB) is by far the most important. It occupies an area covering 20 per cent of the Australian landmass, extending over four States/Territories. Its water resources are discussed elsewhere.

The Oxley Basin contains a sandstone and volcanic rock that locally can moderately large supplies of water from bores. The aquifers are extensively covered and obscured by the basalt of the Liverpool Range. Sandstone and coal seams in the Clarence-Morton, Gunnedah and Sydney Basins is generally less productive than in the GAB but locally yield in excess of 5 ML/day where fracturing has enhanced the normal porosity. Stock and domestic supplies are commonly available.

Older, fractured crystalline rocks of igneous or metamorphic origin form the landscape in large areas of the State and have been grouped here into the New England, Lachlan Fold Belt and Olary Provinces. These rocks are intrinsically impermeable and only attain a degree of porosity and permeability, which enables them to store and transmit water by secondary processes. Such processes may be tectonism (earth movements), which causes fracturing and jointing and consequently open spaces within the rock mass, or chemical erosion, which may differentially remove some of the rock mass leaving a matrix of residual material with some porosity and permeability. In the more humid areas along the Great Dividing Range, salinity is generally less than 1,500–2,000 mg/L, with small pumping rates sufficient for stock and domestic use. Towards the west, as the rainfall decreases and the land slopes and elevation that control the hydraulic gradients decrease, the salinity increases gradually and is generally such that the water can only be used for stock watering and limited domestic purposes.

Groundwater monitoring tends to be related to the high use aquifer outlined above both along the coast and inland. In these areas water level information is required to manage aquifer storage and the associated impacts on stream flow and other users as well as aquifer compaction and water quality change.

In most of the other areas it has been found that due to the large volume of groundwater in storage pumping has little impact on the natural system.

Water monitoring sites in NSW

As required by the Bureau's brief, this section of the report concentrates on the more physical side of water monitoring, i.e. Surface Water Quantity, Groundwater Level, Surface and Groundwater Quality, and Meteorological monitoring.

Surface water

The Surface water network is the oldest data collection system and is the basis of modern water monitoring activity. The oldest gauging station was established at Windsor NSW in 1799, with some 1,841 river gauging stations in NSW having been operated by the Department or one of its predecessors. Of this total, 230 of these stations are or were run by other authorities. Of the remainder run by DWE, over 1,000 remain operational and data is archived from over 750 of these stations.

Figure 7: Surface water monitoring sites in NSW

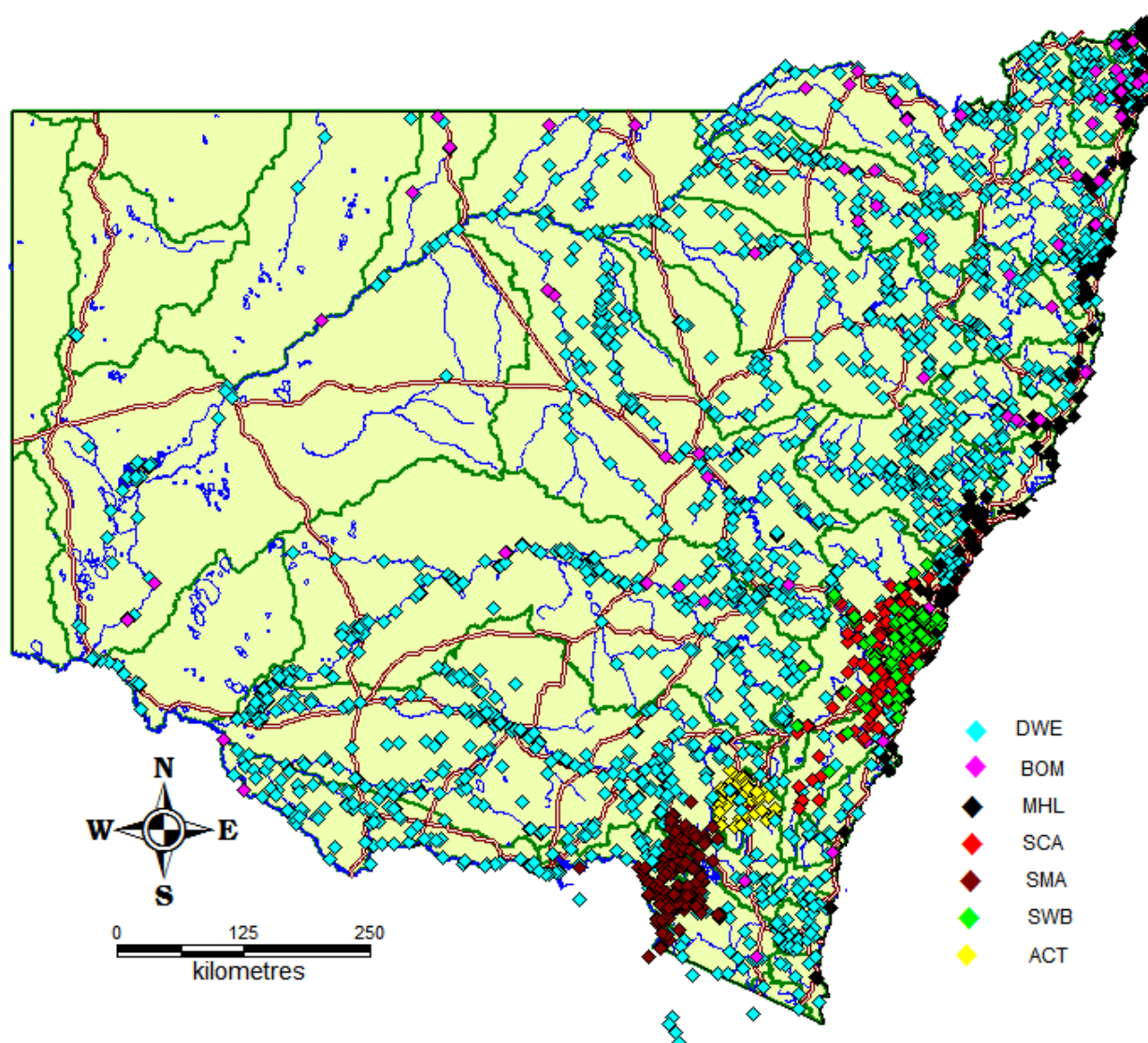


Table 8: Monitoring inventory response summary

	Monitoring sites				Total
	SW	GW	WQ	Met	
Major agencies					
DWE	990	9,043	1,887	161	1,2081
SWC*	350*	0	0	25	25
SCA	134	0	115	167	416
MHL	259*	0	6*	0	0
DECC**	269	12	0	73	0
DPI	48	5	41	31	125
Bureau of Meteorology NSW	218	0	0	450	668
Sydney Water	5	0	179	179	363
Total	1,664	9,060	2,222	1,086	
Other agencies					
Armidale-Dumaresq Council	10**	0	17	7	34
Ballina Shire Council	0	0	15	0	15
Bathurst Regional Council	7	0	0	0	7
Country Energy	3	0	3	0	6
Eurobodalla Council	6	0	0	0	6
Gosford Wyong Council	10	20	0	0	30
Kempsey Shire Council	2	86	51	9	148
Lismore Council	12	0	0	15	27
Murrumbidgee Irrigation#	16	900	27	7	950
Murray Irrigation#	6	1,449	0	0	1,455
Coleambally Irrigation#	6	809	56	0	871
Total	58	3,264	169	38	

Notes:

* SWC requires a number of river sites for their river operations (these sites are funded by irrigators and SWC collects these monies). DWE operates these sites and these numbers are included in the DWE totals.

* SWC operates 20 major storages where a range of manual data is collected and some 280 weirs, many of which supply data via SCADA. At some storages, water quality is monitored, but not on a regular basis at this stage.

* All SWC data is stored on the DWE Hydstra system and DWE sends this data to the Bureau on SWC's behalf.

** DECC – all sites are operated by MHL and/or DWE. Their numbers are included in the MHL and DWE totals and are not double-counted in the totals

*** Armidale-Dumaresq Council has 10 surface water sites, of which nine are operated by DWE. DWE sends the data from these sites to the Bureau.# The Irrigation Corporations monitor a large number of shallow bores on an irregular basis. This information has been included for completeness

The total state surface water network recorded so far in the Inventory totals over 1700 current sites. There are also over 1000 discontinued sites that are not included in the Inventory.

These gauging stations have been operated on behalf of the state as a whole, for various branches within the Department, a variety of state and interstate authorities and a range of other clients including private firms and councils. However, the bulk of the non-directly client-funded stations have been operated under the State's capital budget.

DWE's networks currently consist of some 900 active surface installations where comprehensive water quantity data is captured and another 150 installations where other surface water data is collected. Some 650 of these active installations provide real-time data via a range of telecommunications networks. The surface water archive holds data from 1,800 sites, 45 of which date pre-1900. At 200 of these surface water installations, water quality data is/has also been collected for various clients.

DWE's network is currently expanding as various state legislative requirements (Water Sharing Plans) and National Water Commission funding drive this expansion. Anecdotal evidence suggests that most other networks appear to be relatively stable. The figure below displays the location of the monitoring sites operated by the major agencies.

Table 9: Age of Surface Water Network on DWE's archive

Stations	Opened	Closed	Sites Still Open
Opened Before 1900	45	0	45
Between 1900-1920	86	8	123
Between 1920-1940	192	55	260
Between 1940-1960	305	74	491
Between 1960-1970	292	74	709
Between 1970-1980	231	107	833
Between 1980-1990	170	192	811
Between 1990-2000	231	138	904
After 2000	289	120	1,073
Total	1,841	768	

Source: DWE Site Database Queries April 2009.

Groundwater in NSW

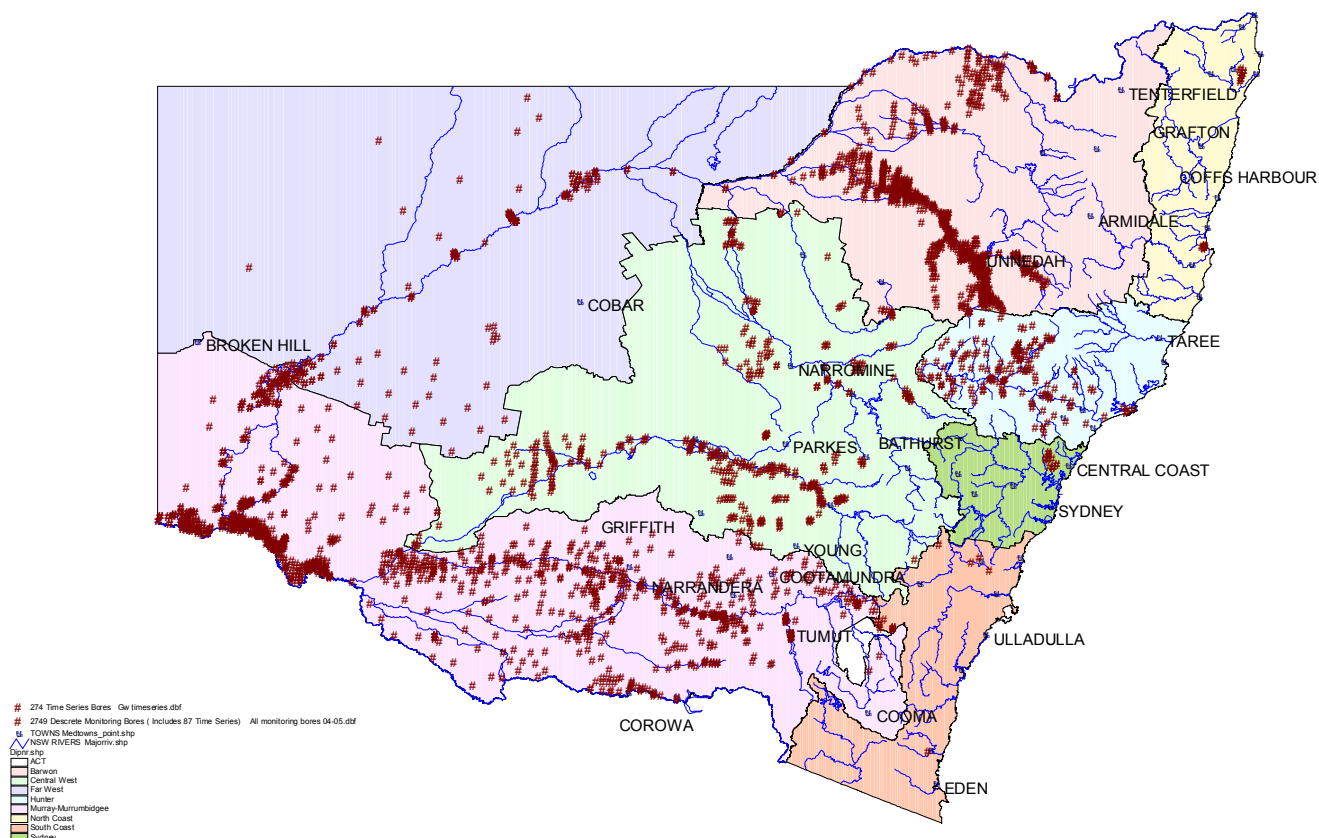
Groundwater is an important and vital natural resource in NSW. It makes a substantial contribution as a source of water for the maintenance of aquatic environments and is an integral component in the long-term management of water resources at both State and regional levels. It is coming under increasing pressure to meet human uses for agriculture and industry as well as drinking water for many country towns. It also sustains a variety of ecosystems.

In NSW, groundwater plays an important role in town water supply. The city of Newcastle relies on the Tomago Sandbeds Aquifer for up to one-third of its town water, especially when drought or water quality problems affect its surface water supplies. Outside the metropolitan centres, over 130 towns and 220,000 people rely at least in part on groundwater for domestic supplies. However, one-quarter of these supplies is drawn from bores in alluvial aquifers alongside rivers and is likely to also contain surface water.

Many thousands of private properties in rural NSW also rely on groundwater, especially in arid and semi-arid areas such as the GAB, where surface water supply can be scarce and infrequent.

Now that most of NSW river systems are stressed, there is increasing demand for groundwater to meet human needs. As groundwater demand and use increase, so too does the need for groundwater management. Groundwater extraction by humans disrupts the natural water cycle. It lowers and alters the natural variability of groundwater levels, which in turn alters the timing of availability and volume of groundwater to its dependent ecosystems. Groundwater use must be made to be sustainable, for the long-term benefit of all the people, plants and animals that depend on it.

Figure 7: DWE GW monitoring sites



Groundwater monitoring is expanding at a rapid pace, especially continuous monitoring of bores. Some 5,000 manual-read groundwater installations are currently active. Of these, 250 are operated by DWE's hydrographic staff. The water archive holds data for almost 900 installations, where groundwater level data has been measured continuously by logging devices. Of these, over 320 are still operating.

Water quality

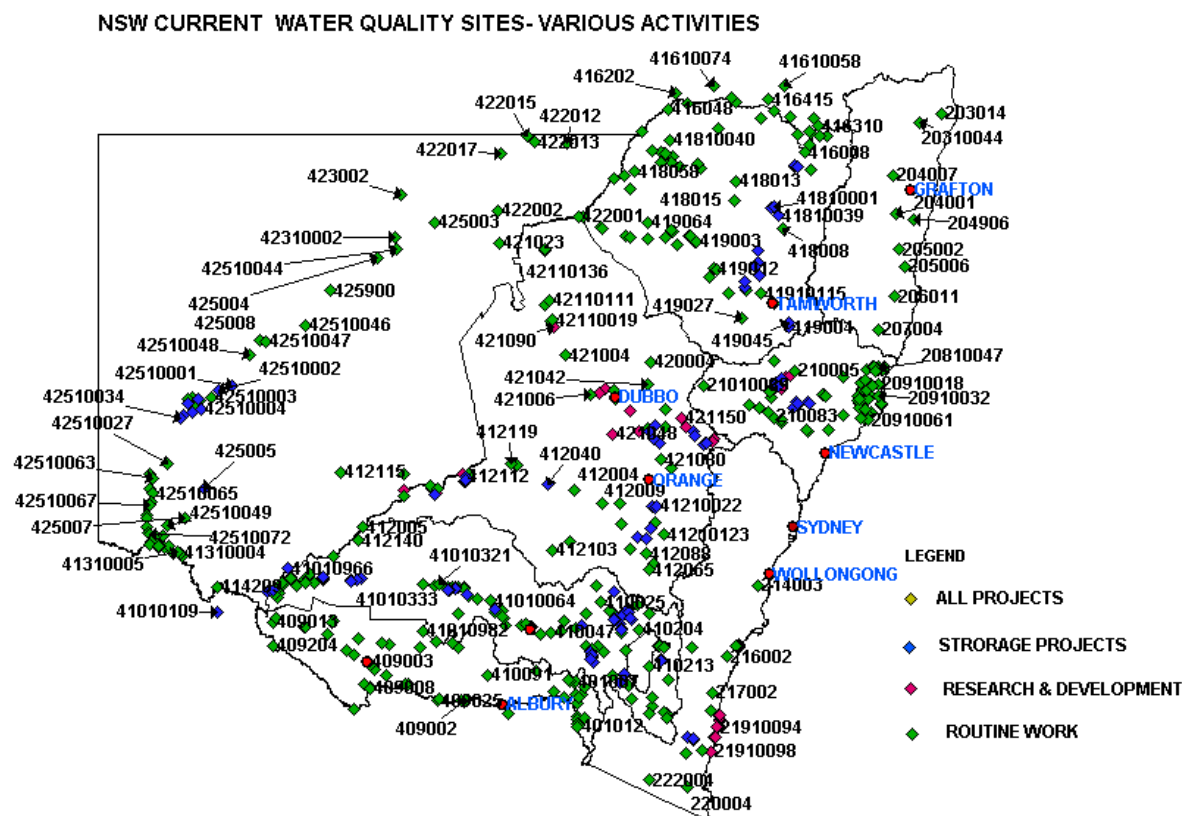
We can use water without depleting its supply. However, water is a fundamental component of a complex ecosystem. Its maximum sustainable yield depends on how we exploit it within the system. Evidence of over-exploitation and environmental stress is abundant. Pollution from human activities destroys aquatic life and threatens human health. Misuse of the water resource causes widespread degradation of soils, disrupts the supply of potable water and generates massive economic losses. To be aware of the extent of these problems and to manage them, baseline data is needed.

The business of water quality monitoring is divided into two separate areas:

1. Continuous Monitoring
2. Discrete Sampling.

The Continuous Monitoring business processes have been externally quality certified to ISO 9001. Investigations are continuing regarding the practicality of seeking quality accreditation for manual sampling.

Figure 8: DWE water quality monitoring sites



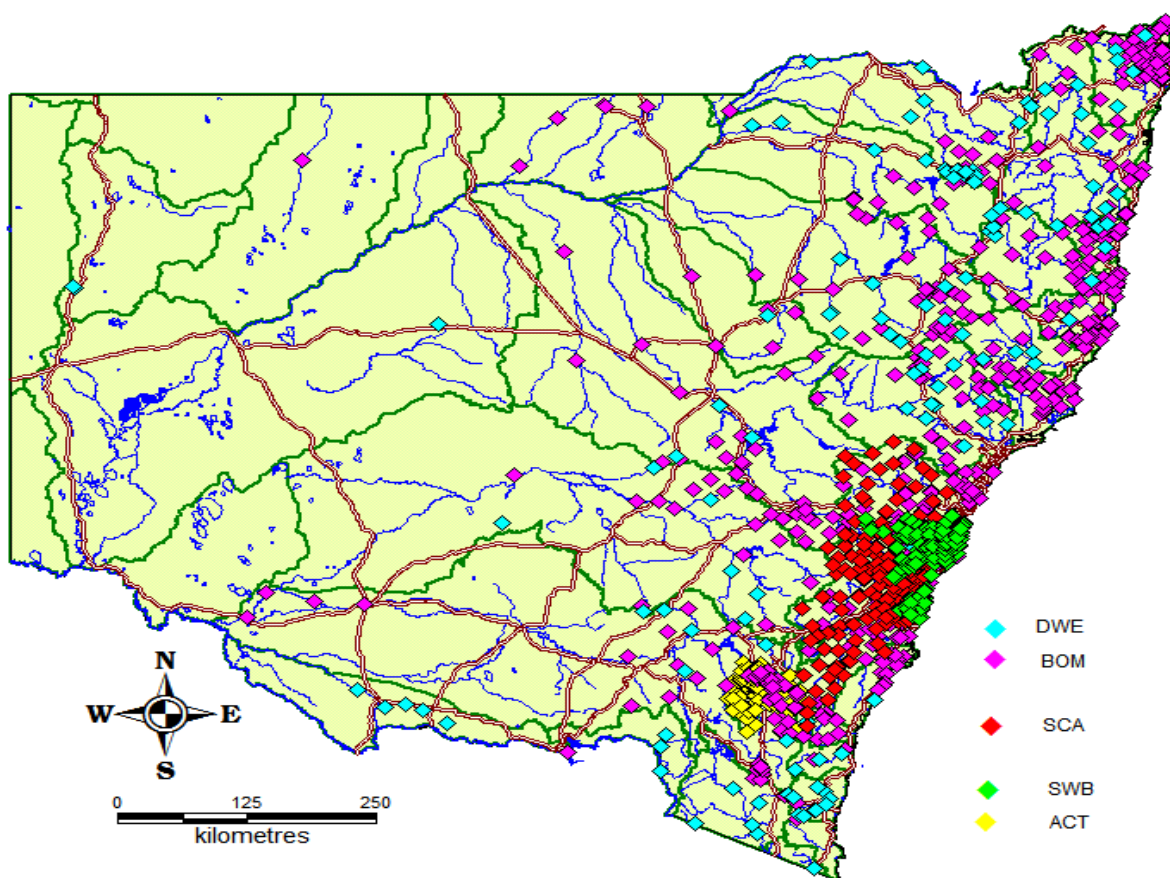
Meteorological

While the Bureau is the primary meteorological data collector in Australia, various state agencies also have meteorological networks.

The state agencies networks were primarily for river and storage operations especially during flood times, so these agencies were earlier adopters of automated technology for rainfall measurement. Many of the sites are in non-standard installations and as such are not used as long-term rainfall data stations by the Bureau, but the information is supplied to the Bureau's flood forecasting sections.

Recently, there has been increased installation of weather stations for research purposes measuring a range of meteorological data, but the number is still low compared to rainfall sites.

Figure 9: Meteorological monitoring NSW



Information systems

By far the most common system in use for the data of concern to the Bureau is the Kisters product, Hydstra. In smaller organisations, there are a range of in-house systems used primarily for Water Quality and Groundwater data, such as MS Access and Excel.

Table 10: Information systems summary

	Information systems			
	SW	GW	WQ	Met
Major agencies				
DWE	Hydstra	In-house Oracle – GDS*	In-house Oracle – Triton*	Hydstra
SWC	Hydstra	N/A	In-house Oracle – Triton*	Hydstra
SCA	Hydstra/SCARMS	N/A	In-house Oracle – WQDB	Hydstra
MHL	LEOST**	LEOST**	LEOST**	LEOST**
DPI	Hydstra	In-house – MS Access	In-house – MS Access	Hydstra

Information systems				
	SW	GW	WQ	Met
Bureau of Meteorology	Enviromon plus in-house Oracle	N/A	N/A	Enviromon, Time Studio plus in-house Oracle
Sydney Water	Hydstra and IICATS	N/A	In-house Oracle – LIMNOS	Hydstra
MDBA	Hydstra	N/A	N/A	Hydstra
Snowy Hydro	Hydstra	Not known	Not known	Hydstra
DECC	N/A	N/A	Many, primarily MS Access and spreadsheets**	AcquisNet
Other agencies				
Armidale-Dumaresq Council	MS Excel spreadsheets	N/A	MS Excel spreadsheets	N/A
Ballina Shire Council	N/A	N/A	MS Excel spreadsheets	N/A
Country Energy	MS Excel spreadsheets	N/A	MS Excel spreadsheets	N/A
Bathurst Council	Not known	N/A	N/A	N/A
Eurobodalla Shire Council	Not known	Not known	Not known	Not known
Gosford Wyong Council	MS Excel spreadsheets	Not known	N/A	Not known
Kempsey Shire Council	MS Excel spreadsheets	MS Excel spreadsheets	MS Excel spreadsheets	Not known
Lismore Council	Not known	N/A	N/A	Not known
Murrumbidgee Irrigation	Hydstra	Not known	In-house	Not known
Murray Irrigation	Hydstra	In-house Oracle	N/A	N/A
Colleambally Irrigation	Rubicon	MS Excel spreadsheets	MS Excel spreadsheets	Rubicon

Note: * In-house Oracle system, Bureau funds granted to develop specifications, Bureau funding sought for commercial replacement.

** In-house VAX LEOST system to be replaced shortly by commercial system.

*** Multitude of small systems, Bureau provided funding for development of a new in-house Oracle-based database system.

N/A – not applicable, i.e. no data stored.

Not known – no information supplied.

DWE Information Systems

As the lead agency, DWE is able to supply detailed information about the computer database systems it uses and also because of the historical relationship between DWE and SWC (previously one organisation) and due to the fact that both organisations still share applications and systems. It can also supply this detailed information for State Water Corporation. As this information is available, it is included in this report.

However, this level of information was not requested in the inventory and is not available for other agencies. It is not the intention of DWE that this level of information will be sought from other agencies.

HYDSTRA

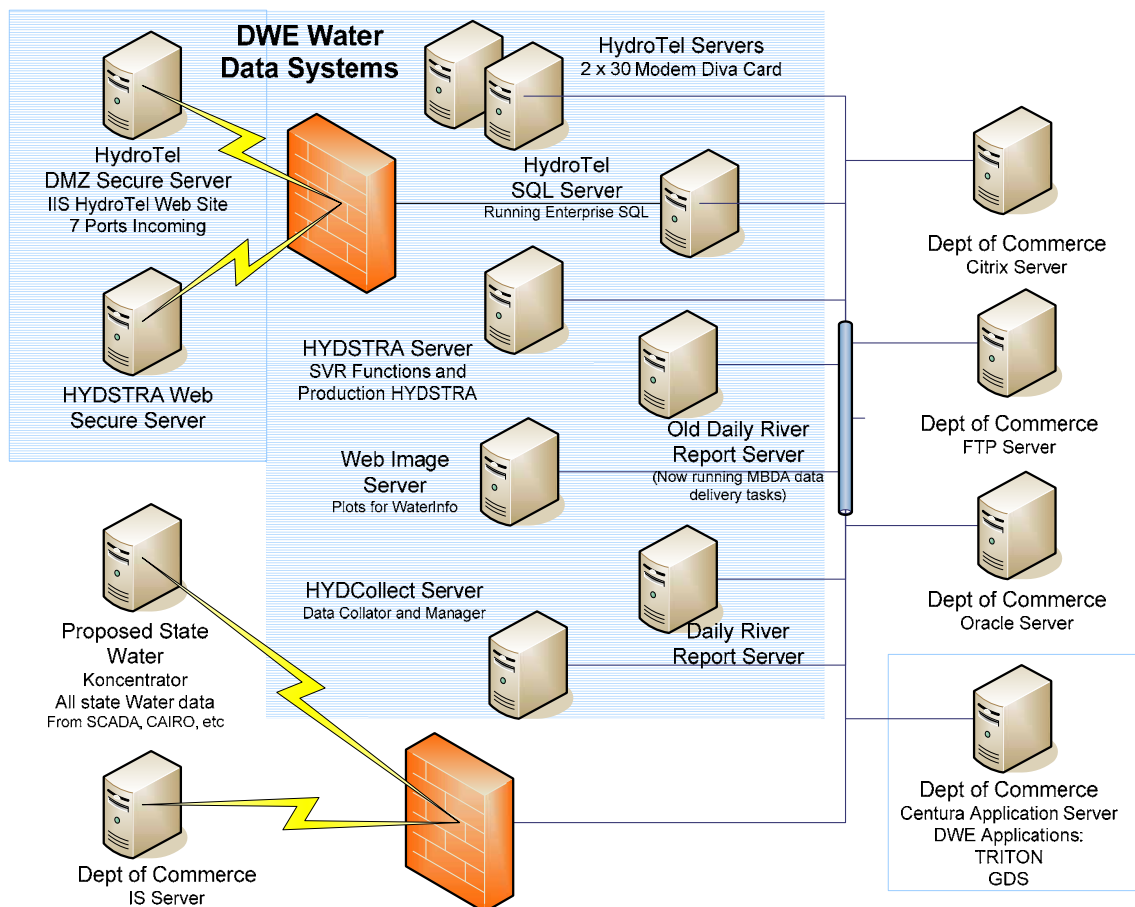
HYDSTRA is the DWE's (and most other NSW government agencies) continuous monitoring data archive. This system stores all data that is monitored at intervals less than daily and primarily recorded by digital (or less so now, analogue) devices and all real-time or near real-time data.

The data on DWE's archive as of March 2008 included:

- 42,613 years of daily stream flow information from 1,465 sites
- 27,898 years of continuous stream height data from 1,192 sites
- 3,244 years of continuous groundwater level data from 445 sites
- 2,640 years of continuous rainfall data from 188 sites
- 3,757 years of continuous conductivity data from 560 sites
- 3,557 years of continuous water temperature data from 801 sites
- 1,074 years of continuous storage level data from 77 sites
- 134 years of continuous turbidity data from 36 sites
- 49 years of continuous air temperature data from 8 sites
- 47 years of continuous pH data from 14 sites
- 33 years continuous wind data from 11 sites

Plus other related hydrometric data.

Figure 10: DWE's water data systems



The data is from both current and discontinued DWE gauging sites. It also includes data from former DWE sites that have been transferred to other authorities and for sites that have been transferred from other authorities to DWE. For those sites transferred to other authorities, only the data that was collected while DWE operated the sites is included.

DWE also collects, stores and disseminates storages and stream data provided by State Water from its own data collection systems.

GDS

The Groundwater Data System (GDS) is the Department's Oracle-based groundwater data archive. This system maintains records relating to groundwater bore constructions, lithological and aquifer details, and water level records for monitoring groundwater. The database also maintains other detailed technical records that includes pumping tests, bore development and geological logs. There is currently data available for some 100,000 bores. The data includes:

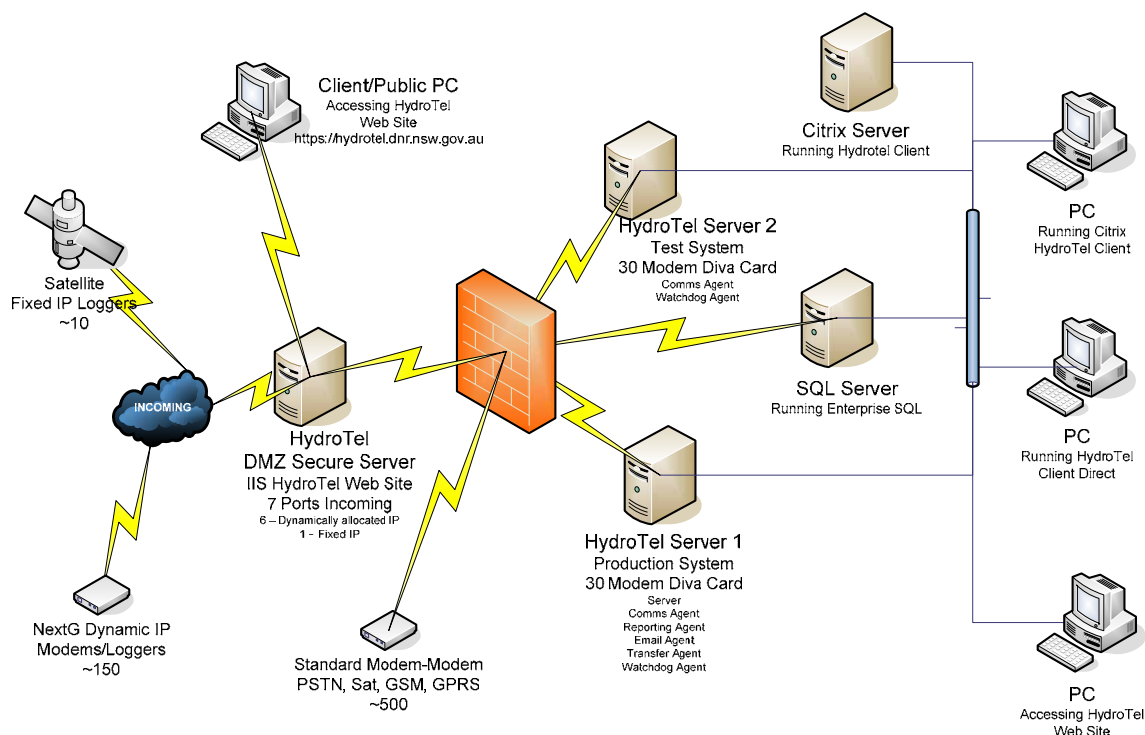
- location details
- lithology encountered during drilling
- construction details
- casing location and materials
- artesian details
- manual water level readings
- linkages to water extraction licenses.

TRITON

TRITON (from Greek mythology, Triton was a messenger of the deep, son of Poseidon, and the god of the sea) is the Department's Oracle-based water quality data archive. This system maintains records relating to manual water quality samples from the state's surface water and groundwater monitoring programs. The database also maintains other detailed project-related metadata. The data includes over 1,000,000 data records.

HydroTel

Figure 11: HydroTel real-time data delivery system



HydroTel is the Department's corporate telemetry system. This system is used to acquire data from remote stream and groundwater monitoring sites throughout NSW via various telemetry systems including phones (landline, mobile and satellite) and radio. Some 650 sites currently have data that is accessed at least daily. This information is added to the HYDSTRA data archive and disseminated via NSW Waterinfo website at <http://waterinfo.nsw.gov.au>.

Direct access to the HydroTel data is provided via <https://hydrotel.dnr.nsw.gov.au>. This website also provides major clients with the ability to initiate polls for sites directly.

State Water Corporation Systems

These are systems that State Water has in place to operate the regulated rivers in NSW on a day-to-day basis. While there is only one major system (CAIRO), a number of smaller sub-systems and data sources do exist from which information can be obtained.

Hydstra

State Water has a license for the Hydstra system, however DWE maintains the hardware and software and the data on its behalf.

State Water accesses the Hydstra system via a Citrix Metaframe interface, similar to the regional officer and hydrographers of DWE.

CAIRO (Computer Aided Improvements to River Operations)

CAIRO was developed with the aim to improve the efficiency and effectiveness of river operations in the areas of data collection, operational performance, monitoring and reporting. It is a generic computer system for managing River Operations in NSW regulated river systems and is currently operated by State Water. It tracks a 'parcel' of water down a river using a simple water-balance method. It provides automatic data collection, reports, graphs, data analysis and data distribution capabilities. It also provides an underlying database that enables the data collected and derived each day to be stored for future use.

CAIRO will provide a substantial amount of data and information into the proposed water balance for the Murrumbidgee and for the future national water accounts.

Joint DWE-SWC Information Systems

Before 2000, the functions of river and storage operation, licensing and water management were combined within the one government department called the Department of Land and Water Conservation. In 2004, both the State Water Corporation (SW) and Department of Infrastructure, Planning and Natural Resources were formed. In April 2007, DIPNR was replaced by the Department of Water and Energy (DWE) with some functions being transferred to other agencies and the energy function being merged with water into the new department.

For a time, State Water operated from the same building as DWE (or its predecessors) and shared computer network, databases and applications. In the latest restructure:

- State Water has consolidated its offices in other locations with a move to centralise many functions, including IT at Dubbo.
- State Water is looking to move its applications and databases off the ServiceFirst network and de-couple connections with DWE systems.
- As well, the IT section of DWE was amalgamated with other IT-related elements to form ServiceFirst under the Department of Commerce (DoC). This will provide a bureau service to DWE.

While a number of shared systems still currently exist within the DWE/DoC network, many are now being enhanced and/or re-developed. As part of the redevelopment, the level and number of common systems are being reduced. The following outlines the current and proposed systems for SW and DWE related to the Bureau's water data delivery regulations.

DWE and SWC Water Accounting Systems

DWE and State Water Systems

Figure 11 illustrates the relationship and status of the DWE and State Water Accounting Systems. These are the major systems that will be used to collect, store and extract information on water ordering, water extraction, transfers, cropping and other water use information, licensing details and transactions. While a number of systems are still under development (refer to details below), others that are in place and operational require reviews and further development. This review process will form part of the project requirements.

LAS

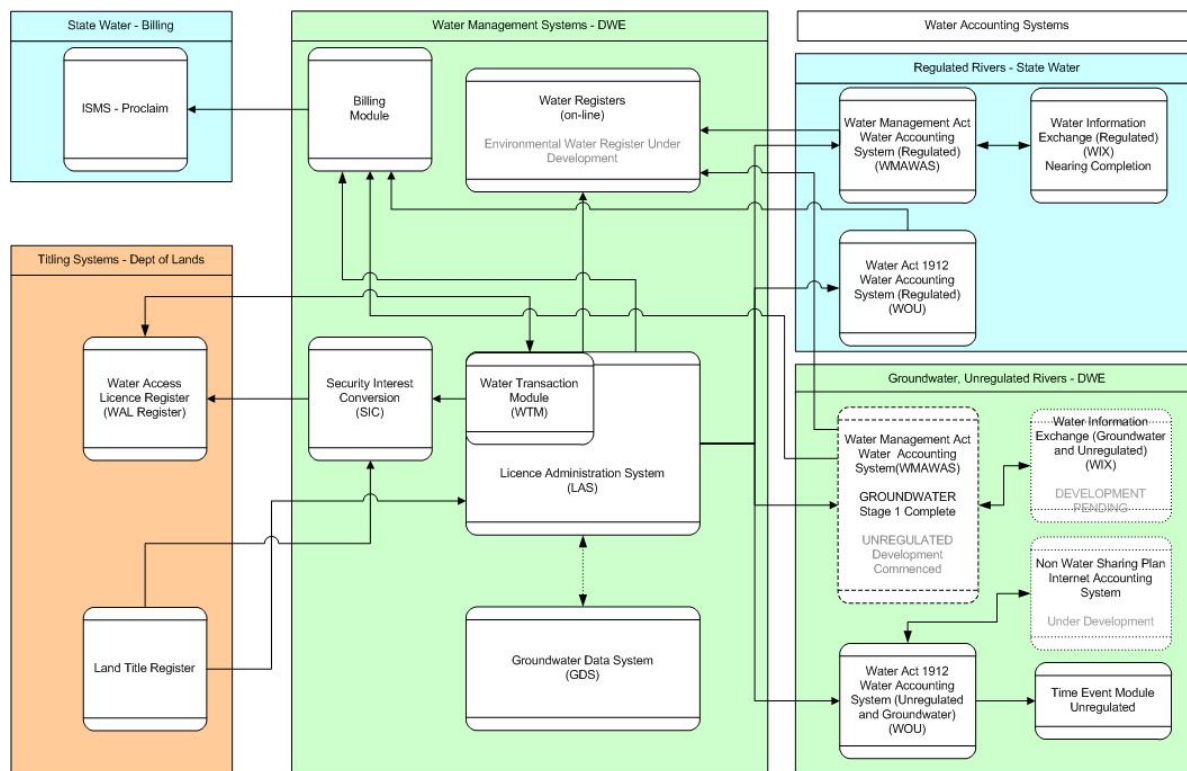
The LAS system is used to manage and administer all water licensing and approval transactions and is owned and administered solely by DWE.

Numerous business applications are dependent on LAS as a source of licensing data including water registers, WMAWAS, GDS, WAL Register and WIX.

A series of enhancements are to be carried out in LAS that will include:

- enhanced reporting functions
- enhanced spatial capabilities
- improved security around licensing and approvals.

Figure 12: Water accounting system relational diagram



WAL Register

The Water Access Licence Register (WAL Register) stems from the requirement in the *Water Management Act 2000* for a publicly accessible register of water access licences and a broader policy objective for a secure and robust register of water entitlements. Access to the Register is primarily by way of an online search function.

The WAL Register provides the legal register of the existence of a water access licence. WAL transactions do not take effect until they are registered on the Register. Notice of the registration of all transactions is provided to DWE and the licence records in LAS are updated. This feedback mechanism is currently a manual process and is targeted to be automated.

The Register is administered by the Department of Lands on behalf of DWE in accordance with a Service Level Agreement and is modelled on the land titles register.

Water registers

The WMA requires a range of water licence data to be made available to the public. DWE has met this requirement by developing the range of registers currently available on DWE's website. These registers also meet subsequently agreed requirements under the National Water Initiative.

The registers present data that is maintained in LAS (including the Water Transaction Module) and the Water Management Act Water Accounting System (see below). For example, approvals register presents details of approvals directly from the LAS database record for that approval.

The Registers are owned, operated and supported by DWE and were developed between 2004 and 2006. Extension of the current registers is proposed to include information on interstate water tagging, more detailed reporting as well as further development beyond the currently limited raw data to include substantial spatial information and time trends.

Water Management Act Water Accounting System (WMAWAS)

Water licences under the *Water Act 1912* and water access licences under the *Water Management Act 2000* provide a permanent entitlement to or a specified share to available water in a water source. Each licence is given an account where the water made available annually under that licence is credited. This is the water available during that season to the licence holder to take, trade or carry over to the next season. There are numerous and often complex accounting rules that govern the administration of these accounts.

WMAWAS is a computer database designed to facilitate a highly automated level of account management. The first stage of WMAWAS was deployed in 2004 to support accounts for water access licences in Stage 1 regulated water sources and was jointly funded and developed by DWE and State Water. It is administered by State Water. The key functionality of the system includes:

- crediting all relevant accounts following available water determinations
- recording usage and adjusting balances
- registering water allocation assignments, adjusting balances
- application of account limit rules
- giving effect to water access licence dealings as they relate to water allocation accounts
- calculation of end of year balances, carryover (in accordance with relevant water sharing plan carry over rules) and posting commencing balances for new water years.

Calculation of water bills

WMAWAS is also the source for data in the Water Registers on the DWE website as they relate to water allocations and in particular, water allocation assignments (temporary trades).

DWE is currently developing the groundwater version of the WMAWAS. This system will facilitate accounting for water access licences in groundwater by adapting the existing WMAWAS system to deal with the unique accounting requirements for groundwater. Deployment of the system for groundwater is expected soon.

Development of the WMAWAS to include accounting in unregulated water sources began in early 2007, but was delayed due to groundwater becoming a higher priority. The project is expected to recommence in early 2008.

Water Accounting Systems under development

The following describes some of the major systems currently being developed that will contribute in a major way to the water accounting process.

WIX

The Water Information Exchange (WIX) introduces a major change in the way DWE and State Water collect and provide information to better manage the state's water resources.

WIX will offer water users a simple and fast way to provide information such as meter readings, water orders, gauge readings and crop statistics, while providing ready access to more comprehensive and up-to-date information on licenses and approvals, pumping conditions, water accounts and river heights and flows.

WIX will provide a variety of benefits that will affect Water Accounting, some of which are detailed below:

- 24/7 access.
- Water ordering 'online'.
- Access to real-time and better quality information.
- System access via multiple media such as Internet, Interactive Voice Response (IVR), SMS and Email.
- Remote access to system, e.g. access to unregulated pumping conditions, river flow information or entering meter readings directly from pump site.
- Instant confirmations of water orders, unregulated pumping conditions, etc.
- Ability of water users to provide and maintain licensing and contact information.
- Improve river operation efficiency resulting in water savings.
- Cost-effective system management by government.

The WIX project is being developed jointly by DWE and State Water and is supported by the NSW Farmers' Association and the NSW Irrigators' Council.

WIX will initially be available to customers with water sharing plans using water from regulated and unregulated rivers. Groundwater will not be included in the initial stage of WIX, but will be included later. For a number of NSW unregulated rivers, WIX will not include information on water extraction until monitoring is in place (Refer to section 7.2 Water Extraction). WIX will not apply within irrigation corporations and districts.

WMAWAS – Unregulated and Groundwater

See earlier section concerning WMAWAS.

NWSPWAS – Non Water Sharing Plan Water Accounting System

The rolling out of meters across NSW at a faster rate than conversion of Licenses to the *Water Management Act 2000* and the development of corresponding Water Sharing Plans has meant that meters are being installed to monitor water extractions for licenses that are yet to come under a Water Sharing Plan. The current water ordering unit has significant shortfalls in this area and as such, an Internet-based Water Accounting System is being developed to collect metering information and enable monitoring of usage against entitlement.

The Internet-based application will allow DWE customers to independently retrieve or input meter data and view account balances against entitlement within or outside core business hours.

The system will also provide the mechanism for the proposed State Water Call Centre Support Group to enter data coming in via the Call Centre and to provide online support for the system. For this functionality, the addition of a license search facility and access to user logs will be provided.

Data currency

The majority of agencies in NSW operate digital equipment in surface water and meteorological monitoring. A large number of these systems are telemetered.

In water quality and groundwater, the vast majority of measurements are taken manually and it is only recently that the use of digital equipment and telemetry has begun.

The details of the how the data is collected and transmitted is summarised in the table below.

Table 11: Currency of data collection systems

	Equipment and communication summary			
	SW	GW	WQ	Met
Major agencies				
DWE	Mix of manual 5% and digital 95%, 77% telemetered*	Mix of manual 90% and digital 10%, 10% telemetered	Mix of manual 90% and digital 10%, 7.5% telemetered	Digital 100%
SWC	Mix of manual and digital, majority telemetered	N/A	Manual 100%	Manual 100%*
SCA	Mix of manual 5% and digital 95%, 73% telemetered	N/A	Mix of manual 22% and digital 78%, 7% telemetered	Digital 100%, 25% telemetered
MHL	Digital 100%, all telemetered *	N/A	Digital 100%, all telemetered *	N/A*
DPI	Digital 100%, none telemetered	Digital 100%, none telemetered	Mix of manual 20% and digital 80%, none telemetered	Mix of manual 13% and digital 87%, none telemetered
Bureau	Mix of manual 12% and digital 88%, all telemetered	N/A	N/A	Digital 100%, all telemetered
Sydney Water	100% digital, all telemetered	N/A	Manual 100%, none telemetered	Digital 100%, all telemetered
MDBA	Mix of manual and digital, all telemetered	N/A	N/A	
Snowy Hydro	Not known	Not known	Not known	Not known
DECC	N/A	N/A	100% manual	Mix of manual and digital, majority telemetered
Other agencies				
Armidale – Dumaresq Council	Digital 100%, all telemetered	N/A	100% manual	Digital 100%, all telemetered
Ballina Shire Council	N/A	N/A	100% manual	N/A

Equipment and communication summary				
	SW	GW	WQ	Met
Bathurst Council	Digital 100%, all telemetered			
N/A	N/A	N/A		
Country Energy	Digital 100%, all telemetered	N/A	100% manual	N/A
Eurobodalla Shire Council	Not known	Not known	100% manual	Not known
Gosford Wyong Council	+Not known	100% Manual	N/A	+Digital 100%, 90% telemetered
Kempsey Shire Council	Digital 100%, all telemetered	74% digital data, no telemetry	100% manual	Digital 100%, 10% telemetered
Lismore Council	+Digital 100%, all telemetered	N/A	N/A	+Digital 100%, all telemetered
Murrumbidgee Irrigation	Digital 100%, 50% telemetered	100% manual	100% manual	Digital 100%, all telemetered
Murray Irrigation	Digital 100%, 80% telemetered	100% manual		
Coleambally Irrigation	100% digital	100% manual	100% manual	0

Note: * funds applied for from the Bureau for modernisation of equipment.

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Appendix 1

Sampled detailed water data inventory from DWE

The inventory undertaken as a part of the SWIMP report has been, as specified by the Bureau, relatively brief.

All state agencies, especially in the surface water area where they all use the Hydstra system, could in some areas produce more detailed information than the current inventory required.

However, there still has not been clear guidance from the Bureau on what the final purpose of this inventory might be, and whether it will be an ongoing requirement. Accordingly, there is no fixed format for the inventory and it is unlikely that state agencies will do further work in this area until both the format and purpose become more evident and there is some value in this activity to the state agencies.

DWE has a program that generates reports from its Hydstra system, with other systems available to the web as a general inventory of available data.

