Appendix I – Groundwater assessment



SITA Australia

Lucas Heights Resource Recovery Park Project

Groundwater Assessment

October 2015

Executive summary

SITA Australia (SITA) is proposing a number of activities at the Lucas Heights Resource Recovery Park (LHRRP) in Lucas Heights (referred to in this report as 'the proposal'). This report has been prepared by GHD Pty Ltd on behalf of SITA to provide an assessment of the potential impacts on groundwater associated with the proposal as an input to the environmental impact statement. Due to the existing operational arrangements at LHRRP, Sutherland Shire Council (SSC) is a joint applicant for the proposal. The environmental impact statement is being prepared by GHD in accordance with the requirements of Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (the EP&A Act).

A groundwater assessment has been completed to qualitatively assess the potential impacts posed by the proposed development at the LHRRP.

The aim of the groundwater assessment was to address the SEARs and agency requirements and to:

- Assess the potential impacts of the proposal on the groundwater system and sensitive groundwater dependent systems
- Outline measures that would be adopted to minimise any identified impacts.

An extensive suite of existing groundwater monitoring data (approximately 25 years) suggests that the combination of the insitu geology and current leachate collection system is resulting in concentrations of parameters in groundwater which are below the level where impacts on the surrounding groundwater and surface water systems may occur. As similar conditions would be maintained with the proposal, it is expected that there would be no significant impact on groundwater from the proposed landfilling activities at the LHRRP.

The Stage 5 landfill leachate collection system and control measures have been designed and installed in accordance with best practice to facilitate preferential capture of leachate from up gradient landfill areas and further minimise the potential for impacts to underlying groundwater. The existing groundwater drainage system located beneath Stage 5 provides additional capacity for interception of groundwater in the unlikely event that adverse groundwater impacts are detected.

Groundwater elevation observations and the hydrogeological conditions identified around the existing landfill suggest that any reduction in groundwater recharge and hence flow associated with the proposal would be minimal during construction and operation and after closure. This is supported by the overall footprint of the landfill remaining similar to existing conditions.

The proposed ARRT and GO facility operations include activities that require management and monitoring during construction and operation, to avoid impacting groundwater. Mitigation should include installing a suitable low permeability barrier underneath where any waste or leachate is stored or handled and implementing a monitoring and management program. After closure and removal of these facilities, the potential for groundwater contamination is minimal.

There would be a reduction in recharge associated with the development of low permeability surfaces at the ARRT and GO facilities to minimise the potential for groundwater contamination. Given already naturally low recharge rates and that recharge impacts would be highly localised, it is not expected that there would be overall adverse impacts to groundwater elevations and flows.

With the adoption of the proposed mitigation measures and a long term commitment to monitor for the emergence of impacts (should they occur) and respond if required, the potential for adverse impacts on groundwater would be acceptably minimised.

The groundwater assessment addresses the SEARs and concludes that the proposal would meet the identified objectives of:

- No significant impacts on the community or environment
- No significant impacts on groundwater quality.

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Glossary

Term	Definition
ADWG	Australian Drinking Water Guidelines
AHD	Australian Height Datum
AIP	Aquifer Interference Policy
ANSTO	Australian Nuclear Science and Technology Organisation
ANZECC	Australian and New Zealand Conservation Council
ARRT facility	Advanced Resource Recovery Technology facility
bgl	below ground level
BOM	Bureau of Meteorology
BSAL	Biophysical Strategic Agricultural Land
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
CEMP	Construction and Environmental Management Plan
COC	Condition of Consent
Currently approved landform	The currently approved landform heights and contours outlined in the 1999 EIS
Disturbed Runoff	Runoff from unsealed areas where mobilisation of sediment is likely
DTV	Default Trigger Values
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	New South Wales Environment Protection Authority and any successor body
EPL	Environmental Protection Licence
ESDAT	Environmental Data Management Software
GALC	Gandangara Local Aboriginal Land Council
GDE	Groundwater Dependent Ecosystem
GIS	Geographic Information Systems
GMR	Greater Metropolitan Region
GO facility	The Garden Organics facility at LHRRP, that undertakes composting of waste including green and garden waste, but excluding waste types such as food waste and biosolids
GWL	Ground Water Level
HELP	Hydrologic Evaluation of Landfill Performance
IWC	Industrial Waste Collection
Landform reprofiling	Proposed changes to currently approved landform at the LHRRP.
LEMP	Landfill Environment Management Plan
LEP	Local Environment Plan
LH1	Lucas Heights 1
LHRRP	Lucas Heights Resource Recovery Park
LHWMC	Lucas Heights Waste Management Centre
LTAAEL	Long-Term Average Annual Extraction Limit
Mitigation	The application of techniques to reduce environmental impacts arising from the proposal
NHMRC	National Health and Medical Research Council
NOW	NSW Office of Water
NWQMS	National Water Quality Management System

OCPS	Organochline Pesticides
OEH	Office of Environment and Heritage
OEMP	Operational Environment Management Plan and all relevant future documents, these will be provided for the landfill, GO and ARRT and will detail how these projects can be managed to meet the environmental outcomes for the site
PAHs	Speciated Poly-Aromatic-Hydrocarbons
PCBs	Polychlorinated Biphenyls
PCYC Mini-Bike Club	The mini-bike club operated by the Police and Community Youth Clubs NSW Limited (PCYC).
POEO Act	Protection of the Environment Operations Act 1997
SEAR	Secretary's Environmental Assessment Requirements (formerly known as Director-General's Requirements or DGRs)
SICTA	Sydney International Clay Target Association and any successor body
SITA	SembSITA Australia Pty Ltd (SembSITA) is the holding company for the SITA Australia (SITA) group of companies in Australia. SembSITA is the parent company of both SITA and WSN Environmental Solutions Pty Ltd (WSN). WSN owns part of the land on which the LHRRP is situated, and leases the remainder from ANSTO. SITA holds the environmental protection licence (EPL), and so is the operator of the facilities at LHRRP. For simplicity, the term 'SITA' is used to refer to all of these organisations in this report.
SLEP	Sutherland Local Environmental Plan 2015
SSC	Sutherland Shire Council
VOC	Volatile Organic Compounds
WMA	Water Management Act 2000
WSP	Water Sharing Plans

1. Introduction

1.1 Purpose of this report

SITA Australia (SITA) in conjunction with Sutherland Shire Council (SSC) is proposing a number of activities at the Lucas Heights Resource Recovery Park (LHRRP) in Lucas Heights (referred to in this report as 'the proposal'). This report has been prepared by GHD Pty Ltd on behalf of SITA to provide an assessment of groundwater impacts associated with the proposal as an input to the environmental impact statement. Due to the existing operational arrangements at LHRRP, Sutherland Shire Council (SSC) is a joint applicant for the proposal. The environmental impact statement is being prepared by GHD in accordance with the requirements of Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (the EP&A Act).

The report addresses the requirements of the Secretary of the NSW Department of Planning and Environment (the Secretary's Environmental Assessment Requirements (SEARs No SSD-6835) dated 3 February 2015.

In addition to addressing the SEARs requirements, this report provides an assessment of how well the proposal meets SITA's objectives of having no significant impacts on the community or environment. Environmental management and mitigation measures related to groundwater are proposed (where necessary) to mitigate potential impacts and ensure that they are managed in accordance with statutory requirements, regulations and community expectations.

1.2 Objective

The following objectives have been identified:

- no significant impact on groundwater quality
- no significant impact on the community or environment

1.3 Proposal overview

The LHRRP consists of approximately 205 hectares (ha) in two ownerships. 89 ha is owned by SITA and 116 ha owned by Australian Nuclear Science and Technology Organisation (ANSTO) and leased to SITA for waste management or other agreed purposes. The following activities are proposed at the LHRRP and are collectively referred to as 'the proposal'. The proposal would not have a significant impact on the community. In addition to the proposal detailed below, SITA is committed to better environmental outcomes by the application of best practice prevention, mitigation and rectification measures:

- **Reprofiling of existing landfill areas to provide up to 8.3 million cubic metres of additional landfill airspace capacity.** This is equivalent to approximately 8.3 million tonnes of waste, assuming 1 tonne of waste utilises 1 cubic metre of waste disposal airspace. As the process of reprofiling would include removal and replacement of capping material over previously landfilled waste and augmentation of gas and leachate collection systems, the environmental performance of the site would be ultimately improved by reducing the infiltration of stormwater into the landfill (resulting in reduced landfill leachate in the longer term) and increase the overall amount of landfill gas recovered from the site.

  As part of the proposal, SITA is seeking permission to increase the approved quantity of waste landfilled at the site from 575,000 to 850,000 tonnes per year. This would enable the reprofiling of the site to be completed in 2037.

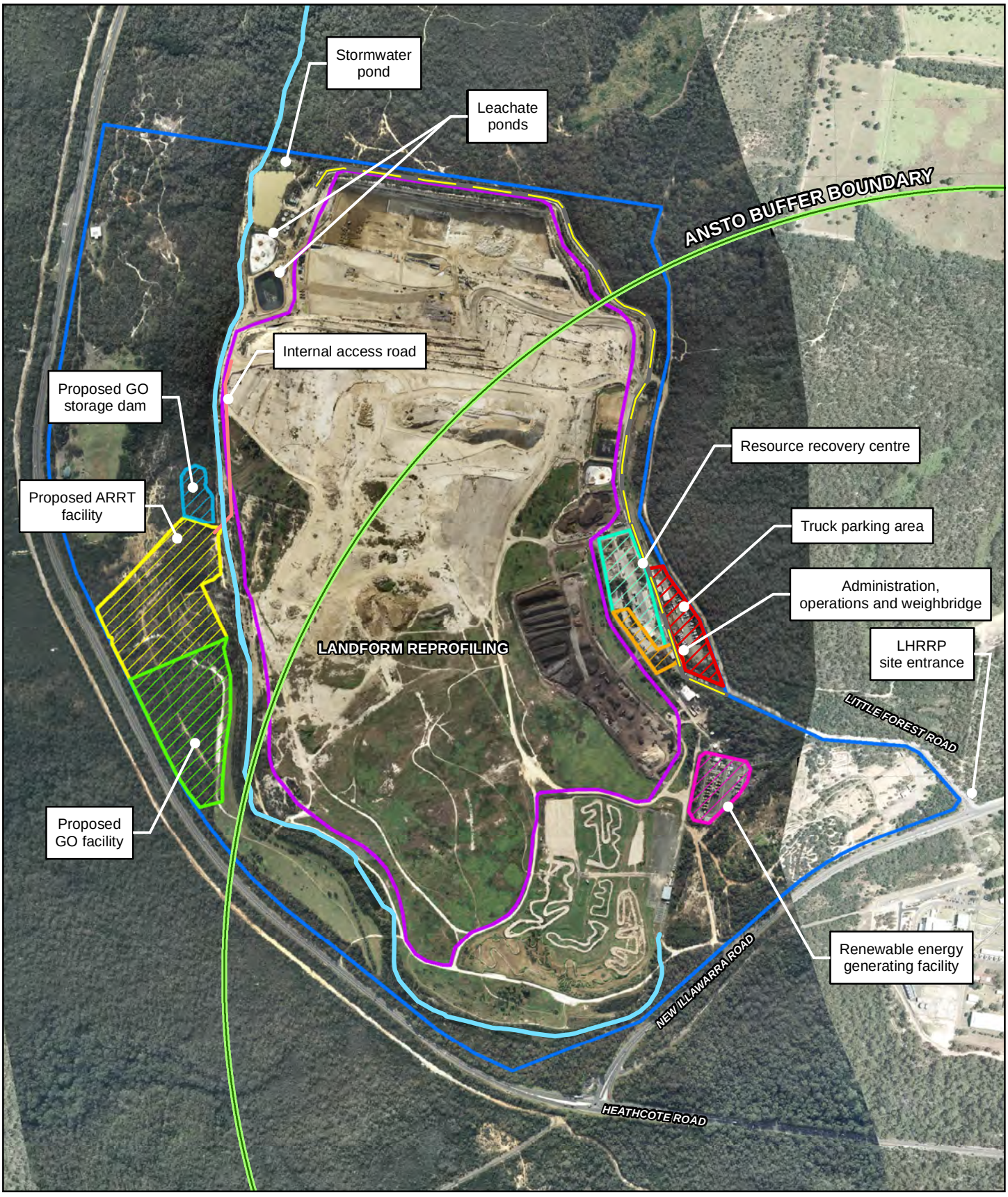
- **Relocation and expansion of the existing garden organics (GO) facility**. The existing garden organics facility would be relocated to the western side of the site adjacent to Heathcote Road. Approval is being sought to increase the approved capacity from 55,000 to 80,000 tonnes of green waste and garden waste received per year at the facility. The new facility would include the partial enclosure, active aeration and covering of the first four weeks of the active composting process, which coincides with the period of highest potential for odour generation, to enable more effective control of odour. Relocation of the facility would result in increased separation distances from the current nearest occupied land at ANSTO, existing residential areas and the proposed new residential area at West Menai.
- **Construction and operation of a fully enclosed advanced resource recovery technology (ARRT) facility**. The ARRT would be located on the western side of the site adjacent to the GO facility and would process and recover valuable resources from up to 200,000 tonnes of general solid waste per year, reducing the amount of waste disposed to landfill to approximately 60,000 tonnes per year. This would divert up to 140,000 tonnes of waste per year from landfill. SSC and other councils would have the opportunity to have their municipal waste processed by the ARRT facility.
- **Community parkland**. The landfill reprofiling would increase the area available for future passive recreation following site closure from 124 ha (existing approved parkland) to a total of 149 ha, an increase of approximately 25 ha. Landfilling would cease in 2037 after which time the site would be rehabilitated and converted to a community parkland, with capping and landscaping to be completed and the site made available for community use in 2039.

As part of the proposal SITA has committed to entering into an agreement with SCC in the form of a Voluntary Planning Agreement which includes ‘environmental undertakings’. In addition operational environmental management plans have been prepared for the landfill, GO facility, ARRT facility and post closure measures to manage potential environmental impacts, reflect regulatory requirements and provide guidance for site operators to undertake activities in an environmentally sound manner.

A Planning Proposal is being submitted in parallel with this State Significant Development Application. The Planning Proposal seeks to include new local provisions on the LHRRP site within the Sutherland Local Environmental Plan 2015 (SLEP), which would allow the proposal (a waste or resource management facility) to be undertaken on the proposal site.

The expansion of the LHRRP which is outlined in this EIS would permit the proposed future use of the land for recreational purposes, which is currently approved and would occur when the existing facility ceases operation in 2025. The proposal would however extend the timeframe for which the land would be unavailable for recreational purposes until 2037, due to the extension of operations at the proposed LHRRP.

These key components of the proposal are shown on Figure 1.1. The proposed final landform and preliminary master plan for the parkland are shown in Figure 1.2.



LEGEND

- ANSTO buffer boundary
- Mill Creek
- Internal access road
- Existing access road
- Proposed GO facility
- Proposed ARRT facility
- Resource Recovery Centre
- Administration, operations and weighbridge
- Renewable energy generating facility
- Lucas Heights Resource Recovery Park boundary
- Landform reprofiling boundary
- Truck parking area

Paper Size A4

0 100 200 400

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

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SITA Australia
Lucas Heights Resource Recovery Park

Job Number 21-23482
Revision A
Date 28 May 2015

Key existing infrastructure and proposed facility layout

Figure 1.1

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Lucas Heights Resource Recovery Park

Job Number 21-23482
Revision A
Date 24 June 2015

Proposed parkland master plan **Figure 1.2**

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1.4 Definitions

The following terms are used within this report when referring to the proposal site and surrounding areas:

- The 'LHRRP' refers to the entire Lucas Heights Resource Recovery Park. The boundary of the LHRRP is shown as the blue line on Figure 1.3
- The 'proposal site' refers to the areas where the activities described in Section 1.2 would be located. The boundary of the proposal site is shown as the red line on Figure 1.3

1.5 Location of the proposal

1.5.1 Existing

The proposal would be located within the boundary of the existing LHRRP. The LHRRP is located within the Sutherland local government area, approximately 30 kilometres (km) south west of the Sydney city centre. The site is bound to the west by Heathcote Road and New Illawarra Road to the south.

Specifically, the proposal would be located on:

- Lot 101 DP 1009354
- Lot 3 DP 1032102
- Lot 2 DP 605077

It is noted that the proposal directly affects only a portion of each of these lots. There is minimal encroachment into the SICTA leased land (part of Lot 3 DP 1032102).

The proposal site, within the boundary of the LHRRP, is shown on Figure 1.3.

The site is currently accessed from Little Forest Road, off New Illawarra Road.

Current facilities at the LHRRP include:

- Landfill
- Resource recovery centre and waste collection point
- GO facility for processing garden organics
- Renewable energy production (operated by Energy Developments Ltd)
- Truck parking area
- Community use areas (mini bike area at the southern extent of the site run by the Sutherland Police Citizens Youth Club and the Sydney International Clay Target Association (SICTA) leased land on the north western side of the site)

There are also several ancillary buildings and structures (e.g. weighbridge, machinery workshop, administration offices, stormwater and leachate dams).

The following land uses are located in the immediate vicinity of the LHRRP:

- Bushland areas that form part of ANSTO's exclusion zone (to the east and south)
- ANSTO's facilities (to the east on the opposite side of New Illawarra Road)

Land uses in the surrounding area include:

- Holsworthy Military Reserve (to the west, northwest and southwest)

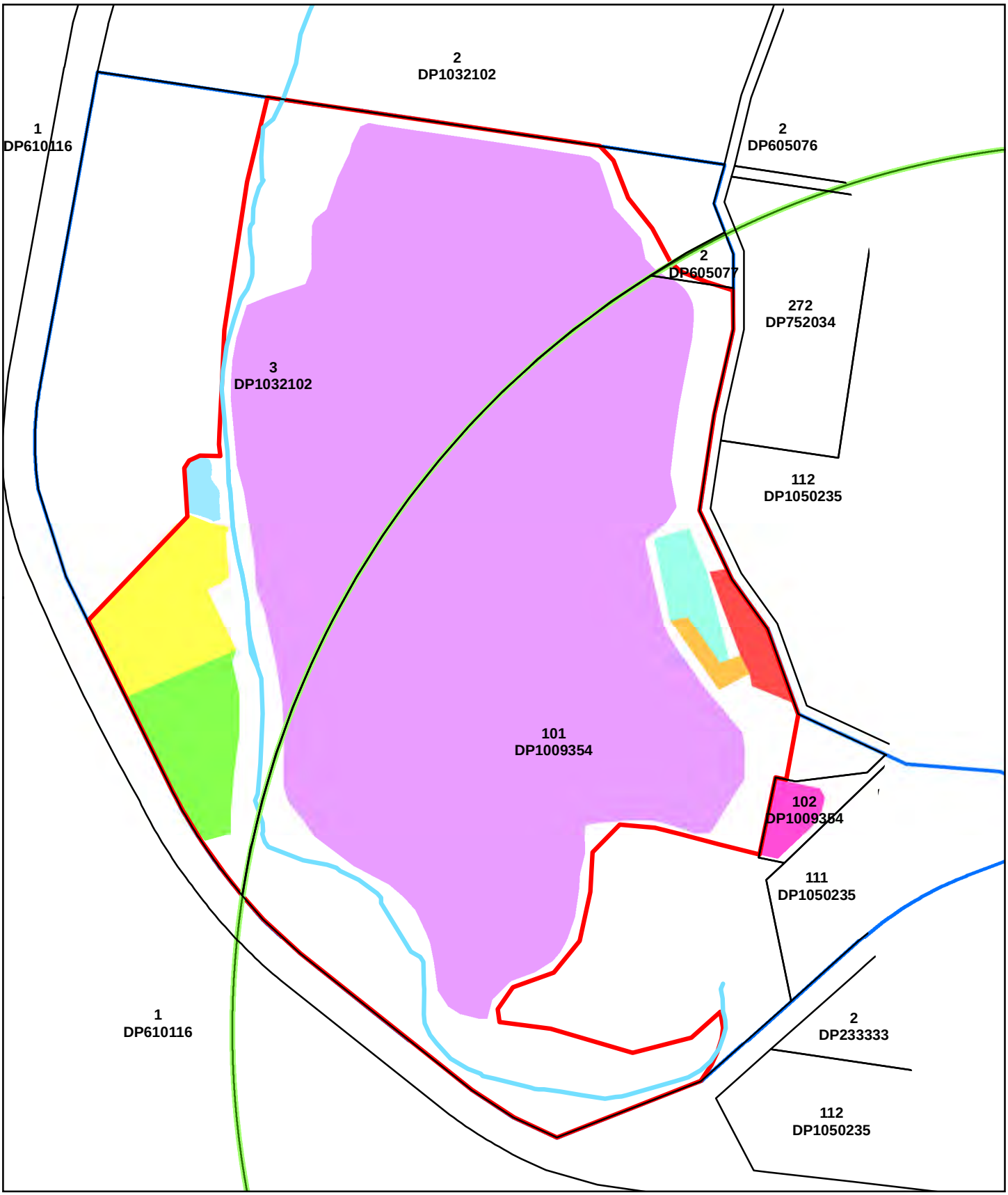
- The Ridge Sports Complex, a major regional sporting facility being developed on the site of the former Lucas Heights Waste and Recycling Centre (approximately 2.5 km to the north east)
- Lucas Heights Conservation Area (immediately to the north of the LHRRP)
- The suburbs of North Engadine (approximately 2 km to the east) and Barden Ridge (approximately 3 km to the north east)

Figure 1.4 shows these key areas.

1.5.2 Potential future surrounding land uses

The Gandangara Local Aboriginal Land Council (GALC) is proposing a development in the West Menai area. The West Menai State Significant Site contains 849 ha of mostly undeveloped land, covering parts of Menai, Barden Ridge and Lucas Heights.

The western boundary of the proposed development is Heathcote Road and the site extends east across Mill Creek to the edge of the existing Menai residential area close to New Illawarra Road. The location of the proposed West Menai State Significant Site is shown on Figure 1.4.



LEGEND

- ANSTO buffer boundary
- Mill Creek
- Cadastre
- Proposal site boundary
- Lucas Heights Resource Recovery Park boundary
- Truck parking area
- Proposed GO facility
- Proposed ARRT facility
- Resource Recovery Centre
- Administration, operations and weighbridge
- Renewable energy generating facility
- Landform reprofiling boundary

Paper Size A4

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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SITA Australia
Lucas Heights Resource Recovery Park

Job Number	21-23482
Revision	A
Date	25 Jun 2015

The proposal site

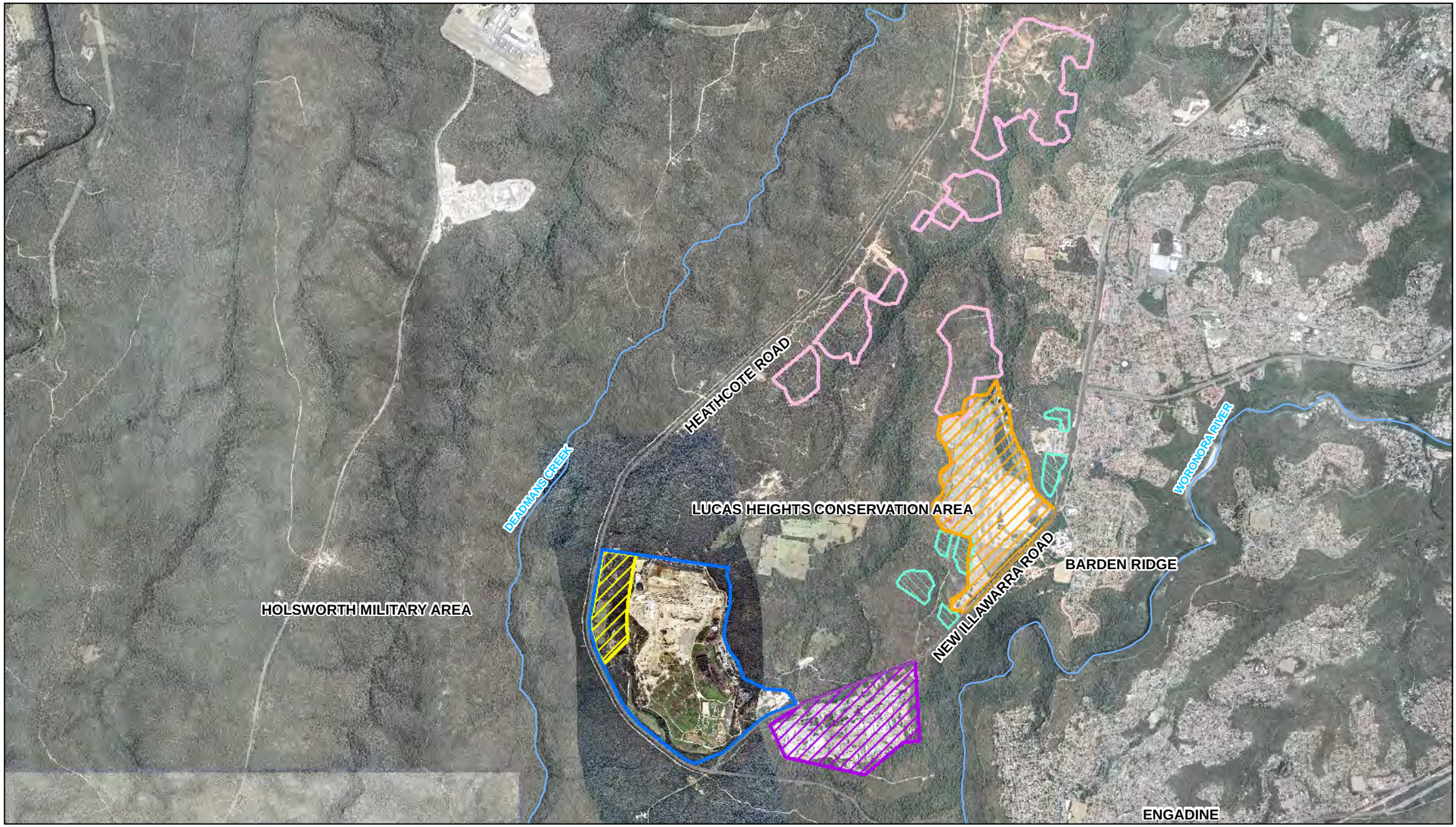
Figure 1.3

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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Legend

- LHRRP boundary
- SICTA boundary
- ANSTO
- Barden Ridge Sports Complex
- Potential future receptors
- Future receptors – Residential

SITA Australia
Lucas Heights Resource Recovery Park

Job Number 21-23482
Revision B
Date 14 Aug 2015

Surrounding landuses

Figure 1.4

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1.6 Secretary's Environmental Assessment Requirements

The specific SEARs and agency requirements addressed in this report are summarised in Table 1.1.

Table 1.1 Secretary's Environmental Assessment Requirements and agency requirements

Assessment requirements	Where addressed in report
Consideration of the potential salinity, contamination, flooding and acid sulphate soil impacts of the development	Chapter 4 –Impact assessment Chapter 5 – Mitigation and Monitoring Measures
Agency requirements	
NSW EPA	
Cover letter The proponents should refer to the relevant guidelines as listed in Attachment B and any industry codes of practice and best practice management guidelines With regard to groundwater these references include: • The National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia. • NSW State Groundwater Policy Framework Document. • NSW State Groundwater Quality Protection Policy. • Draft NSW State Groundwater Quantity Management Policy. • Guidelines for the Assessment and Management of Groundwater Contamination.	Refer to Section 2.
B. The proposal Provide details of the project that are essential for predicting and assessing impacts to waters: a) including the quantity and physio-chemical properties of all potential water pollutants and the risks they pose to the environment and human health, including the risks they pose to Water Quality Objectives in the ambient waters (as defined on http://www.environment.nsw.gov.au/ieo/index.htm, using technical criteria derived from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, ANZECC 2000)	Groundwater quality is discussed in Section 3.8 Relative to standards that are protective of the receptors identified in Section 3.9.
E. The Environmental Issues	
Describe baseline conditions	
• Describe existing surface and groundwater quality - an assessment needs to be undertaken for any water resource likely to be affected by the proposal and for all conditions (e.g. a wet weather sampling program is needed if runoff events may cause impacts). *Note: Methods of sampling and analysis need to conform with an accepted standard (e.g. Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC 2004) or be approved and analyses undertaken by accredited laboratories).*	Groundwater quality is discussed in Section 3.8
• State the indicators and associated trigger values or criteria for the identified environmental values. This information should be sourced from the ANZECC 2000 Guidelines for Fresh and Marine Water Quality (http://www.environment.gov.au/water/publications/g	Adopted trigger criteria are presented in Appendix D and include the ANZECC (2000) freshwater water criteria for the protection of 95 percent of aquatic

uality/nwgms-guidelines-4-vol1.html) (Note that, as at 2004, the NSW Water Quality Objectives booklets and website contain technical criteria derived from the 1992 version of the ANZECC Guidelines. The Water Quality Objectives remain as Government Policy, reflecting the community's environmental values and long-term goals, but the technical criteria are replaced by the more recent ANZECC 2000 Guidelines). *Note: while specific guidelines for groundwater are not available, the ANZECC 2000 Guidelines endorse the application of the trigger values and decision trees as a tool to assess risk to environmental values in groundwater*	species.
• State any locally specific objectives, criteria or targets, which have been endorsed by the government e.g. the Healthy Rivers Commission Inquiries or the NSW Salinity Strategy (DLWC, 2000) (http://www.environment.nsw.gov.au/salinity/governmenUnswstrategy.htm).	Environment Protection Licence (EPL) criteria is used in preference to ANZECC (2000) criteria and is discussed in Section 3.8
• Where site specific studies are proposed to revise the trigger values supporting the ambient Water Quality and River Flow Objectives, and the results are to be used for regulatory purposes (e.g. to assess whether a licensed discharge impacts on water quality objectives), then prior agreement from the EPA on the approach and study design must be obtained.	No revised groundwater trigger levels have been proposed for this assessment as the site EPL provides guidance.
• Describe the state of the receiving waters and relate this to the relevant Water Quality and River Flow Objectives (i.e. are Water Quality and River Flow Objectives being achieved?). Proponents are generally only expected to source available data and information. However, proponents of large or high risk developments may be required to collect some ambient water quality / river flow / groundwater data to enable a suitable level of impact assessment. Issues to include in the description of the receiving waters could include: a) lake or estuary flushing characteristics b) specific human uses (e.g. exact location of drinking water offtake) c) sensitive ecosystems or species conservation values d) a description of the condition of the local catchment e.g. erosion levels, soils, vegetation cover, etc. e) an outline of baseline groundwater information, including, but not restricted to, depth to water table, flow direction and gradient, groundwater quality, reliance on groundwater by surrounding users and by the environment f) historic river flow data where available for the catchment.	Groundwater conditions and associated receptors are discussed in Section 3) particularly Sections 3.3 to 3.10).
Assess impacts	
• No proposal should breach clause 120 of the Protection of the Environment Operations Act 1997 (i.e. pollution of waters is prohibited unless undertaken in accordance with relevant regulations).	The groundwater assessment assesses the potential for impacts to groundwater
• Identify and estimate the quantity of all pollutants	Section 3.8 and Appendix D

that may be introduced into the water cycle by source and discharge point including residual discharges after mitigation measures are implemented.	present and discuss site composition data that may influence groundwater quality.
• Describe the effects and significance of any pollutant loads on the receiving environment. This should include impacts of residual discharges through modelling, monitoring or both, depending on the scale of the proposal. Determine changes to hydrology (including drainage patterns, surface runoff yield, flow regimes, wetland hydrologic regimes and groundwater).	Section 4 discusses groundwater impacts associated with the proposal.
• Describe water quality impacts resulting from changes to hydrologic flow regimes (such as nutrient enrichment or turbidity resulting from changes in frequency and magnitude of stream flow).	This is addressed in the surface water assessment.
• Identify any potential impacts on quality or quantity of groundwater describing their source.	The potential impacts that are expected to be generated by the proposal to groundwater are discussed in Section 4 and are based on water quality monitoring discussed in Section 3.8.
• Identify impacts associated with the disturbance of acid sulphate soils and potential acid sulphate soils.	Acid sulphate soils are considered to be low risk in this area and have not been discussed in the report.
• Containment of spills and leaks shall be in accordance with the technical guidelines section 'Bunding and Spill Management' of the Authorised Officers Manual (EPA, 1995) (http://www.epa.nsw.gov.au/mao/bundingspill.htm) and the most recent versions of the Australian Standards referred to in the Guidelines. Containment should be designed for no-discharge.	Section 5 provides groundwater protection specific recommendations for minimising spills and leaks.
• The significance of the impacts listed above should be predicted. When doing this it is important to predict the ambient water quality and river flow outcomes associated with the proposal and to demonstrate whether these are acceptable in terms of achieving protection of the Water Quality and River Flow Objectives. In particular the following questions should be answered: a) will the proposal protect Water Quality and River Flow Objectives where they are currently achieved in the ambient waters; and b) will the proposal contribute towards the achievement of Water Quality and River Flow Objectives over time, where they are not currently achieved in the ambient waters.	This is addressed in the surface water assessment. Groundwater data and impacts are compared against ANZECC (2000) freshwater quality criteria to assess the potential for impacts to surface water (see Section 3.8).
Describe management and mitigation measures	
• Outline pollution control measures relating to storage of materials, possibility of accidental spills (e.g. preparation of contingency plans), appropriate disposal methods, and generation of leachate.	Mitigation measures for groundwater protection are presented in Section 5. Other mitigation measures are provided in the surface water and leachate assessments.
• Describe hydrological impact mitigation measures including: a) site selection (avoiding sites prone to flooding and waterlogging , actively eroding or affected by deposition)	This is addressed in the surface water assessment. Measures proposed to minimise impacts to groundwater are

b) minimising runoff c) minimising reductions or modifications to flow regimes d) avoiding modifications to groundwater.	discussed in Section 5.
• Describe groundwater impact mitigation measures including: a) site selection b) retention of native vegetation and revegetation c) artificial recharge d) providing surface storages with impervious linings e) monitoring program	Groundwater impact mitigation measures are presented in Section 5.
• Any proposed monitoring should be undertaken in accordance with the Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC 2004).	Monitoring Measures are proposed in Section 5
F. List of approvals and licences	
• Identify all approvals and licences required under environment protection legislation including details of all scheduled activities and types of discharges (to air, land, water).	Section 2 discusses the legislative framework with regard to groundwater and any potential licenses and approvals.
NSW Office of Water (NOW)	
No specific comments were provided by NOW with regard to groundwater issues.	

1.7 Scope and structure of the report

1.7.1 Scope of work

The overarching objective of this investigation is to provide a characterisation of:

- The key impacts of the project on the existing groundwater system and sensitive groundwater dependent systems
- The potential hydraulic connection with the groundwater migrating beneath the site
- The mitigation and monitoring measures that could be adopted to minimise any impacts identified.

A groundwater impact assessment has been undertaken to characterise the impacts to groundwater receptors associated with the project. In accordance with the proposal, a qualitative desktop assessment has been completed and has included the following works.

- A review of previous hydrogeological investigations which included:
  - Consulting Earth Scientists (2006) – Report on Quarterly Water Monitoring, December 2006, Lucas Heights WRC, Report ID: CES020510-WS-67-F.
  - Consulting Earth Scientists (2008); Annual Monitoring Report for Lucas Heights Waste and Recycling Centre 2007/2008, prepared for WSN Environmental Solutions, Report ID: CES020510-WS-80-D
  - Consulting Earth Scientists (2009); Annual Monitoring Report for Lucas Heights Waste and Recycling Centre 2008/2009, prepared for WSN Environmental Solutions, Report ID: CES020510-WS-85-D.
  - Consulting Earth Scientists (2010); Annual Environmental Monitoring Report for Lucas Heights II Waste and Recycling Centre 2009/2010, prepared for WSN Environmental Solutions, Report ID: CES020510-WS-92-F.
  - Consulting Earth Scientists (2011); Annual Environmental Monitoring Report for Lucas Heights II Resource Recovery Park 2010/2011, prepared for SITA Australia, Report ID: CES020510-WS-101-D.

  - Douglas Partners and Coffey Partners (DP&CPI, 1992); Interim Report on Hydrogeological Investigation Proposed Extension Regional Waste Depot, Lucas Heights.
  - Douglas Partners (DP, 1994); Report on Investigation into the Effects of Blasting and Excavation, Regional Waste Depot Lucas Heights – Project 14780C.
  - Douglas Partners and Coffey Partners (DP&CPI, 1994); Report on Hydrogeology and Groundwater Monitoring, Waste Depot Lucas Heights, Volume 1 – DP 14780.
  - Douglas Partners (DP, 1998); Report on Hydrogeology and Leachate Management, Waste Management Centre Lucas Heights No. 2 Landfill, Lucas Heights, Prepared for National Environmental Consulting (NECS) – Project 14780M-2
  - Douglas Partners (DP, 2003); Summary Report of Groundwater Investigations – Assessment of Fractured Rock, Lucas Heights.
  - Douglas Partners (DP, 2008); Geological Mapping – Eastern End, Cell No. 5 Lucas Heights Waste Management Centre – Letter to WSN Environmental Solutions.
  - Douglas Partners (2009), Excavation and Groundwater Infiltration, Cell 5 Lucas Heights Waste Management Centre – Letter to WSN Environmental Solutions Ltd.
  - ENVIRON (2006); Lucas Heights Groundwater Monitoring Network Review – Letter to WSN Environmental Solutions.
  - National Environmental Consulting Services (NECS, 1999); Environmental Impact Statement, Lucas Heights 1, Lucas Heights Waste Management Centre, Lucas Heights Conservation Area.
  - Woodward Clyde and C. M. Jewell & Associates Pty Ltd (1999); Luca Heights Independent Review – Water, Review of Mill Creek Water Quality Issues Associated with the Proposed Developments at: Lucas Heights 1 Landfill; Lucas Heights Waste Management Centre; Lucas Heights Conversation Area.
  - SITA Australia (2012); Landfill Environmental Management Plan.
- Interpretation of historic and recent water quality data, which included collating data in a consistent electronic format from a range of datasets including:
  - Site investigations pre-1999 that were available in paper copy and various electronic spreadsheets;
  - A number of different spreadsheets of groundwater data collected between 2000 and 2014.
  - Up to 12 different water quality data sets available on the SITA environmental monitoring website.
- A review of the existing environmental protection licence for the landfill EPL5056.
- A review of the project description with a view to outlining key project features that could potentially change the existing interaction of the project with the existing groundwater environment.
- Establishment of the existing environmental conditions including (but not limited to):
  - Geology
  - Topography and surface water features
  - Climate
  - Water quality, which included an assessment of existing site groundwater quality data
  - Characterisation of groundwater dependent ecosystems, existing groundwater users and other beneficial uses
  - Groundwater flow and direction using previous and existing groundwater data

- A qualitative assessment of the impacts to groundwater and down gradient receptors to assess how the project could potentially impact groundwater elevations and flows and groundwater quality.
- Identification of proposed measures to mitigate and/or manage identified potential impacts during construction, operation and post closure.
- Identification of proposed measures to monitor for the presence of impacts and to respond to the identification of impact

1.7.2 Structure of report

- **Chapter 1 – Introduction** - This chapter introduces the project, the proponent and describes the project area.
- **Chapter 2 – Legislative framework -** This chapter provides a brief overview of the legislation, policies and guidelines relevant to this groundwater impact assessment.
- **Chapter 3 - Existing Environment -** This chapter outlines the existing groundwater environment and associated sensitivity of the environment for the purposes of further understanding how the project interacts with the existing groundwater environment.
- **Chapter 4 – Impact assessment –** This chapter collectively assesses the interaction of the proposal with the existing environment for the purposes of qualitatively characterising impacts to identified sensitive systems.
- **Chapter 5 – Proposed Mitigation Measures and Monitoring -** This chapter contains the proposed measures to mitigate and monitor for potential impacts identified in the impact assessment.
- **Chapter 6 - Conclusions and Recommendations**
- **Chapter 7 – References** – This chapter provides a reference list.
- **Chapter 8 - Limitations**

2. Legislative framework

The following section provides a brief overview of the legislation, policies and guidelines relevant to this groundwater impact assessment.

2.1 Legislation

2.1.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) administered by the NSW Department of Planning and Environment outlines the core legislation relating to planning and development activities in NSW and provides the statutory framework under which development proposals are assessed.

This report provides the results of a groundwater impact assessment in accordance with the environmental impact considerations under Section 78A (8A) of the EP&A Act.

Consolidated Development Consent Conditions (1999)

The Consolidated Development Consent Conditions (1999) was issued by the Minister for Urban Affairs and Planning, and outlines the agreement under which a number of activities were permitted to occur on the site. These activities included expansion of the capacity of the Lucas Heights Waste Management Centre (LHWMC), the development of composting and recycling facilities and the establishment of an area known as 'the Lucas Heights Conservation Area'. The LHWMC area generally equates to the current LHRRP.

Groundwater management is addressed in conjunction with leachate management for two separate areas; Lucas Heights 1 (LH1), which is not associated with the LHRRP area and LHWMC (which approximates the LHRRP area). For both areas, the conditions focus on reducing the risk of leachate impacting the groundwater as stipulated in the Environmental Protection Authority (EPA) licence and the Landfill EMP. A groundwater contamination remediation action plan is also required for both areas.

The consent conditions outline two additional leachate management requirements over and above those outlined in the Landfill EMP and include:

- A requirement to leave the excavation of Stage 5 open for a minimum of 3 months prior to commencement of placement of the base liner to allow for stress relief of the underlying strata.
- A requirement that where significant lateral groundwater flows are encountered, the base liner shall be extended up the walls of the excavation in order to intercept such flows, unless otherwise approved by the EPA.

Groundwater is also addressed in the environmental monitoring requirements where it is stated that groundwater should be monitored in accordance with the Landfill EMP and the relevant EPA licences. The groundwater quality monitoring results should be forwarded to NOW within one month of sample collection and an annual report on groundwater quality monitoring should be prepared by an independent consultant.

2.2 Protection of the Environment Operations Act 1997

The objectives of the *Protection of Environment Operations Act 1997* (POEO Act) are to protect, restore and enhance the quality of the environment. Some of the mechanisms that can be applied, under the POEO Act, to achieve these objectives include reduction of pollution at source, monitoring and reporting of environmental quality.

Environmental Protection Licences (EPL's), issued under the POEO Act, are a means by which the impact on the environment is regulated.

Three Environment Protection Licences (EPL) have been issued to SITA Australia by the EPA for the LHRRP. EPL number 12520 (composting at Lucas Heights Waste and Recycling Centre) and EPL number 13114 (PCYC) do not contain any requirements for managing groundwater. The details for the third licence are outlined below.

Premises: Lucas heights waste and recycling centre (EPL No. 5065)

Scheduled Activity: Waste disposal (application to land) and waste storage

This licence stipulates that groundwater quality monitoring will be conducted at the following eleven wells:

- MB008
- MB032
- MB033
- MB034
- MB035
- MB038
- MB039
- MB040
- MB041
- MB305
- MB306

The bore locations are presented in Figure 3.5 (Section 3.8) and Appendix A.

The aim of this monitoring network is to monitor the quality of groundwater potentially migrating offsite.

The EPL also states that the licensee must manage any groundwater extracted from groundwater depressurisation works in the same manner as leachate if the ammonia concentration in the groundwater is greater than 1 mg/L. In this instance, it must be disposed of to sewer or removed by tanker to an appropriately licensed facility.

The EPL also stipulates that if a groundwater concentration of ammonia greater than 1 mg/L [1]is detected, SITA must notify the Manager Sydney Waste and the EPA within 14 days of receiving the result. Landfill leachate is generally characterised by high concentrations of ammonia, this is due to the breakdown of organic material during the anaerobic (without oxygen) phase of a landfill's life cycle. As ammonia is a key indicator for the presence of leachate it is interpreted that the criteria for assessing leachate impacts on groundwater is 1 mg/L of ammonia.

The EPL also sets analytical concentration limits for surface water sites. To avoid doubt the EPL states that the absence of criteria does not authorise the pollution of waters by any other potential pollutants.

Given the above, the trigger criteria adopted for assessing influence of leachate on groundwater would include the 1 mg/L ammonia criteria from the EPL and relevant ANZECC (2000) criteria

[1] To date the ammonia concentration in the groundwater sampled in accordance with the EPL have had concentrations less than 1 m/L, indicating no significant impact on groundwater due to leachate.

for protection of aquatic ecosystems and livestock and the NHMRC (2011) criteria for the protection of human health.

2.2.1 Water Management Act 2000

The *Water Management Act 2000 (WMA 2000)* administered by the NSW Office of Water (NOW) and is intended to ensure that water resources are conserved and properly managed for sustainable use benefitting both present and future generations. It is also intended to provide formal means for the protection and enhancement of the environmental qualities of waterways and their in-stream uses as well as to provide for protection of catchment conditions.

The WMA 2000 requires that licenses are obtained to install infrastructure (a bore) within an aquifer for an intended purposes. It also requires that an access licence is required to take a given volume of water from a groundwater source.

The Water Management Act 2000 requires the development of Water Sharing Plans (WSPs) to manage water use and access. The NOW website states that water sharing plans aim to:

- Clarify the rights of the environment, basic landholder rights users, town water suppliers and other licensed users.
- Define the Long-Term Average Annual Extraction Limit (LTAAEL) for water sources.
- Set rules to manage impacts of extraction.
- Facilitate the trading of water between users.

The WSP for the Greater Metropolitan Region (GMR) Groundwater Sources covers 13 groundwater sources on the east coast of NSW. The Project lies within the Sydney Basin Central Porous Rock groundwater source area. The porous rock aquifer is referenced in the WSP as sedimentary sandstone and siltstone formations with intervening coal seams.