The sections below are samples of the sort of information that could be made available if the inventory required:

Surface water sites

S U R F A C E W A T E R A R C H I V E, P A R R A M A T T A

\$=Telemetered

*=Storage

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

R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.														
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net	
			Starts		Starts		Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

\$201001	01/05/1947	01/01/2007	03/03/1957	08/11/2006	08/11/2006	01/03/1957	08/11/2004	145	13	378	R								DWR PI	OXLEY @ EUNGELLA	
201002	01/05/1947	01/04/1957						48		31/07/1957	DWR DISC	ROUS @	BOAT HARBOUR								
201003	01/08/1951	01/01/1969						126		31/12/1968	DWR DISC	TWEED @	BRAESIDE								
201004	01/08/1954	01/07/1982						195		02/06/1982	DWR DISC	TWEED @	KUNGHUR								
\$201005	01/01/1957	01/01/2007	03/04/1957	08/11/2006	08/11/2006	01/01/1957	01/09/2006	25	25	247									DWR SPS	ROUS@ BOAT HARBOUR 3	
201006	01/06/1969	01/09/1982						108		12/08/1982	DWR DISC	OXLEY @	TYALGUM								
201007	01/06/1969	01/06/1982						105		02/06/1982	DWR DISC	HOPPING DICK	CREEK								
201008	01/05/1969	01/06/1982						110		02/06/1982	DWR DISC	ROUS R @	CHILLINGHAM								
201009	01/05/1969	01/06/1982						114		02/06/1982	DWR DISC	ROLANDS CK @	UKI								
201010	01/05/1969	01/06/1982						106		02/06/1982	DWR DISC	BYRRILL@GLEN	WARNING								
201011	01/05/1969	01/06/1982	10/11/1969	22/01/1982					103		13/05/1982	DWR DISC	LOWER DOON	DOON							
201012	01/01/1982	01/01/2007	09/06/1982	08/11/2006	08/11/2006	01/06/1982	30/06/2005	139	19	114									DWR SMS	COBAKI CK @ COBAKI	
201013						8		27/08/2001	DWR DISC	D/S CLARRIE	HALL DAM										
201014						10		27/08/2001	DWR DISC	FOGARTYS	DIP										

[illegible]

[illegible]

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S U R F A C E W A T E R A R C H I V E, P A R R A M A T T A

\$=Telemetered

*=Storage I N V E N T O R Y O F D A T A

R A W C T W H O

Station	Flows	Heights	Ratings	No. No. a t t o u i u x Discont.	
Number	Start	End	Start	End	First Last Last of of i m m n r p n m y Date Org. Net
			Starts	Starts	Tab Tabs Gaug n p p d b H d d g Code Class NAME
203003	01/05/1921	01/11/1927			31 15/09/1927 DWR DISC EMIGRANT@ KNOCKROW 1
\$203004	01/06/1943	01/01/2008	21/03/1970	22/05/2007	01/01/1970 06/03/2006 169 26 453 DWR PPS RICHMOND @ CASINO
\$203005	01/06/1943	01/01/2007	30/06/1971	29/06/2006	07/03/1971 09/03/2007 303 63 403 R DWR PI RICHMOND @ WIANGAREE
203006	01/06/1943	01/01/1985			161 04/06/1985 DWR DISC LYNCHS CK WIANGAREE
203007	01/05/1947	01/07/1985			209 DWR PRHG TERANIA CK @ BLAKES
203008	01/11/1950	01/01/1970			128 31/12/1969 DWR DISC RICHMOND R @ THE RIS
203009	01/09/1951	01/07/1985			254 04/06/1985 DWR DISC BACK CK @ BENTLEY
\$203010	01/09/1951	01/01/2007	17/06/1967	29/06/2006	01/08/1951 28/11/2005 309 68 359 R DWR PI LEYCESTER RCK VALLEY
203011	01/09/1951	01/01/1957			33 05/11/1957 DWR DISC GOOLMANGAR @ CLAPINS
203012	01/08/1951	01/01/2007	30/09/1977	09/11/2006	30/09/1977 19/01/2006 185 33 346 DWR PI BYRON CK @ BINNABURR
203013	01/02/1952	01/01/1989	09/03/1974	27/10/1988	31/07/1973 30/01/1988 101 6 261 DWR PRHG WILSONS R @ FEDERAL
\$203014	01/01/1957	01/01/2007	22/08/1957	07/11/2006	22/08/1957 30/08/2006 167 38 302 DWR SMS WILSONS @ ELTHAM
203015	01/05/1957	01/07/1985			205 DWR PRHG GOOLMANGAR CFFEE CMP
203016	01/01/1960	01/01/1968	10/02/1960	26/09/1967	01/01/1960 01/01/1960 100 1 70 26/09/1967 DWR DISC EMIGRANT @ KNOCKROW2

203017	01/03/1967	01/07/1985		128		DWR PRHG UPPER HORSESHOE CK	
203018	01/03/1967	01/01/1986	04/08/1981	04/06/1985	30/11/1979	17/07/1984	105 6 119 DWR PRHG EDEN CK @ UPPER EDEN
203019			13		03/03/1976	DWR DISC EDEN CK THE FORD	
203020	01/03/1967	01/06/1968		18		20/05/1968 DWR DISC IRONPOT CK GHINNIGHI	
203021			26		26/06/1973	DWR DISC MUMMULGUM CREEK	
203022	01/01/1967	01/01/1984	19/06/1967	14/04/1983	19/06/1967	20/12/1982	290 44 142 14/04/1983 DWR DISC TERANIA CK @ KEERONG
\$203023	01/05/1968	01/01/2008	09/10/1975	29/01/2007	01/04/1974	20/01/2006	200 36 288 DWR SFS IRONPOT CK TOONUMBAR
\$203024	01/05/1969	01/01/2007	27/06/1982	09/11/2006	21/01/1982	09/03/2007	127 28 183 R DWR SMS COOPERS CK EWING BDG
203025	01/07/1923	01/07/1985		117		DWR PRHG MAROM CK ALSTONVILLE	
203026	01/06/1969	01/07/1985		106		DWR PRHG RICHMOND R GREVILLIA	
203027	01/06/1969	01/01/1986	24/03/1983	04/06/1985	26/12/1981	04/04/1985	105 6 101 DWR PRHG FINDON CK TERRACE CK
203028	01/05/1969	01/07/1985		117		DWR PRHG FAWCETTS PLAIN	
203029	01/05/1969	01/10/1971		23		22/09/1971 DWR DISC SHANNON BRK LEEVILLE	
\$203030	01/06/1969	01/01/2008	27/09/1979	22/05/2007	18/10/1978	10/11/2006	213 33 228 R DWR PI MYRTLE CK@ RAPPVILLE
203031							DWR UNCL REFER 203900
203032	01/12/1970	01/09/1984		01/01/1979	08/05/1986	110 4 121	03/05/1991 DWR DISC EDEN CK @ ETTRICK
203033			8		14/12/1971	DWR DISC IRONPOT TOONUMBAR VG	
\$203034	01/12/1970	01/01/2007	30/08/2001	29/06/2006	22/11/2001	28/01/2007	12 12 146 R DWR SFS EDEN CK @ DOUBTFUL
203035	01/02/1971	01/01/1989	09/11/1976	05/01/1988	11/02/1976	07/02/1985	146 12 133 03/05/1991 DWR DISC IRONPOT CK @ ETTRICK
203036	01/05/1972	01/01/1979		46		10/01/1979 DWR DISC GIBBERGUNYAH RANGE R	
203037	01/07/1972	01/01/1990	26/09/1979	13/07/1989	01/08/1979	25/08/1988	170 15 125 DWR PRHG DUCK CK ALSTONVILLE
203038	01/07/1972	01/01/1988	07/03/1979	24/09/1987	01/07/1972	05/03/1987	245 30 122 DWR PRHG PEARCES CK @ BOOYONG
203039	01/08/1972	01/01/1994	01/11/1973	21/06/1993	31/07/1972	13/03/1991	196 20 158 DWR PRHG MAGUIRES CK @ TEVEN
203040	01/08/1972	01/06/1975		28		24/09/1976 DWR DISC GUM CK @ ROUS MILL	

\$203041	01/05/1972	01/01/2008	07/03/1979	22/05/2007	01/03/1972	03/03/2007	180	31	166	R	DWR SMS	SHANNON BRK@ YORKLEA
\$203042 *	04/05/1976	29/01/2007									DWR SFH	TOONUMBAR STORAGE
203043					01/01/1900						DWR DISC	BUSBYS @ BUSBYS FLAT
203044	01/01/1983	01/01/1993	15/04/1983	26/10/1992	13/04/1983	12/12/1991	138	11	63		26/10/1992	DWR DISC BATTENS BGHT @ CAMIR
203045	01/01/1984	01/01/1993	11/04/1984	10/11/1992	11/04/1984	11/06/1991	114	11	51		10/11/1992	DWR DISC MYALL CK GIBBERAGE
203046			24/09/1987	24/09/1987	1	1	7				12/07/2001	DWR DISC BENNYS CK @ EUREKA
\$203047					02/07/2005						DWR GWP	HENDERSONS DRN
203048		23/12/2002	23/08/2006	01/01/1900	01/01/1900	1	1				DWR PJI	MAGUIRES @ ALSTONVI
203049											DWR PJI	GUM CK. @ DALWOOD FL
203050		01/09/2004	31/01/2007	26/07/2004	08/05/2005	2	2	8			DWR	YELLOW CK @ WARDELL
203051		27/07/2004	31/01/2007	27/07/2004	27/07/2004	1	1	7			DWR	GUM CK @ MAROM CK RD

DWRSITEREP Output at 2007/06/19 16:28:46

S U R F A C E W A T E R A R C H I V E, P A R R A M A T T A

\$=Telemetered

*=Storage I N V E N T O R Y O F D A T A

R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.												
Number	Start	End	Start	End	First	Last	Last of of	i	m	m	n	r	p	n	y	Date	Org.	Net	
			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

203052			27/08/2004	31/01/2007	27/08/2004	27/08/2004		1	1	7							DWR	YOUGMANS@MAROM CK RD	
203053			27/07/2004	31/01/2007	27/07/2004	30/08/2006		3	3	7							DWR	MAROM @ MAROM CK RD	
203054			29/07/2004	31/01/2007	29/07/2004	29/07/2004		1	1	8							DWR	TUCKI TUCKI@TUCKI RD	
203055			13/11/2004	22/08/2006				1									DWR	Lennys Drain	
203402										PWD							WILSONS @WOODLAW COL		
203403										PWD							RICHMOND @CORAKI		
203416										PWD							RICHMOND @WARDELL		
203428										PWD							WILSONS @WYRALLAH		
203429										PWD							WILSONS @TUCKURIMBA		
\$203900	01/05/1969	01/01/2007	01/06/1985	29/06/2006	25/04/1985	06/03/2006		06/03/2006	115	17	174	R					DWR SMS	RICHMOND @ KYOGLE	
203901										CBM							GOOLMANGAR CK NIMBIN		
203902										CBM							WILSONS R AT NASHUA		
203903								01/01/1967									CBM DISC BYRON CK AT BANGALOW		
203904										CBM							WILSONS R LISMORE PO		

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2040022	1	DWR CR DUNDOO CK @ KUNGALA
2040023	1	DWR CR KANGAROO @ BETTONG D
2040024	1	DWR CR BLAXLANDS @ COUTTS X
2040025	1	DWR CR KOREELAH CK @ KUMBEE
2040026	2	DWR CR ACACIA CK @ LEGUME
2040027	1	DWR ADH KOREELAH @ RIVERTREE
2040028	1	DWR ADH MARYLAND @ OUTLET
2040029	1	DWR ADH ACACIA @ MT LINDSAY
204003 01/04/1917 01/08/1921	8	01/01/1922 DWR DISC CLARENCE @ THE GORGE
2040030	1	DWR ADH RAZORBACK @ BOONOO B
2040031	1	DWR ADH BOONOO B @ CLIFF CK

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.													
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net
			Starts	Starts	Tab	Starts	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
2040032							1											DWR ADH	BEAURY @ TOOLOOM JCT	
2040033							1											DWR ADH	DUCK CK D/S YARD CK	
2040034							1											DWR ADH	TABULAM RIV'T @ TABU	
\$204004	01/05/1919	01/01/2008	31/10/1963	28/03/2007	22/06/1962	24/01/1996	170	14	411									DWR PPS	MANN @ JACKADGERY	
204005	01/03/1921	01/01/1987	11/10/1973	15/05/1986	27/04/1970	28/07/1984	225	26	354									15/05/1986	DWR DISC	NYMBOIDA BUCCARUMBI
204006	01/09/1921	01/01/1986	27/02/1983	21/11/1985	21/12/1982	12/11/1984	99	5	186									DWR PRHG	BOOKOOKOORARA RIVER	
\$204007	01/03/1922	01/01/2008	13/08/1971	23/05/2007	19/07/1971	01/05/2007	202	30	487	R								DWR PPS	CLARENCE @ LILYDALE	
\$204008	01/11/1923	01/01/2008	09/10/1973	05/02/2007	01/10/1973	31/03/2002	161	18	371	R	T	C						DWR PI	GUY FAWKES R @ EBOR	
204009	01/12/1923	01/09/1931					41											31/08/1931	DWR DISC	BIELSDOWN@ DORRIGO 1
204010	01/12/1923	01/08/1961					100											31/07/1961	DWR DISC	ROCKY CK @ DORRIGO
204011	01/02/1925	01/03/1958					79											28/02/1958	DWR DISC	DEER PARK@ DEER VALE
204012	01/02/1925	01/12/1953					123											01/06/1959	DWR DISC	MAJORS CK GRAFTON RD
204013	01/02/1925	01/02/1961					137											11/03/1961	DWR DISC	JOCKS WATER MAIDA VL
\$204014	01/10/1945	01/01/2008	10/05/1972	26/03/2007	25/10/1971	10/03/2001	138	10	345									DWR PPS	MANN @ MITCHELL	

\$204015	01/10/1945	01/01/2008	26/05/1970	27/03/2007	30/04/1968	29/05/2000	202	26	325		DWR PPS	BOYD @ BROADMEADOWS
204016	01/02/1947	01/01/1984	01/04/1971	22/04/1983	01/04/1971	31/01/1980	135	7	269		22/04/1983	DWR DISC LITTLE MURRAY RIVER
\$204017	01/09/1947	01/01/2008	18/08/1971	28/03/2007	01/08/1971	03/03/2006	145	15	410	R	DWR PI	DORRIGO NO.2 &NO.3
204018	01/09/1948	01/03/1957			43	28/02/1957	DWR DISC	BOBO R.	@	BROOKLANA		
204019	01/09/1948	01/01/1986	10/02/1972	11/06/1985	01/12/1971	07/10/1983	130	6	266		11/06/1985	DWR DISC NYMBOIDA@ BOSTOBRICK
204020	01/10/1948	01/01/1986	31/08/1984	07/06/1985	19/06/1984	19/06/1984	100	1	236		07/06/1985	DWR DISC BLICKS R DUNDURRABIN
204021	01/04/1950	01/01/1986	01/04/1978	14/06/1985	26/03/1978	01/11/1984	115	16	244		14/06/1985	DWR DISC BLICKS R @ HERNANI
204022	01/05/1951	01/09/1962			82	16/08/1962	DWR DISC	LITTLE DANDAHRA	CK			
204023	01/06/1951	01/09/1962			76	15/08/1962	DWR DISC	DANDAHRA CK	DAM SITE			
204024	01/03/1955	01/01/1986	04/09/1984	12/06/1985	28/11/1983	28/11/1983	100	1	245		12/06/1985	DWR DISC WILD CATTLE@ MEGAN 2
\$204025	01/05/1925	01/01/2008	31/10/1969	27/03/2007	31/10/1969	18/03/2007	383	76	430	T C B P O	DWR PPS	ORARA @ KARANGI
204026	01/07/1951	01/01/1986	03/12/1953	12/06/1985	03/12/1953	03/04/1981	130	19	262		12/06/1985	DWR DISC BOBO @ BOBO NURSERY
204027	01/08/1951	01/01/1993	05/07/1973	16/11/1992	14/12/1970	25/01/1986	121	6	233	R	16/11/1992	DWR DISC LITTLE NYMBOIDA R.
204028	01/08/1951	01/10/1960			58	11/10/1960	DWR DISC	MOLE CREEK	@	MOLETON		
204029	01/08/1951	01/03/1958			40	28/02/1958	DWR DISC	CAMP CREEK	@	LOWANNA		
\$204030	01/09/1951	01/01/2008	29/08/1977	30/03/2007	04/01/1977	17/07/1995	135	17	297	R	DWR PI	ABERFOYLE@ ABERFOYLE
\$204031	01/10/1951	01/01/2008	18/04/1984	11/04/2007	13/12/1983	28/12/2004	117	17	352		DWR PJI	MANN @ SHANNON VALE
204032	01/10/1951	01/12/1985			157		DWR PRHG	TIMBARRA@	GLEN	ELGIN		
\$204033	01/11/1951	01/01/2007	07/03/1978	12/12/2006	26/09/1973	04/11/2006	209	32	327	R T	DWR PPS	TIMBARRA BILLYRIMBAH
\$204034	01/10/1951	01/01/2008	16/08/1971	27/03/2007	28/01/1971	30/06/2005	174	22	325		DWR PI	HENRY @ NEWTON BOYD
204035	01/09/1921	01/09/1962			135	13/08/1962	DWR DISC	BOONOO	BOONOO	RIVER		
\$204036	01/01/1952	01/01/2007	14/03/1952	12/12/2006	14/03/1952	20/11/2004	288	46	389	R	DWR PI	CATARACT SANDY HILL
204037	01/07/1952	01/01/2008	16/02/1971	21/05/2007	16/12/1970	09/03/2001	241	30	274		DWR PI	CLOUDS CK @ CLOUDS
204038	01/07/1952	01/11/1961			63	22/10/1961	DWR DISC	SHEEP STATION	CREEK			

\$204039	01/07/1955	01/01/2008	08/03/1979	05/03/2007	19/10/1978	09/11/2004	151	20	302		DWR PI	MARYLAND D/S WYLIE C
204040	01/10/1954	01/01/1986	14/12/1982	03/06/1985	01/12/1982	01/12/1982	100	1	204		03/06/1985 DWR DISC	KOREELAH HEWETSONS M
\$204041	01/01/1956	01/01/2008	29/06/1960	27/03/2007	20/02/1959	06/08/2003	143	15	369		DWR PPS	ORARA @ BAWDEN BDGE
204042	01/07/1955	01/01/1987	08/07/1981	13/05/1986	21/06/1979	28/10/1985	190	19	171		DWR PRHG	TOOLOOM CK @ FALLS
\$204043	01/01/1960	01/01/2008	25/03/1960	29/01/2007	25/03/1960	28/02/2002	182	18	260		DWR PI	PEACOCK CK @ BONALBO
204044	01/05/1960	01/01/1986	23/04/1969	06/06/1985	01/01/1969	04/04/1985	355	51	176		06/06/1985 DWR DISC	GORGE CK @ BONALBO
204045	01/05/1960	01/07/1967			59	05/10/1967					DWR DISC	LINDSAY @ WOODENBONG
\$204046	01/01/1969	01/01/2007	07/07/1969	13/12/2006	01/11/1968	05/03/2006	267	43	217		DWR PPS	TIMBARRA @ DRAKE
204047	01/05/1970	01/01/1979	06/06/1973	10/01/1978	01/05/1970	19/05/1977	135	8	77		10/01/1978 DWR DISC	URUMBILUM DAIRYVILLE
204048	01/06/1970	01/01/1986	08/02/1977	20/11/1985	06/06/1970	02/08/1984	205	22	102		DWR PRHG	COOMBADJHA CREEK
204049	01/06/1970	01/01/1986	27/06/1985	21/11/1985	10/04/1984	10/07/1985	99	2	96		21/11/1985 DWR DISC	DUCK CREEK @ CAPEEN

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R A W C T W H O

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204050 01/06/1970 01/01/1987 01/03/1982 13/05/1986 24/05/1981 13/11/1984 120 6 101 13/06/1986 DWR DISC TOOLOOM CK UP TLOOM

\$204051	01/06/1970	01/01/2008	26/03/1976	06/03/2007	01/06/1970	19/07/2005	242	35	200		DWR PPS	CLARENCE PADDYS FLAT
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204052 01/06/1970 01/01/1986 01/10/1984 07/06/1985 20/07/1982 13/12/1984 101 2 103 07/06/1985 DWR DISC YARROW CK@ YARROW CK

204053 01/06/1970 01/01/1986 01/10/1984 07/06/1985 06/03/1982 13/12/1984 100 2 101 07/06/1985 DWR DISC SARA @ KOOKABOOKRA

204054	01/06/1972	01/01/1986	20/03/1980	06/06/1985	01/01/1980	01/01/1980	97	1	78	06/06/1985	DWR DISC WASHPOOL LIONSVILLE
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\$204055	01/01/1972	01/01/2008	28/02/1972	24/05/2007	28/02/1972	04/01/2007	369	65	201	DWR PI	SPORTSMANS	GURRANANG
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\$204056	01/01/1975	01/01/2008	23/05/1975	28/03/2007	18/02/1975	16/05/2003	287	44	190	DWR PI	DANDAHRA GIBRALTAR R
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204057	01/06/1972	01/01/1986	07/09/1982	25/09/1985	04/03/1982	01/02/1985	105	6	97	24/09/1985	DWR DISC BARNEY DOWNS CREEK
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204058	01/05/1972	01/01/1986	83	08/02/1988	DWR DISC KOREELAH NEW KOREELA
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204059 79 20/11/1985 DWR DISC GLENUGIE CR @ S.GRAF

204060 01/01/1975 01/01/1991 22/05/1975 19/04/1990 22/05/1975 05/04/1990 354 57 126 19/04/1990 DWR DISC BUCCA CK CNTRL BUCCA

204061	01/08/1929	01/09/1931	7	31/08/1931 DWR DISC STANTHORPE ROAD
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204062	01/07/1951	01/01/1956	34	31/12/1955 DWR DISC WILD CATTLE@ MEGAN 1
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204063 01/01/1929 DWR DISC NYMBOIDA TAIL RACE

204064											01/04/1958	DWR	DISC	KELLYS CK @ DAM SITE			
204065											30/09/1930	DWR	DISC	ORARA @ KARANGI NO1			
204066											31/12/2000	DWR	DISC	ORARA @ RAMORNIE			
\$204067	01/01/1983	01/01/2008	21/04/1983	07/02/2007	21/04/1983	21/11/2001	5	5	112				DWR	SMS	GORDON BK@FINEFLOWER		
\$204068	01/01/1995	01/01/2008	14/08/1995	27/03/2007	14/08/1995	28/02/2007	32	32	109				DWR	PJI	ORARA @ ORANGE GROVE		
\$204069	01/01/1997	01/01/2008	17/09/1997	24/05/2007	17/09/1997	13/02/2007	13	13	63				DWR	PJI	NYMBOIDA D/S WEIR		
204070											27/08/2001	DWR	DISC	SWAN CK @ WILCOX BG			
\$204071	01/01/2003	01/01/2008	21/05/2003	28/03/2007	21/05/2003	03/03/2006	2	2	15				DWR	SMS	BIELSDOWN@CHARLSTD		
\$204072	01/01/1999	01/01/2008	18/08/1999	24/05/2007	18/08/1999	18/08/1999	1	1	5				DWR	SFP	NYMBOIDA PS RIGHT BK		
\$204073	01/01/1999	01/01/2008	18/08/1999	24/05/2007	18/08/1999	18/08/1999	1	1	4				DWR	SFP	NYMBOIDA PS LEFT BK		
204074												DWR	UNCL	UPPER NYMBOIDA EOS			
204075												DWR	UNCL	BIELSDOWN EOS			
204076												DWR	UNCL	WILD CATTLE EOS			
204077												DWR	UNCL	BLICKS EOS			
\$204403		14/08/2001	23/05/2007	14/08/2001	14/08/2001		1	1	R				DWR	PRH	COLDSTREAM @ TUCABI		
\$204900	01/01/1971	01/01/2008	14/07/1971	23/05/2007	14/07/1971	11/11/2006	170	22	159	R			DWR	SPS	CLARENCE @ BARYULGIL		
204901												CBM		NYMBOIDA @ TYRINGHAM			
204902											27/05/1964	CBM		CLARENCE HEIFER STN			
204903												CBM		CLARENCE COPMANHURST			
204904											1		12/03/2001	DWR	ADH	CLARENCE R @ GRAFTON	
204905												CBM		CLARENCE @ ULMARRA			
\$204906	01/01/1972	01/01/2008	15/11/1972	27/03/2007	18/10/1972	03/03/2006	230	46	221	R			DWR	PI	ORARA R @ GLENREAGH		
2050001											2			DWR	CR	BELLINGER U/S BORES	
2050002											2			DWR	CR	BELLINGER D/S BORES	

2050003	31/05/2006	29/03/2007	3	3	4	DWR	MISSABOTTI @ WIA ORA
2050004	01/06/2006	01/06/2006	1	1	1	DWR	TAYLORS @ UPP TAYLOR
2050005	05/09/2006	05/09/2006	1	1	2	DWR	HYDES CK @ KETHELS R
2050006	05/09/2006	05/09/2006	1	1	2	DWR	BONVILLE CK @ CROSSM
2050007	06/09/2006	06/09/2006	1	1	2	DWR	NEVER NEVER @ OLD XG
2050008	06/09/2006	06/09/2006	1	1	2	DWR	KALANG @ SUNNY CNR R
205001	01/05/1925	01/09/1928	15			31/08/1928	DWR DISC 2 (NEVER) @ GLENIFFER
\$205002	01/06/1955	01/01/2008	18/02/1982	30/03/2007	14/01/1970	31/08/2006	266 49 330 R DWR PI BELLINGER @ THORA
205003	01/01/1948	01/01/1957	14/12/1948	01/03/1956	05/07/1948	01/11/1956	4 2 37 22/05/1958 DWR DISC 2 (NEVER) SLINGSBY RD
205004	01/06/1959	01/01/1975	14/10/1971	20/03/1974	24/06/1970	30/10/1972	111 4 171 20/03/1974 DWR DISC KALANG R @ SCOTCHMAN
205005	01/06/1959	01/01/1967	67			31/12/1966	DWR DISC BELLINGER @ BOGGY CK

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.												
Number	Start	End	Start	End	First	Last	Last of	of	i	m	n	r	p	n	y	Date	Org.	Net	
			Starts	Starts	Tab	Tabs	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

\$205006	01/09/1959	01/01/2007	25/08/1971	04/07/2006	25/08/1971	04/07/2006	246	48	336	R							DWR PI	NAMBUCCA BOWRAVILLE	
205007	01/01/1960	01/01/1984	04/02/1960	18/03/1983	04/02/1960	13/10/1979	160	12	170								18/03/1983	DWR DISC WOOLGOOLGA CREEK	
205008	01/01/1970	01/01/1990	24/03/1970	31/01/1989	01/02/1970	12/04/1988	240	37	147								DWR PRHG	TAYLORS ARM GRAYS XG	
205009	01/06/1970	01/01/1986	14/05/1980	09/10/1985	24/08/1971	28/07/1984	165	18	121								08/10/1985	DWR DISC WARRELL CREEK	
205010	01/01/1971	01/01/1983	14/10/1971	17/02/1982	01/10/1971	14/05/1980	140	8	96								17/02/1982	DWR DISC BELLINGER UPPR THORA	
205011																	02/10/1985	DWR DISC WARRELL CK @ BARRAGE	
205012	01/01/1975	01/01/1986	20/05/1975	01/11/1985	20/05/1975	08/03/1985	264	37	87								01/11/1985	DWR DISC CORINDI UPPR CORINDI	
205013	01/01/1974	01/01/1984	24/04/1975	15/04/1983	24/04/1975	22/03/1983	195	20	76								15/03/1983	DWR DISC KALANG R @ KOOROOWI	
\$205014	01/01/1982	01/01/2008	24/06/1982	27/02/2007	24/06/1982	03/03/2006	148	25	134	R							27/02/2007	DWR SMS 2 (NEVER) @ GLENNIFER	
\$205015		01/06/2006	29/03/2007	31/05/2006	10/09/2006		2	2	8								DWR CF	NAMBUCCA U/S BOWRAVI	
205416																	PWD	NAMBUCCA @MACKSVILLE	
2060001						4											DWR CR	APSLEY @ ANDYS	
2060002						3											DWR CR	APSLEY @ SOMERSET	
2060003						3											DWR CR	APSLEY U/S PUMPHOUSE	

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206004	01/01/1924	01/01/1986	07/01/1924	26/06/1985	01/01/1900	23/12/1981	100	2	267		DWR PRHG GARA RIVER @ GARA
206005	01/10/1924	01/05/1956			114	30/04/1956	DWR DISC OAKY @ KEMPSEY ROAD				
206006	01/10/1924	01/09/1931			41	31/08/1931	DWR DISC APSLEY R @ WATERLOO				
206007	01/02/1925	01/07/1936			38	31/08/1931	DWR DISC OAKY R @ YOOROONAH				
\$206008	01/01/1924	01/01/2008	19/06/1975	24/04/2007	10/06/1975	27/11/2001	131	12	237	T C	DWR SMS COMMISSIONERS WATERS
\$206009	01/11/1927	01/01/2008	21/01/1954	01/05/2007	25/06/1950	31/03/2002	221	54	481		DWR PI TIA @ TIA
206010	01/07/1928	01/07/1985		21/06/1984	21/06/1984	101	1	338		17/06/1985	DWR DISC YARROWITCH RIVER
\$206011	01/10/1945	01/01/2008	15/01/1970	08/05/2007	01/01/1900	01/09/2006	217	41	360	R	DWR PPS MACLEAY @ TURNERS FT
206012				59		01/01/1961	DWR DISC GEORGES CK GEORGES C				
206013	01/05/1948	01/01/1961			55	19/01/1961	DWR DISC OAKY R @ YOOROONAH 2				
\$206014	01/04/1948	01/01/2008	23/06/1954	21/05/2007	22/02/1953	06/04/1998	219	48	362		DWR PI WOLLOMOMBI CONINSIDE

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R A W C T W H O

Station	Flows	Heights	Ratings	No. No. a t t o u i u x Discont.
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Number	Start	End	Start	End	First	Last	Last of of	i m m n r p n m y	Date	Org. Net
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Starts	Starts	Tab	Tabs	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
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206015 01/05/1948 01/01/1986 01/07/1979 07/06/1985 12/11/1975 21/04/1982 105 6 266 07/06/1985 DWR DISC CHANDLER EURINGILLY

206016	01/10/1950	01/04/1974	144	31/03/1974	DWR DISC MACLEAY LOWER CREEK
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206017	01/03/1952	01/01/1986	27/07/1954	12/11/1985	11/03/1952	07/07/1985	333	49	277	12/11/1985	DWR DISC	SERPENTINE CREEK
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\$206018	01/01/1952	01/01/2008	10/12/1952	01/05/2007	10/12/1952	17/11/2002	204	31	373	T	DWR	PPS	APSLEY	APSLEY	FALLS
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206019 01/05/1953 01/07/1984 218 30/06/1984 DWR DISC MACLEAY @ BELLBROOK

206020 01/01/1956 01/01/1986 05/05/1970 14/06/1985 24/08/1969 27/02/1983 130 6 194 DWR PRHG STYX R @ SERPENTINE

206021	01/07/1956	01/01/1984	05/05/1980	02/11/1983	15/03/1976	03/12/1981	110	4	184	02/11/1983	DWR DISC OAKY R ABVE OAKY DAM
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206022 01/01/1976 01/01/1987 13/10/1976 20/11/1986 01/01/1962 01/01/1985 110 2 34 DWR PRHG MACLEAY R @ KEMPSEY

206023 01/04/1963 01/01/1986 25/03/1983 25/09/1985 01/07/1981 01/07/1981 100 1 191 DWR PRHG GEORGES R @ BIGHILL

\$206024	01/01/1969	01/01/2008	27/06/1969	07/05/2007	27/06/1969	24/02/2003	217	29	235	DWR PPS	MACLEAY D/S GEORGES
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\$206025	01/01/1972	01/01/2008	29/12/1972	11/04/2007	29/12/1972	01/07/1992	140	21	176	DWR PPS	SALISBURY WATERS
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\$206026 01/01/1974 01/01/2008 19/09/1974 16/04/2007 01/09/1974 05/03/1994 169 22 190 R DWR PJX SANDY CK @ NEWHOLME

\$206027 01/01/1974 01/01/2008 29/11/1974 31/05/2007 01/11/1974 27/07/1990 123 8 171 R DWR PJI PIPECLAY @ KIRBY FAR

206028 01/10/1924 01/09/1929 07/12/1998 19/08/2005 104 4 27 DWR CR YARROWITCH@YARROBIND

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\$207010	01/06/1972	01/01/2008	23/06/1985	02/05/2007	27/12/1983	27/01/2005	119	13	169	T		DWR PRF	PAPPINBARRA CREEK
207011	01/06/1972	01/01/1986	01/07/1980	18/06/1985	01/09/1979	22/07/1981	200	6	118			DWR PRHG	THONE R @ BAGNOO
207012	01/01/1972	01/01/1990	12/12/1972	03/02/1989	06/11/1972	29/11/1988	260	36	117			DWR PRHG	DOYLES DOYLES RIV RD
\$207013	01/01/1975	01/01/2008	26/03/1975	02/05/2007	01/03/1975	06/11/2006	198	31	209			DWR PI	ELLENBRGH D/S BUNNOO
\$207014	01/01/1984	01/01/2008	11/05/1984	03/05/2007	11/05/1984	31/08/2006	145	28	130			DWR SMS	WILSON @ AVENAL
\$207015	01/01/1984	01/01/2008	31/05/1984	01/05/2007	31/05/1984	29/09/2003	11	11	117			DWR SMS	HASTINGS @ MT SEAVIE
207016			16/02/2000	03/05/2007	6	6	32					DWR CR	CEDAR SCRUB NR HERON
207017			03/08/2006	03/08/2006	1	1	9					DWR	Mortons @ Mortons Ck
207400											PWD	HASTINGS @BAINS BRDG	
207401											PWD	HASTINGS @WAUCHOPE	
207600			01/07/2005	01/07/2005	7	1	4					DWR	Hastings R @ Koree

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Starts	Starts	Tab	Tabs	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
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\$207998	CBM	HASTINGS SETTLMNT PT
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\$207999 CBM HASTINGS R @ HIBBARD

208001	01/01/1944	01/01/2008	31/01/1944	21/02/2007	31/01/1944	12/05/1997	135	5	238	DWR PBM	BARRINGTON BOBS XING
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208002 01/01/1954 01/01/1982 08/04/1954 15/09/1981 19/01/1954 20/03/1978 105 2 178 R 04/05/1982 DWR DISC MANNING R @ TOMALLA

\$208003	01/01/1945	01/01/2008	31/05/1945	31/05/2007	28/05/1945	15/07/1999	277	59	345	R	DWR	PPS	GLOUCESTER	DOON	AYRE
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\$208004 01/01/1945 01/01/2008 31/05/1945 31/05/2007 31/05/1945 30/06/2005 165 28 360 DWR PPS MANNING @ KILLAWARRA

\$208005	01/01/1945	01/01/2008	30/06/1945	30/05/2007	07/06/1945	11/02/1999	182	51	363	R	DWR	PPS	NOWENDOC	ROCKS	XING
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\$208006	01/01/1945	01/01/2008	07/11/1945	17/05/2007	08/11/1945	28/05/2003	154	22	338	DWR PPS	BARRINGTON FORBSDALE
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\$208007 01/01/1946 01/01/2008 15/07/1946 23/03/2007 05/07/1946 30/12/1994 186 35 339 DWR PI NOWENDOC @ NOWENDOC

208008	01/01/1948	01/01/2008	31/05/1948	17/05/2007	01/06/1948	17/09/2004	171	26	276	DWR	PJX	GLOUCESTER FORBESDAL
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\$208009 01/01/1949 01/01/2008 16/02/1949 04/05/2007 16/02/1949 24/08/2003 139 52 336 R DWR PJI BARNARD @ BARRY

208010 47 12/02/1962 DWR DISC BARNARD R @ KAUTHI

\$208011 01/08/1962 01/01/2008 14/05/1973 30/05/2007 02/08/1962 06/11/2006 199 40 297 R DWR PPS BARNARD @ MACKAY

208012 01/06/1964 01/01/1986 28/04/1971 20/06/1985 28/04/1971 08/11/1984 210 23 194 20/06/1985 DWR DISC MANNING R @ WOKO

208013	01/06/1969	01/01/1986	04/03/1980	30/10/1985	01/12/1976	04/05/1985	120	5	133	30/10/1985	DWR DISC ROWLEYS RIVER @ N01
208014	01/06/1969	01/01/1986	04/03/1980	30/10/1985	01/06/1974	07/11/1984	113	10	139	30/10/1985	DWR DISC COOPLACURRIPA RIVER
\$208015	01/01/1969	01/01/2008	24/06/1969	31/05/2007	23/06/1969	20/10/2004	148	29	228	DWR PI	LANDSDOWNE @ LANDSDN
208016	01/06/1969	01/01/1986	08/08/1979	29/10/1985	01/04/1979	10/07/1985	160	16	145	29/10/1985	DWR DISC BOWMAN R @ WAPRA
208017	01/07/1969	01/06/1972			21	05/05/1972				DWR DISC DINGO CK @ DINGO CK	
208018	01/01/1971	01/01/1986	30/07/1971	29/10/1985	30/07/1971	24/02/1985	130	14	122	29/10/1985	DWR DISC AVON R BELOW DAMSITE
\$208019	01/01/1971	01/01/2008	13/08/1971	31/05/2007	13/08/1971	26/02/2004	166	14	147	DWR PJI	DINGO CK @ MUNYAREE
\$208020	01/01/2003	01/01/2008	04/04/2003	17/05/2007	05/03/2003	06/08/2006	5	5	17	DWR CF	GLOUCESTER GLOUCESTR
208021					01/02/1953					DWR DISC MANNING R CAMPBELLS1	
208022	01/01/1979	01/01/1993	29/11/1979	20/01/1992	01/11/1979	12/09/1991	151	20	145	20/01/1992	DWR DISC BARNARD @ THE PIMPLE
208023					31/12/1949					DWR DISC MANNING @ THE FALLS	
\$208024	01/01/1982	01/01/2008	01/04/1982	04/05/2007	30/03/1982	14/03/2004	157	27	178 R	DWR PJI	BARNARD D/S BACK RV
208025				1	31/05/2000					DWR DISC GLOUCESTER @ BERRICO	
208026	01/01/1984	01/01/2008	04/05/1984	03/04/2007	04/05/1984	20/11/2000	100	2	87	DWR SMS	MYALL @ JACKY BARKER
\$208027	01/01/1987	01/01/2008	01/10/1987	04/05/2007	30/09/1987	25/03/2001	105	2	48	DWR PJI	BARNARD MEASURE WEIR
208028	01/01/2004	01/01/2008	07/09/2004	17/05/2007	06/09/2004	06/09/2004	1	1	2	DWR CF	AVON D/S WAUKIVORY
\$208029		25/05/2006	30/05/2007	26/05/2006	26/05/2006		1	1	4	DWR PPS	MANNING @ LESLIES BR
208900					CBM					MANNING CUNDLE FLAT	
208901					CBM					MANNING @ MT GEORGE	
208902					CBM					MANNING R AT WINGHAM	
209001	01/06/1945	01/08/1981	01/01/1944	01/12/1980	08/03/1945	01/04/1963	3	3	183	31/07/1981	DWR DISC KARUAH R @ MONKERAI
209002	01/01/1967	01/01/2008	18/12/1967	23/04/2007	18/12/1967	15/12/2002	150	21	166	DWR PBM	MAMMY J RV@PIKES XIN
\$209003	01/01/1968	01/01/2008	26/10/1968	30/04/2007	26/10/1968	14/07/2006	215	41	215	DWR PBM	KARUAH R @ BOORAL
209004	01/11/1968	01/06/1980	04/07/1973	02/06/1974	30/10/1972	29/11/1973	125	6	67	21/05/1981	DWR DISC MAMMY JNS STROUD RD

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R A W C T W H O

Station	Flows	Heights	Ratings	No. No. a t t o u i u x Discont.	
Number	Start	End	Start	End	First Last Last of of i m m n r p n m y Date Org. Net
			Starts	Starts	Tab Tabs Gaug n p p d b H d d g Code Class NAME
209016					FOR BOLLYGUM CREEK
209017	01/01/1975	01/01/1981	23/01/1975	11/08/1980	01/03/1976 20/03/1978 135 4 R FOR COACHWOOD CREEK
\$209018	01/01/1979	01/01/2008	18/12/1979	30/04/2007	27/11/1979 24/03/2005 118 7 146 DWR PI KARUAH R @ DAM SITE
\$210001	01/01/1898	01/01/2008	01/01/1913	30/04/2007	31/10/1891 01/04/2006 339 145 1055 DWR SFS HUNTER RV@SINGLETON
\$210002	01/01/1907	01/01/2008	01/01/1913	02/05/2007	01/09/1910 01/10/2006 361 96 697 T C DWR SFP MUSWELLBROOK BRIDGE
210003	01/01/1907	01/03/1921			30/06/1924 DWR DISC GOULBURN R ROSEMOUNT
\$210004	01/01/1908	01/01/2008	09/02/1908	14/02/2007	09/02/1908 24/02/2005 122 81 444 T C DWR PJI WOLLOMBI BR@WARKWRTH
210005	01/01/1913	01/01/1961	31/12/1912	31/12/1960	01/11/1911 18/08/1964 53 48 241 27/11/1987 DWR DISC HUNTER @ MOONAN FLAT
210006	01/01/1913	01/01/2008	31/12/1912	01/05/2007	26/10/1912 27/07/1998 283 84 405 R DWR PI GOULBURN R @ COGGAN
210007					5 01/07/1985 DWR DISC CHICHESTER DAM
210008	01/07/1918	01/01/1963	01/01/1949	31/12/1962	01/05/1923 08/05/1963 55 46 233 31/08/1963 DWR DISC MUSWELLBROOK WEIR
210009	01/02/1919	01/12/1920			17 30/06/1924 DWR DISC HUNTER @ LUSKINTYRE
\$210010	01/01/1927	01/01/2008	01/12/1927	17/05/2007	01/12/1927 23/03/2004 157 47 326 R DWR SFP WILLIAMS RV@GLEN MAR
\$210011	01/01/1931	01/01/2008	19/02/1931	17/05/2007	19/02/1931 18/03/2005 140 118 448 DWR PJI WILLIAMS RV@TILLEGRA

210012	01/08/1934	01/12/1952							30/09/1952	DWR DISC	PAGES R @ CRONINS	
210013	01/08/1934	01/01/2004	04/04/2002	13/10/2003	04/04/2002	04/04/2002	105	1	8		13/10/2003	DWR DISC STEWARTS CLOVERDALE
\$210014	01/01/1934	01/01/2008	06/08/1934	14/05/2007	27/07/1934	14/05/2007	150	41	277	R		DWR PI ROUCHEL BROOK
\$210015	01/01/1940	01/01/2008	01/04/1940	24/05/2007	01/01/1940	30/01/2003	212	62	568	T C		DWR SFP HUNTER D/S GLENBAWN
\$210016	01/01/1940	01/01/2008	13/03/1940	01/05/2007	16/02/1940	11/05/2005	498	141	417	T C		DWR PPS GOULBURN R KERRABEE
\$210017	01/01/1940	01/01/2008	17/06/1940	03/05/2007	01/01/1940	08/08/1998	111	33	299			DWR SMS MOONAN BROOK
\$210018	01/01/1940	01/01/2008	13/06/1940	03/05/2007	01/01/1900	30/06/2005	150	43	368	R		DWR SFP HUNTER MOONAN DAM ST
210019	01/01/1940	01/01/1979	30/06/1940	30/06/1978	19/06/1940	05/03/1977	59	55	230		30/06/1978	DWR DISC OMADALE BROOK @ ROMA
210020											NSW	REFER 210048
\$210021	01/12/1940	01/01/2008	30/11/1940	16/03/2007	01/12/1940	03/11/2005	165	30	286	T C		DWR SFS PATERSON R D/S LOSTO
\$210022	01/01/1940	01/01/2008	11/12/1940	08/05/2007	11/12/1940	01/12/2004	255	64	426	R		DWR PI ALLYN RIVER @ HALTON
210023	01/02/1944	01/04/1963					96				02/04/1963	DWR DISC GLENNIES THE ROCKS 1
210024											30/06/1949	DWR DISC WOLLOMBI @ FORDWICH
210025	01/07/1946	01/05/1973					173				30/04/1976	DWR DISC STEWARTS B WINDEMERE
210026	01/05/1948	01/10/1979					170				28/09/1979	DWR DISC CONGEWAI @ EGLINFORD
210027											23/05/1963	DWR DISC CONGEWAI CK DAM SITE
\$210028	01/01/1949	01/01/2008	25/07/1949	19/04/2007	01/01/1949	23/02/2005	261	80	394	T C		DWR SPS WOLLOMBI BRK @ BULGA
210029	01/10/1950	01/09/1979	30/09/1950	31/08/1979	01/06/1950	06/04/1978	63	54	198		31/08/1979	DWR DISC ROUCHEL UPPR ROUCHEL
210030	01/04/1956	01/10/1958	11/04/1956	30/09/1958	12/04/1956	10/04/1959	7	7	39		30/09/1975	DWR DISC PAGES RIVER @ GUNDY
\$210031	01/01/1954	01/01/2008	23/11/1954	01/05/2007	01/01/1954	10/11/2004	388	95	467	T C		DWR PPS GOULBURN SANDY HOLLW
210032	01/09/1954	01/06/1958					50				31/05/1958	DWR DISC DART BROOK @ DALMORE
210033											31/05/1958	DWR DISC KNGDN PNDS CAMYR ALN
210034	01/09/1954	01/04/1979	31/08/1954	31/03/1979	01/01/1954	01/01/1979	102	36	170		31/03/1979	DWR DISC WIDDEN BRK @ WIDDEN
210035											31/03/1955	DWR DISC GLENDON BR MITCHELLS

210036	01/09/1954	01/04/1963					67			31/03/1963	DWR DISC WALLIS CK @ MULBRING								
210037	01/12/1954	01/07/1969					145			23/09/1976	DWR DISC KRUI R @ NEVERFAIL								
210038										22/09/1955	DWR DISC HUNTER R @ THE GLEN								
\$210039	01/01/1999	01/01/2008	02/08/1999	03/05/2007	02/08/1999	02/10/2004	107	3	43	T C		DWR PJI	HUNTER R @ BELLTREES						
\$210040	01/01/1955	01/01/2008	14/06/1955	02/05/2007	17/05/1955	20/09/2005	161	38	247	T C		DWR PI	WYBONG CK @ WYBONG						
210041	01/12/1955	01/01/1976					156			31/12/1978	DWR DISC PATERSON @ MT RIVERS								
210042	01/01/1956	01/01/2000	22/03/1956	23/11/1999	01/02/1956	03/02/1989	412	68	188			01/03/2000	DWR DISC FOY BRK @ RAVENSWRTH						
210043	01/01/1956	01/11/1981					132			20/10/1981	DWR DISC SADDLERS CK BOWFIELD								
\$210044	01/01/1956	01/01/2008	26/01/1956	23/05/2007	25/01/1956	23/02/2007	291	70	292	T C		DWR SFS	MIDDLE FALBROOK						
210045	01/02/1956	01/01/1982	12/12/1968	23/06/1981	13/01/1968	09/02/1977	130	7	85			03/09/1991	DWR DISC SALTWATER @ PLASHETT						
210046	01/03/1956	01/09/1982	08/03/1956	31/08/1982	09/03/1956	17/05/1980	37	33	156			31/08/1982	DWR DISC GOULBURN R @ ULAN						

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INVENTORY OF DATA

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Starts	Starts	Tab	Tabs	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
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210047 01/01/1958 01/07/1976 453 PWD SFH HUNTER R @ MAITLAND

210048 01/03/1940 01/01/2000 01/12/1940 08/11/1999 01/01/1940 04/09/1996 282 76 356 08/11/1999 DWR DISC WOLLOMBI BR@PAYNES

210049	01/03/1958	01/01/1969	75	10/12/1968	DWR DISC YORK CK RAVENSWORTH
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210050	01/03/1958	01/07/1968	86	23/11/1968	DWR DISC SWAMP CK RAVENSWORTH
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210051	01/05/1958	01/06/1973	31/05/1973	04/04/1974	222	13/07/1979	DWR DISC CONGEWAI HANGING RCK
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\$210052 01/01/1958 01/01/2008 25/09/1958 03/05/2007 02/07/1958 23/02/2003 156 37 288 DWR PPS PAGES R @ GUNDY REC

210053 01/11/1958 01/01/1977 15/11/1972 28/05/1976 16/11/1972 22/04/1975 120 4 125 25/01/1977 DWR DISC SWAMP @ KURRI KURRI

210054	01/01/1959	01/01/1979	08/07/1968	05/12/1978	09/07/1968	10/07/1978	315	41	171	14/12/1978	DWR	DISC	WALLIS	RICHMOND	VALE
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\$210055	01/01/1959	01/01/2008	04/02/1959	01/05/2007	19/11/1918	01/09/2006	207	81	424	R	T	C	DWR	SFS	HUNTER RIVER	DENMAN
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\$210056	01/01/1959	01/01/2008	17/03/1959	18/04/2007	17/03/1959	01/10/2006	108	37	235	T	C	DWR SFP	HUNTER R @ ABERDEEN
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210057 01/05/1959 01/05/1963 41 19/01/1964 DWR DISC ISIS RIVER @ WAVERLY

210058	01/06/1959	01/01/1972	90	31/03/1974 DWR DISC DART BRK ABERDEEN 1
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\$210059	01/10/1966	01/01/2002	01/11/1973	28/06/2001	01/11/1973	01/03/1994	160	14	182	C	18/11/2002	DWR DISC BAYSWATER D/S LIDDEL
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210060 01/02/1960 01/01/1993 13/10/1980 02/01/1992 03/02/1960 10/10/1990 274 54 178 16/01/1992 DWR DISC BAERAMI CK @ BAERAMI

\$210061	01/01/1960	01/01/2008	20/05/1960	07/02/2007	11/05/1960	09/09/2004	227	70	230	R		DWR PI	PAGES R @ BLANDFORD
210062	01/09/1969	01/04/1979			102	01/04/1979						DWR DISC	BYLONG R BYLONG NO.2
210063	01/01/1963	01/01/1979	25/10/1963	27/09/1978	25/10/1963	14/02/1975	105	2	125			27/09/1978	DWR DISC FIRST CK POKOLBIN 1
\$210064	01/01/1968	01/01/2008	04/12/1968	12/04/2007	27/08/1961	01/09/2006	421	70	363	T C		DWR SFP	HUNTER R @ GRETA
210065	01/12/1962	01/07/1982			115	30/06/1982						DWR DISC	HALLS CK @ GUNGAL
\$210066	01/01/1963	01/01/2008	22/01/1963	01/05/2007	01/01/1963	25/12/2004	186	27	172	T C		DWR SFS	MERRIWA U/S VALLANCE
210067	01/01/1963	01/01/1979	11/12/1963	31/07/1978	11/12/1963	11/12/1963	105	1	91			01/08/1978	DWR DISC MIDDLE CK POKOLBIN 2
210068	01/01/1963	01/01/2008	11/11/1963	18/05/2007	11/11/1963	30/04/1983	115	4	127	R		DWR PJI	POKOLBIN CK@POKOLBIN
210069	01/01/1963	01/01/1994	11/11/1963	25/06/1993	11/11/1963	04/09/1984	115	3	102			25/06/1993	DWR DISC MUGGYRANG CK@POKOLBIN
210070	01/12/1963	01/09/1982			6	31/08/1982						DWR DISC	ISIS @ LOWER TIMOR
210071	01/02/1965	01/01/1979	12/11/1970	06/07/1978	20/10/1970	20/09/1977	145	10	90			06/07/1978	DWR DISC GLENDON BROOK
210072	01/10/1965	01/04/1969			59	01/04/1969						DWR DISC	ALLYN @ UPPER ALLYN
210073	01/10/1965	01/11/1968			45	13/03/1975						DWR DISC	PATERSON CARRABOLLA
210074	01/02/1968	01/01/1984	25/09/1972	01/01/1983	10/07/1967	14/09/1981	120	4	71	R		31/12/1982	DWR DISC MCMAHONS @ LIDDELL 5
210075	01/12/1968	01/08/1971			26	14/07/1971						DWR DISC	BAYSWATER U/SLIDDELL
\$210076	01/01/1968	01/01/2008	16/08/1968	02/05/2007	15/08/1968	20/06/1979	145	21	87	R T C		DWR PJI	ANTIENE CK @ LIDDELL
210077	01/05/1970	01/01/1984	31/12/1972	01/01/1983	01/01/1973	19/06/1974	105	2				31/12/1982	DWR DISC MAIDSWATER LIDDELL 4
210078	01/11/1968	01/01/1993	26/09/1972	03/01/1992	20/09/1968	22/01/1991	202	21	77			03/01/1992	DWR DISC TINKERS CK LIDDELL 1
\$210079	01/01/1928	01/01/2008	23/05/1928	08/05/2007	01/01/1927	21/02/2005	390	70	321	T C		DWR SFP	PATERSON R@GOSTWYCK
210080	01/01/1969	01/01/2008	29/04/1969	28/05/2007	29/04/1969	10/08/1978	100	17	114			DWR PI	WEST BRK U/S GLENDON
210081	01/05/1969	01/01/1993	16/09/1980	02/01/1992	29/06/1976	14/12/1991	193	24	134			02/01/1992	DWR DISC PAGES CK U/S HUNTER
210082	01/05/1969	01/01/1998	29/04/1980	10/09/1997	15/12/1977	12/02/1992	127	14	85			10/09/1997	DWR DISC WOLLAR U/S GLBRN RIV
\$210083	01/01/1969	01/01/2008	16/09/1969	18/04/2007	05/09/1969	21/11/2000	320	41	213	T C		DWR SFP	HUNTER R @ LIDDELL
\$210084	01/01/1969	01/01/2008	05/11/1969	23/05/2007	05/11/1969	20/01/2007	335	66	208	T C		DWR PBM	GLENNIES THE ROCKS 2

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R A W C T W H O

Station	Flows	HEIGHTS	RATINGS	No. No. a t t o u i u x	Discont.						
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			Starts	Starts	Tab	Tab	Gaug	n p p d b H d d g	Code	Class	NAME

210096									01/01/1930	DWR DISC HUNTER R @ DENMAN
\$210097 *		11/11/1993	31/05/2006							DWR PRH GLENBAWN STORAGE
210098									31/12/1926	DWR DISC GLENNIES CAMBERWELL
210099									26/06/2000	DWR DISC GLENDON BK HAMILTONS
210100									21/08/1975	DWR DISC CHICHESTER DUSODIE B
21010055						T				DWR WQR THOMPSONS LANE SITE2
21010056										DWR WQR HUNTER @ THOMPSONS 1
21010057						T				DWR WQR HUNTER @ RIVERSIDE 2
21010058										DWR WQR HUNTER @ RIVERSIDE 1
21010059										DWR WQR HUNTER @ TYRELLS 2
21010060										DWR WQR HUNTER @ TYRRELLS 1
21010061						T C B P				DWR WQS PAGES @ ALLANS BDGE.
21010062										DWR WQR PAGES R. @ VINERY
21010063						T				DWR WQR ROUCHEL BROOK SITE 2

21010064	DWR WQR ROUCHEL BROOK SITE 1										
21010068	01/01/2002	01/01/2004	03/04/2002	27/11/2003	03/04/2002	03/04/2002	105	1	10	27/11/2003	DWR DISC OMADALE @ GUY GULLEN
210101	30/08/1973 DWR DISC POKOLBIN @ POKOLBIN										
\$210102 *	02/04/1987	10/05/2007	DWR PRH LOSTOCK STORAGE GGE								
210103	NSW REFER 210443										
210104	01/04/1965	01/01/1982	31/03/1965	31/12/1981	19/02/1965	18/01/1981	60	11	91	01/01/1983	DWR DISC WILLIAMS @ SALISBURY
210105	03/06/1971 DWR DISC HUNTER @ BOWMANS BDG										
210106	01/12/1963 DWR DISC WOLLOMBI BLAIR WLMBI										
210107	DWR DISC PAGES RIVER @ GUNDY										
210108	10/08/1973 DWR DISC MIDDLE NEAR POKOLBIN										
210109	01/01/1979	01/01/1983	24/01/1979	04/08/1982	21/01/1979	06/05/1981	120	5	24	04/08/1982	DWR DISC CARROW U/S FAL BROOK
\$210110	01/12/1959	01/01/2008	19/01/1994	02/05/2007	28/10/1993	28/10/1993	105	1	5 R T C	DWR PJI BAYSWATER @ LIDDELL	
210111	28/02/1919 DWR DISC CHICHESTER FERNDLE 2										
210112	31/05/1929 DWR DISC HUNTER @ ASH ISLAND										
210113	01/07/1980	01/01/1986	55 07/01/1986 DWR DISC FOY BRK @ UPR HEBDEN								
\$210114	01/01/1981	01/01/2008	04/02/1981	23/05/2007	04/02/1981	04/03/1990	222	25	75 T C	DWR PJI CARROW BROOK	
210115	01/12/1981	01/01/1986	40 07/01/1986 DWR DISC FOY BROOK INV SITE								
210116	01/12/1981	01/01/1986	35 07/01/1986 DWR DISC FOY BROOK INV SITEDS								
\$210117 *	12/01/1990	31/03/2006	DWR PBM GLENNIES CREEK DAM								
\$210118	01/01/2004	01/01/2008	03/03/2004	03/05/2007	04/03/2004	04/03/2004	105	1	20	DWR SFS ISIS STICK-ME-UP BDG	
210119	4			09/10/1986 DWR DISC PAGES CAMERERONS DS1							
210120	01/01/1984	01/01/1999	13/06/1984	19/02/1998	13/06/1984	13/06/1984	1	1	19	19/02/1998	DWR DISC APPLE TREE DURAL GAP
210121	01/01/1988	01/01/1993	31/03/1988	03/01/1992	01/01/1988	01/01/1988	1	1	14	11/11/1991	DWR DISC FOYBROOK @ NEWDEL
210122	24			11/01/1993 DWR DISC GLENNIES U/S HUNTER							

\$210123	01/01/1989	01/01/2007	26/10/1989	03/03/2006	17/08/1989	07/08/1998	105	7	18	T	C		DWR PJI	FALBROOK US GLENNIES
\$210124	01/01/1994	01/01/2008	09/03/1994	07/05/2007	09/03/1994	26/10/2001	3	3	16	R			DWR PJI	DART BR @ YARRAND BR
\$210125	01/01/1994	01/01/2008	13/04/1994	18/04/2007	13/04/1994	03/07/2005	120	5	36	T	C		DWR PJI	U/S BAYSWATER
\$210126	01/01/1993	01/01/2008	28/10/1993	18/04/2007	29/10/1993	04/10/2004	110	3	28	T	C	P	DWR PJI	U/S FOY BROOK
\$210127	01/01/1993	01/01/2008	24/06/1993	13/04/2007	24/06/1993	01/12/2006	119	14	73	T	C		DWR SPS	HUNTER RV U/S GLENNI
\$210128	01/01/1993	01/01/2008	26/07/1993	13/04/2007	26/07/1993	01/12/2005	6	6	31	T	C		DWR SFS	HUNTER RV@MASON DIEU
\$210129	01/01/1993	01/01/2008	08/02/1993	13/04/2007	01/01/1900	01/04/2006	2	2	15	T	C		DWR SPS	HUNTER U/S SINGLETON
\$210130	01/01/1993	01/01/2008	27/10/1993	18/04/2007	27/10/1993	27/10/1993	2	1	24	T	C		DWR PJI	D/S BOWMANS
\$210131	01/01/1993	01/01/2004	28/07/1993	06/11/2003	28/07/1993	22/03/2000	105	2	16	T	C		06/11/2003 DWR	DISC BLACK CK D/S ANVIL C
\$210132	01/01/1993	01/01/1997	29/07/1993	13/05/1996	29/07/1993	29/07/1993	100	1	5	T	C		13/05/1996 DWR	DISC GLENDONBROOK D/S WBR
\$210133	01/01/1994	01/01/1998	02/03/1994	28/10/1997	02/03/1994	02/03/1994	1	1	4	T	C		04/06/1998 DWR	DISC BAYSWATER U/S HUNTER