The background document for the water sharing plan (NOW, 2011) lists the Sydney Central Basin porous rock aquifer as having:

- Low to moderate contact with surface water with generally long travel times (years to decades).
- Allocated volumes of 2,592 ML/yr versus a long-term average annual extraction limit (LTAAEL) of 45,915 ML/yr, which suggests that there is a significant amount of available groundwater in the aquifer. The estimated LTAAEL volumes are based on recharge rates of 6% of annual rainfall.

The water sharing plan also set out a number of key water sharing rules for the Central Porous Rock groundwater resource, which are outlined below:

- Eligibility for obtaining a water access licenses. Commercial use is permitted in this area under a controlled allocation.
- The distances allowed between new water supply works and neighbouring water supply works. This ranges from 50 m from a neighbouring property to 1 km from a major water utility bore.
- The distances allowed between a new water supply works and the contaminates sites, which ranges from 250 m to greater than 500 m depending on the potential for impact.
- A requirement to protect Sandstone aquifers by sealing off shale aquifers that are highly saline.
- The distances allowed between new water supply works and high priority groundwater dependent ecosystems, which range from between 100 m for basic land rights bores to

200 m for all other uses. Further to this no new water supply works are allowed within 40 m of a river or stream that is 3rd order or above and 40 m of a 1st and 2nd order stream (similar to Mill Creek) unless located within underlying parent material or within 100 m of an escarpment.

- The maximum amount of water that can be taken within 500 m of a contaminated site.
- Permission to trade water allocated under an access license. Trading is permitted within this groundwater resource.

2.3 Policies and guidelines

2.3.1 Environmental Guidelines: Solid Waste Landfills (NSW EPA, 1996)

Environmental Guidelines: Solid Waste Landfills (NSW EPA, 1996) contains reference to the environmental goals and benchmark techniques that should be adopted for landfilling. It provides a basis for the OEH[2] to assess the environmental performance of LHRRP and to review the operational and monitoring activities that are covered by the site's Environment Protection License (EPL No. 5065 – Section 3.3.1). The guidelines require the development of environmental management plans (EMPs). An LEMP has been developed for the site as part of existing activities and describes the current operational activities on site that have, or are likely to have, an impact on the environment and measures to be undertaken to minimize those impacts.

The LEMP discusses the current environmental state of the site and the operations occurring on the site. Of relevance to groundwater quality/management was a description of the geology and the groundwater protection systems within the landfill cells. Specifically, the LEMP states that very low permeability basal rock and a comprehensive leachate drainage system protects the groundwater environment in Stages 1 to 3. Stage 4 and Stage 5 have compacted clay and/or geomembrane liners as well as a comprehensive leachate drainage system. Details of groundwater intrusion were submitted in a report to the OEH by SITA Australia prior to disposal of waste into Stage 5-1.

The LEMP also states groundwater can be collected from beneath the Stage 5 liners and directed to the leachate collection system if groundwater quality monitoring results indicate the presence of leachate contamination. The LEMP also states that it is not proposed to actively pump ground water from beneath Stage 5 unless absolutely necessary and that if this is required appropriate licences would be needed.

The prevention of groundwater impact from leachate is a core aim of the leachate management strategy on the site. To meet this goal, the LEMP states that the leachate collection dam is lined to prevent seepage into the groundwater.

Additional groundwater monitoring bores have also been installed to the north of Stage 5 to monitor groundwater elevations and quality on a quarterly basis. Change in groundwater quality from groundwater monitoring is outlined as a key performance indicator.

A section of the LEMP further outlines groundwater monitoring regularity and analysis. Samples of groundwater are collected on a quarterly basis from 13 groundwater monitoring bores from around the landfill. The monitoring bores are:

[2] The LEMP states that the OEH also includes NSW EPA and the National Parks and Wildlife Service.

- MB008
- MB023
- MB032
- MB033
- MB034
- MB035
- MB038
- MB039
- MB040
- MB041
- MB044*
- MB045*
- MB305
- MB306

* Not required under NSW EPA Licence but undertaken to determine background levels.

The locations of the bores mentioned above are shown in Appendix A.

The LEMP outlines a procedure that should be followed (including dipping the standard groundwater level) and the analytes that should be included in the chemical analysis on a quarterly and yearly basis. An independent assessment (Environ 2006) of the adequacy of the current groundwater monitoring network to detect potential groundwater impact from the landfill was provided to the OEH. The LEMP states that a report to the OEH shall be submitted within 14 days if ammonia concentrations in groundwater exceed 1.0 mg/L.

In accordance with COC 67, a draft groundwater remediation action plan was also prepared and included as an appendix to the LEMP.

The LEMP states that groundwater monitoring post closure has not yet been addressed.

2.3.2 NSW Aquifer Interference Policy

The NSW Aquifer Interference Policy (AIP) was finalised in September 2012 and clarifies the water licencing and approval requirements for aquifer interference activities in NSW. Many aspects of this Policy will be given legal effect in the future through an Aquifer Interference Regulation. Stage 1 of the Aquifer Interference Regulation commenced on 30 June 2011.

The Policy indicates that activities with the potential to contaminate groundwater are considered to be an aquifer interference activity.

The NSW Aquifer Interference Policy states that aquifer interference approval will not be granted unless the “Minister is satisfied that adequate arrangements are in force to ensure that no more than minimal harm will be done to any water source, or its dependent ecosystems, as a consequence of being interfered with” by the activities the approval relates to.

The minimal impact criteria for the groundwater source at the site are summarised below:

- With regard to the water table, impact is considered to be minimal where the water table change is less than 10 % of the cumulative variation in the water table 40 m from any high priority Groundwater Dependent Ecosystem (GDE) or high priority culturally significant site listed in the water sharing plan. If an impact is greater than this it must be

demonstrated to the Ministers satisfaction that the variation will not prevent the long term viability of the GDE of culturally significant. There are no high priority sites listed in the water sharing plan near to the site.

- With regard to the water table, impact is considered to be minimal where the water table where there is less than cumulative 2 m decline at any water supply work. If the impact is greater make good provisions apply.
- With regard to water pressure, impact is considered to be minimal where the cumulative decline in head is less than 2 m at any water supply work. If the impact is greater then further studies are required to satisfy the Minister that long term viability of the affected water supply works will not be affected. Otherwise make good provisions will apply.
- With regard to water quality, impact is considered to be minimal where the change in groundwater quality is within the current beneficial use category of the groundwater source beyond 40 m from the activity. If this cannot be achieved studies will need to demonstrate that the change will not prevent the long term viability of the dependent ecosystem, or affected water supply works.

If the predicted impacts are less than the Level 1 minimal impact considerations, then these impacts will be considered as acceptable.

While it is not anticipated that the proposed works will result in a reduction in the available groundwater compared to existing approved operation, SITA would consult with NOW in regard to the requirement for an aquifer interference approval.

Additional restrictions cover the interception of groundwater that underlies Biophysical Strategic Agricultural Land (BSAL), its dependent ecosystems or other water users. The site is not located within or near to BSAL.

2.3.3 NSW State Groundwater Policies

The objective of the NSW State Groundwater Policy Framework Document (NSW Government 1997) is to manage the State's groundwater resources so that they can sustain environmental, social and economic uses for the people of NSW. NSW groundwater policy has three component parts:

- NSW Groundwater Quantity Protection Policy.
- NSW Groundwater Quality Protection Policy.
- NSW Groundwater Dependent Ecosystems Policy.

NSW Groundwater Quantity Management Policy

The principles of this policy include:

- Maintain total groundwater use within the sustainable yield of the aquifer from which it is withdrawn.
- Groundwater extraction shall be managed to prevent unacceptable local impacts.
- All groundwater extraction for water supply is to be licensed. Transfers of licensed entitlements may be allowed depending on the physical constraints of the groundwater system.

NSW Groundwater Quality Protection Policy

The objective of this policy is the ecologically sustainable management of the State's groundwater resources so as to:

- Slow and halt, or reverse any degradation in groundwater resources.

- Direct potentially polluting activities to the most appropriate local geological setting so as to minimise the risk to groundwater.
- Establish a methodology for reviewing new developments with respect to their potential impact on water resources that will provide protection to the resource commensurate with both the threat that the development poses and the value of the resource.
- Establish triggers for the use of more advanced groundwater protection tools such as groundwater vulnerability maps or groundwater protection zones.

NSW Groundwater Dependent Ecosystems Policy

This policy was designed to protect ecosystems which rely on groundwater for survival so that, wherever possible, the ecological processes and biodiversity of these dependent ecosystems are maintained or restored for the benefit of present and future generations.

2.3.4 National Water Quality Management Strategy (NWQMS)

The NWQMS policy and principles document (ARMCANZ/ANZECC, April 1994) provides an overview of the principles for water quality management in Australia. The primary objective of the guideline/policy is:

"to achieve sustainable use of the nation's water resources by protecting and enhancing their quality while maintaining economic and social development."

The policy and principles document states that:

"the generally accepted mechanism for establishing in-stream or aquifer water quality requirements is a two-step process which involves:

- *establishing a set of environmental values, and*
- *establishing scientifically based water quality criteria corresponding to each environmental value."*

Environmental values are often interchanged with the term beneficial use (which is referred to in regard to minimum impact criteria set in the aquifer interference policy in Section 2.3.2 and are identified in the guidance to include:

- Ecosystem protection
- Recreation and aesthetics
- Drinking water
- Agricultural water (irrigation and stock water)
- Industrial water

Ecosystem protection, in this context, refers to aquatic ecosystems which depend at least in part on groundwater to maintain ecosystem health (groundwater-dependent ecosystems). Depending on the site setting, this may include surface water bodies such as wetlands, streams and rivers reliant on groundwater base flow, some estuarine and near-shore marine systems, as well as aquifer and cave ecosystems.

Criteria have been developed to characterise water quality relative to these environmental criteria and are outlined in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality and the Australian Drinking Water Guidelines (ADWG) and are discussed further below. The criteria specified in these documents will be used as the basis for assessing the current environmental values for this assessment and the treatment requirements for discharge to receiving water environments.

2.3.5 Australian and New Zealand Guidelines for Fresh and Marine Water Quality

The National Water Quality Management Strategy (NWQMS) provides a national framework for improving water quality in Australia's waterways. The main policy objective of the NWQMS is to achieve sustainable use of the nation's water resources; protecting and enhancing their quality, while maintaining economic and social development. The NWQMS process involves community and government interaction, and implementation of a management plan for each catchment, aquifer, estuary, coastal water or other water body. This includes the use of national guidelines for local implementation.

For this project the national guidelines on water quality benchmarks within the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC and ARMCANZ, 2000) are applicable and provide default trigger values (DTVs) of various analytes for comparison with sampled values. Guideline water criteria are presented in the guidelines for:

- Aquatic Ecosystems.
- Primary Industries (which includes agricultural and industrial water criteria).
- Recreational water quality and aesthetics.
- Drinking Water.

2.3.6 Australian Drinking Water Guidelines

The *Australian Drinking Water Guidelines* (ADWG) (NHMRC, 2013) provide a framework for the appropriate management of drinking water supplies to achieve a safe and appropriate point of supply. The guidelines provide a base standard for aesthetic and health water quality levels.

Where ADWG water quality trigger levels are above the ANZECC and ARMCANZ (2000) guideline levels, the most stringent of triggers between the two guidelines has been considered in the assessment. Characterisation of surface water quality has been assessed using the ANZECC and ARMCANZ (2000) framework.

3. Existing environment

3.1 Historical land-use

LHRRP is located within a forested area. The nearest residential areas are Menai and Lucas Heights located approximately 3 to 4 km to the north east of the LHRRP. The area surrounding the LHRRP has had historical landfilling activities associated with municipal and industrial waste disposal. Previous landfill sites are listed below:

- Harrington's Quarry landfill which is understood to have briefly operated in 1987 and received municipal waste (NSW WAMC, 2012)
- Industrial Waste Collection (IWC) Landfill which operated between 1968 and 1976 and received liquid industrial wastes.
- Night Soil and Sludge Landfill which operated between 1965 and 1980 and received sludge and night soil from sewage treatment activities.
- Little Forest Burial Ground, which operated between 1958 and 1968 and was filled with waste from ANSTO.

The approximate locations of these landfills are presented in Figure 3.1. The LHRRP originally opened in 1987 (Mitchell McCotter & Associates Pty Ltd, 1991) based on a development consent received in 1985 permitting waste disposal operations. A development application was submitted and approved in 1999 which permitted the expansion of waste disposal operations and also the development of composting and other resource recovery operations at the site. The final land-use was approved to be parkland over the majority of the site with potential on-going composting and other resource recovery operations located on the eastern side of the site.

Landfilling has occurred across the site in stages. The lining information has been included to help understand the potential for interaction with the underlying groundwater system, in particular, Stages 1 to 3 are understood to be unlined.

Table 3.1 indicates that Stages 5-1 to 5-3 have capacity still available. These stages have already been permitted under the previous approvals for the site.

Table 3.1. Details of the LHRRP landfill stages

Stage	Date of Commencement	Overtopping Commencement	Date of Completion	Lining and leachate collection system
Stage 1A	1988 - 1989	1999	2001	In-situ low permeability geological barrier with leachate collection system
Stage 1B	1990 - 1995	1999	2001	
Stage 1C	1988 - 1991	1999	2001	
Stage 2	1990 - 1996	2002	2003	
Stage 3	1993 - 1998	2004	2006	
Stage 4	1995 - 1998	2006	2010	Engineered clay liner including leachate collection
Stage 5-1	Approx. 2010	N/A	2011 to current	

Stage	Date of Commencement	Overtopping Commencement	Date of Completion	Lining and leachate collection system
			levels with capacity available (current approval to 31 December 2024)	system
Stage 5-2A	Approx. 2012	N/A	Capacity available (current approval to 31 December 2024)	
Stage 5-2B	Filling commenced 2013	N/A	Capacity available (approval to 31 December 2024)	Geomembrane and compacted clay including leachate collection system
Stage 5-3A	Filling commenced 2014	N/A	Capacity available (approval to 31 December 2024)	
Stage 5-3b & C	5-3b to commence in approx. November 2015	N/A	Capacity available (approval to 31 December 2024)	Not constructed – geomembrane and compacted clay approved

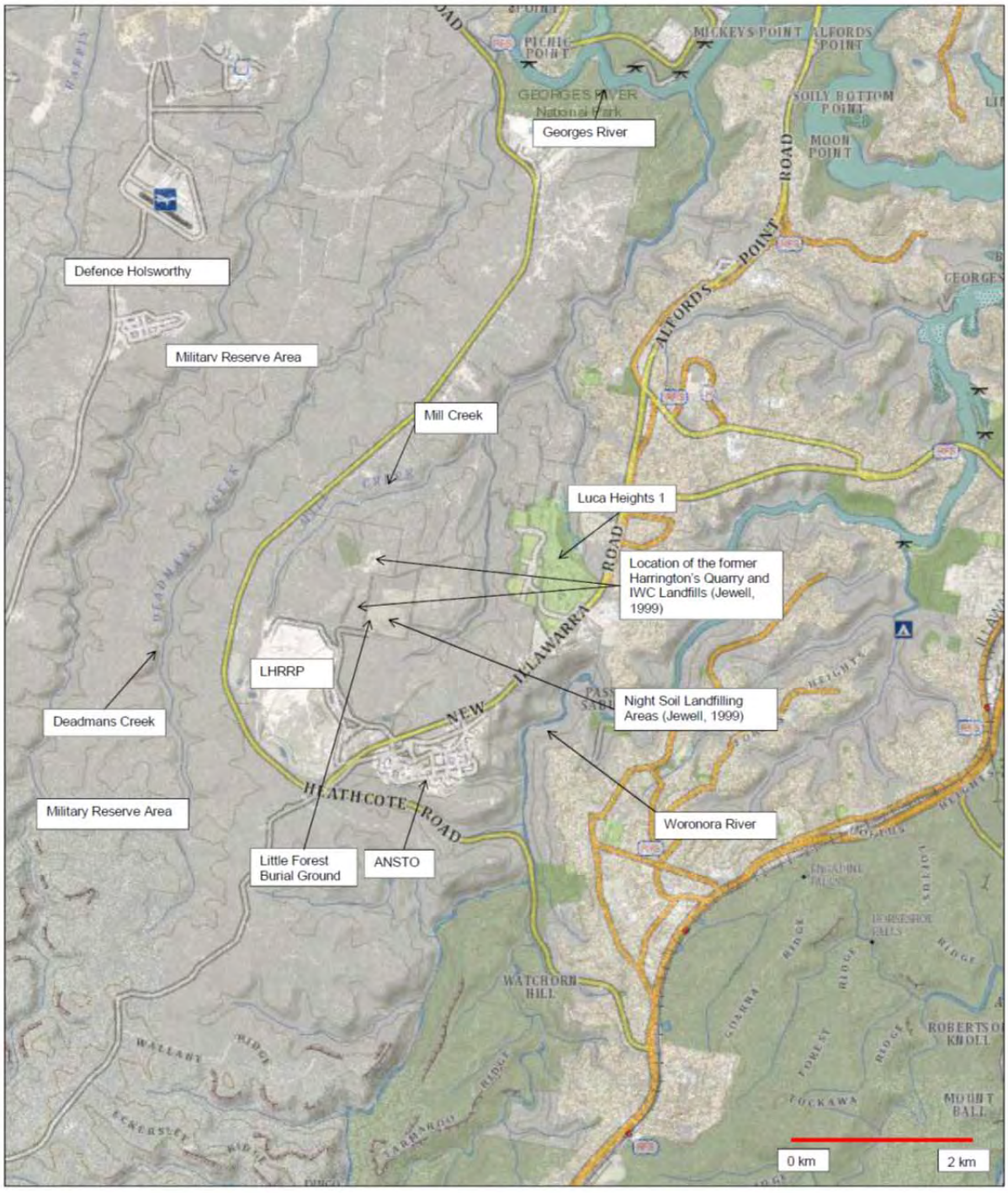


Figure 3.1 Previous landfill sites

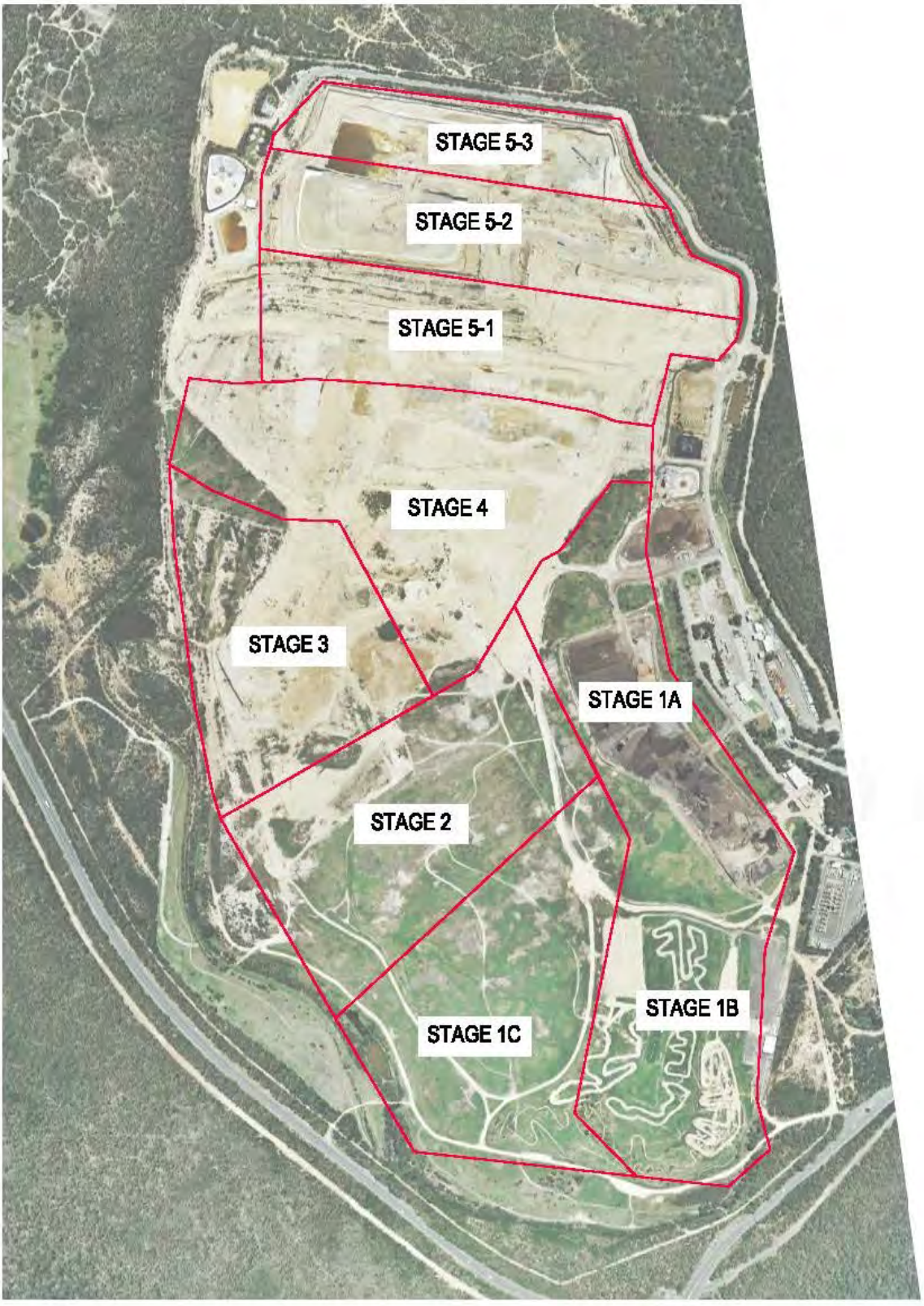


Figure 3.2 Landfill stages

3.2 Current leachate extraction system

A leachate extraction system has been in place since (1988) and works in tandem with the landfill liners detailed in Table 3.1 and other leachate collection systems to manage and extract leachate generated by the landfill. The extraction system includes a range of underground pipe systems and extraction wells that control the collection of landfill leachate within the landfill. A broad representation of the extraction well system currently in place is presented in Figure 3.3. This primarily includes gas extraction wells but there are approximately 50 'dual purpose' gas and leachate extraction wells across the site, which are presented in the figure. Further details of the leachate system design and the leachate extraction values are provided in the leachate assessment report prepared for this EIS (GHD, 2015).

Conversations with site staff (Kim Ross *pers*. *comm*.) suggest that leachate does not pond as a singularly saturated leachate body at the base of the landfill. Instead the leachate tends to pond above or be re-directed by lower permeability zones create by old cover materials or low permeability waste located within the waste. This results in variably saturated conditions horizontally and vertically throughout the landfill and prevents the establishment of a valid relationship between surrounding groundwater elevations and landfill leachate levels. Leachate that bypasses the well extraction system infiltrates to the base of the landfill and is captured within the basal drainage network.

Leachate levels in these locations would control the primary interaction with the surrounding groundwater system. At present there are no known data that characterise leachate levels at the landfill base other than temporary testing undertaken in wells P1 to P5 that was reported in Thom and Knight (1995), which are expected to have been decommissioned during infilling.

Stage 5 of the landfill which is still being developed includes a low permeability double liner system with an extensive drainage network that directs infiltrating leachate to a sump and pump system that also extracts and controls leachate levels.

The Stage 5 liner is underlain by a depressurisation system to depressurise groundwater around the cell and prevent heaving or instability of the liner until there is sufficient waste thickness to maintain its integrity. Once this has occurred the groundwater drainage system may be turned off. This system could potentially be used in future as a capture system for shallow impacted groundwater, should it be required, although this is unlikely as impacts to groundwater from the proposal are not expected.

Leachate generated by the landfill is stored within a lined leachate pond and piped to a treatment plant located offsite (at the former Lucas Heights 1 landfill) and then discharged to sewer. Low concentration leachate can also be discharged to sewer, where it meets the trade waste requirements of Sydney Water.

Figure 3.3 Gas/Leachate Well Field- Adapted from EDL (08/05/2014)



MAPPING INFORMATION	
Coordinate System:	New South Wales ISG
Coordinate Units:	Metres
Zone:	56-1
PATHFINDER OFFICE INFORMATION	
Datum:	AGD 1966
EDL Zone Name:	
Site Adjst. Names:	

GAS FIELD LEGEND

- WELL
- SATELLITE COLLECTOR WELL
- (USER DEFINED WELL)
- (DOWIE DITNICTION WELL - (COLOUR RELATED TO PIPE SIZE))
- STANDALONE WELL WITH SINGLE MANIFOLD
- SLIP JOINT WELL
- 315mm FABRICATED WELL
- HORIZONTAL WELL CONNECTION TO FLOWLINE
- HORIZONTAL WELL (COLOUR RELATED TO PIPE SIZE)
- CONTINUATION TO NEXT WELL
- EDL MONITORING BOREHOLE
- EXISTING WELL/MONITR. BOREHOLE
- WELLHEAD STATION - TYPE 1
- WELLHEAD STATION - TYPE 3
- WELLHEAD STATION - BOX MANIFOLD
- WELLHEAD STATION - HORIZONTAL
- WELLHEAD - SINGLE MANIFOLD
- "J" TRAP
- "J" TRAP WELL
- BAROMETRIC TRAP
- SURVEY DATUM
- FLARE
- LEACHATE PIT
- VALVE PIT
- ISOLATION TEE
- PUMP OUT PIT FOR WATER
- CONDENSATE SEPARATOR VESSEL
- CONDENSATE LINE (COLOUR RELATED TO PIPE SIZE)
- AIR SUPPLY LINE (COLOUR RELATED TO PIPE SIZE)
- POWER POLE
- A — WELLHEAD STATION NAME
- A125 — WELL NUMBER
- M1-1 — MAIN/LATERAL HEADER NUMBER
- EDGE OF FILL
- HEADER DISTANCE MARKER
- FENCE LINE
- PROPERTY BOUNDARY

- 63mm WELL FLOWLINE
- 90mm WELL FLOWLINE/LAT. HDR.
- 110mm WELL FLOWLINE/LAT./MAIN HDR.
- 125mm MAIN/LATERAL HEADER
- 160mm MAIN/LATERAL HEADER
- 180mm MAIN/LATERAL HEADER
- 200mm MAIN HEADER
- 225mm MAIN HEADER
- 250mm MAIN HEADER
- 280mm MAIN HEADER
- 315mm MAIN HEADER
- 355mm MAIN HEADER
- 400mm MAIN HEADER
- 450mm MAIN HEADER
- 500mm MAIN HEADER

AS BUILT

NOTES:
1. CONTOUR INFORMATION OBTAINED FROM AERIAL PHOTOGRAPHY FLOWN JUNE 2012, COMPILED BY GEO-SPECTRUM (AUSTRALIA) PTY. LIMITED
2. WELLS WITH "SJF" NEXT TO THE WELL NAME INDICATES THAT THE FLOW LINE HAS A SLIP JOINT FITTING CONNECTED TO IT.

50 0 50 100 150m
SCALE 1:2000

REV	AMENDMENTS	DRAWN	DESIGNED	CHECKED	APPROVED	DATE
17	REFER TO DWG'S 840-AB-085, 840-AB-087, 840-AB-090, 840-AB-091 & 840-AB-092 FOR DETAILS OF ADDITIONS.	T.J.H.	T.J.H.	R.W.G.	G.A.K.	21/04/08
16	REFER TO DRAWINGS 840-AB-077, 840-AB-078 AND 840-AB-083 FOR DETAILS OF ADDITIONS TO AS BUILT.	T.J.H.	T.J.H.	R.W.G.	G.A.K.	06/09/07
15	WELLS SA801, SA803 & SA833 CONNECTED. WELLS 3J157, 3R596 & LEACHATE PIT 1J683 REMOVED FROM DWG.	T.J.H.	T.J.H.	R.W.G.	W.D.L.	18/12/06
14	22 NEW WELLS ADDED TO AREAS 2 AND 3. 3 NEW WELLS ADDED TO AREA 5.	T.J.H.	T.J.H.	R.W.G.	J.C.T.	27/06/06
13	GENERAL CORRECTIONS MADE TO AS BUILT.	T.J.H.	T.J.H.	R.W.G.	J.C.T.	13/03/06
12	REFER TO DWG. 840-AB-061 FOR ADDITIONS	S.G.H.	T.J.H.	R.W.G.	R.W.G.	27/09/05
20	AS BUILT UPDATED.	T.J.H.				14/03/14
19	GENERAL CORRECTIONS MADE TO AS BUILT.	T.J.H.	T.J.H.	R.W.G.	G.A.K.	12/01/10
18	WELLHEAD STATION 5D ADDED. MAIN HEADER M23-4 & M23-5 ADDED.	T.J.H.	T.J.H.	R.W.G.	G.A.K.	20/11/08

ASSOCIATED DRAWING | DRAWING NUMBER

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DRAWN	DESIGN	APPROVED
P.A.Z.	AS BUILT	W.D.L.
DATE 04/03/96	DATE 04/03/96	DATE 13/10/97

PROJECT: LUCAS HEIGHTS 2 LFG POWER PROJECT

DRAWING TITLE: GAS FIELD AS BUILT SURVEY

SCALE	DRAWING NUMBER	PAGE	REV	SIZE
1:2000	840- AB -003	1 OF 2	20	A0

LAST PLOTTED TIME: 09:35 DATE: 08/05/14 LAST MODIFIED TIME: 09:35 DATE: 08/05/14

3.3 Surface water catchments

Most of the LHRRP site lies within the Mill Creek catchment. Mill Creek originates from the LHRRP and flows north along the western boundary towards Georges River. The gradients of the LHRRP are typical of a dissected plateau, with the slopes becoming steeper close to Mill Creek. Mill Creek itself has a slope of 2% as it travels through the site. Baseflow for the perennial rivers and streams are generally sourced from seeps and springs derived from groundwater. Baseflow for the perennial rivers and streams are generally sourced from seeps and springs derived from groundwater.

The majority of the site, the landfilled portion, constitutes runoff to Mill Creek. The area around the administration facilities is a tributary to Bardens Creek. As this area is not impacted by this proposal, impacts to Bardens Creek are not assessed in this report.

There are a number of surface water management features currently in place at the site. Surface water diversion drainage is constructed around the rim of each active waste disposal cell to control surface water runoff flowing into or from the cells. The drainage typically comprises open channel drains on the outer edge of earthen bunds. Surface water is collected in drains, swales and ponds and diverted to sediment dams. The dams are designed to allow for settlement of suspended solids before discharging offsite to Mill Creek following large rainfall events when stormwater retention systems have reached capacity.

Mill Creek has been modified to flank the north-western edge of the landfill and is heavily disturbed in this area.

Leachate generated by the site does not discharge to Mill Creek and is designed to be isolated from the site's surface water management system.

The Mill Creek Catchment is located between the Deadmans Creek catchment to the northwest and the Woronora River catchment to the southeast. These surface water features also drain to the northeast toward the Georges River. Within the vicinity of the landfill area, the elevation of Deadmans Creek (approximately 80 m AHD 1 km to the northwest) and Woronora River (approximately 20 m AHD, 5 km to southeast) are generally below the elevation of Mill Creek (greater than 100 m AHD). These systems are expected to be discharge points for deeper more regional groundwater systems. Deadmans Creek and the Woronora River (upgradient of Lucas Heights) are located in relatively undisturbed catchments within Holsworthy Military Base and National Park respectively.

3.4 Geology

Extensive geological characterisation has been completed at the LHRRP as part of previous investigations. This included, review of regional geological data, site drilling investigations, seismic surveys and geological mapping of jointing on exposed surfaces. The findings of these investigations are summarised below.

The LHRRP site is located on the Woronora Plateau which is primarily comprised of Triassic aged Hawkesbury Sandstone of thicknesses approximating 200 m (DP & CPI, 1994). The Hawkesbury Sandstone is comprised of cross bedded massive sandstones, laminates and occasional black shale and claystone lenses (DP & CPI, 1992). The sandstone matrix is often well cemented.

Environ (2006) reported two layers of laminate (2 m thick) and siltstone (2.5 m thick) at elevations of 60 m AHD and 84 m AHD respectively.

DP & CPI (1994) provided the following summary of site conditions after drilling investigations:

- Surficial Clayey SAND/Sandy CLAY ranged in depth from 0 to 2.8 m bgl.

- Very low strength weathered Sandstone extending from ground surface or beneath unconsolidated sediments to depths of up to 6.1 m bgl.
- Medium to high strength slightly fractured to unbroken Sandstone extending from the base of the low strength sandstone to depths of 60 m bgl (the maximum depth of characterisation). Laminate and siltstone layers were noted in some bores.

Geological mapping suggested that locally shale layers tended to dip to the north at between 2 and 5 degrees, however, the regional dip of the geology is considered to be to the north at an overall slope of 1.5 to 2 degrees (DP & CPI, 1994). Regional jointing systems have also affected this environment with surface drainage developing along well developed and relatively continuous jointing systems at spacings of 300 to 400 m (DP & CPI, 1994). It is inferred that these jointing systems have resulted in the development of the primary surface water features including Mill Creek and Deadmans Creek and Woronora River. On a more local scale jointing spacing of between 1 and 3 m common and can be laterally extensive (up to 100 m being common), however, vertical continuity is generally limited to less than 20 m (DP & CPI, 1994). Geological mapping undertaken by DP & CPI (1992) suggest that local jointing is orientated in NNE and ESE directions.

Surface weathering of the bedrock in the vicinity of LHRRP is generally considered to be less than 2 m (DP & CPI, 1994). DP & CPI (1992) reported that the Hawkesbury Sandstone had been subject to lateritic weathering and that the extent and depth of the weathering is variable across the site. This was confirmed with seismic surveys which also suggested the presence of two to four distinct layers that reflected variation in the type and depth of weathering. Generally, the weathered layers were deeper on the ridges and shallower in the valleys.

DP & CPI (1994) suggested that, based on a review of previous studies, a laterally extensive discrete zone of fracturing can develop at depths of 30 to 50 m below ground level (bgl) (estimated to be approximately between 74 and 84 m AHD). This fracture zone is thought to be related to stress relief movements as valley systems are eroded. A review of bore log data for the site suggests that fracture zones at depths of between 30 and 50 m bgl appear to be intermittent and not laterally extensive, although it is noted in Environ (2006) and in DP&CPI (1994) that a continuous fracture zone was interpreted to exist in wells intersecting geology beneath the valley floor at LHRRP. This fracture zone was also interpreted to extend further down Mill Creek Valley.

3.5 Hydrogeological conditions

DP & CPI (1992) noted that the well cemented nature and composition of the massive sandstone matrix that predominates within the Hawkesbury sandstones often result in very low inter-granular water transmission properties. As such groundwater flow is primarily through the joints, fractures and bedding planes (secondary porosity flow). These flow features are more prevalent at shallower depths were stress relief is greatest and become less prevalent with depth.

A potential fracture zone identified at depths between 30 m and 50 m bgl (estimated to be approximately between 74 and 84 m AHD) could act as a preferential groundwater flow pathway if it is laterally continuous. The fracture zone was interpreted to be located beneath a low permeability zone that acted to limit the connection between the landfill and underlying groundwater systems. As part of maintaining the integrity of this low permeability system the Stage 5 cells and drainage system were limited to an elevation of 90 m AHD which was anticipated to leave a layer of low permeability material above the interpreted high permeability fracture zone (Douglas Partners, 2009).

Intermittent laminate, siltstone, shale and more massive well cemented sandstone layers will limit vertical hydraulic conductivity and groundwater flow, especially at greater depths where

vertical jointing and fracturing is less frequent, while fracturing along bedding planes will generally increase the horizontal groundwater movement. This will result in significantly lower overall vertical conductivities and groundwater flows compared with horizontal conductivity.

Due to the hydrogeological conditions, vertical groundwater flows can be expected to be significantly reduced. Any limited migration to deeper aquifer systems is expected to discharge to more deeply incised surface water systems such as Woronora River and Deadmans Creek.

As groundwater tends to follow along paths of least resistance it is expected that, while on a local scale flow patterns could be both horizontal and vertical, the overall hydrogeological conditions would promote horizontal flow.

The NNE and ESE aligned joint sets coupled with a north east dip in the regional geology would be expected to further control groundwater flow directions resulting in preferential groundwater migration to the north.

Topographical features (such as valley associated with Mill Creek) dissecting the shallow geological units and associated groundwater systems will act as preferential discharge points for the shallow groundwater system and tend to distort the northward groundwater flow directions.

3.5.1 Hydraulic parameters

Hydraulic conductivity

Hydraulic conductivity provides an indication of the ability of a lithological unit to transmit water. Higher conductivity generally corresponds with a higher rate of groundwater movement.

DP & CPI (1992) completed a range of hydraulic tests that included hydraulic testing on 10 different boreholes across the site. A combination of packer testing, slug testing and single well pumping test methods were used to estimate hydraulic parameters in the wells. Summary statistics for this testing are presented in Table 3.2. The results generally range between values of 0.0007 and 0.6 m/day with average and median values of 0.11 and 0.085 m/day respectively.

Additional hydraulic testing was completed as part of the DP & CPI (1994) investigations. The information available on this testing suggests that up to 283 packer tests and 16 slug tests were completed. The results available had a range in hydraulic conductivity of 0.001 m/day to 0.67 m/day with an average value of approximately 0.06 m/day.

An additional 14 short term pumping tests and a 48 hour pumping test were also completed but the results were reported as transmissivity which cannot be converted to hydraulic conductivity results without a detailed understanding of the saturated depths (and well screen details) in the wells tested.

Table 3.2 DP and CPI 1992 Hydraulic testing statistics

Parameter	Hydraulic Conductivity (m/day)
Number of tests	43
Max	0.6
Min	0.0007
Average	0.108523
Median	0.085
25th percentile	0.0525
75th percentile	0.1185

DP and CPI (1994) made a number of conceptual conclusions based on the hydraulic testing undertaken, which are summarised below:

- High angle jointing systems are likely to provide the main pathway for vertical groundwater migration.
- Major pathways for lateral movement are likely to be sub-horizontal fissures associated with bedding plans.
- Groundwater flow is primarily expected to be within a laterally continuous fracture zone located at the depths of 20 to 50 m bgl and between elevations of 74 to 85 m AHD, which is expected to extend further down Mill Creek valley.
- There is 20 to 25 m of low permeability rock located between the base of the landfill / Mill Creek Valley and the moderately permeable fracture zone interpreted to exist between elevations of 74 to 85 m AHD.

Douglas Partners 2003 undertook some additional packer testing within the Stage 5 landfill area. Seventeen tests were completed and had a range of $8.6E^{-8}$ to $6.5E^{-2}$ m/day with average and median values of 0.0125 m/day and 0.003 m/day respectively. These results are significantly lower than the results of the previous testing.

Overall the data suggest that the hydraulic conductivities of the geology are low, however they are higher than the liners located under the Stage 4 and Stage 5 landfill, which would have lower hydraulic conductivities.

The waste itself is anticipated to have highly variable hydraulic conductivities due to a range of factors associated with the nature of the waste being in-filled, the infilling methods, intermittent capping left in-situ and the state of waste decomposition. Reddy *et al* (2009) reported hydraulic conductivity ranges for municipal solid wastes of between $3E^{-5}$ m/day to 10 m/day.

Storage values

Storage values provide an understanding of the available water within a lithological unit/aquifer that can be released from storage. In confined aquifer systems the amount of water in storage that can be released from the aquifer is limited to how much the aquifer can release by an elastic response to depressurisation. This volume of storage is termed the storativity. In unconfined systems the groundwater in storage that can freely drain under gravity represents the available water in storage for release.

This storage is called the specific yield but is generally equivalent to the effective porosity of the aquifer. Where fracture/fissure/jointing flow predominates the effective porosity generally corresponds to the open area of these systems. Specific yields for unconfined fractured sandstone generally range between 0.001 to 0.1 (dimensionless) (Freeze and Cherry, 1979).

Due to the variable nature of the landfill waste, the effective porosity of the waste is expected to range between that of clays and highly permeable gravel systems and therefore is expected to be between 0.01 to 0.46 (dimensionless) (Weight and Sonderegger, 2001).

3.6 Groundwater elevations

3.6.1 Horizontal groundwater flow directions

Observed groundwater elevations have been presented in plan view (Figures A1 to A4 in Appendix A) and on cross-section plots for 1992, 1997, 2004-2006 composite and 2014 (Figures A5 to A8 in Appendix A) to further understand groundwater flow directions and interactions with site features including the landfill and Mill Creek and whether there was any changes over time as the landfill developed. The cross-section location within Mill Creek catchment is presented on Figure A1 in Appendix A. The data used to prepare the plots is tabulated in Appendix B.

In developing the plots there was inherent limitations in the data, which are summarised below.

- Vertical groundwater elevations can vary significantly at specific spatial locations due to the presence of significant vertical head gradients. This is likely to have influenced the interpretation of horizontal flow directions in all figures. In the plan view figures, data from different depths has been included to highlight the uncertainty in the data and how this fits in with broad horizontal patterns.
- The data points resolving groundwater elevations between years is variable, as such, the difference in flow patterns between the figures is heavily influenced by data resolution rather than being representative of changed groundwater conditions. It is noted that the 1992 data set was the most extensive; however, some data used included information from wells with large screens which may ignore the vertical gradients influencing the interpretation of horizontal flow fields.
- With regard to the cross-sections, the original 1991 ground surface was interpolated from topographic maps for the site and surrounds, while the 2010 ground surface was interpolated from more recent surveys at the site. The 2010 surface has been varied slightly to include the Stage 5 cell development. It should be noted that these surfaces do not necessarily correspond to the exact surface that was present at the time of groundwater observations.

Despite the above limitations, the data are suitable to provide broad interpretations of the spatial groundwater behaviour which are presented below.

- There is a general northerly flow direction in groundwater elevations in all figures. The northerly flow gradients generally approximate 0.02 m/m. Given that average hydraulic conductivities are expected to range between approximately 0.013 and 0.11 m/day and that effective porosity is likely to range between 0.005 and 0.05, the flow velocities are estimated to range between 0.004 and 0.4 m/day. This broadly corresponds with the flow velocities of 0.035 to 0.14 m/day estimated by Thom and Knight (1995) from isotope analysis.
- In 1992 the spatial characterisation of groundwater elevations was better resolved by the groundwater monitoring undertaken at that time. This figure suggests that groundwater flow is generally directed toward Mill Creek and that topography significantly influences groundwater flow directions.
- At the location of the proposed ARRT and GO facilities on the western site boundary there is limited groundwater elevation data. The 1992 data for BH07 located near to the proposed ARRT and GO site and surrounding wells suggests that the flow direction is generally eastward toward Mill Creek, however, given that this site is located near to the top of a ridgeline and that there is no groundwater elevation data further to the west, groundwater flow could be to west towards Deadmans Creek.
- The data suggests potential for groundwater elevations to be above Mill Creek around the toe of the landfill (Chainage of 50 m) and approximately 1.1 km further down gradient, which suggests the potential for groundwater discharge to the Creek in these areas.
- The base of the Stage 5 landfill (approx. chainage 100 to 500) appears to be below groundwater elevations in this area, which would suggest the presence of inward head gradient to the landfill at this location, although this needs to be considered in the context of potentially larger vertical head gradients (See Section 3.6.2).
- At present there are limited data to relate groundwater elevations in the sandstone aquifer to leachate levels in the current landfill (approx. chainage 500 to 2000).

- The leachate levels within the landfill are perched on low permeability zones resulting in variable leachate elevations throughout the landfill. These levels are not indicative of the levels at the base of the landfill where the potential for interaction with the underlying groundwater system exists (Thom and Knight, 1995). There are no wells currently intercepting the base of the landfill, however, Thom and Knight (1995) reported groundwater depths at the base of the landfill (beneath waste thicknesses of approximately 20 m) of between 0.3 m and 8.5 m. These levels may have been overstated by seepage from shallower zones in the landfill. Even in the absence of a basal drainage system the natural slope of the underlying bedrock will promote flow toward the valley centre with subsequent migration northward down the valley. This would inherently limit the potential for build-up of leachate at the land base of Stages 1 to 4 and promote flow of leachate to the Stage 5 landfill area.

3.6.2 Vertical groundwater flow directions

Vertical groundwater gradients were calculated for nested bores at the site and are shown in Table 3.3. Nested bores were not installed in 1992, therefore monitoring results from later years (2003/2004, 2005 and 2014) were used. The nested bore locations provide a reasonable characterisation of upgradient, site and downgradient conditions.

The majority of wells displayed downward flow conditions, however, there was an anomaly between MB034 and MB033 where an upwards flow was detected across all years indicating that this is a stable, preferential flow path and corresponds with the fracture zone reported between 74 and 85 m AHD in DP & CPI (1994). Overall the drilling logs indicated that the screens are likely to be in medium-coarse sandstone (massive carbonaceous lenses).

The vertical head gradients are generally large in comparison with horizontal gradients ca. 0.02 m/m suggesting that the vertical hydraulic conductivities are significantly lower than horizontal hydraulic conductivities.

The large vertical gradients also suggest that the shallow sandstone lithology is likely to be significantly retarding vertical flow. This conceptually fits with the water quality result which suggests limited interaction between the landfill leachate and underlying groundwater systems.

The predominant downward head gradient does however provide the potential for vertical migration of leachate and groundwater where the geological conditions will allow. This circumstance needs to consider that the horizontal groundwater flow path is the predominant flow direction and any elevated influence of leachate on groundwater quality would likely be first experienced in the horizontal direction.

Table 3.3 Vertical groundwater gradients in nested well areas

bore ID	Location	Mid-screen elevation (m AHD)	GWL (mAHD)			Vertical head gradient (m/m)		
			2003/2004	2005	2014	2004/2003	2005	2014
MB114	Approx. 1.4 km down gradient of landfill	82.24	83.68	83.23	-	0.005	0.004	0.000
MB115		57.34	83.56	83.14	-	0.554	0.561	0.000
MB116		37.41	72.51	71.95	-	-	-	-
MB035	At down gradient edge of landfill	96.2	100.44	99.94	100.38	0.018	0.161	0.212
MB034		90.25	100.33	98.98	99.12	-0.154	-0.055	-0.035
MB033		75.25	102.64	99.80	99.65	1.240	0.706	1.193
MB032		68	93.65	94.68	91.00	-	-	-

bore ID	Location	Mid-screen elevation (m AHD)	GWL (mAHD)			Vertical head gradient (m/m)		
			2003/2004	2005	2014	2004/2003	2005	2014
MB306	West side of landfill	103	114	118	-	0.089	0.267	-
MB305		80.5	112	112	-	-	-	-
MB044	Upgradient Edge of Landfill	121	151.00	-	146.73	-	-	0.177
MB045		144.5	-	-	150.90	-	-	-

Notes:

- Gradients are calculated from the top well to the bottom well. Positive values therefore showing downward flow).
- - = no data
- Upward head gradients are defined as negative values.

3.7 Groundwater recharge

The groundwater flow directions interpolated from site data suggest that topographical features are likely to impact the shallow aquifer systems such that the recharge catchment for the shallow groundwater systems will generally be defined by surface water catchments. Some recharge will migrate to deeper aquifer systems that are part of a more regional flow system that could discharge to Deadmans Creek or Woronora River.

Groundwater quality data (See Section 3.8) suggest that there is little migration of leachate from the landfill into the underlying aquifer as such it is expected that the landfill is acting to reduce recharge to the system and its associated capture system, however, there does not appear to be a significant reduction in groundwater elevations in the catchment in response to the an expanding landfill.

The groundwater sharing plan for this area adopts a conservatively high recharge rate of 6% of annual rainfall (1003 mm/annum – BOM Station 066078 at ANSTO) for setting sustainable use targets, which equates to 60 mm/annum of groundwater recharge. Given the low permeability hydrogeological conditions present in this area it could be expected that overall groundwater recharge would be significantly lower, which is supported by the overall absence of leachate impacts to the underlying aquifer system despite some area of the landfill being unlined.

While the development of the ARRT and GO facilities could result in reduced recharge to groundwater the reduced recharge area is small relative to the overall recharge area contributing to the groundwater flow along the ridgeline between Deadmans Creek and Mill Creek where the site is located. As such, it is expected that changes in groundwater associated with recharge reductions would be small and localised.

The landfill itself has a recharge rate that reflects the current hydraulic conditions of the landfill material and the landfill cap. HELP modelling (GHD, 2015) suggests that rainfall recharge into the landfill generally varies between 5 % and 53 % of annual rainfall in the modelled scenarios through the various cover types. This recharge results in the production of leachate which is subsequently collected by the leachate collection system and treated before being discharge to sewer.

3.8 Water quality conditions

Water quality monitoring has been undertaken at the site for more than 20 years as part of meeting the development consent and landfill licence requirements. This data provides an opportunity to understand the actual groundwater composition associated with landfilling at the site, which represents a significant improvement on the extent of data that would normally be

available. The understanding of the behaviour of water quality conditions over an extended time frame provides much greater certainty in understanding what the influence of the landfill will be on surrounding systems into the future. As such this data forms a central component of the assessment of the site's performance with respect to groundwater and presented in Section 4.

3.8.1 Previous water quality assessments

A comprehensive hydrogeological evaluation was undertaken by Thom and Knight (1995) at the site which involved drilling of nested piezometers. One well at each nested location was installed within the waste cell and the other well into the bedrock beneath the landfill. The wells drilled into the bedrock were screened about 5 m into the bedrock and sealed with bentonite and cement. Depending on the hydraulic gradient between the nested piezometers there was a range in the influence (from negligible to significant) on groundwater underlying the landfill. While some influence to underlying groundwater was identified the results suggested that there was significant attenuation of leachate constituents between the waste cells and the underlying bedrock. The report concluded that there was minimal leachate leaving the site and that the leachate collection system along with the impermeable base / bedrock was preventing the leachate from entering the groundwater beneath the landfill. It is noted that this testing was completed in the unlined areas associated with Stages 1 to 3.

A review of available water quality data was undertaken by AGC Woodward-Clyde and CM Jewell & Associates (Woodward & Jewell 1999) and concluded that there was insignificant discharge of leachate from the site based on water quality data that had been collected up until that time. The water quality data was from a number of groundwater wells located in, surrounding and down gradient of the landfill and for surface water quality data taken from Mill Creek, which site groundwater elevation data had indicated to be the primary discharge point for groundwater migrating beneath the landfill.

Woodward-Clyde and Jewell (1999) stated that: "*there is geochemical evidence of leachate impacts on the surface water in the catchment; however, the impacts are slight and are noticeable only in terms of a somewhat neutralised pH compared to the very acidic condition of the adjacent undeveloped catchments and the presence of some pH buffering from bicarbonate. Even the fractured rock geology stimulates attenuation of contaminant load, in that the strongly cross bedded and fractured nature of the rock produces intermittent pockets and basins representing, under differing flow regimes, alternating aerobic and anaerobic micro environments. These potentially provide a variety of environments for contaminant degradation and removal, including denitrification of nitrate in solution and filtration through natural slow sand filters.*"

It was noted in the report that leachate quality often changes over time as it ages and at the time of the 1999 report the leachate was relatively young. It was also noted that with age leachate quality becomes less variable.

The Woodward-Clyde and Jewell (1999) report also states that although there is leachate emerging from Harrington's Quarry Landfill, the effects at Mill Creek are minimal due to attenuation along the flow paths between the former Quarry and the Creek.

Given that the landfill commenced around 1987 and that flow velocities identified by Thom and Knight (1995) approximate 0.035 m/day to 0.14 m/day (13 m/year to 51 m/year), there is some uncertainty as to whether any leachate migration to groundwater would have migrated to monitoring wells at the downgradient boundary and to Mill Creek at the time of the 1999 assessment. Ongoing quarterly to yearly monitoring that has been undertaken since this time (25 years since the landfill commenced) at various monitoring wells and surface water sites is expected to be a sufficient period (approx. 25 years = migration distances between 325 m to

1,275 m) to characterise emerging breakthrough of leachate influence at downgradient groundwater monitoring wells and within Mill Creek.

3.8.2 Current water quality conditions

Appendix D provides a summary of all water quality monitoring data that has been collected since 1987 that is available in electronic format, excluding some recent monitoring data undertaken for the PCYC and surface water overflow from the main site sediment dam (SD05), which is not considered to limit the analysis and outcomes of this groundwater assessment. There is also some additional data pre-1995 that was only available in paper format which has not been included in the tables. Due to the abundance of data after 1995 the absence of this data is interpreted not to limit the outcomes of this assessment.

It is noted that GHD's interpretations and conclusions in the section relies on the data collection, management and reporting undertaken by others over the last 23 years.

The data provides an overall understanding of the influence of landfill leachate and sediment dam water on the groundwater system and down gradient surface water features.

The locations of the sampling points are presented in Figure 3.5 and in Appendix A relative to groundwater flow directions and contours. Based on this information and the well details presented in Appendix B, the spatial distribution of groundwater monitoring locations (in both the horizontal and vertical directions) is expected to provide adequate coverage to suitably characterise the influence (if any) of leachate on underlying groundwater (e.g. there are a number of wells located directly down gradient of the landfill at a range of depths).

Some of the historic sampling locations presented in Appendix D are not presented in Figure 3.5 as there is insufficient information currently available to locate them. This is mainly for locations along Mill Creek and for surface water sampling locations within the site boundary. The interpretation and conclusions made below account for this.

Key conclusions that can be drawn from the data set are presented below.

- Leachate (as characterised at the site leachate dam – LD001) is generally differentiated from other surface water and groundwater results by:
  - Higher alkalinity.
  - Higher electrical conductivity.
  - Higher ortho-phosphorus,
  - Higher ammonia
  - The presence of detectable concentrations of longer chain petroleum hydrocarbons
  - Higher concentrations of BTEX
  - The presence of detectable concentrations of Naphthalene
- There is elevated electrical conductivity in groundwater wells MB016, MB025, MB115 MB116, MB301 to MB304 and detectable concentrations of BTEX compounds in MB032, MB033, MB041, MB115 and MB305. Slightly elevated concentrations of ammonia are also present in MB032, MB035, MB040, MB041, MB104, MB115, MB116 and MB301 to MB304 relative to other wells. The distribution of these wells in relation to groundwater flow beneath the landfill suggests that the changes are due to background conditions rather than the landfill. The data suggest that any influence from the landfill is minimal and does not result in concentrations above the assessment criteria.
- There is a higher electrical conductivity present at MB023, which based on the understanding of groundwater flow directions (presented in Appendix A), is associated with Harrington's Quarry and not the LHRRP.

These findings support those of previous investigations and suggest that the hydrogeological and landfill management systems currently result in minimal impact to groundwater and hence that the migration of leachate via groundwater to downgradient receptors such as Mill Creek is limited and within acceptable concentration ranges.

3.8.3 Temporal changes in water quality

The water quality data made available to GHD (1987 – 2014) in both paper and electronic format has been reviewed for temporal trends/changes (See Appendix D). The ammonia data is the most comprehensive out of all the analytes and is considered to most clearly show any possible relationship between landfill leachate, surface water and groundwater. It is also generally recognised as being a key contaminant of concern for landfills. Figure 3.4 presents the ammonia (as N) data for various wells, leachate ponds and surface water sites across the site. It is noted that a number of the 'BH' wells may have corresponding 'MB' numbers as presented in Appendix B. The data from these two data sets has been colour coded the same such as for BH1 and MB001. The monitoring locations are presented in Figure 3.5. The key ammonia concentration trends in surface water, groundwater and leachate as presented in the following Figure 3.4 and discussed separately in sections below.

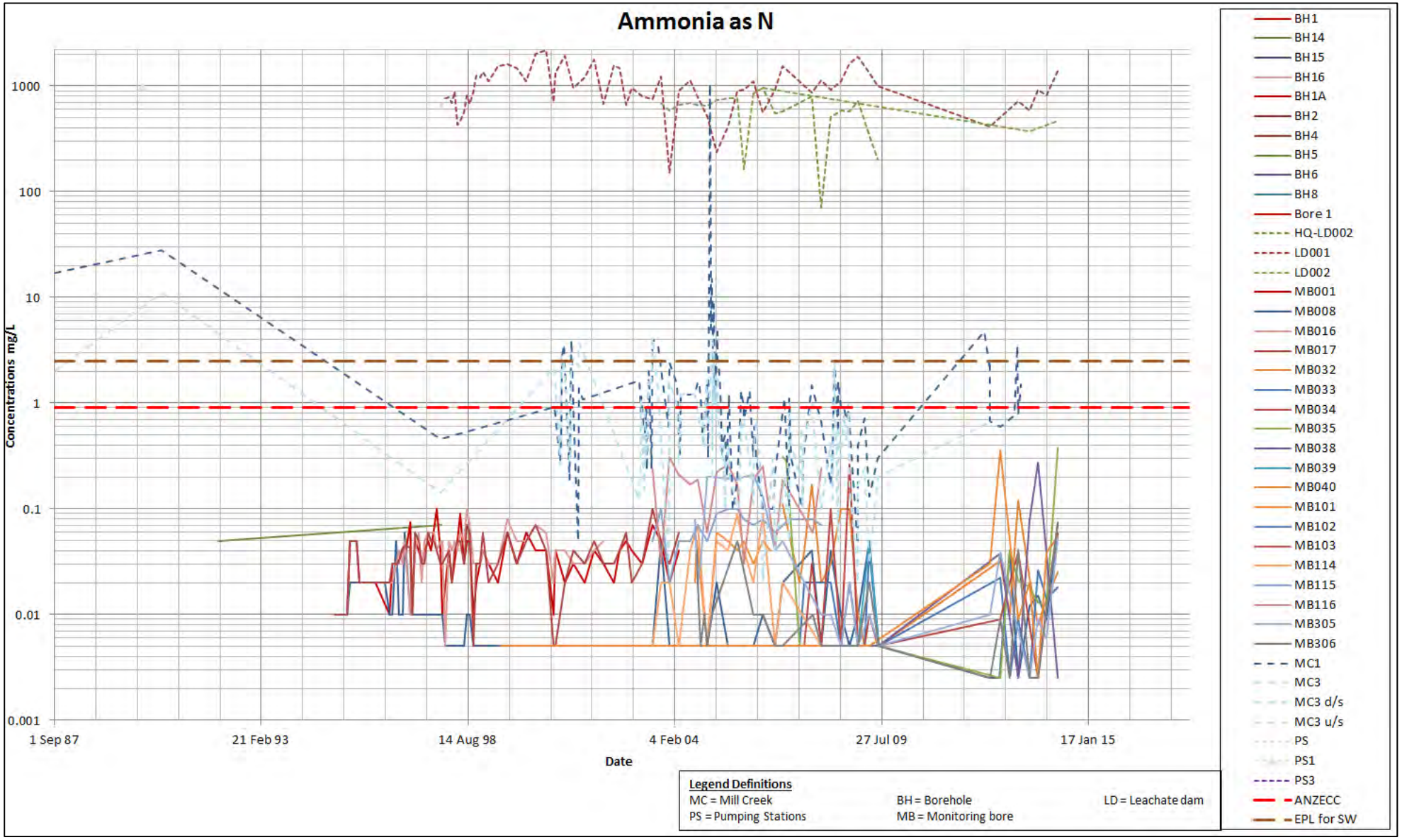


Figure 3.4 Ammonia concentrations at the Site

Leachate data

Ammonia concentrations in leachate have generally ranged between 69.8 (LD002, Dec 2007) and 2180 mg/L (LD001 Sept 2000) and represent the source of potential downgradient influence to surface water and groundwater receptors. The ammonia concentrations are variable across the dataset, but these concentrations are significantly higher than that observed in surface water (excl. 1 reading at MC1) and groundwater. This suggests that site management practices and prevailing physiochemical hydrogeological conditions are resulting in a significant reduction in leachate influence at down gradient monitoring locations in surface water and groundwater.

The leachate concentrations do not appear to have any increasing or decreasing trends suggesting that the water chemistry of leachate is relatively stable.

Surface water

The ammonia concentrations for surface water quality range between 0.02 (MC3, Dec 2008) and 1,040 mg/L (MC1. Jan 2005). The MC1 sampling location is immediately downgradient of the surface water management system discharge point and suggests that surface water run-off has on occasion been influenced by leachate. The concentrations for ammonia are regularly under the EPL criteria of 2.5 mg/L. In January 2005 the results for MC1 were much higher than the EPL criteria. This is understood to be have been due to leachate overflowing from a bunded area into Mill Creek on 10 January 2005. It is noted that there have been no similar elevated exceedances since January 2005.

There do not appear to be any increasing trends in the data over the period of assessment that are significant relative to the inherent variability in the data set. Further to this the limited early time (pre-1997) data appears to be elevated relative to the data after this time which suggests the adoption of improved site management practices.

The surface water quality in Mill Creek between MC1 (immediately downgradient of the landfill) and MC3 (located more than 1 km down gradient of the landfill) tend to mimic each other with MC1 predominately being higher than MC3. These trends are consistent with surface water discharge from the landfill being the primary source of ammonia within the Creek. There are some instances where the concentrations in MC3 are slightly higher than MC1 which may be due to inherent variability in concentrations between the times samples were collected.

On a relatively small number of occasions, the concentrations recorded at MC3 are significantly higher than at MC1, which could suggest another source of leachate influence that may be associated with other landfills located in the catchment.

Further assessment of the site's activities on the surface water environment is detailed in the Surface Water Assessment (GHD 2015a). This report documents the findings from a recent aquatic ecology survey undertaken in Mill Creek.

It appears very unlikely that the elevated concentrations at MC1 and/or MC3 would be due to discharge of leachate influenced groundwater to Mill Creek as concentrations reported for groundwater are overall much lower than the concentrations reported in Mill Creek and are below the criteria which would indicate leachate could be unacceptably influencing groundwater quality.

Groundwater

There have been some difficulties in characterising temporal changes in groundwater concentrations as there has been an on-going decommissioning and re-positioning of groundwater monitoring locations as the landfill and associated facilities have advanced. As such there are only a few locations (such as MB008) that have long term data sets. This has

been accounted for in the interpretation of the data and the establishment of conclusions. Key observations from the data are provided below:

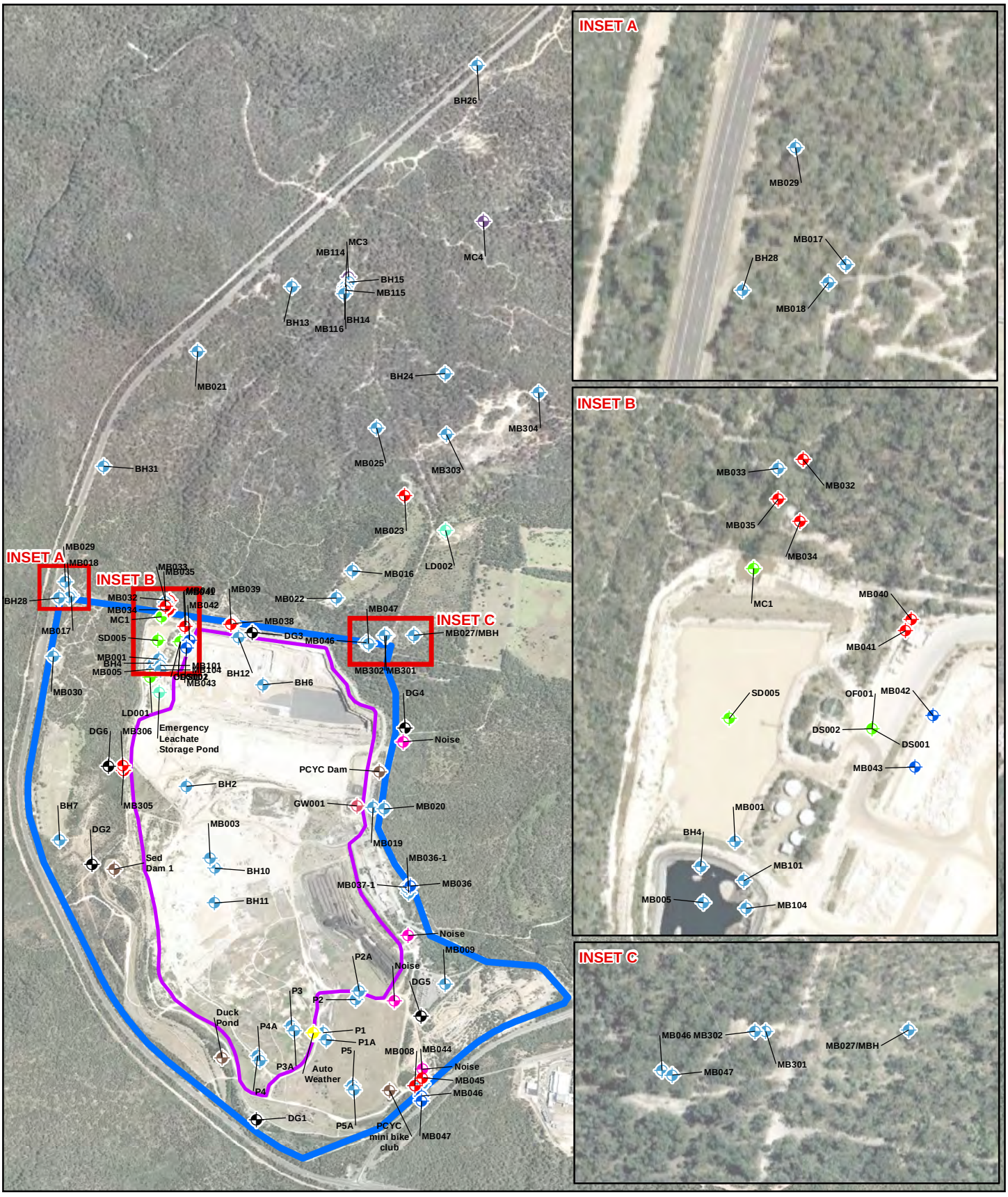
- As stated above for leachate, the concentrations of groundwater are lower than those present in leachate which suggests that the physiochemical hydrogeological environment coupled with the site management practices are significantly reducing the influence of leachate on groundwater.
- As stated above for surface water, the concentrations of groundwater are generally lower than those present in surface water which suggests that groundwater discharge to Mill Creek is not responsible for the overall concentrations reported in surface water discharge.
- All groundwater ammonia data are below the ANZECC criteria for the protection of 95% of species for ammonia and EPL criteria of 1 mg/L suggesting that the physiochemical hydrogeological environment is reducing influence of the landfill on the groundwater environment to acceptable levels.
- Wells MB114 (also named BH14 and BH114), MB115 (also named BH15 and BH115) and MB116 (also named BH16 and BH116) that are located approximate 1.3 km down gradient of the landfill have ammonia results that range between <0.05 and 0.31 mg/L however these concentrations are significantly lower than the leachate ammonia concentrations and the ANZECC freshwater (95%) screening criteria. There is no indication of increasing trends in the data. The concentrations observed for ammonia are below surface water and the groundwater criteria presented in the graph, suggesting that they are not contributing significantly to any influence within the Creek.
- Wells MB116, MB305, MB032, MB034, MB035, MB038 and MB040 have elevated results compared to the other groundwater monitoring wells, which could be indicative of minor influence from landfill leachate. This appears reasonable given that the majority of these wells are located at the down gradient edge of the landfill. The influence is not considered to represent a potential adverse impact as the concentrations are below the nominated screening criteria. Further to this, when these data are compared to older well data in this area, (i.e. BH1 data) there does not appear to be increasing trends, which suggests the influence is stable. All wells including MB008 (up gradient) have variations in ammonia concentrations indicating that ammonia concentrations may vary naturally.

Based on the travel times determined by Thom and Knight (1995) and the distance between the landfill we would expect to have seen some emergence and increasing trends in the influence of leachate on downgradient surface water and groundwater. This is not the case, providing confidence in the interpretation that leachate is not causing any significant impact on groundwater quality.

Summary of findings

Overall the data suggests that there is no breakthrough or increasing trends of leachate influence on down gradient groundwater and surface water locations.

The data suggests that the in-situ geology and current landfill and leachate management practices implemented (including the current leachate collection system) are preventing down gradient impacts to groundwater and surface water systems. As such on-going operation of the system using the same practices is not expected to result in the development of impacts to down gradient receptors (i.e., Mill Creek) via the groundwater pathway.



LEGEND

- LHRRP boundary
- Landform reprofiling boundary
- Auto weather station
- Active surface water / leachate sample sites
- Dust monitoring point
- Garden organics leachate dam
- Active groundwater monitoring bore
- Historic groundwater monitoring bore
- Leachate dam
- Surface water sampling points
- Noise monitoring points
- Sediment dam
- Subsurface gas bores

Note:
Locations are indicative only, and includes historical monitoring locations that may have been decommissioned

Paper Size A4

0 62.5125 250 375 500

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

SITA Australia
Lucas Heights Resource Recovery Park

Job Number 21-23482
Revision A
Date 13 May 2015

Locations of monitoring points (indicative)

Figure 3.5

Level 15, 133 Castlereagh Street Sydney NSW 2000 Australia T 61 2 9239 7100 F 61 2 9239 7199 E sydmail@ghd.com W www.ghd.com

G:\21\23482\GIS\Maps\MXD\21-23482-Z030_SampleLocations2.mxd

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Data Source: NSW Department of Lands: Cadastre - Jan 2014; Geoscience Australia: 250k Data - Jan 2014; NSW Department of Primary Industry - Jan 2014; Google image Jan 2014. Created by: afoddy

3.9 Sensitive receptors

For the purposes of this assessment the key receptors are those that are potentially in hydraulic connection with leachate migrating within groundwater from the landfill. These receptors are discussed below.

3.9.1 Surface water

Based on the conceptual understanding of the hydrogeological conditions and interpreted groundwater flow direction it is expected that Mill Creek is likely to be the primary point of discharge for shallow groundwater migrating beneath the landfill.

Based on the current understanding of groundwater flow direction beneath the proposed ARRT and GO facility sites proposed to be located on the western side of the site, groundwater flow to Deadmans Creek or Woronora River is possible. As such it is therefore considered to be a potential discharge receptor for groundwater.

However, based on the conceptual understanding of existing groundwater migration there is a limited potential for groundwater to migrate to deeper aquifer systems and discharge to either Deadmans Creek or Woronora River. Given that water transmission properties of the sandstone generally decrease with depth, this pathway is likely to be more limited than the horizontal pathways to Mill Creek and shallow groundwater systems at the down gradient edge of the landfill. As such, it can be expected that impact to these more shallow features would act as a precursor for impact to deeper systems.

Mill Creek is a highly disturbed environment that has been re-directed in the vicinity of the landfill. The 1999 EIS for the LHRRP (NECS, 1999) suggested that Mill Creek was primarily ephemeral with stagnant pools predominating at times of no flow. Aquatic biological studies suggested that while ecosystems were highly disturbed immediately downgradient of the landfill, there was a large increase in taxa abundance 2.5 km downstream. The study did not establish whether the recovery in abundance was to levels commensurate with undisturbed neighbouring catchments.

Data characterising the flow behaviour and aquatic ecology within Deadmans Creek was not available in the documents reviewed, however, it can be expected that; due to the more deeply incised nature of Deadmans Creek and that it appears to be located within a relatively undisturbed catchment (native bushland), it is likely to be more dependent on groundwater discharge (but it still anticipated to ephemeral) and have aquatic ecosystems more sensitive to impacted groundwater.

Woronora River is considered to be perennial in nature and likely to be a discharge point for groundwater due to its low elevation and size of its catchment. Woronora Dam is located approximately 10 km upstream. Upgradient of Lucas Heights the Woronora River catchment is relatively undisturbed and well vegetated in native bushland. Downstream of Lucas Heights the catchment is more disturbed by development and is likely to receive run-off from low density residential areas. Data characterising the sensitivity of aquatic ecology within Woronora River was not available in the documents reviewed.

Based on this information aquatic ecosystems in the lower reaches of Mill Creek and in Deadmans Creek and Woronora River are considered to be potentially sensitive receptors.

As stated above in Section 3.8.3, further assessment of the site's activities on the surface water environment is detailed in the Surface Water Assessment (GHD 2015a). This report documents the findings from a recent aquatic ecology survey undertaken in Mill Creek.

3.9.2 Groundwater dependent ecosystems

The BOM definition of groundwater dependent ecosystems (GDEs) is natural ecosystems that require access to groundwater to meet all or some of their water requirements on a permanent or intermittent basis, so as to maintain their communities of plants and animals, ecosystem processes and ecosystem services. GDEs can be surface water features that rely on ground water inflows or other ecological communities, usually vegetation, that obtain water from subsurface groundwater (often when groundwater is shallow).

With regard to the sub-surface groundwater dependent ecosystems, the biodiversity assessment report states the following:

"A literature review found conflicting information on the likelihood of GDEs being present in the study area. The Atlas of Groundwater Dependent Ecosystems maps vegetation in most of the Project footprint as having no or low potential for groundwater interaction although vegetation with high potential for interaction with groundwater is identified down-stream of the site by the GDE Atlas. Conversely, native vegetation types identified in the study area by GHD are likely to be GDEs according to Kuginis et al (2012). According to that study, groundwater dependency can be inferred for many parts of the landscape as there is a strong association between floristic composition, topography and groundwater. Coastal Sandstone Ridgetop Woodland (with which Red Bloodwood - Scribbly Gum heathy woodland on sandstone plateaux is commensurate), Shale Sandstone Transition Forest and Coastal Upland Swamps are all identified as having a high probability of being a GDE (Kuginis et al 2012)."

These three vegetation types are present in the study area. As such, and as a precaution, it is assumed that all native vegetation types in the study area are groundwater dependent to some degree.

The groundwater data presented within Appendix B for wells close to Mill Creek (i.e. MB116) suggest groundwater elevations are very shallow in places and thus provide an environment for vegetation to be reliant on the subsurface presence of groundwater. As noted in Section 3.6, groundwater was observed (in Mar 2014) at higher elevations than the base of the Stage 5 cell (90 m AHD) in a number of nearby shallow wells during its development. This suggests that the presence or absence of shallow groundwater is associated with localised hydrogeological conditions rather than more regional hydrogeological conditions and that shallow groundwater impacts will be minimal in areas away from the Project footprint.

With regard to the sub groundwater inflow dependent ecosystems, the biodiversity assessment report states the following:

"Mill Creek is not mapped by the GDE Atlas of Groundwater Dependent Ecosystems as being groundwater dependent. The only waterway in the vicinity of the proposal with potential dependence of groundwater is the Woronora River. Given its position near the top of the ridge, much of the water flow in Mill Creek is likely to be dependent on rainfall within the immediate area. As such, Mill Creek in the project footprint is not likely to be an groundwater inflow dependent ecosystem."

Field investigations for the biodiversity assessment suggest that downgradient of the LHRRP dam flows were generally absent, but that intermittent pools were present. This suggests that groundwater inputs into Mill Creek may be negligible, however, as a precaution aquatic flora and fauna in Mill Creek downslope of the study area are considered to be potentially dependent on groundwater inflow.

The impacts to the potential GDEs identified are discussed further in Section 4.

3.9.3 Groundwater users

GHD conducted a review of existing registered groundwater borehole records using the NSW Water Information Database[3]. The search was completed to identify registered groundwater boreholes in close proximity to the site and to provide an indication of potential groundwater users in the area.

A total of 87 groundwater boreholes were identified within a five kilometre radius of the site. A summary of the bore details is provided in **Table C1**, with the location of each bore presented in Figure C1 in Appendix C. All bores identified were for monitoring purposes, which is not considered to be a sensitive use. No salinity data or yield information was provided for any of the bores listed in **Table C1,** however previous groundwater sampling results from monitoring wells (MB008) upgradient of the site suggest that groundwater is of reasonably high quality (low in metals and dissolved solids) and potentially suitable for potable water use. The pumping test completed at the site by DP&CPI (1994) also suggests that reasonable yields (5 L/s) may be achievable from the aquifer system in this area.

It is expected that future development in the area would be on a reticulated water supply (as suggested in the Heathcote Ridge Master Plan Servicing Strategy, 9 December 2011), suggesting that there is a low potential for groundwater to be extracted for potable water supply purposes. Further to this the likelihood of groundwater extraction for other purposes such as domestic of stock use is considered to be low given that extensive zones of the surrounding area are comprised of native bushland in the Holsworthy Military reserve or in National Parkland.

Based on the above information the groundwater resource in this area is not considered to be a sensitive resource from human and livestock use perspectives.

3.10 Summary of existing environment

Figure 3.6 presents a summary of the current conceptual understanding of the hydrogeological and groundwater conditions at the site.

The key aspects of the conceptual conditions are summarised below:

- The inherent hydrogeological conditions coupled with the leachate management systems and procedures result in limited migration of leachate to the underlying groundwater system. This is supported by the groundwater quality monitoring results.
- The groundwater chemistry data suggest that any influence of landfill leachate is limited in extent, is at concentrations that are below freshwater and EPL assessment criteria and have no apparent increasing trends.
- The presence of large downward head gradients is expected to be representative of hydrogeological conditions that impede vertical flow relative to horizontal flow rather than being an indication of vertical flow.
- There is potential for migration to deeper aquifer systems, but with decreasing permeability with depth, preferential horizontal flow and the current extensive groundwater monitoring network located within close proximity to the down gradient edge of the landfill it can be expected that shallow groundwater monitoring wells would act as an initial indication of potential impacts to deeper systems.
- Shallow groundwater flow directions are controlled by the topography and the general dip of the geology to the north. As such shallow groundwater tends to flow to the centre of the catchment (I.e. toward Mill Creek) and to the north. Along ridge lines a flow divide will

[3] *www.nr**atlas**.**nsw**.gov.au/*

be present that will result in groundwater flow towards the centre of neighbouring catchments.

- Overall the groundwater data suggests that the risk to down gradient receptors is low and is not causing any significant impact on groundwater quality.

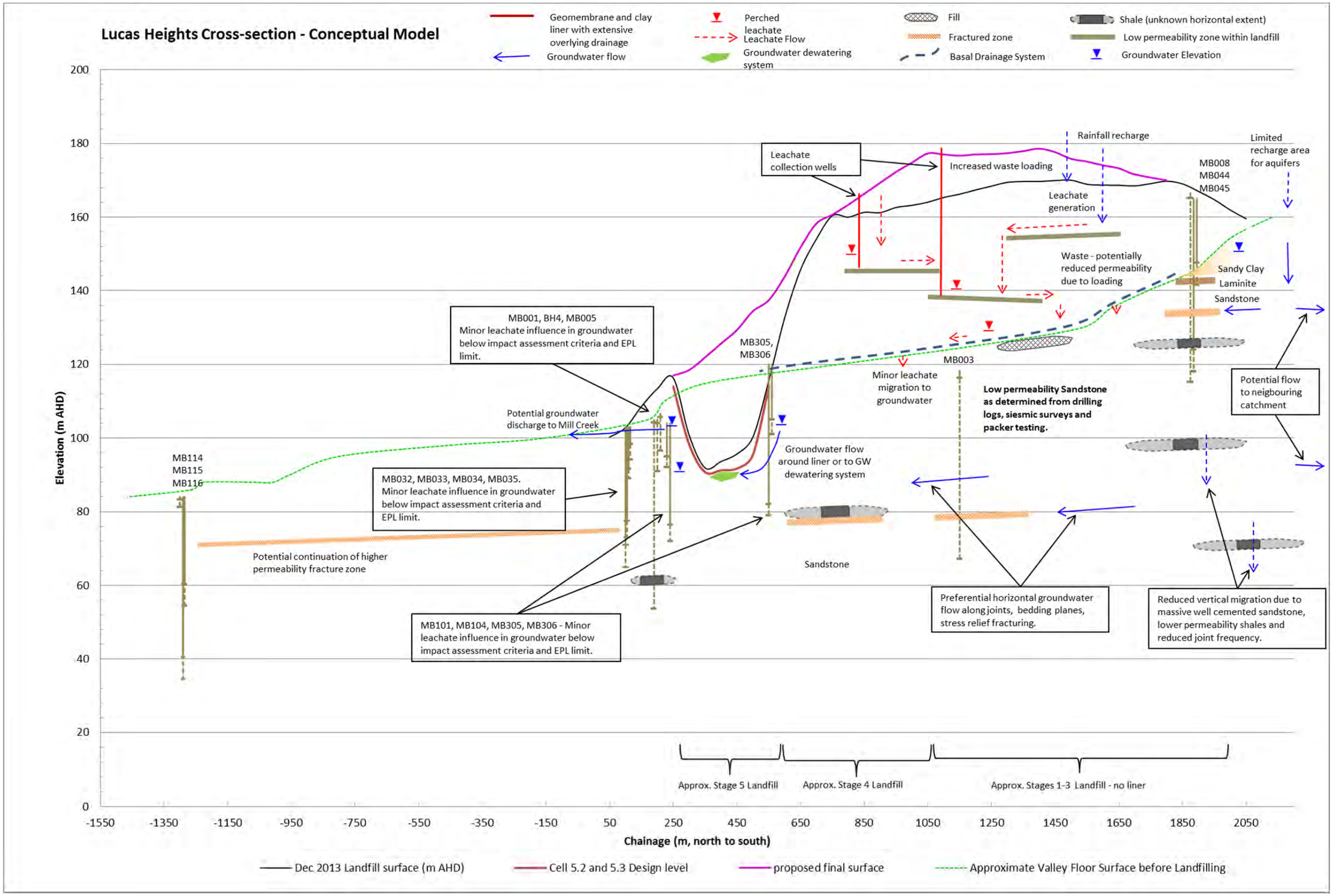


Figure 3.6 Summary of conceptual conditions

4. Impact assessment

4.1 Introduction

The impact assessment addresses the key components of the proposal against the existing environmental setting outlined above.

The key features of the proposal include:

1. Re-profiling works at the landfill
2. Development of the ARRT facility
3. Relocation and expansion of the GO facility
4. Parkland area expansion

The potential impacts associated with the above project activities can be separated into those associated with construction, operation and post closure. These can subsequently be separated into groundwater quality and groundwater availability related potential impacts.

The key potential receptors include potential GDE vegetation and aquatic ecosystems associated with Mill Creek, Deadmans Creek and Woronora River. There are no registered boreholes within 5 km that are used for purposes that may be potentially adversely impacted.

Further detail on the potential interaction of the project with groundwater and the associated assessment is provided in the remainder of this chapter.

4.2 Project interaction with groundwater

The aim of this section is to highlight the key proposal features that interact with groundwater and how the interaction with of these features may change during construction operation and post closure. The potential impacts associated with the key proposal features outlined in this Section are discussed further in Section 4.3.

4.2.1 Re-profiling works

The geometry of the currently approved final landform has been observed to create ponding of rainwater. This increases the potential for infiltration into the waste and results in additional leachate generation. The re-profiling works will further limit the potential for surface ponding to occur.

The re-profiling works will be completed with a layered capping system that will include a sealing layer, an overlying sealing protection layer and a surficial revegetation layer that is designed to achieve greater than 5% slopes as recommended by the EPA (EPA, 1996) and control stormwater infiltration and thereby leachate generation.

The HELP modelling (GHD, 2015) and leachate water balance results presented in the leachate assessment suggests that the proposed re-profiling works and indicative capping and revegetation system will result in a decline in recharge (and leachate generation) over the lifetime of the operational landfill (as noted in Figure 4.4 of the Leachate Assessment, GHD 2015) and from the site's closure. The final landform will have a reduction in leachate generation for the final site arrangement:

- In the 50% AEP average year, the current final cap is estimated to allow 12% –17% of rainfall to infiltrate. The proposed final cap is estimated to reduce the infiltration to 6% of rainfall. This would result in a reduction in leachate generation in the order of 50% – 64% for final capped areas.

- In the 10% AEP wet year, the current final cap is estimated to allow 17% – 22% of rainfall to infiltrate. The proposed final cap is estimated to reduce the infiltration to 5% of rainfall. This would result in a reduction in leachate generation in the order 70% – 77% for final capped areas.

This will tend to reduce the potential for quality impacts to the underlying groundwater and down gradient receptors.

The proposed profiling work stages are presented in Appendix E. Increased loading of waste on the landfill associated with increased waste depth both during and after re-profiling may have the potential to:

- reduce the hydraulic properties of the waste, which may subsequently reduce the capture potential of the existing leachate collection wells and subsurface drainage network and reduce the flux potential to the underlying groundwater system
- compromise the integrity of the capture network such that capture efficiency is reduced
- reduce the hydraulic properties of underling aquifer systems and thus the hydraulic communication (migration) between the leachate and underlying groundwater.

The already approved Stage 5 landfill area is currently being developed and is available to suitably collect, contain and extract leachate that is influenced by the increased loading of waste.

Stage 5 includes the following key features:

- A very low permeability clay and geomembrane liner overlain by a high permeability drainage system which drains to a central leachate extraction sump. This system is at lower elevations than the existing landfilled areas and is designed to collect leachate from the Stage 5 landfill and residual leachate seepage from all other stages of the landfill (located up gradient). This system will limit the migration of any seepage of leachate (which based on current water quality data is considered to be minimal) to groundwater
- A groundwater drainage system, including high permeability drainage geo-composite and drainage trenches draining to a groundwater extraction sump, which underlies the landfill double liner system and leachate drainage system. This is in place to prevent the build-up of groundwater pressure behind/below the liner, preventing heaving or instability until such time that there is sufficient waste thickness to prevent this occurring. The system is located at an elevation of approximately 90 m AHD, which is at or below groundwater elevations in shallow wells screened in this area. As such it will act as a primary point of discharge for shallow groundwater while it is in operation. In future this system could also be used as an interception and capture system if unacceptable impacts were to emerge.

The basal leachate drainage and collection system would operate after closure, to reduce the potential for leachate levels to build up in the landfill. As the base of the landfilled areas slope north down toward Stage 5, it is also expected that leachate would be able to be efficiently extracted from Stage 5 rather than in up gradient areas with higher basal elevations (such as Stages 1 to 4). Therefore ongoing leachate management would occur until such time as the leachate volume monitoring and/or leachate and water quality monitoring data suggest that risks are insignificant and as directed by the EPA.

The existing monitoring data suggests that the current leachate collection system is resulting in an acceptable influence on the surrounding groundwater and surface water systems. As such, provided the same conditions are maintained moving forward it would be expected that minimal impact would continue.

Further details are provided in the Leachate Assessment (GHD 2015) on other proposed measures to prevent leachate escaping to waters.

4.2.2 ARRT and GO facilities

The construction of the new ARRT and the relocation of the GO would involve excavation works but these works are not expected at depths that would intercept groundwater. The proposed ARRT and GO facility layout is presented in Appendix F.

During construction the primary potential for interaction of the site with groundwater would be via spills that could infiltrate into the underlying groundwater system. This is a normal risk associated with all construction works on exposed surfaces and would be minimised by developing appropriate site management practices and emergency response procedures. These practices and methods would be detailed in a Construction and Environmental Management Plan (CEMP) and an EPL for these facilities.

The management practices would normally include (but not be limited to):

- Designated chemical storage areas with appropriate leak protection (in accordance with Australian standards)
- Bunded washdown facilities and refuelling areas
- Provision of emergency response spill kits
- Environmental management practice training and emergency response training
- Regular environmental audits (including site walkovers) by a site environmental manager

Once in operation the ARRT facility would potentially have infrastructure that could have the following interactions with groundwater:

- Infiltration of leachate into the underlying groundwater systems. It is expected that the floor of the ARRT would be lined with a suitable low permeability material, as outlined in Section 2.2.3 of the ARRT OEMP, and leachate would be stored in fully enclosed and bunded tanks, as outlined in Section 7.1.3 of the ARRT OEMP and as such the risk of leachate entering the groundwater would be low.
- Reduction in groundwater recharge associated with the emplacement of low permeability surfaces such as buildings and suitable low permeability surfaces for processing waste. This may result in a decrease in groundwater elevations beneath the site, but due to the small area in comparison to the groundwater catchment the risk of impacts is considered to be low.

Post closure, the potential for degradation of groundwater quality and reduced groundwater levels by site activities would be negligible as the site activities would no longer be taking place.

4.2.3 Parkland changes

The design of parkland areas over the landfill will affect the potential for infiltration to the landfill and therefore the potential for leachate generation. These affects will be present during operation (with ongoing rehabilitation behind re-profiled areas) and after the completion of landfilling (post closure).

The vegetation selected may increase or decrease the potential for infiltration through the re-profiled landfill. The selected vegetation will limit the potential for infiltration.

The HELP modelling and leachate water balance results presented in the Leachate Assessment (GHD, 2015) suggests that the proposed re-profiling works and indicative capping and revegetation system will provide significant reduction in leachate generation for the final site

arrangement, as discussed in Section 4.2.1. This will tend to reduce the potential for flux impact to the underlying groundwater and down gradient receptors.

4.3 Impact characterisation

4.3.1 Re-profiling works

Groundwater Availability

If there are impacts to groundwater dependent ecosystems, such as the vegetation species identified in Section 3.9.3 and the potential inflow dependent ecosystems (such as Mill Creek, Deadmans Creek and Woronora River) due to the landfill re-profiling, there are expected to be localised and minor for the following reasons:

- The footprint of the existing landfill is unlikely to change to any significant extent compared with existing conditions. As such further reduction in recharge to the groundwater system is not expected.
- Re-profiling will result in a reduction in the generation of leachate, which will result in less leachate being generated and collected rather than a reduction in recharge to underlying groundwater systems.
- Water quality data suggests that there is a limited hydraulic connection between the landfill and underlying groundwater, which therefore suggests changes in leachate generation will not result in significant changes to groundwater discharge to creeks and groundwater elevations near potentially dependent vegetation further downslope.
- The hydrogeological conditions suggest that groundwater elevations are likely to be more controlled by localised hydrogeological conditions rather than a more regional interconnected aquifer response. Examples of this include:
  - Groundwater was observed (in Mar 2014) at higher elevations than the base of the Stage 5 cell groundwater depressurisation system (around 8 to 10 m higher) in a number of shallow wells (at distances of approximately 100 and 200 m from the depressurisation system) during its development.
  - The distinct vertical groundwater gradients at and around the Project area suggest the presence of intermittent aquifer systems located within fractures and joints that have limited connection as opposed to a regional highly interconnected groundwater system discharging into the local creek systems.

After closure of the site's operations, leachate management will be required to limit the potential for increased leakage to underlying groundwater and to prevent a resultant increase in groundwater elevations in localised areas and to prevent increased discharge to surface water features, particularly Mill Creek.

Groundwater Quality

The existing water quality information suggests that the groundwater surrounding and beneath the landfill currently is of an acceptable quality after more than 25 years of landfill operation. This suggests that there is an inherent low risk to groundwater quality due to the existing hydrogeological conditions.

While the existing groundwater quality monitoring results suggest that impacts to downgradient systems are acceptable these conditions could change with changing landfill conditions caused by the re-profiling (as discussed below). These changes could increase the risk of migration to underlying groundwater and increase the potential for impacts (via the groundwater pathway) to potential GDE's located along Mill Creek and aquatic ecosystems located in Mill Creek.

A delayed migration to deeper aquifer systems may also occur resulting in potential for water quality impacts to GDE's and aquatic ecosystems associated with Woronora River and/or Deadmans Creek. Given the more limited migration potential of this pathway and as described in Sections 3.6.1 and 3.6.2, it is expected that the shallow groundwater system acts as an early warning indicator should there be an emergence of elevated leachate concentrations in groundwater.