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R A W C T W H O

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			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
\$210134	01/01/1993	01/01/2008	28/10/1993	19/04/2007	05/10/1993	17/09/2006	125	8	40	T	C							DWR SPS	HUNTER R@LONG POINT
\$210135	01/01/1995	01/01/2008	16/11/1995	28/05/2007	21/09/1995	23/02/2005	108	7	29									DWR PI	WOLLOMBI BR D/S BRIC
\$210136	01/01/1997	01/01/2008	31/07/1997	19/04/2007	31/07/1997	18/02/2002	2	3	27									DWR PJI	CHICHESTER RV @ CHIC
210137	01/01/1997	01/01/2008	15/09/1997	19/04/2007	15/09/1997	23/03/2005	6	6	27									DWR PJI	WANGAT @ WANGAT
210138	01/01/2003	01/01/2004	04/04/2002	27/11/2003	04/04/2002	04/04/2002	105	1	5								27/11/2003	DWR DISC	OAKY CK @ WEIR
210139	01/01/2003	01/01/2004	04/04/2002	21/11/2003	18/04/2002	18/04/2002	105	1	6								21/11/2003	DWR DISC	HUNTER @ ALDRIDGES
210140	01/01/2002	01/01/2004	04/04/2002	18/09/2003	04/04/2002	04/04/2002	105	1	8								18/09/2003	DWR DISC	PAGES @ GLEN VALE
\$210142	01/01/2004	01/01/2008	03/03/2004	03/05/2007	05/03/2004	05/03/2004	106	1	16									DWR PJI	PAGES RV U/S KEWELL
\$210143		28/04/2006	10/05/2007	31/05/2006	31/05/2006		1	1	6									DWR	ALLYN @ FLYINGFOX LN
210199					01/05/1986													DWR DISC	BLANDFORD PLUVI
210406					24/12/1921	PWD												PATERSON	P'SON RLY B
210409						PWD												PATERSON	@DUNMORE BR
210410						PWD												PATERSON	@HINTON BR
210413						PWD												HUNTER	U/S GREEN ROX

210414										PWD	HUNTER D/S GREEN ROX	
210417										31/12/1927 PWD	WILLIAMS CLARENCETWN	
210420										PWD	HUNTER HEXHAM FERRY	
210426										PWD	HUNTER OAKHAMPTON RY	
210441										PWD	HUNTER R AT BOLWARRA	
210442										PWD	HUNTER U/S BOLWARRA	
\$210903	01/01/1995	01/01/2008	27/04/1995	17/05/2007	27/04/1995	21/10/2004	120	7	43		DWR PI WILLIAMS R @ DUNGOG	
211001	01/01/1958	01/01/1980	10/11/1958	09/07/1979	10/11/1958	04/03/1977	135	34	136		08/07/1979 DWR DISC WYEE CREEK @ WYEE	
211002	01/05/1959	01/06/1966	01/05/1959	31/05/1966	30/01/1959	16/02/1966	45	9	67		20/02/1969 DWR DISC WYONG RIVER @ WYONG	
211003	01/01/1960	01/07/1964					47			10/09/1965	DWR DISC MANNERING CK @ WYEE	
211004	01/02/1961	01/01/1990	20/11/1973	01/01/1989	18/02/1961	24/02/1975	105	10	100		01/01/1989 DWR DISC JILLIBY CK @ OLNEY	
211005	01/10/1965	01/01/1990	30/07/1973	26/05/1989	14/11/1972	17/09/1988	124	9	32		26/05/1989 DWR DISC OURIMBAH CK TUGGERAH	
211006	01/01/1965	01/01/1977	14/10/1965	16/07/1976	14/10/1965	17/05/1974	110	3	98		16/07/1976 DWR DISC WALLARAH WARNERVALE	
211007	01/06/1966	01/01/1972					54			05/09/1977	DWR DISC WYONG R @ WYONG WEIR	
211008	01/01/1969	01/01/2008	18/12/1969	16/05/2007	07/12/1969	27/08/1974	110	3	102		DWR PI JIGADEE CK@AVONDALE	
\$211009	01/01/1972	01/01/2007	25/12/1972	16/05/2007	20/12/1972	22/09/2004	178	42	196		DWR SPS WYONG R @ GRACEMERE	
\$211010	01/01/1972	01/01/2008	20/12/1972	16/05/2007	20/12/1972	15/11/1994	118	20	58		DWR PJI JILLIBY CK U/S WYONG	
211011											WSC DISC JILLIBY @ DOORALONG	
211012											WSC BRUSH CK @ BRUSH CK	
\$211013	01/01/1976	01/01/2008	12/11/1976	29/05/2007	12/11/1976	01/07/2005	168	24	110		DWR PI OURIMBAH CK U/S WEIR	
\$211014	01/01/1976	01/01/2008	10/11/1976	16/05/2007	10/11/1976	01/06/2006	148	29	166		DWR SPS WYONG RV@YARRAMALONG	
\$211015	01/01/2003	01/01/2008	22/10/2003	21/02/2007	21/10/2003	21/10/2003	1	1	14		DWR PJI OURIMBAH CK D/S BANG	
211016	01/01/2003	01/01/2008	27/08/2003	22/03/2007	27/08/2003	01/03/2006	3	3	10		DWR PJI NARARA CK U/S RESEAR	
212001	01/11/1922	01/12/1945					63				SWB DISC NEPEAN MAGUIRES XING	

212002	01/10/1925	01/01/1955	23/10/1925	31/12/1954		107		28/01/1959	DWR DISC UPPER BURRAGORANG
212003	01/07/1926	01/01/1963	28/02/1928	03/08/1934		192		11/12/1962	DWR DISC BURRALOW @ KURRAJONG
212004	01/01/1926	01/01/1934	21/07/1926	31/08/1933	21/07/1926	01/10/1932	9 9 37	31/08/1933	DWR DISC COXS R @ CEDAR VALE
212005	01/01/1942	01/01/1956	01/10/1942	31/01/1955	22/05/1942	25/03/1958	9 9 53	24/03/1958	DWR DISC COXS R @ MCMAHONS
212006	01/07/1946	01/01/1980	25/07/1947	22/03/1979	19/06/1946	12/07/1975	11 11 145	22/03/1979	DWR DISC WOLLONDILLY POMEROY
212007	01/01/1946	01/01/1957	01/07/1946	26/06/1956	01/07/1946	05/11/1952	2 2 54	01/02/1958	DWR DISC HEFFERNANS @ POMEROY
\$212008	01/01/1951	01/01/2008	08/02/1951	09/05/2007	08/12/1950	10/02/2004	237 52 343		DWR PJI Coks @ Bathurst Road
212009	01/07/1954	01/03/1979	25/10/1989	01/08/2003	25/10/1989	19/11/2002	2 2 293		SCA GREENSTEAD
212010	01/10/1954	01/01/1991	02/05/1972	18/07/1990	03/05/1972	15/11/1986	235 29 265	18/07/1990	SWB XFR MCDONALD RV@ST ALBNS
\$212011	01/01/1960	01/01/2008	26/05/1960	10/05/2007	26/05/1960	22/01/2003	330 42 314		DWR PJI Coks Rv @ Lithgow
212012	01/01/1962	01/01/1978	15/05/1962	01/12/1977	15/05/1962	02/07/1976	18 18 110	01/12/1977	DWR DISC W/DILLY RV @ GOULBUR

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R A W C T W H O

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			Starts		Starts		Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

\$212013	01/01/1968	01/01/2008	18/11/1968	12/01/2007	17/11/1968	06/04/2000	113	8	179										DWR PI	Megalong @ Narrow Nk	
212014	01/01/1968	01/01/1994	21/11/1968	01/04/1993	21/11/1968	23/05/1991	125	5	129										01/04/1993	DWR DISC	BLCKHTH CK @ MT BOYC
212015	01/11/1968	01/01/1976	20/10/1970	31/05/1975	26/11/1968	11/02/1973	180	17	42										30/05/1975	DWR DISC	WOLGAN R WOLGAN GAP
212016	01/01/1968	01/01/1977	07/12/1968	08/08/2003	04/12/1968	23/12/1998	4	34	143	T									SCA		KEDUMBA @ CROSSING
212017																			DWR	REFER	212320
\$212018	01/01/1970	01/01/2008	14/08/1970	10/05/2007	14/08/1970	29/01/2000	153	35	178										DWR PPS	Capertee Glen Davis	
212019	01/10/1970	01/01/1992	17/04/1984	31/05/1991	29/04/1983	17/09/1990	46	14	307										31/05/1991	DWR DISC	MANGROVE CK@MNGRV.MT
212020	01/01/1977	01/01/1994	26/12/1977	24/03/1993	01/01/1972	03/04/1989	101	3	131										24/03/1993	DWR DISC	TARLO R SWALLOWTAIL
212021	01/04/1972	01/01/1994	09/02/1976	13/01/1993	09/02/1976	06/02/1992	196	41	120										13/01/1993	DWR DISC	MCDONALD RV@HOWES VA
212022	01/01/1913	01/01/1930							11										30/06/1929	DWR DISC	WING/BEE RV@SHPWASH
212023	01/04/1924	01/01/1928							4										01/01/1928	DWR DISC	COXS RV@ MARRANGAROO
212024	01/08/1924	01/10/1930							8										31/12/1930	DWR DISC	MARRANGAROO CK@ MAR
212025	01/01/1925	01/01/1946							94										31/01/1946	CBM DISC	GROSE rv@ GROSEWOLD
212026																			DWR	REFER	212320

212027	01/08/1946	01/01/1981	01/01/1947	08/04/1980	25/10/1973	25/10/1973	100	1	52		14/12/1982	DWR	DISC	WOLLONDILLY	RV	DS	PJ
212028	01/01/1973	01/01/1994	06/07/1973	19/04/1993	01/01/1973	14/11/1990	191	20	129		19/04/1993	DWR	DISC	WOLGAN	R	@	NEWNES
212029												DWR		NOT USED			
212030		20/07/1927	30/06/1929		5					30/06/1929	DWR	DISC	WINGECARIBEE	RV	@	BU	
212031 *		08/08/1924	30/06/1927	03/09/1982	27/11/2002		6	5	124			SCA		BONG BONG	WEIR		
212032												CBM		NEPEAN R	@	COBBITY	
212033												UNS		SOUTH CK	AT	CLARKES	
212034												UNS		SOUTH @	TWIN PINES		
212035												UNS		SOUTH CREEK	@	SMITHS	
212036												UNS		EASTERN CK	@	YOUNGS	
212037												UNS		ROPES CK	@	DELMONTES	
212038	01/01/1976	01/01/1985	02/04/1976	31/10/1984	02/03/1976	04/04/1981	135	8	78		19/02/1987	DWR	DISC	WOLGAN	CAPE	PINNACLE	
212039	01/01/1976	01/01/1993	15/11/1976	05/03/1992	15/11/1976	12/02/1991	241	47	122		05/03/1992	DWR	DISC	MANGROVE	CK	D/S	DAM
212040	01/01/1979	01/01/2008	08/06/1979	06/03/2007	08/06/1979	22/11/2001	105	6	157			DWR	PI	Kialla Ck	@	Pomeroy	
212041	01/01/1983	01/01/1995	13/01/1983	01/06/1994	13/01/1883	02/04/1989	2	3	46			PP		Coxs U/s	Wallerawang		
\$212042	01/01/1980	01/01/2008	23/09/1980	10/05/2007	01/03/1980	24/10/2004	184	22	147	R		DWR	PJI	Farmers	@	Mt Walker	
212043											16/02/1993	DWR	DISC	COXS R	@	MT WALKER	
212044											30/11/1981	DWR	DISC	COLO RV@	CULOUL	RANG	
\$212045	01/01/1981	01/01/2008	17/08/1981	12/01/2007	17/08/1981	25/09/1995	106	3	132			DWR	PJI	Coxs	@	Island Hill	
212046				1								CBM		UN-NAMED	STREAM		
212047			19/08/1985	19/08/1985	100	1	52			05/08/1997	DWR	DISC	WOLLONDILLY	CARDOSS			
\$212048	01/01/1986	01/01/2008	25/02/1986	26/04/2007	01/01/1900	13/08/2001	118	12	118	T C		DWR	CF	South Creek	@	G.W.H	
\$212049	01/01/1986	01/01/2008	12/03/1986	26/04/2007	12/03/1986	16/08/1995	103	4	103			DWR	CF	Ropes	@	Debrincat Av	
212050	01/01/1986	01/01/1992	20/03/1986	18/01/1991	20/03/1986	20/03/1986	100	1	66		19/02/1991	SWB	XFR	EASTERN	@	DOUGLAS RD	

212051	01/01/1986	01/01/1992	29/04/1986	19/02/1991	29/04/1986	29/04/1986	100	1	47		19/02/1991	SWB	XFR	2ND	PONDS	WINDSOR	RD
212052	01/01/1986	01/01/1993	04/04/1986	17/07/1992	04/04/1986	31/05/1990	102	3	55		17/07/1992	SWB	XFR	1ST	PONDS	WINDSOR	RD
\$212053	01/01/1990	01/01/2008	04/12/1990	01/05/2007	01/12/1990	01/12/1990	100	1	63	R		DWR	PJI		Stonequarry	@	Picton
\$212054	01/01/1992	01/01/2008	17/01/1992	09/05/2007	10/09/1991	30/11/1994	101	2	73	T C		DWR	PJI		Coxs R	@	Wallerawang
\$212055	01/01/1991	01/01/2008	06/12/1991	10/05/2007	01/12/1991	01/12/1991	100	1	60	T C		DWR	PJI		Neubecks	U/s	Walwang
\$212056	01/01/1999	01/01/2004	13/06/1999	13/02/2003	13/06/1999	13/06/1999	101	1	43	T C B P	O 30/06/2006	DWR	DISC		Cataract	@	Bubble
\$212057		13/12/1999	05/07/2000									R	T C B P	O 24/08/2006	DWR	DISC	South Ck @ Shanes Pk
\$212058	01/01/2000	01/01/2008	13/12/2000	09/05/2007	18/10/2000	18/10/2000	1	1	32			DWR	PJI		Coxs	U/S	Lake Lyall
21210060*		08/02/1988	05/12/2005									R	B		DWR	UNCL	Whiteheads G1
21210061		09/02/1987	12/07/2006									R	B		DWR	UNCL	Whiteheads G2
21210062		02/08/1987	12/07/2006									R	B		DWR	UNCL	Whiteheads G3

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R A W C T W H O

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			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g		Code	Class	NAME
21210063*			06/12/1993	05/12/2005					R	B								DWR UNCL Whiteheads G4		
21210064*			02/02/1996	05/12/2005					R	B								DWR UNCL Whiteheads G5		
21210065			18/08/1988	12/07/2006					R	B								DWR UNCL Whiteheads G6		
212200			28/04/1988	08/10/2003	28/04/1988	06/07/1988		6	3	114				T				SCA		HAWK'BURY NTHRCHMOND
2122001			07/06/1990	08/10/2003	01/06/1990	01/06/1990		1	1	52				T				SCA		NEPEAN R @YARRAMUNDI
2122002			28/06/1990	10/10/2003	28/06/1990	18/12/2000		4	3	43				T				SCA		NEPEANR BLACKS FALLS
2122003			26/04/1995	21/08/2003	26/04/1995	18/05/1995		4	4	19								SCA		RICKABYS CREEK
2122004			12/04/1995	21/08/2003	26/04/1995	26/04/1995		1	1	40								SCA		REDBANK CREEK
2122006			12/06/1997	02/07/2003	01/01/1997	01/01/1997		1	1	31								SCA		STONEQUARRY CK PICTN
212201	01/01/1891	01/01/1993	01/06/1891	07/10/2003	01/06/1891	18/05/1995		58	25	1026				T				SCA		NEPEAN R @ PENRITH
212202	01/01/1917	01/01/1962	04/01/1962	07/10/2003	31/12/1975	23/05/1991		4	2	342				T				SCA		NEPEAN R @ WALLACIA
212203	01/06/1900	01/12/1953	16/11/1983	25/06/2003	01/01/1913	01/11/1983		2	2	68								SCA		NEP.@-PHEASANTS NEST
212204	01/07/1919	01/01/1951	22/07/1986	08/07/2003	08/08/1980	08/08/1980		5	1	202								SCA		NEP.R @ AVON DAM RD
212205 *			22/07/1986	11/08/2003				85										SCA		NEP.R.@ NEPEAN DAM

2122051	16/02/1990	11/07/2003	16/02/1990	25/06/1997	2	2	68	T	P	O	SCA	NEPEAN R DAM INFLOW
2122052	18/02/1990	30/07/2003	18/02/1990	01/02/2002	2	2	54	T	P	O	SCA	BURKE R DAM INFLOW
212207			12								SWB	BARGO R @ BARGO WEIR
212208	09/06/1975	02/07/2003	03/04/1970	15/01/1972	4	2	207				SCA	NEP.RV @ MALDON WEIR
212209	04/02/1970	01/07/2003	04/02/1970	27/08/2001	7	4	289	T			SCA	MAGUIRES CROSSING
212210	01/11/1919	01/12/1953	26/06/1969	27/06/2003	01/01/1919	01/08/1990	3	2	130		SCA	AVON R. @ AVON WEIR
212211 *	07/06/1965	12/06/2003		31							SCA	AVON R. @ AVON DAM
212212 *	31/10/1984	08/07/2003									SCA	WINGECARRIBEE DAM
212213	17/09/1987	01/10/2003	13/09/1985	30/10/1998	3	2	60	T			SCA	NEP.R.@ MT HUNTER WR
212216	20/07/1989	01/10/2003	05/09/1985	29/11/1991	5	5	109	T			SCA	NEP.R.@ CAMDEN WEIR
212217	05/09/1985	04/07/2003	05/09/1985	23/07/2002	2	2	4	T			SCA	MATAHILL CK@ D/S W/C
212218	24/05/1990	24/07/2003	24/05/1990	08/08/1998	2	2	57				SCA	ERSKINE CK @ DODDS
212219	05/06/1990	25/07/2003	01/06/1990	12/03/2003	3	3	78				SCA	GLENBROOK@ JELLYBEAN
212220 *	08/07/1986	12/08/2003		4							SCA	CORDEAUX R @ DAM
212221	02/06/1990	16/07/2003	19/11/1986	11/05/2000	2	2	79				SCA	CORDEAUX R CORD WEIR
212228	18/07/1990	13/08/2003	22/01/1990	11/03/2003	10	10	80				SCA	MC DONALD @ST ALBANS
212229	23/05/1990	12/08/2003	01/01/1990	01/01/1990	1	1	29				SCA	MANGROVE C @PUMP STN
212230	01/06/1900	01/03/1949		1							SWB	CATARACT @BROUGHTONS
212231	08/11/1967	25/06/2003	13/04/1945	07/03/2001	3	3	199				SCA	CAT.R. JORDANS X-ING
212232 *	08/06/1965	13/08/2003		12							SCA	CATARACT DAM
2122322	08/03/1990	09/07/2003	01/01/1990	29/03/2002	3	3	68				SCA	LODDON R BULLI/APPIN
212233	31/12/1982	31/12/1985	15/03/1983	23/06/2003	01/01/1978	01/01/1978	3	1	33		SCA	BROUGHTONS PASS WEIR
2122341	09/03/1992	01/07/2003		2							SCA	GLENQUARRY @ ALCORNS
212238	02/07/1990	01/10/2003	01/05/1990	24/10/1999	2	2	97	T			SCA	NEP.R MENANGLE WEIR

212240	21/03/1967	23/06/2003	09/04/1981	09/04/1981	2	1	73				SCA	W'GAMBA R@ NEP JUNCT		
212241	27/11/1980	20/06/2003	27/11/1980	25/05/1994	8	4	232	T			SCA	WARRAGAMBA R @ WEIR		
212243 *	27/05/1977	17/07/2003									SCA	WARRAGAMBA UPSTREAM		
212244	29/06/1988	04/07/2003	28/06/1988	01/01/1996	4	4	126	T	B		SCA	WERRIBERRI CK @ W10A		
212246 *	25/07/1990	20/08/2003									SCA	STORAGE BUTCHERS CK		
212249 *	25/07/1990	19/06/2003									SCA	STORAGE @ TONALLI		
212250	07/12/1979	30/06/2000	15/03/1962	03/09/2003	01/11/1966	13/09/2001	17	13	391	T	P	O	SCA	COXS R @ KELPIE PT
2122512	30/04/1999	04/09/2003	29/04/1999	29/04/1999	1	1	22				SCA	COXS R @ GLENROY BR		
212260	07/12/1979	26/05/2000	17/05/1968	05/08/2003	01/01/1968	10/04/1992	14	10	1137	T	P	O	SCA	KOWMUNG R@CEDAR FORD
212270	14/12/1961	08/07/2003	14/12/1961	01/08/1990	7	5	504	T	P	O	SCA	W'DILLY R@ JOORILAND		
212271	26/10/1967	15/08/2003	01/01/1974	11/12/1992	3	2	350				SCA	GOLDEN VALLEY		

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R A W C T W H O

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			Starts		Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
2122711			16/08/1990	18/08/2003	04/08/1990	01/04/2002			6	6	107		T	B	P	O		SCA	MURRAYS FLAT	
212272			21/08/1975	19/08/2003	21/01/1975	21/01/1975			4	2	222		T	B	P	O		SCA	BERRIMA	
2122725			06/06/1990	22/08/2003	06/06/1990	19/11/1991			10	2	59		T					SCA	THE TOWERS	
212274			25/11/1986	15/07/2003	01/08/1972	02/04/1984			6	5	330							SCA	CAALANG C @ MAUGERS	
212275			08/10/1986	31/07/2003	01/08/1986	23/08/2002			21	8	449		T					SCA	SHEEPWASH BRIDGE	
2122791			16/11/1999	04/07/2003	01/11/1999	20/07/2000			2	2	13							SCA	GIBBERGUNYAH CREEK	
212280			06/07/1965	07/08/2003	06/07/1965	04/02/1990			7	7	521		T	P	O			SCA	NATTAI @ CAUSEWAY	
2122801			11/07/1990	20/08/2003	11/07/1990	11/07/1990			10	1	82		T	B	P	O		SCA	THE CRAGS	
2122809			20/08/1990	27/11/2002	07/01/1990	07/01/1990			1	1	66		T	P	O			SCA	LITTLE RIVER	
212281 *			27/01/1984	01/07/2003					5									SCA	CASCADE CREEK @ No 1	
212282 *			05/12/1984	04/09/2003					4									SCA	CASCADE CREEK @ No 2	
212283 *			09/02/1984	01/07/2003														SCA	CASCADE CREEK @ No 3	
212284 *			23/02/1984	05/09/2003					7									SCA	GREAVES CK @ MEDLOW	
212285 *			22/11/1984	05/09/2003					3									SCA	GREAVES CREEK AT DAM	

212286	*		07/02/1984	08/09/2003		2		SCA	WOODFORD CK @ DAM											
212290	01/06/1909	01/04/1972	17/06/1971	14/08/2003	01/07/1975	23/03/2000	24	15	818		SCA	COLO R @ UPPER COLO								
212291	01/07/1945	01/09/1969	17/11/1987	10/07/2003	03/11/1987	03/11/1987	3	1	334	T	SCA	GROSE R @ BURRALOW								
212294		08/05/1980	11/08/2003	16/03/1983	16/03/1983		5	1	195		SCA	BEROWRA CK @ GALSTON								
212295		04/06/1980	26/08/2003	21/03/1983	05/02/2002		21	15	360	T	SCA	CATTAI CK @ MARAYLYA								
2122951		04/09/1991	27/08/2003	01/01/1990	30/11/2002		4	4	71		SCA	CATTAI CK RIDGE RD								
212296		15/10/1982	20/08/2003	24/03/1980	19/11/2001		10	10	334		SCA	EAST CK @ RIVERSTONE								
212297		09/07/1981	19/08/2003	05/03/1982	05/02/2002		10	8	255		SCA	SOUTH CK RICHMOND RD								
2122971		21/12/1992	20/08/2003	01/01/1993	01/01/1993		1	1	13	T	SCA	SOUTH CK @ MANDALONG								
\$212320	01/01/1970	01/01/2008	31/05/1970	26/04/2007	31/05/1970	09/02/1992	146	10	132	R		DWR PJX South Ck @ Mulgoa Rd								
212342		18/03/1997	20/08/2003	01/04/1997	01/04/1997		1	1	32		SCA	EASTERN CK QUAKERS H								
212408		25/05/1988	09/10/2003							T	SCA	HAWKESBURYR WEBBS CK								
212900		21/05/1997	10/10/2003							T P O	SCA	HAWK R SACKVILLE FER								
212902	01/09/1925	01/05/1931									UNK	H'BURY @N RICHMOND B								
212903		07/09/1988	08/10/2003							T	SCA	HAWKESBURY R@WINDSOR								
212904							3				UNK	NEPEAN @MENANGLE								
213001	01/02/1925	01/07/1943					20				30/06/1943	DWR DISC WARATAH (WATERFALL)								
213002	01/12/1924	01/12/1930					15				30/11/1930	DWR DISC O HARE DARKES FOREST								
213003	01/06/1924	01/08/1951					25				28/08/1953	DWR DISC WORONORA RV ENGADINE								
213004	01/01/1979	01/01/2005	06/02/1979	29/03/2004	06/02/1979	01/01/1992	112	5	102	R		03/10/2004 UPR XFR PARRAMATTA R@P/MATTA								
\$213005	01/01/1979	01/01/2008	16/03/1979	01/06/2007	16/03/1979	28/05/1992	118	7	148	R		DWR CF Toongabbie Briens Rd								
\$213006	01/01/1980	01/01/2004	16/12/1980	01/05/2007	01/01/1880	16/12/1980	10	3	109	R		DWR PJX Fishers Ghs Bradbury								
213007											30/06/1939	DWR DISC CENTENNIAL PK @ BUSB								
213008											30/06/1939	DWR DISC CENTENNIAL PK @ DUCK								

\$213009	01/01/1986	01/01/2008	08/05/1986	17/05/2007	08/05/1986	30/07/2002	116	8	113						DWR CF	Prospect@ Smithfield
213010				4	08/05/1986	DWR DISC ORPHAN SCH CK KING R										
\$213011	01/01/1986	01/01/2008	08/05/1986	17/05/2007	08/05/1986	02/01/1996	101	2	83	T C					DWR CF	Cabramatta @ OG Road
\$213012	01/01/1986	01/01/2008	28/05/1986	17/05/2007	28/05/1986	28/05/1986	100	1	79						DWR CF	Bunbury Curren Creek
\$213013	01/01/1986	01/01/2008	28/05/1986	27/02/2007	28/05/1986	16/03/1990	102	2	87						DWR CF	Bow Bowning@ Redfern
\$213014	01/01/1987	01/01/2008	24/02/1987	24/05/2007	24/02/1987	10/12/2003	107	7	88						DWR CF	Orphan School Creek
213015			01/01/1990	01/01/1990	1	1									UPR	TOONGABBIE @JOHNSTON
213016			01/01/1990	01/01/1990	1	1									UPR	TOONGABBIE @REDBANK
213017			01/01/1990	01/01/1990	1	1									UPR UNCL	DARLING MILLS @VIADU
213200	01/01/1953	01/01/2007	01/02/1978	27/09/2006	20/09/1971	20/09/1971	101	1	146						DWR PI	O'Hares @ Wedderburn
213201	01/01/1972	01/01/1975	13/04/1972	10/07/1974											SWB	OHARE'S @COBBONG

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R A W C T W H O

Station	Flows	Heights	Ratings	No. No. a t t o u i u x Discont.
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Number	Start	End	Start	End	First	Last	Last of of	i m m n r p n m y	Date	Org. Net
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Starts	Starts	Tab	Tabs	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
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213203

SWB STOKES @FOURMILE

213210 *	09/01/1964 13/08/2003	5	SCA	WORONORA R. @ DAM
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213211	11/05/1992	07/10/2003	01/05/1992	01/05/1992	1	1	37	T	B	P	O	SCA	WORONORA	R	@	NEEDLES
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213223 SWB UPPER CANAL @BROOKS

213240 * 28/02/1991 20/08/2003 SCA PROSPECT LEVEL

213300	1	UNS	STORMWATER @MAROUBRA
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213401 PWD GEORGES @CUTLER ROAD

213404 PWD GEORGES @SCRIVENER

213405 UNK GEORGES U/S MILPERRA

214001	01/03/1922	01/07/1926	18	30/06/1926	DWR	DISC	MACOUARIE @ TONGARRA
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214002	01/06/1925	01/07/1926	1	01/01/1926	DWR	DISC	TONGARRA	CK	TONGARRA
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\$214003	01/09/1949	01/01/2008	04/12/1978	04/06/2007	31/08/1949	09/02/1995	153	55	397		DWR	PI	Macquarie Rylet @ AP
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214004	01/12/1971	01/05/1980	70	20/05/1980	DWR	DISC	MINNAMURRA	@	JAMBERO
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214005	01/06/1926	01/12/1930	20	30/11/1930	DWR	DISC	MACQUARIE	MATTINSONS
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214006	01/01/2001	01/01/2007	18/05/2001	20/03/2006	18/05/2001	01/07/2005	2	2	22		30/06/2006	DWR DISC RAINFOREST CENTRE
214007	01/01/2003	01/01/2006	17/05/2001	03/08/2006	25/04/2001	25/04/2001	1	1	19	R T C	30/06/2006	DWR DISC F/TAINDALE @ BURNSID
214008		16/05/2001	03/08/2006	16/05/2001	16/05/2001		1	1	15		30/06/2006	DWR DISC JAMBEROO ROAD BRIDGE
214009	01/01/2003	01/01/2005	17/05/2001	23/11/2004	17/05/2001	20/11/2002	2	2	19	R T C	30/06/2006	DWR DISC MINNAMURRA LANE
\$214010	01/01/2001	01/01/2008	16/05/2001	05/01/2007	16/05/2001	16/05/2001	1	1	28			DWR PJI Minnamurra Browns Ln
215001	01/06/1909	01/02/1976			319	31/01/1976						DWR DISC SHOALHVN WELCOME RF
\$215002	01/09/1914	01/01/2008	10/06/1969	06/03/2007	31/08/1914	12/04/1998	168	28	485			DWR PPS Shoalhaven @ Warri
215003	01/09/1924	01/02/1954			143	31/01/1954						DWR DISC MONGARLOWE CHARLYONG
\$215004	01/01/1924	01/01/2008	07/09/1924	05/03/2007	07/09/1924	04/05/1979	100	36	523			DWR PI Corang @ Hockeys
215005	01/08/1945	01/01/1986	22/03/1973	01/01/1985	13/10/1972	26/11/1979	120	5	256		31/12/1984	DWR DISC MONGARLOWE R MARLOWE
215006	01/01/1950	01/07/1982			192	28/02/1972						DWR DISC MONGARLOWE RIVER
\$215007	01/01/1950	01/01/2008	07/08/2003	05/03/2007	13/10/1948	01/08/2003	1	2	40	R T C		DWR PJI Mongarlowe @ Monga
\$215008	01/01/1950	01/01/2008	16/09/1950	05/03/2007	06/09/1950	28/01/1997	177	19	245	R		DWR PI Shoalhaven @ Kadoona
215009	01/09/1924	01/01/1980	23/02/1970	10/11/1979	01/07/1958	24/03/1978	255	30	251		20/08/1981	DWR DISC ENDRICK R @ NOWRA RD
215010	01/07/1954	01/03/1975			168	07/05/1975						DWR DISC K/ROO @ KANGAROO VLY
215011	01/02/1964	01/11/1974			102	05/12/1975						DWR DISC SHOALHAVEN NOWRA P.S
215012	01/08/1974	01/03/1984			79	01/01/1985						DWR DISC J/BTGULLA CK @ KAIN
\$215014	01/01/1981	01/01/2008	13/04/1981	06/03/2007	12/04/1981	12/04/1981	100	1	121	R		DWR PI Bungonia @ Bungonia
\$215015	01/01/2003	01/01/2008	04/09/2002	04/01/2007	05/09/2002	05/09/2002	2	1	24	T C		DWR PJI Broughton M @ Berry
\$215016	01/01/2003	01/01/2008	03/07/2003	04/01/2007	03/07/2003	03/07/2003	1	1	16	R		DWR PJI Bomaderry@ Bomaderry
\$215017		11/04/2005	04/01/2007				17	R		T C		DWR PJI Broughton @ The Oaks
215207		14/07/1977	13/08/2003	14/07/1977	08/08/1998		17	14	385	T P O	SCA	FOSSICKERS FLAT
215208	01/01/1974	01/01/1979	21/05/1969	19/08/2003	21/05/1969	07/02/2002	8	6	370	T	01/01/1900	SCA SHOALHAVEN @HILLVIEW
215209		15/07/1971	14/08/2003	14/07/1971	18/08/1998		7	3	354	T	SCA	MOUNTVIEW

215210	05/08/1971	21/08/2003	27/07/1972	10/07/2001	12	7	413	T			SCA	MONGARLOWE
215212 *	13/10/1976	14/08/2003									SCA	TALLOWA DAM
215215	29/05/1991	08/10/2003	29/05/1991	25/09/1997	2	2	95	T	P	O	SCA	D/S TALLOWA DAM
215216	24/11/1987	08/10/2003	24/11/1987	01/01/1995	2	2	170	T	P	O	SCA	GRASSY GULLY NO.2
215217 *	12/07/1993	03/07/2003									SCA	KVPS
215219 *	03/09/1992	11/08/2003									SCA	BENDEELA PUMP STN
215220	23/06/1970	11/08/2003	30/09/1972	18/10/1994	8	4	202	T	P	O	SCA	HAMPDEN BRIDGE
215223	01/01/1971	01/01/1975	29/06/1971	29/06/1974							SWB	BROGERS @CLINTON PK
215233	29/08/1968	10/07/2003	13/07/1971	01/05/1990	7	3	266				SCA	WILDES MEADOW
215234	19/06/1968	10/07/2003	01/03/1983	02/12/1997	8	3	275				SCA	FITZROY FALLS
215235 *	22/10/1975	05/06/2003			10						SCA	FITZROY FALLS DAM

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Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.														
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net	
			Starts		Starts		Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

215237			12/03/1994	14/08/2003	12/03/1994	12/03/1994	1	1	89	T								SCA		GILLAMATONG CREEK	
215238			17/02/1994	18/08/2003	17/02/1994	21/02/2003	2	2	78	T								SCA		REEDY CK @ MANAR	
215239			18/02/1994	20/08/2003	18/02/1994	18/02/1994	1	1	58	T								SCA		BORO CK @ MARLOWE	
215240			02/12/1994	15/08/2003	02/12/1994	02/12/1994	1	1	49	T								SCA		MINSHULL TRIG	
215241			28/08/1994	21/08/2003	23/08/1994	23/08/1994	1	1	65	T								SCA		BENDOURA	
215242			02/12/1994	20/08/2003	02/12/1994	02/12/1994	1	1	68	T								SCA		CORANG R @ MEANGORA	
215900												CBM							SHOALHAVEN @BURRIER		
216001	01/07/1954	01/11/1977					101								31/10/1977			DWR DISC		CURROWAN @ SHALLOW X	
\$216002	01/01/1960	01/01/2008	08/07/1960	17/04/2007	08/07/1960	25/10/1999	205	37	325										DWR PI		CLYDE RV @ BROOMAN
216003	01/10/1969	01/04/1970					47	T							22/07/1977			DWR DISC		Parma @ Falls Creek	
\$216004	01/01/1970	01/01/2008	09/04/1970	05/01/2007	09/04/1970	10/06/1998	118	10	227										DWR PI		Currambene@ Falls Ck
216005	01/01/1975	01/01/1986	20/10/1975	05/06/1985	20/10/1975	28/07/1984	145	10	95	T					05/06/1985			DWR DISC		BUCKENBOWRA NO 2	
216006	01/10/1971	01/01/1982			26/03/1976	05/04/1981	18	12	70						31/12/1981			DWR DISC		WANDANDIAN WAND/DIAN	
216007	01/10/1971	01/09/1981					87	T							01/09/1981			DWR DISC		CLYDE RV @ YADBORO	

216008	01/01/1980	01/01/2008	26/11/1980	17/04/2007	01/11/1980	01/11/1980	100	1	71	R		DWR PJI	BUTLERS CK @ KIOLOA
\$216009	01/01/1985	01/01/2008	19/04/1985	16/04/2007	19/04/1885	17/08/1998	120	6	113			DWR PBM	BUCKENBOWRA NO 3
216010	01/01/1985	01/01/1987	07/08/1985	21/02/1986						21/02/1986	DWR DISC	MOONA MOONA CREEK	
216011	01/08/1970	01/01/1976			31	T	20/10/1975	DWR DISC	BUCKENBOWRA NO 1				
217001	01/01/1955	01/09/1977		01/01/1954	01/01/1954	100	1	164		31/07/1977	DWR DISC	DEUA U/S MCGREGORS	
\$217002	01/01/1959	01/01/2008	24/09/1959	16/04/2007	20/04/1959	23/02/2003	260	56	346			DWR PPS	DEUA RIVER @ WAMBAN
217003	01/01/1969	01/01/1984	03/09/1969	27/04/1983	28/08/1969	05/04/1981	24	26	103		27/04/1983	DWR DISC	LOWER ARALUEN CREEK
217004	01/01/1969	01/01/1976	30/09/1969	11/03/1975	29/09/1969	06/11/1974	140	9	55		11/03/1975	DWR DISC	DEUA R @ MOODONG
217005	01/01/1975	01/01/1986	05/12/1975	01/01/1985	05/12/1975	29/05/1980	130	7	56		17/04/1985	DWR DISC	DEUA RV @ NERINGLA
\$217006	01/01/1997	01/01/2008	21/10/1997	17/04/2007	21/10/1997	07/02/2002	35	4	43	T C		DWR PJI	ARALUEN @ NERINGLA
\$218001	01/01/1948	01/01/2007	24/06/1948	30/10/2006	24/06/1948	21/03/1978	155	14	256			DWR PI	TUROSS @ TUROSS VALE
218002	01/01/1954	01/01/1985	01/06/1954	04/09/1984	29/08/1874	24/05/1981	140	34	240	T C	04/09/1984	DWR DISC	TUROSS RV @ BELOWRA
218003	01/01/1958	01/01/1985	01/09/1958	16/10/1984	01/09/1958	03/05/1983	230	48	246	T C	16/10/1984	DWR DISC	YOWRIE R @ YOWRIE
218004	01/07/1959	01/01/1961	06/07/1959	30/11/1962			25			30/11/1962	DWR DISC	TUROSS @ WATTLEGROVE	
\$218005	01/01/1964	01/01/2008	10/06/1964	16/04/2007	10/06/1864	23/02/2003	58	55	286	R		DWR PI	D/S WADBILLIGA JN
218006	01/01/1966	01/01/2004	06/07/1966	16/12/2003	01/01/1864	21/04/1980	45	37	185	T C	30/06/2006	DWR DISC	WANDELLA CK WANDELLA
\$218007	01/01/1974	01/01/2008	12/06/1974	01/05/2007	01/01/1974	05/12/1992	160	13	196			DWR PBM	WADBILIGA WADBILLIGA
\$218008	01/01/1977	01/01/2008	14/04/1977	16/04/2007	01/04/1977	01/07/2005	185	18	170	R		DWR SPS	TUROSS @ EUROBODALLA
218009	01/03/1924	01/09/1931	07/01/1924	31/08/1931			17	R		31/08/1931	DWR DISC	TUROSS RV @ TUROSS	
218010		01/01/2002	28/03/2007	13/01/2001	13/01/2001		1	1	13	R		DWR CR	ILLAWAMBRA DAM
218011		02/01/2003	01/03/2007	09/01/2002	09/01/2002		1	1	16			DWR CR	WANDELLA @ MOTBEYS
\$219001	01/01/1924	01/01/2008	02/04/1924	24/05/2007	21/03/1883	11/03/2003	175	16	430			DWR PI	RUTHERFORD BROWN MTN
219002	01/10/1939	01/01/1948			15		13/07/1948	DWR DISC	TANTA @ SUNNYSIDE				
\$219003	01/01/1943	01/01/2008	16/04/1943	25/05/2007	16/04/1943	28/06/1997	145	10	327	T C P		DWR PPS	BEMBOKA @ MORANS XIN

219004	01/01/1943	01/01/1975	17/04/1943	06/11/1974	17/04/1943	21/02/1973	26	22	202		06/11/1974	DWR DISC TANTAWANGALO SCHOOL
219005	01/01/1948	01/01/1955	21/05/1948	31/01/1954	21/05/1948	01/04/1953	2	2	24		30/06/1961	DWR DISC GEORGES & STEEPLE FL
\$219006	01/01/1951	01/01/2008	17/02/1951	27/03/2007	17/02/1951	21/04/1990	110	19	409	R		DWR PJI TANTAWANGALO MTN
219007	01/01/1954	01/01/1961	19/05/1954	31/01/1960	19/05/1954	22/10/1959	7	7	31	R	31/01/1960	DWR DISC BROGO RIVER @ BROGO
219008	01/01/1954	01/01/1964	07/09/1954	24/07/1963	07/09/1954	17/02/1956	3	3	58		24/07/1963	DWR DISC NUNNOCK @ BROWN MTN
219009	01/09/1954	01/11/1964	11/09/1954	09/10/1964			64			09/10/1964	DWR DISC YANKEYS BEGA SWAMPS	
219010	01/01/1954	01/01/1975	05/08/1954	01/08/1974	05/08/1954	03/11/1972	120	19	96	T C	01/08/1974	DWR DISC BONAR CK @ BROWN MTN
219011	01/01/1960	01/01/1963	25/02/1960	13/12/1962	25/02/1960	01/02/1962	2	2	25		13/12/1962	DWR DISC CANDELO @ HEFFERNANS
219012	01/01/1960	01/01/1979	05/10/1960	04/05/1978	24/02/1960	29/08/1974	8	9	173	R T C	04/05/1978	DWR DISC DEVILS @ TANTAWANLGL
\$219013	01/01/1961	01/01/2008	11/11/1961	29/04/2007	11/11/1961	08/12/2005	1	45	333			DWR SFS BROGO @ NORTH BROGO
219014	01/01/1963	01/01/1979	22/07/1963	06/04/1978	20/07/1963	22/01/1976	21	19	167	T C	06/04/1978	DWR DISC CANDELO @ YURAMMIE

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			Starts	Starts	Tab	Starts	Starts	Tab	Starts	Starts	Tab	Starts	Starts	Tab	Starts	Starts	Tab	Starts	Starts
219015	01/01/1965	01/01/1990	12/06/1965	21/04/1989	12/06/1965	15/11/1986	125	11	167	T	C						21/04/1989	DWR DISC NUTLEYS @ BERMAGUI	
\$219016	01/01/1965	01/01/2008	17/06/1965	01/05/2007	17/06/1965	01/07/2005	195	14	246	T	C						DWR PJI NARIRA RV @ COBARGO		
\$219017	01/01/1966	01/01/2008	07/07/1966	25/05/2007	07/07/1966	28/01/1999	125	9	297								DWR PI DOUBLE CK NEAR BROGO		
\$219018		12/07/1966	19/02/2007	26/06/1966	25/01/1998	120	45	224									DWR PJI MURRAH RV @ QUAAMA		
219019	01/01/1966	01/01/1979	11/07/1966	10/03/1978	11/07/1966	15/10/1976	13	13	167	R	T	C					10/03/1978	DWR DISC TANTAWANGLO KAMERUKA	
219020	01/01/1966	01/01/1986	18/07/1966	30/08/1985	18/07/1966	03/11/1984	170	15	187								30/08/1985	DWR DISC SANDY CK @ MOGILLA	
219021	01/01/1966	01/01/1984	19/07/1966	21/02/1983	19/07/1966	05/02/1971	100	16	187								21/02/1983	DWR DISC BEMBOKA R @ BEMBOKA	
\$219022	01/01/1971	01/01/2008	30/11/1971	06/03/2007	30/11/1971	02/03/1997	135	7	248								DWR PJI CANDELO DAMSITE		
219023	01/01/1972	01/01/1976	07/03/1972	12/03/1975	07/03/1972	13/02/1973	2	2	35	T	C						12/03/1975	DWR DISC HOUSE CK @ BROGO NTH	
219024		14/06/1972	02/09/1974	28/03/2001	11/04/2002	78	4	65	T	C							08/01/1979	DWR DISC BROGO D/S BROGO DAM	
\$219025	01/01/1976	01/01/2008	03/11/1976	15/03/2007	03/11/1976	11/08/2005	1	23	323	R	T	C	B	P			DWR SFS BROGO RV @ ANGLEDAL		
219026	01/03/1977	01/01/2005	20/10/1997	15/11/2004	20/10/1997	20/10/1997	1	1	96	T	C	B	P				DWR WQS BEGA R WARRAGUBURRA		
\$219027 *		09/07/1976	02/02/2007				1	R									DWR PRH BROGO STORAGE GAUGE		
219028	01/01/1974	01/01/1979	05/11/1974	01/07/1978	04/11/1974	15/10/1976	105	2	56	T	C						01/07/1978	DWR DISC T_ANTA @ TANTAWANGLO	

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Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.						
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			Starts	Starts	Tab	Starts	Tab	Gaug	n	p	p	d	b H d d g
													Code Class NAME
222002	01/01/1941	01/01/1950	05/03/1941	27/05/1949	05/03/1941	20/05/1946	2	2	28				27/05/1949 DWR DISC DEDDICK RV @ DEDDICK
222003	01/03/1941	01/01/1960		10/03/1941	09/11/1954	6	3	63					11/12/1961 DWR DISC DELEGATE RV @ MEADS
\$222004	01/01/1941	01/01/2008	11/03/1941	31/01/2007	11/03/1841	24/10/1995	115	18	352	R	T		DWR PI WELLESLEY (ROWES)
222005	01/05/1947	01/01/1956		13/05/1947	22/04/1951	3	3	49					01/04/1955 DWR DISC EUCUMBENE P/VIDENCE
222006	01/01/1949	01/01/1998	21/03/1949	04/06/1997	21/03/1949	02/03/1997	88	84	777	T	C		04/06/1997 DWR DISC SNOWY @ DALGETY
222007	01/01/1949	01/01/2008	01/03/1949	16/02/2007	01/01/1949	22/02/2001	205	22	392				DWR SMS WULLWYE CK @ WOOLWAY
\$222008	01/01/1951	01/01/2008	21/02/1951	30/01/2007	21/02/1951	11/07/1991	155	11	362	R			DWR PPS DELEGATE R @ QUIDONG
222009	01/01/1951	01/01/1996	28/05/1951	13/09/1995	28/05/1951	05/11/1994	160	14	333	T	C		13/09/1995 DWR DISC BOMBALA @ THE FALLS
222010	01/01/1965	01/01/1984	01/07/1965	05/01/1983	02/06/1865	03/06/1978	145	20	198	T	C		05/01/1983 DWR DISC BOBUNDARA @ DALGETY
222011	01/01/1965	01/01/1983	21/07/1965	27/07/1982	30/06/1965	03/06/1978	110	33	169	T	C		27/07/1982 DWR DISC GUNNING GRACH
222012	01/01/1966	01/01/1983	26/08/1966	10/05/1982	31/05/1966	22/06/1975	105	3	169	T	C		10/05/1982 DWR DISC COOLUMBOOKA RIVER
\$222013	01/01/1975	01/01/2008	12/06/1975	16/02/2007	30/04/1975	29/06/1997	155	11	195	R			DWR SFP SNOWY @ BURNT HUT
222014	01/01/1975	01/01/1986	10/06/1975	06/09/1985	10/06/1975	07/07/1983	110	3	92	T	C		06/09/1985 DWR DISC DELEGATE @ DELEGATE
222015	01/01/1975	01/01/2004	11/06/1975	31/03/2003	11/06/1975	05/12/1992	175	5	186				DWR DISC JACOBS LADDER

222016	01/01/1975	01/01/2008	17/03/1975	14/02/2007	17/03/1975	24/03/1992	120	5	214		DWR PBM	PINCH R @ BARRY WAY
\$222017	01/01/1978	01/01/2008	31/08/1978	15/02/2007	31/08/1978	29/03/2003	125	6	150	R	DWR PI	MACLAUGHLIN @ THE HU
222018	01/05/1947	01/04/1948			27	16/04/1948					DWR DISC	BETTS CK @ CHALET RD
\$222019	01/01/1995	01/01/2008	04/10/1995	31/01/2007	04/10/1995	16/04/2004	40	4	58		DWR PI	BOMBALA @ BOMBALA
222020			01/01/1997	01/01/1997	10	1	18				30/06/2006	DWR XFR SNOWY D/S COBBIN CK
222021			01/01/1997	01/01/1997	10	1	19				30/06/2006	DWR DISC SNOWY D/S MOWAMBA RV
222022			01/01/1997	01/01/1997	10	1	28				30/06/2006	DWR DISC SNOWY D/S BLACKBURN
222023	01/01/1999	01/01/2008	22/04/1999	15/02/2007	01/01/1997	11/03/2003	20	2	55	R T C	DWR SFP	SNOWY RV @ WILLIS
222024											30/06/2006	DWR PJI SNOWY @ SANDY POINT
222025											30/06/2006	DWR DISC SNOWY @ BETE BOLONG
\$222026	01/01/1997	01/01/2008	04/06/1997	16/02/2007	04/06/1997	04/06/1997	10	1	59	R T C	DWR SFP	SNOWY @ DALGETY WEIR
\$222027		16/01/2002	15/02/2007	16/01/2002	16/01/2002		1	1	1	T C	DWR WQR	MOWAMBA @ LYNWOOD
\$222209	01/01/1996	01/01/1999	07/04/1975	10/03/1999	01/01/1996	01/01/1996	7	1	25	R	VRW PJI	SNOWY MCKILLOPS BDGE
222400											SMA	REFER 222525
222401											SMA	REFER 222526
222501	01/01/1902	01/01/1968	24/05/1902	04/05/1967	23/05/1902	28/08/1954	303	10	333	T	17/04/1967	SMA XFR SNOWY R @ JINDABYNE
222502	01/06/1944	01/07/1967			65	06/06/1967					SMA XFR	CRACKENBACK @ CREEL
222503	01/06/1944	01/02/1967			71	24/05/1967					SMA XFR	EUCUMBENE EASTBOUR
222504	01/05/1946	01/08/1959			46	08/07/1959					SMA XFR	GUNGARLIN SNOWY PLNS
222505	01/01/1949	01/09/1965			27	19/08/1965					SMA XFR	BURRUNGBUGGE C'TANCE
222506	01/05/1947	01/02/1966			49	07/01/1966					SMA XFR	MOWAMBA DALGETY ROAD
222507	01/05/1947	01/06/1959			59	27/05/1959					SMA XFR	EUCUMBENE R KIANDR
222508	01/02/1948	01/03/1962			45	07/02/1962					SMA XFR	SNOWY R @ GUTHRIE
222509	01/04/1948	01/05/1967			54	18/04/1967					SMA XFR	SPENCERS @ PARALYS

222510	01/03/1948	01/10/1964	31	22/10/1964	SMA XFR	SNOWY @ ISLAND BEN
222511	01/12/1948	01/02/1961	25	11/01/1961	SMA XFR	CRACKENBACK BUNDIL
222512			22		SMA XFR	LTL THREDBO BUNDIL
222513	01/05/1951	01/06/1967 05/07/1991 17/03/1992		10	SMA XFR	PERISHER CK BLUE C
222514	01/09/1951	01/01/1955	5	01/10/1959	SMA XFR	SNOWY R @ MAGAZINE
222515	01/03/1952	01/01/1955		31/12/1958	SMA XFR	SNOWY R AT GUTHEGA
222516	01/03/1952	01/01/1956		31/01/1957	SMA XFR	PIPERS CK @SUMMIT
222517	01/05/1952	01/06/1966		10/06/1966	SMA XFR	CLUB LAKE CK @CLAR
222518	01/03/1953	01/08/1966		06/07/1966	SMA XFR	GUNGARLIN R DAM ST
222519	01/03/1953	01/08/1960		25/07/1960	SMA XFR	FINNS R AT MAGAZIN
222520	01/03/1953	01/08/1960		13/07/1960	SMA XFR	BOOGONG C DEAD HOR

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Station	Flows	Heights	Ratings	No. No. a t t o u i u x Discont.				
Number	Start	End	Start	End	First	Last	Last of of i m m n r p n m y Date	Org. Net
			Starts	Starts	Tab Tabs	Gaug n p p d b H d d g	Code Class	NAME
222521	01/04/1953	01/03/1960					2	06/02/1960 SMA XFR JACOBS R TIN MINE
222522	01/09/1953	01/01/1980					9	SMA XFR EUCUMBENE P'VIDENC
222523	01/03/1954	01/10/1966						12/09/1966 SMA XFR TOLBAR C @GREEN KN
222524	01/03/1954	01/06/1959						19/05/1959 SMA XFR DEAD HORSE KIDMAN
222525	01/03/1955	01/12/1963						11/11/1963 SMA XFR PINCH R AT LOOKOUT
222526	01/05/1955	01/12/1963						11/11/1963 SMA XFR INGEEGOODBEE TINMI
222527	01/12/1955	01/01/1980						SMA XFR SNOWY R ^GUTHEGA DAM
222528	01/06/1957	01/10/1958						30/04/1959 SMA XFR BALD MNT EUC'BENE
222529								SMA XFR EUCUMBENE RV KALKI
222530	01/01/1956	01/07/1958						30/06/1958 SMA XFR FARM CREEK AT CAMP
222531	01/01/1956	01/07/1958						30/06/1958 SMA XFR GUTHEGA R @ SKI TO
222532	01/01/1964	01/01/1983						SMA XFR SNOWY AB ISLAND BE
222533	01/02/1957	01/08/1960						01/08/1960 SMA XFR TRACTOR BOG PERISH
222534	01/02/1957	01/08/1960						01/08/1960 SMA XFR TAYLOR BOG PERISHE

222535	01/02/1957	01/08/1960		01/08/1960	SMA XFR	PIPERS C SMIGGIN H
222536	01/03/1957	01/05/1960		26/07/1960	SMA XFR	WRAGGES CK SUMMIT
222537					SMA XFR	SNOWY R GUTHEGA PO
222538			1		SMA XFR	LAKE EUCUMBENE
222539					SMA XFR	SNOWY ISLAND BEND
222540					SMA XFR	SNOWY R LAKE J'BYN
222541			24		SMA XFR	CRACKENBACK @ PADDYS
222543					SMA XFR	SNOWY ABV L JINDABYN
222544					SMA XFR	WOLLINDIBBY @GUNDARO
222545	01/01/1995	01/01/1998	22/11/1995	11/11/1997	09/08/1995	09/08/1995 10 1 61 T C 30/06/2006 DWR DISC SNOWY RV @ ROCKWELL
222546					SMA	MOWAMBA @ PATS PATCH
222989					SMA ADH	FARM CK U/S GUTHEGA
222999					SMA ADH	ROCK CK. @ PERISHER
401001	01/09/1905	01/02/1921			01/02/1921 SMA XFR	see 401549
401002	01/01/1913	01/02/1921			01/03/1921 DWR DISC	SWAMPY PL BRINGENB/G
401003	01/01/1913	01/02/1921			01/02/1921 DWR DISC	TOOMA R @ WARBROOK
401004	01/06/1922	01/01/1930	47		31/03/1942 DWR DISC	MURRAY R @ DORA DORA
401005	01/12/1926	01/01/1986	27/02/1973	08/02/1985	06/07/1970	22/02/1983 150 11 330 08/02/1985 DWR DISC TOOMA R @ POSSUM PT
401006	01/06/1946	01/01/1985	25/11/1969	14/03/1984	21/03/1972	08/08/1977 150 10 279 14/03/1984 DWR DISC PADDYS GRANITE FALLS
\$401007	01/06/1946	01/01/2007	30/07/1977	14/12/2006	04/05/1973	11/09/2005 60 16 333 T C DWR SMS TUMBARUMBA @ TUMBA2
401008	01/12/1947	01/01/2007	24/08/1971	13/12/2006	01/12/1947	29/04/1981 115 32 317 T C DWR SPS MANNUS CK @ TOOMA
401009	01/01/1947	01/01/2007	01/12/1947	11/12/2006	01/12/1947	01/11/1997 355 7 403 R T C DWR PI MARAGLE CK @ MARAGLE
401010	01/05/1948	01/02/1964	101		31/01/1964 DWR DISC	SWAMPY PLN KHANCOBAN
401011	01/05/1948	01/12/1961	52		09/11/1961 DWR DISC	MURRAY R @ WALWA

\$401012	01/07/1948	01/01/2007	29/02/1968	08/07/2006	21/07/1948	24/09/1998	195	28	464	R	T	C	DWR PPS	MURRAY R @ BIGGARA
\$401013	01/07/1965	01/01/2007	07/11/1972	19/07/2006	30/06/1965	17/08/1998	195	36	407	R	T	C	DWR PI	JINGELLIC C JINGEL/C
\$401014	01/01/1955	01/01/2007	26/09/1969	13/12/2006	01/01/1955	03/10/2003	315	43	380	R	T	C	DWR PPS	TOOMA R @ PINEGROVE
\$401015	01/01/1973	01/01/2007	17/12/1973	20/07/2006	17/12/1973	26/07/1988	175	18	183	R			DWR SMS	BOWNA CK @ YAMBLA
401016	01/01/1983	01/01/2008	15/06/1983	23/06/2006	15/06/1983	15/06/1983	100	1	112		T	C	DWR PBM	WELUMBA @ THE SQUARE
401017	01/01/1983	01/01/2007	06/07/1983	26/07/2006	06/07/1983	09/03/1988	100	2	118		T	C	DWR SMS	MANNUS @ YARRAMUNDI
401018				15									DWR CH	MANNUS @ WALTEELA RD
401019			03/06/1997	03/06/1997			1	1	6				17/01/2005	DWR DISC M/GDRA @ MT CK RD
401020		23/06/1997	20/07/2006				1			T	C		DWR SMS	MULLENGANDRA @ KEOGH
401021		15/12/1999	26/06/2002	15/12/1999	11/02/2004		4	4	24				DWR CH	MURRAY R @ BRENTWOOD
401022		16/03/2001	31/12/2004	01/01/1900	01/01/1900		1	1	9				DWR PRHG	WAGRA CK. @ WYMAH

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401023	16/05/2000	31/01/2002	01/01/1900	01/01/1900	1	1	17	DWR CH	MUNDEROO @ MANNUS FL
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\$401024	01/01/2003	01/01/2008	21/08/2003	13/12/2006	03/06/2003	03/06/2003	1	1	15	T	C	DWR	SPS	TUMBARUMBA @ BAKERS
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401025 4 DWR SMS MARAGLE CK @ TOOMA

\$401026	16/12/2003	22/06/2006	16/12/2003	16/12/2003	100	1	6	T C	DWR SMS	MARAGLE BK@	GLOAMING
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\$401027 * 01/08/1969 05/03/2007 R DWR SFH MURRAY @ HUME DAM #2

401028	01/01/1985	01/01/2005	11/04/1985	17/03/2004	01/01/1800	16/02/1988	105	4	16	DWR CH MARAGLE @ KARAKATANA
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40110008	28/06/2000	31/10/2002	01/01/1900	01/01/1900	1	1	19	DWR CH	MANNUS CK @ GLENROY
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40110065 DWR WQR D/S BULHEAD CONF.

401201A 09/08/1999 20/06/2004 23 2 VRW DISC MURRAY @JINGELLIC

401202 VRW MITTA MITTA @MITTA M

401204A	25/10/2000	25/07/2006	33	4	VRW	MITTA @ TALLANDOON
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401208A	25/08/2006	25/08/2006	24	1	VRW	CUDGEWA @ BERRINGAMA
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401210 VRW LTL SNOWY BEL GRANIT

401210A	23/07/2003	23/07/2003	9	1	VRW	SNOWY BELOW GRAN FLT
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401211					VRW	MITTA MITTA @COLEMAN
401211A	17/08/2000	24/07/2006	11	2	VRW	MITTA @ COLEMANS
401212A	18/06/2004	18/06/2004	14	1	VRW	NARIEL@ UPPER NARIEL
401220B	03/09/2006	03/09/2006	11	1	VRW	TALLANGATTA McCALLUM
401223					VRW	MITTA MITTA @ESKDALE
401224A					VRW	DARTMOUTH STORAGE
401229A	30/08/2004	01/08/2006	14	2	VRW	CUDGEWA @ CUDGEWA NH
401230A	04/08/2005	04/08/2005	7	1	VRW	CORRYONG @ TOWONG
401501	01/12/1926	01/01/1983		140		SMA XFR SWAMPY PLN KHANCOBAN
401502	01/02/1948	01/07/1962		38		06/06/1962 SMA XFR SWAMPY PLAIN @ GEEHI
401503	01/02/1948	01/07/1967		38		08/06/1967 SMA XFR BOGONG @GEEHI
401504	01/08/1954	01/01/1962				12/12/1961 SMA XFR TOOMA @BYATTS HUT
401505	01/02/1950	01/02/1961		20		27/01/1961 SMA XFR TOOMA @TOOLONG XING
401506	01/02/1950	01/01/1962		15		11/12/1961 SMA XFR OGILVIES @ROUND MTN
401507	01/02/1948	01/07/1962		33		06/06/1962 SMA XFR GEEHI @GEEHI
401508	01/04/1953	01/05/1967				18/04/1967 SMA XFR COOTAPATAMBA @RAMSHE
401509	01/03/1953	01/07/1966				07/06/1966 SMA XFR WINDY @CORRIE'S END
401510	01/04/1953	01/02/1960				09/01/1960 SMA XFR BUCKWONG @GROGGIN S
401511	01/03/1953	01/07/1966				07/06/1966 SMA XFR DICKY COOPER @HUT
401512	01/03/1953	01/06/1967				05/05/1967 SMA XFR VALENTINE @THE GHOST
401514	01/05/1953	01/09/1969				08/08/1969 SMA XFR MURRAY @TOM GROGGIN
401515	01/04/1953	01/01/1962		11		12/12/1961 SMA XFR YELLOW BOG @OLD HUT
401516	01/06/1953	01/02/1960				19/01/1960 SMA XFR SNOWY @GROGGIN EAST
401517	01/08/1953	01/07/1967				16/06/1967 SMA XFR KHANCOBAN @BRADNEYS

401518		13	SMA XFR	TOOLONG @TSR XING	
401519	01/04/1954	01/07/1966		09/06/1966 SMA XFR	WILKINSONS V @ABBOT
401520	01/04/1954	01/07/1965		20/06/1965 SMA XFR	BACK FLAT @GREY MARE
401521	01/04/1954	01/07/1965		20/06/1965 SMA XFR	ROCKY PLAIN @GR MARE
401522	01/06/1954	01/02/1961		16/02/1961 SMA XFR	BOGONG ABV ERROLS SP
401523	01/02/1954	01/08/1966		06/07/1966 SMA XFR	GEEHI ABV WATSONS GO
401525			SMA XFR	SPARKES @TOOMA JUNCT	
401526	01/11/1955	01/10/1959		05/09/1959 SMA XFR	LEATHER BARREL @JUNC
401527	01/02/1954	01/02/1960		19/01/1960 SMA XFR	LEATHER BARREL @DFL
401528	01/04/1954	01/06/1959		02/05/1959 SMA XFR	MARAGLE @NEW MARAGLE
401533	01/04/1956	01/01/1962		12/12/1961 SMA XFR	SHINGLE @CLOVER FLAT

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.												
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	y	Date	Org.	Net
			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
401535	01/03/1955	01/07/1962															06/06/1962	SMA XFR	WATERFALL @EVERARDS
401536	01/03/1955	01/09/1960															25/08/1960	SMA XFR	FREEDAMPER @COWRA SA
401537	01/04/1955	01/02/1960															26/01/1960	SMA XFR	TINMINE ABV THE FALL
401539	01/04/1955	01/09/1964															09/10/1964	SMA XFR	LADY N'THCOTES C'Y
401540	01/06/1955	01/06/1959															26/05/1959	SMA XFR	TOOMA BEL HELLHOLE C
401541	01/05/1955	01/12/1963															11/11/1963	SMA XFR	MURRAY D/S TINMINE
401542	01/06/1955	01/03/1960															04/02/1960	SMA XFR	LIMESTONE @BENAMBRA
401543	01/06/1955	01/03/1960															04/02/1960	SMA XFR	UPPER INDI BEL PILOT
401544	01/05/1957	01/07/1962															22/06/1962	SMA XFR	THREE ROCKS @TATE W
401545	01/05/1957	01/06/1962															04/05/1962	SMA XFR	GEEHI ABOVE WINDY
401546																	SMA XFR	SWAMPY PL @PENDERGAS	
401547																	SMA XFR	SWAMPY PL @FOOTBRIDG	
401548	01/04/1963	01/01/1966															SMA XFR	SWAMPY PL NEAR ROAD	
401549	01/09/1956	01/01/1982															SMA XFR	SEE 401001	

401550	01/02/1961	01/09/1961			SMA XFR	MURRAY R @ TOWONG BR
401551	01/04/1957	01/01/1969			SMA XFR	MURRAY R @ TINTALDRA
401552	01/07/1956	01/01/1962			12/12/1961 SMA XFR	REARDONS NR TOOMA DA
401553	01/05/1957	01/03/1962			20/02/1962 SMA XFR	MIDDLE BEL THE TWINS
401554	01/04/1959	01/01/1980			SMA XFR	TOOMA ABV TOOMA RES
401555	01/04/1959	01/06/1967			01/06/1967 SMA XFR	OGILVIES ABV OGILVIE
401556	01/01/1913	01/09/1961			04/08/1961 SMA XFR	MURRAY @INDI BRIDGE
401557					SMA XFR	SWAMPY PL @BAILEY BR
401558	01/05/1959	01/03/1966	63		18/02/1966 SMA XFR	KHANCOBAN BLYTH BECK
401560	01/05/1962	01/01/1983			SMA XFR	GEEHI ABV GEEHI RES
401561					SMA XFR	SWAMPY PL @DAMSITE
401562					SMA XFR	MURRAY D/S JEREMAL
401563					SMA XFR	SWAMPY PL @CHISHOLMS
401565					SMA XFR	TOOMA @TOOMA RESVOIR
401566					SMA XFR	OUTSTATION @PONDAGE
401567					SMA XFR	OGILVIES @PONDAGE
401568					SMA XFR	DEEP CREEK @PONDAGE
401569					SMA XFR	SWAMPY PL @KHANCOBAN
401570					SMA XFR	GEEHI @GEEHI RESERVO
401571					SMA XFR	KHANCOBAN @MURRAY 2
401572					SMA XFR	MURRAY D/S TOOMA R
402203A		17/01/2003	10/05/2006	20	2	VRW KIEWA @ MONGANS BDGE
402204A		19/06/2004	28/02/2006	22	3	VRW YACK @ OSBOURNES FLT
402205A		20/03/2002	10/09/2004	25	2	VRW KIEWA @ BANDIANA

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

R A W C T W H O

Station	Flows	Heights	Ratings	No. No. a t t o u i u x Discont.
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Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net
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\$409005	01/01/1905	01/01/2008	01/01/1913	07/03/2007	01/01/1800	02/09/2003	275	17	476	T	C		DWR	SFP	MURRAY R @	BARHAM
\$409006	01/01/1914	01/01/2008	03/11/1914	23/04/2007	01/01/1800	01/03/1986	105	5	99				DWR	CH	MURRAY R @	GULPA
409007	01/07/1918	01/06/1946		01/01/1800	01/01/1800	1	1	24				31/12/1947	DWR	DISC	BULLATALE @	OFFTAKE
\$409008	01/03/1933	01/01/2008	01/08/1957	10/05/2007	01/01/1800	16/05/2005	185	41	468	T	C		DWR	SFP	EDWARD R @	OFFTAKE
409009	01/01/1936	01/01/1949		01/01/1800	01/01/1800	1	1	21				30/09/1983	DWR	DISC	EAGLE CK @	OFFTAKE
409010	01/01/1922	01/01/1940	25/08/1922	31/10/1939	01/01/1800	01/01/1933	20	5	35			31/10/1939	DWR	DISC	TUPPAL CK @	OFFTAKE
\$409011	* 01/10/1921	01/02/1925	01/08/1969	18/01/2005	01/01/1800	01/01/1800	100	1	25			15/08/2002	DWR	DISC	MURRAY HUME	STORAGE
409012	01/06/1922	01/08/1951		01/01/1800	01/01/1800	1	1	67				31/07/1951	DWR	DISC	MURRAY R @	BARMAH
\$409013	01/06/1922	01/01/2005	16/06/1922	19/04/2007	01/01/1800	10/05/2005	485	54	551	T	C		DWR	SFP	WAKOOL @	STONE Y XING
\$409014	01/09/1918	01/01/2008	01/08/1921	03/02/2007	01/01/1915	26/09/2005	350	35	520	T	C		DWR	SFS	EDWARD R @	MOULAMEIN
409015	01/02/1927	01/01/1994	01/01/1979	17/12/1993	01/01/1800	01/01/1979	100	2	29			31/10/1959	DWR	DISC	GULPA CK @	MATHOURA
\$409016	01/04/1929	01/01/2007	27/06/1969	07/07/2006	01/01/1800	13/08/1996	200	21	1042	T	C		DWR	SFP	MURRAY @	HEYWOODS
\$409017	01/11/1929	01/01/2007	18/05/1961	07/07/2006	23/08/1929	01/05/2005	443	98	1333	T	C		DWR	SFP	MURRAY @	DOCTORS PNT
409018				55		10/01/1971	DWR	DISC	WODONGA CK	WODONGA						

\$409019	01/01/1936	01/01/2008	01/02/1936	02/03/2007	01/01/1800	16/01/2007	220	38	413							DWR SFS	WAKOOL R OFFTAKE REG
\$409020	01/01/1936	01/01/2008	01/02/1936	26/02/2007	01/01/1800	15/09/2005	170	61	448							DWR SFS	YALLAKOOL C @ OFFTAK
\$409021		01/05/1938	02/03/2007	01/01/1800	01/01/1800		1	1	1							DWR SFH	WAKOOL MAIN CANAL OT
\$409022	01/05/1938	01/01/2007	01/05/1938	02/03/2007	01/01/1800	01/01/1800	1	1	267							DWR SFS	WAKOOL MAIN CANAL OT
\$409023	01/01/1936	01/01/2008	01/02/1936	25/05/2007	01/01/1800	26/04/2007	265	28	416	R	T	C				DWR SFP	EDWARD R D/S STEVEN
\$409024	01/01/1929	01/01/2008	22/10/1929	26/02/2007	01/01/1800	10/05/2006	180	31	462							DWR SFS	COLLIGEN C B/L REGUL
\$409025	01/01/1938	01/01/2007	01/12/1960	01/08/2006	03/03/1960	28/08/2003	368	55	866			T	C			DWR SFP	MURRAY @ YARRAWONGA
\$409026	01/01/1939	01/07/2001	11/06/1997	01/08/2006	01/06/1985	09/08/1999	140	9	495							DWR SFP	MULWALA MN CANAL OT
409027	01/08/1940	01/09/1958		01/01/1800	01/01/1800		1	1	65				31/08/1958			DWR DISC	EDWARD @ GANNON FARM
409028			01/01/1800	01/01/1800			1	1	20				31/12/1957			DWR DISC	LT MURRAY R OFFTAKE
\$409029	01/01/1941	01/01/2008	15/09/1941	01/06/2007	01/01/1800	02/08/2002	105	4	172			T	C			DWR SFS	ESC FR MULWALA EDW R
\$409030	01/01/1914	01/01/2008	03/11/1914	08/03/2007	01/01/1800	29/11/2006	140	30	471							DWR SFS	GULPA CK @ OFFTAKE
409031	01/07/1954	01/05/1968		01/01/1800	01/01/1800		1	1	111				24/06/1969			DWR DISC	LT MERRAN C HEYWOOD
409032			01/01/1800	01/01/1800			1	1	5				31/10/1957			DWR DISC	EDWARD R @WAKOOL JCN
409033			01/01/1800	01/01/1800			1	1	7				20/04/1961			DWR DISC	MURRAY ROBINSONS BND
409034	01/05/1956	01/01/1995	21/07/1986	14/01/1994	01/01/1800	01/01/1956	100	2	12							DWR CF	WAKOOL R @ KYALITE
\$409035	01/09/1957	01/01/2008	20/10/1966	19/04/2007	01/01/1800	19/09/2003	195	29	787			T	C			DWR SFP	EDWARD R @ LEIWAH
\$409036	01/09/1957	01/01/2008	20/04/1966	21/02/2007	01/01/1800	12/12/2006	190	19	324			T	C			DWR SFS	MERRAN CK U/S WAK JN
\$409037		17/02/1967	21/07/2006	26/01/1967	26/01/1967		100	1	3			T	C			DWR SFH	MURRAY R @ HOWLONG
409038		06/09/1989	12/01/2004													DWR PRH	MURRAY ANABCH SHANTY
409039		06/09/1989	12/01/2004				1									DWR PRH	MURRAY R @ WIDGEON
409040		06/09/1989	12/01/2004													DWR PRH	MURRAY @ JILLAMATONG
409041		06/09/1989	02/03/2004				5									DWR PRH	MURRAY @ KENSAL GREE
409042		06/09/1989	02/03/2004				2									DWR PRH	MURRAY R @ MAYFIELD

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INVENTORY OF DATA

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			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
409054	01/01/1985	01/01/1987			01/01/1800	05/02/1987	110	4	50								23/10/1989	DWR DISC	LALALTY 1 ARM UP JNC
409055	01/01/1985	01/01/1990	20/12/1985	07/03/1989	01/01/1800	20/12/1985	100	2	57	C							07/03/1989	DWR DISC	TUPPAL CK @ OLD TOC
409056	01/01/1985	01/01/2008	18/12/1985	24/01/2007	01/01/1800	08/11/2005	305	25	127	R	T	C						DWR SFP	TUPPAL CK@ ARATULA R
409057	01/01/1985	01/01/1994	18/12/1985	16/06/1993	01/01/1800	10/04/1989	140	7	59	R							16/06/1993	DWR DISC	BOX CREEK @ BLIGHTY
409058	01/01/1985	01/01/1997	17/12/1985	18/01/1996	17/12/1985	27/09/1992	135	7	91	R							18/01/1996	MIL XFR	BOX CK AT CONARGO RD
409059	01/01/1985	01/01/1987			01/01/1800	03/01/1986	105	3	31								05/12/1989	DWR DISC	BOX D/S BARRATTA DAM
409060	01/01/1985	01/01/1990	17/12/1985	26/10/1989	01/01/1800	24/03/1988	130	8	28								26/10/1989	DWR DISC	NTH DENI DR @ HAY R
409061	01/01/1983	01/01/2008	23/08/1983	21/02/2007	01/01/1800	03/12/2005	125	14	64	T	C							DWR SFP	WAKOOL R COONAMIT BR
409062	01/01/1983	01/01/2008	23/08/1983	22/02/2007	01/01/1800	12/05/2005	130	11	74	T	C							DWR SFP	WAKOOL R GEEGEE BR 2
409063						1			01/01/1996	MIL XFR	B'RIGAN	CH J'DERIE	R						
409064						16			01/01/1996	MIL XFR	BERRIGAN	CH @ DROP							
409065	01/01/1986	01/01/1996	12/06/1986	25/01/1995	11/03/1986	07/09/1993	105	2									01/01/1996	MIL XFR	P'LINE 3100 @TERMINA
409066	01/01/1989	01/01/2004	01/12/1989	16/03/2004	01/01/1800	05/10/2000	111	4	47								16/03/2004	DWR DISC	LOWER TOUPNA CK @ RE
409067	01/01/1986	01/01/1993	21/03/1986	06/08/1992	01/01/1800	20/10/1989	100	3									18/09/1995	DWR DISC	ESC FROM DENIBOOTA @

409068	01/01/1983	01/01/1993	23/08/1983	02/07/1992	01/01/1800	27/09/1989	100	2	17		06/08/1996	DWR DISC	NEIMUR@NBC	SYPHON
409069	01/01/1991	01/01/1994	27/03/1991	16/06/1993	01/01/1800	01/05/1990	100	2	10	R	16/06/1993	DWR DISC	DC ULUPNA@U/S	BOX CK
\$409070	01/01/1991	01/01/1997	20/03/1991	09/09/1996	01/01/1800	04/04/1996	101	3	26	R	09/09/1996	DWR DISC	DC LALALTY@LALALTY	
409071	01/01/1983	01/01/1997	23/08/1983	19/11/1996	01/01/1800	04/04/1990	105	3	22		20/07/1994	DWR DISC	NIEMUR @	NACURRIE RD
409072	01/01/1983	01/01/1995	23/08/1983	31/12/1993	01/01/1800	01/01/1989	100	3	13		07/08/1996	DWR DISC	WAKOOL R @	DENI RD
409073	01/01/1991	01/01/1996	25/07/1991	06/06/1995	27/03/1990	28/07/1995	99	2	16		06/06/1995	MIL XFR	WAKOOL	OUTFALL DRAIN
409074		24/03/1992	31/10/1995			31/10/1995	MIL XFR						D/BOOT-A-GREEN	GULLY
\$409075	01/01/1991	01/01/2008	20/11/1991	24/01/2007	01/01/1800	10/03/2006	145	10	61	T C		DWR SFS	BULLATALE U/S	EDWARD
409076		29/01/1993	20/09/1995		6	T C	20/09/1995	MIL XFR					WOLLAMI ESC @	OUTFALL
409077	01/01/1993	01/01/2006	16/02/1993	31/10/2005	16/02/1993	16/02/1993	100	1	10	T C		MIL XFR	FINLEY ESC @	OUTFALL
409078			01/01/1800	01/01/1800	1	1					17/06/1993	DWR DISC	WOODBURY	
409079			01/01/1800	01/01/1800	1	1					17/06/1993	DWR DISC	AVALON ROAD	
409080		26/02/1993	16/06/1993	01/01/1800	01/01/1800	1	1	T C			05/03/1993	DWR DISC	BLIGHTY RETR-BLIGHTY	
409081		28/01/1993	16/06/1993	01/01/1800	01/01/1800	1	1	T C			16/06/1993	DWR DISC	DC WOODB @	BOX CK ES
409082		16/02/1993	16/06/1993	01/01/1800	01/01/1800	1	1	T C			16/06/1993	DWR DISC	DC WOOD NTH	USBOXESC
409083	01/01/1993	01/01/1997	21/04/1993	29/01/1996	21/04/1993	07/09/1995	25	5	10	C	29/01/1996	MIL XFR	DENIBOOTA U/S	YALLAK
409084		21/04/1993	29/01/1996		9	C	29/01/1996	MIL XFR					YALLAKOOL CHAN U/S	D
409085		15/06/1994	13/11/1995	01/01/1800	01/01/1800	1	1	6	T C		13/11/1995	DWR DISC	BOX CK U/S	ORO RD
\$409086	01/01/1994	01/01/2008	21/06/1994	21/02/2007	01/01/1800	20/07/2006	140	9	79	T C		DWR SFP	NIEMUR @	MALLAN SCH
409087	01/01/1994	01/01/1996	01/09/1994	30/05/1995	01/09/1994	03/02/1995	105	3	8		30/05/1995	MIL XFR	FINLEY ESC D/S	COREE
409088	01/01/1994	01/01/2001	02/11/1994	07/12/2000	01/01/1800	02/11/1994	100	2	11	T	07/12/2000	DWR DISC	WAKOOL @	BRASSI RD.
409089		06/06/1995	18/01/1996		3	T C	18/01/1996	MIL XFR					WOLLAMAI U/S	B'BONG
409090	01/01/1995	01/01/1997	15/11/1995	24/01/1996	15/11/1995	15/11/1995	10	1	3	T C	24/01/1996	MIL XFR	BOX @	MOORA PARK
409091	01/01/1996	01/01/2004	10/07/1996	12/09/2003	01/01/1800	12/09/2003	27	11	8			DWR PJX	POON	BOON

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R A W C T W H O

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Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net
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409103	01/07/1999	01/01/2007	2	MIL XFR	WAKOOL	ESC @	MULWALA
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409104	01/07/2000	01/01/2007	3	MIL XFR	YALLAKOOL	ESC	MULWAL
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409105	18/03/2003	04/07/2006	01/01/1800	01/01/1800	1	1	04/07/2006	DWR DISC YALLAKOOL U/S REG.
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409106 01/07/2006 DWR MULLIGANS @ WETUPPA

409107	07/06/2006	22/02/2007	07/06/2006	31/07/2006	5	2	4	DWR	ST HELENA DS REGULAT
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\$409108 DWR SFH MURRAY @ MULWALA OT

409202	01/01/1980	13/07/2000	07/07/1977	05/05/1983	130	4	63	01/12/1963	VRW UNCL MURRAY R @ TOCUMWAL
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409202A	01/04/2002 26/01/2007	58 4	VRW	MURRAY AT TOCUMWAL
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409204	01/01/1980 13/07/2000	CBM	Murray @ Swan Hill
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409204C	01/01/1980	13/07/2000	30/10/2001	14/02/2005	32	2	VRW UNCL MURRAY R @ SWAN HILL
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409207B	27/03/2001	27/03/2001	30	1	VRW	MURRAY @ TORRUMBARRY
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409215B 24/10/2001 07/08/2006 12 3 VRW MURRAY R. @ BARMAN

409216A VRW MURRAY U/S Y'WONGA

409219 VRW UNCL MURRAY TORRUMB'Y L26

\$410001	01/01/1868	01/01/2008	01/10/1868	05/03/2007	01/01/1892	27/08/2003	140	62	652	T C B	DWR SFP	M/BIDGEE R @ WAGGA
410002	01/01/1887	01/01/1983	31/12/1955	15/02/1982	28/06/1955	10/05/1978	120	6	543		15/02/1982 DWR DISC	MURRUMBIDGEE @ HAY
41000200			17/10/2001	17/10/2001	10	1	25				DWR PJI	NIMBO OFFTAKE
41000201				12							DWR CR	HOLTS ANNABRANCH O/T
41000202				17							DWR PJI	AFFLECKS D/S OFFTAKE
41000203			01/04/1999	01/04/1999	1	1	13				DWR PJI	TUMUT U/S AFFLECKS
41000204	01/01/1996	01/01/1998	01/11/1996	11/02/1997	06/02/1996	06/02/1996	1	1	4		11/02/1997 DWR DISC	NUNGAR @ TANTANGARA
41000205			01/10/1995	01/10/1995	4	1	37				DWR CR	M BATEMAN @ KERINS X
41000206			07/02/1996	30/04/2004	20	4	45				DWR CR	N/ALLA @ ROSE VALLEY
\$41000207	01/01/2004	01/01/2008	01/07/2004	28/03/2007	01/07/2004	01/07/2004	2	1	2 R		DWR SMS	MUTTAMA AT BERTHONG
\$41000208	01/01/2004	01/01/2008	17/06/2004	15/05/2007	17/06/2004	17/06/2004	1	1	23		DWR SMS	MOLONGLO @ KOBADA
\$41000209		01/08/2006	18/04/2007	01/08/2006	01/08/2006		1	1	6		DWR SFS	YANCO CREEK @ WIRAKI
\$41000210		01/08/2006	18/04/2007	31/07/2006	31/07/2006		1	1	6		DWR SFS	COLOMBO@COONONG WEIR
41000211											DWR DISC	COLOMBO @ EIGHT MILE
\$41000212											DWR SFH	YANCO@TARAB' STORAGE
\$41000213			01/12/2005	01/12/2005	100	1	8				DWR SFS	YANCO @D/S TARABAH W
410003	01/01/1907	01/01/1980	01/01/1907	12/04/1979	08/07/1973	07/02/1978	125	6	387		12/04/1979 DWR DISC	M/BIDGEE @ BALRANALD
\$410004	01/01/1886	01/01/2008	02/08/1886	23/03/2007	01/07/1886	06/06/2002	140	54	872	T C B	DWR SFP	M/BIDGEE @ GUNDAGAI
\$410005	01/06/1891	01/01/2008	13/07/1973	07/03/2007	01/10/1915	15/09/2000	145	78	877	T	DWR SFP	M/BIDGEE NARRANDERA
\$410006	01/11/1900	01/01/2008	02/04/1970	08/05/2007	27/04/1892	28/05/2006	250	63	843		DWR SFP	TUMUT RIVER @ TUMUT
\$410007	01/01/1902	01/01/2008	10/01/1979	08/03/2007	13/11/1973	02/12/1997	155	12	800		DWR SFP	YANCO CK @ OFFTAKE
\$410008	01/01/1961	01/01/2008	18/07/1961	11/04/2007	18/07/1961	15/09/1999	27	3	261	T C B	DWR SFP	M/BIDGEE D/S B/JUCK
410009	01/04/1908	01/01/1968			253						29/04/1968 DWR DISC	JOUNAMA CK @ TALBING
410010	01/05/1910	01/06/1959			74						29/05/1959 DWR DISC	YARRANGOBILLY RIVER

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R A W C T W H O

Station	Flows	Heights	Ratings	No.	No.	a t t o u i u x	Discont.
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410022	01/02/1914	01/01/1951	01/06/1925	04/02/1946	110	3	103	01/09/2006	DWR	CH	MURRUMBIDGEE	JUGIONG
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\$410023	01/02/1912	01/01/2008	20/08/1999	06/03/2007	01/12/1960	15/09/2005	125	10	223	T	C	DWR	SFP	M/BIDGEE	D/S	B/BED
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\$410024	01/01/1914	01/01/2008	19/09/1914	13/03/2007	19/09/1914	10/02/2007	28	28	419	T	C	DWR	PPS	GOODRADIGBEE	WEEJSR
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\$410025	01/01/1914	01/01/2008	01/02/1914	21/03/2007	02/08/1915	04/08/2005	447	48	376	R	T	C	DWR	PPS	JUGIONG	CK	@	JUGIONG
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\$410026	01/01/1915	01/01/2008	24/08/1915	13/03/2007	01/08/1915	01/12/2006	212	12	306		DWR	PI	YASS	RIVER	@	YASS
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410027	01/01/1918	01/07/1930	30	31/05/1930	DWR	DISC	M/BIDGEE	@	YEUMBURRA
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410028	01/04/1918	01/09/1931	77	31/08/1931	DWR	DISC	G/DRADIGBEE	B/BELLA1
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410029	01/01/1922	01/01/1978	02/10/1952	24/03/1977	01/01/1927	01/06/1975	29	30	272	24/03/1977	DWR	DISC	BUDDONG	CK @	BUDDONG
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410030	01/01/1922	01/01/1950	43	31/01/1950	DWR	DISC	BILLABONG @ WINDOURA
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410031 6 31/01/1950 DWR DISC 10 MILE CK HOLBROOK1

410032	01/12/1925	01/07/1952	96	01/03/1954	DWR DISC TUMUT RV @ TALBINGO2
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\$410033	01/01/1916	01/01/2008	01/02/1916	17/05/2007	01/01/1916	03/12/2003	140	57	555	DWR	SFP	M/BIDGEE @ MITTAGANG
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410034	01/04/1926	01/03/1958	122	28/02/1958	DWR	DISC	GILMORE	CK	@	BATLOW
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410035	01/02/1927	01/01/1982	06/09/1976	17/09/1981	401	31/12/1983	DWR DISC M/BIDGEE R @ COTTER
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\$410036	01/04/1928	01/01/2008	26/07/1972	04/06/2007	02/10/1970	14/05/2001	200	21	655						DWR CR	M/BIDGEE D/S YANCO W
410037	01/01/1914	01/08/1940			27	26/02/1943	DWR DISC	COLOMBO CK @ COLOMBO								
\$410038	01/04/1932	01/01/2008	31/05/1967	26/03/2007	22/04/1932	06/02/2007	315	73	504	T					DWR PI	ADJUNGBILLY D'BALARA
\$410039	01/01/1932	01/01/2008	07/05/1932	26/03/2007	06/05/1932	29/05/2006	245	54	427	T					DWR SFP	TUMUT @ BRUNGLE BDGE
\$410040	01/09/1936	01/01/2008	10/06/1974	31/05/2007	06/03/1971	05/09/2005	205	22	475						DWR SFP	M/BIDGEE D/S MAUDE W
410041	01/06/1936	01/01/2008	01/01/1976	07/03/2007	02/03/1974	29/10/1984	120	4	453						DWR CR	M/BIDGEE D/S REDBANK
410042	01/06/1938	01/08/1942			70	26/05/1947	DWR DISC	ADELONG CK @ ADELONG								
\$410043	01/06/1938	01/01/2008	07/02/2003	17/04/2007	27/07/1984	11/09/2005	115	4	103	T C					DWR PPS	HILLAS @ MOUNT ADRAH
\$410044	01/01/1938	01/01/2008	05/05/1938	21/03/2007	01/05/1938	17/01/2003	530	30	365	T C					DWR PI	MUTTAMA CK @ COOLAC
410045	01/06/1938	01/01/1986	30/07/1971	01/01/1985	01/08/1971	26/01/1984	125	6	112				04/01/1985	DWR DISC	BILLABUNG @ SUNNYSID	
410046	01/11/1938	01/07/1968	31/12/1955	14/02/1961	15/01/1951	15/01/1951	4	1	171				30/06/1973	DWR DISC	YASS U/S RAIL WEIR	
\$410047	01/01/1938	01/01/2008	07/05/1938	20/03/2007	01/05/1938	25/03/2004	533	34	425	T C					DWR PPS	TARCUTTA @ BORAMBOLA
\$410048	01/01/1938	01/01/2008	10/05/1938	29/03/2007	10/05/1938	17/01/2002	131	45	232	T C B					DWR PPS	KYEAMBA @ LADYSMITH
410049			13	06/02/1961	DWR DISC	FOREST CK CONARGO RD										
\$410050	01/01/1939	01/01/2008	13/02/1939	16/05/2007	11/04/1939	12/07/2005	65	30	398						DWR PPS	M/BIDGEE BILLILINGRA
410051	01/02/1939	01/08/1950			69	30/06/1954	DWR DISC	NUMERALLA @ NUMERALL								
410052	01/02/1939	01/01/1964			152	31/12/1963	DWR DISC	MURRUMBIDGEE @ YAOUK								
410053	01/06/1940	01/01/1979	18/12/1969	14/07/1978	22/02/1973	11/04/1977	145	10	282				30/06/1978	DWR DISC	BILLABONG CK @ BUNDY	
410054	01/10/1940	01/04/1968			192	31/03/1978	DWR DISC	BILLABONG @ BOONOKE								
410055	01/05/1941	01/01/1997	19/01/1989	25/11/1996	12/10/1977	20/03/1985	105	2	156				27/11/1996	DWR XFR	MAIN DR J DS WBN ESC	
410056	01/09/1943	01/01/1948			13	01/07/1948	DWR DISC	COLOMBO CR @ WHITBYS								
\$410057	01/12/1944	01/01/2008	24/05/1957	06/03/2007	18/12/1944	11/03/2002	125	20	478	T C					DWR PI	GOOBA/GNDRA LACMALAC
\$410058	01/06/1946	01/01/2008	31/12/1977	17/04/2007	01/05/1961	09/12/2002	115	5	294						DWR PPS	TARCUTTA @ WESTBROOK
410059	01/06/1946	01/01/2008	01/01/1948	12/04/2007	17/10/1974	29/01/2003	140	8	423	T					DWR CR	GILMORE @ GILMORE

\$410060	01/05/1947	01/07/1959		01/01/1987	01/06/2004	105	3	78		DWR CH	NIMMING POLLEN OFTKE
\$410061	01/01/1947	01/01/2008	11/09/1947	16/04/2007	01/09/1947	11/09/2005	175	15	344	T C	DWR PI ADELONG @ BATLOW RD
\$410062	01/01/1947	01/01/2008	01/12/1947	16/05/2007	01/01/1947	27/06/1992	150	15	386		DWR PI NUMERALLA SCHOOL
410063	01/06/1948	01/01/1986	01/01/1975	01/01/1985	13/05/1948	25/06/1975	455	70	273		17/01/1985 DWR DISC ROCK FLAT CK @ BUNYA
410064	01/01/1948	01/01/1958	14/05/1948	23/01/1957	13/03/1856	13/03/1956	12	3	32		16/12/1956 DWR DISC COOMA CK @ COOMA NO1
410065	01/12/1948	01/09/1968			167	26/08/1968					DWR DISC TUMUT RV @ TALBINGO
410066	01/05/1951	01/01/1986	23/06/1976	01/07/1985	31/05/1951	18/09/1980	175	38	286		26/06/1985 DWR DISC NACKI NACKI @ TRURO
410067	01/01/1952	01/01/1986	22/10/1971	18/01/1985	16/01/1952	21/03/1978	160	30	289		DWR PRHG BIG BADJA @ NUMERALL
\$410068	01/01/1954	01/01/2008	22/01/1954	15/03/2007	15/01/1954	05/01/2004	5	5	97	T C	DWR SFP M/BIDGEE R @ GLENDAL
410069	01/01/1954	01/08/1963			56	15/08/1963					DWR DISC JUGIONG @ CUMBUMURRA
410070	01/01/1954	01/01/1986	01/12/1979	01/01/1985	05/10/1974	16/04/2005	235	16	340		DWR CR BOMBOWLEE CREEK

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R A W C T W H O

Station	Flows	Heights	Ratings	No. No. a t t o u i u x Discont.	
Number	Start	End	Start	End	First Last Last of of i m m n r p n m y Date Org. Net
			Starts	Starts	Tab Tabs Gaug n p p d b H d d g Code Class NAME
410071	01/01/1954	01/01/1985	16/12/1970	17/09/1984	27/01/1954 26/01/1984 140 9 304 04/12/1984 DWR DISC BRUNGLE CK @ RED HIL
410072	01/06/1954	01/10/1958			42 30/08/1960 DWR DISC YAVEN CR @ BILLAPALA
\$410073	01/01/1954	01/01/2008	28/05/1954	12/03/2007	12/03/1954 28/05/2006 260 31 513 T C DWR SFP TUMUT @ ODDYS BDGE
410074					23 28/04/1960 DWR DISC NUMERALLA KYDRA REEF
410075	01/05/1954	01/01/1985	01/01/1976	28/07/1984	01/01/1976 21/03/1983 115 4 244 DWR PRHG KYBEYAN R @ KYBEYAN
410076	01/05/1955	01/01/2008	17/09/1974	15/05/2007	07/02/1971 03/05/2000 200 17 380 DWR PI STRIKE-A-LIGHT CREEK
410077	01/08/1954	01/01/1986	01/01/1964	30/07/1985	02/05/1973 16/03/1979 140 9 252 R DWR PRHG BREDBO RV @ LAGUNA
\$410078	01/11/1954	01/01/2008	05/06/1995	01/06/2007	24/07/1969 02/09/2003 110 4 174 DWR CR M/BIDGEE @ CARRATHOO
410079			18/11/1954	18/11/1954	4 1 76 07/06/1994 DWR DISC M/BIDGEE @ BURRABOGI
410080	01/10/1956	01/08/1971			51 27/07/1971 DWR DISC BILLABUNG @ GLENFIEL
410081	01/01/1956	01/01/2008	13/12/1956	17/05/2007	20/10/1871 06/12/1995 161 26 295 DWR PJI COOMA CK @ COOMA NO2
\$410082	01/07/1958	01/01/2008	03/03/1965	01/06/2007	03/08/1964 19/12/2002 220 26 371 DWR CR M/BIDGEE D/S GOGEL W
410083	01/01/1977	01/01/1997	10/03/1977	05/07/1996	01/06/1967 28/03/1995 110 16 142 MBI XFR YANCO MAIN STHN DRN
410084					36 16/06/1977 DWR DISC DC RLW2 OUT STNY PNT

\$410085	01/01/1978	01/01/1997	10/05/1978	28/11/1996	29/01/1975	20/07/1981	115	4	225	T	C	MBI XFR	MIRROOL DS	GOGELDRIE
410086	01/01/1977	01/01/1997	02/12/1977	28/11/1996	04/09/1958	01/01/1993	120	4	187			MBI XFR	GOGELDRIE MAIN S	DRN
410087	01/03/1959	01/01/1973					123					05/09/1980	DWR DISC BULLENBUNG @	OLD MAN
410088	01/11/1944	01/01/2008	31/07/1959	14/05/2007	31/07/1959	25/08/2003	142	13	257			DWR PI	GOODRADIGBEE B/BELLA	
410089	01/01/1960	01/01/1990	08/02/1974	05/09/1989	31/12/1970	07/08/1985	290	39	261			12/05/1993	DWR DISC BILLABONG @	GARRYOWE
\$410090	01/01/1965	01/01/2008	28/05/1965	14/03/2007	22/09/1937	30/05/2002	17	17	138	T	C	DWR SMS	YASS RV @	GUNDAROO
\$410091	01/06/1965	01/01/2007	12/05/1981	21/07/2006	28/04/1973	03/03/1981	115	16	220	T	C	DWR PPS	BILLABONG WALBUNDRIE	
410092	01/05/1965	01/01/1989	31/12/1975	02/11/1988	01/05/1965	21/10/1982	140	27	210			12/12/1988	DWR DISC CUNNINGHAMS @	HARDEN
\$410093	01/09/1965	01/01/2008	22/07/1976	07/03/2007	02/09/1974	28/08/2003	125	8	313	T	C	DWR SFS	OLD MAN CK @	KYWONG
410094	01/01/1967	01/01/1983					101					SMA XFR	JOUNAMA CK @	PONDAGE
410095	01/11/1967	01/01/1982	10/04/1978	09/11/1981	28/10/1975	29/05/1980	115	8	157			30/06/1981	DWR DISC UMBANGO CK @	HUMULA
410096	01/11/1967	01/01/1995	12/09/1974	05/01/1994	01/01/1800	02/12/1987	180	31	175			DWR PRHG	MOUNTAIN THOMOND	NTH
410097	01/11/1967	01/01/2007	01/07/1976	27/07/2006	29/09/1970	17/07/1986	196	21	220	T	C	DWR PI	BILLABONG @	ABERFELD
410098	01/11/1967	01/05/1977		01/11/1967	17/10/1974		17	5	127			22/02/1977	DWR DISC 10 MILE @	HOLBROOK 2
410099	01/11/1967	01/06/1973					126					22/02/1977	DWR DISC YARRA CREEK 2 (YARRA)	
410100	01/01/1968	01/01/1981	30/12/1975	27/10/1980	13/12/1969	21/03/1978	105	12	125			30/09/1980	DWR DISC NUMERALLA R @	MONTAG
41010001										T		DWR WQR	BLOWERING DAM OFFTAK	
41010037*		07/06/2001	31/01/2006									DWR SFH	TELEPHONE BANK	
41010038												DWR SFH	POLLEN DAM	
41010039												DWR SFH	NAP NAP SWAMP	
41010056												DWR SFH	EULIMBAH SWAMP	
41010057*		07/06/2001	28/11/2001									DWR SFH	SUICIDE BANK	
41010058												DWR SFH	AVALON SWAMP	
41010059												DWR SFH	PEE VEE CREEK	

41010060									DWR SFH	54	
41010061									DWR SFH	LITTLEWOOD SWAMP	
410101	01/08/1968	01/01/1986	22/07/1974	08/06/1985	21/06/1965	29/12/1981	135	9	175		01/08/1985 DWR DISC M/BIDGEE PINE ISLAND
41010100			01/10/1995	07/02/2001	10	6	44			18/05/2005 DWR DISC YASS @ BOOTHS XING	
41010166			01/01/1901	01/01/1903	3	3				DWR WQS Murr50	
41010173			15/07/2002	16/07/2002	2	2	8			DWR PJI GOOBRA @ ROCK FLAT	
41010178			10/09/1998	10/09/1998	5	1	9			25/10/2000 DWR DISC B/GERY @ GREEN VALLY	
\$410102 *		21/10/1975	05/03/2007							DWR SFH BLOWERING STORAGE	
41010233	01/01/1998	01/01/2000	03/12/1998	05/11/1999	28/11/1998	28/11/1998	100	1	7	T C	05/11/1999 DWR DISC BULLA
41010287										DWR SFH NIMMIE STORAGE	
41010290*		28/10/1999	15/08/2006							DWR SFH COLDENE LAGOON	

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.												
Number	Start	End	Start	End	First	Last	Last of	of	i	m	n	r	p	n	y	Date	Org.	Net	
			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

41010292*			22/10/1999	06/01/2007													DWR SFH	IRIS PARK SWAMP	
41010293*			17/08/2000	06/03/2007													DWR SFH	BERRY JERRY LAGOON	
41010294*			22/10/1999	06/03/2007													DWR SFH	GANMAIN NO1 LAGOON	
41010295*			17/08/2000	06/03/2007													DWR SFH	GANMAIN NO2 LAGOON	
41010296*			18/08/2000	07/03/2007													DWR SFH	NARRANDERA SF LAGOON	
41010297*			20/10/1999	10/04/2003													DWR SFH	EUROLEY LAGOON	
41010298*			15/11/1999	24/10/2006													DWR SFH	MOLLEYS LAGOON	
\$410103	01/01/1965	01/01/2007	24/06/1965	20/03/2007	24/06/1965	27/05/1982	125	4	37	T	C						DWR PI	HOULAGHANS @ DOWNSID	
41010300*			25/01/2000	07/03/2007													DWR SFH	GOORAGOO LAGOON	
41010301*			08/10/1999	24/10/2006													DWR SFH	SUNSHOWER LAGOON	
41010302*			13/07/2000	24/10/2006													DWR SFH	YARRADDA LAGOON	
41010304*			07/06/2000	25/10/2006													DWR SFH	MCKENNAS LAGOON	
41010305*			20/10/1999	24/10/2006													DWR SFH	NINE MILE LAGOON	
41010306*			07/06/2000	21/10/2006													DWR SFH	PEVENSEY LAGOON	

41010307*	21/10/1999	07/03/2007																DWR SFH	BALRANALD WEIR LAGON
\$41010309		16/05/2003	13/04/2005	15	5	28												DWR CR	FOREST CK. @ O/T
41010312																		DWR PJI	GOOLA1
41010313																		DWR WQS	Murna1
41010314																		DWR WQS	Murna2
\$41010343							T											DWR WQR	HAY WEIR BUOY
41010351		01/01/1901	01/01/1903	3	3													DWR WQS	GOODSB
41010361							T											DWR WQR	REDB/K WEIR BUOY
41010362							T											DWR WQR	MAUD WEIR BUOY
41010390*	08/08/2001	07/03/2007																DWR CH	COONANCOOCABIL WEST
41010391*	08/08/2001	07/03/2007																DWR CH	COONANCOOCABIL EAST
41010397																		DWR SFH	COATES SWAMP
410104																		DWR DISC	REFER 410039
410105	01/01/1971	01/01/1983	22/07/1971	14/04/1982	22/02/1971	03/06/1978	125	6	113					14/04/1982			DWR DISC	NUMERALLA R DAM SITE	
\$410106	01/03/1972	01/01/2008	19/11/1978	13/04/2007	01/01/1972	04/02/2003	135	7	167	T	C						DWR PPS	GILMORE @ WYBALENA	
410107	01/01/1972	01/01/2008	19/05/1972	13/03/2007	19/05/1972	02/12/2003	200	20	205								DWR PI	MOUNTAIN CK @ MTN CK	
\$410108	01/01/1992	01/01/2008	03/12/1992	17/04/2007	01/01/1900	12/01/2005	115	5	174	T	C						DWR SFS	D C 800 @ OUTFALL	
\$41010810	01/01/1999	01/01/2008	16/11/1999	28/02/2007	01/01/1800	30/01/2004	10	4	28								DWR SFS	BILABONG@ WANGANELLA	
41010817		13/01/1995	01/08/2003	15	3	32								18/05/2005			DWR DISC	CARABOST @ HUMULA	
41010865		14/03/1988	04/07/2006	35	9	42											DWR CR	UMBGO @ HUMULA RD BG	
41010883																		DWR DISC	TARCUTTA @ HUME HWY
41010889							T											DWR WQR	BURRINJUCK WALL
41010891							T											DWR PJI	TUMMJ
410109			30		01/03/1977													DWR DISC	DC 600 ABOVE DC 500

\$41010904								DWR SFH	BEREMBED STORAGE
41010911			10					DWR DISC	COLEAMBALLY CANAL ST
\$41010922*	03/10/2006	01/06/2007						DWR SFH	GOGELDRIE STORAGE
\$41010928*	18/06/2006	31/05/2007						DWR SFH	HAY STORAGE
\$41010941*	23/11/2006	27/05/2007						DWR SFH	MAUDE STORAGE
\$41010966*	28/08/2006	07/03/2007						DWR SFH	REDBANK STORAGE
41010969	02/09/2003	08/03/2007			6			DWR SFH	INLET TOMBULLEN
\$41010970		03/12/1995	03/12/1995	100	1	10		DWR SFH	TOMBULLEN D/S WEIR
\$41010971								DWR SFH	TOMBULLEN STORAGE
\$41010981*	01/07/2003	04/06/2007						DWR SFH	YANCO STORAGE
41010988								DWR PJI	TUMUT @ G.H.F.N.

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.													
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	y	Date	Org.	Net	
			Starts	Starts	Tab	Starts	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
\$410110	01/01/1977	01/01/2007	08/03/1977	16/04/2007	08/03/1977	01/01/2007	125	7	182	T	C							DWR CR	D C 500 @	OUTFALL
410111	01/03/1973	01/01/1990	30/06/1976	14/03/1989	26/07/1973	24/07/1986	215	21	142									30/11/1989	DWR DISC	YAVEN YAVEN SPYGLASS
\$410112	01/01/1975	01/01/2008	19/08/1975	28/03/2007	01/06/1975	09/01/1996	120	4	128	R								DWR SMS	JINDALEE @	JINDALEE
410113					30/06/1983															DWR DISC GOODRADIGBEE B/BELLA
410114	01/01/1975	01/01/2008	28/05/1975	28/02/2007	01/05/1975	06/03/2001	115	4	186	R								30/06/2005	DWR SMS	KILLIMCAT @ WYANGLE
410115							22													19/01/1977 DWR DISC D C 500 @ BULLS ROAD
410116							1													13/05/1931 DWR DISC B/BONG @ BURRONGONG
410117																				14/02/1966 DWR DISC B/BUNG LOCKHART BDGE
410118																				01/01/1912 DWR DISC COLOMBO COCKETGEDONG
410119							14													18/07/1930 DWR DISC FOREST CK @ QUIAMONG
410120							36													20/06/1963 DWR DISC GILMORE CK@ CLAFFEYS
410121							23													17/08/1922 DWR DISC MURRUMBIDGEE @ YASS
410122																				01/01/1907 DWR DISC COTTER ABVE PADDYS R
410123																				01/01/1907 DWR DISC BUNDIDGERRY @ OFFTAK

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\$410148	01/01/1980	01/01/2008	01/09/1980	12/04/2007	01/01/1800	10/02/2004	130	8	115	T	C		DWR SFS	FOREST WARRISTONWEIR	
410149	01/01/1982	01/01/2008	31/03/1982	13/03/2007	14/07/1981	14/07/1981	110	1	127				DWR SMS	NOTTINGHAM ROAD BDGE	
410150	01/01/1982	01/01/1995	01/04/1982	31/12/1993	01/01/1982	22/08/1987	120	4	52				13/03/1996	DWR DISC MAIN DRN J @ YOOGALI	
410151	01/01/1982	01/01/1995	01/04/1982	31/12/1993	01/01/1982	01/01/1982	100	1	29				25/07/1994	DWR DISC DRAINAGE CHANNEL S	
410152	01/01/1984	01/01/2008	17/04/1984	18/04/2007	13/04/1984	13/04/1984	105	1	93				DWR SMS	STONY @ EDWARDSTOWN	
410153	01/01/1999	01/01/2001	31/03/1999	28/11/2000	01/01/1800	21/02/2000	7	3	5	T			28/11/2000	DWR DISC FOREST CK KIRRIBIRRI	
410154		23/06/1999	27/11/2000	01/01/1800	01/01/1800	1	1			T			28/11/2000	DWR DISC FOREST CK @ BLUEGATE	
\$410155		28/10/1999	14/03/2003	02/10/1985	02/10/1985	100	1	3	R				DWR CF	TARCUTTA BELMORE BR.	
\$410156	01/01/1985	01/01/2008	19/02/1985	23/03/2007	17/06/1985	11/09/2005	11	11	72	R	T	C	B	DWR SMS	KYEAMBA @ BOOK BOOK
410157	01/01/1998	01/01/2000	04/12/1998	01/10/1999	04/12/1998	04/12/1998	100	1	11		T	C		16/11/1999	DWR DISC COLY @ BOOROORBAN.
410158				1		16/11/1999								DWR DISC COLY @ CONARGO RD.	