During re-profiling works it can be expected that overall infiltration rates will decrease. Despite this, there is a possible reduced collection capacity and reduced leachate permeability created by loading effects which may result in increased leachate levels at the base of the landfill. However this situation is able to be effectively managed by geometry, design and operation of the Stage 5 landfill cells. These cells are at least 10 m lower than the other stages and act in effect as a sump to collect and contain leachate from where it is able to be extracted and disposed to sewer.

After re-profiling, if groundwater recharge reductions associated with improved capping and drainage are greater than the loss in recovery/yield of the existing leachate capture system then it can be expected that leachate levels in the landfill will fall. This will reduce the potential for leachate migration to the underlying groundwater systems.

If groundwater recharge reductions are less than the loss in recovery/yield of the existing leachate capture system then it can be expected that leachate levels in the landfill will rise, which will increase the potential for leachate migration to underlying groundwater. This risk will able to be suitably managed by maintaining the operation of the leachate management system after closure and until it has been determined that the risk to groundwater is insignificant.

Once landfilling is completed, the landfill will be capped with a suitable capping system. The HELP modelling and leachate water balance results presented in the leachate assessment suggests that the proposed re-profiling works and indicative capping and revegetation system will provide a significant reduction in leachate generation for the final site arrangement. The predicted reduction in leachate generation is discussed in Section 4.2.1. This will reduce the potential for impact to underlying groundwater and down gradient receptors.

The later Stage 5 areas leachate drainage system is designed to manage the proposed waste loading (GHD 2015).

With the implementation of Stage 5 control measures, which include: a double basal liner; an appropriately designed basal leachate collection system; and extraction of leachate from the landfill, it is expected that down gradient leachate migration associated within Stage 5 will be minimal and of low risk. Further to this, the Stage 5 system will act as a barrier for any impacted groundwater migrating from the earlier and upgradient stages of the landfill.

The risks to groundwater will need to be managed and measures are discussed in Section 5.1.

4.3.2 ARRT and GO facilities

Groundwater Availability

The potential for impacts to sub-surface groundwater dependent ecosystems, such as the vegetation species identified in Section 3.9.3 and the potential groundwater inflow dependent ecosystems (such as Mill Creek, Deadmans Creek and Woronora River) due to operation of the ARRT and GO facilities are expected to be localised and minor for the following reasons:

- The size of the ARRT and GO facilities relative to the Mill Creek and Deadmans Creek Catchments are small and any reductions in groundwater elevations and inflows to creeks associated with reduced recharge at the ARRT and GO facilities would be minor, particularly in areas of more sensitive vegetation and in-stream ecological communities in

Mill Creek further down-slope gradient of landfill. Woronora River catchment is located in a separate catchment and is unlikely to have significant hydraulic connection with the ARRT and GO facility.

- The hydrogeological conditions suggest that groundwater elevations are likely to be more controlled by localised hydrogeological conditions rather than a more regional interconnected aquifer response. Examples of this include:
  - Groundwater was observed (in Mar 2014) at higher elevations than the base of the Stage 5 cell groundwater depressurisation system (around 8 to 10 m higher) in a number of shallow wells (at distances of approximately 100 and 200 m from the depressurisation system) during its development.
  - The shallow vertical groundwater gradients at and around the Project area suggest the presence of intermittent aquifer systems located within fractures and joints that have limited connection as opposed to a regional highly interconnected groundwater system discharging into the local creek systems.
- Topographical conditions, shallow soils and exposed bedrock will already be resulting in low recharge conditions.
- Flows in Mill Creek have been by previous and current site observations to be intermittent, which suggest that there is a low reliance on groundwater inflow for flow maintenance. While there are pools present that may be reliant on surrounding groundwater it is unlikely that the project will result in groundwater elevation reduction below the base of the creek systems, especially downslope of the site were instream ecosystems are less disturbed and the stream bed is lower than the minimum elevations of the landfill.

The performance of these systems would remain the same or tend toward pre-existing conditions after operation.

Groundwater Quality

Groundwater quality under the ARRT and GO facilities will need to be protected to prevent the infiltration of impacted water/leachate to groundwater. Mitigation should include installing a suitable low permeability barrier underneath where any waste or leachate is stored or handled and implementing a monitoring and management program.

After closure of these facilities waste processing will cease and the potential for impacts to groundwater quality will therefore be removed.

4.3.3 Parkland changes

Groundwater availability

A reduction in recharge through the landfill cap associated with increasing the slope of the final landform, an improved capping profile and vegetation changes is not expected to change the groundwater flow regime underlying the landfill and hence discharge to Mill Creek, Deadmans Creek and Woronora River due to the following:

- More than 20 years of groundwater quality data suggests that there is a limited hydraulic connection between the landfill and underlying groundwater, which therefore suggests changes in leachate generation will not result in significant changes to groundwater discharge to creeks and groundwater elevations near potentially dependent vegetation further downslope.
- Less leachate being generated and collected rather than a reduction in recharge to underlying groundwater systems.

The parkland is unlikely to create any adverse impacts on groundwater and associated groundwater dependent receptors. However management measures are recommended post-closure to prevent impact to the integrity of the landfill cap and development of surface water features in areas where they have potential to generate additional leachate.

Groundwater Quality

A reduction in recharge through the landfill cap associated with reprofiling the site, and improving the capping and vegetation system will reduce the potential for the generation of leachate and hence reduce the risk associated with water quality changes to the underlying groundwater system.

The parkland changes are unlikely to create any adverse impacts on groundwater quality and management of downgradient groundwater dependent receptor, however, management measures are recommended post-closure to prevent impact to the integrity of the landfill cap and development of surface water features in areas where they have potential to generate additional leachate.

5. Proposed mitigation measures and monitoring

5.1 Mitigation measures

Groundwater quality can be potentially influenced by surface water runoff and leachate seepage from the landfill.

As part of this proposal, the existing site LEMP has been updated and three separate Operational Environmental Management Plans (OEMPs) have been prepared for the GO facility, ARRT facility and the holistic LHRRP facility. A post-closure environmental management plan (EMP) has also been prepared.

A comprehensive list of prevention, mitigation and rectification measures has been prepared. These are detailed in the surface water and leachate sections of the LHRRP OEMP (SITA Australia, 2015a), ARRT Facility OEMP (SITA Australia, 2015b), GO Facility OEMP (SITA Australia 2015c) and Post-closure EMP (SITA Australia, 2015d).

Identified mitigation and rectification measures would be implemented as required on a case by case situation basis subject to the issue and technical solutions available at the time.

Key mitigation measures relating to the design and operations of the facilities are provided below.

5.2 Re-profiling works

The existing monitoring data suggests that the current leachate collection system is resulting in an acceptable influence on the surrounding groundwater and surface water systems. As such, by maintaining the same conditions moving forward it is expected that the proposal will not cause a significant impact on groundwater. Measures to manage the current groundwater situation and mitigate the risks along the groundwater pathway will include:

- Landfilling practices that are consistent with, or improve on, current practices (i.e. controls the working area and time periods of active landfilling), which will maintain and/or reduce the potential for leachate generation.
- Re-profiling of the landfill with improved slopes and capping design will be adopted to reduce the overall recharge into the landfill.
- After closure there will be no open landfilling area which will reduce the potential for infiltration and leachate generation further.
- To assess the collection capacity/efficiency associated with reprofiling the landfill a monitoring plan will be developed. This may include one or a combination of the following:
  - Ongoing assessment of the leachate generation volumes within the Stage 1 to 4 landfill areas during re-profiling via development and regular updating of a landfill water balance model that compares expected infiltration volumes against collected leachate volumes.
  - Characterisation and monitoring of leachate levels in dual purpose gas/leachate collection wells for changes to water levels.
  - Monitoring of the leachate extraction yields from dual purpose gas/leachate collection wells and leachate collection trench installed around the areas being reprofiled (Leachate Assessment Report GHD 20015) to assess yields over time.

  - Implementation of an improved collection system if water balance discrepancies are interpreted and/or overall changes in leachate levels and yields are observed and taking into account groundwater quality data.
- Ongoing leachate management will occur until such time as the leachate volume monitoring and or leachate and water quality monitoring suggest that risks are no longer significant and as determined by the EPA. This has been incorporated into the Post closure Environmental Management Plan.
- The Stage 5 leachate control measures will further limit the potential for impacts to underlying groundwater systems.
- The groundwater drainage system located beneath Stage 5 will provide additional capacity for collection of impacted groundwater if in the future adverse groundwater impacts emerge.

Ongoing monitoring will be required to monitor for the emergence of impacts.

As presented in Section 2.3.1 and Figure 3-5, the current groundwater monitoring network outlined in the OEMP and EPL includes 14 monitoring wells. These wells are located in suitable positions to characterise up-gradient (baseline) groundwater quality conditions and the groundwater quality at the down gradient edge of the existing landfill. Under the current proposal the landfill footprint is not expected to expand to any significant extent and therefore this monitoring network is considered to be suitable for ongoing monitoring with the proposed landfill changes.

The monitoring wells in the OEMP that are proposed for ongoing monitoring are re-iterated below.

- MB008
- MB023
- MB032
- MB033
- MB034
- MB035
- MB038
- MB039
- MB040
- MB041
- MB044
- MB045
- MB305
- MB306

In accordance with the EPL condition R2.3, the criteria for assessing whether leachate is impacting on groundwater quality is based on an ammonia concentration of not more than 1 mg/L.

Further assessment criteria should also consider ANZECC (2000) water quality management framework. The approach of the guidelines is to '*protect environmental values by meeting management goals that focus on concerns or potential problems'* (ANZECC, 2000).

This framework focuses on development of a monitoring program, including the performance objectives, standards and measurement criteria, should focus on specific issues not on pre-determined guideline values.

The specific issues at this site are considered to be protection of instream ecological diversity of the surface water system that the groundwater primarily discharges to.

The criteria specified in the EPL will be required to be met however, the instream aquatic health and environmental values should be considered. The assessment criteria should consider (in addition to the EPL and aquatic health) background surface water quality in Mill Creek and subsequently the ANZECC (2000) freshwater criteria for the protection of 95% of freshwater species (for slightly to moderately disturbed systems). Recommendations are provided in the Surface Water Assessment (GHD 2015a) in regard to regular assessing instream aquatic health during the reprofiling activities.

Key constituents identified within the leachate, green waste liquor and groundwater include:

- Metals (including but not limited to aluminium, cadmium, iron, lead)
- Total recoverable hydrocarbons
- Benzene, toluene, ethylbenzene and xylene (BTEX)
- Speciated poly-aromatic hydrocarbons (PAHs)
- Phenol
- Ammonia
- Nitrate
- Electrical conductivity
- Alkalinity
- Ortho-phosphorus

As a minimum the water quality analysis undertaken for monitoring should be for the above analytes. In order to understand potential instream impacts total nitrogen and total phosphorus should also be added to this suite. Due to the potential landfill source potentially introducing a large range of fluids, consideration should be given to undertaking intermittent (yearly) expanded sampling suites that also include organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs) and volatile organic compounds (VOC).

Given the rate of groundwater movement, the emergence of impacts (should they occur) are likely to be gradual, as such, on-going water quality monitoring on a quarterly basis would be acceptable.

If emergence of impacts occurs during operation or post closure then further investigation and potentially remedial measures would be required and would include:

- Additional investigations to isolate the source of impact and characterise the significance of the impact relative to key target criteria for the protection of surrounding sensitive systems.
- Implementation of additional control measures to prevent ongoing impact. This may include:
  - Installation of additional monitoring wells to assess the emergence of significant impacts that may not be considered presently significant.

- Installation of additional wells to capture and treat impacted groundwater. This may include treating the water separately or incorporating the system into the existing leachate management system.
- It would be possible to use the Stage 5 groundwater drainage system located beneath the liner, as described in Section 4.2.1, to intercept any impacted water.

5.3 ARRT and GO facilities

The water quality impacts associated with the ARRT and GO facility construction would be minimised by developing appropriate site management practices and emergency response procedures and would be detailed in a Construction and Environmental Management Plan (CEMP).

From an operational perspective, to avoid groundwater quality impacts the site facilities will be designed to minimise the potential for groundwater impacts to occur. The design will include:

- Low permeability processing infrastructure with a fully enclosed water management system as outlined in Section 2.3.2 of the ARRT OEMP and Section 2.3.1 of the GO OEMP..
- separate dirty water and clean water to minimise the generation of leachate and thus the potential for leachate to escape to underlying groundwater.
- storage of leachate within enclosed and bunded tanks or within ponds with suitable low permeability liners as outlined in Section 7.1.3 of the ARRT OEMP and Section 8.2.2 of the GO OEMP.

This will be coupled with site practices that minimise the production and spillage of impacted water and/or fluids used in site activities. These would be detailed in a site based environmental monitoring plan.

Groundwater monitoring will be used to:

- characterise background water quality and groundwater elevation conditions;
- assess the effectiveness of site management and mitigation measures implemented; and
- identify any emerging impacts.

Based on the current understanding of groundwater elevation and water quality at this location, it is recommended that at least four monitoring locations with shallow wells and two locations with deep wells will be required to meet the objectives bulleted above. The four monitoring locations would preferentially be located (See Appendix F):

- At the northwest corner of the site on Heathcote Road (near to the composting hall), which is interpreted to be up gradient and to be representative of background water quality.
- To the south of the site in the vicinity of the active go facility and pond and in-between the site and Mill Creek.
- To the east of the site between Mill Creek and the GO sump.
- To the northeast end of the site between Mill Creek and the site bio-filter and/or the site pond.

Shallow wells should insect the water table with deeper wells intersecting the deeper more regional aquifer system and facilitate interpretation of the deeper groundwater flow directions (as such these should be screened at elevations approximating 70 to 90 m AHD).

Given that there are deeper wells already installed for the landfill it is proposed that only two locations be installed to greater depths near the ARRT and GO facility. These would characterise deeper flow direction and the water quality in the deeper aquifer system from the ARRT and GO facility. The two deeper wells would be located at the northwest corner of the site on Heathcote Road and east of the GO sump.

Assessment criteria should be developed in accordance with the framework described in Section 5.2.

Key constituents identified within the leachate, green waste liquor and groundwater include:

- Metals (including but not limited to aluminium, cadmium, iron, lead)
- Total recoverable hydrocarbons
- Benzene, toluene, ethylbenzene and xylene (BTEX)
- Speciated poly-aromatic hydrocarbons (PAHs)
- Phenol
- Ammonia
- Nitrate
- Electrical conductivity
- Alkalinity
- Ortho-phosphorus

As a minimum, the water quality analysis undertaken for monitoring should be for the above analytes. In order to understand potential instream impacts total nitrogen and total phosphorus should also be added to this suite. Consideration should be given to undertaking intermittent (yearly) expanded sampling suites that also include organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs) and volatile organic compounds (VOC).

Given the rate of groundwater movement, the emergence of impacts (should they occur) are likely to be gradual, as such, on-going water quality monitoring on a bi-annual basis would be acceptable. A less frequent monitoring rate is proposed than for the landfill because the overall risk to water quality is expected to be lower.

If emergence of impacts occurs then further investigation and remedial measures will be implemented and would include:

- Additional investigations to isolate the source of impact and characterise the significance of the impact relative to key target criteria for the protection of surrounding sensitive systems.
- Implementation of additional control measures to prevent ongoing impact. This will include either, or all of, the following measures:
  - Installation of additional monitoring wells to assess the emergence of significant impacts that may not currently be considered to be significant.
  - Installation of additional leachate collections wells or other capture systems to capture and treat impacted groundwater. This may include treating the water separately or incorporating the system into the existing leachate management system.

While it is expected that groundwater drawdown and flow impacts will be localised in nature and potentially insignificant, there is a small potential risk that would be managed by groundwater monitoring elevations. Any reduction in groundwater elevations outside of background conditions and the aquifer interference policy minimal impact criteria would initiate

implementation of additional mitigation measures. These may include introducing clean site stormwater run-off into the groundwater system down immediately down gradient of the site.

5.4 Parkland changes

The location of site facilities, the type of vegetation and type of recreational facilities promoted across the landfill will be designed to limit infiltration to the underlying capping layers (by preventing activities that will damage vegetation cover and maintaining vegetation) and/or damage to the underlying capping layers (by using shallower rooting plants and preventing activities that may cause damage). An EMP developed for the parkland site would include site procedures for managing vegetation, site facilities and potentially damaging recreational activities or site works.

5.5 Summary of mitigation measures and monitoring

Table 5.1 provides a summary of identified impacts and proposed mitigation measures.

Table 5.1 Summary of Mitigation and Monitoring Measures

Activity	Category	Landfill Stage	Potential Impact	Recommended Mitigation and Monitoring
Landfill Re-profiling	Groundwater Quality	Operation	Increased potential for leachate migration to underlying groundwater systems due to accumulation of leachate in the base of the landfill (associated with changed infiltration and hydraulic conditions of waste).	Measures to manage and mitigate the risks along the groundwater pathway will include: • Landfilling practices that are consistent with current practices and or that improve on the area and timing of active landfilling. • Re-profiling of the landfill with improved slopes and capping design to reduce infiltration rates. Refer Section 4.2.1. • Develop and implement a program to assess the leachate collection capacity/efficiency associated with reprofiling the landfill and implement additional leachate collection and extraction measures, if needed. • After closure there will be no open landfilling area, which will reduce the potential for infiltration and leachate generation further. • The Stage 5 leachate control measures have been designed to further limit the potential for impacts to underlying groundwater systems. Ongoing leachate management will occur until such time as the leachate volume monitoring and or leachate and water quality monitoring suggest that risks are no longer significant and as determined by the EPA. Ongoing monitoring of upgradient and down-gradient wells The existing monitoring network system will also be suitable as an indicator of emerging impacts within deeper aquifer systems. Trigger levels for groundwater quality for monitoring are included in the LEMP.

Activity	Category	Landfill Stage	Potential Impact	Recommended Mitigation and Monitoring
				If impacts occur then further investigation and remedial measures would be considered and would include: • Additional investigations to isolate the source of impact and characterise the significance of the impact relative to key target criteria for the protection of surrounding sensitive systems. • Implementation of additional control measures to prevent ongoing impact. This may include: – Installation of additional monitoring wells – Use of the Stage 5 groundwater system as a capture system for emerging groundwater impacts. – Installation of additional wells to capture and manage impacted groundwater. This may include treating the water separately or incorporating the system into the existing leachate management system.
	Groundwater Quality	Post Closure	Post closure changes in leachate management may promote the migration of leachate from the landfill.	Leachate management will occur until such time as the leachate volume monitoring and or leachate and water quality monitoring suggest that risks are acceptable by the EPA.
	Groundwater Availability	Operation and Closure.	Expected to be minor	No mitigation recommended.
ARRT and GO facilities	Groundwater Quality	Construction Phase	Migration of water impacted by site activities to underlying groundwater system and then to down gradient GDEs and surface	A CEMP will be developed that specifies site management practices (such as appropriate storage and use of site fluids) and emergency response procedures to effectively minimise potential impacts to underlying groundwater systems.

Activity	Category	Landfill Stage	Potential Impact	Recommended Mitigation and Monitoring
			water features.	
	Groundwater Quality	Operation	Migration of water impacted by site activities to underlying groundwater system and then to down gradient GDEs and surface water features.	From an operational perspective, the site facilities will be designed to minimise the potential for groundwater impacts to occur. The design will include: • Installation of a suitable low permeability barrier underneath where any waste is stored or handled as outlined in Section 2.3.2 of the ARRT OEMP and Section 2.3.1 of the GO OEMP.. • separate dirty water and clean water to minimise the generation of leachate and thus the potential for leachate to escape to underlying groundwater. • Installation of a suitable low permeability barrier underneath where any leachate is stored or handled as outlined in Section 8.2.2 of the GO OEMP and storage of leachate in fully enclosed and bunded tanks, as outlined in Section 7.1.3 of the ARRT OEMP . This will be coupled with site practices that minimise the production and spillage of impacted water and/or fluids used in site activities. These would be detailed in a site based environmental monitoring plan (EMP). Groundwater quality monitoring will be used to: • characterise background water quality and groundwater elevation conditions; • assess the effectiveness of site management and mitigation measures implemented; and • identify any emerging impacts. Trigger levels for groundwater quality are included in the EMP for monitoring wells around the site

Activity	Category	Landfill Stage	Potential Impact	Recommended Mitigation and Monitoring
	Groundwater Elevations	Construction and Operation	Lowering of groundwater elevations with subsequent impacts to water supply at GDEs and baseflow to Mill Creek and Deadmans Creek is expected to be minor.	While it is expected that groundwater drawdown and flow impacts will be localised in nature and minor, there is a small potential risk that requires management. Groundwater quality and elevation monitoring will be used to manage the risk and will include: • characterising background groundwater elevation conditions; and • identify any emerging groundwater elevation reductions. Any reduction in groundwater elevations outside of background conditions and the aquifer interference policy minimal impact criteria will initiate implementation of additional mitigation measures that will include the re-infiltration of clean site stormwater run-off back into the groundwater system immediately down gradient of the site.
Parkland Changes	Groundwater Quality	Construction and Operation	The design of the parkland system will affect the potential for infiltration to the landfill (and therefore the potential for leachate generation). This situation will be present while rehabilitation is being completed and after closure.	The location of site facilities, the type of vegetation and type of recreational facilities promoted across the landfill will be designed to limit infiltration to the underlying capping layers (by preventing activities that will damage vegetation cover and maintaining vegetation) and or damage to the underlying capping layers (by using shallower rooting plants and preventing activities that may cause damage). An EMP has been developed for the site and documents site procedures for managing vegetation, site facilities and potentially damaging recreational activities or site works.

Activity	Category	Landfill Stage	Potential Impact	Recommended Mitigation and Monitoring
	Groundwater Availability	Construction and Operation	Changes in rainfall infiltration associated with different vegetation types.	Re-profiling works are likely to be primarily responsible for reductions in leachate generation. Given that the current leachate collection system suggests that there is little communication between the landfill and underlying groundwater systems it is not expected that reduction in recharge will adversely impact downgradient flows and groundwater elevations that support GDEs and aquatic ecosystems. As such impacts are expected to be negligible and no mitigation measures are proposed.

6. Conclusions and recommendations

6.1 Summary of key findings

An extensive suite of existing groundwater monitoring data (approximately 25 years) suggests that the combination of the insitu geology and current leachate collection system is resulting in concentrations of parameters in groundwater which are below the level where impacts on the surrounding groundwater and surface water systems may occur. As similar conditions would be maintained with the proposal, it is expected that there would be no significant impact of groundwater from the proposed landfilling activities at the LHRRP.

The Stage 5 landfill leachate collection system and control measures have been designed and installed in accordance with best practice to facilitate preferential capture of leachate from up gradient landfill areas and further minimise the potential for impacts to underlying groundwater. The existing groundwater drainage system located beneath Stage 5 provides additional capacity for interception of groundwater in the unlikely event that adverse groundwater impacts are detected.

Groundwater elevation observations and the hydrogeological conditions identified around the existing landfill suggest that any reduction in groundwater recharge and hence flow associated with the proposal would be minimal during construction and operation and after closure. This is supported by the overall footprint of the landfill remaining similar to existing conditions.

The proposed ARRT and GO facility operations include activities that require management and monitoring during construction and operation, to avoid impacting groundwater. Mitigation would include installing a suitable low permeability barrier underneath where any waste or leachate is stored or handled and implementing a monitoring and management program. After closure and removal of these facilities, the potential for groundwater contamination is minimal.

There would be a reduction in recharge associated with the development of suitable low permeability surfaces at the ARRT and GO facilities to minimise the potential for groundwater contamination. Given already naturally low recharge rates and that recharge impacts would be highly localised, it is not expected that there would be overall adverse impacts to groundwater elevations and flows.

6.2 Recommendations

The management measures proposed to adequately address the identified potential impacts have been recommended and include:

- The adoption of a monitoring approach for the landfill, which includes:
  - monitoring of surrounding and down gradient groundwater quality;
  - a leachate water balance;
  - monitoring of leachate level and abstraction volumes in leachate wells and the reprofile collection trench to assess leachate extraction efficiency
  - A long term commitment to monitoring post closure for the sign of potential impacts and to prevent unacceptable impact to downgradient receptors.
- The adoption of appropriate storage, handling and working procedures during construction and operation to minimise potential for impacts at the at the ARRT/GO facilities.

6.3 Meets identified objectives

With the adoption of the recommended mitigation measures and a long term commitment to monitor for the emergence of impacts and respond it is considered that the potential for adverse impacts can be acceptably minimised.

This report addresses the Secretary's Environmental Assessment Requirements (Section 1.6) and concludes that the proposal would meet the following objectives as identified in Section 1.2:

- no significant impact on groundwater quality
- no significant impact on the community or environment

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8. Limitations

The purpose of this report is to undertake a desktop assessment to assess the risks of the proposed development in the surrounding groundwater system. This will be used as a technical input to environmental impact statement.

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Assumptions made in the assessment are stated in the text of the report where they have been identified.