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SURFACEWATER ARCHIVE, PARRAMATTA

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INVENTORY OF DATA

R A W C T W H O

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Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net
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Starts	Starts	Tab	Tabs	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
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410159	20/07/1978	20/07/1978	1	1	15	14/03/1996	DWR	DISC	DC	U	WARBURN	ESCAP
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410160 01/01/1988 01/01/2008 22/06/1988 15/03/2007 01/07/1988 01/02/1989 110 2 53 R DWR SMS WILLIAMS @ WHITEHILL

410161	08/02/1992	08/02/1992	1	1	11	MBI XFR	NERICON @ LAKE WYANG
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410162	01/01/1992	01/01/1997	26/02/1992	28/11/1996	01/01/1900	01/01/1900	1	1	24	MBI XFR	LITTLE MIRROOL @ U/S
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410163	01/01/1993	01/01/1997	11/02/1993	27/11/1996	11/02/1993	24/10/1996	110	2	15	T	C	MBI XFR	CUDMORE @ BARREBOX
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\$410164	01/01/1993	01/01/1997	10/02/1993	27/11/1996	15/06/1994	01/08/1995	110	2	16	T C	MBI XFR NO.13 ESCAPE
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\$410165 T C MBI XFR MIRROOL @ BENEREMBAH

\$410166	01/01/1993	01/01/1997	23/06/1993	29/10/1996	23/06/1993	23/06/1993	100	1	26	T C	MBI XFR	WILLOW MCNAMARA RD
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\$410167	01/01/1993	01/01/1997	24/06/1993	27/11/1996	09/06/1993	09/06/1993	100	1	13	T C B P	MBI XFR	BARREN BOX	OUTFALL
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\$410168	01/01/1995	01/01/2008	21/09/1995	19/02/2007	01/01/1800	16/10/2005	120	8	64	T	C	DWR SFP	BILLABONG @ HARTWOOD
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\$410169	01/01/1995	01/01/2008	18/09/1995	09/05/2007	18/09/1995	24/05/2004	25	4	60	T	C	DWR SFP	YANCO @ YANCO BRIDGE
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\$410170	01/01/1995	01/01/2008	20/09/1995	17/04/2007	06/08/1995	11/01/2005	105	3	58	T C	DWR SFP	B/BONG U/S INNES BDG
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\$410171	1	C	MBI XFR B'BAH 2 @GOLDB'S GAT
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\$410172	25/01/1996 29/11/1996	1	T C	MBI XFR DC ESC. @B'BAH PS
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\$410173		01/01/1985	01/01/1999	110	4	32				DWR CH	CAIRA CREEK @ OFFTAK	
\$410174										MBI XFR	M.D. J @ MCNAMARA RD	
\$410175		14/06/1998	01/06/2004	10	2	19				DWR CH	CAIRA NORTH	
\$410176	01/01/1999	01/01/2008	10/05/1999	13/03/2007	01/08/1998	16/03/2000	10	2	54	T C	DWR PPS	YASS @ U/S B/JUCK
410177	01/01/1999	01/01/2001	02/09/1999	17/10/2000	02/09/1999	02/09/1999	2	1	4	T	30/11/2000	DWR DISC 8 MILE CK @ W/NELLA
410178	01/01/1999	01/01/2001	02/09/1999	10/11/2000	02/09/1999	22/01/2000	3	2	5	T	10/11/2000	DWR DISC 8 MILE CK @ MCCRABS
410179		13/05/1997	05/05/2000	01/01/1900	01/01/1900		1	1			18/05/2005	DWR DISC PHALARIS FLUME
410180		07/03/1997	13/07/1998	01/01/1900	01/01/1900		1	1	R		18/05/2005	DWR DISC NATIVE GRASS FLUME
410181				2						DWR SMS	BROOKLYN @ EMSLEY	
\$410182	01/01/2001	01/01/2007	04/06/2001	25/07/2006	01/03/2001	01/03/2001	1	1	25	T C	DWR SPS	BILLABONG @ HILLVIEW
\$410183	01/01/2001	01/01/2007	05/06/2001	25/07/2006	02/05/2001	26/08/2003	5	2	25	T C	DWR	BILLABONG @ PARKSIDE
410184	01/01/2001	01/01/2007	05/06/2001	21/07/2006	05/06/2001	05/06/2001	1	1	10	T C	DWR PJI	SIMMONS @ WALBUNDRIE
\$410185		07/02/2001	17/04/2007	01/01/1900	01/01/1900		1	1	19	T C	DWR PJI	NOWRANIE D/S B/BONG
\$410186		30/08/2001	20/07/2006	01/01/1900	01/01/1900		1	1	21	T C	DWR PPS	B/BONG D/S 10-MTN CK
\$410187		29/08/2001	27/07/2006	01/01/1900	01/01/1900		1	1	16	T C	DWR SMS	10 MILE @ H/BROOK #3
410188		29/05/2001	09/01/2004				11				DWR CH	YARRA^2 CK @ DONNA V
410189											DWR XFR	BUNDIDGERRY ESCAPE
410190				15							DWR XFR	BUNDIDGERRY STORAGE
\$410191	01/01/2002	01/01/2007	01/10/2002	16/04/2007	01/10/2002	20/08/2004	105	2	19	T C	DWR CR	CCD @ OUTFALL
410191T											DWR CR	test
410192											DWR DISC	BETHUNGRA STORAGE
410193											DWR DISC	BETHUNGRA SEEPAGE
410194											DWR DISC	D/S BETH. STORAGE
\$410195	01/01/2002	01/01/2008	22/04/2002	24/04/2007	11/04/2002	11/04/2002	1	1	32	T C	DWR SFP	MBIDGEE R U/S GOBARR

410196				49			01/01/1979	DWR	DISC	COL/Y	@	TUBBO	WELLS	
410197		06/01/1995	26/12/2005	20	6	51			DWR	CR	NACKI	@	BANGADANG	
410198		23/10/1996	23/09/2004	25	5	51	T		DWR	CR	ADELONG	CK	@	TUMBLON
410199				31				DWR	PJI	TUMUT	U/S	NIMBO	O/T	
410204								ACT		M'BIDGEE	@	HALLS	XING	
410213								ACT		M'BIDGEE	@	ANGLERS	X	
410240				8				ACT		Halls	Ck			
410501	01/05/1950	01/09/1957			21				SMA		M'BIDGEE	@	KELLYS	PLN
410502	01/02/1950	01/11/1958			20				SMA		TUMUT	RIVER	AT	TUMUT
410503	01/05/1949	01/06/1964			28				SMA		TUMUT	@	LOBS	HOLE
410504	01/02/1952	01/01/1962							SMA		HAPPY	JACKS	@	MCKEAHN

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

R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.														
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net	
			Starts		Starts		Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

410505																			SMA	Y'GOBILLY @LOBS HOLE
410506	01/05/1952	01/11/1972																	SMA	Y'GOBILLY @HOSPITAL
410507	01/05/1952	01/11/1972																	SMA	WALLACES @HOSPITAL
410508	01/01/1953	01/01/1962																	SMA	EIGHT MILE @T2 TRACK
410509	01/01/1953	01/05/1971																	SMA	TUMUT @CUMBERLAND
410510	01/03/1953	01/04/1960																6	SMA	M'BIDGEE @THE GULF
410511	01/03/1953	01/01/1962																	SMA	SECTION @T-2 TRACK
410512	01/02/1953	01/05/1959																	SMA	HIGHGROUND @HIGHGROU
410513	01/03/1953	01/05/1959																	SMA	TUMUT @SAMS DIGGINGS
410514	01/02/1953	01/01/1980																	SMA	GOORUDEE R'LT BOLARO
410515	01/03/1953	01/08/1960																	SMA	N MARAGLE D/S COULTO
410516	01/04/1953	01/08/1960																	SMA	PINCHGUT @PENNYWEIGH
410517																			SMA	LEECH @DAMSITE 4
410518																			SMA	WATERFALL @DAMSITE 4

410519	01/02/1954	01/08/1959		SMA	TUMUT D/S HPPY JACKS
410520	01/06/1953	01/10/1958		SMA	RULES @GUEST HOUSE
410521	01/07/1953	01/02/1964		SMA	MIDDLE @PINBEYAN
410522	01/07/1953	01/08/1960		SMA	L'LE B'DONG @CUMBERL
410523	01/06/1953	01/05/1969		SMA	HONEYSUCKLE BEL MARA
410524	01/05/1947	01/10/1958	63	SMA	M'BIDGEE @RULES POIN
410526	01/03/1954	01/10/1960		SMA	GLENDOWER @RAZORBACK
410527	01/05/1954	01/10/1959		SMA	WALLACES @MUDHOLES
410528	01/06/1954	01/10/1959		SMA	G'GANDRA @STOKES HUT
410530	01/04/1956	01/01/1962		SMA	BOOGONG @YAOUK
410531	01/03/1957	01/01/1962		SMA	G'DIGBEE @OLDFIELDS
410532				SMA	BURNS ABV BURNS POND
410533	01/03/1959	01/01/1983		SMA	TUMUT ABV HPPY JACKS
410534	01/03/1959	01/01/1983		SMA	HAPPY JACKS ABV H.J.
410535	01/06/1958	01/01/1980		SMA	M'BIDGEE ABV TANTANG
410536	01/05/1957	01/02/1960		SMA	BALD HILL @NO.1
410537	01/05/1957	01/04/1960		SMA	BALD HILL @NO.2
410538	01/07/1957	01/02/1960		SMA	BALD HILL @NO.3
410539	01/07/1957	01/05/1960		SMA	BALD HILL @NO.4
410540	01/11/1958	01/03/1960		SMA	BALD HILL @NO.5
410541				SMA	EUCUMBENE-TUMUT TUNN
410542				SMA	TUMUT @TUMUT PND RES
410543				SMA	M'BIDGEE @TANTANGARA
410544				SMA	BURNS @BURNS CK POND

410545								SMA	TUMUT @TUMUT 2 PONDA	
410571								SMA	TUMUT @HAPPY JACKS P	
410572								SMA	TUMUT @TALBINGO RESR	
410573								SMA	TUMUT @JOUNAMA PONDA	
410574	01/06/1972	01/01/1983						SMA	YARRANGOBILLY @RAVIN	
410575	01/01/1976	01/01/1983						SMA	BUDDONG ABV JOUNAMA	
410576	01/05/1976	01/01/1983						SMA	BURNS ABV BURNS POND	
410700	01/01/1910	01/01/1981						ACT	COTTER @KIOSK	
410701	01/01/1912	01/01/1976	01/01/1912	04/03/1961	120	5	31	ACT	QUEANBEYAN @ GOOGONG	
410702	01/01/1918	01/01/1964	31/12/1917	21/10/1959	105	2	103	ACT	MOLONGLO CORKHILLS W	
410703	01/02/1927	01/10/1940			82			ACT	MOLONGLO YARRALUMLA	

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R A W C T W H O

Station	Flows	Heights	Ratings	No.	No.	a t t o u	i u x	Discont.
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Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net
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[illegible]

410733	01/01/1964	01/01/1982	29/07/1964	01/01/1981		ACT	COREE @THREEWAYS
\$410734		02/08/1966	03/03/1993		246	ACT	QUEANBEYAN @TINDERRY
410736		29/09/1967	28/05/1993		157	ACT	ORRORAL @CROSSING
410737		08/04/1969	01/01/1970			ACT	NAAS @GUGENBY CK
410738	01/01/1970	01/01/1982	05/06/1970	01/01/1981		ACT	M'BIDGEE @MT MCDONAL
410739	01/01/1968	01/01/1982	05/01/1968	01/01/1981		ACT	TIDBINBILLA @MOUNTAN
410741	01/01/1968	01/01/1973	24/04/1968	06/01/1972		ACT	MOLONGLO @STURT ISLA
410742 *		08/05/1968	01/01/1981			ACT	CORIN RES
410743	01/01/1969	01/01/1982	20/06/1969	01/01/1981		ACT	J'RABOMBERRA @4 MILE
410744 *		28/04/1969	16/10/1981			ACT	L B'GRIFFIN @BOAT HA
410745	01/01/1970	01/01/1982	29/01/1970	01/01/1981		ACT	YARRALUMLA @CURTIN
410746	01/01/1970	01/01/1982	10/12/1970	01/01/1981		ACT	LONG GULLY @PHILLIP
410747	01/01/1975	01/01/1982	22/12/1975	01/01/1981		ACT	COTTER BEL BENDORA
410748 *		05/07/1976	01/01/1981			ACT	GOOGONG RES
410750	01/01/1978	01/01/1982	09/12/1978	01/01/1981		ACT	
410752	01/01/1974	01/01/1982	23/08/1974	01/01/1981		ACT	COTTER BEL CORIN DAM
410753	01/01/1971	01/01/1982	13/09/1971	01/01/1981		ACT	YARRALUMLA @MAWSON
410754	01/01/1972	01/01/1982	14/01/1972	01/01/1981		ACT	GINNINDERRA BEL DAM
410755	01/01/1973	01/01/1982	07/09/1973	01/01/1981		ACT	TUGGERANONG BEL DAM
\$410756	01/01/1978	01/01/1982	21/08/1978	01/01/1981		ACT	MOLONGLO D/S COPPINS
410757	01/01/1972	01/01/1982	11/12/1972	01/01/1981		ACT	MOLONGLO @COPPER
410758	01/01/1972	01/01/1975	18/11/1972	04/04/1974		ACT	MOLONGLO @HOSKINGTOW
410759	01/01/1973	01/01/1982	06/04/1973	01/01/1981		ACT	MOLONGLO @CARWOOLA
410760	01/01/1973	01/01/1982	13/08/1973	01/01/1981		ACT	QUEANBEYAN @WICKERSL

410761	01/01/1974	01/01/1982	12/11/1974	01/01/1981		ACT	M'BIDGEE BEL LOBBS H
410762	01/01/1973	01/01/1980	25/08/1973	05/01/1979		ACT	COPPER BEL CAPTAINS
410763	01/01/1973	01/01/1982	04/08/1973	01/01/1981		ACT	SW DRAIN @GIRALANG
410764	01/01/1973	01/01/1982	01/09/1973	06/05/1981		ACT	GINNINDERRA @GUMGAHL
410765	*	07/11/1973	01/01/1981			ACT	L GINNINDERRA @DAM
410766		03/08/1973	25/10/1973			ACT	SW UNDERPASS @GIRALA
410768	01/01/1976	01/01/1982	31/07/1976	01/01/1981		ACT	SW DRAIN @GIRALANG W
410770	01/01/1977	01/01/1982	05/09/1977	01/01/1981		ACT	QUEANBEYAN @ACT BORD
410771	01/01/1978	01/01/1981	25/11/1978	01/01/1980		ACT	TUGGERANONG @WEIR
410772		18/08/1979	01/01/1981			ACT	SULLIVANS @SOUTHWELL
410774		01/03/1985	22/10/1992		66	ACT	BURRA @BURRA ROAD

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R A W C T W H O

Station	Flows	Heights	Ratings	No. No. a t t o u i u x Discont.
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Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net
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410777 T ACT M'BIDGEE AT HALLS

410850	40	20/02/1976 DWR DISC YASS MACKS REEF ROAD
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410851	01/01/1996	01/01/2008	24/01/1996	14/03/2007	26/02/1976	24/01/1996	2	2	58	DWR SMS	YASS @ MACKS REEF RD
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410852 41 21/12/1993 DWR DISC BLACK JOES MACKS RD

410998	01/11/1900	01/01/1968	DWR	Murray Misc 1
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410999	01/01/1968	01/01/2002	DWR	Murray Misc 2
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411001	01/01/1958	01/01/1986	29/10/1958	21/10/1985	29/04/1859	02/12/1980	18	21	189	21/10/1985	DWR	PRHG	Mill	Post	Bungendore
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411002	01/01/1971	01/01/1981	23/09/1971	18/01/1980	23/09/1971	08/09/1978	170	15	73	18/01/1980	DWR DISC TURALLO @ BUNGENDORE
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411003 01/09/1971 01/01/2008 31/12/1978 06/03/2007 28/09/1971 23/06/1998 191 23 184 DWR PI BUTMAROO CK@BUTMAROO

412001	01/01/1893	01/12/1956	110	01/01/1957	DWR DISC LACHLAN @ EUABALONG
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\$412002	01/01/1893	01/01/2008	01/01/1893	05/06/2007	01/01/1893	29/09/2005	215	92	787	T	C	DWR SFP LACHLAN R @ COWRA
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412003	01/01/1924	01/03/1961	150	16/10/1984	DWR DISC	LACHLAN HILLSTON T
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\$412004	01/03/1892	01/01/2008	29/07/1970	08/06/2007	04/06/1927	24/04/1984	130	25	655	T	C	DWR	SFP	LACHLAN FORBES	CTTNS
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\$412005	01/06/1907	01/01/2008	12/10/1970	08/06/2007	19/06/1969	22/12/2005	195	20	435	T	C	DWR SFP	LACHLAN @ BOOLIGAL
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\$412006	01/01/1896	01/01/2008	01/09/1973	30/05/2007	16/10/1970	11/12/2004	120	12	535	T	C	DWR SFP	LACHLAN CONDOBOLIN B
412007	01/01/1907	01/07/1955			138	30/09/1955	DWR DISC	LACHLAN @	WILLANTHRY				
412008	01/01/1917	01/01/1933	07/12/2002	25/10/2005	01/12/1982	01/01/2005	20	4	251			DWR CH	LAKE CREEK LC OUTLET
412009	01/12/1908	01/01/1999	01/06/1983	18/11/1998	20/02/1974	12/06/1989	80	16	580			08/02/1999	DWR DISC BELUBULA CANOWINDRA
412010	* 01/04/1979	01/07/1980	22/11/1960	25/10/1995						DWR CH	WYANGALA STORAGE		
\$412011	01/01/1910	01/01/2008	17/09/1970	07/06/2007	01/01/1900	10/12/2002	325	47	453	T	C	DWR SFP	LACHLAN LAKE C WEIR
\$412012	01/01/1907	01/01/2008	31/12/1984	29/05/2007	20/08/1973	22/12/2004	95	30	465			DWR SFP	WILLANDRA @ ROAD BDG
412013	01/10/1916	01/10/1939			59	01/01/1940	DWR DISC	LACHLAN KIACATOO	WR				
\$412014	01/08/1916	01/01/2008	02/03/1916	30/05/2007	18/09/1923	29/04/2007	130	30	528			DWR SFP	GOOBANG CONDOBOLIN
412015	01/12/1918	01/02/1961			106	09/07/1962	DWR DISC	ISLAND WALLAMUNDRY	O				
\$412016	01/06/1942	01/01/2008	07/07/1977	30/05/2007	31/01/1967	21/06/2006	195	49	471			DWR SFP	WALLAMUNDRY O-ISLAND
\$412017	01/08/1916	01/01/2006	13/12/1994	17/09/2005	19/02/1971	13/11/2006	210	23	399			DWR SFP	BUMBUGGAN CK OFFTAKE
412018	01/03/1917	01/04/1928		21/01/1995	21/01/1995	191	1	78		30/06/1942	DWR DISC	LACHLAN R @ CADOW	
412019	01/03/1917	01/09/1926			55	01/01/1927	DWR DISC	ISLAND CREEK @	CADOW				
412020	01/08/1920	01/07/1967			182	31/12/1976	DWR DISC	WILLANDRA CK	TOCABIL				
412021	01/08/1928	01/01/1991	18/09/1969	01/01/1990	09/08/1969	25/07/1978	180	16	274			15/12/1989	DWR DISC LACHLAN BOOBEROI WR
412022	01/07/1928	01/07/1983		31/03/1968	11/12/1978	95	84	258				DWR DISC	BOOBEROI CK OFFTAKE
\$412023	01/03/1927	01/01/2008	29/12/1977	30/05/2007	04/11/1974	20/02/2007	195	26	401			DWR SFP	ISLAND CK FAIRHOLME
412024	01/01/1926	01/01/2008	13/12/1994	31/05/2007	29/05/1985	04/01/1999	105	2	141			DWR SFP	LACHLAN MULGUTHERIE
412025	01/02/1929	01/01/1948			45	31/01/1948	DWR DISC	BOOROWA R	ROCKVALE				
412026	01/10/1930	01/01/1983	01/03/1971	21/04/1982	02/12/1970	13/04/1978	165	13	225			31/08/1982	DWR DISC LACHLAN R @ OXLEY
\$412027	01/12/1930	01/01/2006	03/12/1930	09/05/2007	03/12/1930	31/07/2003	100	16	117	T	C	DWR SFP	LACHLAN @ REIDS FLAT
\$412028	01/01/1930	01/01/2008	08/12/1930	10/05/2007	08/12/1930	28/04/2006	335	28	396	R	T	C	DWR PPS ABERCROMBIE ABERCBIE
\$412029	01/01/1938	01/01/2008	01/07/1938	09/05/2007	01/01/1938	12/11/2004	220	24	333	R	T	C	DWR PPS BOOROWA PROSSERS XNG

\$412030	01/05/1938	01/01/2008	26/04/1938	22/02/2007	02/11/1945	03/02/2003	275	22	371	T	C		DWR PPS	MANDAGERY @ EUGOWRA
412031	01/04/1938	01/07/1977		23/03/1938	13/06/1976		20	13	202				01/01/1978	DWR DISC HOVELLS @ HOVELLS CK
412032	01/04/1938	01/01/1959					125						31/08/1959	DWR DISC LACHLAN @ GOOLOOGONG
\$412033	01/05/1938	01/01/2008	01/01/1990	04/05/2007	29/03/1938	07/01/2006	140	10	121	T	C		DWR PPS	BELUBULA HELENSHOLME
412034	01/06/1939	01/07/1965		13/06/1939	12/05/1965		125	10	175				30/06/1965	DWR DISC LACHLAN CONDO WEIR
412035	01/12/1939	01/01/1946					39						06/06/1947	DWR DISC BUMBUGGAN @ GOOBANG
412036 *	01/01/1941	01/01/1983	20/03/1990	01/04/2004	01/12/1970	01/08/2006	120	16	400	R				SWA XFR LACHLAN JEMALONG WR
412037							5							DWR DISC JEMALONG @ OFFTAKE
\$412038	01/05/1941	01/01/2008	08/10/1970	29/05/2007	05/01/1968	03/12/2004	255	30	366	T	C		DWR SFP	LACHLAN WILLANDRA WR
\$412039	01/05/1941	01/01/2008	09/10/1970	29/05/2007	16/10/1968	09/10/1990	255	31	400	T	C		DWR SFP	LACHLAN HILLSTON WR
412040	01/05/1942	01/09/1947					23						01/01/1948	DWR DISC LACHLAN @ WARROO

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R A W C T W H O

Station	Flows	Heights	Ratings	No. No. a t t o u i u x Discont.	
Number	Start	End	Start	End	First Last Last of of i m m n r p n m y Date Org. Net
			Starts	Starts	Tab Tabs Gaug n p p d b H d d g Code Class NAME
412041	01/07/1946	01/05/1970			132 28/02/1971 DWR DISC BOREE CK @ CUDAL NO1
\$412042	01/10/1946	01/01/2008	01/03/1978	28/05/2007	17/02/1958 27/11/2003 200 38 259 DWR SFP WILLANDRA HOMESTEAD
412043	01/08/1947	01/01/1983	01/11/1977	15/11/1982	11/11/1970 20/12/1979 115 10 138 15/11/1982 DWR DISC GOOBANG DARBY S DAM
412044	01/12/1951	01/01/1964			158 16/02/1984 DWR DISC ISLAND WALLAMUNDRI O
\$412045	01/04/1952	01/01/2008	27/05/1982	08/06/2007	22/05/1968 16/10/2006 150 16 261 T C DWR SFP LACHLAN @ CORRONG
\$412046	01/01/1917	01/01/2008	31/12/1976	29/05/2007	26/07/1962 01/12/2006 155 27 359 DWR SFP WALLAROI WORRONGORRA
\$412047	01/05/1955	01/01/2008	16/04/1996	08/06/2007	06/03/1975 10/10/2003 20 3 250 DWR SFP BENSONS DROP WEIR
412048	01/05/1955	01/10/1968		07/11/1964	22/08/1990 15 7 137 DWR CR LACHLAN LAKE B WEIR
412049	01/01/1955	01/10/1960			37 01/01/1960 DWR DISC LACHLAN @ BEVENDALE
412050	01/01/1955	01/01/2004	21/01/1955	10/05/2007	01/01/1955 28/08/2001 120 10 241 T C DWR PBM CROOKWELL NARRAWA N.
412051	01/01/1955	01/02/1959			30 19/06/1960 DWR DISC ABERCROMBIE HADLEY 1
412052	01/01/1955	01/03/1961			45 31/05/1963 DWR DISC ISABELLA THE MEADOWS
412053	01/01/1955	01/09/1961			51 31/07/1963 DWR DISC ABERCROMBIE BUTMAROO
412054	01/02/1955	01/10/1981		01/05/1970	30/07/1980 17 16 61 01/01/1982 DWR DISC BOLONG R @ GOLSPIE

412055	01/11/1956	01/01/1975		28/11/1956	13/09/1983	42	29	262		01/01/1975	DWR DISC BELUBULA BANGAROO BD
\$412056	01/01/1957	01/01/2008	20/02/1957	08/05/2007	08/02/1957	08/11/2005	180	13	362		DWR SFP BELUBULA THE NEEDLES
\$412057	01/08/1958	01/01/2008	05/12/1969	04/05/2007	23/08/1968	14/09/2001	305	42	314	T C	DWR SFP LACHLAN R @ NANAMI
412058	01/08/1958	01/04/1985	29/12/1976	15/07/1982	31/12/1968	13/11/1981	125	13	177		27/01/1987 DWR DISC LACHLAN ISLAND OFFTK
412059			01/01/1995	04/04/2002	20	3	169				DWR DISC NERATHONG LC ROAD BD
412060	01/03/1959	01/01/1962			22		12/07/1963				DWR DISC 2(BURRA) CK LEVELS
412061	01/02/1959	01/01/1971	15/10/1969	28/05/1980		118			28/05/1980		DWR DISC LACHLAN @ HILLANDALE
412062				5		12/05/1964					DWR DISC CROOKWELL NEAR BINDA
412063	01/01/1960	01/01/2003	10/06/1960	08/08/2002	01/05/1960	09/05/2002	345	20	267		08/08/2002 DWR DISC LACHLAN @ GUNNING
412064	01/09/1962	01/02/1977			146		01/01/1978				DWR DISC REFER 412054
\$412065	01/01/1960	01/01/2008	28/07/1960	10/05/2007	01/01/1960	11/09/2005	200	21	327	R T C	DWR PPS LACHLAN @ NARRAWA
\$412066	01/01/1960	01/01/2008	22/06/1960	10/05/2007	01/01/1960	08/08/1998	215	13	285		DWR PPS ABERCROMBIE HADLEY 2
\$412067	01/01/1913	01/01/2008	06/03/1967	09/05/2007	01/07/1962	20/12/2005	170	13	513	T C	DWR SFP LACHLAN @ WYANGALA
412068	01/08/1966	01/01/2005	07/12/1977	07/04/2004	15/09/1966	01/12/2000	115	11	131	T C	DWR DISC GOONIGAL @ GOOLOGONG
412069	01/08/1966	01/01/1982	06/04/1972	21/09/1981	04/02/1969	10/11/1980	200	20	129		21/09/1981 DWR DISC BOOROWA R @ BOOROWA
412070	01/01/1966	01/01/1982	01/09/1966	16/07/1981	01/09/1966	20/01/1981	410	11	91		16/07/1981 DWR DISC CADIANGULLONG @ PAN.
412070B	01/01/1966	01/01/1982	01/09/1966	16/07/1981						ACT XFR	CADIANGULLONG @ PAN.
412071	01/09/1966	01/01/1995	20/01/1976	22/12/1994	01/09/1966	05/09/1983	213	62	210		23/12/1994 DWR DISC CANOMODINE CREEK
412072	01/08/1966	01/01/1990	31/05/1975	11/03/1989	25/08/1966	14/07/1986	190	41	1		11/03/1989 DWR DISC BACK CK @ KOORAWATHA
412073	01/08/1966	01/01/1995	08/10/1981	26/04/1994	01/06/1966	01/01/1984	110	9	137		23/12/1994 DWR DISC NYRANG CK @ NYRANG
412074	01/09/1966	01/09/1981		09/09/1966	06/01/1980	7	7	84		04/08/1981	DWR DISC ISABELLA @ BALLYROE
412075	01/10/1966	01/01/1983	31/12/1980	29/09/1982	01/10/1966	27/02/1982	22	22	127		02/10/1985 DWR DISC MANDAGERY @ MANILDRA
412076	01/01/1967	01/01/2001	04/12/1979	03/08/2000	30/11/1974	11/09/1980	110	8	192		03/08/2000 DWR DISC BOURIMBLA CK @ CUDAL
\$412077	01/01/1966	01/01/2008	09/12/1966	03/05/2007	08/12/1966	24/12/2005	180	17	281	T C	DWR CR BELUBULA @ CARCOAR

\$412078	01/01/1968	01/01/2008	01/11/1968	08/06/2007	01/11/1968	14/09/2006	125	10	207									DWR SFP	LACHLAN @ WHEALBAH
412079	01/04/1968	01/04/1976		01/01/1970	01/01/1970		3	1	88				01/01/1977	DWR DISC	BELUBULA @ MANDURAMA				
412080	01/04/1968	01/01/2007	01/11/1976	30/11/2006	01/01/1968	19/11/1986	170	15	207				30/11/2006	DWR PI	FLYERS CK @ BENEREE				
412081	01/01/1968	01/01/2003	23/04/1968	06/08/2002	23/04/1968	14/02/1999	240	11	204				06/08/2002	DWR DISC	ROCKY BDG NR NEVILLE				
412082	01/01/1968	01/03/1985	23/04/1968	14/08/1979	19/04/1968	16/04/1980	210	23	131				01/11/1984	DWR DISC	PHILS CK @ FULLERTON				
412083	01/01/1968	01/01/2003	23/04/1968	06/08/2002	01/04/1968	17/02/2002	200	20	202				06/08/2002	DWR DISC	TUENA CREEK @ TUENA				
412084	01/01/1968	01/01/1983	29/05/1968	24/09/1982	29/05/1968	06/05/1981	335	48	102				26/09/1984	DWR DISC	LACHLAN U/S BLAKNEY				
412085	01/06/1968	01/01/2005	31/12/1977	08/04/2004	17/06/1968	31/01/1984	135	16	109	T	C				DWR DISC	OOMA CK HENRY LAWSON			
412086	01/06/1968	01/01/1990	31/12/1978	14/03/1989	19/06/1968	16/08/1985	130	22	132				14/03/1989	DWR DISC	GOOBANG CK @ PARKES				
412087	01/02/1969	01/01/1977										75			DWR DISC	MERROWIE HOMESTEAD			
412088	01/01/1969	01/01/2004	16/06/1969	03/06/2004	15/06/1969	13/12/1982	125	6	141	T	C		12/11/2003	DWR DISC	LACHLAN @ NUMBY				

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			Starts	Starts	Tab	Starts	Starts	Tab	Starts	Starts	Tab	Starts	Starts	Tab	Starts	Starts	Tab	Starts	Starts	Tab
412089	01/01/1969	01/01/1990	16/04/1969	09/03/1989	22/05/1968	17/09/1986	195	19	174									09/03/1989	DWR DISC COOKS VALE PEELWOOD	
412090	01/01/1970	01/01/1991	12/08/1970	28/03/1990	16/12/1970	13/10/1981	190	18	136									28/03/1990	DWR DISC BOREE CK CUDAL NO.2	
412091	01/08/1971	01/01/1995	01/12/1985	23/12/1994	25/08/1971	28/07/1984	33	25	149									23/12/1994	DWR DISC WAUGOOLA U/S COWRA	
412092	01/01/1971	01/01/1994	01/09/1971	30/03/1993	01/06/1971	01/11/1992	130	15	104									30/03/1993	DWR DISC COOMBING NR NEVILLE	
412093	01/01/1973	01/01/1998	10/05/1973	01/05/1997	10/05/1973	10/05/1973	100	1	18 R									09/08/1999	DWR DISC NARADHAN @ NARADHAN	
412094	01/01/1955	01/02/1959					23			01/02/1959									DWR DISC 2(BURRA) CK ROCKWELL	
412095										14/08/1984									DWR DISC BURRANGONG @ MAIMURU	
412096	01/01/1975	01/01/2005	20/10/1975	29/03/2004	01/10/1975	02/04/1987	135	6	162									29/03/2004	DWR DISC PUDMANS KENNYS CK RD	
412097	01/08/1958	01/10/1968		01/01/1985	01/01/1985		1	1	133									01/01/1969	DWR DISC ISLAND CK @ OFFTAKE	
412098							2			15/05/1945									DWR DISC LACHLAN JEMALONG HSD	
412099	01/01/1975	01/01/1999	21/10/1975	01/01/1998	01/10/1975	24/04/1990	105	10	65									05/08/1999	DWR DISC MANNA NR LAKE COWAL	
412100			20/02/1941	16/09/1995			4	4	161										SWA XFR JEMALONG M C OFFTAKE	
41210010							1												DWR DISC LACHLAN NR CHARLS PT	
41210011							1												DWR DISC CHARLIES POINT	

41210016					1															DWR DISC FENCE LINE
412101			10/01/2001	01/05/2006		35	4	157												DWR CR LAKE CARGELLIGO INTK
41210101						1														DWR DISC BELUBULA DUNGEON RD
41210105						1														DWR DISC CHAIN PONDS CARCOAR
41210107						1														DWR DISC KINGS PLAIN CROSSING
41210108						1														DWR DISC HIGHWAY CULVERT
41210109																				DWR DISC SALEYARD CREEK
41210118						1														DWR DISC PRICES CULVERT
41210120						1														DWR DISC ABATTOIR CAR PARK
41210127						1														DWR DISC BOX CULV. HAILBRAE
412102			02/09/1986	02/09/1986		10	1	66												DWR CR LAKE BREWSTER INTAKE
412103	01/01/1976	01/01/2005	16/11/1976	08/04/2004	28/10/1976	06/04/1999	150	6	63	T	C									DWR DISC BLAND @ MORANGARELL
412104	01/01/1993	01/01/1998	10/03/1993	23/05/1997	23/11/1976	14/09/1993	110	4	51				24/09/1997							DWR DISC BELUBULA U/S BLAYNEY
412105	01/01/1992	01/01/2003	07/10/1992	05/08/2002	22/06/1989	07/08/1998	125	6	75				05/08/2002							DWR DISC BELUBULA D/S BLAYNEY
412106	* 01/03/1979	09/05/2007	23/11/1970	26/04/2007						R										DWR SFP CARCOAR DAM STORAGE
412107	* 01/06/1975	01/07/1980	01/01/1990	30/03/2007						R	T									DWR CH L CARGELLIGO STORAGE
412108																				DWR CH L BREWSTER STORAGE
412109			01/09/1983	01/05/2001		20	2	137												DWR CR L BREWSTER CONDUIT
412110	01/01/1980	01/01/2003	22/12/1980	08/05/2002	01/07/1980	01/07/1980	120	1	125				08/05/2002							DWR DISC BOLONG U/S GIDDIGANG
412111							15													DWR DISC LACHLAN @ WOODLANDS
412112							3													DWR DISC LACHLAN @ SAVILLES
412113							29													DWR DISC LACHLAN NERATHONG WR
412114							14			12/02/1965										DWR DISC LACHLAN DS GUNNING C
412115							11			16/01/1996										DWR DISC WLNDRA B /LIGAL-I /H

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			Starts	Starts	Tab	Tab	Gaug	n p p d b H d d g		Code Class	NAME
412127			01/10/1986	01/10/1986	100	1	5			06/01/1987 DWR DISC TORRIGANNY D/S WEIR	
412128										21/10/1986 DWR DISC MERRIMAJEEL IBIS TNK	
412129		04/03/1987	04/05/2007	01/01/1900	02/06/1994	105	4	29		DWR PJI MERRIMAJEEL @ B /BAN	
412130										23/10/1986 DWR DISC LAKE WALJEERS STORAG	
412131										13/10/1986 DWR DISC 2(MOON) LAKE STORAGE	
412132										22/10/1986 DWR DISC MERRIMAJEEL SWAMP SG	
412133	01/01/1987	01/01/1994	23/09/1987	01/01/1993	23/09/1987	23/09/1987	105	1	40	01/01/1993 DWR DISC CROOKWELL IRON MIN	
\$412134	01/01/1988	01/01/2008	20/01/1988	28/03/2007	08/04/1988	08/04/1988	1	1	42 R	DWR SMS WATTLE CK @ DUDAUMAN	
412135	01/01/1989	01/01/2003	31/01/1989	23/04/2002	31/01/1989	19/02/1993	130	3	44 R	23/04/2002 DWR DISC BEGALIA CK @ BEGALIA	
412136			22/06/1989	08/08/1997	35	6	43			05/02/1998 DWR DISC ABBATOIR CK @ ST JO	
412137			22/06/1989	14/09/1993	35	6	42			02/05/1998 DWR DISC ABBATOIR @ PALMER ST	
412138	01/01/1992	01/01/2003	20/02/1992	23/05/2002	20/02/1992	02/11/1994	5	2	12 R C	07/08/2002 DWR DISC MILPOSE	
\$412139		22/03/1992	06/12/2006				R			DWR CF MANDGERY CK GLENAYR	
412140		28/05/1991	04/01/1993				1			04/01/1993 DWR DISC MIRROOL CK COBB HWAY	

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\$412165	01/01/1996	01/01/2008	05/12/1996	03/05/2007	04/01/1996	21/12/2006	130	6	52		DWR SFP	BELUBULA RIV @ BELLS
412166											ACT XFR	DIGGERS CK U/S PAN R
412167											ACT	SWALLOW CK U/S PAN
\$412168											ACT XFR	CADIANG CK @ FPCR
\$412169	01/01/1997	01/01/2005	05/02/1997	02/04/2004	05/02/1997	24/01/2002	110	2	13	T C	DWR DISC	BACK CK @ COWRA
\$412170	01/01/1998	01/01/2005	18/06/1998	07/04/2004	01/01/1900	13/07/1999	6	3	18	T C	DWR DISC	BURRANGONG CK @ BIMB
412171		24/06/1998	08/04/2004	24/06/1998	24/06/1998		1	1	7	T C	DWR DISC	BLAND CK @ MARSDEN
\$412172											SWA XFR	JEMALONG STORAGE
412173											SWA XFR	L. BREWSTER W. STOR
412174											SWA XFR	TORRIGANNY STORAGE
412175											DWR DISC	HOVELLS CK @ NO.2

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			Starts		Starts		Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

412176																			DWR DISC KANGAROOBY @ KANG RD		
412177																			DWR PJI BUNUMBURT INFLOW		
412178																			DWR PJI LACHLAN @ GERAWAY		
412179																			DWR PJI MAROOL OUTFLOW		
412180																			DWR PJI TOOPUNTAL CHANNEL		
412181																			DWR PJI SW FLOODPLAIN WETSP		
412182																			DWR DISC SW FLOODPLAIN DRYSP		
412183																			DWR PJI THE WOODCUTTERS		
\$412184		08/11/2001	02/04/2004	08/11/2001	08/11/2001	10	1		R	T	C								DWR DISC WARRENGONG CK @ TC		
412185	01/01/2001	01/01/2005	08/11/2001	02/04/2004	01/10/2001	01/10/2001	100	1	6		T	C							DWR DISC WARRENGONG CK @ TS		
412186		12/02/2002	07/04/2004	12/02/2002	12/02/2002	10	1			T	C								DWR DISC TYAGONG CK D/S EMU C		
\$412187	01/01/2002	01/01/2008	12/03/2002	28/05/2007	12/03/2002	09/08/2004	30	3	22										DWR CR WILLANDRA @ YILGA		
\$412188	01/01/2002	01/01/2008	04/04/2002	29/05/2007	04/04/2002	02/03/2005	35	4	32										DWR CR NERATHONG @ NERATHOG		
\$412189		03/11/2006	14/03/2007	22/12/2004	21/12/2006	25	4	16											DWR SFP BOOBEROI @ OFFTAKE		

412190			3					DWR CR	WALLAROI @D/S WLSHD	
412191			3					DWR CR	WALLMNDRY@D/S WLSHD	
\$412192	10/11/2006	30/03/2007	14/07/2005	14/07/2005	1	1	9		DWR SFP	BOOBEROI AT RETURN
412193		16/10/2006	16/10/2006		1	1	9		DWR ADH	BELUBULA @CANOWINDRA
412194		29/05/2006	29/05/2006		1	1	4		DWR SFP	LACHLAN AT 4 MILE
412900									DWR DISC	LACHLAN @ GLENWOOD
412901	01/03/1893	01/10/1943		20/10/1929	24/03/1937	110	2	17		01/01/1944 DWR DISC LACHLAN FORBES (IRON)
\$413001						18		T C		DWR PJI MURRAY @ MCLIFFS1
\$413002	25/04/1997	13/02/2007	01/01/1900	01/01/1900		1	1	22	T C	DWR PJI MURRAY @ MCLIFFS2
41310022									DWR WQR	Collignan Pontoon
41310023									DWR WQR	MC UP PONTOON
41310024									DWR WQR	MC Down Pontoon
41310025									DWR WQR	Redcliffs Pontoon
41310026									DWR WQR	Chaffey's Pontoon
41310027									DWR WQR	Merbein Pontoon
41310028									DWR WQR	Curlwa Pontoon
414200	01/01/1980	13/07/2000							CBM	Murray bel Wakool Jn
414200A	01/01/1980	13/07/2000	01/11/2001	16/09/2006	37	4			VRW	MURRAY D/S WAKOOL JN
414201									VRW	MURRAY @BOUNDARY BEN
414201A				31/12/1962	VRW					MURRAY BOUNDARY BEND
\$414201B		14/10/2006	14/10/2006	25	1				VRW	MURRAY BOUNDARY BEND
414202	31/01/1985	02/08/1997			1				VRW CH	MURRAY d/s MILDURA
414203				28/02/1921	VRW					MURRAY @ EUSTON
414203A				28/02/1921	VRW					MURRAY @ EUSTON

414203B				VRW	MURRAY @ EUSTON
414203C	08/08/2006	08/08/2006	43	1	VRW MURRAY @ EUSTON
414204	13/10/1993	17/11/1993			VRW MURRAY REDCLIFF
414206	06/10/1993	29/07/1997	T	C B	VRW CH MURRAY @ MERBEIN P/S
414207	15/12/1975	10/12/1993			VRW MURRAY @COLIGNAN
414209					VRW MURRAYR U/S EUSTON W
414210	31/01/1985	02/08/1997			VRW CH MURRAY R u/s MILDURA
4160001			6		DWR CR TENTERFIELD OLD BAL
4160002			6		DWR CR TENTERFIELD LEECHS
4160003			5		DWR CR BLACKSMITH OLD BAL
4160004	28/06/2000	28/06/2000	1	1 10	DWR CR TENTERFIELD NE H/WAY

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			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
4160005							5										DWR CR	TENTERFIELD	TARBAN
4160006			07/09/2004	07/09/2004			1	1	10								DWR CR	MILLERS	TARBAN RD
4160007							5										DWR CR	TENTERFIELD	SAWYERS
4160008							5										DWR CR	TENTERFIELD	BACK CK
4160009							1										DWR CR	TENTERFIELD	MT PLEAS
\$416001	01/12/1889	01/01/2008	01/02/1973	05/06/2007	24/04/1970	21/07/2004	163	24	484	T	C						DWR SFP	BARWON R @	MUNGINDI
4160010			22/10/2003	22/10/2003			1	1	6								DWR CR	TENTERFIELD	DARTHULA
4160011							4										DWR CR	SEVERN	DARTHULA
4160012							2										DWR CR	MILLERS	BRUX H/WAY
4160013							1										DWR CR	MILLERS	D/S BRUX H/W
4160014							1										DWR CR	TENTERFIELD	RICHFLD
4160015							3										DWR CR	TARBAN @	OAKVALE
4160016			20/10/2003	20/10/2003			1	1	4								UNK UNCL	Doondoona @	Neeworra
4160017							2										DWR	BALD ROCK ROAD	BRIDG

4160018	2					DWR	BOUBLE CROSSING									
\$416002	01/02/1895	01/01/2008	22/04/1982	04/05/2007	21/09/1979	15/01/2006	152	33	532	T		DWR	SFP	MACINTYRE	BOGGABILLA	
\$416003	01/01/1921	01/01/2008	01/09/1921	15/03/2007	01/09/1921	03/07/2005	144	20	528			DWR	PI	TENTERFIELD	CLIFTON	
416004	01/02/1924	01/03/1974			194	01/03/1974	DWR	DISC	MOLE	R @	TRENAYR					
416005	01/01/1925	01/06/1983		15/08/1975	27/08/1988	120	5	265		07/11/1989	DWR	DISC	MACINTYRE	R @	YETMAN	
\$416006	01/02/1934	01/01/2008	10/09/1970	05/06/2007	09/09/1962	28/04/2007	267	43	539			DWR	SFP	SEVERN @	ASHFORD	
\$416007	01/09/1934	01/01/2008	20/09/1972	15/03/2007	04/01/1969	13/01/2007	221	40	529			DWR	SFP	DUMARESQ @	BONSHAW	
\$416008	01/09/1934	01/01/2008	25/06/1970	07/06/2007	11/03/1970	09/09/2004	315	54	440	R		DWR	PPS	BEARDY @	HAYSTACK	
416009	01/01/1937	01/01/1951			129	30/06/1962	DWR	DISC	MACINTYRE	@	INVERELL					
\$416010	01/01/1937	01/01/2008	28/06/1973	06/06/2007	22/05/1963	03/03/2007	257	48	468			DWR	PPS	MACINTYRE	WALLANGRA	
\$416011	01/03/1937	01/01/2008	14/06/1972	07/06/2007	13/03/1958	14/01/2006	295	52	533			DWR	SFP	DUMARESQ @	ROSENEATH	
\$416012	01/01/1951	01/01/2008	18/10/1972	06/06/2007	13/12/1969	08/10/2006	216	36	433	T C		DWR	SFP	MACINTYRE @	HOLDFAST	
416013				16	28/09/1953	DWR	DISC	MOLE @	MOLE RIV	P.O.						
416014	01/01/1954	01/01/1983	02/05/1954	12/01/1982	26/03/1968	03/07/1981	340	48	129		12/01/1982	DWR	DISC	DUMARESQ @	MINGOOLA3	
416015	01/05/1960	01/01/1989	28/12/1984	25/02/1988	01/06/1984	24/11/1987	106	5	242			DWR	PRHG	SEVERN @	LLANARTH	
\$416016	01/06/1962	01/01/2008	18/07/1971	04/05/2007	01/03/1971	13/02/2003	197	25	345	R T C		DWR	SPS	MACINTYRE	INVERELL	
416017	01/03/1963	01/01/1970			93	31/12/1969	DWR	DISC	MOLE	R @	BELLANBOE					
416018	01/01/1966	01/01/1990	09/06/1966	09/02/1989	25/05/1966	06/08/1987	284	40	163			DWR	PRHG	MACINTYRE @	DAMSITE	
\$416019	01/07/1966	01/01/2007	16/03/1970	12/01/2006	15/08/1968	14/01/2004	313	61	298		29/06/2005	DWR	SFP	SEVERN D/S	PINDARI	
\$416020	01/03/1967	01/01/2008	09/11/1978	20/02/2007	11/07/1978	03/01/2007	238	56	232	R		DWR	PI	OTTLEYS @	COOLATAI	
\$416021	01/03/1967	01/01/2007	20/07/1971	14/09/2006	18/07/1971	11/04/1988	397	60	183	R		DWR	SMS	FRAZERS @	WESTHOLME	
\$416022	01/05/1967	01/01/2008	06/03/1978	20/04/2007	01/03/1967	05/11/2006	204	40	229			DWR	SPS	SEVERN @	FLADBURY	
\$416023	01/03/1967	01/01/2007	07/03/1978	18/12/2006	01/01/1978	27/12/2004	164	29	258	R		DWR	PI	DEEPWATER @	BOLIVIA	
416024	01/06/1967	01/01/1990	01/02/1985	03/02/1989	28/07/1984	22/11/1988	104	7	167			DWR	PRHG	SWAN BROOK	CAMPBELL	

416025	01/02/1968	01/01/1990	14/12/1979	01/02/1989	01/02/1968	15/02/1988	176	27	140		DWR PRHG BEARDY R @ DAKABIN
416026	01/04/1969	01/01/1990	01/12/1987	01/01/1989	20/12/1982	13/09/1988	135	12	159		DWR PRHG REEDY CK @ DUMARESQ
\$416027	01/04/1968	01/01/2008	25/07/1979	05/06/2007	01/05/1979	13/11/2005	143	16	240		DWR SFP GIL GIL @ WEEMELAH
416028	01/04/1968	01/01/1995	01/02/1976	23/11/1994	01/01/1900	19/02/2001	125	6	196		DWR CR BOOMI @ NEEWORRA
416029	01/04/1968	01/04/1982			81	31/12/1987					DWR DISC BOOMI @ KANOWNA
\$416030 *		01/01/1969	01/01/1999	01/01/1900	01/01/1900		100	1			DWR SFH PINDARI STORAGE
\$416031	01/01/1997	01/01/2008	06/03/1997	02/05/2007	26/10/1978	28/12/2004	104	6	103	R	DWR PRF MACINTYRE RIDGELANDS
\$416032	01/01/1969	01/01/2008	10/07/1969	15/03/2007	01/03/1969	14/01/2006	226	39	253	R	DWR PPS MOLE @ DONALDSON
416033	01/05/1972	01/01/1993	01/07/1984	06/10/1992	03/01/1983	01/11/1994	120	21	136		06/10/1992 DWR DISC BEARDY WTRS GLENLEGH
416034	01/06/1972	01/01/1990	26/07/1979	16/02/1989	29/06/1972	06/07/1988	114	9	27		16/02/1989 DWR DISC CROPPA CK TULLOONA B
416035	01/01/1972	01/01/1989	18/01/1972	25/02/1988	18/01/1972	28/01/1987	225	26	126		DWR PRHG MACINTYRE @ ELSMORE

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416036	01/04/1973	01/01/1997	07/11/1978	06/05/1996	10/06/1977	19/01/1991	157	14	118							06/05/1996	DWR DISC	CAMPBELLS NEAR BEEBO
\$416037	01/04/1973	01/01/2008	06/07/1976	03/05/2007	01/07/1976	09/08/2003	248	40	181	R							DWR SFP	BOOMI @ OFFTAKE
416038	01/01/1973	01/01/1983	26/06/1973	22/04/1982	01/06/1973	13/03/1982	160	13	83							22/04/1982	DWR DISC	MACINTYRE @ BOONAL
\$416039	01/01/1974	01/01/2008	09/05/1974	02/05/2007	08/05/1974	31/08/2006	198	31	210	T	C						DWR PPS	SEVERN @ STRATHBOGIE
\$416040	01/01/1996	01/01/2008	05/06/1996	02/05/2007	01/01/1900	01/01/2007	9	11	69	R	T	C					DWR SFS	DUMARESQ AT GLENARBO
416041																25/02/1969	DWR DISC	MOLE @ MOLE DAMSITE
416042																31/07/1999	DWR DISC	BOOBERA LAGOON
\$416043	01/01/1976	01/01/2008	06/07/1976	03/05/2007	01/07/1976	24/01/2006	121	20	162								DWR SFP	MACINTYRE BOOMI WEIR
416044																19/03/1947	DWR DISC	MOLE R @ BONDONGA
416045	01/09/1953	01/03/1956														40		31/12/1956 DWR DISC MOLE R @ CAUSEWAY
416046			15/01/1981	15/01/1981	101	1	21									27/06/1984	DWR DISC	MACINTYRE BOONANGA B
\$416047	01/01/1985	01/01/2008	18/01/1985	03/05/2007	01/10/1984	27/12/2006	114	15	101								DWR SFP	MACINTYRE @ TERREWAH
\$416048	01/01/1988	01/01/2008	13/01/1988	03/05/2007	07/11/1984	17/09/1999	102	2	98								DWR SFP	MACINTRYE @ KANOWNA
416049	01/01/1985	01/01/1997	01/10/1985	04/06/1996	20/09/1985	01/01/1996	121	14	95							04/06/1996	DWR DISC	DUMARESQ @ MAURO