Appendices

Appendix A – Groundwater elevation plots and cross-sections

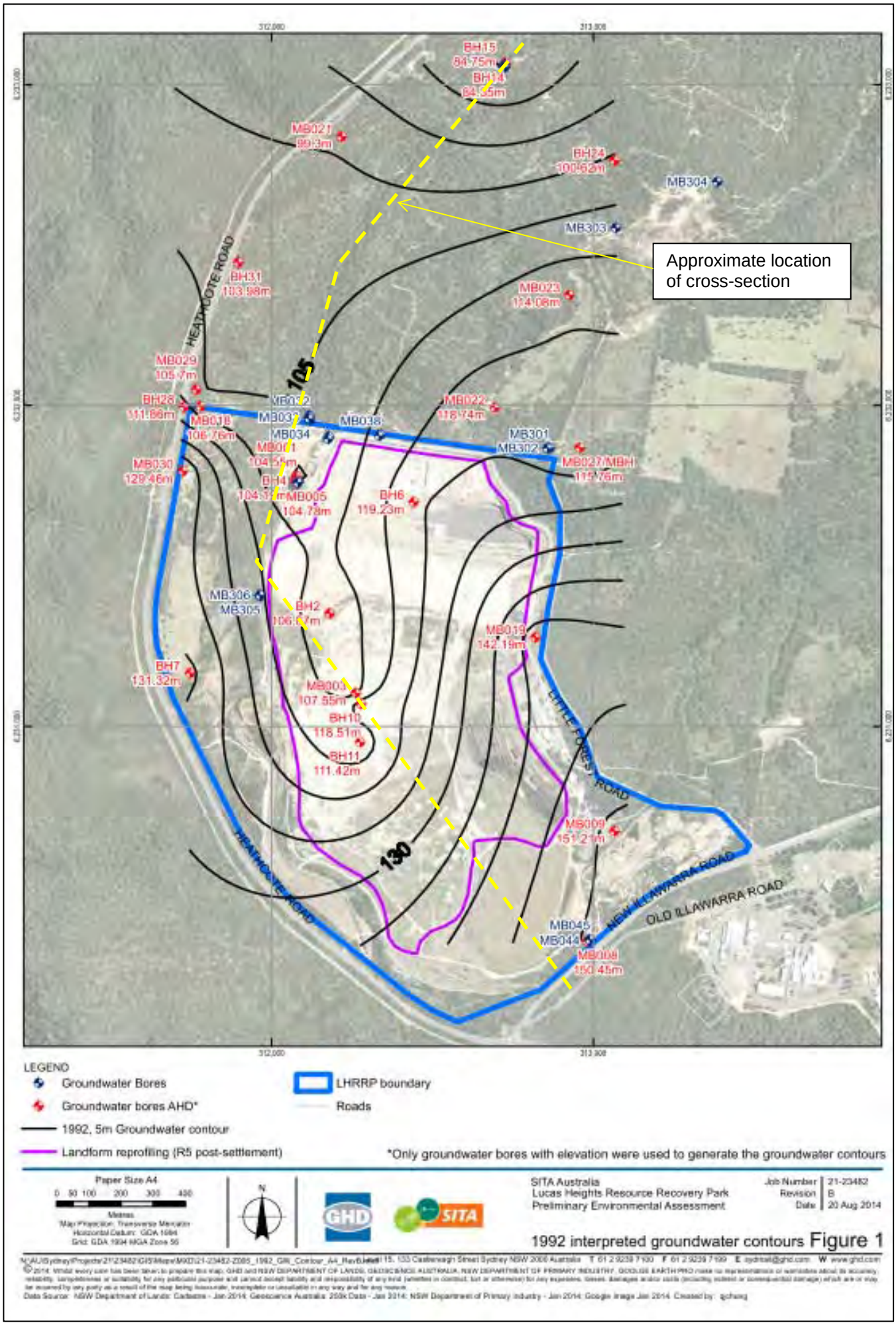


Figure A1: 1992 Interpreted Groundwater Contours

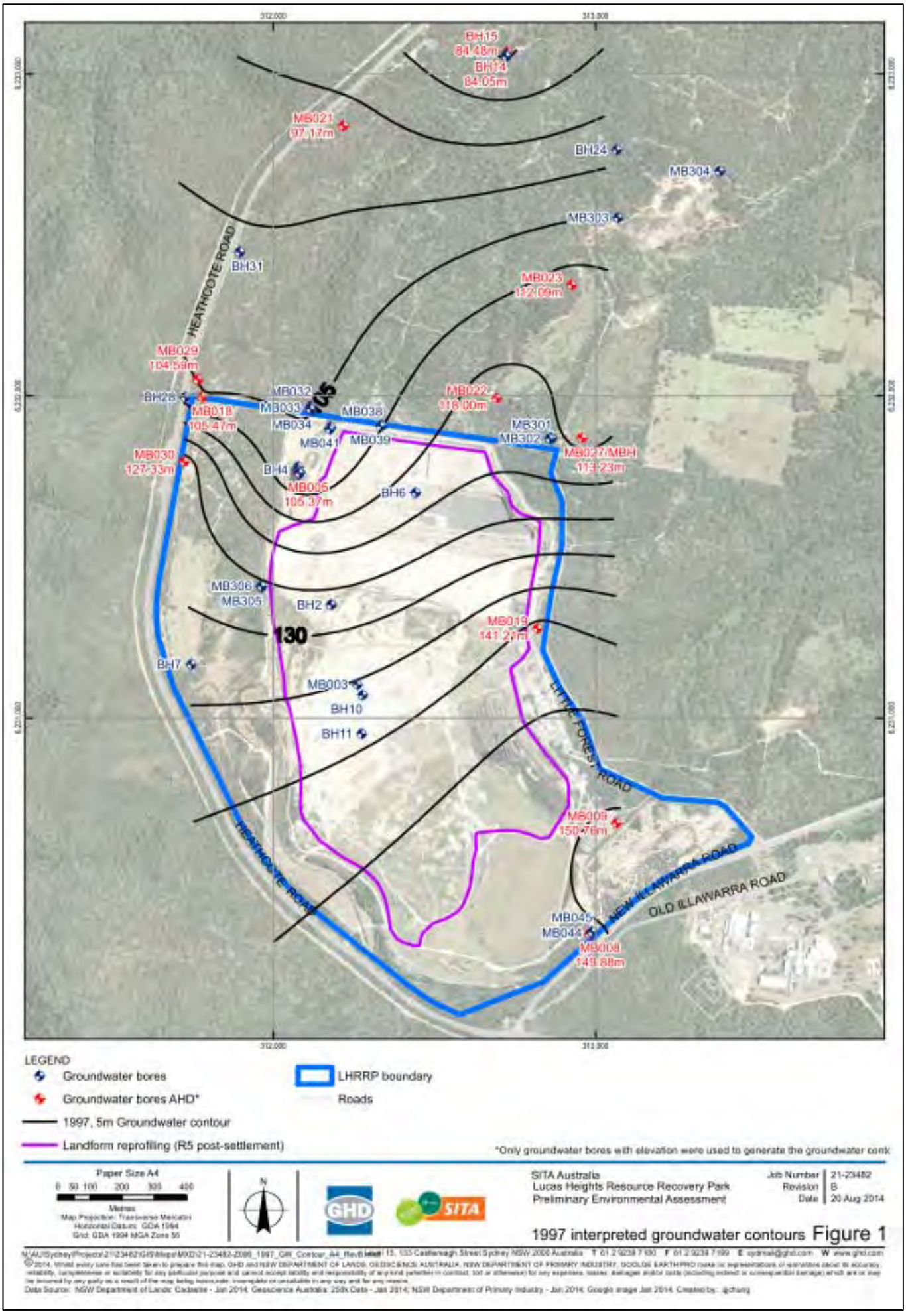


Figure A2: 1997 Interpreted Groundwater Contours

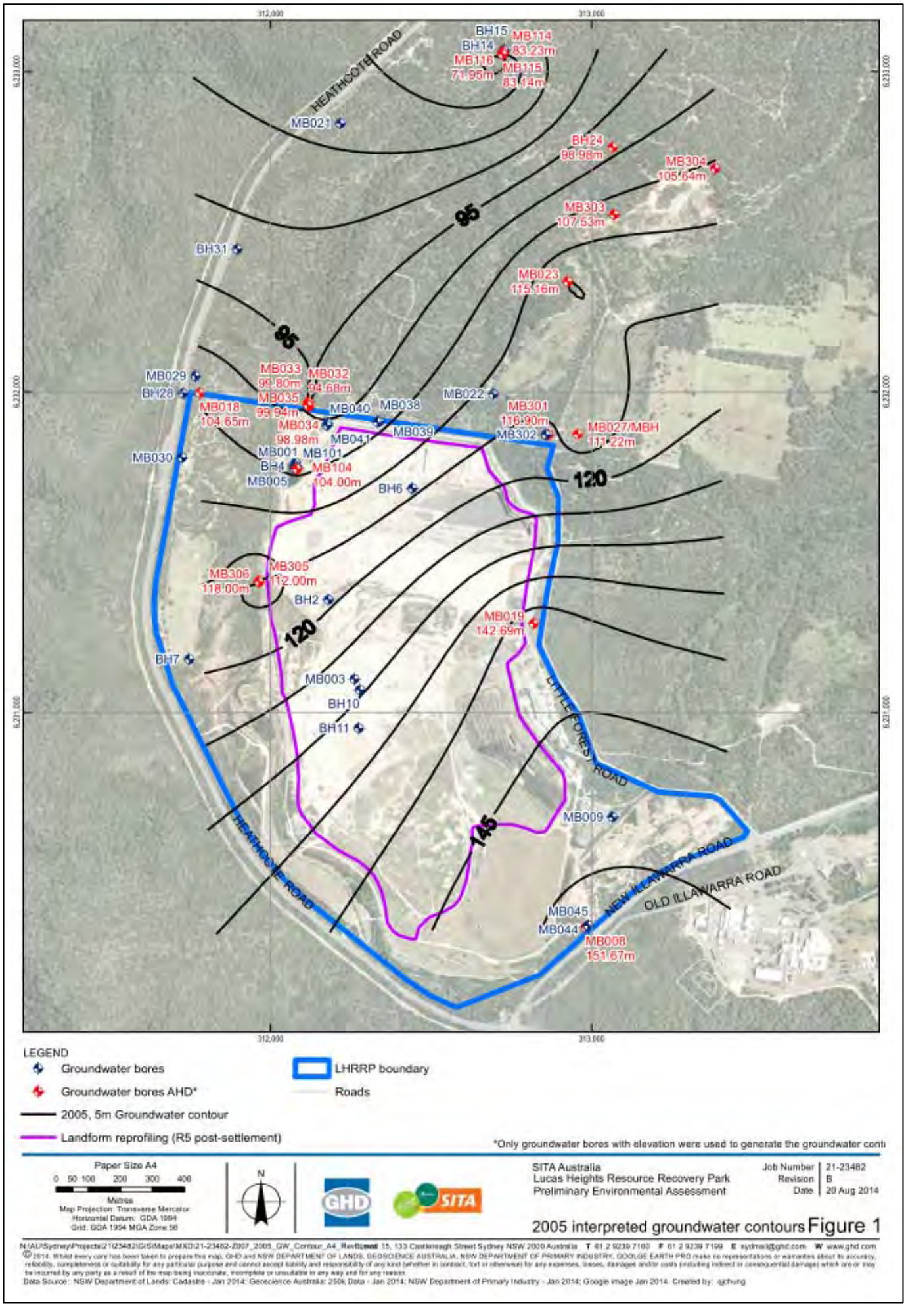


Figure A3: 2005 Interpreted Groundwater Contours

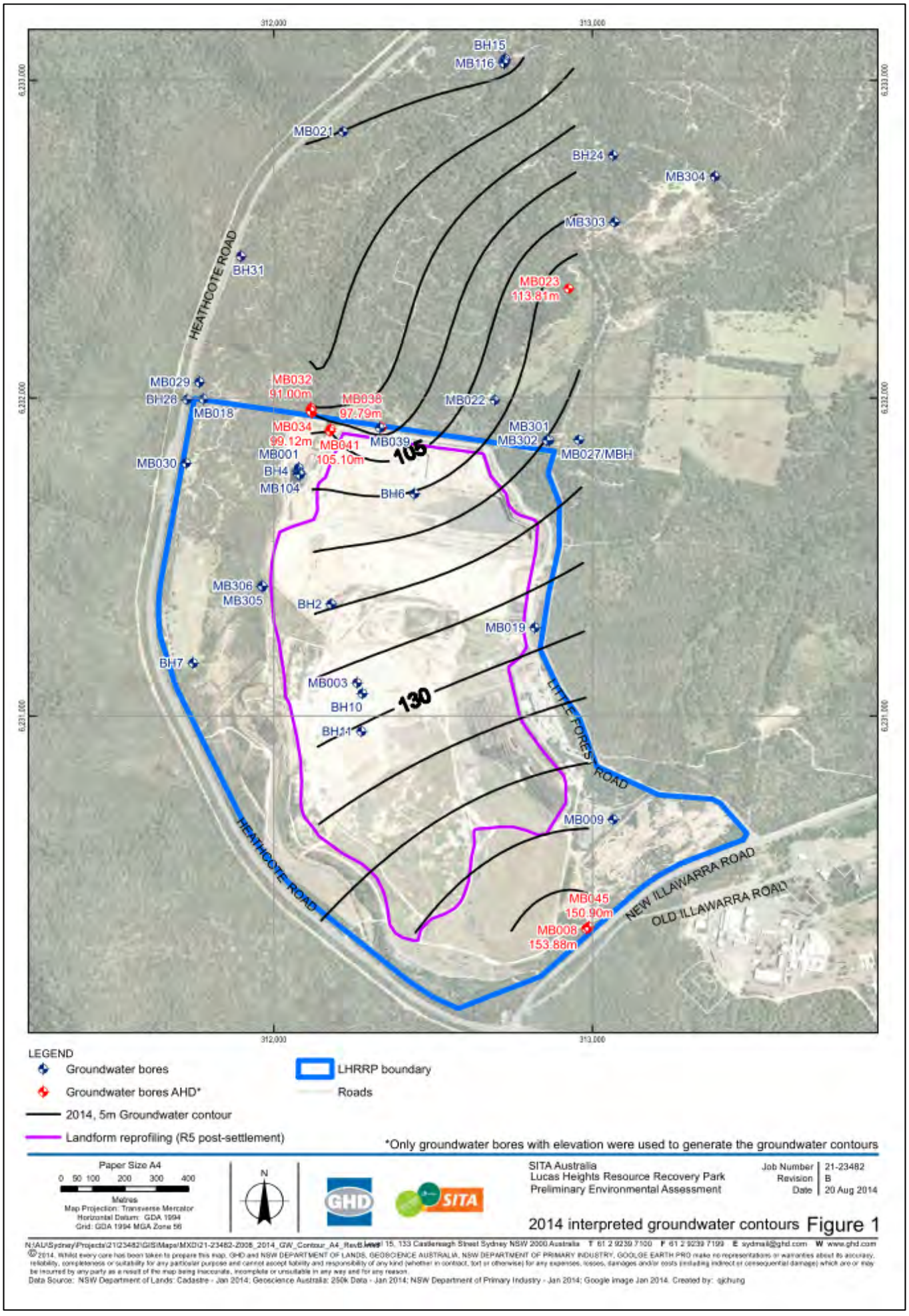


Figure A4: 2014 Interpreted Groundwater Contours

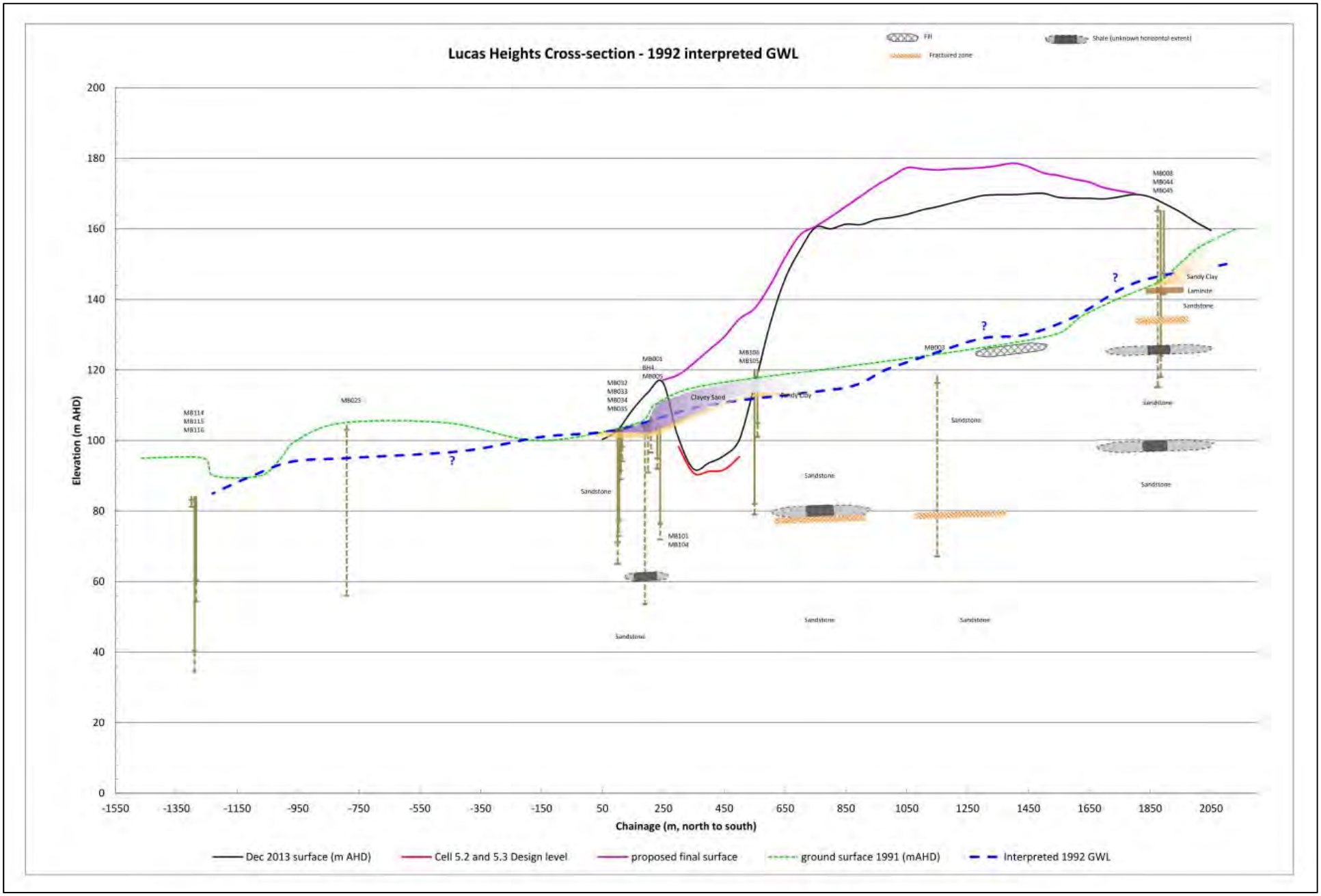


Figure A5: Cross-section of 1992 - Interpreted Groundwater Contours

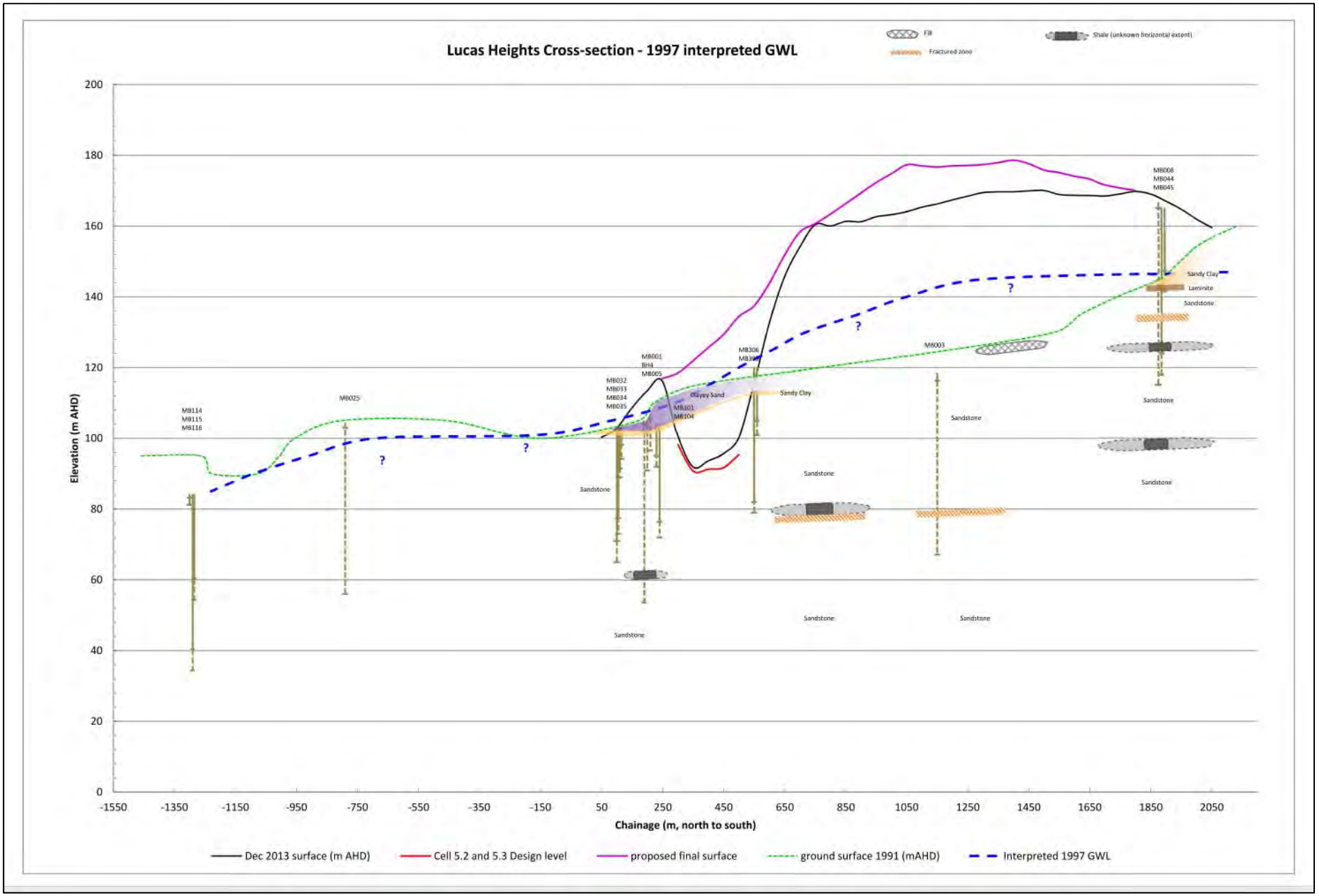


Figure A6: Cross-section of 1997 - Interpreted Groundwater Contours

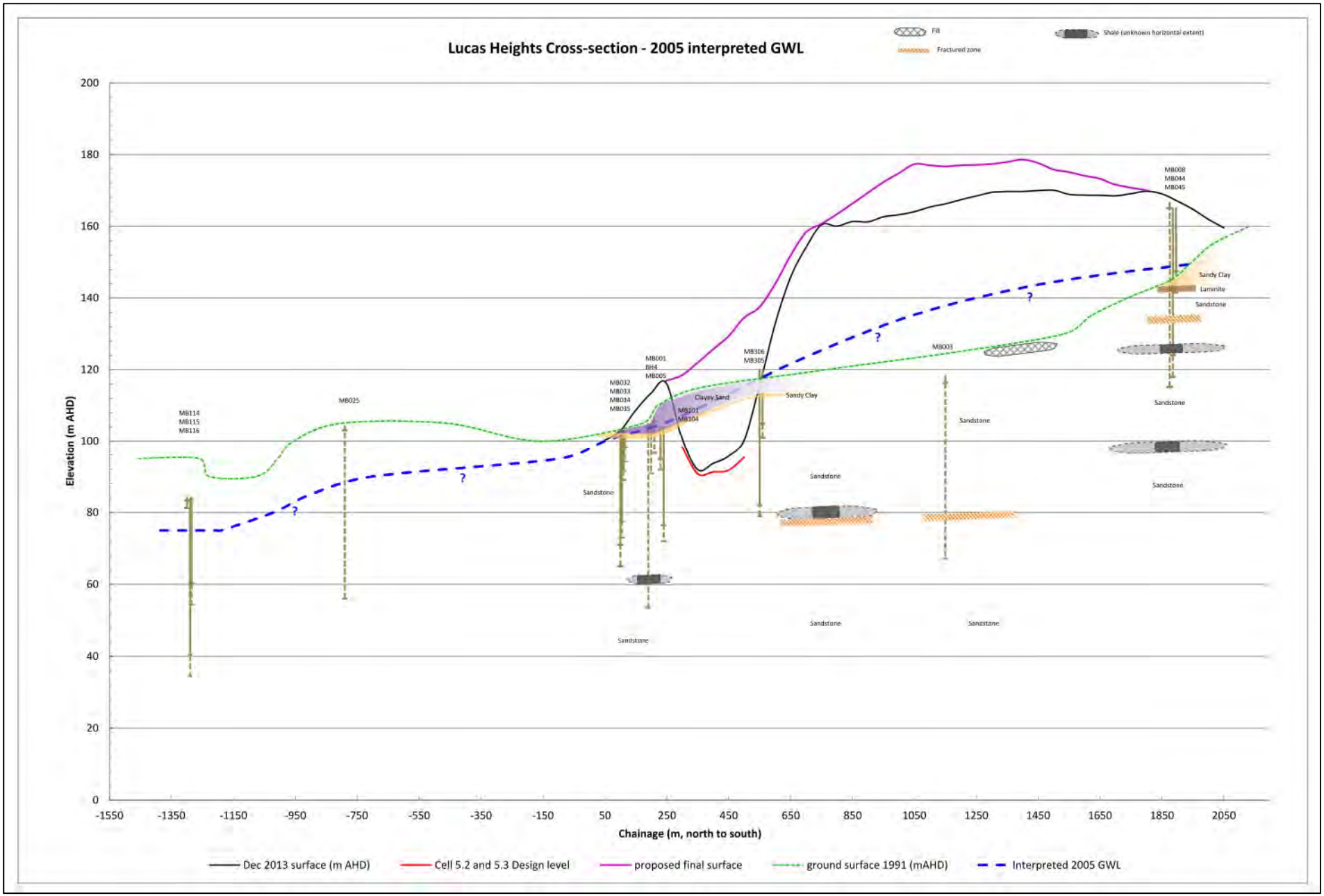


Figure A7: Cross-section of 2005 - Interpreted Groundwater Contours

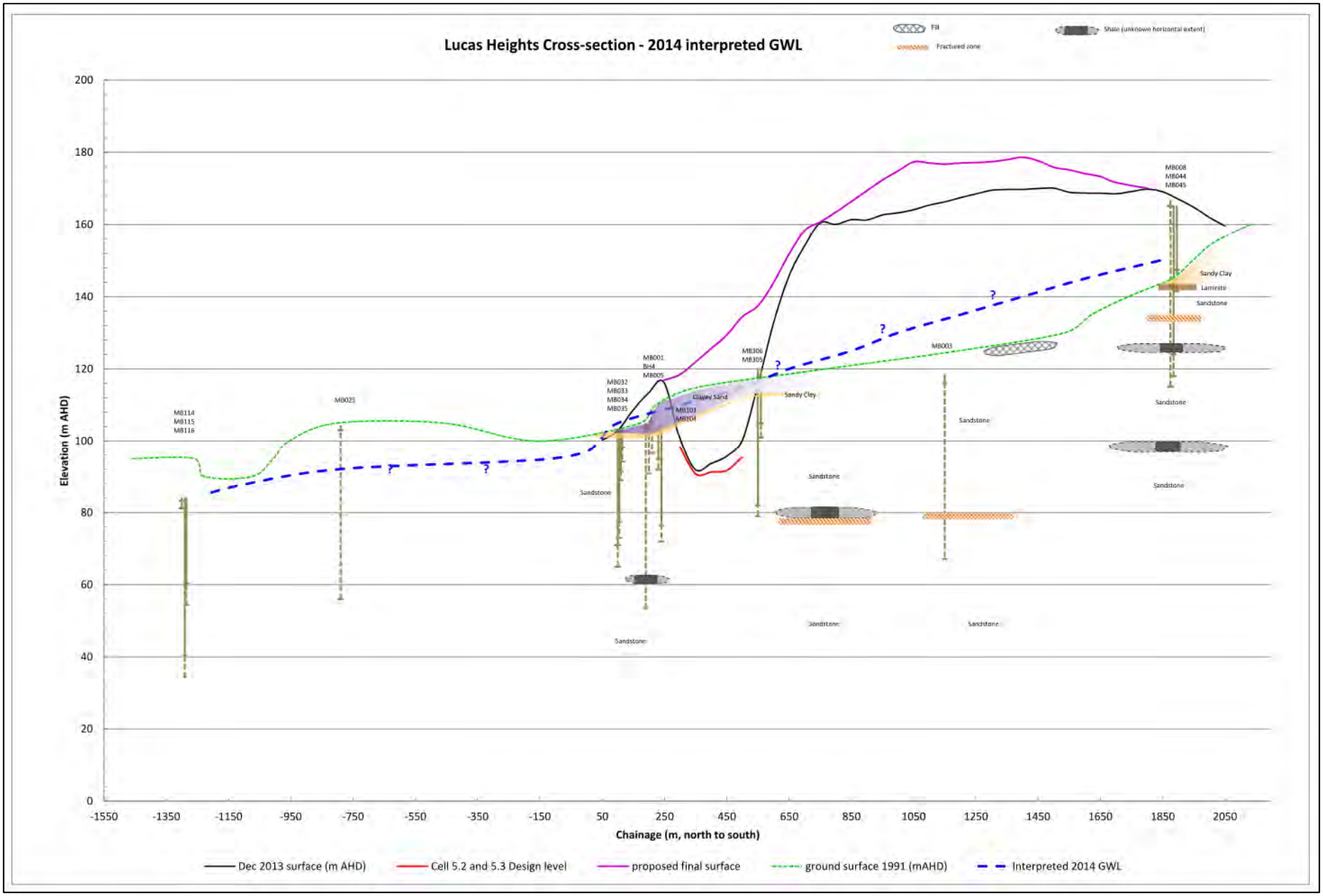


Figure A8: Cross-section of 2014 - Interpreted Groundwater Contours

Appendix B – Groundwater elevation data

Table B1 Site monitoring well data

Borehole	Monitoring Designation	Monitoring Bore Licence No.	Grid System	Co-ordinates (ISG)	Northing	GL mAHD	TOC mAHD	Date Installed	Who	Depth (m)	Screened Interval (m)				Depth to Water (m AHD)			
											m bgs		m AHD		Installation Date	18 December 1997	2004 to 2006 composite	25 March 2014
BH1	MB001		ISG	296598	1232180	104.14	104.91	8/5/92	Douglas Partners	50.50	0	50.5	104.1	53.6	104.55	Artesian	Artesian	
BH2			ISG	296692	1231750	116.69		11/5/92	Douglas Partners	51.50					106.87			
BH3	MB003		ISG	296768	1231501	118.30		14/5/92	Douglas Partners	51.15	2	51.15	116.30	67.15	107.55			
BH4			ISG	296596	1232171	104.37	104.97	14/5/92	Douglas Partners	14.00	1	14	103.97	90.97	104.19	Artesian		
BH5	MB005	10BL164393	ISG	296596	1232161	105.48	106.60	16/5/92	Douglas Partners	10.00	1	10	105.60	96.60	104.78	105.37		
BH6			ISG	296960	1232092	134.46		21/5/92	Douglas Partners	60.10					119.23			
BH7			ISG	296254	1231573	137.39		27/5/92	Douglas Partners	68.00					131.32			
BH8	MB008	10BL164393	ISG	297473	1230714	166.06	166.53	27/5/92	Douglas Partners	50.95	1	50.95	115.11	165.06	150.45	149.88	151.67	153.88
BH9	MB009	10BL164393	ISG	297564	1231055	155.64	155.58	29/5/92	Douglas Partners	52.00	1	52	154.58	103.58	151.21	150.76		
BH10			ISG	296784	1231468	120.58		29/5/92	Douglas Partners	10.00					118.51			
BH11			ISG	296779	1231348	119.30		1/6/92	Douglas Partners	21.00					111.42			
BH12			ISG	296880	1232254			3/6/92	Douglas Partners	25.75								
BH13			ISG	197086	1233453	143.92		10/6/92	Douglas Partners	46.70					126.87			
BH14			ISG	297269	1233453	84.57	84.88	10/6/92	Douglas Partners	11.00	1	11	83.88	73.88	84.35	84.05		
BH15			ISG	297272	1233454	84.94	85.44	10/6/92	Douglas Partners	20.00	1	20	84.44	65.44	84.75	84.48		
BH16	MB016		ISG	297275	1232474	84.66	85.25	11/6/92	Douglas Partners	50.10	1	50.1	84.25	35.15	84.03	83.77	sealed	
BH17	MB027/MBH	10BL164393	ISG	297480	1232251	131.77	132.34	24/6/92	Douglas Partners	84.00	1	84	131.34	48.34	115.76	113.23	111.22	
BH18	MB020		ISG	297367	1231659	136.58	136.96	25/6/92	Douglas Partners	36.00	1	36	135.96	100.96	125.93	121.53		
BH19	MB019	10BL164393	ISG	297329	1231664	147.72	148.10	29/6/92	Douglas Partners	30.00	1	30	147.10	118.10	142.19	141.21	142.69	
BH20	MB018	10BL164393	ISG	296303	1232403	130.50	130.93	1/7/92	Douglas Partners	53.60	1	52.6	129.93	78.33	106.76	105.47	104.65	
BH21	MB021	10BL164393	ISG	296758	1233236	116.89	117.29	1/7/92	Douglas Partners	29.25	1	29.25	116.29	88.04	99.30	97.17		
BH22	MB022	10BL164393	ISG	297217	1232382	129.88	129.28	7/7/92	Douglas Partners	81.00	1	81	128.28	48.28	118.74	118.00		
BH23	MB023	10BL164393	ISG	297457	1232728	119.31	119.71	2/7/92	Douglas Partners	29.95	1	29.95	118.71	89.76	114.08	112.09	115.16	113.81
BH24			ISG	297605	1233144	101.78		8/7/92	Douglas Partners	29.35	1	28.35	100.78	73.43	100.62		98.98	
BH25	MB025	10BL164393	ISG	296603	1234207	104.01	104.59	9/7/92	Douglas Partners	48.00	1	48	56.01	103.01	98.85	97.08	96.57	
BH26			ISG	297735	1234195	101.37		15/7/92	Douglas Partners	48.00	1	48	100.37	53.37	87.97			

Borehole	Monitoring Designation	Monitoring Bore Licence No.	Grid System	Co-ordinates (ISG)	Northing	GL mAHD	TOC mAHD	Date Installed	Who	Depth (m)	Screened Interval (m)				Depth to Water (m AHD)			
											m bgs		m AHD		Installation Date	18 December 1997	2004 to 2006 composite	25 March 2014
BH27	MB017	10BL164393	ISG	296310	1232410	104.21	104.21	16/7/92	Douglas Partners	51.00	0	51	104.21	53.2		Artesian		
BH28			ISG	296251	1232403	135.01		18/8/92	Douglas Partners	54.00	1	54	134.01	81.01	111.86			
BH29	MB029	10BL164393	ISG	296291	1232457	131.87	132.34	18/8/92	Douglas Partners	51.00	1	51	131.34	81.34	105.70	104.59		
BH30	MB030	10BL164393	ISG	296244	1232202	135.66	135.93	20/8/92	Douglas Partners	21.00	1	21	134.93	114.93	129.46	127.33		
BH31			ISG	296429	1232850	128.33		21/8/92	Douglas Partners	54.00	1	54	127.33	74.33	103.98			
	MB032	10BL602007	ISG	296641	1232368	103	103	24/11/06	CES	50.00	32	38	71	65	93.65	n/a	94.68	91.00
	MB033	10BL602007	ISG	296639	1232363	103	103	27/11/06	CES	30.50	25.5	30.5	77.5	73	102.64	n/a	99.80	99.65
	MB034	10BL602007	ISG	296643	1232354	103	103	29/11/06	CES	14.50	11.5	14.5	91.5	89	100.33	n/a	98.98	99.12
	MB035	10BL602007	ISG	296639	1232359	103	103	28/11/06	CES	8.80	4.8	8.8	98.2	94.2	100.44	n/a	99.94	100.38
	MB036-1		GDA94 M56	312938	6230998		0.7	9/5/14		25.70	13.5	25.7						
	MB037-1		GDA94 M56	312938	6230999		0.7	9/5/14		9.00	2	9						
	MB038	10BL603147	ISG	296861	1232303	123		17/04/08	CES	27.00	20	27	103	96	106.00	n/a	n/a	97.79
	MB039	10BL603147	ISG	296855	1232302	123		02/05/08	CES	13.50	9	13.5	114	109.5		n/a	n/a	
	MB040	10BL603147	ISG	296701	1232301	115		22/04/08	CES	25.00	19	25	96	90	105.00	n/a	n/a	101.40
	MB041	10BL603147	ISG	296698	1232295	115		01/05/08	CES	12.00	6	12	109	103		n/a	n/a	105.10
	MB044	10BL603147	ISG	297479	1230716	165		28/04/08	CES	47.00	41	47	124	118	151.00	n/a	n/a	146.73
	MB045	10BL603147	ISG	297481	1230719	165		29/04/08	CES	23.50	17.5	23.5	147.5	141.5		n/a	n/a	150.90
	MB047		GDA94 M56	312796	6231842			13/8/13		47.00	37	47						
	MB046		GDA94 M56	612803	6231839			13/8/13		26.00	11	26						
BH101	MB101	10BL601302	ISG	296602	1232163	104	104	21/06/04	CES	37.00	27.5	32	76.5	72	103.82	n/a	Artesian	
BH104	MB104	10BL601302	ISG	296601	1232160	104	104	23/06/04	CES	12.50	9	12	92	95	102.46	n/a	104.00	
BH114	MB114	10BL164393	ISG	297269	1233448	84		1/05/2003	CES	2.80	0.8	2.8	81.24	83.24	83.68	n/a	83.23	
BH115	MB115	10BL164393	ISG	297268	1233443	84		1/05/2003	CES	30.00	24	30	54.34	60.34	83.56	n/a	83.14	
BH116	MB116	10BL164393	ISG	297267	1233441	84		29/04/03	CES	50.00	44	50	34.41	40.41	72.51	n/a	71.95	
BH301	MB301	10BL601302	ISG	297386	1232252	137		01/06/04	CES	25.50	19	25	118	112	116.6	n/a	116.9	
BH301(shallow)	MB302	10BL601302	ISG	297379	1232252	137		?	CES	8.40	3.5	8	133.5	129	129.35	n/a	129.47	
BH302	MB303	10BL601302	ISG	297605	1232934	116		06/07/04	CES	32.80	28	32.5	88	83.5	107.3	n/a	107.53	
BH303	MB304	10BL601302	ISG	297923	1233071	117		30/06/04	CES	30.15	26.65	29.65	90.35	87.35	105.7	n/a	105.64	
BH304	MB305	10BL601302	ISG	296477	1231809	120		24/06/04	CES	41.50	38	41	79	82	112	n/a	112	
BH304(shallow)	MB306	10BL601302	ISG	296476	1231812	120		24/06/04	CES	19.20	14.7	18.9	101	105	114	n/a	118	
Bores to be considered abandoned																		
Assumed screen depths based on other wells																		

Appendix C – Registered groundwater bores

Figure C1 Registered groundwater well locations

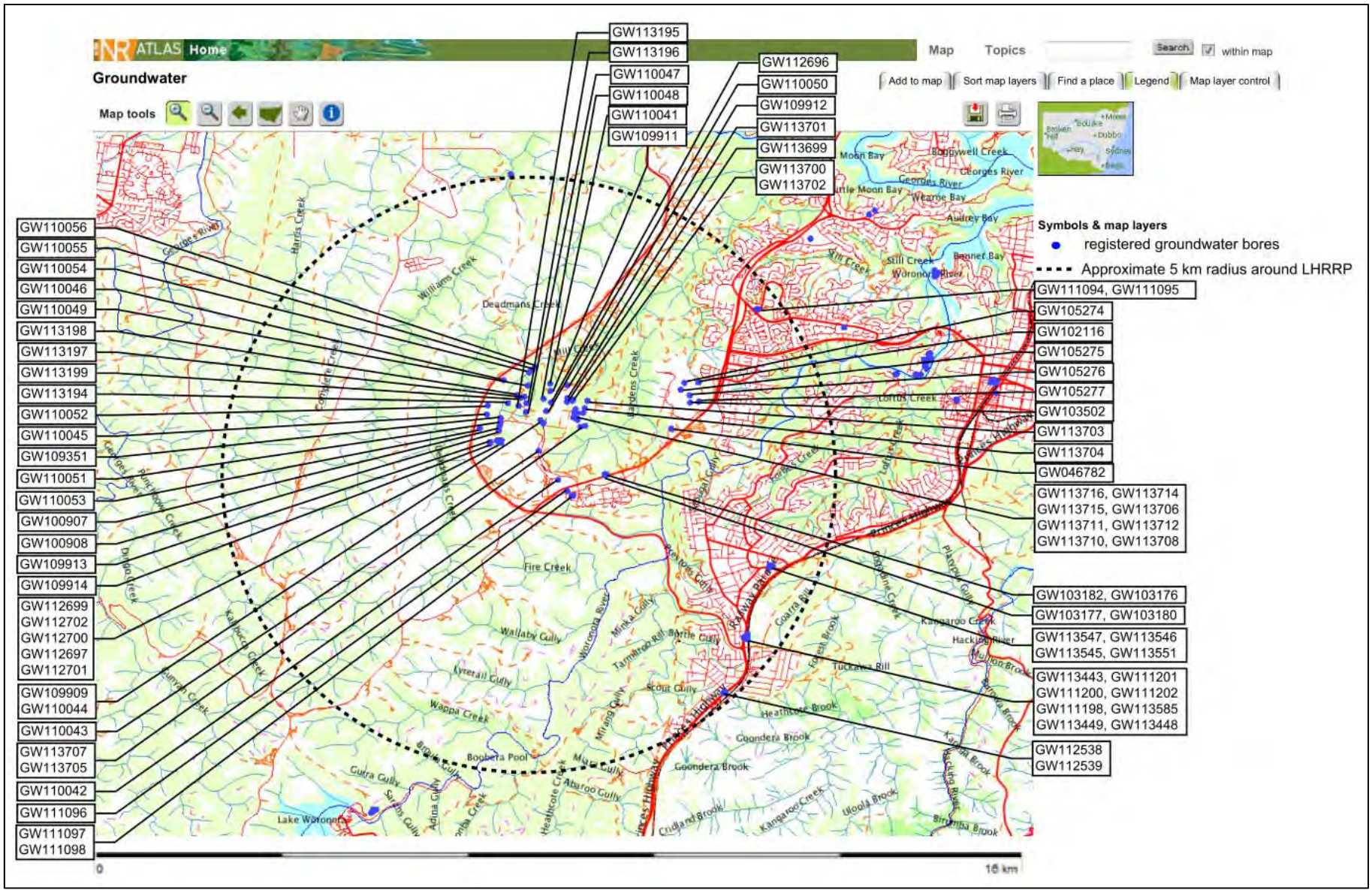


Table C1 Registered groundwater well data.

Borehole ID	Purpose	Installation Date	Property	Depth (m)	Standing Water Level (mbgl)	Latitude and Longitude	Salinity	Yield
GW046782	Test Bore / Groundwater Exploration	January 1997	-	30.00	Not provided	34 2' 17" S, 150 59' 49" E	Not provided	Not provided
GW100907	Monitoring Bore	January 2004	WSN Environmental Solutions	32.50	Not provided	34 2' 14" S, 150 57' 53" E	Not provided	Not provided
GW100908	Monitoring Bore	January 2004	WSN Environmental Solutions	12.50	1.50	34 2' 16" S, 150 57' 53" E	Not provided	Not provided
GW102116	Monitoring Bore	June 1996	-	23.00	9.50	34 1' 46" S, 151 0' 7" E	Not provided	Not provided
GW103176	Monitoring Bore	May 1998	-	45.00	18.42	34 2' 48" S, 150 59' 5" E	Not provided	Not provided
GW103177	Monitoring Bore	May 1998	-	9.00	Not provided	34 2' 49" S, 150 59' 5" E	Not provided	Not provided
GW103180	Monitoring Bore	May 1998	-	24.00	15.00	34 2' 48" S, 150 59' 4" E	Not provided	Not provided
GW103182	Monitoring Bore	May 1998	-	30.00	Not provided	34 2' 48" S, 150 59' 4" E	Not provided	Not provided
GW103502	Monitoring Bore	July 1999	Lucas Heights 1 Landfill	23.00	Not provided	34 1' 60" S, 151 0' 2" E	Not provided	Not provided
GW105274	Monitoring Bore	January 1997	Lucas Heights	13.30	Not provided	34 1' 46" S, 150 59' 58" E	Not provided	Not provided
GW105275	Monitoring Bore	January 1997	Lucas Heights	21.30	7.00	34 1' 51" S, 150 59' 56" E	Not provided	Not provided
GW105276	Monitoring Bore	January 1997	Lucas Heights	30.20	17.00	34 1' 55" S, 151 0' 2" E	Not provided	Not provided
GW105277	Monitoring Bore	January 1997	Lucas Heights	22.90	4.00	34 1' 59" S, 150 0' 8" E	Not provided	Not provided
GW109351	Monitoring Bore	September 2008	WSN Environmental Solutions	38.00	Not provided	34 2' 10" S, 150 57' 53" E	Not provided	Not provided
GW109909	Monitoring Bore	January 2004	WSN Environmental Solutions	25.50	20.20	34 2' 13" S, 150 58' 22" E	Not provided	Not provided
GW109910	Monitoring	January 2004	WSN Environmental	8.40	7.60	34 2' 14" S,	Not	Not

Borehole ID	Purpose	Installation Date	Property	Depth (m)	Standing Water Level (mbgl)	Latitude and Longitude	Salinity	Yield
	Bore		Solutions			150 58' 22" E	provided	provided
GW109911	Monitoring Bore	January 2004	WSN Environmental Solutions	32.80	8.60	34 1' 52" S, 150 58' 27" E	Not provided	Not provided
GW109912	Monitoring Bore	January 2004	WSN Environmental Solutions	30.15	11.40	34 1' 48" S, 150 58' 38" E	Not provided	Not provided
GW109913	Monitoring Bore	January 2004	WSN Environmental Solutions	41.50	8.20	34 2' 26" S, 150 57' 46" E	Not provided	Not provided
GW109914	Monitoring Bore	March 2009	WSN Environmental Solutions	19.40	5.60	34 2' 28" S, 150 57' 46" E	Not provided	Not provided
GW110040	Monitoring Bore	January 1992	Waste Services NSW	10.00	0.77	34 2' 19" S, 150 57' 52" E	Not provided	Not provided
GW110041	Monitoring Bore	January 1992	Waste Services NSW	50.95	15.00	34 1' 47" S, 150 58' 27" E	Not provided	Not provided
GW110042	Monitoring Bore	January 1992	Waste Services NSW	52.00	4.77	34 2' 52" S, 150 58' 32" E	Not provided	Not provided
GW110043	Monitoring Bore	January 1992	Waste Services NSW	30.00	6.72	34 2' 32" S, 150 58' 19" E	Not provided	Not provided
GW110044	Monitoring Bore	January 1992	Waste Services NSW	53.60	26.00	34 2' 12" S, 150 58' 21" E	Not provided	Not provided
GW110045	Monitoring Bore	January 1992	Waste Services NSW	53.60	26.00	34 2' 8" S, 150 57' 45" E	Not provided	Not provided
GW110046	Monitoring Bore	January 1992	Waste Services NSW	25.00	20.14	34 1' 44" S, 150 57' 55" E	Not provided	Not provided
GW110047	Monitoring Bore	April 2008	Waste Services NSW	81.00	11.37	34 2' 6" S, 150 58' 11" E	Not provided	Not provided
GW110048	Monitoring Bore	January 1992	Waste Services NSW	29.95	7.67	34 1' 57" S, 150 58' 22" E	Not provided	Not provided
GW110049	Monitoring Bore	January 1992	Waste Services NSW	48.00	9.00	34 1' 48" S, 150 58' 12" E	Not provided	Not provided
GW110050	Monitoring Bore	January 1992	Waste Services NSW	84.00	18.57	34 2' 5" S, 150 58' 24" E	Not provided	Not provided
GW110051	Monitoring Bore	January 1992	Waste Services NSW	84.00	18.57	34 2' 12" S, 150 57' 53" E	Not provided	Not provided
GW110052	Monitoring	January 1992	Waste Services NSW	51.00	27.58	34 2' 2" S,	Not	Not

Borehole ID	Purpose	Installation Date	Property	Depth (m)	Standing Water Level (mbgl)	Latitude and Longitude	Salinity	Yield
	Bore					150 57' 45" E	provided	provided
GW110053	Monitoring Bore	January 1992	Waste Services NSW	21.00	8.51	34 2' 17" S, 150 57' 39" E	Not provided	Not provided
GW110054	Monitoring Bore	January 2003	Waste Services NSW	2.80	1.90	34 1' 39" S, 150 58' 13" E	Not provided	Not provided
GW110055	Monitoring Bore	January 2003	Waste Services NSW	30.00	1.80	34 1' 37" S, 150 58' 15" E	Not provided	Not provided
GW110056	Monitoring Bore	January 2003	Waste Services NSW	50.00	14.20	34 1' 35" S, 150 58' 17" E	Not provided	Not provided
GW111094	Monitoring Bore	May 2010	7-Eleven	8.00	Not provided	34 0' 56" S, 151 0' 48" E	Not provided	Not provided
GW111095	Monitoring Bore	May 2010	7-Eleven	8.00	Not provided	34 0' 56" S, 151 0' 48" E	Not provided	Not provided
GW111096	Monitoring Bore	May 2010	ANSTO	12.10	Not provided	34 2' 59" S, 150 58' 39" E	Not provided	Not provided
GW111097	Monitoring Bore	May 2010	ANSTO	25.00	Not provided	34 3' 3" S, 150 58' 41" E	Not provided	Not provided
GW111098	Monitoring Bore	May 2010	ANSTO	27.50	Not provided	34 3' 3" S, 150 58' 43" E	Not provided	Not provided
GW111198	Monitoring Bore	September 2006	BP Refinery	6.00	Not provided	34 4' 39" S, 151 0' 40" E	Not provided	Not provided
GW111200	Monitoring Bore	September 2006	BP Refinery	6.20	Not provided	34 4' 38" S, 151 0' 40" E	Not provided	Not provided
GW111201	Monitoring Bore	September 2006	BP Refinery	7.00	Not provided	34 4' 38" S, 151 0' 41" E	Not provided	Not provided
GW111202	Monitoring Bore	September 2006	BP Refinery	7.00	Not provided	34 4' 39" S, 151 0' 40" E	Not provided	Not provided
GW112538	Monitoring Bore	November 2011	The Shell Company of Australia Ltd	8.50	2.87	34 5' 16" S, 151 0' 26" E	Not provided	Not provided
GW112539	Monitoring Bore	November 2007	The Shell Company of Australia ltd	8.00	2.94	34 5' 16" S, 151 0' 24" E	Not provided	Not provided
GW112696	Monitoring Bore	July 1992	WSN Environmental Solutions	29.55	Not provided	34 1' 60" S, 150 58' 28" E	Not provided	Not provided
GW112697	Monitoring	July 1992	WSN Environmental	51.00	Not provided	34 2' 27" S,	Not	Not

Borehole ID	Purpose	Installation Date	Property	Depth (m)	Standing Water Level (mbgl)	Latitude and Longitude	Salinity	Yield
	Bore		Solutions			150 57' 52" E	provided	provided
GW112699	Monitoring Bore	April 2007	WSN Environmental Solutions	50.00	Not provided	34 2' 25" S, 150 57' 51" E	Not provided	Not provided
GW112700	Monitoring Bore	April 2008	WSN Environmental Solutions	35.00	Not provided	34 2' 25" S, 150 57' 54" E	Not provided	Not provided
GW112701	Monitoring Bore	June 2004	WSN Environmental Solutions	9.05	Not provided	34 2' 27" S, 150 57' 54" E	Not provided	Not provided
GW112702	Monitoring Bore	June 2004	WSN Environmental Solutions	19.40	Not provided	34 2' 25" S, 150 57' 53" E	Not provided	Not provided
GW113194	Monitoring Bore	April 2008	WSN Environmental Solutions	35.00	Not provided	34 1' 60" S, 150 57' 58" E	Not provided	Not provided
GW113195	Monitoring Bore	April 2008	WSN Environmental Solutions	35.00	Not provided	34 2' 2" S, 150 58' 6" E	Not provided	Not provided
GW113196	Monitoring Bore	September 2008	WSN Environmental Solutions	25.00	Not provided	34 2' 00" S, 150 58' 11" E	Not provided	Not provided
GW113197	Monitoring Bore	April 2008	WSN Environmental Solutions	12.00	Not provided	34 1' 56" S, 150 58' 7" E	Not provided	Not provided
GW113198	Monitoring Bore	April 2008	WSN Environmental Solutions	47.50	9.00	34 1' 55" S, 150 58' 5" E	Not provided	Not provided
GW113199	Monitoring Bore	April 2008	WSN Environmental Solutions	23.50	Not provided	34 1' 56" S, 150 58' 10" E	Not provided	Not provided
GW113443	Monitoring Bore	October 2010	BP Refinery (Bulwer Island)	6.50	Not provided	34 4' 37" S, 151 0' 41" E	Not provided	Not provided
GW113448	Monitoring Bore	December 2008	BP Refinery (Bulwer Island)	6.00	Not provided	34 4' 38" S, 151 0' 39" E	Not provided	Not provided
GW113449	Monitoring Bore	December 2008	BP Refinery	6.00	Not provided	34 4' 39" S, 151 0' 38" E	Not provided	Not provided
GW113545	Monitoring Bore	July 2007	Caltex Oil (Australia) Pty Ltd	6.80	Not provided	34 3' 50" S, 151 0' 56" E	Not provided	Not provided
GW113546	Monitoring Bore	July 2010	Caltex Oil (Australia) Pty Ltd	6.30	Not provided	34 3' 50" S, 151 0' 57" E	Not provided	Not provided
GW113547	Monitoring Bore	July 2010	Caltex oil (Australia) Pty Ltd	6.20	Not provided	34 3' 51" S, 151 0' 57" E	Not provided	Not provided
GW113551	Monitoring	July 2010	Caltex Oil (Australia)	5.00	Not provided	34 1' 51" S,	Not	Not

Borehole ID	Purpose	Installation Date	Property	Depth (m)	Standing Water Level (mbgl)	Latitude and Longitude	Salinity	Yield
	Bore		Pty Ltd			151 0' 55" E	provided	provided
GW113585	Monitoring Bore	July 2010	BP Engadine	6.00	Not provided	34 4' 38" S, 151 0' 41" E	Not provided	Not provided
GW113699	Monitoring Bore	September 2010	ANSTO	6.50	Not provided	34 1' 57" S, 150 58' 39" E	Not provided	Not provided
GW113700	Monitoring Bore	September 2010	ANSTO	20.50	Not provided	34 1' 58" S, 150 58' 42" E	Not provided	Not provided
GW113701	Monitoring Bore	September 2010	ANSTO	13.50	Not provided	34 1' 59" S, 150 58' 38" E	Not provided	Not provided
GW113702	Monitoring Bore	September 2010	ANSTO	5.00	Not provided	34 1' 58" S, 150 58' 42" E	Not provided	Not provided
GW113703	Monitoring Bore	September 2010	ANSTO	7.00	Not provided	34 1' 58" S, 150 58' 52" E	Not provided	Not provided
GW113704	Monitoring Bore	September 2010	ANSTO	5.50	Not provided	34 2' 4" S, 150 58' 50" E	Not provided	Not provided
GW113705	Monitoring Bore	February 2014	ANSTO	4.30	Not provided	34 2' 15" S, 150 58' 51" E	Not provided	Not provided
GW113706	Monitoring Bore	February 2014	ANSTO	5.80	Not provided	34 2' 7" S, 150 58' 45" E	Not provided	Not provided
GW113707	Monitoring Bore	September 2010	ANSTO	6.00	Not provided	34 2' 16" S, 150 58' 48" E	Not provided	Not provided
GW113708	Monitoring Bore	September 2010	ANSTO	7.00	Not provided	34 2' 11" S, 150 58' 46" E	Not provided	Not provided
GW113710	Monitoring Bore	September 2010	ANSTO	3.50	Not provided	34 2' 10" S, 150 58' 45" E	Not provided	Not provided
GW113711	Monitoring Bore	September 2010	ANSTO	4.80	Not provided	34 2' 9" S, 150 58' 43" E	Not provided	Not provided
GW113714	Monitoring Bore	September 2010	ANSTO	5.50	Not provided	34 2' 4" S, 150 58' 44" E	Not provided	Not provided
GW113715	Monitoring Bore	September 2010	ANSTO	9.00	Not provided	34 2' 7" S, 150 58' 43" E	Not provided	Not provided
GW113716	Monitoring Bore	September 2010	ANSTO	7.00	Not provided	34 2' 7" S, 150 58' 49" E	Not provided	Not provided

Appendix D – Water quality monitoring data

Appendix D
Table D1_a
Main Leachate Dam

	Inorganics								Field				Metals				TRH - NEPM 1999				BTEX & MAH					PAH													
	Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)	Aluminium	Cadmium	Iron	Lead	C6 - C 9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene
	mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%													0.055	0.0002		0.0034					950			350						0.01		0.1			1			16
ANZECC 2000 FW Med-Low Reliability													0.0008	0.0002	0.3	0.0034					950	180	80	350															16

Monitoring_Zone	Location_Code	Sampled_Date_Time	Sample_Type																																						
Landfill Leachate	LD001	8/01/1998	Normal	-	-	-	-	7.7	1140	-	-	0.17	8950	7.4	-	-	-	-	0.011	-	-	-	-	3	113	10	-	39	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	6/02/1998	Normal	-	-	-	-	6.7	1740	-	-	0.15	12,920	6.67	-	-	-	-	0.032	-	-	-	-	36	1100	86	-	404	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	5/03/1998	Normal	-	-	-	-	7.5	1480	-	-	0.54	8460	7.8	-	-	-	-	0.008	-	-	-	-	5	176	16	-	68	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	2/04/1998	Normal	-	-	-	-	7.5	1880	-	-	0.68	10,920	7.15	-	-	-	-	0.014	-	-	-	-	39	955	91	-	420	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	5/05/1998	Normal	-	-	-	-	6.5	1340	-	-	0.76	6530	6.27	-	-	-	-	0.019	-	-	-	-	34	767	119	-	522	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	3/06/1998	Normal	-	-	-	-	7.2	1396	-	-	4	6360	7.17	-	-	-	-	0.012	-	-	-	-	21	211	23	-	98	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	1/07/1998	Normal	-	-	-	-	7.4	1440	-	-	0.32	7830	7.48	-	-	-	-	0.011	-	-	-	-	4.6	199	22	-	88	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	3/08/1998	Normal	-	-	-	-	7.4	1720	-	-	0.47	10,030	7.32	-	-	-	-	0.014	-	-	-	-	4.5	258	21	-	74	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	2/09/1998	Normal	-	-	-	-	7.4	2115	-	-	0.1	12,070	7.11	-	-	-	-	0.012	-	-	-	-	11	317	29	-	119	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	1/10/1998	Normal	-	-	-	-	7.5	2713	-	-	0.7	14,390	7.4	-	-	-	-	0.011	-	-	-	-	2.3	131	12	-	50	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	4/11/1998	Normal	-	-	-	-	7.1	3686	-	-	1.3	16,530	6.8	-	-	-	-	0.026	-	-	-	-	20	632	90	-	324	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	8/12/1998	Normal	-	-	-	-	7.1	3625	-	-	0.9	18,240	7.22	-	-	-	-	-	-	-	-	-	32	885	88	-	413	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	6/01/1999	Normal	-	-	-	-	7.2	3330	-	-	0.8	20,380	7.04	-	-	-	-	0.017	-	-	-	-	16	617	76	-	283	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	3/03/1999	Normal	-	-	-	-	8.1	2100	-	-	0.39	16,200	7.73	-	-	-	-	0.005	-	-	-	-	2.5	32	4	-	18	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	2/06/1999	Normal	7350	-	0.3	6990	7.2	4430	-	-	1.27	20,560	7.24	-	-	-	-	0.032	-	-	-	-	24	593	87	-	347	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	2/09/1999	Normal	8520	-	0.3	3200	7.3	3840	-	-	1.86	21,070	7.16	-	-	-	-	0.048	-	-	-	-	29.1	417	60	263	263	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	2/12/1999	Normal	8600	-	0.4	5440	7.3	3000	-	-	0.4	22,110	7.78	-	-	-	-	0.027	-	-	-	-	5	400	65	280	280	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	2/03/2000	Normal	6100	-	0.2	3400	8.1	1200	-	-	-	16,360	7.49	-	-	-	-	0.009	-	-	-	-	0.9	58	3	13	13	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	1/06/2000	Normal	11,000	-	0.3	5530	7.7	750	-	-	-	24,200	7.29	-	-	-	-	0.009	-	-	-	-	<6.4	280	31	140	140	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	1/09/2000	Normal	11,000	-	0.3	5160	7.6	810	-	-	-	25,300	7.46	-	-	-	-	0.028	-	-	-	-	0.5	250	28	130	130	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	20/11/2000	Normal	3400	-	0.2	2420	7.7	900	-	-	-	9780	7.68	-	-	-	-	0.014	-	-	-	-	3.6	44	8	30	30	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	8/12/2000	Normal	6300	-	0.2	4540	8	1340	-	-	-	18,100	7.86	-	-	0.001	-	0.02	-	-	-	-	2.6	46	8	34	34	<3	<3	<3	<3	<3	<3	<6	<3	<3	<3	<3	<3	3
Landfill Leachate	LD001	7/03/2001	Normal	9900	-	0.4	7440	7.6	1800	-	-	-	16,060	7.42	-	-	0.0035	-	0.034	-	-	-	-	<14	310	<45	250	250	<10	<10	<10	<10	<10	<1	<2	<1	<10	<1	<10	11
Landfill Leachate	LD001	1/06/2001	Normal	5600	-	0.4	1380	7.2	2000	-	-	-	15,530	6.11	-	-	0.0005	-	0.013	-	-	-	-	25	250	50	150	150	0.05	0.05	0.05	0.05	0.05	<1	<2	<1	0.05	<1	0.05	2
Landfill Leachate	LD001	13/09/2001	Normal	5600	-	0.3	1380	7.1	4300	-	-	-	17,592	6.94	-	-	0.0005	-	0.017	-	-	-	-	<8.8	360	<48	240	240	0.05	0.05	0.05	0.05	0.05	<1	2	1	0.05	1	0.05	0.05	1	4
Landfill Leachate	LD001	11/12/2001	Normal	8100	-	0.5	9780	8.2	830	-	-	0.14	20,430	8.51	-	-	0.0005	-	0.024	-	-	-	-	-	22	-	-	-	-	-	-	-	-	<1	0.1	0.05	-	0.05	-	-	0.05	-
Landfill Leachate	LD001	12/03/2002	Normal	3600	-	0.5	5280	8	1500	-	-	-	9520	7.66	-	-	0.01	-	0.017	-	-	-	-	-	23	<10	<30	<30	-	-	-	-	-	<1	-	-	-	-	-	-	-
Landfill Leachate	LD001	26/06/2002	Normal	9100	480	0.3	8400	8	860	-	-	0.12	19,960	7.88	6	0.55	0.0005	0.72	0.023	-	-	-	-	0.25	0.5	0.5	0.5	1	0.05	0.05	0.05	0.05	0.05	0.1	<0.2	<0.1	0.05	<0.1	0.05	0.05	<0.1	0.05
Landfill Leachate	LD001	13/08/2002	Normal	7600	-	0.3	2040	8	720	-	-	0.4	11,600	8.04	40	0.7	0.001	10.1	0.026	-	-	-	-	1.8	57	13	22	44	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Landfill Leachate	LD001	17/10/2002	Normal	4100	180	0.2	2150	8	360	-	-	0.16	7680	8.03	-4	0.22	0.00005	12.4	0.011	-	-	-	-	0.25	0.5	0.5	0.5	1	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	16/12/2002	Normal	5900	260	0.3	4940	8.2	590	-	-	0.22	18,640	7.9	-147	0.68	0.00005	11.3	0.02	-	-	-	-	-	24	6	9	19	-	-	-	-	0.05	0.05	0.1	0.05	0.05	0.05	-	-	0.05	-
Landfill Leachate	LD001	20/03/2003	Normal	4800	>60	0.3	4970	8.3	540	-	-	0.08	11,930	8.35	-20	0.37	0.00005	7.27	-	-	-	-	-	0.25	13	2	6	12	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	2
Landfill Leachate	LD001	30/06/2003	Normal	3870	310	0.05	17	8.3	550	-	-	0.11	11,090	8.17	-83	0.56	0.006	9.5	0.013	-	-	-	-	0.5	9	3	5	9	0.2	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.1	0.2	0.05	1.5
Landfill Leachate	LD001	25/09/2003	Normal	6610	6700	1.1	8210	8.23	740	-	-	0.22	14,770	8.11	76	0.49	0.0007	8.8	0.026	-	-	-	-	0.5	19	3	6	12	-	-	-	-	0.05	0.05	0.1	0.05	0.05	0.05	-	-	0.05	4.1
Landfill Leachate	LD001	11/12/2003	Normal	7130	1700	0.7	11,500	8.16	940	-	-	0.41	18,200	8.03	-217	950	0.0011	9.4	0.038	-	-	-	-	1	24	4	10	17	-	-	-	-	0.05	0.05	0.1	0.05	0.05	0.05	-	-	0.05	1.8
Landfill Leachate	LD001	15/03/2004	Normal	4390	1500	0.6	4870	8.19	540	-	-	0.18	10,800	8.22	-73	0.5	0.0014	9.8	0.023	-	-	-	-	3	26	6	12	21	-	-	-	-	-	0.05	0.1	0.05	-	0.05	-	-	0.05	2
Landfill Leachate	LD001	30/06/2004	Normal	5650	220	0.7	5750	8.16	510	-	-	0.2	13,090	7.98	-254	0.31	0.0006	13.9	0.023	-	-	-	-	3	0.5	9	17	33	-	-	-	-	-	0.05	0.1	0.05	-	0.05	-	-	0.05	4
Landfill Leachate	LD001	7/09/2004	Normal	4610	500	0.5	5050	7.84	640	-	-	0.26	9550	8.01	-269	0.57	0.0013	20.1	0.027	-	-	-	-	4	41	13	23	44	-	-	-	-	0.05	0.05	0.1	0.05	0.05	0.05	-	-	0.05	
Landfill Leachate	LD001	14/12/2004	Normal	2920	1100	0.5	3940	7.93	650	-	-	0.02	6660	7.83	-330	2.1	0.001	17.5	0.031	-	-	-	-	1	28	4	9	16	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	0.4	<0.1	1.2
Landfill Leachate	LD001	16/03/2005	Normal	1370	620	0.3	1420	8.31	150	-	-	5.17	4520	8.15	-221	210	0.0003	2.5	0.006	-	-	-	-	<1	12	<1	4	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.2	<0.1	<0.5	<0.1	<0.5	<0.5	<0.1	<0.5
Landfill Leachate	LD001	29/06/2005	Normal	2220	1500	0.5	830	8.18	205	-	-	0.52	3040	8.1	-128	0.52	0.0005	14.4	0.01	-	-	-	-	<1	12	<1	7	13	-	-	-	-	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	-	-	<0.1	1
Landfill Leachate	LD001	28/09/2005	Normal	-	2700	0.8	-	-	-	-	-	0.14	8810	8.09	-141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	7/12/2005	Normal	-	2700	0.7	-	8.1	-	-	-	-	10,040	8.03	74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	6/03/2006	Normal	6210	-	0.7	-	8.3	590	180	-	0.59	10,420	8.18	-140	0.18	0.007	-	0.005	-	-	-	-	<1	2	4	12	23	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Landfill Leachate	LD001	6/06/2006	Normal	-	-	0.4	-	8.2	-	-	-	0.26	12,250	8.55	-162	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	0.2	0.1	-	0.7
Landfill Leachate	LD001	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	15,870	8.71	-63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	7/06/2012	Normal	-	100	0.48	-	-	-	-	470	7.05	8061	7.73	71.6	-	-	-	-	<100	930	4400	440	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Landfill Leachate	LD001	24/06/2014	Normal	-	640	0.72	-	8.68	-	-	350	6.44	275	-	-194	-	-	-	-	<200	1000	2800	500	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1