\$416050	01/01/1987	01/01/2008	08/10/1987	06/06/2007	01/01/1900	22/07/2004	43	9	95			DWR SFP	BARWON U/S PRESBURY
416051	01/01/1988	01/01/1989	07/04/1988	27/04/1988	02/03/1987	12/03/2003	16	5	45			DWR CR	MACINTYRE @ YARROWEE
\$416052	01/01/1987	01/01/2008	02/06/1987	06/06/2007	02/06/1987	18/12/2004	114	10	109			DWR SFP	GIL GIL @ GALLOWAY
416053 *		05/01/1995	11/04/2000			T			11/04/2000	DWR DISC	TENTERFIELD CR @ WS		
\$416054	01/01/1996	01/01/2008	05/12/1996	05/06/2007	05/12/1996	10/10/2004	6	6	56	T		DWR SFP	GIL GIL @ BOOLATAROO
\$416055		19/12/1996	18/04/2007	01/01/1900	01/01/1900	1	1	15	R			DWR PRF	MIDDLE CR @ FERNDALE
\$416056		31/12/1996	18/04/2007	01/01/1900	01/01/1900	1	1	15	R			DWR PRF	MACINTYRE@LITTLE VLY
\$416057		09/01/1997	18/04/2007	01/01/1900	01/01/1900	1	1	15	R			DWR PRF	MACINTYRE@ELSMORE BR
\$416058	01/01/1997	01/01/2008	27/03/1997	22/02/2007	01/03/1997	11/12/2006	10	10	25	R		DWR PRF	MACINTYRE @ YETMAN B
\$416059		26/03/1997	19/04/2007	01/01/1900	01/01/1900	1	1	14	R			DWR PRF	KINGS CREEK @ GRED
\$416060		21/07/1997	15/09/2004		3		15/09/2004	DWR SFP				MACINTYRE D/S WEIR	
\$416061		25/06/1998	18/04/2007	01/01/1900	01/01/1900	1	1	14	R			DWR PRF	PARADISE @ PARADISE
\$416062		22/06/1998	18/04/2007	01/01/1900	01/01/1900	1	1	15	R			DWR PRF	KINGS @ NEWSTEAD NTH
\$416063		24/06/1998	17/04/2007	01/01/1900	01/01/1900	1	1	16				DWR PRF	MACINTYRE @ WYOMING
\$416064		26/06/1998	13/09/2006	01/01/1900	01/01/1900	1	1	13	R			DWR PRF	MIDDLE CK @ STANNIFE
416065												DWR DISC	BOGGABILLA W.STORAGE
\$416066		22/06/2000	13/09/2006	01/01/1900	01/01/1900	1	1	14	R			DWR PRF	MACINTYRE@RIVERSTONE
\$416067	01/01/2002	01/01/2008	21/03/2002	05/06/2007	20/03/2002	28/04/2007	7	7	47			DWR SFP	SEVERN @ DUCCA MARRI
\$416068	01/01/2002	01/01/2007	11/07/2002	14/09/2006	11/07/2002	11/01/2006	2	2	16	R		DWR PRF	MACINTYRE @ TINTOT
416069	01/01/2002	01/01/2007	30/05/2002	14/09/2006	30/05/2002	30/05/2002	1	1	9	R		DWR PRF	FRAZERS @ GLENORCHY
41610001					T T	W H						DWR DISC	PINDARI DAM WALL
41610020			10/07/1995	10/07/1995	1	1	1		18/03/1996	DWR DISC	BEARDY D/S DAM		
41610022				3		18/03/1996	DWR DISC					BEARDY @ RANGERS VAL	
41610024			12/07/1995	12/07/1995	1	1	2		18/03/1996	DWR DISC	WELINGROVE @ GLROWAN		

41610026	07/06/1995	07/06/1995	1	1	4	18/03/1996	DWR	DISC	SEVERN	US	WELLINGROV
41610027	21/06/1995	21/06/1995	1	1	3	18/03/1996	DWR	DISC	SEVERN	DS	WELLINGROV
41610028		1				18/03/1996	DWR	DISC	CAMERONS	@	FERNHILL
41610029		1				18/03/1996	DWR	DISC	STONE	@	TANGO
41610030						18/03/1996	DWR	DISC	ARRAWATTA	@	HAZELTON
41610032	08/06/1995	08/06/1995	1	1	3	18/03/1996	DWR	DISC	REDISTONE	@	GLENWOOD
41610033	21/06/1995	21/06/1995	1	1	4	18/03/1996	DWR	DISC	WELLINGROVE	@	POOL
416201	15/04/1976	01/01/1987	110	2	16		QWR		MACINTYRE@GOONDIWIND		
416201A	18/01/2005	18/01/2005	85	1			QWR		GOONDIWINDI	TOWN	
416201B	18/01/2005	18/01/2005	5	1			QWR		GOONDIWINDI	WEIR	
416202							CBM		Weir@Talwood	TM	

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Starts	Starts	Tab	Tabs	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
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416202A	01/05/1949	01/02/1981	18/01/2005	24/01/2005	30	2	QWR	WEIR @ TALWOOD
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416203A QWR CLARRIES WEIR

416303 31 QWR PIKE CK @ CLEARVIEW

416305B	01/02/2006	01/02/2006	18	1	QWR	BRUSH CK @ BEEBO
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416307	QWR	BONSHAW WEIR
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416308	21/10/1979	21/10/1979	100	1	60	QWR	DUMARESQ @CUNNINGHAM
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416309 CBM Dumaresq@Glenlyon Dm

416309A 01/11/1960 01/11/1980 15/02/1973 QWR PIKE @ GLENLYON DAM

416309B	01/02/2006	01/02/2006	2	1	12	QWR	D/S GLENLYON DAM
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416310	16	CBM	Dumaresq@Farnbro TM
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416310A	01/10/1962	01/02/1981	18/01/2005	18/01/2005	94	1	28	QWR	DUMARESQ @ FARNBRO
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416312A	18/01/2005	18/01/2005	43	1	QWR	OAKY CREEK U/S TEXAS
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416315A QWR GLENLYON DAM

416402C	18/01/2005	18/01/2005	28	1	QWR	MACINTYRE @ ING'WOOD
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[illegible]

418010	01/01/1937	01/09/1949	01/01/1937	31/01/1943	116	31/08/1987	DWR DISC GWYDIR R @ BINGARA
\$418011	01/08/1939	01/01/2008	13/02/1979	01/06/2007	01/07/1978	01/07/2005	38 38 226 DWR SFP CAROLE D/S REGULATOR
\$418012	01/01/1949	01/01/2008	01/09/1949	01/05/2007	01/09/1949	17/04/2007	265 58 437 DWR SFP GWYDIR @ PINEGROVE
\$418013	01/09/1950	01/01/2008	01/02/1955	19/04/2007	01/01/1900	02/03/2007	315 61 542 R DWR SFP GWYDIR @ GRAVESEND
\$418014	01/01/1955	01/01/2008	01/01/1955	30/04/2007	17/12/1954	03/03/2007	235 56 394 R DWR PI GWYDIR @ YARROWYCK
\$418015	01/01/1957	01/01/2008	01/02/1957	01/05/2007	01/01/1900	30/01/2007	303 70 427 DWR PPS HORTON @ RIDER
418016	01/02/1972	01/01/2006	14/06/1978	05/01/2005	05/05/1978	05/12/2003	262 42 154 T C 05/01/2005 DWR PJI WARIALDA WARIALDA 3
\$418017	01/01/1964	01/01/2008	28/06/1964	01/05/2007	01/01/1900	10/01/2007	134 28 300 T C DWR PI MYALL @ MOLROY
418018	01/05/1964	01/01/1990	21/03/1978	16/01/1989	01/03/1978	14/11/1987	181 18 198 DWR PRHG KEERA CREEK @ KEERA
418019	30/06/1978 DWR DISC GWYDIR@KELVIN GROVE						
418020	01/01/1965	01/01/1988	31/08/1965	15/09/1987	28/11/1972	18/08/1987	190 19 178 15/09/1987 DWR DISC BOOROLONG@YARROWYCK

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R A W C T W H O

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\$418021	01/01/1965	01/01/2008	01/06/1965	11/04/2007	01/01/1900 08/10/2003 198 32 253 DWR PI LAURA @ LAURA
418022	01/04/1966	01/01/1990	20/03/1978	17/01/1989	18/12/1974 07/07/1988 130 6 185 DWR PRHG GEORGES @ CLERKNESS
418023	01/01/1966	01/01/1989	16/06/1978	13/05/1988	12/03/1977 06/03/1987 175 15 190 DWR PRHG MOREDUN @ BUNDARRA
418024	01/01/1965	01/01/1990	01/08/1965	16/01/1989	01/01/1900 29/09/1988 159 17 194 DWR PRHG ROUMALLA @ KINGSTOWN
\$418025	01/03/1966	01/01/2008	13/06/1978	01/05/2007	02/06/1978 17/12/2005 298 49 281 R DWR SMS HALLS @ BINGARA
\$418026 *	01/07/1966	01/01/2008	03/07/1997	10/09/1997	21/06/1971 07/12/2002 156 15 258 DWR SFP GWYDIR D/S COPETON
418027	01/05/1967	01/01/2008	30/06/1970	21/03/2007	17/10/1969 16/07/2006 208 40 229 DWR PI HORTON @ HORTON DSTE
418028				23	30/06/1971 DWR DISC WEAH WAA TERRY HIE H
418029	01/06/1967	01/01/1990	04/10/1982	01/01/1989	19/02/1981 19/08/1987 120 6 149 DWR PRHG GWYDIR @ STONYBATTER
418030	01/08/1967	01/01/1990	01/07/1984	01/03/1989	27/05/1980 08/04/1988 106 7 163 28/02/1989 DWR DISC COPES CK @ TINGHA
418031	01/01/1970	01/01/2000	09/12/1970	24/09/1999	01/12/1970 20/04/1990 180 25 116 24/09/1999 DWR DISC GWYDIR @ COLLYMONGLE
\$418032	01/06/1971	01/01/2008	24/05/1979	23/05/2007	07/05/1979 08/09/2005 168 28 219 DWR PI TYCANNAH @ HORSESHOE
418033	01/05/1972	01/01/1994	05/10/1978	05/02/1993	21/09/1975 13/12/1991 136 12 147 DWR PRHG BAKERS CK @ BUNDARRA
418034	01/01/1975	01/01/2006	14/03/1975	24/06/2005	14/03/1975 24/10/1999 138 15 196 R 24/06/2005 DWR PI BOOROLONG BLACK MTN

\$418035 *	26/05/1976	03/05/2007								DWR SFH	COPETON DAM STORAGE	
418036	01/01/1980	01/01/2008	01/10/1980	31/05/2007	01/01/1900	13/02/2007	131	23	199	DWR SFP	GWYDIR D/S BOOLOOROO	
418037	01/01/1977	01/01/2008	09/06/1977	29/05/2007	01/06/1977	04/03/2007	132	25	202	DWR SFP	MEHI D/S COMBADELLO	
418038				11	01/01/1974	DWR DISC MEHI R @ WEIR SITE1						
\$418039				13	01/01/1974	DWR DISC MEHI R @ WEIR SITE2						
418040					01/01/1973	DWR DISC GWYDIR D/S MEHI OFTK						
\$418041	01/01/1980	01/01/2003	01/10/1980	27/09/2002	01/09/1979	04/01/1999	136	17	134		21/11/2002 DWR DISC MEHI R D/S GUNDARE	
418042	01/01/1976	01/01/2008	19/10/1976	19/04/2007	28/01/1976	03/03/2007	192	52	306	DWR SFP	GWYDIR DS TAREELAROI	
418043		01/10/1980	19/04/2007	01/01/1900	01/01/1900		1	1		DWR SFH	TAREELAROI STORAGE	
418044	01/01/1977	01/01/2008	01/02/1977	19/04/2007	01/02/1977	20/01/2006	28	28	201	DWR SFP	MEHI D/S TAREELAROI	
418045	01/04/1929	01/04/1939			51	31/03/1939	DWR DISC GWYDIR @ BUNDARRA					
418046		01/06/1971	04/04/2006	10	10	62				DWR CR	MALLOWA KAMILAROI W	
\$418047										DWR SFH	COMBADELLO STORAGE	
418048	01/01/1982	01/01/2008	05/05/1982	29/05/2007	31/08/1977	22/03/2007	31	31	206	DWR SFP	MOOMIN COMBADELLO CU	
\$418049	01/01/1986	01/01/2008	01/12/1986	31/05/2007	01/04/1977	22/03/2007	55	46	147	DWR SFP	MALLOWA CREEK @ REG	
418050	01/04/1964	01/09/1971			51	08/02/1972	DWR DISC WARIALDA WARIALDA 1					
\$418051		01/06/1989	31/05/2007	01/01/1900	01/01/1900		100	1		DWR SFH	BOOLOOROO W. STORAGE	
\$418052	01/01/1980	01/01/2008	01/10/1980	05/06/2007	01/10/1980	19/02/2006	124	32	173	DWR SFP	CAROLE CK NEAR GARAH	
\$418053	01/01/1982	01/01/2008	22/10/1982	17/05/2007	21/12/1978	19/01/2006	150	47	188	DWR SFP	GWYDIR @ BRAGEEN XIN	
418054	01/01/1982	01/01/1995	19/10/1982	22/03/1994	19/10/1982	07/01/1993	111	5	120		22/03/1994 DWR DISC MOOMIN CK @ IFFLEY	
\$418055	01/01/1980	01/01/2008	11/06/1980	30/05/2007	01/06/1980	28/11/2005	131	32	164	DWR SFP	MEHI NR COLLARENEBRI	
418056		28/07/1981	27/02/1985	01/01/1900	01/01/1900		100	1	61		27/02/1985 DWR DISC GWYDIR @ TYREEL	
418057					01/01/1985	DWR DISC GINGHAM WATERCOURSE						
\$418058	01/01/1982	01/01/2008	06/02/1982	30/05/2007	01/01/1900	24/02/2006	118	16	155	T C	DWR SFP MEHI RIVER @ BRONTE	

418059	11						DWR SFH	MEHI U/S	GUNDARE REG					
\$418060	01/01/1984	01/01/2008	18/12/1984	29/05/2007	01/01/1900	17/02/2006	27	19	169		DWR SFP	MOOMIN @ GLENDELLO		
\$418061	01/01/1983	01/01/2008	17/02/1983	31/05/2007	01/01/1900	24/02/2007	129	21	156		DWR SFP	MOOMIN CK @ ALMA BR		
\$418062	01/01/1992	01/01/2003	01/01/1992	31/01/2002	19/10/1993	04/03/2007	64	16	183		DWR CR	MOOMIN CK @ OFFTAKE		
\$418063	01/01/1985	01/01/2007	23/09/1985	17/05/2007	01/09/1985	18/12/2005	123	27	138		DWR SFP	GWYDIR D/S TYREEL		
418064	01/01/1990	01/01/1997	08/03/1990	24/09/1996	13/10/1986	30/01/1995	114	15	75	07/05/1997	DWR DISC	GINGHAM WC WILLOWLEE		
\$418065	01/01/1998	01/01/2008	22/06/1998	17/05/2007	11/05/1987	02/02/2001	4	4	24		DWR SFP	TYREEL STORAGE		
\$418066	01/01/1988	01/01/2008	31/05/1988	06/02/2007	01/03/1988	24/10/2006	130	21	82		DWR SFP	GWYDIR @ MILLEWA		
\$418067	01/01/1988	01/01/2008	16/12/1988	29/05/2007	01/01/1900	17/05/2006	125	17	119		DWR SFP	MOOMIN CLARENDON BDG		
\$418068	01/01/1989	01/01/2008	06/02/1989	30/05/2007	01/06/1988	02/05/2007	128	28	102		DWR SFP	MEHI US BALLIN BOO		
\$418069	01/01/1990	01/01/2006	10/05/1990	24/02/2005	03/05/1990	11/05/2000	102	3	50 R T C	24/02/2005	DWR PJI	BOXHILL NEARINVERELL		

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			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g		Code	Class	NAME

\$418070	01/01/1994		01/01/2008	29/03/1994	31/05/2007		21/03/1994	11/03/2007	22	22	65								DWR SFP	MOOMIN @ MOOMIN PLA
418071			07/05/1997	07/07/1999				9	T			10/11/1999	DWR DISC	GWYDIR	NTH@BULLERANA					
418072			11/04/1997	10/11/1999				9	T			10/11/1999	DWR DISC	RYLIE S &	MIDKEN RD					
418073			08/05/1997	22/10/1999					T			22/10/1999	DWR DISC	GWYDIR	NTH@BAROONA					
\$418074	01/01/1997		01/01/2008	09/04/1997	20/04/2007		09/04/1997	11/06/2006	7	6	46	T							DWR PJI	GINGHAM CH.@ TERALBA
418075	01/01/1997		01/01/2003	07/05/1997	22/11/2002		07/05/1997	02/02/2001	5	5	18	T					22/11/2002	DWR DISC	GINGHAM @ WILLOWLEE	
418076	01/01/1997		01/01/2008	08/05/1997	05/06/2007		08/05/1997	06/11/2006	6	6	47	T							DWR PJI	GINGHAM CH.@TILLALOO
\$418077			08/04/1997	20/04/2007	01/01/1900		01/01/1900		1	1		T							DWR PJI	GINGHAM CH@WATERHOLE
418078	01/01/1997		01/01/2008	08/04/1997	06/06/2007		08/04/1997	23/12/2006	10	10	51	T							DWR PJI	GWYDIR @ ALLAMBIE BR
418079	01/01/1997		01/01/2008	06/05/1997	06/06/2007		06/05/1997	17/10/2006	7	7	57	T							DWR PJI	GINGHAM @ GINGHAM BR
418080													DWR CR	BIG LEATHER@	WOODBINE					
418081							2						DWR CR	GINGHAM @	WOODLANDS					
418082							2						DWR CR	GWYDIR @	CAIDMURRA B					
\$418083			02/08/2000	20/04/2007	01/01/1900		01/01/1900		1	1		T							DWR PJI	GINGHAM @ ROOKERY

418084	12/06/1987 DWR DISC GINGHAM D/S WEIR															
\$418085	01/01/2002	01/01/2008	20/11/2002	30/05/2007	19/11/2002	10/11/2006	6	6	33				DWR SFP	MEHI D/S	GUNDARE	REG
\$418086		06/10/2005	05/06/2007	06/10/2005	06/10/2005	1	1	17				DWR	CAROLE @	MIDKIN		
\$418087		23/05/2006	17/05/2007	23/05/2006	23/05/2006	1	1	10				DWR	MEHI AT	CHINOOK		
418088				2								DWR	Marshall @	Ashley		
418089				2								DWR	Marshall @	Newell Hw		
41810002												DWR UNCL	COPETON	DAM	STN 2	
418900												CBM PRF	GWYDIR	BUNDARRA	BDE	
4190002		11/04/2003	19/08/2003	01/01/1900	01/01/1900	1	1	6				DWR PJI	COCKBURN @	KOOTINGAL		
4190008		11/04/2003	07/08/2003	01/01/1900	01/01/1900	1	1	3				DWR PJI	COCKBURN @	NEMINGHA		
4190009			25/10/2004	25/10/2004	1	1	2					DWR CR	Ironbark @	Neranghi		
\$419001	01/12/1891	01/01/2008	02/12/1968	12/04/2007	02/10/1968	01/12/2006	324	55	811		T C B		DWR SFP	NAMOI @	GUNNEDAH	
4190010		14/04/2005	11/09/2006			T						DWR GWP	Quipolly u/s	Highway		
419002	01/01/1891	01/01/1996	08/08/1891	12/09/1995	01/01/1890	01/08/1984	182	83	400				DWR CF	NAMOI @	NARRABRI	
\$419003	01/01/1891	01/01/2008	08/08/1891	01/05/2007	01/08/1891	01/10/2006	157	81	534		T C		DWR SFP	NARRABRI CK	NARRABRI	
419004	01/01/1915	01/10/1970			301				30/09/1970	DWR DISC	PEEL BOWLING	ALLEY P				
\$419005	01/01/1916	01/01/2008	04/09/1972	16/05/2007	01/02/1972	01/02/2005	199	34	623		T		DWR PPS	NAMOI @	NTH CUERINDI	
\$419006	01/12/1923	01/01/2008	26/02/1973	10/04/2007	08/09/1969	01/03/2007	256	52	779				DWR SFP	PEEL @	CARROL GAP	
\$419007	01/12/1923	01/01/2008	19/06/1973	10/04/2007	11/04/1973	01/12/2006	266	46	711				DWR SFP	NAMOI D/S	KEEPIT DAM	
419008	01/06/1924	01/07/1928			18				31/08/1928	DWR DISC	MACDONALD @	RIMBAH				
\$419009	01/01/1925	01/01/2008	20/07/1993	04/04/2007	12/07/1971	10/06/2006	111	13	311				DWR PRF	PEEL @	TAMWORTH	
\$419010	01/11/1927	01/01/2008	18/05/1979	14/05/2007	29/12/1978	26/04/2007	198	39	541	R			DWR PI	MACDONALD	WOOLBROOK	
419011	01/12/1936	01/01/1952			83				30/09/1953	DWR DISC	NAMOI U/S	MANILLA WR				
\$419012	01/01/1913	01/01/2008	01/02/1955	05/04/2007	01/01/1900	01/09/2006	130	24	611				DWR SFS	NAMOI @	BOGGABRI	

419013	01/01/1937	01/07/1960		154	31/12/1960	DWR DISC NARRABRI CK @ KARUAH
419014	01/12/1936	01/09/1948		62	01/09/1948	DWR DISC MANILLA @ WIMBORNE
\$419015	01/11/1936	01/01/2008	17/05/1979	17/05/2007	17/05/1979	13/02/2006 151 45 539 DWR SFP PEEL @ PIALLAMORE
\$419016	01/12/1936	01/01/2008	16/07/1973	18/05/2007	28/02/1973	18/07/2006 236 34 555 R T C B DWR PPS COCKBURN MULLA XING
419017	01/05/1937	01/01/1945			04/07/1951	DWR DISC NAMOI BOGGABRI WSITE
419018	01/12/1936	01/01/1958		138	31/12/1960	DWR DISC NAMOI R @ KARUAH
419019	01/12/1956	01/02/1976			31/01/1976	DWR DISC NAMOI R @ WEE WAA
\$419020	01/09/1948	01/01/2008	25/01/1977	11/04/2007	24/01/1977	01/04/2006 248 45 455 T C B P O DWR PPS MANILLA @ BRABRI
\$419021	01/05/1951	01/01/2008	03/02/1971	24/05/2007	31/07/1969	14/10/1996 216 28 436 DWR SFP NAMOI @ BUGILBONE
\$419022	01/10/1952	01/01/2008	14/07/1970	10/04/2007	01/01/1900	01/01/2007 228 40 568 DWR PPS NAMOI @ MANILLA
\$419023	01/07/1953	01/01/2008	07/11/1972	05/04/2007	01/01/1900	01/05/1995 300 2 233 DWR PRF NAMOI @ TURRAWAN

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R A W C T W H O

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			Starts	Starts	Tab Tabs Gaug n p p d b H d d g Code Class NAME
\$419024	01/11/1953	01/01/2008	22/01/1974	15/05/2007	11/12/1970 18/01/2004 289 51 452 T C B DWR SFP PEEL U/S PARADISE WR
419025				12	21/11/1960 DWR DISC BARADINE @ KENE B R I
\$419026	01/08/1954	01/01/2008	02/02/1971	23/05/2007	15/05/1958 01/02/2006 271 47 369 T C B DWR SFP NAMOI @ GOANGRA
\$419027	01/09/1957	01/01/2008	24/09/1971	12/03/2007	30/09/1970 09/03/2007 232 40 374 T DWR PPS MOOKI @ BREEZA
\$419028	01/05/1965	01/01/2008	30/09/1982	14/05/2007	21/07/1982 01/03/2007 109 15 209 R DWR PI MACDONALD @ RETREAT
\$419029	01/05/1965	01/01/2008	30/11/1978	16/05/2007	26/11/1977 01/03/2007 278 62 323 DWR PI HALLS CK @ UKOLAN
419030	01/06/1965	01/06/1988	31/12/1984	25/03/1987	08/12/1985 08/12/1985 25 1 160 25/03/1987 DWR DISC MANILLA @ BARRABA
419031	01/06/1965	01/07/1985		09/03/1985	09/03/1985 100 1 143 30/06/1986 DWR DISC MANILLA GLEN RIDDLE
\$419032	01/06/1965	01/01/2008	17/10/1977	18/04/2007	31/12/1974 01/07/2005 122 20 214 R T C B W DWR PPS COXS CK @ BOGGABRI
\$419033	01/06/1965	01/01/2007	16/06/1981	30/11/2006	25/10/1980 04/11/2005 234 62 206 R T C B DWR PPS COXS TAMBAR SPRINGS
\$419034	01/08/1965	01/01/2008	22/05/1979	02/03/2007	01/05/1978 11/12/2004 189 28 245 R T C B DWR SPS MOOKI @ CAROONA
\$419035	01/12/1969	01/01/2008	15/09/1981	15/05/2007	25/07/1981 29/12/2006 209 55 305 R DWR PI GOONOO @ TIMBUMBURI
419036	01/06/1965	01/01/1987	01/01/1982	01/12/1986	01/09/1981 13/08/1986 190 10 174 DWR PRHG DUNCANS @ WOOLOMIN
419037	01/10/1969	01/06/1977	30/03/1988	06/06/1989	104 30/06/1978 DWR DISC MULLA @ BULLIMBALL

419038	01/06/1965	01/01/1988	30/04/1978	14/04/1987	01/01/1978	01/11/1984	110	9	170		DWR PRHG MACDONALD COBRABALD
\$419039	01/10/1965	01/01/2008	12/10/1972	07/05/2007	23/09/1972	01/01/2006	302	63	365		DWR SFP NAMOI @ MOLLEE
\$419039A		01/01/1996	02/01/1996	01/01/1900	01/09/2005		56	8	194		DWR CR NAMOI D/S MOLLEE W.
419040	01/10/1965	01/01/1987	04/12/1974	09/12/1986	27/05/1973	30/07/1986	190	20	154	09/12/1986	DWR DISC NAMOI R @ WOMERAH
\$419041 *		01/01/1976	10/04/2007								DWR SFH KEEPIT DAM STORAGE
419042	01/04/1968	01/01/1988	31/08/1983	26/02/1987	17/03/1982	17/03/1982	100	1	118	26/02/1987	DWR DISC MACDONALD BONNIEDOON
\$419043	01/06/1968	01/01/2008	06/06/1973	10/04/2007	19/06/1968	16/02/2005	164	46	338	T C B P O	DWR SFS MANILLA DS SPLITROCK
419044	01/01/1968	01/01/1993	20/06/1968	02/11/1992	19/06/1968	28/12/1990	203	24	144	02/11/1992	DWR PRHG MAULES CK @ DAMSITE
\$419045	01/12/1968	01/01/2008	22/05/1972	17/05/2007	22/05/1972	26/03/2001	325	55	346	T	DWR SFP PEEL D/S CHAFFEY DAM
419046	01/12/1936	01/12/1946			100	21/02/1952					DWR DISC PEEL RIVER @ ATTUNGA
\$419047	01/06/1970	01/01/2008	30/03/1988	11/04/2007	24/08/1985	01/03/2005	114	11	232		DWR SFS IRONBARK @ WOODSREEF
419048			59		30/09/1986						DWR DISC NAMOI @ HORNABROOKS
\$419049	01/01/1972	01/01/2008	14/06/1972	23/05/2007	28/03/1972	01/12/2004	186	34	192		DWR SFP PIAN @ WAMINDA
419050	01/01/1977	01/01/1993	12/05/1977	22/10/1992	03/11/1974	01/08/1990	286	43	132		DWR PRHG CONNORS CK @ BARRABA
\$419051	01/06/1972	01/01/2008	15/07/1975	05/04/2007	21/03/1975	03/01/2006	242	47	221		DWR PI MAULES @ AVOCA EAST
419052	01/01/1972	01/01/1990	01/10/1972	31/01/1989	01/10/1972	12/12/2002	151	11	89		DWR CR COXS CK @ MULLALEY
\$419053	01/01/1972	01/01/2008	22/08/1972	11/04/2007	22/08/1972	01/08/2004	358	62	229		DWR PI MANILLA BLACK SPRING
419054	01/01/1974	01/01/2008	21/05/1974	17/05/2007	21/05/1974	01/09/1998	234	33	227		DWR PI SWAMP OAK CK LIMBRI
419055	01/01/1974	01/01/1990	21/05/1974	10/02/1989	21/05/1974	20/05/1988	133	10	99		DWR PRHG MULLA CK GOLDCLIFF
\$419056	01/01/1996	01/01/2008	19/11/1996	11/04/2007	01/01/2001	01/01/2007	20	11	185	T C B P O	DWR SFP MANILLA UPPER MANILA
419057			24		31/08/1931						DWR DISC NAMOI R @ WALGETT
419058			1		08/12/1986						DWR DISC NAMOI D/S KEEPIT DAM
\$419059	01/01/1976	01/01/2008	07/04/1976	24/04/2007	11/09/1975	01/01/2006	119	19	217		DWR SFP NAMOI D/S GUNIDGERA
\$419060 *		14/12/2006	24/04/2007								DWR CH GUNIDGERA W STORAGE

\$419061	01/01/1975	01/01/2008	29/07/1975	24/04/2007	29/07/1975	01/01/2007	157	58	242		DWR SFP	GUNIDGERA D/S REG
\$419062 *		14/12/2006	03/04/2007								DWR CH	MOLLEE WEIR STORAGE
\$419063	01/01/1998	01/01/2008	28/10/1998	07/03/2007	01/10/1998	01/06/2005	14	5	166		DWR SFP	GUNIDGERA-PIAN CUTNG
\$419064	01/01/1990	01/01/2008	01/10/1990	16/05/2007	01/01/1990	01/08/2006	15	7	157		DWR SFP	PIAN CK @ ROSSMORE
419065			21		31/12/1986						DWR DISC	PIAN CK @ OLD BURREN
419066 *		10/01/1974	17/06/2005		4	C					DWR PRH	GORAN LK HOKEY POKEY
\$419067 *		13/11/1992	08/05/2007								DWR SFH	WEETA WEIR STORAGE
\$419068	01/01/1978	01/01/2008	26/10/1978	08/05/2007	25/10/1978	01/06/2006	188	37	197		DWR SFP	NAMOI D/S WEETA WEIR
\$419069 *		20/07/1979	17/05/2007								DWR SFH	CHAFFEY DAM STORAGE
\$419070	01/01/1980	01/01/2008	25/06/1980	14/05/2007	01/01/1900	15/01/2007	109	10	196		DWR SFP	PEEL @ TAMWORTH W/S
419071			2		15/02/1949						DWR DISC	MACDONALD@ BENDEMEER

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R A W C T W H O

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419072	01/01/1981	01/01/2007	17/06/1981	28/11/2006	01/06/1981	01/06/2005	145	19	128									DWR SMS	BARADINE @ KIENBRI 2
\$419073	01/01/1996	01/01/2008	31/10/1996	15/05/2007	01/01/1900	18/01/2004	106	7	102	T								DWR SFH	PEEL @ APPLEBY
\$419074	01/01/1996	01/01/2008	29/10/1996	15/05/2007	24/10/1996	17/07/2006	109	18	121	T								DWR SFH	PEEL @ BECTIVE
\$419075	01/01/1996	01/01/2008	30/10/1996	16/05/2007	17/11/1994	13/07/2005	111	12	103	T								DWR SFH	PEEL @ SOMERTON
\$419076	01/01/1982	01/01/2007	15/06/1982	12/09/2006	15/06/1982	01/03/2005	244	56	139	R	T	C	B					DWR PI	WARRAH @ OLD WARRAH
419077			10/01/1996	10/01/1996	2	1	6											DWR DISC	DUNGOWAN DAM INFLOW
419078			27/02/1992	10/01/1996	3	2	12											DWR DISC	DUNGOWAN DAM OUTFLOW
\$419079	01/01/1998	01/01/2008	03/09/1998	07/03/2007	01/12/2000	01/08/2006	62	13	114									DWR SFP	GUNIDGERA D/S CUTTIN
\$419080 *		22/12/1989	17/04/2007	31/01/2000	31/01/2000	1	1											DWR SFH	SPLIT ROCK STORAGE
\$419081	01/01/1991	01/01/2008	05/07/1991	17/05/2007	05/07/1991	27/11/2005	19	19	119	R	T	C	B					DWR PJI	PEEL @ TAROONA
\$419082	01/01/1993	01/01/2001	12/10/1993	18/04/2000			42											DWR DISC	NAMOI U/S DUNCAN S
\$419083	01/01/1993	01/01/2008	14/10/1993	08/05/2007	01/07/1993	01/07/2005	9	9	67									DWR SMS	BRIGALOW @ THARLANE
\$419084	01/01/1994	01/01/2008	29/06/1994	12/04/2007	29/06/1994	06/11/2005	9	9	86	R	T	C	B	W				DWR PJI	MOOKI @ RUVIGNE
\$419085	01/01/1995	01/01/2007	07/06/1995	19/10/2006	01/03/1995	19/10/2006	18	18	53	R	T	C	B					DWR PJI	BOMERA @ TAMBAR RD

\$419086	01/01/1995	01/01/2008	06/12/1995	05/03/2007	01/11/1995	30/06/2005	14	14	48	R	T	C	B	DWR PJI	BUNDELLA @ BUNDELLA
\$419087	01/01/1995	01/01/2005	07/12/1995	22/06/2004	01/12/1995	28/07/2001	14	13	63	R	T	C	B	22/06/2004 DWR PJI	BIG JACKS @ WARRAH
\$419088	01/01/1996	01/01/2008	07/11/1996	24/05/2007	01/07/1996	01/11/2003	2	2	60		T			DWR SFP	PIAN @ CUBBAROO LANE
\$419089	01/01/1997	01/01/2008	05/11/1996	24/05/2007	01/01/1997	01/10/2006	35	16	58		T			DWR SFP	PIAN @ DEMPSEYS BRDG
\$419090	01/01/1996	01/01/2008	07/11/1996	03/04/2007	01/01/2001	01/08/2006	9	9	59		T			DWR SFP	B+B CH @ DOREEN LANE
\$419091	01/01/1996	01/01/2008	18/11/1996	23/05/2007	01/01/1900	01/06/2006	17	9	62		T			DWR SFP	NAMOI U/S WALGET
419092					02/12/1997									DWR DISC	MOORE CREEK DAM
\$419093		02/03/1999	27/11/2006	01/01/1900	01/01/1900		1	1						DWR PRH	YARRAMAN @ SPRING RG
\$419094	01/01/2000	01/01/2008	18/04/2000	08/05/2007	01/01/2000	01/05/2006	7	7	35					DWR SFP	NAMOI R. D/S DUNCANS
\$419095	01/01/2000	01/01/2008	18/04/2000	08/05/2007	01/10/2000	01/05/2006	15	11	44		T			DWR SFP	NAMOI R.@ BULLAWA
\$419096		20/07/2001	17/05/2007	01/01/1900	01/01/1900		1	1						DWR SFH	CHAFFEY OUTLET WORKS
\$419097	01/01/2002	01/01/2008	06/08/2002	28/03/2007	05/08/2002	13/07/2005	10	10	43		T	C		DWR SMS	GOONOO @ MEADOWS LAN
\$419098	01/01/2003	01/01/2008	21/05/2003	23/02/2007	01/05/2003	01/05/2003	1	1	20					DWR SMS	QUIRINDI @ GREENACRE
\$419099		23/02/2006	14/05/2007	23/02/2006	04/02/2007		4	3	21					DWR PRF	COCKBURN @ KOOTINGAL
41910048					20/01/1999									DWR DISC	BVD001
41910049					22/05/1998									DWR DISC	BVD002
41910050					22/05/1998									DWR DISC	BVD003
\$419900		09/06/1995	03/04/2007	01/01/1900	01/01/1900		1	1						DWR PRF	NAMOI @ GLENCOE
\$419905	01/01/1995	01/01/2006	01/09/1995	06/03/2007	08/06/1995	16/06/2005	2	2	2					DWR PRF	BOHENA @ NEWELL HWY
419906				3										CBM CF	PEEL @ PEARLY GATES
420001	01/01/1950	01/01/1982			173					11/04/2000				DWR DISC	CSTLEREAGH GILGANDRA
420002	01/10/1951	01/01/1970			87					29/01/1971				DWR DISC	COONABARABRAN NO.1
\$420003	01/11/1951	01/01/2008	25/01/1972	16/05/2007	01/06/1969	24/10/2006	172	17	279		R			DWR PI	BELAR CK @ WARKTON
\$420004	01/01/1913	01/01/2007	03/04/1968	18/12/2006	10/03/1967	29/10/2003	425	78	238					DWR CF	CSTLEREAGH MENDOORAN

420005	01/09/1960	01/01/2003	02/06/1986	30/04/2002	06/01/1983	17/06/1999	130	19	203		30/04/2002	DWR	DISC	CSTLEREAGH	COONAMBLE
420006					51	11/12/1980	DWR	DISC	WARRENA	CK	COONAMBLE				
420007	01/09/1965	01/10/1981				129		01/10/1981	DWR	DISC	CASTLEREAGH	BINNAWAY			
420008	01/05/1965	01/01/1984				63		01/01/1984	DWR	DISC	BINNIA	CK @	ULINDA		
420009	01/05/1965	01/07/1976				75		22/07/1981	DWR	DISC	MERRYGOEN	MENDOORAN			
420010	01/05/1965	01/01/2003	28/11/1979	03/05/2002	19/11/1977	19/07/2000	147	12	118		03/05/2002	DWR	DISC	WALLUMBURRAWANG	CK
420011	01/01/1966	01/06/1973	31/05/1983	17/06/1999			44		01/06/1973	DWR	DISC	BARONNE	GULARGAMBONE		
420012	01/07/1968	01/01/2003	21/11/1979	02/05/2002	21/11/1979	21/11/1979	100	1	109		02/05/2002	DWR	DISC	BUTHEROO @	NEILREX
420013	01/01/1969	01/01/1982	05/12/1969	09/10/1981	01/01/1969	10/08/1978	115	4	92		01/01/1982	DWR	DISC	COONABARABRAN	NO.2
420014	01/01/1970	01/01/2003	23/06/1987	30/04/2002	23/06/1987	19/07/2000	110	3	60		30/04/2002	DWR	DISC	MAGOMETON	(SITE 3)
420015	01/01/1970	01/01/2003	23/06/1987	30/04/2002	02/01/1980	17/06/1999	150	8	108		30/04/2002	DWR	DISC	WARRENA	CK @ WARRANA

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R A W C T W H O

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			Starts	Starts	Tab	Starts	Starts	Tab	Starts	Starts	Tab	Starts	Starts	Tab	Starts	Starts	Tab	Starts	Starts
420016	01/01/1975	01/01/1992	25/03/1975	27/03/1991	25/03/1975	30/06/1976	105	2	56									01/01/1992	DWR DISC JACK HALLS NR COONAB
\$420017	01/01/1980	01/01/2008	26/02/1980	16/05/2007	01/01/1980	30/06/2005	151	10	139	T	C							DWR PPS	CSTLEREAGH HIDDEN VLY
420018																		DWR DISC	CSTLEREAGH RANter CK
420019			19/04/1978	01/01/1991	20	2	22											DWR CH	CASTLEREAGH ULAMAM
\$420020	01/01/2001	01/01/2008	30/05/2001	30/04/2007	30/05/2001	06/07/2005	21	3	23	T	C							DWR PJI	CASTLEREAGH GUNGALMN
420021			04/10/2001	04/10/2001	1	1	13											DWR CR	GRAHAM S CROSSING
\$420901		16/11/2000	19/03/2007	01/01/1900	01/01/1900	1	1											DWR PRH	CASTLEREAGH RV@LUCAS
\$421001	01/06/1885	01/01/2008	27/05/1966	20/03/2007	10/11/1969	28/09/1999	180	18	575	T	C							DWR SFP	MACQUARIE R @ DUBBO
421002	01/10/1919	01/01/1961					263											DWR DISC	MACQUARIE R @ B/DONG
\$421003	01/01/1909	01/01/2007	07/08/1998	18/12/2006	01/01/1900	01/01/1900	1	1	463									DWR CF	MACQUARIE WELLINGTON
\$421004	01/04/1901	01/01/2008	01/01/1913	09/05/2007	01/01/1911	10/10/2006	150	36	414	T	C							DWR SFP	WARREN WEIR
421005	01/04/1901	01/01/1998	01/07/1980	14/05/2007	24/12/1980	18/07/2006	250	11	433									DWR SFP	GUNNINGBAR D/S REG
421006	01/06/1901	01/07/1982	01/01/1913	31/07/1978	01/01/1997	01/01/1997	132	1	438									01/07/1982	DWR DISC MACQUARIE NARROMINE
421007	01/01/1933	01/01/1994	01/06/1933	30/09/1993	01/01/1900	01/01/1900	1	1	460									CBM CF	MACQ BATHURST >DIV

421008	01/01/1913	01/12/1959	31/08/1996	06/09/1996			220		01/12/1959	DWR DISC BELL R @ WELLINGTON
421009	01/04/1924	01/10/1930			27		30/09/1930	DWR DISC MACQUARIE MACQ. VALE		
421010	01/01/1925	01/09/1967			20		23/08/1967	DWR DISC BOGAN @ PEAK HILL 1		
\$421011	01/10/1944	01/01/2008	14/06/1968	30/04/2007	01/01/1900	30/03/2002	341 18 242	T C		DWR SFP MARTHAGUY @ CARINDA
\$421012	01/01/1926	01/01/2008	15/04/1926	14/03/2007	16/03/1971	22/03/2006	250 33 360	R T C		DWR SFP MACQUARIE RV@CARINDA
421013	01/03/1927	01/12/1939			73		30/11/1939	DWR DISC CUDGEGONG GUNTAWANG		
421014	01/04/1933	01/01/1961	01/01/1893	19/09/1994	01/09/1890	01/06/2004	120 15 174		01/01/1961	DWR DISC MACQUARIE WARREN TWN
421015	01/04/1936	01/01/1998	01/01/1986	30/04/1997	10/12/1985	01/01/2007	295 17 322			DWR SFT DUCK CK @ OFFTAKE
421016	01/04/1936	01/01/1998	01/01/1986	30/04/1997	10/12/1985	18/07/2006	270 15 309			DWR SFT CROOKED CK @ PROFILE
421017	01/01/1986	01/01/1998	01/01/1986	30/04/1997	10/12/1985	17/07/2006	255 11 341			DWR SFT GUNNINGBAR D/S WEIR
\$421018	01/08/1939	01/01/2008	15/05/1973	25/01/2007	10/11/1971	08/11/2005	215 25 406	T C		DWR PPS BELL RIVER @ NEWREA
\$421019	01/08/1939	01/01/2008	13/12/1955	02/05/2007	02/08/1939	05/01/2005	50 35 381	T C		DWR SFP CUDGEGONG YAMBLE BDG
421020	01/11/1953	01/01/1998	01/01/1986	30/04/1997	25/12/1985	01/12/2002	275 15 283			DWR SFP NYNGAN CHNNL OFFTAKE
421021	01/01/1944	01/01/1951			14		01/04/1951	DWR DISC TALBRAGAR R @ BENI		
\$421022	01/01/1943	01/01/2008	01/01/1955	18/04/2007	17/02/1969	09/09/2006	155 11 296			DWR SFP MACQUARIE OXLEY STN
\$421023	01/01/1942	01/01/2008	30/11/1942	13/03/2007	01/01/1800	18/12/2004	230 28 232	T C		DWR SFP BOGAN R @ GONGOLGON
421024	01/11/1945	01/01/1977			82		15/12/1980	DWR DISC MARRA CK @ YARRAWIN		
\$421025	01/09/1947	01/01/2008	04/08/1955	04/05/2007	23/08/1968	05/11/2002	180 21 358	T C		DWR SFP MACQUARIE R BRUINBUN
\$421026	01/01/1947	01/01/2008	10/09/1947	03/05/2007	01/01/1900	06/11/2004	285 52 408	T C		DWR SFP TURON RIVER @ SOFALA
\$421027	01/05/1948	01/01/2008	25/09/2002	18/05/2007	01/01/1900	01/01/1900	1 1 9			DWR CF BELL R @ GOWAN GREEN
421028	01/01/1913	01/11/1954			24		09/10/1954	DWR DISC TALBRAGAR @ COBBORAH		
421029	01/03/1950	01/09/1954			29		30/09/1954	DWR DISC TALBRAGAR R@ GRAVELS		
421030	01/05/1954	01/03/1967			59		05/02/1967	DWR DISC MEROO CK @ YARRABIN1		
\$421031	01/08/1954	01/01/2008	01/01/1980	10/05/2007	23/04/1990	10/05/2007	160 7 333			DWR SFP MACQUARIE @ GIN GIN

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R A W C T W H O

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			Starts		Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

421043	01/05/1965	01/07/1980						92						30/06/1980	DWR	DISC	WISEMANS @ WISEMANS			
421044	01/05/1965	01/08/1985			20/05/1965	15/06/1966	2	2	113					27/08/1985	DWR	DISC	SEWELLS @ WISEMANS C			
421045	01/01/1966	01/04/1972			01/04/1972	17/12/1985	210	23	68					01/04/1972	DWR	DISC	DUCK CREEK U/S BOGAN			
421046	01/11/1965	01/04/1972			10/07/1986	22/10/1986	105	2	79					01/04/1972	DWR	DISC	GUNNINGBAR U/S BOGAN			
421047	01/01/1966	01/03/1975	14/10/1988	22/11/1991					89					01/03/1975	DWR	DISC	TALBRAGAR MERUTHERA			
\$421048	01/07/1965	01/01/2008	24/06/1986	12/03/2007	09/07/1965	01/07/1986	221	21	202	T	C	B					DWR	PI	LITTLE R @ OBLEY 2	
421049	01/07/1965	01/01/1997	31/07/1990	03/09/1996	08/12/1980	08/12/1980	100	1	117					01/01/1997	DWR	DISC	MOLONG R @ MOLONG			
\$421050	01/07/1965	01/01/2008	21/02/1974	01/06/2007	02/07/1973	05/08/1998	260	34	226								DWR	PI	BELL RIVER @ MOLONG	
421051	01/08/1965	01/06/1978						92						27/05/1980	DWR	DISC	B/MANS SWMP NR ORNGE			
421052	01/01/1965	01/01/1979	31/08/1965	15/03/1978	09/02/1971	11/12/1974	110	3	108					09/03/1978	DWR	DISC	LEWIS PONDS @ OPHIR			
421053	01/07/1965	01/02/1983	12/10/1971	20/01/1976	13/08/1965	09/11/1966	4	4	116					19/01/1983	DWR	DISC	Q CHARLOTTE'S GGS PLN			
421054	01/07/1965	01/02/1981						116						30/04/1980	DWR	DISC	CAMPBELLS NR ROCKLEY			
\$421055	01/02/1966	01/01/2008	25/11/1980	05/03/2007	27/08/1980	25/07/2000	205	10	137	T	C	B					DWR	SMS	RAWSONVILLE	
421056	01/07/1966	01/01/2000	26/11/1980	05/08/1999	26/11/1980	21/06/1985	121	6	179					05/08/1999	DWR	DISC	COOLABURRAGUNDY RIV			

421057	01/01/1966	01/11/1978	07/08/1966	02/02/1976	01/08/1966	30/09/1975	215	24	93		30/09/1978	DWR DISC CAMPBELLS @ APSLEY
421058	01/08/1966	01/02/1983		24/08/1966	02/01/1967	2	2	90		31/12/1982	DWR DISC WYALDRA CK @ GULGONG	
\$421059	01/09/1966	01/01/2005	27/09/1999	17/06/2004	01/01/1978	01/01/2001	30	3	119	T C		DWR DISC BUCKINBAH @ YEOVAL
421060	01/08/1967	01/01/1979			50		31/12/1978	DWR DISC MARRA @ MARRABANK				
421061	01/09/1966	01/01/1984	01/01/1984	28/02/1993		96		01/01/1984	DWR DISC 2 (MERRI) NR QUAMBONE			
421062	01/09/1966	01/01/1983		06/09/1984	13/06/1988	105	2	100		01/01/1983	DWR DISC MARTHAGUY @ QUAMBONE	
421063	01/09/1966	01/01/1998	01/01/1986	30/04/1997	01/01/1967	10/06/1974	100	2	69		11/04/2000	DWR PRHG EWENMAR CK @ WARREN
421064	01/09/1966	01/09/1985	10/06/1986	25/02/1998		108		03/03/1999	DWR DISC SANDY CK @ MEDWAY 2			
421065	01/09/1966	01/01/2000	11/06/1986	03/06/1999	29/09/1966	25/07/1990	101	3	90		01/01/1999	DWR DISC MITCHELL @ WESTELLA
421066	01/11/1966	01/01/2003	10/02/1975	01/02/2002	23/11/1966	20/01/1995	136	14	147		01/02/2002	DWR DISC GREEN VALLEY HILLEND
421067	01/11/1966	01/07/1975			56		05/06/1975	DWR DISC PYRAMUL CK HILL END				
\$421068	01/02/1967	01/01/2005	08/09/1977	09/09/2004	25/10/1976	12/05/1985	115	4	142	T C		DWR DISC SPICERS @ SAXA XING
421069	01/01/1966	01/01/1976	01/11/1966	16/01/1975	20/08/1971	17/12/1985	170	15	106		01/01/1976	DWR DISC BOGAN R @ BROOMFIELD
421070				80		11/04/2000	DWR DISC CROOKED @ MUMBLEBONE					
421071				67		31/08/1981	DWR DISC DUCK CREEK @ COLANE					
421072	01/01/1968	01/11/1978	05/02/1968	24/03/1976	04/02/1968	05/09/1978	220	25	77		31/10/1978	DWR DISC WINBURNDALE RIVULET
421073	01/03/1968	01/02/1983			91		31/12/1982	DWR DISC MEROO @ YARRABIN 2				
421074	01/05/1968	01/06/1978			74		12/05/1978	DWR DISC C/GONG APPLE TREE FL				
421075	01/07/1968	01/02/1983			84		30/06/1982	DWR DISC EVANS PLNS NR B/HUST				
\$421076	01/08/1967	01/01/2007	11/11/1980	02/11/2006	10/09/1978	10/05/1999	120	4	95			DWR SMS BOGAN PEAK HILL NO.2
421077												DWR DISC MACQ @ B/DONG SPILL
421078 *	01/06/1967	01/07/1980	01/01/1993	10/07/2001	01/10/1976	01/10/1976	100	1				DWR CH BURRENDONG STORAGE
\$421079	01/01/1970	01/01/2008	27/02/1970	26/04/2007	01/01/1970	05/07/2005	185	19	215	T C		DWR SFP C/GONG D/S WINDAMERE
421080	01/01/1971	01/01/1979	30/06/1971	11/10/1978	27/11/1974	12/09/1976	105	2	45		11/10/1978	DWR DISC MACQ. DIXONS LONG PT

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R A W C T W H O

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421092	01/01/2000	01/01/2004	08/12/2000	18/02/2003	03/07/2000	03/07/2000	10	1	16	T	C							DWR DISC Q CHARLOTTES ORTON P		
421093						6		27/05/1980	DWR DISC SWALLOW@	ROCK FOREST										
421094						15		27/05/1980	DWR DISC SUMMERHILL CREEK											
421095						9		27/05/1980	DWR DISC PLOUGHMANS @	ORAN										
421096						8		27/05/1980	DWR DISC LEWIS PONDS D	BROWNS										
421097	01/01/1980	01/01/2008	06/03/1980	12/02/2007	06/03/1980	01/08/2005	230	16	126									DWR SFP MARRA CK CARINDA RD		
421098	01/08/1933	01/07/1942					67		30/06/1942	DWR DISC GUNNINGBAR @	WARREN									
421099		01/01/1986	30/04/1997				44		08/08/1990	DWR PRHG BELARINGAR @	OFFTAKE									
421100	01/01/1975	01/01/1986	14/02/1975	09/05/1985	14/02/1975	14/10/1976	105	2	43									01/10/1986 DWR DISC PYRAMUL U/S HILLEND		
42110011	01/01/1999	01/01/2003	18/02/1999	22/07/2002	18/02/1999	17/11/2000	115	2	11	T	C							DWR DISC CARWELL@CUDGEGONG RD		
42110040	01/01/1999	01/01/2005	18/02/1999	04/02/2004	18/02/1999	18/02/1999	110	1	22	T	C	B						DWR DISC CUDGEGON R@MOONBUCCA		
42110047	01/01/1999	01/01/2003	12/02/1999	22/07/2002	12/02/1999	19/11/2000	115	2	17	T	C							DWR DISC CUDGEGONG R @ KONA		
421101	01/01/1978	01/01/2003	18/08/1978	19/07/2002	18/08/1978	01/01/1999	102	3	119									DWR CF CAMPBELLS B CHIF DAM		
421102	01/01/1909	01/01/1934						30/06/1933	DWR DISC MACQ PRE Q	CHAR DIV										

421103	01/01/1980	01/01/2002	06/03/1980	27/02/2001	06/03/1980	31/08/1996	115	5	84		27/02/2002	DWR DISC EMU SWAMP @ LLEWELYN
421104	01/01/1979	01/01/2004	04/12/1979	30/10/2003	01/12/1979	01/12/1979	100	1	100			DWR DISC BRISBANE VALLEY CK
421105				48		30/06/1932	DWR DISC MACQUARIE WHITE RO					
421106	01/01/1980	01/01/2003	08/07/1980	14/05/2002	01/07/1980	08/08/1998	125	6	96		14/05/2002	DWR DISC CHESHIRE @ WIAGDON
421107	01/08/1980	01/01/2008	25/12/1983	02/05/2007	26/06/1980	02/07/2005	136	7	48	T C		DWR CR MARRA BILLYBINGBONE
421108	01/01/1982	01/01/2008	25/10/1982	14/02/2007	01/07/1971	01/11/2006	225	12	117			DWR SFT NORTHERN BYPASS CH
421109	01/01/1988	01/01/2003	15/09/1988	31/01/2002	02/04/1979	04/07/1996	25	5	52		31/01/2002	DWR DISC MONKEY CK @ BREAK
421110				6		25/03/1999	DWR DISC MONKEY WEST ARM RE					
421111	01/01/1988	01/01/2008	19/09/1988	13/02/2007	03/04/1979	22/08/2002	30	5	58			DWR SFT BUCKINGUY @ BREAK
421112		24/06/1999	01/06/2007	01/01/1900	01/01/1900		1	1	45			DWR SFH BUCKINGUY @ RETUR
421113				3		08/12/1980	DWR DISC					
421114						18/02/1993	DWR DISC MONKEY BULGERAGA B					
421115				1		08/12/1980	DWR DISC L. MONKEYGAR @ BREAK					
421116	01/01/1987	01/01/2008	28/10/1987	13/03/2007	03/04/1979	09/12/2005	25	5	63			DWR SFT MACQUARIE GIBSON W
421117							DWR DISC MONKEYGAR GIBSON W					
421118	01/01/1988	01/01/2007	16/09/1988	09/11/2006	26/11/1980	07/12/2005	15	4	63			DWR SFT BULGERAGA GIBSON W
421119		17/09/1991	12/11/1991		1	08/12/1980	DWR DISC MONKEY D/S GIBSON WY					
421120		26/10/1982	24/11/1982	03/05/1979	01/02/1985	15	2	21		30/01/1985	DWR DISC MACQUARIE THE WILLOW	
421121				58		11/04/2000	DWR DISC TUREE COOLAH-CASSILS					
421122				2			DWR DISC MACQUARIE D/S GIBS					
421123						30/06/1925	DWR DISC TALBRAGAR@ TALBRAGAR					
421124		29/08/1996	03/09/1996			03/09/1996	DWR DISC BELL WELLINGTON GOLF					
421125	01/01/1982	01/01/1998	20/01/1982	06/08/1997	20/01/1982	19/04/1990	2	2	20		01/01/1998	DWR DISC JONES CREEK @ TAR
421126	01/01/1982	01/01/2000	19/01/1982	05/08/1999	19/01/1982	29/05/1990	2	2	29		01/01/1999	DWR DISC CAINBIL LOCH LOMON