Statistical Summary

Number of Results	28	17	33	27	45	42	1	2	37	48	47	21	15	21	14	40	2	2	2	2	39	42	41	26	40	13	12	12	12	17	21	20	20	17	20	13	13	20	19
Number of Detects	28	17	33	27	45	42	1	2	37	48	47	21	15	21	14	40	0	2	2	2	33	42	36	25	39	8	6	6	6	10	10	11	11	10	11	7	8	11	16
Minimum Concentration	1370	60	0.05	17	6.5	150	180	350	0.02	275	6.11	4	0.18	0.00005	0.72	0.005	<100	930	2800	440	0.25	0.5	0.5	0.5	1	0.05	0.05	0.05	0.05	0.05	<0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Minimum Detect	1370	60	0.05	17	6.5	150	180	350	0.02	275	6.11	4	0.18	0.00005	0.72	0.005	ND	930	2800	440	0.25	0.5	0.5	0.5	1	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Maximum Concentration	11000	6700	1.1	11500	8.68	4430	180	470	7.05	25300	8.71	330	950	0.01	20.1	0.048	<200	1000	4400	500	39	1100	119	280	522	<10	<10	<10	<10	<10	<3	<6	<3	<10	<3	<10	<10	<3	11
Maximum Detect	11000	6700	1.1	11500	8.68	4430	180	470	7.05	25300	8.71	330	950	0.01	20.1	0.048	ND	1000	4400	500	39	1100	119	280	522	0.2	0.05	0.05	0.05	0.05	0.1	2	1	0.05	1	0.2	0.4	1	11
Average Concentration	6127	1251	0.44	4668	7.7	1547			1	13202	7.6	129	78	0.0018	11	0.019					9.1	231	28	65	127	0.66	0.68	0.68	0.68	0.49	0.27	0.5	0.26	0.49	0.26	0.64	0.67	0.26	2.2
Geometric Average	5556	629	0.38	3288	7.7	1168			0.42	11385	7.6	85	1.2	0.00073	8.5	0.017					3.3	68	12	19	53	0.21	0.16	0.16	0.16	0.12	0.12	0.21	0.11	0.12	0.11	0.18	0.21	0.11	1.1
Median Concentration	6000	620	0.4	4940	7.84	1270	180	410	0.4	12160	7.73	128	0.55	0.0007	9.95	0.017	75	965	3600	470	3.2	85.5	13	14	47	0.2	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.1	0.2	0.05	1.8
Standard Deviation	2512	1639	0.22	2821	0.49	1160			1.7	5656	0.56	91	247	0.0026	5.2	0.0099					12	291	33	94	146	1.4	1.4	1.4	1.4	1.2	0.35	0.78	0.39	1.2	0.39	1.4	1.4	0.39	2.5
Geometric Standard Deviation	1.6	3.5	1.8	3.5	1.1	2.2		1.2	3.6	2	1.1	3.2	12	4.3	2.4	1.7	1.6	1.1	1.4	1.1	4.8	7.8	4.7	5.7	4.7	4.3	5.1	5.1	5.1	4.3	3.6	3.4	3.5	4.3	3.5	4.6	4.4	3.5	4.1

Appendix D
Table D1_a
Main Leachate Dam

			Phenols	Major Ions						Nutrients		
	Phenanthrene	PAHs (Sum of total) - Lab calc	Phenol	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate	Ammonia as N	Nitrate (as N)	Nitrite (as N)
	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%			320							0.9	0.158	
ANZECC 2000 FW Med-Low Reliability	0.6		320								0.7	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**									
Landfill Leachate	LD001	8/01/1998	Normal	-	-	820	-	-	-	720	894	-	761	-	-
Landfill Leachate	LD001	6/02/1998	Normal	-	-	1080	-	-	-	757	903	-	772	-	-
Landfill Leachate	LD001	5/03/1998	Normal	-	-	770	-	-	-	730	897	-	684	-	-
Landfill Leachate	LD001	2/04/1998	Normal	-	-	1510	-	-	-	828	1010	-	878	-	-
Landfill Leachate	LD001	5/05/1998	Normal	-	-	970	-	-	-	409	514	-	431	-	-
Landfill Leachate	LD001	3/06/1998	Normal	-	-	990	-	-	-	491	605	-	462	-	-
Landfill Leachate	LD001	1/07/1998	Normal	-	-	500	-	-	-	594	796	-	560	-	-
Landfill Leachate	LD001	3/08/1998	Normal	-	-	1070	-	-	-	687	937	-	805	-	-
Landfill Leachate	LD001	2/09/1998	Normal	-	-	1610	-	-	-	705	994	-	679	-	-
Landfill Leachate	LD001	1/10/1998	Normal	-	-	1820	-	-	-	941	1240	-	875	-	-
Landfill Leachate	LD001	4/11/1998	Normal	-	-	2540	-	-	-	1028	1282	-	1240	-	-
Landfill Leachate	LD001	8/12/1998	Normal	-	-	1850	-	-	-	990	1190	-	1195	-	-
Landfill Leachate	LD001	6/01/1999	Normal	-	-	1870	-	-	-	1080	1380	-	1360	-	-
Landfill Leachate	LD001	3/03/1999	Normal	-	-	1100	-	-	-	942	1200	-	1100	-	-
Landfill Leachate	LD001	2/06/1999	Normal	-	-	2390	580	1990	288	1170	1430	83	1540	0.005	-
Landfill Leachate	LD001	2/09/1999	Normal	-	-	1820	484	2050	288	1240	1550	58	1600	0.01	-
Landfill Leachate	LD001	2/12/1999	Normal	-	-	1470	380	2100	270	1200	1500	61	1470	0.005	-
Landfill Leachate	LD001	2/03/2000	Normal	-	-	620	92	1900	230	930	1300	<5	1110	0.01	-
Landfill Leachate	LD001	1/06/2000	Normal	-	-	350	49	2500	240	1400	1800	0.5	2000	<0.01	-
Landfill Leachate	LD001	1/09/2000	Normal	-	-	120	50	2600	240	1400	1900	0.5	2180	<0.01	-
Landfill Leachate	LD001	20/11/2000	Normal	-	-	420	120	980	98	460	650	34	708	0.02	-
Landfill Leachate	LD001	8/12/2000	Normal	<3	3	710	130	1900	170	960	1200	10	1340	<0.01	-
Landfill Leachate	LD001	7/03/2001	Normal	<10	11	660	130	2500	220	1300	1700	7	1920	<0.01	-
Landfill Leachate	LD001	1/06/2001	Normal	0.05	2	650	540	1600	230	880	1100	26	958	1.38	-
Landfill Leachate	LD001	13/09/2001	Normal	0.05	4	2330	79	1700	180	960	1200	26	1200	<0.01	-
Landfill Leachate	LD001	11/12/2001	Normal	-	2	130	79	2700	180	1400	1800	62	1760	0.05	-
Landfill Leachate	LD001	12/03/2002	Normal	-	-	690	250	1100	89	580	770	4	670	5.28	-
Landfill Leachate	LD001	26/06/2002	Normal	0.05	<0.1	80	77	2200	140	1100	1500	20	1560	<0.01	-
Landfill Leachate	LD001	13/08/2002	Normal	0.05	-	340	100	1900	140	1300	1600	21	1460	0.03	-
Landfill Leachate	LD001	17/10/2002	Normal	-	-	210	120	1500	100	850	880	10	666	0.01	-
Landfill Leachate	LD001	16/12/2002	Normal	-	-	270	110	2000	130	1000	1400	47	960	0.05	-
Landfill Leachate	LD001	20/03/2003	Normal	0.05	2	360	94	1400	91	890	1100	110	795	0.005	-
Landfill Leachate	LD001	30/06/2003	Normal	0.1	2.1	220	146	1330	93	703	894	99	748	0.92	-
Landfill Leachate	LD001	25/09/2003	Normal	-	4.1	540	102	1940	97	1180	1500	70	1220	0.03	-
Landfill Leachate	LD001	11/12/2003	Normal	-	-	1200	84	2480	119	1470	1860	420	150	0.005	-
Landfill Leachate	LD001	15/03/2004	Normal	-	-	550	97	1330	85	746	1030	80	895	0.01	-
Landfill Leachate	LD001	30/06/2004	Normal	-	-	150	95	1640	78	700	960	360	1130	0.005	-
Landfill Leachate	LD001	7/09/2004	Normal	1.2	3	390	151	1290	82	593	841	90	805	0.005	-
Landfill Leachate	LD001	14/12/2004	Normal	0.6	2.4	280	156	850	59	441	646	120	514	0.005	-
Landfill Leachate	LD001	16/03/2005	Normal	<0.5	-	20	62	560	37	259	364	98	236	4.6	-
Landfill Leachate	LD001	29/06/2005	Normal	-	1	20	116	910	75	304	558	38	410	3.1	-
Landfill Leachate	LD001	28/09/2005	Normal	-	-	-	68	1690	79	591	945	-	904	0.02	-
Landfill Leachate	LD001	7/12/2005	Normal	-	-	-	101	1480	67	881	1010	110	914	<0.01	-
Landfill Leachate	LD001	6/03/2006	Normal	-	2	250	79	1840	77	758	1220	260	1100	0.03	-
Landfill Leachate	LD001	6/06/2006	Normal	0.3	1.5	-	83	940	92	326	605	16	564	5.8	-
Landfill Leachate	LD001	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Leachate	LD001	7/06/2012	Normal	<1	-	-	52	1600	72	650	1200	32	410	80	660
Landfill Leachate	LD001	24/06/2014	Normal	<1	-	-	120	2400	110	1100	2200	41	880	140	710
Statistical Summary															
Number of Results				14	14	42	33	33	33	47	47	32	47	33	2
Number of Detects				9	13	42	33	33	33	47	47	31	47	26	2
Minimum Concentration				0.05	<0.1	20	49	560	37	259	364	0.5	150	0.005	660
Minimum Detect				0.05	1	20	49	560	37	259	364	0.5	150	0.005	660
Maximum Concentration				<10	11	2540	580	2700	288	1470	2200	420	2180	140	710
Maximum Detect				1.2	11	2540	580	2700	288	1470	2200	420	2180	140	710
Average Concentration				0.73	2.9	851	151	1724	138	864	1150	76	991	7.3	
Geometric Average				0.25	1.9	538	118	1625	121	801	1076	33	877	0.046	
Median Concentration				0.275	2.05	655	101	1700	100	880	1100	44	895	0.01	685
Standard Deviation				1.3	2.6	699	138	554	73	313	409	98	462	28	
Geometric Standard Deviation				4.6	3.3	3.2	1.9	1.4	1.7	1.5	1.5	5	1.7	22	1.1

Monitoring_Zone In('Landfill Leachate')
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Appendix D
Table D1_b
Green Waste Liquor

	Inorganics								Field				Metals				TRH - NEPM 1999					BTEX & MAH					PAH												
	Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)	Aluminium	Cadmium	Iron	Lead	C6 - C 9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 (Sum of Total) - Calc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene
	mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%													0.055	0.0002		0.0034						950			350													
ANZECC 2000 FW Med-Low Reliability													0.0008	0.0002	0.3	0.0034						950	180	80	350					0.01		0.1				1	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																																				
Green Waste Liquor	GW001	30/06/2003	Normal	710	420	0.2	13,000	7.44	420	-	-	0.16	3180	7.35	-44	0.8	0.003	5.3	0.024	-	-	-	-	-	0.5	11	0.5	0.5	1	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05
Green Waste Liquor	GW001	25/09/2003	Normal	850	170	0.3	9650	8.11	190	-	-	6.32	2990	8.12	82	0.31	0.00005	2	0.009	-	-	-	-	-	0.5	0.5	0.5	0.5	1	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05
Green Waste Liquor	GW001	11/12/2003	Normal	480	17	0.2	3220	8.04	125	-	-	4.88	2558	7.61	198	1.5	0.0002	4.1	0.026	-	-	-	-	-	0.5	0.5	0.5	0.5	1	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05
Green Waste Liquor	GW001	15/03/2004	Normal	710	10	0.2	5900	8.08	144	-	-	4.29	2060	7.61	134	0.57	0.00005	1.7	0.005	-	-	-	-	-	0.5	0.5	0.5	0.5	1	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05
Green Waste Liquor	GW001	30/06/2004	Normal	600	6	0.2	7200	8.71	110	49	-	18.69	2200	8.46	104	0.54	0.0001	1.9	0.007	<50	<50	<200	140	140,000	0.5	0.5	0.5	0.5	1	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05
Green Waste Liquor	GW001	7/09/2004	Normal	390	12	-	4670	8.14	120	220	-	7.65	2020	8.15	66	-	-	-	-	<50	<50	280	140	420,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Green Waste Liquor	GW001	14/12/2004	Normal	380	5	-	3750	7.98	150	390	-	4.35	1581	7.64	-244	-	-	-	-	<50	<50	280	180	460,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Green Waste Liquor	GW001	16/03/2005	Normal	380	1	-	4310	8.54	100	210	-	6.66	2101	8.4	-212	-	-	-	-	-	<50	260	120	380,000	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Green Waste Liquor	GW001	29/06/2005	Normal	350	15	0.2	4940	8.23	87	41	-	8.31	1794	7.61	-19	0.44	0.0001	1.1	0.008	<50	<50	300	290	590,000	<1	<1	<1	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Green Waste Liquor	GW001	28/09/2005	Normal	-	10	-	5270	-	-	-	-	7.65	1592	7.98	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Green Waste Liquor	GW001	7/12/2005	Normal	-	5	-	-	7.7	-	-	-	3.54	1637	7.65	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Green Waste Liquor	GW001	6/03/2006	Normal	-	30	-	7050	7.4	-	-	-	0.68	1550	7.08	18	-	-	-	-	<50	<50	620	250	870,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Green Waste Liquor	GW001	6/06/2006	Normal	-	5	-	3710	8.3	-	-	-	9.2	1807	8.02	194	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Green Waste Liquor	GW001	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	1798	8.16	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Green Waste Liquor	GW001	7/06/2012	Normal	-	720	-	-	-	-	-	1000	0.02	7488	7.92	-2308	-	-	-	-	<200	5300	8900	1300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																																							
Number of Results				9	14	6	12	12	9	5	1	14	15	15	15	6	6	6	6	6	7	7	7	6	6	6	6	6	7	6	6	6	6	6	6	6	6	6	6	6
Number of Detects				9	14	6	12	12	9	5	1	14	15	15	15	6	6	6	6	0	1	6	7	6	5	5	5	5	6	5	5	5	5	5	5	5	5	5	5	5
Minimum Concentration				350	1	0.2	3220	7.4	87	41	1000	0.02	1550	7.08	18	0.31	0.00005	1.1	0.005	<50	<50	<200	120	140000	0.5	0.5	0.5	0.5	1	0.05	0.05	0.05	0.05	0.05	<0.05	0.1	0.05	0.05	0.05	0.05	0.05
Minimum Detect				350	1	0.2	3220	7.4	87	41	1000	0.02	1550	7.08	18	0.31	0.00005	1.1	0.005	ND	5300	260	120	140000	0.5	0.5	0.5	0.5	1	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05
Maximum Concentration				850	720	0.3	13000	8.71	420	390	1000	18.69	7488	8.46	2308	1.5	0.003	5.3	0.026	<200	5300	8900	1300	870000	<1	11	<1	<1	8	<0.1	<0.1	<0.1	<0.1	<0.1	0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Detect				850	720	0.3	13000	8.71	420	390	1000	18.69	7488	8.46	2308	1.5	0.003	5.3	0.026	ND	5300	8900	1300	870000	0.5	11	0.5	0.5	8	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05
Average Concentration				539	102	0.22	6056	8.1	161	182		5.9	2424	7.9	247	0.69	0.00058	2.7	0.013	38	779	1534	346	476667	0.5	2.3	0.5	0.5	2	0.05	0.05	0.05	0.05	0.05	0.046	0.1	0.05	0.05	0.05	0.05	0.05
Geometric Average				512	18	0.21	5565	8	143	129		2.9	2193	7.8	84	0.61	0.00016	2.3	0.011	31	54	443	235	417236	0.5	0.84	0.5	0.5	1.3	0.05	0.05	0.05	0.05	0.05	0.045	0.1	0.05	0.05	0.05	0.05	0.05
Median Concentration				480	11	0.2	5105	8.095	125	210	1000	5.6	2020	7.92	82	0.555	0.0001	1.95	0.0085	25	25	280	180	440000	0.5	0.5	0.5	0.5	1	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05
Standard Deviation				184	211	0.041	2847	0.39	102	144		4.8	1487	0.39	576	0.43	0.0012	1.6	0.0093	31	1994	3252	425	242377	0	4.3	0	0	2.6	0	0	0	0	0	0.01	0	0	0	0	0	0
Geometric Standard Deviation				1.4	6.3	1.2	1.5	1.1	1.6	2.7		6.4	1.5	1.1	3.7	1.7	4.6	1.8	2	1.8	7.6	4.2	2.3	1.8		3.5			2.2						1.3						

Monitoring_Zone = 'Green Waste Liquor'
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Appendix D
Table D1_b
Green Waste Liquor

								Phenols	Major Ions							Nutrients				
				Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	PAHs (Sum of total) - Lab calc	Phenol	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate	Ammonia as N	Nitrate (as N)	Nitrogen (Total)			
				µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			
ANZECC 2000 FW 95%					16			320							0.9	0.158				
ANZECC 2000 FW Med-Low Reliability					16	0.6		320								0.7				
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																	
Green Waste Liquor	GW001	30/06/2003	Normal	0.05	0.2	0.4	0.6	670	217	530	56	517	138	68	36.2	0.005	-			
Green Waste Liquor	GW001	25/09/2003	Normal	0.05	0.05	0.05	-	1200	154	520	62	537	190	64	40.8	0.8	-			
Green Waste Liquor	GW001	11/12/2003	Normal	0.05	0.05	0.05	-	1000	120	480	58	493	181	110	0.18	10.3	-			
Green Waste Liquor	GW001	15/03/2004	Normal	0.05	0.05	0.05	-	20	131	580	63	572	197	180	8.8	0.01	-			
Green Waste Liquor	GW001	30/06/2004	Normal	0.05	0.05	0.05	-	70	105	470	50	406	161	59	0.08	7	-			
Green Waste Liquor	GW001	7/09/2004	Normal	-	-	-	-	5	-	-	-	-	-	-	0.09	3.1	-			
Green Waste Liquor	GW001	14/12/2004	Normal	-	-	-	-	60	-	-	-	-	-	-	0.03	1.9	-			
Green Waste Liquor	GW001	16/03/2005	Normal	-	-	-	-	580	-	-	-	-	-	-	0.04	2.8	-			
Green Waste Liquor	GW001	29/06/2005	Normal	<0.1	<0.1	<0.1	-	50	78	410	34	335	93	75	0.67	0.95	-			
Green Waste Liquor	GW001	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	12	0.03	-	-			
Green Waste Liquor	GW001	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	0.04	-	3.82	-			
Green Waste Liquor	GW001	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	2.6	-	-			
Green Waste Liquor	GW001	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	0.11	-	-			
Green Waste Liquor	GW001	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Green Waste Liquor	GW001	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	220	-	240			
Statistical Summary																				
Number of Results				6	6	6	1	9	6	6	6	6	6	8	13	10	1			
Number of Detects				5	5	5	1	9	6	6	6	6	6	8	13	10	1			
Minimum Concentration				0.05	0.05	0.05	0.6	5	78	410	34	335	93	0.04	0.03	0.005	240			
Minimum Detect				0.05	0.05	0.05	0.6	5	78	410	34	335	93	0.04	0.03	0.005	240			
Maximum Concentration				<0.1	0.2	0.4	0.6	1200	217	580	63	572	197	180	220	10.3	240			
Maximum Detect				0.05	0.2	0.4	0.6	1200	217	580	63	572	197	180	220	10.3	240			
Average Concentration				0.05	0.075	0.11		406	134	498	54	477	160	71	24	3.1				
Geometric Average				0.05	0.063	0.071		129	128	495	53	469	155	26	0.75	0.84				
Median Concentration				0.05	0.05	0.05	0.6	70	125.5	500	57	505	171	66	0.18	2.35	240			
Standard Deviation				0	0.061	0.14		468	48	58	11	89	39	56	61	3.3				
Geometric Standard Deviation					1.8	2.3		6.9	1.4	1.1	1.3	1.2	1.3	15	22	14				

Appendix D
Table D1_c
Harringtons Quarry

				Inorganics						Field				Metals				TRH - NEPM 1999					BTEX & MAH					PAH													
				Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Organic Carbon	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)	Aluminium	Cadmium	Iron	Lead	C6 - C 9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 (Sum of Total) - Calc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene
				mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	uS/cm	pH Units	mV	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%														0.055	0.0002		0.0034						950			350														
ANZECC 2000 FW Med-Low Reliability														0.0008	0.0002	0.3	0.0034						950	180	80	350				0.01		0.1				1		
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																																						
Harringtons Quarry Leachate	LD002	25/09/2003	Normal	3850	3100	0.9	350	7.52	250	3.87	10,270	7.43	41	0.11	0.001	15.2	0.049	-	-	-	-	-	3	0.5	6	24	3	0.05	-	-	-	0.05	0.05	0.1	0.05	0.05	0.05	0.05	-	0.05
Harringtons Quarry Leachate	LD002	11/12/2003	Normal	3300	280	0.6	130	7.22	180	0.71	9340	7.05	130	0.09	0.0001	15.2	0.011	80	1120	1750	-	2,870,000	8	0.5	16	6	10	-	-	-	-	0.05	0.05	0.1	0.05	0.05	0.05	0.05	-	0.05
Harringtons Quarry Leachate	LD002	15/03/2004	Normal	3650	170	0.8	5900	7.49	210	1.4	8600	6.66	60	0.17	0.0002	15.4	0.011	-	850	1260	-	2,110,000	88	0.5	3	4	29	0.05	-	-	-	0.05	0.05	0.1	0.05	0.05	0.05	0.05	-	0.05
Harringtons Quarry Leachate	LD002	30/06/2004	Normal	3880	32	0.8	210	7.81	185	2.47	8.73	7.37	-65	0.06	0.00005	14.9	0.01	-	960	2360	140	3,460,000	6	0.5	0.05	4	4	0.05	-	-	-	0.05	0.05	0.1	0.05	0.05	0.05	0.05	-	0.05
Harringtons Quarry Leachate	LD002	7/09/2004	Normal	3860	93	0.7	200	7.37	190	0.6	6080	7.25	44	0.02	0.0002	11.1	0.01	25	920	2450	180	3,550,000	9	1	0.05	10	17	-	-	-	-	0.05	0.05	0.1	0.05	0.05	0.05	-	-	0.05
Harringtons Quarry Leachate	LD002	14/12/2004	Normal	3690	110	0.8	160	7.25	220	1.1	8280	6.89	-34	0.11	0.0002	15.2	0.012	70	1540	2640	220	4,400,000	10	2	3	8	21	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Harringtons Quarry Leachate	LD002	16/03/2005	Normal	4020	2300	0.9	110	7.34	230	0.21	10,440	7.05	-315	90	0.0002	12.9	0.01	-	1190	2440	120	3,750,000	13	2	8	10	41	<0.1	<0.5	<0.5	<0.5	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1
Harringtons Quarry Leachate	LD002	29/06/2005	Normal	3800	2300	1	180	7.78	240	0.66	8840	7.09	-103	0.05	0.002	13.1	0.013	60	1080	2850	210	4,140,000	10	1	<1	7	9	-	-	-	-	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	-	-	<0.1
Harringtons Quarry Leachate	LD002	28/09/2005	Normal	-	2700	0.6	180	8.3	-	1.48	8350	6.95	-33	-	-	-	-	70	850	1740	300	2,890,000	10	1	2	6	14	-	-	-	-	-	-	-	-	-	-	-	-	-
Harringtons Quarry Leachate	LD002	7/12/2005	Normal	-	290	0.3	-	6.9	-	1.2	2123	6.73	1	-	-	-	-	70	850	1740	300	2,890,000	1	<1	1	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Harringtons Quarry Leachate	LD002	6/03/2006	Normal	-	1700	0.8	-	7.3	-	-	10,290	7.47	-22	-	-	-	-	90	1280	2530	210	4,110,000	16	3	8	14	19	-	-	-	-	-	-	-	-	-	-	-	-	-
Harringtons Quarry Leachate	LD002	6/06/2006	Normal	-	1400	0.8	-	7.5	-	-	11,210	7.38	-84	-	-	-	-	350	1100	2870	150	3,480,000	<1	2	84	73	110	-	-	-	-	-	-	-	-	-	-	-	-	-
Harringtons Quarry Leachate	LD002	27/09/2006	Normal	-	-	-	-	-	-	-	10,440	7.56	87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																																								
Number of Results				8	12	12	9	12	8	10	13	13	13	8	8	8	8	8	11	11	9	11	12	12	12	12	12	5	2	2	2	8	8	8	8	8	8	5	2	8
Number of Detects				8	12	12	9	12	8	10	13	13	13	8	8	8	8	8	11	11	9	11	11	11	11	12	12	3	0	0	0	5	5	5	5	5	5	3	0	5
Minimum Concentration				3300	32	0.3	110	6.9	180	0.21	8.73	6.66	1	0.02	0.00005	11.1	0.01	25	850	1260	120	2110000	<1	0.5	0.05	1	3	0.05	<0.1	<0.1	<0.1	0.05	<0.05	0.1	0.05	0.05	0.05	0.05	<0.1	0.05
Minimum Detect				3300	32	0.3	110	6.9	180	0.21	8.73	6.66	1	0.02	0.00005	11.1	0.01	25	850	1260	120	2110000	1	0.5	0.05	1	3	0.05	ND	ND	ND	0.05	0.05	0.1	0.05	0.05	0.05	0.05	ND	0.05
Maximum Concentration				4020	3100	1	5900	8.3	250	3.87	11210	7.56	315	90	0.002	15.4	0.049	350	1540	2870	300	4400000	88	3	84	73	110	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1
Maximum Detect				4020	3100	1	5900	8.3	250	3.87	11210	7.56	315	90	0.002	15.4	0.049	350	1540	2870	300	4400000	88	3	84	73	110	0.05	ND	ND	ND	0.05	0.05	0.1	0.05	0.05	0.05	0.05	ND	0.05
Average Concentration				3756	1206	0.75	824	7.5	213	1.4	8021	7.1	78	11	0.00049	14	0.016	102	1067	2239	203	3422727	15	1.2	11	14	24	0.05				0.05	0.044	0.1	0.05	0.05	0.05	0.05		0.05
Geometric Average				3751	529	0.72	265	7.5	212	1	4798	7.1	47	0.18	0.00025	14	0.013	77	1049	2175	194	3355388	6.9	0.98	2.2	8.1	14	0.05				0.05	0.042	0.1	0.05	0.05	0.05	0.05		0.05
Median Concentration				3825	845	0.8	180	7.43	215	1.15	8840	7.09	60	0.1	0.0002	15.05	0.011	70	1080	2440	210	3480000	9.5	1	3	7.5	15.5	0.05	0.15	0.15	0.15	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.15	0.05
Standard Deviation				217	1171	0.18	1905	0.36	26	1.1	3388	0.29	79	32	0.00068	1.6	0.013	102	215	530	65	683097	24	0.84	23	20	29	0				0	0.012	0	0	0	0	0		0
Geometric Standard Deviation				1.1	4.9	1.4	3.3	1	1.1	2.3	7	1	3.8	13	3.3	1.1	1.7	2.1	1.2	1.3	1.4	1.2	3.8	2	9	2.8	2.8		3.1	3.1	3.1		1.4					3.1	

Monitoring_Zone In('Harringtons Quarry Leachate')
G:\21\23482\Technical\Groundwater\Water Quality\Combined data_rev1

Appendix D
Table D1_c
Harringtons Quarry

					Phenols	Major Ions						Nutrients	
				Naphthalene	Phenanthrene	PAHs (Sum of total) - Lab calc	Phenol	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate	Ammonia as N	Nitrate (as N)
				µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				16			320							0.9	0.158
ANZECC 2000 FW Med-Low Reliability				16	0.6		320								0.7
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**												
Harringtons Quarry Leachate	LD002	25/09/2003	Normal	9.7	-	-	480	109	1620	164	680	1170	93	685	3.9
Harringtons Quarry Leachate	LD002	11/12/2003	Normal	6.9	-	-	70	95	1350	143	567	1040	200	580	0.06
Harringtons Quarry Leachate	LD002	15/03/2004	Normal	6	-	-	20	96	1310	115	528	978	53	655	0.005
Harringtons Quarry Leachate	LD002	30/06/2004	Normal	4.3	-	4.3	30	78	1520	129	470	880	330	690	0.05
Harringtons Quarry Leachate	LD002	7/09/2004	Normal	5.7	-	5.7	5	71	1440	114	457	898	50	655	3.6
Harringtons Quarry Leachate	LD002	14/12/2004	Normal	13	0.2	13.2	40	71	1320	126	497	928	130	650	<0.01
Harringtons Quarry Leachate	LD002	16/03/2005	Normal	11	<0.5	11	30	59	1480	124	502	943	240	738	<0.01
Harringtons Quarry Leachate	LD002	29/06/2005	Normal	7.2	-	-	20	82	1740	141	573	1110	2	770	8.4
Harringtons Quarry Leachate	LD002	28/09/2005	Normal	-	-	-	-	4.4	1680	132	518	975	<1	766	0.01
Harringtons Quarry Leachate	LD002	7/12/2005	Normal	-	-	-	-	36	280	26	114	196	33	164	<0.01
Harringtons Quarry Leachate	LD002	6/03/2006	Normal	-	-	-	-	74	1670	116	468	974	200	842	0.2
Harringtons Quarry Leachate	LD002	6/06/2006	Normal	-	-	-	-	82	1690	138	575	1120	1	952	0.4
Harringtons Quarry Leachate	LD002	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary															
Number of Results				8	2	4	8	12	12	12	12	12	12	12	12
Number of Detects				8	1	4	8	12	12	12	12	12	11	12	9
Minimum Concentration				4.3	0.2	4.3	5	4.4	280	26	114	196	<1	164	0.005
Minimum Detect				4.3	0.2	4.3	5	4.4	280	26	114	196	1	164	0.005
Maximum Concentration				13	<0.5	13.2	480	109	1740	164	680	1170	330	952	8.4
Maximum Detect				13	0.2	13.2	480	109	1740	164	680	1170	330	952	8.4
Average Concentration				8		8.6	87	71	1425	122	496	934	111	679	1.4
Geometric Average				7.5		7.7	35	59	1321	114	464	871	35	636	0.087
Median Concentration				7.05	0.225	8.35	30	76	1500	127.5	510	974.5	73	687.5	0.055
Standard Deviation				3		4.2	160	28	391	34	135	250	109	190	2.6
Geometric Standard Deviation				1.4	1.2	1.7	3.7	2.4	1.6	1.6	1.6	1.6	9.7	1.6	17

Appendix D
Table D2
Groundwater Quality Data

				Inorganics									Field			
				Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Dissolved Solids (Filtered)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)
				mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV
ANZECC 2000 FW 95%																
ANZECC 2000 FW Med-Low Reliability																
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**													
Groundwater Monitoring Well	MB001	1/02/1995	Normal	-	-	-	-	6	-	2	-	-	1.9	-	5.4	-
Groundwater Monitoring Well	MB001	1/03/1995	Normal	-	-	-	-	5.8	-	4	-	-	2.6	-	6.2	-
Groundwater Monitoring Well	MB001	1/04/1995	Normal	-	-	-	-	6	-	4	-	-	2.16	-	6.1	-
Groundwater Monitoring Well	MB001	1/05/1995	Normal	-	-	-	-	6	-	2	-	-	1	-	5.9	-
Groundwater Monitoring Well	MB001	1/06/1995	Normal	-	-	-	-	6	-	1.4	-	-	1.76	-	5.95	-
Groundwater Monitoring Well	MB001	1/07/1995	Normal	-	-	-	-	5.63	-	4	-	-	0.9	-	5.6	-
Groundwater Monitoring Well	MB001	1/08/1995	Normal	-	-	-	-	5.72	-	8	-	-	-	-	5.3	-
Groundwater Monitoring Well	MB001	1/09/1995	Normal	-	-	-	-	5.57	-	1	-	-	3.21	-	5.94	-
Groundwater Monitoring Well	MB001	1/10/1995	Normal	-	-	-	-	5.9	-	8	-	-	4.61	-	6.12	-
Groundwater Monitoring Well	MB001	1/11/1995	Normal	-	-	-	-	5.85	-	5	-	-	6.96	-	6.43	-
Groundwater Monitoring Well	MB001	1/12/1995	Normal	-	-	-	-	5.83	-	5	-	-	1.08	-	6.53	-
Groundwater Monitoring Well	MB001	1/01/1996	Normal	-	-	-	-	5.65	-	4	-	-	2.62	-	6.89	-
Groundwater Monitoring Well	MB001	1/02/1996	Normal	-	-	-	-	5.49	-	1	-	-	2.05	-	5.53	-
Groundwater Monitoring Well	MB001	1/03/1996	Normal	-	-	-	-	5.8	-	7	-	-	2.05	-	6.13	-
Groundwater Monitoring Well	MB001	16/07/1996	Normal	-	-	-	-	5.5	-	5	-	-	2.7	440	5.5	-
Groundwater Monitoring Well	MB001	14/08/1996	Normal	-	-	-	-	5.7	-	0.5	-	-	2.1	502	6	-
Groundwater Monitoring Well	MB001	17/09/1996	Normal	63	-	-	-	5.9	-	0.5	-	-	2.4	400	6.1	-
Groundwater Monitoring Well	MB001	9/10/1996	Normal	64	-	-	-	6.1	-	0.5	-	-	3.6	411	6.6	-
Groundwater Monitoring Well	MB001	19/11/1996	Normal	66	-	-	-	6.3	-	0.5	-	-	3.3	464	5.9	-
Groundwater Monitoring Well	MB001	10/12/1996	Normal	80	-	-	-	5.5	-	0.5	-	-	2.9	458	5.8	-
Groundwater Monitoring Well	MB001	29/01/1997	Normal	54	-	-	-	5.7	-	0.5	-	-	1.5	458	5.7	-
Groundwater Monitoring Well	MB001	18/02/1997	Normal	52	-	-	-	5.7	-	0.5	-	-	2	440	5.8	-
Groundwater Monitoring Well	MB001	19/03/1997	Normal	54	-	-	-	6.1	-	0.5	-	-	2.5	503	5.6	-
Groundwater Monitoring Well	MB001	23/04/1997	Normal	57	-	-	-	5.9	-	0.5	-	-	2.5	410	5.7	-
Groundwater Monitoring Well	MB001	19/05/1997	Normal	60	-	-	-	5.6	-	0.5	-	-	2	492	5.4	-
Groundwater Monitoring Well	MB001	18/06/1997	Normal	72	-	-	-	5.5	-	0.5	-	-	1.4	432	5.5	-
Groundwater Monitoring Well	MB001	22/07/1997	Normal	48	-	-	-	5.9	-	0.5	-	-	2.6	381	5.8	-
Groundwater Monitoring Well	MB001	19/08/1997	Normal	61	-	-	-	5.8	-	0.5	-	-	1.6	396	5.6	-
Groundwater Monitoring Well	MB001	18/09/1997	Normal	-	-	-	-	5.8	-	-	-	-	-	-	5.8	-
Groundwater Monitoring Well	MB001	16/10/1997	Normal	57	-	-	-	5.8	-	0.5	-	-	2.6	335	6	-
Groundwater Monitoring Well	MB001	21/11/1997	Normal	49	-	-	-	6	-	2	-	-	1.24	367	5.95	-
Groundwater Monitoring Well	MB001	12/12/1997	Normal	56	-	-	-	5.8	-	0.5	-	-	0.82	403	5.56	-
Groundwater Monitoring Well	MB001	5/02/1998	Normal	59	-	-	-	5.6	-	0.5	-	-	1.1	419	5.95	-
Groundwater Monitoring Well	MB001	5/03/1998	Normal	55	-	-	-	5.7	-	0.5	-	-	0.44	382	6	-
Groundwater Monitoring Well	MB001	5/05/1998	Normal	54	-	-	-	5.8	-	0.5	-	-	3.2	400	5.26	-
Groundwater Monitoring Well	MB001	3/06/1998	Normal	52	-	-	-	5.5	-	0.5	-	-	2.1	367	5.16	-
Groundwater Monitoring Well	MB001	1/07/1998	Normal	52	-	-	-	5.6	-	0.5	-	-	2.09	380	5.89	-
Groundwater Monitoring Well	MB001	3/08/1998	Normal	55	-	-	-	5.5	-	0.5	-	-	2.72	465	5.81	-
Groundwater Monitoring Well	MB001	2/09/1998	Normal	53	-	-	-	5.8	-	0.5	-	-	2.9	449	5.78	-
Groundwater Monitoring Well	MB001	1/10/1998	Normal	57	-	-	-	5.8	-	0.5	-	-	1.5	436	5.79	-
Groundwater Monitoring Well	MB001	4/11/1998	Normal	56	-	-	-	5.9	-	0.5	-	-	2.6	438	5.58	-
Groundwater Monitoring Well	MB001	8/12/1998	Normal	56	-	-	-	5.8	-	0.5	-	-	2.5	451	6.04	-
Groundwater Monitoring Well	MB001	6/01/1999	Normal	61	-	-	-	5.8	-	1	-	-	1.84	523	6.04	-
Groundwater Monitoring Well	MB001	3/03/1999	Normal	54	-	-	-	5.7	-	<1	-	-	1.96	475	5.76	-
Groundwater Monitoring Well	MB001	2/06/1999	Normal	58	-	0.2	210	5.9	-	3	-	-	2.67	463	6.23	-
Groundwater Monitoring Well	MB001	2/09/1999	Normal	62	-	0.2	210	5.9	-	<1	-	-	2.04	469	5.83	-
Groundwater Monitoring Well	MB001	2/12/1999	Normal	62	-	0.2	210	5.8	-	<1	-	-	2.16	474	6.39	-
Groundwater Monitoring Well	MB001	2/03/2000	Normal	62	-	0.2	-	5.7	-	<1	-	-	2.34	448	6.44	-
Groundwater Monitoring Well	MB001	1/06/2000	Normal	61	-	0.2	-	6.1	-	<1	-	-	2.72	455	6	-
Groundwater Monitoring Well	MB001	1/09/2000	Normal	66	-	0.2	-	5.9	-	<1	-	-	2.22	473	5.74	-
Groundwater Monitoring Well	MB001	20/11/2000	Normal	69	-	0.2	-	5.8	-	1	-	-	1.21	458	5.97	-
Groundwater Monitoring Well	MB001	8/12/2000	Normal	-	-	0.2	-	6	-	<1	-	-	1	457	6.11	-
Groundwater Monitoring Well	MB001	7/03/2001	Normal	-	-	0.2	-	5.7	-	1	-	-	1.89	465	5.93	-
Groundwater Monitoring Well	MB001	1/06/2001	Normal	-	-	0.2	-	5.9	-	<1	-	-	2	455	5.6	-
Groundwater Monitoring Well	MB001	13/09/2001	Normal	-	-	0.2	-	5.8	-	<2	-	-	2.22	429	5.9	-
Groundwater Monitoring Well	MB001	11/12/2001	Normal	-	-	0.2	-	5.9	-	<3	-	-	0.95	454	6.03	-
Groundwater Monitoring Well	MB001	12/03/2002	Normal	-	-	0.2	-	6.3	-	<4	-	-	1.28	434	6.01	-
Groundwater Monitoring Well	MB001	26/06/2002	Normal	53	-	0.1	120	6.2	-	0.5	-	-	1.18	405	5.72	86
Groundwater Monitoring Well	MB001	13/08/2002	Normal	73	-	0.2	220	6.3	-	0.5	-	-	1.33	441	5.83	102
Groundwater Monitoring Well	MB001	17/10/2002	Normal	71	-	0.2	190	6.4	-	0.5	-	-	1.26	451	5.81	45
Groundwater Monitoring Well	MB001	16/12/2002	Normal	71	-	0.2	5	6.5	-	0.5	-	-	0.52	475	5.8	-247
Groundwater Monitoring Well	MB001	20/03/2003	Normal	69	-	0.2	160	6.5	-	0.5	-	-	0.55	412	5.93	89
Groundwater Monitoring Well	MB001	30/06/2003	Normal	59	-	0.3	35	5.88	-	0.5	-	-	0.95	446	5.75	69
Groundwater Monitoring Well	MB001	25/09/2003	Normal	68	-	0.2	170	6	-	1	-	-	1.02	416	6.04	2
Groundwater Monitoring Well	MB001	11/12/2003	Normal	84	-	0.2	48	6.21	-	0.5	-	-	1.42	422	6.06	-28
Groundwater Monitoring Well	MB001	15/03/2004	Normal	74	-	0.2	170	6.37	-	0.5	-	-	0.96	409	6.95	-17
Groundwater Monitoring Well	MB008	1/02/1995	Normal	-	-	-	-	5.5	-	65	-	-	0.05	-	5.3	-
Groundwater Monitoring Well	MB008	1/03/1995	Normal	-	-	-	-	5.2	-	17	-	-	3	-	5.3	-
Groundwater Monitoring Well	MB008	1/04/1995	Normal	-	-	-	-	5.2	-	22	-	-	0.96	-	5.4	-
Groundwater Monitoring Well	MB008	1/05/1995	Normal	-	-	-	-	5.1	-	46	-	-	1.64	-	5.14	-
Groundwater Monitoring Well	MB008	1/06/1995	Normal	-	-	-	-	5.2	-	-	-	-	2	-	5.25	-
Groundwater Monitoring Well	MB008	1/07/1995	Normal	-	-	-	-	4.9	-	3	-	-	3.2	-	5.1	-
Groundwater Monitoring Well	MB008	1/08/1995	Normal	-	-	-	-	5.13	-	7	-	-	4.1	-	4.6	-
Groundwater Monitoring Well	MB008	1/09/1995	Normal	-	-	-	-	4.79	-	2	-	-	4.1	-	4.86	-
Groundwater Monitoring Well	MB008	1/10/1995	Normal	-	-	-	-	5.1	-	3	-	-	5.16	-	5.46	-
Groundwater Monitoring Well	MB008	1/11/1995	Normal	-	-	-	-	5.1	-	3	-	-	8.22	-	5.69	-
Groundwater Monitoring Well	MB008	1/12/1995	Normal	-	-	-	-	5.18	-	2	-	-	2.9	-	6.06	-
Groundwater Monitoring Well	MB008	1/01/1996	Normal	-	-	-	-	4.85	-	1	-	-	2.28	-	6.11	-
Groundwater Monitoring Well	MB008	1/02/1996	Normal	-	-	-	-	5.29	-	1	-	-	2.78	-	4.91	-
Groundwater Monitoring Well	MB008	1/03/1996	Normal	-	-	-	-	5.22	-	6	-	-	7.15	-	5.92	-
Groundwater Monitoring Well	MB008	1/04/1996	Normal	-	-	-	-	4.85	-	5	-	-	5.55	-	5.59	-
Groundwater Monitoring Well	MB008	1/05/1996	Normal	-	-	-	-	5.19	-	4	-	-	5.73	-	5.27	-
Groundwater Monitoring Well	MB008	1/06/1996	Normal	-	-	-	-	5.3	-	9	-	-	3.71	-	5.73	-
Groundwater Monitoring Well	MB008	16/07/1996	Normal	-	-	-	-	4.6	-	4	-	-	7.2	264	5.6	-
Groundwater Monitoring Well	MB008	15/08/1996	Normal	-	-	-	-	5.5	-	1	-	-	4.3	284	5.4	-
Groundwater Monitoring Well	MB008	18/09/1996	Normal	17	-	-	-	5.3	-	0.5	-	-	4.3	322	5.5	-
Groundwater Monitoring Well	MB008	10/10/1996	Normal	27	-	-	-	5.6	-	0.5	-	-	3.6	288	5.7	-
Groundwater Monitoring Well	MB008	20/11/1996	Normal	22	-	-	-	5.9	-	2	-	-	3.7	332	5.4	-
Groundwater Monitoring Well	MB008	11/12/1996	Normal	40	-	-	-	5.5	-	5	-	-	3.8	340	5.2	-
Groundwater Monitoring Well	MB008	31/01/1997	Normal	4	-	-	-	5.2	-	1	-	-	4.8	293	5.2	-
Groundwater Monitoring Well	MB008	19/02/1997	Normal	23	-	-	-	6	-	0.5	-	-	4	277	5.2	-
Groundwater Monitoring Well	MB008	20/03/1997	Normal	20	-	-	-	5.3	-	0.5	-	-	5.9	320	5.1	-
Groundwater Monitoring Well	MB008	23/04/1997	Normal	21	-	-	-	5.5	-	0.5	-	-	2.7	274	5.5	-
Groundwater Monitoring Well	MB008	20/05/1997	Normal	20	-	-	-	5.3	-	2	-	-	3.4	252	5.2	-
Groundwater Monitoring Well	MB008	17/06/1997	Normal	13	-	-	-	5.2	-	2	-	-	1.5	285	5.1	-
Groundwater Monitoring Well	MB008	22/07/1997	Normal	11	-	-	-	5.3	-	0.5	-	-	2	250	5.1	-
Groundwater Monitoring Well	MB008	19/08/1997	Normal	25	-	-	-	5.4	-	2	-	-	3.7	223	5.2	-
Groundwater Monitoring Well	MB008	18/09/1997	Normal	25	-	-	-	5.4	-	1	-	-	2.1	213	5	-

Appendix D
Table D2
Groundwater Quality Data

				Inorganics									Field			
				Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Dissolved Solids (Filtered)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)
				mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV
ANZECC 2000 FW 95%																
ANZECC 2000 FW Med-Low Reliability																
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**													
Groundwater Monitoring Well	MB008	16/10/1997	Normal	12	-	-	-	5.1	-	1	-	-	1.5	249	5.2	-
Groundwater Monitoring Well	MB008	20/11/1997	Normal	12	-	-	-	5.8	-	1	-	-	2.1	232	5.09	-
Groundwater Monitoring Well	MB008	11/12/1997	Normal	13	-	-	-	5.2	-	0.5	-	-	2.73	267	5.1	-
Groundwater Monitoring Well	MB008	8/01/1998	Normal	15	-	-	-	5.2	-	0.5	-	-	1.82	261	4.93	-
Groundwater Monitoring Well	MB008	5/02/1998	Normal	16	-	-	-	5.1	-	2	-	-	2.39	288	5.03	-
Groundwater Monitoring Well	MB008	5/03/1998	Normal	17	-	-	-	5.7	-	0.5	-	-	1.03	260	5.03	-
Groundwater Monitoring Well	MB008	2/04/1998	Normal	19	-	-	-	5.1	-	2	-	-	2.14	274	4.9	-
Groundwater Monitoring Well	MB008	6/05/1998	Normal	25	-	-	-	5.2	-	0.5	-	-	1.22	284	5.1	-
Groundwater Monitoring Well	MB008	3/06/1998	Normal	0.5	-	-	-	5.4	-	0.5	-	-	1.66	266	5	-
Groundwater Monitoring Well	MB008	1/07/1998	Normal	21	-	-	-	5.3	-	0.5	-	-	2.08	261	5.29	-
Groundwater Monitoring Well	MB008	3/08/1998	Normal	22	-	-	-	5.1	-	0.5	-	-	1.88	292	5.4	-
Groundwater Monitoring Well	MB008	2/09/1998	Normal	20	-	-	-	5.3	-	1	-	-	1.5	317	5.05	-
Groundwater Monitoring Well	MB008	1/10/1998	Normal	18	-	-	-	5.3	-	0.5	-	-	2.7	299	5.13	-
Groundwater Monitoring Well	MB008	4/11/1998	Normal	8	-	-	-	5.1	-	4	-	-	2.3	288	5.14	-
Groundwater Monitoring Well	MB008	8/12/1998	Normal	2	-	-	-	5	-	0.5	-	-	3.3	278	5.16	-
Groundwater Monitoring Well	MB008	6/01/1999	Normal	9	-	-	-	5	-	1	-	-	2.56	317	5.09	-
Groundwater Monitoring Well	MB008	3/03/1999	Normal	10	-	-	-	4.9	-	<1	-	-	1.04	317	4.9	-
Groundwater Monitoring Well	MB008	2/06/1999	Normal	12	-	0.1	<10	5.3	-	<1	-	-	2.04	292	5.29	-
Groundwater Monitoring Well	MB008	2/09/1999	Normal	14	-	0.1	<10	5.4	-	<1	-	-	2.38	297	5.57	-
Groundwater Monitoring Well	MB008	2/12/1999	Normal	7	-	<0.1	<10	5.3	-	<1	-	-	1.83	308	5.09	-
Groundwater Monitoring Well	MB008	2/03/2000	Normal	8	-	<0.1	<10	4.9	-	<1	-	-	1.47	294	5.04	-
Groundwater Monitoring Well	MB008	1/06/2000	Normal	10	-	<0.1	<10	5.2	-	<1	-	-	0.76	288	4.9	-
Groundwater Monitoring Well	MB008	1/09/2000	Normal	10	-	<0.1	40	5.2	-	<1	-	-	2.19	284	5.09	-
Groundwater Monitoring Well	MB008	20/11/2000	Normal	13	-	<0.1	<10	5	-	<1	-	-	0.62	293	4.85	-
Groundwater Monitoring Well	MB008	8/12/2000	Normal	58	-	0.2	220	5.2	-	<1	-	-	1.1	306	4.77	-
Groundwater Monitoring Well	MB008	7/03/2001	Normal	10	-	<0.1	20	5.1	-	3	-	-	2.62	295	5.18	-
Groundwater Monitoring Well	MB008	1/06/2001	Normal	10	-	<0.1	<10	5.1	-	<1	-	-	1.37	285	4.6	-
Groundwater Monitoring Well	MB008	13/09/2001	Normal	8	-	<0.1	<10	5.2	-	<1	-	-	4.25	279	5.06	-
Groundwater Monitoring Well	MB008	11/12/2001	Normal	5	-	<0.1	<10	5	-	<1	-	-	0.94	283	4.81	-
Groundwater Monitoring Well	MB008	12/03/2002	Normal	13	-	<0.1	<10	5.4	-	<1	-	-	1.05	263	5.02	-
Groundwater Monitoring Well	MB008	26/06/2002	Normal	16	-	0.05	5	5.6	-	0.5	-	-	1.72	278	5.2	140
Groundwater Monitoring Well	MB008	13/08/2002	Normal	13	-	0.05	140	5.5	-	0.5	-	-	1.2	273	5.11	147
Groundwater Monitoring Well	MB008	17/10/2002	Normal	14	-	0.05	5	5.6	-	0.5	-	-	0.63	288	5.19	172
Groundwater Monitoring Well	MB008	16/12/2002	Normal	14	-	0.05	5	5.8	-	0.5	-	-	0.68	289	5.37	123
Groundwater Monitoring Well	MB008	20/03/2003	Normal	17	-	0.05	5	5.7	-	0.5	-	-	0.72	253	5.14	158
Groundwater Monitoring Well	MB008	30/06/2003	Normal	13	-	0.05	12	5.08	-	8	-	-	0.49	275	4.93	217
Groundwater Monitoring Well	MB008	25/09/2003	Normal	15	-	0.05	13	5.28	-	0.5	-	-	0.93	253	5.28	171
Groundwater Monitoring Well	MB008	11/12/2003	Normal	13	-	0.05	18	5.37	-	3	-	-	0.99	279	5.05	183
Groundwater Monitoring Well	MB008	15/03/2004	Normal	15	-	0.05	20	5.39	-	0.5	-	-	1.1	242	5.88	142
Groundwater Monitoring Well	MB008	30/06/2004	Normal	2	-	0.05	20	5.14	-	1	-	-	0.69	227	5.09	156
Groundwater Monitoring Well	MB008	8/09/2004	Normal	14	-	0.05	32	5.64	-	1	-	-	0.16	240	4.98	85
Groundwater Monitoring Well	MB008	13/12/2004	Normal	14	-	0.05	24	5.52	-	0.5	-	-	0.21	236	5.07	-340
Groundwater Monitoring Well	MB008	16/03/2005	Normal	11	-	<0.1	20	5.65	-	<1	-	-	0.33	273	5.15	-266
Groundwater Monitoring Well	MB008	30/06/2005	Normal	26	-	<0.1	16	5.95	-	<1	-	-	0.39	313	5.2	120
Groundwater Monitoring Well	MB008	28/09/2005	Normal	13	-	-	-	-	180	<1	-	-	0.46	241	4.77	136
Groundwater Monitoring Well	MB008	7/12/2005	Normal	12	-	-	-	6.2	180	2	-	-	0.52	251	5.03	147
Groundwater Monitoring Well	MB008	6/03/2006	Normal	13	-	<0.1	-	5.7	170	<1	-	-	1.32	214	5.43	168
Groundwater Monitoring Well	MB008	6/06/2006	Normal	17	-	-	-	5.6	185	2	-	-	-	277	5.15	149
Groundwater Monitoring Well	MB008	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	1.17	284	4.94	95
Groundwater Monitoring Well	MB008	5/06/2012	Normal	16	-	-	-	-	230	2	-	270	2.86	329.5	5.2	151.9
Groundwater Monitoring Well	MB008	11/09/2012	Normal	13	-	-	-	-	150	4	-	270	2.17	257	5.44	194
Groundwater Monitoring Well	MB008	17/12/2012	Normal	14	-	-	-	-	200	<1	-	110	1.68	298	5.01	184
Groundwater Monitoring Well	MB008	13/03/2013	Normal	15	-	<0.1	<5	5	150	1	-	290	1.86	348	5.04	186
Groundwater Monitoring Well	MB008	24/06/2014	Normal	17	-	-	-	5.95	160	3	-	1000	5.31	3200	-	-60
Groundwater Monitoring Well	MB016	1/02/1995	Normal	-	-	-	-	5.7	-	24	-	-	0.05	-	5.7	-
Groundwater Monitoring Well	MB016	1/03/1995	Normal	-	-	-	-	5.2	-	53	-	-	3.1	-	5.7	-
Groundwater Monitoring Well	MB016	1/04/1995	Normal	-	-	-	-	5.3	-	38	-	-	1.64	-	5.75	-
Groundwater Monitoring Well	MB016	1/05/1995	Normal	-	-	-	-	5.6	-	29	-	-	3.15	-	5.7	-
Groundwater Monitoring Well	MB016	1/06/1995	Normal	-	-	-	-	4.9	-	100	-	-	5.2	-	5.62	-
Groundwater Monitoring Well	MB016	1/07/1995	Normal	-	-	-	-	5.72	-	6	-	-	2.3	-	5.5	-
Groundwater Monitoring Well	MB016	1/08/1995	Normal	-	-	-	-	5.52	-	6	-	-	2.5	-	5.5	-
Groundwater Monitoring Well	MB016	1/09/1995	Normal	-	-	-	-	5.2	-	9	-	-	4.24	-	5.5	-
Groundwater Monitoring Well	MB016	1/10/1995	Normal	-	-	-	-	5.55	-	6	-	-	9.11	-	5.97	-
Groundwater Monitoring Well	MB016	1/11/1995	Normal	-	-	-	-	5.7	-	12	-	-	7.58	-	6.11	-
Groundwater Monitoring Well	MB016	1/12/1995	Normal	-	-	-	-	5.68	-	6	-	-	3.25	-	6.38	-
Groundwater Monitoring Well	MB016	1/01/1996	Normal	-	-	-	-	5.71	-	1	-	-	7.95	-	6.78	-
Groundwater Monitoring Well	MB016	1/02/1996	Normal	-	-	-	-	4.33	-	3	-	-	2.05	-	5.22	-
Groundwater Monitoring Well	MB016	1/03/1996	Normal	-	-	-	-	5.32	-	23	-	-	5.94	-	5.94	-
Groundwater Monitoring Well	MB016	1/04/1996	Normal	-	-	-	-	5.7	-	35	-	-	5.44	-	6.46	-
Groundwater Monitoring Well	MB016	1/05/1996	Normal	-	-	-	-	5.61	-	6	-	-	2.21	-	5.78	-
Groundwater Monitoring Well	MB016	1/06/1996	Normal	-	-	-	-	5.38	-	6	-	-	1.69	-	6.11	-
Groundwater Monitoring Well	MB016	16/07/1996	Normal	-	-	-	-	5.2	-	5	-	-	2.2	1922	5.5	-
Groundwater Monitoring Well	MB016	14/08/1996	Normal	-	-	-	-	5.5	-	2	-	-	3.8	2150	5.6	-
Groundwater Monitoring Well	MB016	17/09/1996	Normal	56	-	-	-	5.6	-	0.5	-	-	1.5	1545	5.6	-
Groundwater Monitoring Well	MB016	10/10/1996	Normal	66	-	-	-	5.8	-	1	-	-	2.5	1760	5.8	-
Groundwater Monitoring Well	MB016	19/11/1996	Normal	69	-	-	-	6.1	-	0.5	-	-	2.3	1920	5.6	-
Groundwater Monitoring Well	MB016	10/12/1996	Normal	80	-	-	-	6	-	1	-	-	3.9	1950	5.6	-
Groundwater Monitoring Well	MB016	30/01/1997	Normal	56	-	-	-	5.7	-	2	-	-	2.8	1935	5.6	-
Groundwater Monitoring Well	MB016	19/02/1997	Normal	55	-	-	-	5.9	-	0.5	-	-	2.4	1891	5.6	-
Groundwater Monitoring Well	MB016	19/03/1997	Normal	59	-	-	-	5.8	-	0.5	-	-	2	2030	5.6	-
Groundwater Monitoring Well	MB016	23/04/1997	Normal	68	-	-	-	5.8	-	1	-	-	2.5	1814	5.8	-
Groundwater Monitoring Well	MB016	20/05/1997	Normal	62	-	-	-	5.7	-	2	-	-	2.5	1633	5.7	-
Groundwater Monitoring Well	MB016	17/06/1997	Normal	56	-	-	-	5.3	-	2	-	-	1	1745	5.6	-
Groundwater Monitoring Well	MB016	22/07/1997	Normal	63	-	-	-	5.7	-	1	-	-	1.3	1570	5.7	-
Groundwater Monitoring Well	MB016	19/08/1997	Normal	56	-	-	-	5.6	-	2	-	-	1.2	1480	5.6	-
Groundwater Monitoring Well	MB016	18/09/1997	Normal	64	-	-	-	5.6	-	1	-	-	0.8	1470	5.3	-
Groundwater Monitoring Well	MB016	16/10/1997	Normal	60	-	-	-	5.5	-	2	-	-	2.3	1559	5.4	-
Groundwater Monitoring Well	MB016	20/11/1997	Normal	0.5	-	-	-	5.8	-	1	-	-	2.3	1790	5.92	-
Groundwater Monitoring Well	MB016	11/12/1997	Normal	58	-	-	-	5.6	-	1	-	-	1.33	1710	5.59	-
Groundwater Monitoring Well	MB016	8/01/1998	Normal	60	-	-	-	5.5	-	2	-	-	1.16	1802	5.38	-
Groundwater Monitoring Well	MB016	6/02/1998	Normal	42	-	-	-	5.4	-	2	-	-	0.72	1790	5.63	-
Groundwater Monitoring Well	MB016	5/03/1998	Normal	60	-	-	-	6	-	2	-	-	1.3	1499	5.9	-
Groundwater Monitoring Well	MB016	2/04/1998	Normal	70	-	-	-	5.5	-	2	-	-	1.23	1757	5.65	-
Groundwater Monitoring Well	MB016	6/05/1998	Normal	41	-	-	-	5.7	-	2	-	-	1.22	1186	5.74	-
Groundwater Monitoring Well	MB016	3/06/1998	Normal	52	-	-	-	5.6	-	1	-	-	1.46	1757	5.53	-
Groundwater Monitoring Well	MB016	1/07/1998	Normal	60	-	-	-	5.6	-	3	-	-	1.65	1563	5.64	-
Groundwater Monitoring Well	MB016	3/08/1998	Normal	63	-	-	-	5.5	-	2	-	-	1.6	1693	5.72	-
Groundwater Monitoring Well	MB016	2/09/1998	Normal	55	-	-	-	5.7	-	2	-	-	0.8	1767	5.54	-

Appendix D
Table D2
Groundwater Quality Data

				Inorganics									Field			
				Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Dissolved Solids (Filtered)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)
				mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV
ANZECC 2000 FW 95%																
ANZECC 2000 FW Med-Low Reliability																
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**													
Groundwater Monitoring Well	MB016	1/10/1998	Normal	61	-	-	-	5.6	-	0.5	-	-	1.2	1780	5.59	-
Groundwater Monitoring Well	MB016	4/11/1998	Normal	65	-	-	-	5.7	-	1	-	-	2	1709	5.42	-
Groundwater Monitoring Well	MB016	8/12/1998	Normal	70	-	-	-	5.7	-	1	-	-	2.9	2204	5.78	-
Groundwater Monitoring Well	MB016	6/01/1999	Normal	61.5	-	-	-	6	-	2	-	-	2.3	2444	5.7	-
Groundwater Monitoring Well	MB016	3/03/1999	Normal	53	-	-	-	5.7	-	1	-	-	1.77	1976	5.8	-
Groundwater Monitoring Well	MB016	2/06/1999	Normal	66	-	0.3	50	5.7	-	1	-	-	1.95	1964	5.81	-
Groundwater Monitoring Well	MB016	2/09/1999	Normal	66	-	0.3	30	5.7	-	1	-	-	2.02	1881	5.49	-
Groundwater Monitoring Well	MB016	2/12/1999	Normal	64	-	0.3	40	5.7	-	1	-	-	2.35	1901	5.67	-
Groundwater Monitoring Well	MB016	2/03/2000	Normal	64	-	0.3	40	5.8	-	1	-	-	2.18	2100	6.06	-
Groundwater Monitoring Well	MB016	1/06/2000	Normal	70	-	0.4	40	6	-	<1	-	-	2.01	2039	5.56	-
Groundwater Monitoring Well	MB016	1/09/2000	Normal	64	-	0.4	40	5.7	-	1	-	-	0.72	2221	5.61	-
Groundwater Monitoring Well	MB016	20/11/2000	Normal	67	-	0.3	40	5.8	-	2	-	-	0.35	2058	5.78	-
Groundwater Monitoring Well	MB016	8/12/2000	Normal	53	-	0.3	50	5.54	-	2	-	-	0.69	2009	5.54	-
Groundwater Monitoring Well	MB016	7/03/2001	Normal	60	-	0.4	40	5.78	-	2	-	-	1.08	2087	5.78	-
Groundwater Monitoring Well	MB016	1/06/2001	Normal	55	-	0.4	10	5.3	-	2	-	-	0.84	2007	5.3	-
Groundwater Monitoring Well	MB016	13/09/2001	Normal	65	-	0.4	40	5.7	-	1	-	-	1.45	1899	5.7	-
Groundwater Monitoring Well	MB016	11/12/2001	Normal	70	-	0.4	50	5.73	-	1	-	-	0.34	2244	5.73	-
Groundwater Monitoring Well	MB016	12/03/2002	Normal	67	-	0.3	30	5.51	-	2	-	-	0.46	1732	5.51	-
Groundwater Monitoring Well	MB017	1/02/1995	Normal	-	-	-	-	6.1	-	1	-	-	0.5	-	5.9	-
Groundwater Monitoring Well	MB017	1/03/1995	Normal	-	-	-	-	5.9	-	5	-	-	0.15	-	6.1	-
Groundwater Monitoring Well	MB017	1/04/1995	Normal	-	-	-	-	6	-	6	-	-	1.87	-	6.2	-
Groundwater Monitoring Well	MB017	1/05/1995	Normal	-	-	-	-	6.1	-	2	-	-	3.28	-	6.08	-
Groundwater Monitoring Well	MB017	1/06/1995	Normal	-	-	-	-	6.1	-	5	-	-	3.1	-	6.14	-
Groundwater Monitoring Well	MB017	1/07/1995	Normal	-	-	-	-	5.87	-	5	-	-	3.4	-	5.9	-
Groundwater Monitoring Well	MB017	1/08/1995	Normal	-	-	-	-	6.02	-	6	-	-	2.6	-	5.4	-
Groundwater Monitoring Well	MB017	1/09/1995	Normal	-	-	-	-	7	-	6	-	-	6.62	-	6.04	-
Groundwater Monitoring Well	MB017	1/10/1995	Normal	-	-	-	-	6	-	7	-	-	5.31	-	6.26	-
Groundwater Monitoring Well	MB017	1/11/1995	Normal	-	-	-	-	6.09	-	7	-	-	6.18	-	6.54	-
Groundwater Monitoring Well	MB017	1/12/1995	Normal	-	-	-	-	6	-	3	-	-	4.69	-	6.76	-
Groundwater Monitoring Well	MB017	1/01/1996	Normal	-	-	-	-	5.88	-	6	-	-	4.14	-	7.02	-
Groundwater Monitoring Well	MB017	1/02/1996	Normal	-	-	-	-	5.61	-	2	-	-	4.49	-	5.64	-
Groundwater Monitoring Well	MB017	1/03/1996	Normal	-	-	-	-	5.98	-	5	-	-	4.29	-	6.29	-
Groundwater Monitoring Well	MB017	1/04/1996	Normal	-	-	-	-	6	-	7	-	-	1.9	-	6.5	-
Groundwater Monitoring Well	MB017	1/05/1996	Normal	-	-	-	-	6	-	12	-	-	2.94	-	6.16	-
Groundwater Monitoring Well	MB017	16/07/1996	Normal	-	-	-	-	5.6	-	2	-	-	3.3	441	5.1	-
Groundwater Monitoring Well	MB017	14/08/1996	Normal	-	-	-	-	5.8	-	0.5	-	-	3.1	472	6.2	-
Groundwater Monitoring Well	MB017	17/09/1996	Normal	64	-	-	-	6	-	0.5	-	-	1.7	409	6.2	-
Groundwater Monitoring Well	MB017	9/10/1996	Normal	64	-	-	-	6.1	-	0.5	-	-	1.5	442	6.5	-
Groundwater Monitoring Well	MB017	19/11/1996	Normal	56	-	-	-	6.4	-	1	-	-	1.8	456	5.9	-
Groundwater Monitoring Well	MB017	10/12/1996	Normal	80	-	-	-	5.4	-	0.5	-	-	1.8	476	5.8	-
Groundwater Monitoring Well	MB017	29/01/1997	Normal	36	-	-	-	5.8	-	0.5	-	-	3.2	448	5.6	-
Groundwater Monitoring Well	MB017	18/02/1997	Normal	56	-	-	-	5.7	-	0.5	-	-	1.7	446	5.7	-
Groundwater Monitoring Well	MB017	19/03/1997	Normal	63	-	-	-	6.1	-	0.5	-	-	1.9	510	5.6	-
Groundwater Monitoring Well	MB017	23/04/1997	Normal	63	-	-	-	5.9	-	0.5	-	-	1.3	424	5.9	-
Groundwater Monitoring Well	MB017	19/05/1997	Normal	62	-	-	-	5.8	-	0.5	-	-	2.1	493	5.6	-
Groundwater Monitoring Well	MB017	18/06/1997	Normal	65	-	-	-	5.6	-	0.5	-	-	1.3	436	5.6	-
Groundwater Monitoring Well	MB017	22/07/1997	Normal	64	-	-	-	5.8	-	0.5	-	-	1.8	420	5.8	-
Groundwater Monitoring Well	MB017	19/08/1997	Normal	64	-	-	-	5.9	-	0.5	-	-	1.5	410	5.8	-
Groundwater Monitoring Well	MB017	18/09/1997	Normal	73	-	-	-	5.9	-	0.5	-	-	2.2	340	5.8	-
Groundwater Monitoring Well	MB017	16/10/1997	Normal	60	-	-	-	5.8	-	0.5	-	-	1.7	374	5.9	-
Groundwater Monitoring Well	MB017	21/11/1997	Normal	61	-	-	-	6	-	0.5	-	-	1.7	360	6.01	-
Groundwater Monitoring Well	MB017	12/12/1997	Normal	63	-	-	-	5.9	-	0.5	-	-	1.15	397	5.7	-
Groundwater Monitoring Well	MB017	5/02/1998	Normal	63	-	-	-	5.7	-	0.5	-	-	0.82	453	5.99	-
Groundwater Monitoring Well	MB017	5/03/1998	Normal	61	-	-	-	5.6	-	0.5	-	-	1.05	396	6.07	-
Groundwater Monitoring Well	MB017	2/04/1998	Normal	68	-	-	-	5.6	-	0.5	-	-	1.3	429	6.09	-
Groundwater Monitoring Well	MB017	5/05/1998	Normal	61	-	-	-	5.7	-	1	-	-	1.04	414	5.31	-
Groundwater Monitoring Well	MB017	3/06/1998	Normal	40	-	-	-	5.5	-	0.5	-	-	1.48	388	5.21	-
Groundwater Monitoring Well	MB017	1/07/1998	Normal	56	-	-	-	5.7	-	0.5	-	-	2.3	422	6	-
Groundwater Monitoring Well	MB017	3/08/1998	Normal	60	-	-	-	5.5	-	1	-	-	1.8	441	5.89	-
Groundwater Monitoring Well	MB017	2/09/1998	Normal	58	-	-	-	5.9	-	0.5	-	-	2.7	454	5.76	-
Groundwater Monitoring Well	MB017	1/10/1998	Normal	62	-	-	-	5.9	-	0.5	-	-	1.3	452	5.75	-
Groundwater Monitoring Well	MB017	4/11/1998	Normal	61	-	-	-	6	-	0.5	-	-	2.1	443	5.57	-
Groundwater Monitoring Well	MB017	8/12/1998	Normal	68	-	-	-	5.9	-	0.5	-	-	1.9	468	6.13	-
Groundwater Monitoring Well	MB017	6/01/1999	Normal	73	-	-	-	5.9	-	1	-	-	1.23	5517	6.01	-
Groundwater Monitoring Well	MB017	3/03/1999	Normal	64	-	-	-	5.7	-	<1	-	-	1.36	502	6.08	-
Groundwater Monitoring Well	MB017	2/06/1999	Normal	65	-	0.2	260	5.9	-	<1	-	-	2.38	538	5.95	-
Groundwater Monitoring Well	MB017	2/09/1999	Normal	67	-	0.2	260	6	-	<1	-	-	2.62	490	6.13	-
Groundwater Monitoring Well	MB017	2/12/1999	Normal	68	-	0.2	250	5.9	-	<1	-	-	3.22	496	6.13	-
Groundwater Monitoring Well	MB017	2/03/2000	Normal	70	-	0.2	250	5.7	-	<1	-	-	2.19	463	6.36	-
Groundwater Monitoring Well	MB017	1/06/2000	Normal	68	-	0.2	250	6.1	-	<1	-	-	1.38	457	5.85	-
Groundwater Monitoring Well	MB017	1/09/2000	Normal	66	-	0.2	240	5.9	-	<1	-	-	2.22	473	5.74	-
Groundwater Monitoring Well	MB017	20/11/2000	Normal	69	-	0.2	270	5.8	-	1	-	-	1.21	458	5.97	-
Groundwater Monitoring Well	MB017	8/12/2000	Normal	64	-	0.2	320	6	-	<1	-	-	0.97	488	5.63	-
Groundwater Monitoring Well	MB017	7/03/2001	Normal	59	-	0.3	250	5.7	-	<1	-	-	2.11	482	5.94	-
Groundwater Monitoring Well	MB017	1/06/2001	Normal	55	-	0.2	240	5.9	-	<1	-	-	0.84	470	5.55	-
Groundwater Monitoring Well	MB017	13/09/2001	Normal	62	-	0.2	250	5.7	-	<1	-	-	1.59	452	5.97	-
Groundwater Monitoring Well	MB017	11/12/2001	Normal	63	-	0.2	270	5.9	-	<1	-	-	1.5	459	6.24	-
Groundwater Monitoring Well	MB017	12/03/2002	Normal	74	-	0.2	250	6.3	-	<1	-	-	1.28	434	6.01	-
Groundwater Monitoring Well	MB017	26/06/2002	Normal	66	-	0.2	220	6.3	-	0.5	-	-	0.62	436	5.67	80
Groundwater Monitoring Well	MB017	13/08/2002	Normal	84	-	0.2	170	6.4	-	0.5	-	-	1.34	461	5.96	50
Groundwater Monitoring Well	MB017	17/10/2002	Normal	86	-	0.2	180	6.5	-	0.5	-	-	1.13	481	5.97	-8
Groundwater Monitoring Well	MB017	16/12/2002	Normal	81	-	0.2	-	6.6	-	0.5	-	-	1.38	495	6.07	-15
Groundwater Monitoring Well	MB017	20/03/2003	Normal	82	-	0.2	180	6.6	-	0.5	-	-	0.62	437	6.01	105
Groundwater Monitoring Well	MB017	30/06/2003	Normal	64	-	0.3	54	6.04	-	0.5	-	-	2.03	464	5.9	58
Groundwater Monitoring Well	MB017	25/09/2003	Normal	85	-	0.2	25	6.11	-	2	-	-	1.27	443	6.52	-61
Groundwater Monitoring Well	MB017	11/12/2003	Normal	88	-	0.2	59	6.37	-	0.5	-	-	1.53	480	6.1	-65
Groundwater Monitoring Well	MB017	15/03/2004	Normal	96	-	0.2	20	6.57	-	0.5	-	-	1.26	430	6.53	-28
Groundwater Monitoring Well	MB018	1/01/1996	Normal	-	-	-	-	3.7	-	1	-	-	9.89	-	4.93	-
Groundwater Monitoring Well	MB018	1/02/1996	Normal	-	-	-	-	3.89	-	1	-	-	4.06	-	3.88	-
Groundwater Monitoring Well	MB018	1/03/1996	Normal	-	-	-	-	3.78	-	35	-	-	7.17	-	4.37	-
Groundwater Monitoring Well	MB018	1/04/1996	Normal	-	-	-	-	3.78	-	6	-	-	6.28	-	4.48	-
Groundwater Monitoring Well	MB018	1/05/1996	Normal	-	-	-	-	3.79	-	2	-	-	2.99	-	4	-
Groundwater Monitoring Well	MB018	1/06/1996	Normal	-	-	-	-	3.8	-	7	-	-	4.18	-	4.33	-
Groundwater Monitoring Well	MB018	17/07/1996	Normal	-	-	-	-	3.9	-	0.5	-	-	4.6	393	4.1	-
Groundwater Monitoring Well	MB018	14/08/1996	Normal	-	-	-	-	4	-	0.5	-	-	4.4	452	3.8	-
Groundwater Monitoring Well	MB018	17/09/1996	Normal	0.5	-	-	-	3.9	-	0.5	-	-	2.8	411	3.6	-
Groundwater Monitoring Well	MB018	10/10/1996	Normal	0.5	-	-	-	4.1	-	0.5	-	-	3.2	406	3.2	-
Groundwater Monitoring Well	MB018	20/11/1996	Normal	0.5	-	-	-	3.8	-	0.5	-	-	2.1	440	3.7	-

Appendix D
Table D2
Groundwater Quality Data

				Inorganics									Field			
				Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Dissolved Solids (Filtered)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)
				mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV
ANZECC 2000 FW 95%																
ANZECC 2000 FW Med-Low Reliability																
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**													
Groundwater Monitoring Well	MB018	10/12/1996	Normal	0.5	-	-	-	3.2	-	0.5	-	-	4.4	436	3.8	-
Groundwater Monitoring Well	MB018	31/01/1997	Normal	0.5	-	-	-	3.8	-	0.5	-	-	2.4	382	3.8	-
Groundwater Monitoring Well	MB018	19/02/1997	Normal	0.5	-	-	-	3.6	-	0.5	-	-	2.6	395	3.8	-
Groundwater Monitoring Well	MB018	19/03/1997	Normal	0.5	-	-	-	3.9	-	0.5	-	-	4.6	480	3.4	-
Groundwater Monitoring Well	MB018	23/04/1997	Normal	0.5	-	-	-	3.9	-	0.5	-	-	2.2	363	3.8	-
Groundwater Monitoring Well	MB018	20/05/1997	Normal	0.5	-	-	-	3.9	-	0.5	-	-	2.9	351	3.9	-
Groundwater Monitoring Well	MB018	18/06/1997	Normal	0.5	-	-	-	3.9	-	0.5	-	-	3.5	390	3.9	-
Groundwater Monitoring Well	MB018	22/07/1997	Normal	0.5	-	-	-	3.9	-	0.5	-	-	4.9	353	3.8	-
Groundwater Monitoring Well	MB018	19/08/1997	Normal	0.5	-	-	-	3.8	-	0.5	-	-	2.1	390	3.4	-
Groundwater Monitoring Well	MB018	18/09/1997	Normal	0.5	-	-	-	3.9	-	0.5	-	-	1.9	308	3.5	-
Groundwater Monitoring Well	MB018	16/10/1997	Normal	0.5	-	-	-	3.9	-	0.5	-	-	1.4	399	3.6	-
Groundwater Monitoring Well	MB018	21/11/1997	Normal	0.5	-	-	-	3.9	-	0.5	-	-	4.19	359	4.97	-
Groundwater Monitoring Well	MB018	11/12/1997	Normal	0.5	-	-	-	3.8	-	0.5	-	-	3.82	389	3.75	-
Groundwater Monitoring Well	MB018	8/01/1998	Normal	0.5	-	-	-	3.5	-	0.5	-	-	4.16	373	3.62	-
Groundwater Monitoring Well	MB018	5/02/1998	Normal	0.5	-	-	-	3.6	-	0.5	-	-	3.5	408	3.76	-
Groundwater Monitoring Well	MB018	5/03/1998	Normal	0.5	-	-	-	3.9	-	0.5	-	-	2.92	365	3.92	-
Groundwater Monitoring Well	MB018	2/04/1998	Normal	0.5	-	-	-	3.6	-	0.5	-	-	3.93	413	3.51	-
Groundwater Monitoring Well	MB018	6/05/1998	Normal	0.5	-	-	-	4	-	1	-	-	2.36	390	3.85	-
Groundwater Monitoring Well	MB018	3/06/1998	Normal	0.5	-	-	-	3.9	-	0.5	-	-	2.48	375	3.69	-
Groundwater Monitoring Well	MB018	1/07/1998	Normal	0.5	-	-	-	3.8	-	0.5	-	-	3.53	368	3.79	-
Groundwater Monitoring Well	MB018	3/08/1998	Normal	0.5	-	-	-	3.5	-	1	-	-	2.34	404	3.81	-
Groundwater Monitoring Well	MB018	2/09/1998	Normal	0.5	-	-	-	3.9	-	0.5	-	-	3.4	433	3.78	-
Groundwater Monitoring Well	MB018	1/10/1998	Normal	0.5	-	-	-	3.8	-	0.5	-	-	4.3	420	3.79	-
Groundwater Monitoring Well	MB018	23/11/1998	Normal	0.5	-	-	-	3.9	-	0.5	-	-	4.8	398	3.82	-
Groundwater Monitoring Well	MB018	8/12/1998	Normal	0.5	-	-	-	3.8	-	0.5	-	-	4.3	417	3.95	-
Groundwater Monitoring Well	MB018	6/01/1999	Normal	0.5	-	-	-	3.8	-	1	-	-	4.55	464	3.92	-
Groundwater Monitoring Well	MB018	3/03/1999	Normal	0.5	-	-	-	3.8	-	<1	-	-	3.72	436	4.04	-
Groundwater Monitoring Well	MB018	2/06/1999	Normal	0.5	-	<0.1	<10	3.9	-	<1	-	-	3.04	419	3.93	-
Groundwater Monitoring Well	MB018	2/09/1999	Normal	0.5	-	0.1	<10	3.9	-	<1	-	-	2.72	428	3.78	-
Groundwater Monitoring Well	MB018	2/12/1999	Normal	0.5	-	<0.1	<10	3.9	-	<1	-	-	3.17	446	3.94	-
Groundwater Monitoring Well	MB018	2/03/2000	Normal	0.5	-	<0.1	<10	3.8	-	<1	-	-	2.7	410	3.86	-
Groundwater Monitoring Well	MB018	1/06/2000	Normal	0.5	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/09/2000	Normal	0.5	-	<0.1	30	3.8	-	<1	-	-	2.89	431	3.8	-
Groundwater Monitoring Well	MB018	20/11/2000	Normal	0.5	-	<0.1	<10	4.2	-	1	-	-	2.82	427	3.74	-
Groundwater Monitoring Well	MB018	8/12/2000	Normal	0.5	-	<0.1	<10	3.9	-	<1	-	-	3.52	453	0.52	-
Groundwater Monitoring Well	MB018	7/03/2001	Normal	0.5	-	<0.1	<10	3.8	-	3	-	-	3.52	447	4.09	-
Groundwater Monitoring Well	MB018	1/06/2001	Normal	0.5	-	<0.1	<10	3.9	-	<1	-	-	2.28	427	3.7	-
Groundwater Monitoring Well	MB018	13/09/2001	Normal	0.5	-	<0.1	<10	3.9	-	<1	-	-	3.2	409	3.92	-
Groundwater Monitoring Well	MB018	11/12/2001	Normal	0.5	-	<0.1	<10	3.9	-	<1	-	-	2.75	405	3.67	-
Groundwater Monitoring Well	MB018	12/03/2002	Normal	0.5	-	<0.1	<10	4	-	<1	-	-	2.89	387	3.84	-
Groundwater Monitoring Well	MB018	26/06/2002	Normal	0.5	-	0.05	5	4	-	0.5	-	-	2.1	401	3.85	320
Groundwater Monitoring Well	MB018	13/08/2002	Normal	0.5	-	0.05	310	4	-	0.5	-	-	2.35	400	3.91	308
Groundwater Monitoring Well	MB018	17/10/2002	Normal	0.5	-	0.05	5	4	-	0.5	-	-	2.35	307	3.92	229
Groundwater Monitoring Well	MB018	16/12/2002	Normal	0.5	-	0.05	5	4	-	0.5	-	-	2.73	404	3.91	222
Groundwater Monitoring Well	MB018	20/03/2003	Normal	0.5	-	0.05	5	4.1	-	0.5	-	-	2.45	355	3.96	251
Groundwater Monitoring Well	MB018	30/06/2003	Normal	0.5	-	0.05	23	5.88	-	0.5	-	-	1.81	391	3.74	232
Groundwater Monitoring Well	MB018	25/09/2003	Normal	0.5	-	0.05	28	4	-	0.5	-	-	2.15	341	3.9	253
Groundwater Monitoring Well	MB018	11/12/2003	Normal	0.5	-	0.05	20	4.03	-	1	-	-	3.87	390	3.65	287
Groundwater Monitoring Well	MB018	15/03/2004	Normal	0.5	-	0.05	20	3.97	-	0.5	-	-	2.17	330	3.96	222
Groundwater Monitoring Well	MB018	30/06/2004	Normal	0.5	-	0.05	-	4.1	-	0.5	-	-	3.87	319	3.69	367
Groundwater Monitoring Well	MB018	8/09/2004	Normal	0.5	-	0.05	18	4.21	-	0.5	-	-	2.8	332	3.9	397
Groundwater Monitoring Well	MB018	13/12/2004	Normal	0.5	-	0.05	31	4.07	-	0.5	-	-	3.12	326	3.83	-141
Groundwater Monitoring Well	MB018	16/03/2005	Normal	<1	-	<0.05	20	4.19	-	<1	-	-	2.54	379	3.88	-159
Groundwater Monitoring Well	MB018	30/06/2005	Normal	<1	-	<0.05	18	4.4	-	1	-	-	2.36	313	3.63	270
Groundwater Monitoring Well	MB023	5/06/2012	Normal	80	-	-	-	-	4200	8	-	120	1.83	6032	5.44	119.2
Groundwater Monitoring Well	MB025	1/06/2000	Normal	60	-	0.3	30	5.9	-	1	-	-	4.92	2910	5.45	-
Groundwater Monitoring Well	MB025	1/09/2000	Normal	54	-	0.2	<10	5.8	-	2	-	-	4.81	3050	5.89	-
Groundwater Monitoring Well	MB025	20/11/2000	Normal	59	-	0.2	20	5.7	-	3	-	-	2.17	3510	6.83	-
Groundwater Monitoring Well	MB025	8/12/2000	Normal	35	-	0.3	190	5.7	-	2	-	-	5.43	3630	6.05	-
Groundwater Monitoring Well	MB025	7/03/2001	Normal	26	-	0.3	12	5.7	-	2	-	-	8.31	3483	5.96	-
Groundwater Monitoring Well	MB025	1/06/2001	Normal	32	-	0.3	<10	5.7	-	2	-	-	2.41	3910	5.2	-
Groundwater Monitoring Well	MB025	13/09/2001	Normal	48	-	0.3	20	5.8	-	2	-	-	2.01	3421	5.65	-
Groundwater Monitoring Well	MB025	11/12/2001	Normal	39	-	0.3	50	5.6	-	0.5	-	-	1.52	3260	5.73	-
Groundwater Monitoring Well	MB025	12/03/2002	Normal	56	-	0.2	20	6	-	1	-	-	3	3230	5.68	-
Groundwater Monitoring Well	MB025	26/06/2002	Normal	68	-	0.3	5	6	-	1	-	-	0.7	3300	5.55	43
Groundwater Monitoring Well	MB025	13/08/2002	Normal	66	-	0.2	320	6.1	-	1	-	-	0.58	3000	5.65	39
Groundwater Monitoring Well	MB025	16/10/2002	Normal	64	-	0.2	5	6.1	-	1	-	-	0.56	3150	5.64	29
Groundwater Monitoring Well	MB025	16/12/2002	Normal	37	-	0.2	5	5.9	-	1	-	-	0.55	3250	5.73	14
Groundwater Monitoring Well	MB025	20/03/2003	Normal	56	-	0.2	10	6.1	-	2	-	-	0.59	2870	5.65	56
Groundwater Monitoring Well	MB025	30/06/2003	Normal	53	-	0.4	40	5.65	-	1	-	-	0.37	3080	5.55	69
Groundwater Monitoring Well	MB025	25/09/2003	Normal	67	-	0.2	31	5.66	-	1	-	-	0.79	2680	5.73	62
Groundwater Monitoring Well	MB025	11/12/2003	Normal	57	-	0.2	39	5.75	-	1	-	-	2.65	2832	5.61	45
Groundwater Monitoring Well	MB025	15/03/2004	Normal	66	-	0.3	40	6.13	-	1	-	-	0.71	2680	5.89	43
Groundwater Monitoring Well	MB025	30/06/2004	Normal	67	-	0.3	30	6.08	-	1	-	-	1.01	2520	5.67	3
Groundwater Monitoring Well	MB025	8/09/2004	Normal	62	-	0.2	40	6.05	-	1	-	-	0.08	2690	5.57	31
Groundwater Monitoring Well	MB025	13/12/2004	Normal	59	-	0.3	53	5.76	-	2	-	-	0.01	2600	5.57	-366
Groundwater Monitoring Well	MB025	16/03/2005	Normal	62	-	0.4	40	6.16	-	2	-	-	-	3020	5.63	-389
Groundwater Monitoring Well	MB025	30/06/2005	Normal	49	-	0.2	31	6.04	-	2	-	-	0.06	2330	5.59	16
Groundwater Monitoring Well	MB025	28/09/2005	Normal	60	-	-	-	-	2010	1	-	-	0.16	2420	5.4	53
Groundwater Monitoring Well	MB025	7/12/2005	Normal	65	-	-	-	6.5	2150	1	-	-	0.26	2450	5.77	22
Groundwater Monitoring Well	MB025	6/03/2006	Normal	63	-	0.3	-	5.9	1820	<1	-	-	0.63	2060	6.04	59
Groundwater Monitoring Well	MB025	6/06/2006	Normal	62	-	-	-	5.8	1650	1	-	-	-	3010	5.71	45
Groundwater Monitoring Well	MB032	13/12/2006	Normal	120	-	-	-	6.6	400	23	5800	-	1.82	916	6.56	31
Groundwater Monitoring Well	MB032	23/05/2007	Normal	83	-	0.2	-	6.4	295	3	-	-	1.71	527	6.22	19
Groundwater Monitoring Well	MB032	12/07/2007	Normal	64	-	-	-	6.06	270	2	130	-	2.82	467	5.9	94
Groundwater Monitoring Well	MB032	7/06/2012	Normal	9.8	67	94	10,000	17.2	-	1	-	-	11.36	1.34	433.7	5.55
Groundwater Monitoring Well	MB032	12/09/2012	Normal	35	-	-	-	-	210	<1	-	210	2.57	434	6.09	87
Groundwater Monitoring Well	MB032	17/12/2012	Normal	34	-	-	-	-	240	4	-	750	4.06	449	5.9	59
Groundwater Monitoring Well	MB032	13/03/2013	Normal	46	-	0.12	<5	5.9	240	15	-	3400	2.44	292	5.92	58
Groundwater Monitoring Well	MB032	24/06/2014	Normal	66	-	-	-	6.27	230	5	-	150	2.76	270	-	-197
Groundwater Monitoring Well	MB033	13/12/2006	Normal	52	-	-	-	6.1	310	14	6200	-	3.99	710	5.99	51
Groundwater Monitoring Well	MB033	23/05/2007	Normal	48	-	0.2	-	6.3	270	3	-	-	3.04	436	6.18	66
Groundwater Monitoring Well	MB033	12/07/2007	Normal	54	-	-	-	6.21	235	7	2300	-	2.86	448	5.76	115
Groundwater Monitoring Well	MB033	7/06/2012	Normal	9.5	330	91	10,000	17.1	-	3	-	-	3.45	2.86	392.7	5.65
Groundwater Monitoring Well	MB033	12/09/2012	Normal	41	-	-	-	-	230	<1	-	150	3.03	447	6.26	43
Groundwater Monitoring Well	MB033	17/12/2012	Normal	25	-	-	-	-	230	2	-	5900	4.69	394	5.93	62
Groundwater Monitoring Well	MB033	13/03/2013	Normal	34	-	0.2	<5	5.8	210	2	-	270	1.96	283	5.83	62
Groundwater Monitoring Well	MB033	24/06/2014	Normal	48	-	-	-	-	210	1	-	310	3.35	275	6.14	-154