\$421127	01/01/1986	01/01/2008	11/06/1986	16/04/2007	01/12/1981	12/12/2004	50	14	175	T C	DWR SFP	MACQUARIE RV @ BAROO
421128			01/01/1990	01/01/1990	10	1	41				DWR CR	GUNNINGBAR BOX CUL
421129	01/01/1987	01/01/2008	28/10/1987	01/06/2007	02/04/1979	29/06/2004	30	7	82		DWR SFT	MONKEYGAR - SITE 5
421130				16		11/04/2000					DWR DISC	MACQUARIE BOSSES X
421131				10		19/09/1991					DWR DISC L	MONKEYGAR OFFTAK
421132	01/01/1987	01/01/2008	28/10/1987	14/02/2007	04/04/1979	06/09/2002	20	4	47		DWR SFT	MONKEYGAR - SITE 16
421133		22/10/1982	25/11/1982	01/09/1982	01/04/1984		15	2	16		07/03/1984	DWR DISC BORA CHANNEL RETUR
421134				14		15/10/1985					DWR DISC DUCK SWAMP @ RETU	
\$421135	01/01/1989	01/01/2008	02/11/1989	13/03/2007	01/01/1989	22/10/2006	160	12	119		DWR SFT	MACQUARIE @ MILTARA
421136		15/09/1988	26/10/1993			5			26/10/2000		DWR DISC BULGERAGA @ OXLEY	
421137		28/10/1982	24/11/1982	14/09/1982	01/09/1983		15	2	18		23/06/1987	DWR DISC MACQ D/S WILLOWS

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\$421138	01/01/1993	01/01/2008	08/06/1993	11/04/2007	01/06/1993	01/06/1993	10	1	31				DWR SFP BOGAN @ NYNGAN
421139													DWR PRHG REDENVILLE BREAK
421140						14							DWR DISC NTHRN MARSHES @ E
421141						12		12/12/1990					DWR DISC NYNGAN CH @ NEW W
421142	01/01/1991	01/01/2004	19/09/1991	10/08/2004	01/07/1983	06/09/1998	20	4	38			08/08/2004	DWR CR MILMILAND @ RD BRI
421143						2							DWR DISC OXLEY LAGOON @ BRE
421144						4		25/03/1999					DWR DISC NO 3 BREAK - OXLEY
\$421145	01/01/1993	01/01/2008	21/01/1993	15/02/2007	21/01/1993	09/09/2006	230	8	107				DWR SFT BULGERAGA @ B/CATION
\$421146	01/01/1987	01/01/2008	27/10/1987	15/02/2007	25/08/1994	21/03/2006	215	4	79				DWR SFT GUM COWAL @ B/CATION
\$421147	01/01/1989	01/01/2008	16/06/1989	18/04/2007	05/09/1984	04/12/2005	35	6	95				DWR SFT MACQ. PILLICAWARRINA
421148 *		01/07/1985	15/02/2007				1						DWR CH WINDAMERE STORAGE
\$421149	01/01/1994	01/01/2008	29/10/1994	03/05/2007	05/09/1990	23/02/2005	125	9	115	T	C		DWR SFP C/GONG ROCKY WATER
\$421150	01/01/1997	01/01/2008	13/08/1997	03/05/2007	06/08/1986	10/09/2004	115	8	112	T	C		DWR SFP C/GONG WILBERTREE RD
421151	01/01/1991	01/01/2003	28/10/1987	19/02/2002	04/09/1983	23/02/2005	15	4	26			19/02/2002	DWR DISC BORA CHNNL @ OFFTA

421152	01/01/1991	01/01/2008	17/09/1991	18/04/2007	01/09/1987	09/08/2002	10	2	15					DWR SFT	GUM COWAL @ OXLEY
421153	01/01/1987	01/01/2008	27/10/1987	13/03/2007	18/08/1986	07/12/2005	25	4	42					DWR SFT	TERRIGAL U/S. MARTHA
421154			01/01/1989	01/01/1996			4	4						DWR DISC	MOLONG D/S HFR STN
421155							5							DWR DISC	BOGAN R @ OAKS BD
421156	01/01/1991	01/01/2005	18/09/1991	02/09/2004	07/08/1991	01/01/1995	10	2	18	R	C		25/07/2002	DWR DISC	BONADA CREEK @ MUMB
421157		13/06/1993	08/05/1996										13/07/2000	DWR DISC	EUAMBALENE
\$421158	01/01/1993	01/01/2008	11/06/1993	05/01/2007	01/01/1990	19/05/2006	35	8	75					DWR SFP	BOGAN @ MONKEY BRID
\$421159	01/01/2000	01/01/2006	11/12/2000	09/02/2005	10/12/2000	10/12/2000	1	1	13		T C			DWR DISC	COPPER HILL
421160	01/01/2000	01/01/2004	08/12/2000	18/02/2003	03/07/2000	03/07/2000	10	1	8					DWR DISC	OPHIR RD
421161													13/12/1993	DWR DISC	MACQUARIERVU/SBUDDAH
421162													12/12/1993	DWR DISC	MACQUARIERVD/SBUDDAH
421163	01/01/1981	01/01/1999	31/12/1980	08/04/1998	01/01/1980	11/02/1992	6	6					01/01/1999	DWR DISC	TALBRAGAR @ EMANON
\$421164	01/01/1994	01/01/2008	22/09/1994	13/04/2007	22/09/1994	21/12/2005	25	6	37					DWR SFP	DUCK CK @ NAPALI
\$421165	01/01/1994	01/01/2008	22/09/1994	12/04/2007	22/09/1994	30/12/2005	20	8	63		T			DWR SFP	BENIBILLA DS CANONBA
\$421166 *	01/01/1994	01/01/2008	22/09/1994	20/08/2001	01/01/1994	24/10/2004	40	7	52					DWR SFP	GUNNINGBAR @ FVIEW
421167		11/09/1992	29/01/1994										29/01/1994	DWR DISC	THIRD CROSSING SWAMP
421168		10/09/1992	17/09/1994										17/09/1994	DWR DISC	HUNT S WOODLAND
421169	01/01/1994	01/01/2008	03/06/1994	18/04/2007	01/06/1994	06/10/2003	20	3	23					DWR SFT	BREAKAWAY @ OFFTAKE
421170													01/08/2000	DWR DISC	BORA CHNLS@ BLUELGHT
421171													01/08/2000	DWR DISC	HUNTSWOOD@NTH BYPASS
421172													01/08/2000	DWR DISC	BUCKIINGUY SWAMP@BGY
421173														DWR DISC	CUDGEGONG @ CARWELL
421174	01/01/1999	01/01/2005	18/02/1999	04/02/2004	18/02/1999	01/02/2003	130	3	17		T C B			DWR DISC	CUMBER MEL CK @ MOON
421175														SWA CR	GUNNINGBAR WEIR STOR

\$421176	01/01/2001	01/01/2005	25/10/2001	17/06/2004	25/10/2001	25/10/2001	10	1	9	T C	DWR DISC ARTHURVILLE NO. 2
421177	01/01/2002	01/01/2005	05/02/2002	10/06/2004	01/01/1900	01/01/1900	1	1		T C	DWR DISC SNAKE GULLY
\$421178		19/06/2002	14/02/2007	01/01/1900	01/01/1900		1	1	R		DWR CF MOLONG CK @ D/S BORE
\$421179	01/01/2002	01/01/2005	30/07/2002	10/05/2004	01/01/1900	01/01/1900	1	1	3	T C	DWR DISC DOG ROCKS RD BRIDGE
421180			09/02/2005	09/02/2005			2	2	6		DWR CR BELL @ TANTALLON RD
421421		31/12/1980	07/02/1992							DWR	Macquarie Misc
\$421900		06/06/1996	15/05/2007	01/01/1900	01/01/1900		1	1			DWR CF MACQ RV @ WOLLOMBI
421902				19		11/04/2000	CBM DISC BOGAN R	MULGAWARRINA			
421905		13/06/1993	07/03/2000			10/01/2000	DWR DISC BOGAN RIVER @	MUDALL			
421906				7			DWR DISC BOGAN RV @	NYNGAN			
421908			01/01/1994	01/01/1994			2	1	4		CBM CH MACQUARIE R @STANLEY

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.													
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	y	Date	Org.	Net	
			Starts	Starts	Tab	Starts	Starts	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code Class	NAME

\$422001	01/04/1886	01/01/2008	09/08/1972	22/05/2007	04/12/1969	01/01/2007	155	19	438	T	C							DWR SFP	BARWON @ DANGAR BDGE	
\$422002	01/01/1892	01/01/2008	17/04/1892	08/02/2007	11/02/1892	04/01/2007	120	8	405	T	C							DWR SFP	BARWON @ BREWARRINA	
\$422003	01/07/1944	01/01/2008	31/10/1980	22/05/2007	01/07/1974	01/03/2002	119	12	418	T	C							DWR SFP	BARWON COLLARENEBRI	
\$422004	01/02/1944	01/01/2008	10/06/1980	30/05/2007	10/06/1980	15/11/2005	116	13	317									DWR SFP	BARWON @ MOGIL MOGIL	
\$422005	01/01/1944	01/01/2008	02/10/1944	13/04/2007	06/09/1944	06/12/2000	107	16	215									DWR SFP	BOKHARA @ BOKHARA	
422006	01/01/1944	01/01/2008	05/09/1944	30/04/2007	01/09/1944	01/05/2006	149	29	215									DWR SFP	CULGOA D/S COLLERINA	
422007	01/12/1947	01/01/2008	01/07/1983	08/02/2007	29/06/1983	05/04/1999	225	6	237									DWR SFP	CATO CK @ BREWARRINA	
422008	01/06/1954	01/01/1986	01/08/1972	18/12/1985	01/07/1972	01/08/1982	141	10	173								18/12/1985	DWR DISC	BARWON R @ COMBADERY	
422009	01/01/1957	01/06/1973					102			01/06/1973								DWR DISC	BARWON @ WALGETT	
422010	01/01/1964	01/01/2007	01/10/1964	01/10/2006	01/10/1964	05/11/1999	41	11	126									DWR SFP	BIRRIE R @ TALAWANTA	
\$422011	01/01/1964	01/01/2008	09/12/1964	12/04/2007	09/12/1964	06/01/2007	60	20	170									DWR SFP	CULGOA U/S COLLERINA	
422012	01/01/1959	01/01/2008	30/09/1959	31/01/2007	01/01/1960	01/01/2001	24	6	139									DWR SFP	NARRAN NEW ANGLEDPOOL	
422013	01/01/1964	01/01/2008	29/10/1964	30/04/2007	29/01/1964	22/10/2005	65	17	178									DWR SFS	BIRRIE NEAR GOODOOGA	
422014	01/01/1915	01/01/2008	01/01/1915	01/05/2007	01/01/1915	03/10/2005	136	23	171									DWR SFS	BOKHARA @ GOODOOGA	

\$422015	01/01/1960	01/01/2008	01/01/1960	11/04/2007	01/01/1960	04/01/2003	124	27	189	T C	DWR SFS	CULGOA R @ BRENDA
422016	01/01/1964	01/01/2008	01/11/1964	01/05/2007	01/01/1900	21/11/2000	54	14	129	T	DWR SFS	NARRAN @ WILBY WILBY
422017	01/01/1964	01/01/2007	02/11/1964	12/10/2006	01/01/1900	06/02/2005	52	12	152		DWR SFS	CULGOA @WEILMORINGLE
422018	01/06/1965	01/01/2008	03/09/1980	22/05/2007	03/09/1980	01/01/2003	102	3	199		DWR SFP	GRAWAN OLDPOCKATAROO
422019 *		18/03/1982	31/12/1990								DWR SFH	NARRAN LAKE STORAGE
422020				4							DWR DISC	BARWON R @ CARAMIA
422021	01/09/1944	01/05/1948		02/01/2007	02/01/2007	156	1	21		12/02/1952	DWR DISC	BARWON @ EUROOL
422022	01/01/1930	01/01/2008	25/11/1985	08/02/2007	01/01/1900	01/06/1983	105	2	56		DWR SFP	TARRION @ BREWARRINA
422023	01/01/1948	01/01/2004		01/01/1974	01/11/2001	206	2	3			DWR SFP	BREWARRINA TOTAL FL
422024		28/05/1993	04/10/2000		23				04/10/2000		DWR DISC	NARRAN @ NARRAN PLAI
\$422025	01/01/1999	01/01/2008	30/06/1999	22/05/2007	01/01/1999	01/05/2007	4	4	47		DWR SFP	BARWON @ TARA
\$422026	01/01/1999	01/01/2008	29/06/1999	23/05/2007	01/01/1999	01/05/2007	4	4	54		DWR SFP	BARWON @ BOOROOMA
\$422027	01/01/1999	01/01/2008	29/06/1999	23/05/2007	01/03/1999	01/12/2006	4	4	53	T C	DWR SFP	BARWON @ GEERA
\$422028	01/01/1999	01/01/2008	26/06/1999	05/02/2007	26/06/1999	14/01/2007	7	7	52		DWR SFP	BARWON @ BEEMERY
\$422029	01/01/2002	01/01/2008	14/02/2002	13/04/2007	14/02/2002	22/03/2004	2	2	36	T C	DWR SPS	NARRAN @ NARRAN PARK
\$422030	01/01/2002	01/01/2008	11/04/2002	11/04/2007	11/04/2002	01/02/2004	2	2	38	T C	DWR SFP	NARRAN @ ANGLEDPOOL 2
\$422204A		01/08/1965	02/07/1998				T C P		QWR		CULGOA_R	WHYENBAH
\$422206A		04/08/1965	17/08/1999						QWR		DIRRANBANDI	HEBEL RD
422208A		04/08/1965	30/09/1988					30/09/1988	QWR		WOOLERBILLA	
\$422209A		09/08/1965	17/08/1999						QWR		BOKHARA_R	HEBEL
\$423001	01/01/1921	01/01/2008	01/12/1921	07/02/2007	01/01/1900	11/03/2003	149	13	160		DWR PPS	WARREGO FORDS BRIDGE
\$423002	01/01/1921	01/01/2008	01/12/1921	07/02/2007	01/01/1900	16/05/2006	176	17	205	T C	DWR PPS	WARREGO F.B. BYWASH
423003	01/11/1926	01/02/1981	01/11/1926	31/01/1981			1			01/02/1981	DWR DISC	WARREGO BARRINGUN 1
\$423004	01/01/1993	01/01/2008	30/05/1993	06/02/2007	30/05/1993	01/08/2002	6	2	52	T C	DWR PPS	WARREGO BARRINGUN #2

\$423005	01/01/1993	01/01/2008	31/05/1993	06/02/2007	31/05/1993	20/03/2002	6	2	43	T C	DWR PPS	CUTTABURRA AT TURRA
423202A					01/01/1900	QWR	WARREGO_R	CUNNAMULLA				
423202B		02/01/1961	31/12/1976			28/02/1977	QWR	WARREGO_R	CUNNAMULLA			
\$423202C		16/01/1992	04/07/1999				QWR	CUNNAMULLA	WEIR			
423903				5	18/02/1976	DWR DISC	WARREGO @	ENNGONIA				
424001	01/01/1942	01/01/1985	31/10/1942	31/12/1983	11/02/1976	29/09/1987	105	3	62		04/04/1989	DWR DISC PAROO R @ WANAARING
\$424002	01/01/1975	01/01/2008	22/11/1975	07/02/2007	22/11/1975	16/05/1995	140	5	101		DWR PPS	PAROO @ WILLARA XING
\$424201A		17/04/1967	05/07/1999				QWR	PAROO_R	CAIWARRO			
425001	01/01/1881	01/04/1960	19/04/1972	14/12/1972			406 R T		DWR CH	DARLING MENINDEE TWN		
425002	01/01/1886	01/01/1980			33		DWR SFP	DARLING WILCAN.	TOT			
\$425003	01/06/1880	01/01/2008	01/02/1895	05/02/2007	18/01/1894	24/04/1993	300	8	517	T C	DWR SFP	DARLING BOURKE TOWN

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R A W C T W H O																				
Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.													
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	y	Date	Org.	Net	
			Starts	Starts	Tab	Starts	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

\$425004	01/01/1954	01/01/2008	01/01/1983	30/03/2007	01/01/1984	20/03/2003	10	2	277	T	C							DWR SFS	DARLING R @ LOUTH	
\$425005	01/01/1993	01/01/2008	27/01/1993	26/03/2007	16/07/1992	14/12/2005	140	5	63	T	C	B						DWR SFPR	DARLING @ POONCAR	
425006	01/09/1929	01/01/1950					67							31/12/1949	DWR DISC			DARLING R @ STUDLEY		
\$425007	01/01/1940	01/01/2008	25/03/1940	18/01/2007	01/01/1900	01/11/2006	190	20	71	T	C	B						DWR SFP	DARLING @ BURTUNDY	
\$425008	01/01/1913	01/01/2008	17/10/1972	31/03/2007	20/05/1972	24/01/2005	191	22	512	T	C							DWR SFP	DARLING WILC. MAIN C	
425009							11								DWR DISC			DARLING R @ DUNLO		
425010	01/07/1951	01/01/2008	01/01/1987	30/04/2007	16/08/1982	16/08/1982	120	1	210									DWR SFS	MURRAY L10 WENTWORTH	
425011	01/01/1954	01/01/2007	30/11/1954	30/11/2006	01/01/1900	16/09/2002	140	16	144	T	C							DWR SFP	DARL ANABR BULPUNGA	
\$425012	01/02/1958	01/01/2008	20/02/1974	27/03/2007	01/01/1973	03/05/2007	230	24	468	T	C							DWR SFS	DARLING U/S. WEIR 32	
425013	01/06/1962	01/01/2007	31/05/1971	23/11/2006	02/04/1971	08/08/1990	195	17	150	T	C							DWR SFS	DARLING ANABR WYCOT	
\$425014	01/01/1992	01/01/2007	15/06/1992	23/11/2006	02/05/1986	01/01/1999	135	6	124	T	C							DWR SFS	LKE CAWNDILLA OUTLET	
425015															DWR			REFER 425013		
425016	01/01/1973	01/01/2007	13/12/1973	29/11/2006	13/12/1973	13/12/1973	100	1	78	R								DWR PI	BOX CREEK @ COBAR	
425017							15	T	C	B				31/08/1953	DWR DISC			DARLING @ WENTWORTH		

425018	01/01/1971	01/01/2008	01/03/1981	31/03/2007	28/02/1981	31/01/1985	110	4	17			DWR SFP	TALYAWALKA BARR HW
425019	01/01/1962	01/01/2007	30/03/1962	23/11/2006	01/01/1900	01/12/2001	150	16	103	T C		DWR SFS	REDBANK D/S PACKRS
425020 *		01/05/1979	14/03/2006							T C		DWR SFH	LK WETHERELL STORA
425021 *		01/05/1979	14/03/2006									DWR SFH	LK PAMAMAROO STORA
425022 *		01/05/1979	14/03/2006									DWR SFH	LK MENINDEE STORAG
425023 *		01/05/1979	14/03/2006									DWR SFH	LK CAWNDILLA STORA
425024				2								DWR SFT	LK PAMAMAROO INLET
425025				3								DWR SFT	LK MENINDEE INLET
425026				21	16/11/1964							DWR DISC	DARLING @ TOLARNO
425027				4								DWR CR	DARLING FLOOD CHNL
425028	01/01/1981	01/01/2000	31/07/1981	23/12/1999	01/01/1900	31/07/1981	100	2	2			DWR DISC	WIREYARDS @ QUONDO
425029		04/03/1976	01/04/2007							22	T	DWR SFPR	TALYAWALKA KANGA W/H
425030												DWR DISC	DARLING BOURKE SLOPE
425031										18/05/1979		DWR DISC	DARLING @ MENIND SLP
425032										13/09/1979		DWR DISC	DARLING @ WILCAN SLP
425033				5								DWR DISC	DAR ANABRA BELLS C
425034				3								DWR CR	DARLING M/DEE MAIN
\$425035		01/05/1992	29/03/2007	01/01/1900	01/01/1900		1	1	9	T C		DWR PJI	DARLING @ DEAD HORSE
425036		30/04/1992	29/03/2007	01/01/1900	01/01/1900		1	1	12	T C		DWR PJI	DARLING @ GLEN VILLA
\$425037	01/01/2002	01/01/2008	16/05/2002	30/03/2007	01/01/1900	16/05/2002	2	2	8	T C		DWR PJI	DARLING D/S WEIR 19A
425038		03/05/1992	30/03/2007	01/01/1900	01/01/1900		1	1	3	T C		DWR PJI	BL.MYANDETTA.
\$425039	01/01/1999	01/01/2008	27/06/1999	05/02/2007	27/06/1999	18/03/2007	4	5	49	T C		DWR SFP	DARLING @ WARRAWEENA
425040												DWR SFH	CAWN+MENIN STORAGE
425041												DWR PJI	MORTON-BOULKA CK

425042		DWR SFPR PAMAMAROO OUTLET CH	
425043		DWR SFPR WETHERELL OUTLET CH	
425044		DWR SFPR MENINDEE OUTLET CH	
425045		DWR SFPR WETHERELL@ MAIN WEIR	
425046		DWR WETHERILL & TANDURE	
425047		DWR TANDURE	
42510008		DWR SFH LK TANDURE SITE 8	
42510037		DWR SFPR MENINDEE @ COPI HOLL	
42510080	01/01/1995 01/01/2007 30/05/1995 15/11/2006 29/05/1995 05/10/2006	6 5 24 C	DWR SFPR THEGOA INLET D/S
42510082		DWR SFH THEGOA @ AIRPORT	
42510083		DWR SFH THEGOA @ ATKINSONS	

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.													
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net
			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g		Code	Class	NAME
42510089																		DWR WQR	Darling at Tulney	
42510090																		DWR WQR	Darling u/s Weir 32	
42510091																		DWR WQR	Darling at Menincout	
42510092																		DWR WQR	Darling u/s Tulney	
42510417																		DWR WQR	Darling at Menincout	
\$425900	01/01/1995	01/01/2008	10/05/1995	28/03/2007	10/05/1995	01/03/2003	10	2	46	T	C							DWR SFS	DARLING RIVER @ TILP	
426200			21/03/2006	09/10/2006	22	2	23											VRW	MURRAY D/S RUFUS RIV	
012001	01/01/1972	01/01/1996	07/08/1972	16/12/1995	07/08/1972	02/01/1978	120	5	1	R									DWR DISC HOMESTEAD CK @ FOWLE	
012002	01/01/1977	01/01/2004	19/03/1977	31/05/2003	25/12/1984	27/12/1984	110	3	R										DWR DISC FRIESLICH DAM	
012003	01/05/1980	01/01/1993	28/02/1992	07/12/1992	14/01/1984	22/08/1987	110	3	16										DWR DISC FOWLERS CK	

Data summary for site list 012001-426999

Sites with Rainfall Data 183 2437.0 years of data

Sites with Air Temp. Data 9 54.4 years of data

Sites with Humidity Data	1	0.0 years of data
Sites with Wind Data	7	25.3 years of data
Sites with Water Temp. Data	540	3387.4 years of data
Sites with Conductivity Data	477	3399.0 years of data
Sites with Turbidity Data	50	261.8 years of data
Sites with pH Data	32	179.5 years of data
Sites with Diss.Oxygen Data	23	139.0 years of data
Sites with Water Quality data	1122	
Sites with Height data	1392	30982.9 years of data
Sites with Flow data	1456	42798.4 years of data
Current sites	1566	
Closed sites	893	
Total sites listed	2456	

Water Quality Sites

The following is a sample of the information available for each water quality monitoring site that has been operated by the Department. This information can be obtained from the WaterInfo website at <http://waterinfo.nsw.gov.au/wq/sitelist.html>.

Manually Sampled WQ Monitoring Sites Reports

Abattoir Creek @Palmer Street

Station Number:	412137		
Grid Coordinates:	Easting: 708100	Northing: 6288600	Zone 55 MGA94
	Long: 149.2403 deg E	Lat: 33.5222 deg S	Datum: GDA94

Water Quality Data Availability

Variable	Number	Earliest Date	Latest Date	Dataset #
Alkalinity as Bicarbonate (HCO ₃)	17	09/01/1989	04/06/1989	HIWQ0001
Alkalinity as Carbonate (CO ₃)	17	09/01/1989	04/06/1989	HIWQ0001
Ammonia as N - total	312	03/02/1989	30/09/1992	HIWQ0001 RWWQ0011
Biochemical Oxygen Demand (BOD)	4	28/01/1990	30/01/1990	HIWQ0001
Boron as B - total	16	09/01/1989	04/06/1989	HIWQ0001
Calcium as Ca - total	17	09/01/1989	04/06/1989	HIWQ0001
Chemical Oxygen Demand (COD)	1	12/01/1989	12/01/1989	HIWQ0001
Chloride as Cl	20	09/01/1989	25/10/1989	HIWQ0001
Chlorophyll-a	6	12/01/1989	26/03/1989	HIWQ0001
Colour - True	291	09/01/1989	23/07/1991	HIWQ0001
Electrical Conductivity (uncompensated)	126	08/01/1991	28/05/1997	RWWQ0011
Electrical Conductivity @25 C	348	09/01/1989	30/09/1992	HIWQ0001 RWWQ0011
Flow - instantaneous	202	06/08/1989	28/05/1997	HIWQ0001 RWWQ0011
Fluoride as F - soluble	20	09/01/1989	31/10/1989	HIWQ0001
Iron as Fe - soluble	15	12/01/1989	05/05/1989	HIWQ0001
Iron as Fe - total	10	09/01/1989	04/06/1989	HIWQ0001
Level - Streamwater (Gauge Height)	361	06/07/1989	09/07/1996	HIWQ0001 RWWQ0011
Magnesium as Mg - total	17	09/01/1989	04/06/1989	HIWQ0001
Nitrate + nitrite as N (NO _x)	42	08/01/1992	30/09/1992	RWWQ0011
Nitrate as N	302	09/01/1989	23/07/1991	HIWQ0001
Nitrogen - Kjeldahl	96	12/01/1989	15/02/1991	HIWQ0001

Nitrogen - total	175	25/01/1991	18/03/1997	HIWQ0001 RWWQ0011
Oxygen - dissolved	118	08/01/1991	28/05/1997	RWWQ0011
Phaeophytin	2	12/01/1989	26/03/1989	HIWQ0001
Phosphorus - acid hydrolysable - total	7	09/01/1989	04/06/1989	HIWQ0001
Phosphorus - reactive (orthophosphate) - total	42	08/01/1992	30/09/1992	RWWQ0011
Phosphorus - total	453	12/01/1989	28/05/1997	HIWQ0001 RWWQ0011
Potassium as K - soluble	17	09/01/1989	04/06/1989	HIWQ0001
Silica as SiO ₂ - reactive	17	09/01/1989	04/06/1989	HIWQ0001
Sodium as Na - soluble	17	09/01/1989	04/06/1989	HIWQ0001
Solids - total suspended @ 105 C	53	09/01/1989	28/05/1997	HIWQ0001 RWWQ0011
Strontium as Sr - total	16	09/01/1989	04/06/1989	HIWQ0001
Sulphate as SO ₄	17	09/01/1989	04/06/1989	HIWQ0001
Temperature - Water	157	08/08/1989	28/05/1997	HIWQ0001 RWWQ0011
Total Organic Carbon (TOC)	7	09/01/1989	04/06/1989	HIWQ0001
Turbidity	394	12/01/1989	18/04/1997	HIWQ0001 RWWQ0011
Zinc as Zn - total	10	07/02/1989	05/05/1989	HIWQ0001
pH	472	12/01/1989	28/05/1997	HIWQ0001 RWWQ0011

Dataset #	DWE Dataset Description
HIWQ0001	HISTORICAL SURFACE WATER QUALITY TASK
RWWQ0011	CARCOAR MODEL CATCHMENT WQ MONITORING

Data Availability: 12/06/2007

HUNTER RIVER @GRETA

Station Number:	210064		
Grid Coordinates:	Easting: 350200	Northings: 6384700	Zone 56 AMG66
	Long: 151.4 deg E	Lat: 32.6667 deg S	Datum: AGD66

Water Quality Data Availability

Variable	Number	Earliest Date	Latest Date	Dataset #
Alkalinity as Bicarbonate (HCO ₃)	21	21/11/1978	14/12/1982	HIWQ0001

Alkalinity as Carbonate (CO ₃)	21	21/11/1978	14/12/1982	HIWQ0001
Ammonia as N - total	11	21/11/1978	23/11/1979	HIWQ0001
Boron as B - total	3	14/10/1982	14/12/1982	HIWQ0001
Calcium as Ca - total	21	21/11/1978	14/12/1982	HIWQ0001
Chemical Oxygen Demand (COD)	2	01/03/1979	29/05/1979	HIWQ0001
Chloride as Cl	21	21/11/1978	14/12/1982	HIWQ0001
Chlorophyll-a	2	01/03/1979	29/05/1979	HIWQ0001
Colour - Apparent	9	02/08/1979	09/09/1980	HIWQ0001
Colour - True	67	02/08/1979	06/02/1990	HIWQ0001
Electrical Conductivity (uncompensated)	1	21/11/1978	21/11/1978	HIWQ0001
Electrical Conductivity @25 C	527	24/02/1972	14/06/2006	HIWQ0001 RDHU0007 RWHU0012 RWHU0022 RWWQ0004
Faecal Coliform - membrane filtration count	13	07/04/1998	18/05/1999	RWWQ0006
Flow - instantaneous	315	24/02/1972	22/03/2006	HIWQ0001 RWHU0022
Fluoride as F - soluble	4	01/03/1979	14/12/1982	HIWQ0001
Iron as Fe - total	12	21/11/1978	14/12/1982	HIWQ0001
Level - Streamwater (Gauge Height)	355	07/10/1976	18/05/1999	HIWQ0001 RWWQ0006
Magnesium as Mg - total	21	21/11/1978	14/12/1982	HIWQ0001
Nitrate + nitrite as N (NO _x)	11	09/02/1999	08/01/2002	RWHU0003 RWHU0005 RWHU0010 RWHU0012
Nitrate as N	16	21/11/1978	14/12/1982	HIWQ0001
Nitrogen - total	82	09/02/1999	27/04/2006	RDHU0007 RWHU0003 RWHU0005 RWHU0010 RWHU0012
Phosphorus - acid hydrolysable - dissolved	2	01/03/1979	29/05/1979	HIWQ0001
Phosphorus - reactive (orthophosphate) - dissolved (FRP)	6	06/09/2000	08/01/2002	RWHU0003 RWHU0005 RWHU0010 RWHU0012
Phosphorus - reactive (orthophosphate) - total	5	09/02/1999	28/03/2000	RWHU0003

Phosphorus - total	157	21/11/1978	27/04/2006	HIWQ0001 RDHU0007 RWHU0003 RWHU0005 RWHU0012 RWWQ0004
Potassium as K - soluble	21	21/11/1978	14/12/1982	HIWQ0001
Silica as SiO ₂ - reactive	18	21/11/1978	14/12/1982	HIWQ0001
Sodium as Na - soluble	21	21/11/1978	14/12/1982	HIWQ0001
Sulphate as SO ₄	21	21/11/1978	14/12/1982	HIWQ0001
Temperature - Water	394	24/02/1972	16/12/2005	HIWQ0001 RWHU0012 RWHU0022 RWWQ0004 RWWQ0006
Turbidity	471	07/10/1976	14/06/2006	HIWQ0001 RDHU0007 RWHU0012 RWWQ0004
Zinc as Zn - total	2	01/12/1982	14/12/1982	HIWQ0001
pH	447	23/02/1977	14/06/2006	HIWQ0001 RDHU0007 RWHU0012 RWWQ0004

Dataset #	DWE Dataset Description
HIWQ0001	HISTORICAL SURFACE WATER QUALITY TASK
RDHU0007	IMEF - CARBON STUDY
RWHU0003	HUNTER KEY SITES
RWHU0005	INTEGRATED MONITORING OF ENVIRONMENTAL FLOWS - ALGAE STUDY
RWHU0010	MYALL LAKES CATCHMENT ASSESSMENT
RWHU0012	LOWER NORTH COAST STRATEGIC WATER QUALITY ASSESSMENT
RWHU0022	HUNTER SURFACE WATER SALINITY ASSESSMENT 2006
RWWQ0004	KEYSITES - OVERALL RIVER WATER QUALITY MANAGEMENT
RWWQ0006	RIVERS BACTO

Data Availability: 18/06/2007

GW Bore Sites

For some 100,000 bores, DWE has the following Works Summary Information reports available:

Groundwater Works Summary

For information on the meaning of fields please see Glossary Document Generated on Friday, June 29, 2007	
Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log	

Work Requested -- GW004135

Works Details [\(top\)](#)

GROUNDWATER NUMBER	GW004135
LIC-NUM	85BL240419
AUTHORISED-PURPOSES	DOMESTIC STOCK
INTENDED-PURPOSES	STOCK
WORK-TYPE	Bore - GAB
WORK-STATUS	(Unknown)
CONSTRUCTION-METHOD	Cable Tool
OWNER-TYPE	Trust Bore
COMMENCE-DATE	
COMPLETION-DATE	1911-06-01
FINAL-DEPTH (metres)	946.90
DRILLED-DEPTH (metres)	946.90
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	DUMBLE
GWMA	601 - GREAT ARTESIAN BASIN
GW-ZONE	- ALSTONVILLE GROUNDWATER SOURCE
STANDING-WATER-LEVEL	
SALINITY	

YIELD	
--------------	--

Site Details [\(top\)](#)

REGION	80 - MACQUARIE-WESTERN
RIVER-BASIN	422 - CONDAMINE - CULGOA RIVERS
AREA-DISTRICT	
CMA-MAP	8439
GRID-ZONE	55/2
SCALE	1:100,000
ELEVATION	
ELEVATION-SOURCE	R.L. at Surface
NORTHING	6772890.00
EASTING	554420.00
LATITUDE	29 10' 17"
LONGITUDE	147 33' 35"
GS-MAP	0012B1
AMG-ZONE	55
COORD-SOURCE	GD.,ACC.MAP
REMARK	

Form-A [\(top\)](#)

COUNTY	NARRAN
PARISH	invalid code
PORTION-LOT-DP	WLL 8277

Licensed [\(top\)](#)

COUNTY	NARRAN
PARISH	invalid code

PORTION-LOT-DP	4219 766786
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Construction [\(top\)](#)

Negative depths indicate Above Ground Level; H-Hole; P-Pipe; OD-Outside Diameter;
ID-Inside Diameter; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity

HOLE-NO	PIPE-NO	COMPONENT-CODE	COMPONENT-TYPE	DEPTH-FROM (metres)	DEPTH-TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1	1	Casing	Threaded Steel	0.00	48.70	254			(Unknown)
1	1	Casing	Threaded Steel	0.00	101.20	203			(Unknown)
1	1	Casing	Threaded Steel	0.00	928.10	152			(Unknown)

Water Bearing Zones [\(top\)](#)

FROM-DEPTH (metres)	TO-DEPTH (metres)	THICKNESS (metres)	ROCK-CAT-DESC	S-W-L	D-D-L	YIELD	TEST-HOLE-DEPTH (metres)	DURATION	SALINITY
24.70	24.70	0.00	Unconsolidated						V.Salty
662.90	662.90	0.00	Consolidated (natural flow)	0.00		0.05			(Unknown)
759.00	759.00	0.00	Consolidated (natural flow)	0.00		0.63			(Unknown)
767.50	767.50	0.00	Consolidated (natural flow)	0.00		2.11			(Unknown)
772.40	772.40	0.00	Consolidated (natural flow)	0.00		3.16			(Unknown)
858.90	858.90	0.00	Consolidated (natural flow)	0.00		6.32			(Unknown)
862.00	862.00	0.00	Consolidated (natural flow)	0.00		13.16			(Unknown)
865.00	865.00	0.00	Consolidated (natural flow)	0.00		18.47			(Unknown)

880.90	880.90	0.00	Consolidated (natural flow)	0.00	26.31			(Unknown)
924.80	924.80	0.00	Consolidated (natural flow)	0.00	43.76			(Unknown)
940.30	940.30	0.00	Consolidated (natural flow)	0.00	52.63			(Unknown)

Drillers Log [\(top\)](#)

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	15.24	15.24	Clay		
15.24	16.76	1.52	Sand Gravel		
16.76	17.98	1.22	Gravel		
17.98	21.03	3.05	Sand Coarse Gravel		
21.03	22.86	1.83	Gravel Very Hard		
22.86	24.08	1.22	Gravel White Flinty		
24.08	27.13	3.05	Greybilly Hard Water Supply		
27.13	34.14	7.01	Clay Pinkish		
34.14	43.28	9.14	Clay Grey		
43.28	47.85	4.57	Soapstone Grey		
47.85	82.30	34.45	Clay Yellow		
82.30	98.15	15.85	Clay Yellow Shale		
98.15	103.33	5.18	Shale		
103.33	154.23	50.90	Shale Sandy		
154.23	253.29	99.06	Shale		
253.29	366.98	113.69	Shale Black		
366.98	392.28	25.30	Shale		
392.28	470.92	78.64	Shale Black		
470.92	487.68	16.76	Shale Black		
487.68	506.58	18.90	Shale Black		

506.58	563.27	56.69	Shale Black		
563.27	642.82	79.55	Shale		
642.82	656.23	13.41	Shale		
656.23	662.33	6.10	Shale Grey		
662.33	665.68	3.35	Sand Sandstone Water Supply		
665.68	666.90	1.22	Sandstone		
666.90	668.12	1.22	Shale Grey Very		
668.12	679.98	11.86	Shale Grey		
679.98	698.60	18.62	Shale Grey		
698.60	712.93	14.33	Shale Grey Sandy		
712.93	740.66	27.73	Shale Grey		
740.66	748.89	8.23	Shale Grey		
748.89	751.94	3.05	Shale Grey Very		
751.94	756.51	4.57	Shale Grey		
756.51	759.26	2.75	Sandstone Hard Sand Rock Water Supply		
759.26	762.30	3.04	Sand		
762.30	767.49	5.19	Sandstone Hard		
767.49	768.10	0.61	Sand Water Supply		
768.10	786.38	18.28	Sandstone Hard Water Supply		
786.38	787.30	0.92	Shale Sandy		
787.30	830.58	43.28	Sandstone Hard		
830.58	835.15	4.57	Shale Hard Sandy		
835.15	836.98	1.83	Shale Hard Sandy Very		
836.98	840.64	3.66	Shale Hard Sandy		
840.64	845.82	5.18	Shale Hard Sandy		
845.82	854.35	8.53	Shale Hard Sandy		
854.35	858.93	4.58	Shale Hard Sandy		

858.93	859.54	0.61	Shale Hard Sandy Water Supply		
859.54	870.81	11.27	Sandstone Water Supply		
870.81	873.56	2.75	Sandstone Hard		
873.56	874.47	0.91	Sandstone Very Hard		
874.47	877.82	3.35	Sandstone Hard		
877.82	893.37	15.55	Sandstone Sand Water Supply		
893.37	899.77	6.40	Sandstone Hard Sand		
899.77	906.78	7.01	Sandstone Hard		
906.78	911.66	4.88	Sandstone Hard		
911.66	913.18	1.52	Sandstone Hard		
913.18	923.54	10.36	Shale		
923.54	942.75	19.21	Sandstone Water Supply		
942.75	946.86	4.11	Shale Sandy		

GW Water Level Monitoring Sites

There are some 5000 GW manually-monitored groundwater level monitoring sites currently operated. The majority are manually measured at a monthly or greater frequency.

There are also 400+ sites where groundwater level is currently continuously monitored. A report similar to that for Surface Water is presented below.

DWRSITEREP Output at 2007/07/02 21:54:09

S U R F A C E W A T E R A R C H I V E, P A R R A M A T T A

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.													
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net
			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g		Code	Class	NAME

GB030024			03/02/1996	22/01/1997																DWR
GB030029			03/02/1996	22/01/1997																DWR
GB030183			03/02/1996	22/01/1997																DWR
GB030184			26/01/1996	22/01/1997																DWR
GB030307			24/01/1996	21/01/1997																DWR
GB030341			08/03/1990	20/03/1992																DWR
GB030342			08/03/1990	20/03/1992																DWR
GB030344			24/01/1996	21/01/1997																DWR
GB030421			03/02/1996	22/01/1997																DWR
GB036197			24/01/1996	22/01/1997																DWR
GB036238			24/01/1996	21/01/1997																DWR
GB036372			13/08/1982	19/03/1992																DWR
GB036701			16/01/1990	03/02/2006														T	09/06/1987	DWR GWP WOLLONGBAR
GB036701			16/01/1990	09/02/2007														T		DWR GWP WOLLONGBAR

GB036701	16/01/1990 05/02/2007	T	DWR GWP WOLLONGBAR
GB036702	16/01/1990 31/05/2006	T	30/06/1987 DWR GWP PEARCES CREEK
GB036702	16/01/1990 08/02/2007	T	DWR GWP PEARCES CREEK
GB036702	16/01/1990 08/02/2007	T	DWR GWP PEARCES CREEK
GB036757	02/11/1988 12/11/1992		DWR
GB036760	02/11/1988 12/11/1992		DWR
GB036761	17/05/1995 17/08/1995		DWR
GB036762	02/11/1988 07/09/1992		DWR
GB036764	02/11/1988 11/11/1992		DWR
GB036767	02/11/1988 22/11/1988		DWR
GB036826	11/01/1990 11/03/1998		DWR
GB036827	11/01/1990 11/03/1998		DWR
GB036831	23/01/1991 11/03/1998		DWR
GB036861	30/08/1996 02/02/1998		DWR
GB036922	11/10/1997 21/05/1998		DWR
GB036923	10/10/1997 21/05/1998		DWR
GB036924	03/09/1997 21/05/1998		DWR
GB036928	30/08/1993 11/12/1996		DWR
GB036930	30/08/1993 11/12/1996		DWR
GB036933	22/09/1993 07/02/1998		DWR
GB036936	03/09/1997 21/05/1998		DWR MALLEE CLIFFS #7
GB040695	30/08/1993 07/10/1996		DWR
GB040696	30/08/1993 11/12/1996		DWR
GB040700	21/09/1993 11/12/1996		DWR

GB040701	30/08/1993 11/12/1996		DWR	
GB040749	11/01/1990 20/01/1997		DWR	
GB040762	11/04/1990 20/01/1997		DWR	
GB040764	11/01/1990 20/01/1997		DWR	
GB040814		DWR		
GB042827		DWR		
GB064051	04/11/1993 30/05/2002		DWR	MANGROVE @ WESTYS
GB064386	12/05/1995 15/05/1997		DWR	
GB075009	17/03/1995 21/03/2001		DWR	RMB 1310
GB075010	27/10/1994 30/05/2002		DWR	RMB 1535
GB075012	29/09/1999 22/03/2001		DWR	AG RESEARCH STATION

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R A W C T W H O

Station	Flows	HEIGHTS	RATINGS	No. No. a t t o u i u x Discont.	
Number	Start	End	Start	End	First Last Last of of i m m n r p n m y Date Org. Net
			Starts	Starts	Tab Tabs Gaug n p p d b H d d g Code Class NAME
GB075013		13/08/1998 29/05/2002			DWR MANGROVE @ HARRIS
GB075014		04/03/1999 30/05/2002			DWR FABIANS FARM
GB075015		11/08/1998 30/05/2002			DWR AMBER PARK.
GB075016		11/08/1998 30/05/2002			DWR THE HALL
GB075037		29/09/1999 22/03/2001			DWR GWP AG RESEARCH STATION
GB075038		29/09/1999 22/03/2001			DWR GWP AG RESEARCH STATION
GB075040		29/09/1999 22/03/2001			DWR GWP AG RESEARCH STATION
GB075041		29/09/1999 22/03/2001			DWR GWP AG RESEARCH STATION
GB081000		21/07/1999 09/02/2007		T	DWR GWP ALSTNVL STH SHALLOW
GB081001		21/07/1999 08/02/2007		T	DWR GWP ALSTNVL STH DEEP
GB081002		21/07/1999 08/02/2007		T	DWR GWP ALSTNVL CENTL DEEP
GB081003		21/07/1999 08/02/2007		T	DWR GWP ALSTNVL CENTL MEDIUM
GB081004		22/07/1999 04/07/2001			04/07/2001 DWR GWP ALSTNVL CENTL SHALOW
GB081005		20/07/1999 05/02/2007		T	DWR GWP ALSTNVL NTH DEEP

GB081006	20/07/1999 05/02/2007	T	DWR GWP	ALSTNVL NTH SHALLOW
GB081007		14/03/2000	DWR GWP	HEATHER - SW CORNER
GB081007	14/03/2000 29/03/2007		DWR GWP	HEATHER - SW CNR No1
GB081007	14/03/2000 29/03/2007		DWR GWP	HEATHER - SW CNR No2
GB081008	14/03/2000 29/03/2007	T C	DWR GWP	FIELDTREE - SOUTH
GB081010	11/12/2001 29/03/2007		DWR GWP	ZYGALSKI-SW CORNER
GB081011	14/03/2000 29/03/2007		DWR GWP	TOLSON - SW CORNER
GB081012	11/12/2001 29/03/2007		DWR GWP	COUNCIL ROAD SOUTH
GB081013	11/12/2001 29/03/2007		DWR GWP	COUNCIL ROAD NORTH
GB081015	14/03/2000 29/03/2007		DWR GWP	WEST OF WETLAND
GB081016	14/03/2000 29/03/2007		DWR GWP	NORTHERN TWS BORE
GB081017	14/03/2000 29/03/2007		DWR GWP	MIDDLE TWS BORE
GB081019	14/03/2000 29/03/2007		DWR GWP	NELSON - SE CORNER
GEINST			DWR ADH	G EVANS INST TECH
GMCHDT			DWR ADH	GMCHDT
GTQHDT		01/01/1900	DWR	Quinns Spares
GW025055	17/11/2005 01/08/2006	T	DWR GWP	Lower Namoi Wee Waa
GW025138	24/02/2005 01/08/2006	T	DWR GWP	Merah North
GW025206	23/10/1999 16/05/2007		DWR	206 [Site 1]
GW025324	24/02/2005 01/03/2006	T	01/03/2006 DWR GWP	Gurleigh Section
GW025327	23/02/2005 01/08/2006	T	DWR GWP	Gurleigh Section
GW025329	23/02/2005 01/08/2006	T	DWR GWP	Gurleigh Section
GW027713	12/10/2006 14/12/2006		DWR GWP	MEADOW BANK
GW030009	16/03/2005 11/09/2006	T	DWR GWP	Upper Namoi Zone 8

GW030130		15/03/2005	DWR GWP	Maules Ck
GW030130	15/03/2005 13/03/2007	T	DWR GWP	Maules Ck
GW030130	15/03/2005 13/03/2007	T	DWR GWP	Maules Ck
\$GW030203	05/09/2001 21/02/2007		DWR GWP	Brennans Lane
\$GW030204	08/07/2004 19/09/2006		DWR GWP	Linbar
\$GW030209	16/06/2002 19/09/2006		DWR GWP	Backwater Rd
GW030236		15/03/2005	DWR GWP	Maules Ck
GW030236	15/03/2005 13/03/2007	T	DWR GWP	Maules Ck
GW030236	15/03/2005 13/03/2007	T	DWR GWP	Maules Ck
GW030274	16/03/2005 11/09/2006	T	DWR GWP	Upper Namoi Zone 8
GW030295	01/03/2006 01/08/2006	T	DWR GWP	Gurleigh Section

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

R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.												
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	y	Date	Org.	Net
			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

GW030344			15/02/2005	01/08/2006													T	DWR GWP	Upper Namoi Zone 4
GW030484			16/12/2005	19/09/2006														DWR GWP	New Grenfell Rd
GW036041			24/02/2005	01/08/2006													T	DWR GWP	Merah North
GW036043			24/02/2005	01/08/2006													T	DWR GWP	Merah North
GW036053			12/07/1999	28/05/2007														DWR	532 [Site 2]
GW036102			14/07/1999	09/05/2007														DWR	102 - [Site 3]
GW036119			07/09/2004	14/02/2007														DWR GWP	Burrundulla
GW036151			17/02/2005	16/08/2006													T	DWR GWP	Upper Namoi Zone 3
GW036152			17/02/2005	16/08/2006													T	DWR GWP	Upper Namoi Zone 3
GW036186			22/04/2005	13/03/2007													T	DWR GWP	Maules CK
GW036201			30/05/2005	15/05/2007														DWR	
GW036215			17/02/2005	16/08/2006													T	DWR GWP	Upper Namoi Zone 3
GW036238			15/02/2005	01/08/2006													T	DWR GWP	Upper Namoi Zone 4
GW036281			23/10/1999	16/05/2007														DWR	Site 4

GW036282	23/10/1999 22/02/2007		DWR	Site 5
GW036283		DWR		
GW036303	23/10/1999 16/05/2007		DWR	Site 6
GW036306	11/07/1999 17/05/2007		DWR	Site 7
GW036354	11/07/1999 16/05/2007		DWR	Site 8
GW036356	11/07/1999 16/05/2007		DWR	Site 9
GW036376	23/10/1999 17/05/2007		DWR	762 [10]
GW036489	15/02/2005 01/08/2006	T	DWR GWP	Upper Namoi Zone 4
GW036500	04/11/2005 20/09/2006		DWR GWP	Back Ck South
GW036501	10/11/2005 20/09/2006		DWR GWP	Cowra - Back Ck Nth
GW036502	16/06/2002 14/03/2007		DWR GWP	Orange Rd West
GW036504	10/05/2001 09/07/2001		09/07/2001 DWR	WEIR POOL @ MDA
GW036553	06/12/2005 20/09/2006		DWR GWP	Burcher Rd
GW036582	09/07/1999 07/06/2007		DWR	822 [11]
GW036584	11/07/1999 08/06/2007		DWR	Yantara
GW036585	29/03/2007 26/04/2007		DWR	
GW036586		DWR		
GW036587	13/12/2006 31/05/2007		DWR	
GW036588	09/07/1999 18/04/2007		DWR	Bullatale
GW036597	23/03/2006 21/02/2007		DWR GWP	MARSDEN WEST
GW036611	07/12/2005 20/09/2006		DWR GWP	Marsden East
GW036635	10/07/1999 28/05/2007		DWR	4 Corners
GW036638	10/07/1999 28/05/2007		DWR	Morrawanga
GW036697	27/07/2005 27/03/2006	T	DWR GWP	Border Rivers/Keetah

GW036742	27/03/2007 30/05/2007		DWR	
GW036743	10/07/1999 31/05/2007		DWR	36743
GW036743	10/07/1999 31/05/2007		DWR	36743
GW036744	12/07/1999 26/04/2007		DWR	McAlister
GW036747	13/07/1999 01/05/2007		DWR	Waliston
GW036765	09/07/1999 23/04/2007		DWR	CALIVIL
GW036766	13/07/1999 17/04/2007		DWR	CALIVIL
GW036769	14/07/1999 08/05/2007		DWR	CALIVIL
GW036782	14/12/1995 07/02/2007		DWR	NOOLA STN @ LK VIC
GW036806	14/12/1991 21/03/2007	T	DWR	GW036806
GW036807	10/12/1991 21/03/2007	T	DWR	GW036807

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.														
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net	
			Starts		Starts		Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

GW036809			27/08/1989	15/02/2007															DWR	36809 @ ELLERSLIE
GW036810			26/11/1998	16/12/2005															DWR	BURTUNDY
GW036811			26/11/1998	21/02/2007															DWR	LETHERO
GW036812			16/02/1998	16/03/2006															DWR	BONO @ MENINDEE
GW036813			28/08/1989	15/03/2006															DWR	GOLF COURSE @ MENIND
GW036814			17/02/1998	13/03/2006															DWR	CAWNDILLA @ MENINDEE
GW036815			17/02/1998	27/05/2007															DWR	TANDOU @ MENINDEE
GW036816			17/02/1998	25/07/2006															DWR	TANDOU @ MENINDEE
GW036818			30/11/1998	21/02/2007															DWR	POPILTAH
GW036819			30/11/1998	21/02/2007															DWR	WATARA
GW036820			26/02/1998	21/02/2007															DWR	KELLEEN
GW036821			15/07/1999	08/05/2007															DWR	SHEPPARTON
GW036824			14/07/1999	09/05/2007															DWR	SHEPPARTON
GW036836			05/06/1992	21/03/2007														T	DWR	GW036836

GW036837	11/12/1991 16/03/2006		DWR	36837 @ MENINDEE.
GW036839	14/12/1991 20/03/2007	T	DWR	GW036839
GW036841	14/12/1991 20/03/2007	T	DWR	GW036841
GW036842	05/06/1992 20/03/2007	T	DWR	GW036842
GW036851	23/05/1996 08/02/2007		DWR	TALGARRY @ LK VIC
GW036852	03/01/1992 07/12/2006	T	DWR	GW036852
GW036853	20/12/1991 23/11/2006	T	DWR	GW036853
GW036856	26/06/1993 14/03/2007		DWR	MALLEE CLIFFS
GW036857	08/05/1994 22/03/2007		DWR	MALLEE CLIFFS
GW036857	25/08/1994 22/03/2007		DWR	MALLEE CLIFFS
GW036858	11/04/1994 21/03/2007		DWR	@ MALLEE CLIFFS BASI
GW036858	15/12/1992 21/03/2007		DWR	@ MALLEE CLIFFS BASI
GW036871	14/07/1999 08/05/2007		DWR	CALIVIL
GW036876	02/04/2007 24/04/2007		DWR	
GW036880	15/04/1994 05/05/2006		DWR	MALLEE CLIFFS
GW036880	24/08/1994 18/01/2007		DWR	MALLEE CLIFFS
GW036882	09/06/1992 06/03/2007	T	DWR	GW036882
GW036883	31/12/1991 06/12/2005	T	DWR	GW036883
GW036884	23/12/1991 06/03/2007	T	DWR	GW036884
GW036885	09/06/1992 06/03/2007	T	DWR	GW036885
GW036891	14/04/1999 15/03/2006		DWR	TALYAWALKA CK @ MENI
GW036891	14/04/1999 15/03/2006		DWR	TALYAWALKA CK @ MENI
GW036907	30/12/1991 05/03/2007	T	DWR	GW036907
GW036909	31/12/1991 06/03/2007	T	DWR	GW036909

GW036934	09/08/1993 23/11/2006	T	DWR	GW036934
GW036937	09/08/1993 23/11/2006	T	DWR	GW036937
GW036938	07/05/1994 22/03/2007		DWR	MALLEE CLIFFS
GW036938	16/12/1993 22/03/2007		DWR	MALLEE CLIFFS
GW036940	18/06/1998 22/03/2007		DWR	MALLEE CLIFFS
GW036940	18/06/1998 22/03/2007		DWR	MALLEE CLIFFS
GW036943	15/04/1994 21/03/2007		DWR	MALLEE CLIFFS
GW036943	16/04/1994 21/03/2007		DWR	MALLEE CLIFFS
GW036944	16/12/1992 21/03/2007		DWR	MALLEE CLIFFS
GW036945	26/08/1994 22/03/2007		DWR	MALLEE CLIFFS
GW036955	15/12/1992 22/03/2007		DWR	MALLEE CLIFFS

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.													
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net
			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g		Code	Class	NAME

GW036966			09/04/1999	08/02/2007														DWR	TALGARRY @ LK VIC	
GW036967			19/12/1995	29/05/2007														DWR	TANDOU @ MENINDEE	
GW036982			31/03/1995	14/03/2006														DWR	SNAKE ISLAND	
GW036982			31/03/1995	14/03/2006														DWR	SNAKE ISLAND	
GW036990			18/12/1995	19/04/2005											19/04/2005		DWR	MENINDEE		
GW036991			20/12/1995	19/04/2005														DWR	MENINDEE	
GW036992			18/12/1995	29/05/2007														DWR	MENINDEE	
GW036993			15/04/1999	28/05/2007														DWR	MENINDEE	
\$GW039001			07/06/1999	06/03/2007														DWR GWP	THE RANCH	
GW039002																		DWR GWP	The Ranch 2	
GW039003																		DWR GWP	Yarranung 1	
GW039004																		DWR GWP	Yarranung 2	
GW039005																		DWR GWP	Yarranung 3	
GW039006																		DWR GWP	Tarraganda Lane 1	

GW039007		DWR GWP	Tarraganda Lane 2
GW039008		DWR GWP	Tarraganda Lane 3
GW039009		DWR GWP	Daisy Bank
GW039010		DWR GWP	Daisy Bank 2
GW039011		DWR GWP	Allawah
GW039012		DWR GWP	Warraguburra 1
GW039013		DWR GWP	Warraguburra 2
GW039014		DWR GWP	Warraguburra 3
GW039019		DWR GWP	Jellat Jellat 1
GW039020		DWR GWP	Jellat Jellat 2
GW039021		DWR GWP	Jellat Jellat 3
GW039022		DWR GWP	Jellat Jellat 4
GW039023		DWR GWP	Betunga Swamp 1
GW039024		DWR GWP	Penooka Swamp 1
GW039025		DWR GWP	Penooka Swamp 3
GW039026		DWR GWP	Penooka Swamp 2
GW039027		DWR GWP	Betunga Swamp 2
GW039054		DWR GWP	Penooka Swamp 4
GW039055		DWR GWP	Betunga Swamp 3
GW039056		DWR GWP	Betunga Swamp 4
GW039384	16/10/2003 22/12/2003	DWR	LUMOB
GW040354	26/02/1998 21/02/2007	DWR	HAZELDELL
GW040357	26/02/1998 21/02/2007	DWR	HAZELDELL
GW040375	18/04/2005 09/06/2005	DWR GWP	40375 @ Tandou

GW040482		DWR			
GW040506	19/12/2006 09/02/2007	T	DWR GWP	Alstonville	
GW040771	27/07/2005 02/08/2006	T	DWR GWP	Bord/Rivers Tarwoona	
GW040795	20/12/1995 05/10/2004		DWR	MENINDEE	
GW040795	05/10/2004 12/09/2005		DWR	MENINDEE	
GW040797	19/12/1995 05/10/2004		DWR	MENINDEE	
GW040797	05/10/2004 14/03/2006		DWR	MENINDEE	
GW040798	19/12/1995 13/03/2006		DWR	MENINDEE	
GW040799	19/12/1995 18/04/2005		DWR	MENINDEE	
GW040799	18/04/2005 29/05/2007		DWR	MENINDEE	
GW040802	19/12/1995 12/12/2003		19/04/2005 DWR	MENINDEE	

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.												
Number	Start	End	Start	End	First	Last	Last of of	i	m	m	n	r	p	n	y	Date	Org.	Net	
			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

GW040802			19/12/1995	12/12/2003												19/04/2005	DWR	MENINDEE	
GW040805			20/12/1995	19/02/1998												01/07/1999	DWR	MENINDEE	
GW040805			20/12/1995	19/02/1998													DWR	MENINDEE	
GW040806			20/12/1995	22/04/2005												22/04/2005	DWR	MENINDEE	
GW040807			18/12/1995	06/10/2004												19/04/2005	DWR	MENINDEE	
GW040807			06/10/2004	19/04/2005												19/04/2005	DWR	MENINDEE	
GW040808			20/12/1995	19/04/2005													DWR	MENINDEE	
GW040808			19/04/2005	13/03/2006													DWR	MENINDEE	
GW040809			15/06/1998	22/03/2007													DWR	MALLEE CLIFFS	
GW040831			27/07/2005	02/08/2006													DWR	GWP	Border Rvrs/Lochiel
GW040837			14/04/1999	29/05/2007													DWR	EMU LK @	MENINDEE
GW040838			15/04/1999	13/03/2006													DWR	LK CAWNDILLA @	MENIN
GW040839			15/04/1999	20/04/2005												20/04/2005	DWR	LK MENINDEE @	MENIND
GW040872			02/05/2003	28/07/2004													DWR	GW040872	

GW040873	04/05/2003 28/07/2004	T	DWR	GW040873
GW040874	04/05/2003 17/02/2005	T	DWR	GW040874
GW040875		DWR		
GW040892	04/05/2003 26/05/2005	T	DWR	GW040892 @ WILCANNIA
GW040947	24/02/2005 11/12/2006		DWR	Walbunderie
GW040948	25/02/2005 02/08/2006		DWR	Wabunderie
GW040959	30/11/2006 29/03/2007		DWR GWP	Carinya
GW040960	30/11/2006 30/03/2007		DWR GWP	Hollydeen
GW040961	30/11/2006 30/03/2007		DWR GWP	River View
GW040962		DWR GWP	Baerami House	
GW040963		DWR GWP	1590 Bylong Valley	
GW040964		DWR GWP	Pleasant View	
GW040965	30/11/2006 30/03/2007		DWR GWP	Stairs Road
GW040979	23/02/2006 28/03/2007		DWR	Please enter
GW040999	10/01/2006 08/02/2007	T	DWR GWP	Marom Creek
GW040999	16/01/2006 08/02/2007	T	DWR	Marom Creek Weir
GW041000	18/12/2006 20/12/2006	T	DWR GWP	Lumney Park
GW041000	18/12/2006 20/12/2006	T	DWR GWP	Convery Lane
GW041001	11/01/2006 20/12/2006	T	DWR GWP	Lumney Park
GW041001	11/01/2006 20/12/2006	T	DWR GWP	Lumney Cutting
GW041002	19/12/2006 20/12/2006	T	DWR GWP	Boatharbour
GW041003	11/01/2006 08/02/2007	T	DWR GWP	Fernleigh
GW041003	11/01/2006 08/02/2007	T	DWR GWP	Fernleigh
GW041004	11/01/2006 08/02/2007	T	DWR GWP	Nashua

GW041004	11/01/2006 08/02/2007	T	DWR GWP Nashua
GW041005	12/01/2006 08/02/2007	T	DWR GWP Duck Creek
GW041007	19/12/2006 08/02/2007	T	DWR GWP Eltham
GW041007	19/12/2006 08/02/2007	T	DWR GWP Eltham
GW041008	19/12/2006 20/12/2006	T	DWR GWP Corndale
GW041008	19/12/2006 20/12/2006	T	DWR GWP Corndale
GW041014	01/08/2006 29/03/2007	T	DWR BOWRAVIL BORE NO. 14
GW041015	01/08/2006 29/03/2007	T	DWR BOWRAVIL BORE NO. 15
GW041016	01/08/2006 29/03/2007	T	DWR BOWRAVIL BORE NO. 16
GW041017	01/08/2006 29/03/2007	T	DWR BOWRAVIL BORE NO. 17
GW041018	01/08/2006 29/03/2007	T	DWR BOWRAVIL BORE NO. 18

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.										Org. Net	
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	y	Date	Org. Net
			Starts	Starts	Tab	Starts	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code Class NAME
GW041019			01/08/2006	29/03/2007					T								DWR	BOWRAVIL BORE NO. 19
GW042158			04/05/1999	31/10/2006					T								DWR GWP	BOTANY @ MOORE GOLF
GW042161			14/03/2000	31/10/2006					T								DWR GWP	BOTANY @ EASTLAKES
GW042402			04/01/1992	15/09/2005					T								DWR	GW042402
GW042404			04/01/1992	31/08/2006					T								DWR	GW042404
GW042406			22/02/1994	24/02/2001													DWR	GW042406
GW042414			09/08/1993	07/12/2006					T								DWR	GW042414
GW042416			03/01/1992	13/07/2005													DWR	GW042416
GW042418			19/12/1991	07/12/2006					T								DWR	GW042418
GW042420			04/06/1996	07/12/2006					T								DWR	GW042420
GW042421			17/07/1999	24/02/2005													DWR	GW042421
GW042423			09/08/1993	07/12/2006					T								DWR	GW042423
GW042425			04/06/1996	31/08/2006					T								DWR	GW042425
GW060354			03/05/2005	02/08/2006					T								DWR GWP	ZONE 1A

GW064051	04/11/1993 25/09/2006		DWR GWP	Westys
GW065976	19/01/2006 16/12/2006	T	DWR GWP	Bewers Hill
GW066742			DWR GWP	
GW075000	28/11/1997 27/11/2006	T	DWR GWP	HEARSESD RD 1
GW075000	05/02/1998 27/11/2006	T	DWR GWP	HEARSESD RD 2
GW075000	05/02/1998 27/11/2006	T	DWR GWP	HEARSESD RD 3
GW075001	03/12/1997 27/11/2006	T	DWR GWP	TELEGRAPH RD.
GW075002	11/02/1998 27/11/2006	T	DWR GWP	MARKET GARDENS #1
GW075002	11/02/1998 27/11/2006	T	DWR GWP	MARKET GARDENS #2
GW075003	11/02/1998 27/11/2006	T	DWR GWP	MARROTA COTTAGE A.
GW075004	04/02/1998 27/11/2006	T	DWR GWP	MARROTA COTTAGE B.
GW075005	25/05/1999 21/09/2005		DWR GWP	LEURA @ DARWIN RD #1
GW075005	16/09/1997 11/07/2006		DWR GWP	LEURA @ DARWIN RD #2
GW075006	16/09/1997 11/04/2006		DWR GWP	LEURA @ SINCLAIR CR1
GW075006	16/09/1997 11/04/2006		DWR GWP	LEURA @ SINCLAIR CR2
GW075007	16/07/1998 11/07/2006		DWR GWP	LEURA @ GOLF COURSE1
GW075007	29/01/1998 11/07/2006		DWR GWP	LEURA @ GOLF COURSE2
GW075009	17/03/1995 20/09/2006		DWR GWP	RMB1310-Calga
GW075010	27/10/1994 05/04/2005		DWR GWP	RMB1535- Peats Ridge
GW075011			DWR GWP	Rickabys Creek Bore1
GW075011			DWR GWP	Rickabys Creek Bore2
GW075011			DWR GWP	Rickabys Creek Bore3
GW075012	29/09/1999 22/03/2007		DWR GWP	Ag Station 1
GW075013	13/08/1998 15/06/2006	T	DWR GWP	Nicklins

GW075014	04/03/1999 28/11/2006		DWR GWP Fabian
GW075015	11/08/1998 09/11/2006		DWR GWP Amber Park
GW075016	11/08/1998 14/06/2006		DWR GWP Hall
GW075017	04/03/1999 31/10/2006	T	DWR GWP BOTANY @ AUST GOLF
GW075018	04/03/1999 31/10/2006	T	DWR GWP BOTANY @ RACECOURSE
GW075019	04/03/1999 31/10/2006	T	DWR GWP BOTANY @ PAPER MILL
GW075020	04/03/1999 31/10/2006	T	DWR GWP BOTANY @ HEFRON PARK
GW075021	05/03/1999 31/10/2006	T	DWR GWP BOTANY @ KENSINGTON
GW075022	10/03/1999 31/10/2006	T	DWR GWP BOTANY @ BORALEE PK.
GW075023	12/05/2005 31/10/2006	T	DWR GWP BOTANY @ L ESTRANGE
GW075024	10/03/1999 31/10/2006	T	DWR GWP BOTANY @ MASCOT OVAL

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R A W C T W H O

Station	Flows	Heights	Ratings	No. No. a t t o u i u x Discont.	
Number	Start	End	Start	End	First Last Last of of i m m n r p n m y Date Org. Net
			Starts	Starts	Tab Tabs Gaug n p p d b H d d g Code Class NAME
GW075025		04/03/1999 31/10/2006			T DWR GWP BOTANY @ ROWLAND PK.
GW075026		16/03/1999 30/11/2006			T DWR GWP ARALUEN @ HARRISONS
GW075027		16/03/1999 30/11/2006			T DWR GWP ARALUEN Town Hall #1
GW075027		16/03/1999 30/11/2006			T DWR GWP ARALUEN Town Hall #2
GW075028		16/03/1999 30/11/2006			T DWR GWP BOURKETOWN #1
GW075028		16/03/1999 30/11/2006			T DWR GWP BOURKETOWN #2
GW075029		25/06/1999 30/11/2006			T DWR GWP Charlie Harrison #1
GW075029		25/06/1999 30/11/2006			T DWR GWP Charlie Harrison #2
GW075030		24/06/1999 30/11/2006			T DWR GWP ARALUEN @ FIRE STN.
GW075031		24/06/1999 30/11/2006			T DWR GWP ARALUEN @ MAIN RD.
GW075032		04/02/1999 14/11/2006			T DWR GWP STHN HIGH @ STP
GW075032		04/02/1999 15/02/2007			T DWR GWP STHN HIGH @ STP
GW075033		04/02/1999 14/11/2006			T DWR GWP STHN HIGH @ PUMPHOUS
GW075033		04/02/1999 14/11/2006			T DWR GWP STHN HIGH @ PUMPHOUS

GW075034	05/02/1999 14/11/2006	T	DWR GWP	STHN HIGH @ AERO CLU
GW075035	04/02/1999 14/11/2006	T	DWR GWP	STHN HIGH @ BOX VALE
GW075036	05/02/1999 15/02/2007	T	DWR GWP	STHN HIGH @ MONTROSE
GW075038	29/09/1999 16/06/2006		DWR GWP	Ag Station 2
GW075046	18/07/2001 23/11/2006	T	DWR GWP	DUCKHOLE LAGOON BORE
GW075047	30/05/2001 23/11/2006	T	DWR GWP	KINGSWOOD BORE
GW075048	15/06/2001 23/11/2006	T	DWR GWP	#1 BORE @ RIVERSIDE
GW075048	10/06/2001 23/11/2006	T	DWR GWP	#2 BORE @ RIVERSIDE
GW075049	09/07/2001 23/11/2006	T	DWR GWP	JELGOWRY BORE
GW075050	31/05/2001 23/11/2006	T	DWR GWP	#1 BORE THE MEADOWS
GW075050	07/06/2001 23/11/2006	T	DWR GWP	#2 BORE THE MEADOWS
GW075051	19/07/1999 01/05/2000		DWR GWP	CURRANS @ VULCAN #1
GW075051	19/07/1999 01/05/2000		DWR GWP	CURRANS @ VULCAN #2
GW075052	19/07/1999 01/05/2000		28/05/2002 DWR GWP	CURRANS @ DOWNES CR
GW075053	19/07/1999 01/05/2000		DWR GWP	CURRANS @ THOMAS WY
GW075054	19/07/1999 01/05/2000		01/05/2000 DWR DISC	CURRANS @ MOORE PL
GW075055			DWR GWP	CURRANS HILL @ ORTON
GW075056	20/07/1999 05/05/2000		DWR GWP	CURRANS @ OUTRAM #1
GW075056	20/07/1999 05/05/2000		DWR GWP	CURRANS @ OUTRAM #2
GW075057	20/07/1999 05/05/2000		DWR GWP	Vale Circuit #1
GW075057	20/07/1999 05/05/2000		DWR GWP	Vale Circuit #2
GW075058	20/07/1999 05/05/2000		DWR GWP	CURRANS @ ORIELTON R
GW075059	23/04/2002 31/10/2006	T	DWR GWP	BOTANY@ SCARBOROUGH
GW075060	24/04/2002 31/10/2006	T	DWR GWP	BOTANY @ ABBOTTS E

GW075061	24/04/2002 31/10/2006	T	DWR GWP	BOTANY @ ABBOTTS W
GW075062	24/04/2002 31/10/2006	T	DWR GWP	BOTANY @ MARTON PARK
GW075063	23/04/2002 31/10/2006	T	DWR GWP	BOTANY @ TONBRIDGE
GW075064	30/08/2001 11/08/2004		DWR GWP	CECIL HILLS @ SITE 1
GW075065	30/08/2001 11/08/2004		DWR GWP	CECIL HILLS @ SITE 2
GW075066	30/08/2001 11/08/2004		DWR GWP	CECIL HILLS @ SITE 3
GW075067	30/08/2001 11/08/2004	T C	DWR GWP	CECIL HILLS @ SITE 4
GW075068	30/08/2001 20/08/2002	T C	DWR GWP	CECIL HILLS @ SITE 5
GW075069	30/08/2001 18/12/2001	T C	DWR GWP	GLENMORE @ SOFTBALL
GW075070	30/08/2001 06/02/2003	T C	DWR GWP	GLENMORE @ RESERVE
GW075071	30/08/2001 06/02/2003	T C	DWR GWP	GLENMORE @ ENGLEWOOD

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R A W C T W H O

Station	Flows	HEIGHTS	RATINGS	No. No. a t t o u i u x Discont.								
Number	Start	End	Start	End	First	Last	Last of of	i m m n r p n m y	Date	Org.	Net	
			Starts	Starts	Tab	Tab	Gaug	n p p d b H d d g		Code	Class	NAME
GW075072		30/08/2001	06/02/2003					T C		DWR GWP	GLENMORE @ THUNDER	
GW075073		30/08/2001	06/02/2003					T		DWR GWP	GLENMORE @ LAKESIDE	
GW075074		30/08/2001	03/06/2003					T C		DWR GWP	GLENMORE @ GLENGARRY	
GW075075		30/08/2001	06/02/2003					T C		DWR GWP	GLENMORE @ BLUE HILL	
GW075076		30/08/2001	06/02/2003					T C		DWR GWP	OXLEY @ EDMONDSON AV	
GW075077		30/08/2001	06/02/2003					T C		DWR GWP	OXLEY @ SCHOOL	
GW075078		30/08/2001	02/06/2003					T C	06/02/2003	DWR DISC	OXLEY @ WHITCROFT PL	
GW075079										DWR GWP	Cranebrook Park #1	
GW075079										DWR GWP	Cranebrook Park #2	
GW075080										DWR GWP	Glossodia	
GW075081										DWR GWP	Glossodia @ Meadows	
GW075082										DWR GWP	OXLEY @ WHITCROFT 2	
GW075083										DWR GWP	Lakeside No.3	
GW075084										DWR GWP	Lakeside No.2	

GW075085		DWR GWP	Lakeside No.1
GW075086		DWR GWP	Mandalong Tce
GW075087		DWR GWP	Nada Place
GW075088		DWR GWP	Blue Hills R/about
GW078004		DWR GWP	
GW079055	15/01/2001 29/03/2007	DWR GWP	Wollombi 1
GW079056	15/01/2001 29/03/2007	DWR GWP	Wollombi 2
GW079057	15/01/2001 29/03/2007	DWR GWP	Broke 1
GW079058	15/01/2001 29/03/2007	DWR GWP	Broke 2
GW079059	13/01/2001 29/03/2007	DWR GWP	Warkworth 1
GW079060	13/01/2001 29/03/2007	DWR GWP	Warkworth 2
GW080068	12/01/2001 08/09/2005	DWR GWP	Parkville 1
GW080069	12/01/2001 30/03/2006	DWR GWP	Parkville 2
GW080070	12/01/2001 04/01/2007	DWR GWP	Fresh Meats
GW080071	12/01/2001 03/01/2007	DWR GWP	Flame Tree 1
GW080072	12/01/2001 03/01/2007	T	DWR GWP Flame Tree 2
GW080073	12/01/2001 04/01/2007	DWR GWP	Little Fields
GW080074	12/01/2001 27/09/2005	DWR GWP	Turanville
GW080075	13/01/2001 21/08/2006	DWR GWP	Gnorang 1
GW080076	13/01/2001 20/04/2006	DWR GWP	Gnorang 2
GW080077	13/01/2001 21/08/2006	DWR GWP	Model Farm
GW080078	13/01/2001 21/08/2006	DWR GWP	Esmal
GW080079	05/12/2002 15/02/2007	DWR GWP	William Town
GW080080	06/12/2002 27/03/2007	DWR GWP	Shoal Bay

GW080081	11/03/2003 27/03/2007		DWR GWP	Soldiers Point
GW080082	08/08/2006 15/02/2007		DWR GWP	Tomaree
GW080083	06/12/2002 27/03/2007		DWR GWP	Anna Bay 1
GW080084	11/03/2003 27/03/2007		DWR GWP	Tanilba Bay
GW080163	12/06/2002 04/04/2007	T	DWR GWP	Hitchcock 1
GW080164	09/12/2002 04/04/2007	T	DWR GWP	Hitchcock 2
GW080165	12/06/2002 16/06/2006		DWR GWP	Somersby falls 1
GW080166	12/06/2002 16/06/2006		DWR GWP	Somersby Falls 2
GW080167	12/06/2002 04/04/2007		DWR GWP	Dupille
GW080168	12/06/2002 16/06/2006		DWR GWP	Somersby Falls 3
GW080359	06/12/2002 07/09/2004		DWR GWP	Anna Bay 2

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.												
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	y	Date	Org.	Net
			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

GW080414			31/08/2004	28/05/2007					T								DWR GWP	jakes	
GW080415			31/08/2004	28/05/2007					T C								DWR GWP	jakes	
GW080416			31/08/2004	25/08/2006					T								DWR GWP	jakes	
GW080433			27/06/2003	08/01/2006					T								DWR GWP	Nandowra	
GW080434			27/06/2003	29/03/2007					T								DWR GWP	Wybong	
GW080436			27/06/2003	12/07/2006					T								DWR GWP	Allan Bridge	
GW080437			27/06/2003	12/07/2006					T								DWR GWP	Dartbrook	
GW080438			27/06/2003	27/09/2005					T								DWR GWP	Bellrive	
GW080439			27/06/2003	27/09/2005					T								DWR GWP		
GW080932			26/10/2005	14/05/2007					T								DWR GWP	jakes	
GW080933			18/10/2005	14/05/2007					T								DWR GWP	docs	
GW080935			18/10/2005	25/07/2006					T								DWR GWP	GW080935	
GW080944			06/07/2006	23/05/2007					T								DWR GWP		
GW080945			04/07/2006	23/05/2007					T								DWR GWP		

GW080946	04/07/2006 23/05/2007	T	DWR GWP	
GW080947	05/07/2006 23/05/2007	T	DWR GWP	
GW080948	04/07/2006 23/05/2007	T	DWR GWP	
GW080958			DWR GWP	
GW080964	03/07/2006 07/05/2007	T	DWR GWP	
GW080965	03/07/2006 07/05/2007	T	DWR GWP	
GW080967	30/06/2006 07/05/2007	T	DWR GWP	
GW080972			DWR GWP	
GW080976	27/10/2006 08/05/2007	T	DWR GWP	Miller Park
GW080979	14/08/2006 07/05/2007	T	DWR GWP	
GW080980	29/06/2006 07/05/2007	T	DWR GWP	
GW081023	06/04/2001 02/02/2004		DWR	
GW081024	14/10/2001 02/02/2004		DWR	mrgde22
GW081029	14/10/2001 02/02/2004		DWR	mrgde15
GW081030	19/12/2000 02/02/2004		DWR	mrgde14
GW081032	19/12/2000 02/02/2004		DWR	mrgde12
GW081033	06/04/2001 02/02/2004		DWR GWP	mrgde11
GW081037	13/10/2001 01/02/2004		DWR GWP	mrgde7
GW081039	31/07/2001 02/02/2003		DWR GWP	mrgde5
GW081040	27/04/2003 02/02/2004		DWR GWP	
GW081044			DWR GWP	Tuckean swamp
GW081048	06/02/2002 07/02/2007	T	DWR GWP	SHALLOW
GW081049	06/02/2002 07/02/2007	T	DWR GWP	MEDIUM
GW081050	06/02/2002 07/02/2007	T	DWR GWP	DEEP

GW081059	06/02/2002 07/02/2007	T	DWR GWP DEEP
GW081060	06/02/2002 07/02/2007	T	DWR GWP SHALLOW
GW081063	06/02/2002 07/02/2007	T	DWR GWP SWAMP
GW081065	05/09/1999 08/11/2003	R	DWR mrgw1
GW081066	24/04/2000 08/11/2003		DWR mrgw2
GW087087	21/05/1997 28/02/2007		DWR EUSTON
GW087091	16/12/1997 28/02/2007		DWR EUSTON
GW087095	16/12/1997 28/02/2007		DWR EUSTON
GW087098	16/12/1997 02/04/2007		DWR EUSTON
GW087099	16/12/1997 28/02/2007		DWR EUSTON
GW087107	16/12/1997 28/02/2007		DWR MEILMAN

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R A W C T W H O

Station FLOWS HEIGHTS RATINGS No. No. a t t o u i u x Discont.

Number Start End Start End First Last Last of of i m m n r p n m y Date Org. Net

Starts Starts Tab Tabs Gaug n p p d b H d d g Code Class NAME

GW087108			16/12/1997	28/02/2007											DWR	MEILMAN
GW087112			16/12/1997	28/02/2007											DWR	MEILMAN
GW087113			16/12/1997	09/07/2006											DWR	MEILMAN
GW087114			16/12/1997	20/04/2006											DWR	MEILMAN
GW087222			10/05/2001	09/07/2001											DWR	WEIR POOL @ MDA
GW087230			24/06/1998	14/03/2007											DWR	MALLEE CLIFFS
GW087231			24/06/1998	14/03/2007											DWR	MALLEE CLIFFS
GW087231			24/06/1998	14/03/2007											DWR	MALLEE CLIFFS
GW087236			24/06/1998	14/03/2007											DWR	MALLEE CLIFFS
GW087236			24/06/1998	14/03/2007											DWR	MALLEE CLIFFS
GW087272			11/05/2001	09/07/2001										09/07/2001	DWR	WEIR POOL @ MDA
GW087285			11/05/2001	10/07/2001										10/07/2001	DWR	WEIR POOL @ MDA
GW087343			12/05/2001	18/12/2006										10/07/2001	DWR	WEIR POOL @ MDA
GW087345			09/05/2001	09/07/2001										09/07/2001	DWR	WEIR POOL @ MDA

GW087345	09/05/2001 09/07/2001	09/07/2001 DWR	WEIR POOL @ MDA
GW087522	07/05/2001 09/07/2001	09/07/2001 DWR	WEIR POOL @ MDA
GW087580	10/04/1999 22/11/2001	22/11/2001 DWR	NOOLA @ LK VIC
GW087581	10/04/1999 07/02/2007	DWR	NOOLA @ LK VIC
GW087582	10/04/1999 07/02/2007	DWR	NOOLA @ LK VIC
GW087696	17/06/1998 22/03/2007	DWR	MALLEE CLIFFS
GW087696	17/06/1998 24/12/2004	DWR	MALLEE CLIFFS
GW087727	10/04/1999 26/04/2002	01/10/2002 DWR	MOORNA @ LK VIC
GW087727	01/10/2002 30/01/2007	DWR	MOORNA @ LK VIC
GW087729	09/04/1999 08/02/2007	DWR	TALGARRY @ LK VIC
GW087729	09/04/1999 08/02/2007	DWR	TALGARRY @ LK VIC
GW087732	17/06/1998 22/03/2007	DWR	MALLEE CLIFFS
GW087735	02/10/1995 06/09/1996	12/08/1999 DWR WQR	Mallee Cliffs
GW087735	02/10/1995 06/09/1996	12/08/1999 DWR WQR	Mallee Cliffs
GW087736	17/06/1998 22/03/2007	DWR	MALLEE CLIFFS
GW087747	17/12/1995 08/02/2007	DWR	TALGARRY @ LK VIC
GW087747	17/12/1995 08/02/2007	DWR	TALGARRY @ LK VIC
GW087748	09/04/1999 21/06/2006	DWR	TALGARRY @ LK VIC
GW087748	09/04/1999 29/09/2006	DWR	TALGARRY @ LK VIC
GW087749	09/04/1999 08/02/2007	DWR	TALGARRY @ LK VIC
GW087754	28/11/2001 16/10/2002	16/10/2002 DWR	NULLA @ LK VIC
GW087754	16/10/2002 08/02/2007	DWR	NULLA @ LK VIC
GW087755	17/12/1995 17/10/2002	17/10/2002 DWR	NULLA @ LK VIC
GW087755	17/10/2002 08/02/2007	DWR	NULLA @ LK VIC

GW087756	17/12/1995 29/04/2002	10/10/2003 DWR	NULLA @ LK VIC
GW087756	25/06/2003 08/02/2007	DWR	NULLA @ LK VIC
GW087757	22/08/1995 01/07/2004	01/07/2004 DWR	BASIN @ M/CLIFFS
GW087760	23/08/1995 01/07/2004	01/07/2004 DWR	M/CLIFFS
GW087786	05/10/1997 20/04/2005	20/04/2005 DWR	APPIN @ MENINDEE
GW087787	13/04/1999 15/03/2006	DWR	WINDALLE @ MENINDEE
GW087788	03/10/1997 15/03/2006	DWR	MAIN WEIR @ MENINDEE
GW087788	03/10/1997 15/03/2006	DWR	MAIN WEIR @ MENINDEE
GW087789	13/04/1999 15/03/2006	DWR	WINDALLE @ MENINDEE
GW087790	14/04/1999 16/03/2006	DWR	LK BIJIJIE @ MENINDEE
GW087790	14/04/1999 12/02/2006	DWR	LK BIJIJIE @ MENINDEE

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Station	Flows	Heights	Ratings	No. No. a t t o u i u x Discont.
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Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net
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Starts	Starts	Tab	Tabs	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME
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GW087790	14/04/1999	15/03/2006		DWR	LK BIJIJIE @ MENINDE
GW087791	06/10/1997	15/03/2006		DWR	LK BIJIJIE @ MENINDE
GW087791	06/10/1997	16/03/2006		DWR	LK BIJIJIE @ MENINDE
GW087792	06/10/1997	16/03/2006		DWR	LK TANDURE @ MENINDE
GW087792	06/10/1997	16/03/2006		DWR	LK TANDURE @ MENINDE
GW087793	05/10/1997	21/04/2005	21/04/2005	DWR	WINDALLE @ MENINDEE
GW087793	05/10/1997	21/04/2005	21/04/2005	DWR	WINDALLE @ MENINDEE
GW087794	12/04/1999	15/03/2006		DWR	WINDALLE @ MENINDEE
GW087794	12/04/1999	15/03/2006		DWR	WINDALLE @ MENINDEE
GW087795	12/04/1999	21/04/2005	21/04/2005	DWR	WINDALLE @ MENINDEE
GW087795	12/04/1999	21/04/2005	21/04/2005	DWR	WINDALLE @ MENINDEE
GW087796	13/04/1999	15/03/2006		DWR	VIEWMONT @ MENINDEE
GW087796	13/04/1999	15/03/2006		DWR	VIEWMONT @ MENINDEE
GW087797	19/02/2000	08/10/2004	21/04/2005	DWR	WINDALLE @ MENINDEE

GW087798	12/04/1999 21/04/2005	21/04/2005 DWR	WINDALLE @ MENINDEE
GW087798	12/04/1999 21/04/2005	21/04/2005 DWR	WINDALLE @ MENINDEE
GW087799	18/02/2000 21/04/2005	21/04/2005 DWR	MENINDEE @ APPIN
GW087800	06/10/1997 16/03/2006	DWR	MENINDEE FRUITS
GW087801	07/10/1997 14/03/2006	DWR	LK PAMAM @ MENINDEE
GW087801	07/10/1997 15/03/2006	DWR	LK PAMAM @ MENINDEE
GW087802	03/10/1997 21/04/2005	21/04/2005 DWR	MENINDEE @ COMMON
GW087802	03/10/1997 21/04/2005	21/04/2005 DWR	MENINDEE @ COMMON
GW087803	03/10/1997 21/04/2005	21/04/2005 DWR	MENINDEE @ COMMON
GW087803	03/10/1997 21/04/2005	21/04/2005 DWR	MENINDEE @ COMMON
GW087804	06/10/1997 16/03/2006	DWR	LK PAMAM @ MENINDEE
GW087804	06/10/1997 16/03/2006	DWR	LK PAMAM @ MENINDEE
GW087805	19/08/2003 14/03/2006	DWR GWP	Weir @ Menindee
GW087805	19/08/2003 14/03/2006	DWR GWP	Weir @ Menindee
GW087806	03/10/1997 15/03/2006	DWR	APPIN @ MENINDEE
GW087806	03/10/1997 16/03/2006	DWR	APPIN @ MENINDEE
GW087807	15/04/1999 14/03/2006	DWR	TANDOU @ MENINDEE
GW087808	15/04/1999 14/03/2006	DWR	TANDOU @ MENINDEE
GW087820	13/11/2002 20/04/2007	DWR GWP	BORE @ LOCK ISLE
GW088117	22/06/1999 04/05/2007	DWR GWP	88117@LkVic
GW088118	22/06/1999 04/05/2007	DWR GWP	88118@LkVic
GW088119	22/06/1999 04/05/2007	DWR GWP	88119@LkVic
GW088120	22/06/1999 25/01/2007	DWR GWP	88120@LkVic
GW088121	22/06/1999 04/05/2007	DWR GWP	88121@LkVic

GW088122	22/06/1999 04/05/2007	DWR GWP 88122@LkVic
GW088123	24/06/1999 05/05/2007	DWR GWP 88123@LkVic
GW088124	24/06/1999 05/05/2007	DWR GWP 88124@LkVic
GW088125	06/07/1999 05/05/2007	DWR GWP 88125@LkVic
GW088126	06/07/1999 05/05/2007	DWR GWP 88126@LkVic
GW088127	06/07/1999 05/05/2007	DWR GWP 88127@LkVic
GW088128	06/07/1999 29/03/2007	DWR GWP 88128@LkVic
GW088129	16/07/1999 03/05/2007	DWR GWP 88129@LkVic
GW088130	16/07/1999 03/05/2007	DWR GWP 88130@LkVic
GW088175	13/10/2006 14/03/2007	DWR 88175 on floodplain
GW088176	13/10/2006 14/03/2007	DWR 88176 on floodplain

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.													
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net
			Starts	Starts	Tab	Starts	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

GW088216			22/11/2001	07/02/2007														DWR	NOOLA @ LK VIC	
GW088217			19/11/2001	07/02/2007														DWR	KULKURNA @ LK VIC	
GW088218			15/11/2001	04/08/2006														DWR	MOORNA @ LK VIC.	
GW088218			15/11/2001	30/01/2007														DWR	MOORNA @ LK VIC.	
GW088219			15/11/2001	30/01/2007														DWR	MOORNA @ LK VIC	
GW088219			15/11/2001	04/08/2006														DWR	MOORNA @ LK VIC	
GW088220			15/11/2001	30/01/2007														DWR	MOORNA @ LK VIC	
GW088220			15/11/2001	30/01/2007														DWR	MOORNA @ LK VIC	
GW088221			21/11/2001	02/02/2007														DWR	LK VIC	
GW088221			21/11/2001	14/06/2006														DWR	LK VIC	
GW088222			22/11/2001	02/02/2007														DWR	LK VIC	
GW088222			22/11/2001	16/06/2006														DWR	LK VIC	
GW088223			21/11/2001	02/02/2007														DWR	LK VIC	
GW088223			21/11/2001	02/02/2007														DWR	LK VIC	

GW088225	21/11/2001 02/02/2007	DWR	LK VIC
GW088246	06/02/2004 17/03/2005	16/03/2005 DWR	GW88246@TulPoint
GW088248	09/02/2004 13/07/2006	DWR	GW088248@OldBurt
GW088250	06/02/2004 06/12/2004	17/03/2005 DWR	GW088250@TulPoint
GW088251	09/02/2004 17/03/2005	DWR	GW088251@OldBurt.
GW088265	10/05/2004 26/04/2007	DWR GWP	88265 @ Dtn
GW088265	13/05/2004 26/04/2007	DWR GWP	88265 @ Dtn
GW088266	14/05/2004 26/04/2007	DWR GWP	88266 @ Dtn
GW088266	14/05/2004 26/04/2007	DWR GWP	88266 @ Dtn
GW088267	14/05/2004 26/04/2007	DWR GWP	88267 @ Dtn
GW088267	14/05/2004 26/04/2007	DWR GWP	88267 @ Dtn
GW088273	27/10/2004 03/05/2007	DWR GWP	88273 @ Neilpo
GW088273	27/10/2004 03/05/2007	DWR GWP	88273 @ Neilpo
GW088274	27/10/2004 03/05/2007	DWR	88274 @ Neilpo
GW088275	27/10/2004 03/05/2007	DWR	88275 @ Neilpo
GW088276	27/10/2004 03/05/2007	DWR	88276 @ Neilpo
GW088277	27/10/2004 03/05/2007	DWR	88277 @ Neilpo
GW088278	27/10/2004 03/05/2007	DWR	88278 @ Neilpo
GW088279	28/10/2004 03/05/2007	DWR	88279 @ Warrananga
GW088280	28/10/2004 03/05/2007	DWR	88280 @ Warrananga
GW088280	28/10/2004 03/05/2007	DWR	88280 @ Warrananga
GW088282	28/10/2004 03/05/2007	DWR	88282 @ Warrananga
GW088283	28/10/2004 03/05/2007	DWR	88283 @ Warrananga
GW088452	23/02/2000 02/02/2007	DWR	LK VIC

GW088453	10/07/2000 30/01/2007	DWR	MOORNA
GW088454	12/07/2000 08/02/2007	DWR	LK VIC
GW088454	12/07/2000 08/02/2007	DWR	LK VIC
GW088455	13/07/2000 07/02/2007	DWR	LK VIC
GW088456	10/07/2000 07/02/2007	DWR	NAMPOO @ LK VIC
GW088456	10/07/2000 07/02/2007	DWR	NAMPOO @ LK VIC
GW088461	07/05/2001 09/07/2001	09/07/2001 DWR	WEIR POOL STUDY @ MD
GW088461	07/05/2001 09/07/2001	09/07/2001 DWR	WEIR POOL STUDY @ MD
GW088462	09/05/2001 20/04/2007	DWR	WEIR POOL STUDY @ MD
GW088462	09/05/2001 20/04/2007	DWR	WEIR POOL STUDY @ MD
GW088464	03/11/2002 20/04/2007	DWR	88464 @ BURONGA

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.													
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	m	y	Date	Org.	Net
			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g		Code	Class	NAME

GW088464			03/11/2002	20/04/2007														DWR	88464 @ BURONGA	
GW088464			03/11/2002	20/04/2007														DWR	88464 @ BURONGA	
GW088465			01/11/2002	19/04/2007														DWR	88465 @ MDA TENNIS	
GW088465			01/11/2002	19/04/2007														DWR	88465 @ MDA TENNIS	
GW088465			01/11/2002	19/04/2007														DWR	88465 @ MDA TENNIS	
GW088466			01/11/2002	20/04/2007														DWR	88466 @ BURONGA	
GW088466			01/11/2002	20/04/2007														DWR	88466 @ BURONGA	
GW088466			01/11/2002	20/04/2007														DWR	88466 @ BURONGA	
GW088467			02/11/2002	19/04/2007														DWR	88467 @ OLD HMSTD	
GW088467			02/11/2002	19/04/2007														DWR	88467 @ OLD HMSTD	
GW088467			02/11/2002	19/04/2007														DWR	88467 @ OLD HMSTD	
GW088468			02/11/2002	19/04/2007														DWR	88468 @ NATIVE NURSE	
GW088468			02/11/2002	19/04/2007														DWR	88468 @ NATIVE NURSE	
GW088468			02/11/2002	19/04/2007														DWR	88468 @ NATIVE NURSE	

GW088482	13/03/2007 26/04/2007	DWR GWP 88482 @ Dtn
GW088518	16/10/1999 18/10/2001	DWR SHEPPARTON
GW088519	16/10/1999 16/05/2007	DWR SHEPPARTON
GW088520	16/10/1999 08/12/2004	DWR SHEPPARTON
GW088521	16/10/1999 14/11/2006	DWR SHEPPARTON
GW088522	17/10/1999 26/02/2004	DWR SHEPPARTON
GW088523	17/10/1999 17/05/2007	DWR SHEPPARTON
GW088524	17/10/1999 17/05/2007	DWR SHEPPARTON
GW088525	17/10/1999 17/05/2007	DWR SHEPPARTON
GW088526	17/10/1999 16/05/2007	DWR SHEPPARTON
GW088527	17/10/1999 16/05/2007	DWR SHEPPARTON
GW088535	23/05/2001 11/12/2006	DWR COWRA
GW088536	29/05/2001 11/12/2006	DWR COWRA
GW088537	24/05/2001 17/05/2007	DWR COWRA
GW088538	28/05/2001 21/02/2007	DWR COWRA
GW088539	23/05/2001 17/05/2007	DWR COWRA
GW088540	31/05/2001 24/05/2007	DWR CALIVIL
GW088542	15/05/2002 20/02/2007	DWR COWRA
GW088543	15/05/2002 15/11/2006	DWR COWRA
GW088544	15/05/2002 15/11/2006	DWR COWRA
GW088547	26/09/2003 30/05/2007	DWR
GW088554	16/09/2003 11/12/2006	DWR 1_554
GW088555	09/07/2003 02/08/2006	DWR 2_555
GW088556	09/07/2003 21/02/2007	DWR 3_556

GW088557	09/07/2003 21/02/2007	DWR	4_557
GW088558	09/07/2003 21/02/2007	DWR	5_558
GW088559	28/04/2004 21/02/2007	DWR	6_559
GW090024	21/10/2004 16/03/2007	DWR GWP	Parkes - East
GW090055		DWR PJI	GW WEST OF SWAMP
GW090056		DWR	WOODCUTTERS
GW093032	11/12/2002 06/05/2004		06/05/2004 DWR GWP
GW093035	11/12/2002 06/05/2004		06/05/2004 DWR GWP
GW093036	18/02/2005 08/11/2006	T	DWR GWP
GW093037	18/02/2005 08/11/2006	T	DWR GWP
GW093038	11/12/2002 06/05/2004		06/05/2004 DWR GWP

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.													
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	y	Date	Org.	Net	
			Starts	Starts	Tab	Starts	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

GW093040			11/12/2002	09/11/2006														T	DWR	GWP
GW096000			06/04/2006	15/12/2006															DWR	GWP WATERLOO (NTH)
\$GW096084			05/11/2002	14/02/2007															DWR	GWP GW RWH North
GW096085			12/11/2002	14/02/2007															DWR	GWP GW RWH South
\$GW096087			13/03/2003	31/05/2007															DWR	GWP Wilbertree Rd
GW096101			20/12/2001	11/09/2002															DWR	GW096101
GW096102			20/12/2001	21/11/2006														T	DWR	GW096102
GW096103			20/12/2001	18/04/2002															DWR	GW096103
GW096104			20/12/2001	17/04/2002															DWR	GW096104
GW096105			20/12/2001	22/11/2006														T C	DWR	GW096105
GW096106			20/12/2001	21/11/2006														T	DWR	GW096106
GW096107			20/12/2001	18/04/2002															DWR	GW096107
GW096108			20/12/2001	18/04/2002															DWR	GW096108
GW096109			20/12/2001	18/04/2002															DWR	GW096109

GW096110	20/12/2001 18/04/2002		DWR	GW096110
GW096111	20/12/2001 18/04/2002		DWR	GW096111
GW096112	18/12/2001 24/08/2006	T C	DWR	GW096112
GW096113	20/12/2001 22/11/2006	T C	DWR	GW096113
GW096114	20/12/2001 22/11/2006	T	DWR	GW096114
GW096115	20/12/2001 22/11/2006	T	DWR	GW096115
GW096116	20/12/2001 17/04/2002		DWR	GW096116
GW096134	16/12/2003 22/11/2006	T	DWR GWP	GW096134
GW096135	18/12/2003 23/11/2006		DWR GWP	GW096135
GW096136	18/12/2003 23/11/2006		DWR GWP	GW096136
GW096137	18/12/2003 23/11/2006	T	DWR GWP	GW096137
GW096144	06/06/2006 15/12/2006		DWR GWP	Narwonah Rd
GW271002		DWR GWP	Sylvania Park	
GW271003		DWR GWP	Helvetia	
GW271004		DWR GWP	Torrie Lodge	
GW271005		DWR GWP	Widden Stud	
GW271006		DWR GWP	Talooby Stud	
GW304427	20/10/2003 21/01/2004	30/03/2004	DWR	STP-D
GW500512	20/09/2006 10/11/2006		DWR	500512@M/Cliffs
GW500513	10/08/2006 14/03/2007		DWR	500513@M/Cliffs
GW500515	24/06/1998 12/03/2007		DWR	500515@M/CLIFFS
GW500531	23/03/1994 21/03/2007		DWR	PARINGI
GW500541	22/06/1993 21/03/2007		DWR	M/CLIFFS
GW500542	23/06/1998 21/03/2007		DWR	M/CLIFFS

GW500552	08/05/2001 11/07/2001	11/07/2001 DWR	WEIR POOL STUDY @ MD
GW500554	09/05/2001 11/07/2001	11/07/2001 DWR	WEIR POOL STUDY @ MD
GW500560	15/06/1998 01/07/2004	01/07/2004 DWR	M/CLIFFS
GW500561	17/06/1998 30/06/2004	30/06/2004 DWR	M/CLIFFS
GW500562	17/06/1998 22/03/2007	DWR	M/CLIFFS
GW500563	02/04/2000 21/04/2005	21/04/2005 DWR	TALYWALKA @ MENINDEE
GW500566	30/05/2006 12/03/2007	DWR GWP	Bore @ Cattle Yards
GW500568	13/12/1995 02/02/2007	DWR GWP	LK VIC
GW500568	14/12/1995 02/02/2007	DWR GWP	LK VIC
GW500571	13/04/1994 08/03/2007	DWR	LMBRT ISLE
GW500572	13/07/1994 08/03/2007	DWR	LMBRT ISLE

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R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.												
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	n	r	p	n	y	Date	Org.	Net
			Starts	Starts	Tab	Tab	Gaug	n	p	p	d	b	H	d	d	g	Code	Class	NAME

GW500573			14/04/1994	08/03/2007													DWR	LMBRT ISLE	
GW500574			05/03/1991	08/03/2007													DWR	LMBRT ISLE	
GW500575			13/04/1994	08/03/2007													DWR	LMBRT ISLE	
GW500576			14/04/1994	08/03/2007													DWR	LMBRT ISLE	
GW500577			25/06/1998	08/03/2007													DWR	LMBRT ISLE	
GW500578			29/06/1998	30/05/2004													DWR	LMBRT ISLE	
GW500579			06/03/1991	15/05/2006													DWR	LMBRT ISLE	
GW500580			06/03/1991	15/05/2006													DWR	LMBRT ISLE	
GW500581			12/04/1994	08/03/2007													DWR	LMBRT ISLE	
GW500582			12/04/1994	08/03/2007													DWR	LMBRT ISLE	
GW500583			14/04/1994	08/03/2007													DWR	LMBRT ISLE	
GW500584			27/06/1993	08/03/2007													DWR	LMBRT ISLE	
GW500585			14/12/1995	03/10/2002													DWR	LK VIC	
GW500585			03/10/2002	02/02/2007													DWR	LK VIC	

GW500586	10/04/1999 03/10/2002	DWR	LK VIC
GW500586	03/10/2002 04/08/2006	DWR	LK VIC
GW500586	03/10/2002 01/02/2007	DWR	LK VIC
GW500586	01/03/2004 01/02/2007	DWR	LK VIC
GW500589	10/04/1999 01/02/2007	DWR	LK VIC
GW500589	10/04/1999 07/06/2006	DWR	LK VIC
GW500591	10/04/1999 02/10/2002	DWR	LK VIC
GW500591	10/04/1999 01/02/2007	DWR	LK VIC
GW500591	02/10/2002 02/02/2007	DWR	LK VIC
GW500592	15/12/1995 09/10/2002	DWR	LK VIC
GW500592	23/05/1996 01/02/2007	DWR	LK VIC
GW500592	09/10/2002 01/06/2006	DWR	LK VIC
GW500593	15/12/1995 09/10/2002	DWR	LK VIC
GW500593	15/12/1995 19/09/2006	DWR	LK VIC
GW500593	09/10/2002 01/06/2006	DWR	LK VIC
GW500594	16/12/1995 09/10/2002	DWR	LK VIC
GW500594	16/12/1995 01/02/2007	DWR	LK VIC
GW500594	09/10/2002 01/02/2007	DWR	LK VIC
GW500595	16/12/1995 10/10/2002	DWR	LK VIC
GW500595	16/12/1995 08/02/2007	DWR	LK VIC
GW500595	10/10/2002 08/02/2007	DWR	LK VIC
GW500596	16/12/1995 10/10/2002	DWR	LK VIC
GW500596	16/12/1995 23/06/2006	DWR	LK VIC
GW500596	10/03/2003 08/02/2007	DWR	LK VIC

GW500597	15/12/1995 02/10/2002	DWR	LK VIC
GW500597	15/12/1995 01/02/2007	DWR	LK VIC
GW500597	02/10/2002 01/02/2007	DWR	LK VIC
GW500598	16/12/1995 17/10/2002	DWR	LK VIC
GW500598	16/12/1995 23/06/2006	DWR	LK VIC
GW500598	17/10/2002 09/02/2007	DWR	LK VIC
GW600023	14/05/2004 26/04/2007	DWR GWP	600023 @ Dareton
GW600024	14/05/2004 26/04/2007	DWR GWP	600024 @ Dareton.
GW600025	10/05/2004 26/04/2007	DWR GWP	600025 @ WMI
GW800232	05/10/2006 12/02/2007	DWR GWP	TOMPKINS Rd.
GW800258	04/10/2006 15/12/2006	DWR GWP	Farrendale Rd.

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

R A W C T W H O

Station	FLOWS		HEIGHTS		RATINGS		No. No. a t t o u i u x Discont.					
Number	Start	End	Start	End	First	Last	Last of	of	i	m	m	Org. Net
			Starts		Starts	Tab	Tab	Gaug	n	p	p	NAME
									d	b	H	
									d	d	g	
GW800554			05/07/2006	15/12/2006								DWR GWP HAMILTONS Rd.
GW88175A								DWR				88175@M/Cliffs
GW88176A								DWR				88176@M/Cliffs
GW901421			03/05/2005	02/08/2006				T				DWR GWP ZONE 1A
GW901635			03/05/2005	02/08/2006				T				DWR GWP ZONE 1A
GW901938			03/05/2005	02/08/2006				T				DWR GWP ZONE 1A
GW902099			03/05/2005	02/08/2006				T				DWR GWP ZONE 1A
GW967087			25/01/2006	07/08/2006				T				DWR GWP Ashley
GW967089			08/02/2006	07/08/2006				T				DWR GWP Ashley - Bullerana
GW967090			08/02/2006	07/08/2006				T				DWR GWP Ashley - Bullerana
GW967094			25/01/2006	08/08/2006				T				DWR GWP Mungindi-Ballinbora
GW967103			09/02/2006	08/08/2006				T				DWR GWP Boomi - Dolgelly
GW967105			09/02/2006	08/08/2006				T				DWR GWP Boomi- Boonanga Xing
GW967108			09/02/2006	08/08/2006				T				DWR GWP Boomi Town

GW967110	09/02/2006 08/08/2006	T	DWR GWP	Boomi
GW967111	14/03/2006 08/08/2006	T	DWR GWP	Mungindi
GW967113	14/03/2006 08/08/2006	T	DWR GWP	Mungindi Town
GW967125	24/01/2006 07/08/2006	T	DWR GWP	Bellata
GW967127	24/01/2006 07/08/2006	T	DWR GWP	Bellata
GW967128	24/01/2006 07/08/2006	T	DWR GWP	Bellata
GW967132	08/02/2006 07/08/2006	T	DWR GWP	Auscott
GW967135	08/02/2006 07/08/2006	T	DWR GWP	Ashley - Auscott
GW967137	16/11/2005	DWR GWP	Maules Ck Zone 11	
GW967137	16/11/2005 13/03/2007	T	DWR GWP	Maules Ck Zone 11
GW967137	16/11/2005 13/03/2007	T	DWR GWP	Maules Ck Zone 11
GW967138	16/11/2005 13/03/2007	T	DWR GWP	Maules Ck Zone 11
GW967225	15/03/2006 08/08/2006	T	DWR GWP	Croppa Ck
GW967226	15/03/2006 08/08/2006	T	DWR GWP	Croppa Ck
GW967227	15/03/2006 08/08/2006	T	DWR GWP	Croppa Ck
GWTRAIN1		DWR	GW Training 1	
GWTRAIN2		DWR	GW Training 2	
\$GWTRAINI*	08/06/2004 09/02/2005 22/09/1937 30/05/2002 17 17		DWR SMS	Training

Data summary for site list G*

Sites with Rainfall Data 1 1.3 years of data

Sites with Water Temp. Data 249 374.4 years of data

Sites with Conductivity Data 34 34.9 years of data

Sites with Water Quality data 283

Sites with Height data 910 4739.7 years of data

Current sites	754
Closed sites	62
Total sites listed	816