Appendix D
Table D2
Groundwater Quality Data

				Inorganics									Field			
				Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Dissolved Solids (Filtered)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)
				mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV
ANZECC 2000 FW 95%																
ANZECC 2000 FW Med-Low Reliability																
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**													
Groundwater Monitoring Well	MB034	13/12/2006	Normal	13	-	-	-	5.5	255	<1	20	-	2.1	566	6.37	34
Groundwater Monitoring Well	MB034	23/05/2007	Normal	16	-	<0.1	-	5.6	220	<1	-	-	0.95	372	5.18	156
Groundwater Monitoring Well	MB034	12/07/2007	Normal	15	-	-	-	5.48	230	<1	17	-	0.38	366	5.04	141
Groundwater Monitoring Well	MB034	7/06/2012	Normal	7	51	94	10,000	17.2	-	<1	-	-	3.42	1.93	410.5	5.14
Groundwater Monitoring Well	MB034	12/09/2012	Normal	14	-	-	-	-	190	<1	-	66	2.97	250	5.53	161
Groundwater Monitoring Well	MB034	17/12/2012	Normal	9	-	-	-	-	220	3	-	61	5.31	236	5.42	111
Groundwater Monitoring Well	MB034	13/03/2013	Normal	7	-	<0.1	<5	5.9	230	3	-	180	3.03	258	5.84	454
Groundwater Monitoring Well	MB034	24/06/2014	Normal	21	-	-	-	-	190	<1	-	31	1.51	277.5	5.44	-77
Groundwater Monitoring Well	MB035	13/12/2006	Normal	7	-	-	-	5.3	240	1	56	-	0.51	496	5.05	100
Groundwater Monitoring Well	MB035	16/01/2007	Normal	4	-	-	-	5.09	204	2	-	-	0.51	496	5.05	100
Groundwater Monitoring Well	MB035	23/05/2007	Normal	<1	-	<0.1	-	4.7	230	<1	-	-	0.66	367	4.38	211
Groundwater Monitoring Well	MB035	12/07/2007	Normal	<1	-	-	-	4.49	220	<1	31	-	0.31	371	4.14	298
Groundwater Monitoring Well	MB035	7/06/2012	Normal	6.9	1600	93	9000	17.4	-	5	-	-	2.63	1.56	394.5	4.46
Groundwater Monitoring Well	MB035	12/09/2012	Normal	<5	-	-	-	-	300	<1	-	270	2.37	234	5.44	216
Groundwater Monitoring Well	MB035	17/12/2012	Normal	<5	-	-	-	-	220	5	-	12,000	3.35	237	4.93	150
Groundwater Monitoring Well	MB035	13/03/2013	Normal	<5	-	<0.1	<5	5.2	220	4	-	3100	2.59	356	5.23	473
Groundwater Monitoring Well	MB035	24/06/2014	Normal	7	-	-	-	-	180	4	-	2300	1.88	200.1	5.17	-117
Groundwater Monitoring Well	MB038	7/06/2012	Normal	9.6	2300	140	9000	17.8	-	1	-	-	22.55	2.61	552.1	4.07
Groundwater Monitoring Well	MB038	12/09/2012	Normal	<5	-	-	-	-	420	<1	-	420	2.18	322	4.71	306
Groundwater Monitoring Well	MB038	17/12/2012	Normal	<5	-	-	-	-	250	2	-	3100	2.18	524	4.02	310
Groundwater Monitoring Well	MB038	13/03/2013	Normal	<5	-	<0.1	<5	4	250	4	-	1200	3.93	331	4.08	308
Groundwater Monitoring Well	MB038	24/06/2014	Normal	<1	-	-	-	-	290	4	-	1300	12.07	307.5	4.64	304
Groundwater Monitoring Well	MB040	7/06/2012	Normal	8	-	-	-	-	200	3	-	96	1.3	400.7	5.17	149.6
Groundwater Monitoring Well	MB040	12/09/2012	Normal	<5	-	-	-	-	190	2	-	31	1.92	400	5.45	159
Groundwater Monitoring Well	MB040	17/12/2012	Normal	16	-	-	-	-	210	1	-	69	2.8	346	5.29	146
Groundwater Monitoring Well	MB040	13/03/2013	Normal	<5	-	<0.1	<5	5.3	220	84	-	5900	1.67	298	5.24	507
Groundwater Monitoring Well	MB040	24/06/2014	Normal	17	-	-	-	-	190	30	-	1900	10.38	344	5.44	-57
Groundwater Monitoring Well	MB041	7/06/2012	Normal	<5	-	-	-	-	240	-	-	510	1.44	352.4	4.17	236.5
Groundwater Monitoring Well	MB041	12/09/2012	Normal	15	-	-	-	-	220	<1	-	130	1.22	200	5.01	275
Groundwater Monitoring Well	MB041	17/12/2012	Normal	<5	-	-	-	-	230	4	-	570	3.55	301	5.2	216
Groundwater Monitoring Well	MB041	13/03/2013	Normal	<5	-	<0.1	<5	5.7	220	5	-	2700	3.2	342	5.73	398
Groundwater Monitoring Well	MB041	24/06/2014	Normal	<1	-	-	-	-	200	2	-	57	10.44	325	4.43	103
Groundwater Monitoring Well	MB044	7/06/2012	Normal	35	-	-	-	-	180	<1	-	100	0.98	361.2	5.76	470
Groundwater Monitoring Well	MB045	7/06/2012	Normal	21	-	-	-	-	190	3	-	200	3.52	297.1	5.32	143
Groundwater Monitoring Well	MB101	12/08/2004	Normal	-	6	0.3	20	6.58	-	0.5	67	-	0.69	414	6.36	-123
Groundwater Monitoring Well	MB101	7/09/2004	Normal	-	-	-	23	6.3	-	<1	16	-	0.17	393	5.83	-4
Groundwater Monitoring Well	MB101	13/12/2004	Normal	66	-	0.3	94	6.19	-	0.5	-	-	0.72	389	5.72	-31
Groundwater Monitoring Well	MB101	16/03/2005	Normal	62	-	0.3	170	6.37	-	<1	-	-	-	444	6.46	-356
Groundwater Monitoring Well	MB101	29/06/2005	Normal	65	-	0.3	220	6.47	-	1	-	-	0.03	376	5.85	-14
Groundwater Monitoring Well	MB101	28/09/2005	Normal	68	-	-	-	-	260	<1	-	-	0.14	386	5.59	30
Groundwater Monitoring Well	MB101	7/12/2005	Normal	30	-	-	-	6.3	300	<1	-	-	0.4	402	5.7	-40
Groundwater Monitoring Well	MB101	6/03/2006	Normal	68	-	-	-	6.2	270	<1	-	-	-	346	5.85	34
Groundwater Monitoring Well	MB101	6/06/2006	Normal	66	-	-	-	6.1	230	<1	-	-	0.17	249	5.84	-1
Groundwater Monitoring Well	MB101	15/08/2006	Normal	65	-	-	-	6.3	-	-	-	-	0.19	448	5.55	2
Groundwater Monitoring Well	MB104	12/08/2004	Normal	-	4	0.05	20	5.94	-	1	21	-	2.52	353	6.37	-119
Groundwater Monitoring Well	MB104	8/09/2004	Normal	13	0.5	0.05	20	5.81	-	0.5	23	-	2.64	315	5.48	117
Groundwater Monitoring Well	MB104	14/12/2004	Normal	21	-	0.1	22	5.91	-	1	-	-	4	318	6.06	-203
Groundwater Monitoring Well	MB104	16/03/2005	Normal	23	-	0.1	20	6.02	-	<1	-	-	3.58	386	5.63	-184
Groundwater Monitoring Well	MB104	29/06/2005	Normal	20	-	0.1	17	6	-	<1	-	-	2.17	313	5.73	34
Groundwater Monitoring Well	MB104	28/09/2005	Normal	8	-	-	-	-	245	<1	-	-	2.48	358	4.92	48
Groundwater Monitoring Well	MB104	7/12/2005	Normal	1	-	-	-	6	240	<1	-	-	3.85	343	5.84	-10
Groundwater Monitoring Well	MB104	6/03/2006	Normal	22	-	-	-	5.9	260	<1	-	-	-	319	6	56
Groundwater Monitoring Well	MB104	6/06/2006	Normal	24	-	-	-	5.8	200	<1	-	-	1.69	373	5.58	67
Groundwater Monitoring Well	MB104	15/08/2006	Normal	4	-	-	-	5.5	-	-	-	-	3.11	366	5.03	86
Groundwater Monitoring Well	MB114	30/06/2003	Normal	0.5	-	0.05	24	4.24	-	4	-	-	4.56	369	4.78	184
Groundwater Monitoring Well	MB114	25/09/2003	Normal	4	-	0.05	20	4.98	-	3	-	-	5.46	543	5.4	112
Groundwater Monitoring Well	MB114	11/12/2003	Normal	5	-	<0.1	25	5.23	-	3	-	-	5.12	621	4.77	139
Groundwater Monitoring Well	MB114	15/03/2004	Normal	14	-	<0.1	30	5.92	-	3	-	-	3.97	444	5.07	181
Groundwater Monitoring Well	MB114	30/06/2004	Normal	1	-	<0.1	20	5.51	-	3	-	-	9.13	565	5.01	160
Groundwater Monitoring Well	MB114	8/09/2004	Normal	<1	-	<0.1	24	4.98	-	2	-	-	4.31	779	4.84	169
Groundwater Monitoring Well	MB114	14/12/2004	Normal	<1	-	<0.1	27	4.56	-	6	-	-	2.01	673	5.75	-247
Groundwater Monitoring Well	MB114	16/03/2005	Normal	20	-	0.2	20	5.78	-	9	-	-	2.3	1391	5.72	-216
Groundwater Monitoring Well	MB114	29/06/2005	Normal	<1	-	<0.1	15	4.89	-	2	-	-	4.09	954	5.4	94
Groundwater Monitoring Well	MB114	28/09/2005	Normal	<1	-	-	-	-	820	3	-	-	4.52	1029	4.69	86
Groundwater Monitoring Well	MB114	7/12/2005	Normal	<1	-	-	-	5.4	910	3	-	-	5.01	854	5.35	21
Groundwater Monitoring Well	MB114	7/03/2006	Normal	<1	-	<0.1	-	4.09	1400	3	-	-	1.6	1604	4.18	217
Groundwater Monitoring Well	MB114	6/06/2006	Normal	<1	-	-	-	4.7	860	21	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	1710	5.88	43
Groundwater Monitoring Well	MB115	30/06/2003	Normal	67	-	0.3	32	6.41	-	3	-	-	2.68	974	6.85	8
Groundwater Monitoring Well	MB115	25/09/2003	Normal	85	-	0.3	13	6.05	-	0.5	-	-	3.94	1365	6.11	69
Groundwater Monitoring Well	MB115	11/12/2003	Normal	90	-	0.5	15	6.24	-	2	-	-	0.87	1464	5.92	-5
Groundwater Monitoring Well	MB115	15/03/2004	Normal	96	-	0.4	10	6.51	-	1	-	-	2.98	1382	6.52	114
Groundwater Monitoring Well	MB115	30/06/2004	Normal	110	-	0.5	10	6.82	-	2	-	-	3.55	1308	5.96	-5
Groundwater Monitoring Well	MB115	8/09/2004	Normal	100	-	0.3	10	6.43	-	1	-	-	0.85	1390	6.06	17
Groundwater Monitoring Well	MB115	14/12/2004	Normal	88	-	0.5	15	6.27	-	2	-	-	0.82	1273	5.1	-269
Groundwater Monitoring Well	MB115	16/03/2005	Normal	100	-	0.5	20	6.53	-	1	-	-	2.22	1573	6.16	-233
Groundwater Monitoring Well	MB115	29/06/2005	Normal	110	-	0.6	10	6.56	-	1	-	-	0.85	1288	6.37	-2
Groundwater Monitoring Well	MB115	28/09/2005	Normal	120	-	-	-	-	970	<1	-	-	1.1	1333	5.9	49
Groundwater Monitoring Well	MB115	7/12/2005	Normal	87	-	-	-	6.5	970	<1	-	-	11.7	1406	6.08	28
Groundwater Monitoring Well	MB115	7/03/2006	Normal	90	-	-	-	6.36	950	<1	-	-	7.18	1271	6.32	73
Groundwater Monitoring Well	MB115	6/06/2006	Normal	98	-	-	-	6.3	850	3	-	-	-	1555	6.35	33
Groundwater Monitoring Well	MB115	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	7.94	1589	6.53	16
Groundwater Monitoring Well	MB116	30/06/2003	Normal	110	-	0.2	13	7.01	-	6	-	-	1.9	1366	7.23	-35
Groundwater Monitoring Well	MB116	25/09/2003	Normal	110	-	0.3	10	7.25	-	5	-	-	3.21	1167	7.07	36
Groundwater Monitoring Well	MB116	11/12/2003	Normal	220	-	0.4	20	6.85	-	5	-	-	1.41	1639	6.52	13
Groundwater Monitoring Well	MB116	15/03/2004	Normal	0.5	-	0.2	40	3.08	-	1	-	-	1.93	1552	6.55	126
Groundwater Monitoring Well	MB116	30/06/2004	Normal	310	-	0.4	20	7.18	-	2	-	-	3.77	1424	6.62	10
Groundwater Monitoring Well	MB116	8/09/2004	Normal	290	-	0.3	20	7.19	-	2	-	-	2.9	1520	6.56	38
Groundwater Monitoring Well	MB116	14/12/2004	Normal	300	-	0.4	26	7.21	-	2	-	-	4.26	1319	6.98	-239
Groundwater Monitoring Well	MB116	16/03/2005	Normal	340	-	0.4	20	7.22	-	3	-	-	2.67	1807	6.81	-235
Groundwater Monitoring Well	MB116	29/06/2005	Normal	350	-	0.4	13	7.15	-	2	-	-	1.82	1476	6.29	3
Groundwater Monitoring Well	MB116	28/09/2005	Normal	360	-	-	-	-	1050	1	-	-	2.52	1459	6.66	17
Groundwater Monitoring Well	MB116	7/12/2005	Normal	340	-	-	-	7.1	1050	1	-	-	9.34	1518	6.76	16
Groundwater Monitoring Well	MB116	7/03/2006	Normal	350	-	-	-	6.89	980	<1	-	-	11.39	1387	6.85	95
Groundwater Monitoring Well	MB116	6/06/2006	Normal	350	-	-	-	7	1060	1	-	-	-	1562	6.86	35
Groundwater Monitoring Well	MB116	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	1644	7.19	4
Groundwater Monitoring Well	MB301	3/09/2004	Normal	-	-	-	2.5	10.79	-	1	270	-	5.02	2330	11.39	-293
Groundwater Monitoring Well	MB301	8/09/2004	Normal	-	-	-	15	10.56	-	1	950	-	2.85	2730	10.99	-49

Appendix D
Table D2
Groundwater Quality Data

				Inorganics									Field			
				Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Dissolved Solids (Filtered)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)
				mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV
ANZECC 2000 FW 95%																
ANZECC 2000 FW Med-Low Reliability																
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**													
Groundwater Monitoring Well	MB301	14/10/2004	Normal	-	-	-	40	9.38	-	1	160	-	1.52	2660	9.1	19
Groundwater Monitoring Well	MB301	11/11/2004	Normal	-	-	-	95	8.4	-	1	200	-	1.32	2500	7.52	17
Groundwater Monitoring Well	MB301	14/12/2004	Normal	-	-	-	20	8.88	-	1	320	-	2.88	2620	9.09	-288
Groundwater Monitoring Well	MB301	31/01/2005	Normal	-	-	-	30	7.69	-	0.5	170	-	1.2	3000	7.12	18
Groundwater Monitoring Well	MB302	12/08/2004	Normal	-	-	-	30	6.58	-	2	310	-	4.8	-	6.62	-114
Groundwater Monitoring Well	MB302	8/09/2004	Normal	-	-	-	45	6.48	-	3	160	-	2.55	3091	6.42	35
Groundwater Monitoring Well	MB302	14/10/2004	Normal	-	-	-	40	6.44	-	2	86	-	2.54	4310	6.48	19
Groundwater Monitoring Well	MB302	11/11/2004	Normal	-	-	-	270	6.55	-	1	56	-	2.6	4210	6.33	41
Groundwater Monitoring Well	MB302	14/12/2004	Normal	-	-	-	48	6.33	-	1	24	-	1.02	4500	6.54	-301
Groundwater Monitoring Well	MB302	31/01/2005	Normal	-	-	-	60	6.37	-	0.5	39	-	3.9	4660	6.26	93
Groundwater Monitoring Well	MB303	12/08/2004	Normal	-	-	-	240	6.89	-	3	200	-	1.18	2390	7	-190
Groundwater Monitoring Well	MB303	8/09/2004	Normal	-	-	-	20	6.78	-	2	91	-	1.69	2740	6.35	70
Groundwater Monitoring Well	MB303	14/10/2004	Normal	-	-	-	60	6.84	-	3	3650	-	2.59	2760	6.53	-24
Groundwater Monitoring Well	MB303	11/11/2004	Normal	-	-	-	160	7.35	-	3	130	-	3.73	3190	6.79	-12
Groundwater Monitoring Well	MB303	14/12/2004	Normal	-	-	-	27	4.15	-	3	120	-	4.62	3340	6.35	-255
Groundwater Monitoring Well	MB303	31/01/2005	Normal	-	-	-	30	6.72	-	0.5	1400	-	5.96	3790	6.43	20
Groundwater Monitoring Well	MB304	12/08/2004	Normal	-	-	-	60	6.34	-	3	910	-	1.33	1530	6.87	-160
Groundwater Monitoring Well	MB304	8/09/2004	Normal	-	-	-	40	5.94	-	2	99	-	2.2	2110	5.71	40
Groundwater Monitoring Well	MB304	14/10/2004	Normal	-	-	-	110	5.57	-	5	-	-	3.41	2620	5.57	72
Groundwater Monitoring Well	MB304	11/11/2004	Normal	-	-	-	260	5.55	-	2	580	-	2.85	2780	5.23	122
Groundwater Monitoring Well	MB304	14/12/2004	Normal	-	-	-	48	5.13	-	5	98	-	4.4	2850	5.26	-216
Groundwater Monitoring Well	MB304	31/01/2005	Normal	-	-	-	50	5.1	-	0.5	66	-	4.2	3380	4.97	120
Groundwater Monitoring Well	MB305	12/08/2004	Normal	-	-	-	60	6.63	-	1	960	-	0.86	545	6.6	-160
Groundwater Monitoring Well	MB305	8/09/2004	Normal	-	-	-	16	6.6	-	1	72	-	2.52	459	6.17	18
Groundwater Monitoring Well	MB305	14/10/2004	Normal	-	-	-	40	6.52	-	1	320	-	3.48	439	6.24	45
Groundwater Monitoring Well	MB305	11/11/2004	Normal	-	-	-	90	6.46	-	1	170	-	2.76	393	6.09	51
Groundwater Monitoring Well	MB305	14/12/2004	Normal	-	-	-	25	6.31	-	3	95	-	3.12	394	6.67	-221
Groundwater Monitoring Well	MB305	31/01/2005	Normal	-	-	-	30	6.37	-	0.5	1400	-	5.96	474	6.75	7
Groundwater Monitoring Well	MB305	28/09/2005	Normal	18	-	-	-	-	270	2	-	-	3.64	439	5.92	14
Groundwater Monitoring Well	MB305	7/12/2005	Normal	70	-	-	-	6.5	310	1	-	-	4.24	431	6.17	87
Groundwater Monitoring Well	MB305	7/03/2006	Normal	74	-	0.1	-	6.26	280	<1	-	-	-	412	5.96	100
Groundwater Monitoring Well	MB305	6/06/2006	Normal	58	-	-	-	6.2	220	1	-	-	-	446	6.33	-4
Groundwater Monitoring Well	MB305	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	488	6.08	36
Groundwater Monitoring Well	MB305	7/06/2012	Normal	25	-	-	-	-	210	<1	-	210	2.37	413.1	5.6	89.3
Groundwater Monitoring Well	MB305	12/09/2012	Normal	35	-	-	-	-	200	<1	-	190	1.93	490	5.67	133
Groundwater Monitoring Well	MB305	17/12/2012	Normal	22	-	-	-	-	230	3	-	240	3.34	276	5.69	107
Groundwater Monitoring Well	MB305	13/03/2013	Normal	22	-	<0.1	<5	5	240	5	-	800	4.02	305	5.03	333
Groundwater Monitoring Well	MB305	24/06/2014	Normal	40	-	-	-	-	230	<1	-	280	3.27	280	6.06	-67
Groundwater Monitoring Well	MB306	3/09/2004	Normal	-	-	-	<5	6.38	-	0.5	28	-	4.07	383	6.26	-293
Groundwater Monitoring Well	MB306	8/09/2004	Normal	-	-	-	23	6.59	-	0.5	28	-	2.9	422	6.08	79
Groundwater Monitoring Well	MB306	14/10/2004	Normal	-	-	-	60	6.48	-	0.5	22	-	2.38	428	6.2	81
Groundwater Monitoring Well	MB306	11/11/2004	Normal	-	-	-	150	6.58	-	0.5	37	-	3.17	517	6.58	68
Groundwater Monitoring Well	MB306	14/12/2004	Normal	-	-	-	26	6.27	-	1	14	-	2.47	400	6.24	-240
Groundwater Monitoring Well	MB306	31/01/2005	Normal	-	-	-	40	5.99	260	0.5	8	-	3.26	387	5.85	76
Groundwater Monitoring Well	MB306	28/09/2005	Normal	18	-	-	-	-	280	<1	-	-	2.24	375	5.28	9
Groundwater Monitoring Well	MB306	7/03/2006	Normal	15	-	<0.1	-	5.67	265	<1	-	-	-	352	5.64	110
Groundwater Monitoring Well	MB306	6/06/2006	Normal	15	-	-	-	5.7	230	<1	-	-	-	384	5.69	75
Groundwater Monitoring Well	MB306	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	586	6.27	43
Groundwater Monitoring Well	MB306	7/06/2012	Normal	<5	-	-	-	-	200	<1	-	2.8	2.78	402.5	4.47	236.9
Groundwater Monitoring Well	MB306	12/09/2012	Normal	<5	-	-	-	-	210	<1	-	23	2.23	395	5.11	271
Groundwater Monitoring Well	MB306	17/12/2012	Normal	<5	-	-	-	-	220	<1	-	8.1	2.48	251	4.97	183
Groundwater Monitoring Well	MB306	13/03/2013	Normal	9	-	<0.1	<5	6	250	1	-	34	3.15	363	5.95	462
Groundwater Monitoring Well	MB306	24/06/2014	Normal	5	-	-	-	-	200	<1	-	45	4.27	437	5.75	64
Statistical Summary																
Number of Results				411	8	193	209	491	97	531	47	48	523	469	539	241
Number of Detects				384	8	149	175	491	97	434	47	48	523	469	539	241
Minimum Concentration				0.5	0.5	<0.05	2.5	3.08	150	0.5	8	2.8	0.01	1.34	0.52	1
Minimum Detect				0.5	0.5	0.05	2.5	3.08	150	0.5	8	2.8	0.01	1.34	0.52	1
Maximum Concentration				360	2300	140	10000	17.8	4200	100	6200	12000	22.55	6032	552.1	507
Maximum Detect				360	2300	140	10000	17.8	4200	100	6200	12000	22.55	6032	552.1	507
Average Concentration				44	545	2.8	289	5.7	436	2.9	594	1069	2.6	904	9.5	124
Geometric Average				16	52	0.15	30	5.6	307	1.2	133	273	2	6.2	5.7	72
Median Concentration				40	59	0.2	25	5.7	230	1	99	255	2.3	436	5.65	93
Standard Deviation				53	894	17	1465	1.5	563	8	1333	2128	2	971	42	109
Geometric Standard Deviation				6.5	20	3.8	5	1.2	2	2.9	5.3	5.8	2.4	2.7	1.6	3.5

Appendix D
Table D2
Groundwater Quality Data

				Metals														
				Aluminium	Arsenic	Barium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Iron (Filtered)	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				0.055			0.0002	0.001	0.001		0.0014			0.0034	1.9	0.0006	0.011	0.011	0.008
ANZECC 2000 FW Med-Low Reliability				0.0008			0.0002	0.001		0.0014	0.0014	0.3	0.3	0.0034	1.7		0.011	0.005|0.011	0.008
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																
Groundwater Monitoring Well	MB001	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.006	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.006	-	-	-	-	-
Groundwater Monitoring Well	MB001	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	9/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	29/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	18/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	12/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	5/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	<0.002	-	-	-	-	-
Groundwater Monitoring Well	MB001	26/06/2002	Normal	-	-	-	-	-	-	-	-	23.3	22.5	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	13/08/2002	Normal	-	-	-	0.00005	-	-	-	-	27.8	22.1	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	17/10/2002	Normal	-	-	-	0.00005	-	-	-	-	23.7	22.6	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	16/12/2002	Normal	0.005	-	-	0.00005	-	-	-	-	24.9	26.8	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	20/03/2003	Normal	-	-	-	0.00005	-	-	-	-	22.5	23.6	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	30/06/2003	Normal	-	-	-	0.00005	-	-	-	-	33.2	27.8	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB001	25/09/2003	Normal	-	-	-	0.00005	-	-	-	-	23.3	22.5	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	11/12/2003	Normal	-	-	-	0.00005	-	-	-	-	26.2	25.1	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB001	15/03/2004	Normal	-	-	-	0.00005	-	-	-	-	38	31.3	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.31	-	-	-	-	-
Groundwater Monitoring Well	MB008	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB008	15/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	18/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	31/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	19/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB008	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	17/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				Metals														
				Aluminium	Arsenic	Barium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Iron (Filtered)	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				0.055			0.0002	0.001	0.001		0.0014			0.0034	1.9	0.0006	0.011	0.011	0.008
ANZECC 2000 FW Med-Low Reliability				0.0008			0.0002	0.001		0.0014	0.0014	0.3	0.3	0.0034	1.7		0.011	0.005|0.011	0.008
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																
Groundwater Monitoring Well	MB008	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB008	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB008	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB008	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	26/06/2002	Normal	-	-	-	0.00005	-	-	-	-	1.7	1.63	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	13/08/2002	Normal	-	-	-	0.00005	-	-	-	-	1.83	1.79	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB008	17/10/2002	Normal	-	-	-	0.00005	-	-	-	-	27.9	22.3	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB008	16/12/2002	Normal	-	-	-	0.00005	-	-	-	-	72.5	1	0.015	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/03/2003	Normal	-	-	-	0.00005	-	-	-	-	14.4	1.51	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB008	30/06/2003	Normal	-	-	-	0.0004	-	-	-	-	284	0.83	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB008	25/09/2003	Normal	-	-	-	0.00005	-	-	-	-	9.2	0.95	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/12/2003	Normal	-	-	-	0.00005	-	-	-	-	481	1.1	0.15	-	-	-	-	-
Groundwater Monitoring Well	MB008	15/03/2004	Normal	-	-	-	0.00005	-	-	-	-	16.6	1.4	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB008	30/06/2004	Normal	-	-	-	0.00005	-	-	-	-	185	66.3	0.044	-	-	-	-	-
Groundwater Monitoring Well	MB008	8/09/2004	Normal	-	-	-	0.0002	-	-	-	-	189	1.3	0.046	-	-	-	-	-
Groundwater Monitoring Well	MB008	13/12/2004	Normal	-	-	-	0.00005	-	-	-	-	39.7	0.84	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB008	16/03/2005	Normal	-	-	-	<0.0001	-	-	-	-	8.9	6.5	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB008	30/06/2005	Normal	-	-	-	<0.0001	-	-	-	-	26.1	0.5	0.008	-	-	-	-	-
Groundwater Monitoring Well	MB008	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/03/2006	Normal	0.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	13/03/2013	Normal	14	<1	200	<0.1	<0.005	<1	5	<1	-	-	<1	230	<0.05	18	<1	45
Groundwater Monitoring Well	MB008	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.017	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB016	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB016	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	30/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	17/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB016	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB016	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	20/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB016	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB016	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB016	6/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB016	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	6/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB016	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				Metals														
				Aluminium	Arsenic	Barium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Iron (Filtered)	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				0.055			0.0002	0.001	0.001		0.0014			0.0034	1.9	0.0006	0.011	0.011	0.008
ANZECC 2000 FW Med-Low Reliability				0.0008			0.0002	0.001		0.0014	0.0014	0.3	0.3	0.0034	1.7		0.011	0.005|0.011	0.008
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																
Groundwater Monitoring Well	MB016	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB016	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB016	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB016	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-
Groundwater Monitoring Well	MB017	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	9/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	29/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	18/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	12/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB017	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	5/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB017	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB017	26/06/2002	Normal	-	-	-	0.00005	-	-	-	-	22.9	22.7	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	13/08/2002	Normal	-	-	-	0.00005	-	-	-	-	27.6	27.2	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	17/10/2002	Normal	-	-	-	0.00005	-	-	-	-	32	28.1	0.021	-	-	-	-	-
Groundwater Monitoring Well	MB017	16/12/2002	Normal	-	-	-	0.00005	-	-	-	-	30.5	31.2	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	20/03/2003	Normal	-	-	-	0.00005	-	-	-	-	27.6	25.9	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	30/06/2003	Normal	-	-	-	0.00005	-	-	-	-	35.8	29.6	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB017	25/09/2003	Normal	-	-	-	0.00005	-	-	-	-	28.7	28.4	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	11/12/2003	Normal	-	-	-	0.00005	-	-	-	-	34	31	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB017	15/03/2004	Normal	-	-	-	0.1	-	-	-	-	40.6	34.5	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.016	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.11	-	-	-	-	-
Groundwater Monitoring Well	MB018	17/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB018	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB018	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB018	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	20/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				Metals															
				Aluminium	Arsenic	Barium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Iron (Filtered)	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				0.055			0.0002	0.001	0.001		0.0014			0.0034	1.9	0.0006	0.011	0.011	0.008
ANZECC 2000 FW Med-Low Reliability				0.0008			0.0002	0.001		0.0014	0.0014	0.3	0.3	0.0034	1.7		0.011	0.005|0.011	0.008
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																
Groundwater Monitoring Well	MB018	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB018	31/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	19/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB018	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB018	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.014	-	-	-	-	-
Groundwater Monitoring Well	MB018	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.015	-	-	-	-	-
Groundwater Monitoring Well	MB018	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-
Groundwater Monitoring Well	MB018	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.014	-	-	-	-	-
Groundwater Monitoring Well	MB018	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB018	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB018	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB018	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	6/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-
Groundwater Monitoring Well	MB018	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.008	-	-	-	-	-
Groundwater Monitoring Well	MB018	23/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	0.007	-	-	-	-	-
Groundwater Monitoring Well	MB018	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	0.008	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB018	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB018	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	0.008	-	-	-	-	-
Groundwater Monitoring Well	MB018	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-
Groundwater Monitoring Well	MB018	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB018	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	26/06/2002	Normal	-	-	-	0.00005	-	-	-	-	0.025	0.025	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	13/08/2002	Normal	-	-	-	0.00005	-	-	-	-	1.28	0.06	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	17/10/2002	Normal	-	-	-	0.00005	-	-	-	-	0.54	0.53	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB018	16/12/2002	Normal	-	-	-	0.00005	-	-	-	-	0.79	0.11	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB018	20/03/2003	Normal	-	-	-	0.00005	-	-	-	-	0.33	0.08	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	30/06/2003	Normal	-	-	-	0.00005	-	-	-	-	1.3	0.29	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB018	25/09/2003	Normal	-	-	-	0.00005	-	-	-	-	0.49	0.06	0.013	-	-	-	-	-
Groundwater Monitoring Well	MB018	11/12/2003	Normal	-	-	-	0.00005	-	-	-	-	0.39	0.11	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB018	15/03/2004	Normal	-	-	-	0.00005	-	-	-	-	0.59	0.09	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB018	30/06/2004	Normal	-	-	-	0.0012	-	-	-	-	118	0.83	0.096	-	-	-	-	-
Groundwater Monitoring Well	MB018	8/09/2004	Normal	-	-	-	0.00005	-	-	-	-	3.6	0.23	0.013	-	-	-	-	-
Groundwater Monitoring Well	MB018	13/12/2004	Normal	-	-	-	0.00005	-	-	-	-	2.7	0.69	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB018	16/03/2005	Normal	-	-	-	<0.0001	-	-	-	-	1.9	0.06	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB018	30/06/2005	Normal	-	-	-	<0.0001	-	-	-	-	0.74	<0.05	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB023	5/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB025	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB025	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB025	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB025	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB025	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	0.006	-	-	-	-	-
Groundwater Monitoring Well	MB025	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB025	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB025	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB025	26/06/2002	Normal	-	-	-	0.00005	-	-	-	-	84	84.9	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB025	13/08/2002	Normal	-	-	-	0.00005	-	-	-	-	79.9	78.2	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB025	16/10/2002	Normal	-	-	-	0.00005	-	-	-	-	77.2	75.9	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB025	16/12/2002	Normal	-	-	-	0.00005	-	-	-	-	84.3	80.7	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB025	20/03/2003	Normal	-	-	-	0.00005	-	-	-	-	78.1	74.4	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB025	30/06/2003	Normal	-	-	-	0.00005	-	-	-	-	98.2	86.6	0.007	-	-	-	-	-
Groundwater Monitoring Well	MB025	25/09/2003	Normal	-	-	-	0.00005	-	-	-	-	84.1	74.6	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB025	11/12/2003	Normal	-	-	-	0.00005	-	-	-	-	94.2	87.3	0.006	-	-	-	-	-
Groundwater Monitoring Well	MB025	15/03/2004	Normal	-	-	-	0.00005	-	-	-	-	105	82.6	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB025	30/06/2004	Normal	-	-	-	0.00005	-	-	-	-	88.2	77.1	0.01	-	-	-	-	-
Groundwater Monitoring Well	MB025	8/09/2004	Normal	-	-	-	0.0001	-	-	-	-	91.7	71.1	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB025	13/12/2004	Normal	-	-	-	0.0004	-	-	-	-	178	73.2	0.091	-	-	-	-	-
Groundwater Monitoring Well	MB025	16/03/2005	Normal	-	-	-	<0.0001	-	-	-	-	75.8	72.8	0.005	-	-	-	-	-
Groundwater Monitoring Well	MB025	30/06/2005	Normal	-	-	-	<0.0001	-	-	-	-	71.6	68.5	0.005	-	-	-	-	-
Groundwater Monitoring Well	MB025	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	6/03/2006	Normal	0.33	-	-	-	-	-	-	-	-	-	0.005	-	-	-	-	-
Groundwater Monitoring Well	MB025	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	13/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	23/05/2007	Normal	4.4	<0.01	0.22	0.2	<0.01	0.006	<0.01	0.005	-	-	12	0.89	<0.01	0.017	<0.005	0.43
Groundwater Monitoring Well	MB032	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	13/03/2013	Normal	<10	<1	160	<0.1	<0.005	<1	1	<1	-	-	<1	480	<0.05	20	<1	17
Groundwater Monitoring Well	MB032	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	13/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	23/05/2007	Normal	3.2	<0.01	0.22	0.3	<0.01	<0.01	0.005	<0.01	-	-	13	0.96	<0.01	0.012	<0.005	0.25
Groundwater Monitoring Well	MB033	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	13/03/2013	Normal	<10	<1	160	<0.1	<0.005	<1	2	<1	-	-	<1	710	<0.05	4	<1	34
Groundwater Monitoring Well	MB033	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				Metals														
				Aluminium	Arsenic	Barium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Iron (Filtered)	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				0.055			0.0002	0.001	0.001		0.0014			0.0034	1.9	0.0006	0.011	0.011	0.008
ANZECC 2000 FW Med-Low Reliability				0.0008			0.0002	0.001		0.0014	0.0014	0.3	0.3	0.0034	1.7		0.011	0.005|0.011	0.008
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																
Groundwater Monitoring Well	MB034	13/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB034	23/05/2007	Normal	0.14	<0.01	0.19	<0.5	<0.01	<0.01	0.008	<0.01	-	-	<5	0.59	<0.01	0.008	<0.005	0.032
Groundwater Monitoring Well	MB034	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB034	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB034	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB034	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB034	13/03/2013	Normal	19	<1	160	<0.1	<0.005	<1	4	<1	-	-	<1	460	<0.05	4	<1	27
Groundwater Monitoring Well	MB034	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	13/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	16/01/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	23/05/2007	Normal	1.2	<0.01	0.18	0.7	<0.01	<0.01	0.013	0.013	-	-	27	0.33	<0.01	0.013	<0.005	0.091
Groundwater Monitoring Well	MB035	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	13/03/2013	Normal	150	<1	150	0.6	<0.005	<1	5	39	-	-	40	210	<0.05	6	<1	37
Groundwater Monitoring Well	MB035	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB038	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB038	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB038	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB038	13/03/2013	Normal	120	<1	140	<0.1	<0.005	<1	13	<1	-	-	2	510	<0.05	14	<1	100
Groundwater Monitoring Well	MB038	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB040	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB040	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB040	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB040	13/03/2013	Normal	14	2	200	11	<0.005	<1	9	9	-	-	3	460	<0.05	7	<1	160
Groundwater Monitoring Well	MB040	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB041	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Groundwater Monitoring Well	MB041	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB041	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB041	13/03/2013	Normal	1400	<1	78	1.1	<0.005	<1	8	16	-	-	81	140	<0.05	8	<1	200
Groundwater Monitoring Well	MB041	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB044	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB045	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	12/08/2004	Normal	-	-	-	<0.0001	-	-	-	-	20	-	0.008	-	-	-	-	-
Groundwater Monitoring Well	MB101	7/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	13/12/2004	Normal	-	-	-	<0.0001	-	-	-	-	22.9	21.3	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB101	16/03/2005	Normal	-	-	-	<0.0001	-	-	-	-	23	21.5	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB101	29/06/2005	Normal	-	-	-	<0.0001	-	-	-	-	23	20.2	<0.001	-	-	-	-	-
Groundwater Monitoring Well	MB101	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	6/03/2006	Normal	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	15/08/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	12/08/2004	Normal	-	-	-	<0.0001	-	-	-	-	15.4	-	0.007	-	-	-	-	-
Groundwater Monitoring Well	MB104	8/09/2004	Normal	-	-	-	0.0001	-	-	-	-	11.3	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB104	14/12/2004	Normal	-	-	-	<0.0001	-	-	-	-	14.2	10.7	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB104	16/03/2005	Normal	-	-	-	<0.0001	-	-	-	-	18.4	16.1	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB104	29/06/2005	Normal	-	-	-	<0.0001	-	-	-	-	16.6	13.3	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB104	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	6/03/2006	Normal	0.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	15/08/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	30/06/2003	Normal	-	-	-	0.0005	-	-	-	-	6.9	2.2	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB114	25/09/2003	Normal	-	-	-	0.0002	-	-	-	-	8.5	7.9	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB114	11/12/2003	Normal	-	-	-	0.0016	-	-	-	-	14.5	6.6	0.005	-	-	-	-	-
Groundwater Monitoring Well	MB114	15/03/2004	Normal	-	-	-	0.0007	-	-	-	-	40.9	15.2	0.008	-	-	-	-	-
Groundwater Monitoring Well	MB114	30/06/2004	Normal	-	-	-	0.0005	-	-	-	-	19.2	10.3	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB114	8/09/2004	Normal	-	-	-	0.001	-	-	-	-	9.9	15.7	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB114	14/12/2004	Normal	-	-	-	0.0011	-	-	-	-	34.6	19.7	0.021	-	-	-	-	-
Groundwater Monitoring Well	MB114	16/03/2005	Normal	-	-	-	0.0014	-	-	-	-	42.4	34.3	0.023	-	-	-	-	-
Groundwater Monitoring Well	MB114	29/06/2005	Normal	-	-	-	0.0013	-	-	-	-	16.9	7.3	0.007	-	-	-	-	-
Groundwater Monitoring Well	MB114	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	7/03/2006	Normal	11.5	-	-	0.0022	-	-	-	-	-	-	0.0017	-	-	-	-	-
Groundwater Monitoring Well	MB114	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	30/06/2003	Normal	-	-	-	<0.0001	-	-	-	-	8.6	4.1	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB115	25/09/2003	Normal	-	-	-	<0.0001	-	-	-	-	23.8	9.4	0.013	-	-	-	-	-
Groundwater Monitoring Well	MB115	11/12/2003	Normal	-	-	-	<0.0001	-	-	-	-	30.5	13.8	0.016	-	-	-	-	-
Groundwater Monitoring Well	MB115	15/03/2004	Normal	-	-	-	<0.0001	-	-	-	-	19.1	11.4	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB115	30/06/2004	Normal	-	-	-	<0.0001	-	-	-	-	18.4	16.9	0.005	-	-	-	-	-
Groundwater Monitoring Well	MB115	8/09/2004	Normal	-	-	-	0.0001	-	-	-	-	15.3	12.5	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB115	14/12/2004	Normal	-	-	-	<0.0001	-	-	-	-	14	14.6	0.0005	-	-	-	-	-
Groundwater Monitoring Well	MB115	16/03/2005	Normal	-	-	-	<0.0001	-	-	-	-	28.8	17.4	0.017	-	-	-	-	-
Groundwater Monitoring Well	MB115	29/06/2005	Normal	-	-	-	<0.0001	-	-	-	-	18.8	16.2	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB115	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	7/03/2006	Normal	0.33	-	-	0.0002	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB115	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	30/06/2003	Normal	-	-	-	0.0002	-	-	-	-	37.5	3.6	0.043	-	-	-	-	-
Groundwater Monitoring Well	MB116	25/09/2003	Normal	-	-	-	<0.0001	-	-	-	-	1.3	1.3	0.005	-	-	-	-	-
Groundwater Monitoring Well	MB116	11/12/2003	Normal	-	-	-	0.0006	-	-	-	-	98.4	2	0.28	-	-	-	-	-
Groundwater Monitoring Well	MB116	15/03/2004	Normal	-	-	-	<0.0001	-	-	-	-	1.4	0.38	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB116	30/06/2004	Normal	-	-	-	0.0001	-	-	-	-	2.2	1.4	0.005	-	-	-	-	-
Groundwater Monitoring Well	MB116	8/09/2004	Normal	-	-	-	0.0003	-	-	-	-	1.1	0.07	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB116	14/12/2004	Normal	-	-	-	<0.0001	-	-	-	-	1	0.81	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB116	16/03/2005	Normal	-	-	-	<0.0001	-	-	-	-	1.1	0.74	0.004	-	-	-	-	-
Groundwater Monitoring Well	MB116	29/06/2005	Normal	-	-	-	<0.0001	-	-	-	-	7.5	1.7	0.016	-	-	-	-	-
Groundwater Monitoring Well	MB116	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	7/03/2006	Normal	0.33	-	-	0.0002	-	-	-	-	-	-	0.002	-	-	-	-	-
Groundwater Monitoring Well	MB116	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	3/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				Metals														
				Aluminium	Arsenic	Barium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Iron (Filtered)	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				0.055			0.0002	0.001	0.001		0.0014			0.0034	1.9	0.0006	0.011	0.011	0.008
ANZECC 2000 FW Med-Low Reliability				0.0008			0.0002	0.001		0.0014	0.0014	0.3	0.3	0.0034	1.7		0.011	0.005|0.011	0.008
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																
Groundwater Monitoring Well	MB301	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	0.012	-	-	-	-	-
Groundwater Monitoring Well	MB301	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB302	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	0.007	-	-	-	-	-
Groundwater Monitoring Well	MB302	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	0.006	-	-	-	-	-
Groundwater Monitoring Well	MB303	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	0.067	-	-	-	-	-
Groundwater Monitoring Well	MB303	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	0.078	-	-	-	-	-
Groundwater Monitoring Well	MB304	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	0.21	-	-	-	-	-
Groundwater Monitoring Well	MB304	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	0.011	-	-	-	-	-
Groundwater Monitoring Well	MB305	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	0.054	-	-	-	-	-
Groundwater Monitoring Well	MB305	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	0.044	-	-	-	-	-
Groundwater Monitoring Well	MB305	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/03/2006	Normal	10.4	-	-	<0.0001	-	-	-	-	-	-	0.05	-	-	-	-	-
Groundwater Monitoring Well	MB305	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	13/03/2013	Normal	<10	<1	180	0.1	<0.005	<1	7	<1	-	-	<1	820	<0.05	20	<1	220
Groundwater Monitoring Well	MB305	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	3/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	0.009	-	-	-	-	-
Groundwater Monitoring Well	MB306	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-
Groundwater Monitoring Well	MB306	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	7/03/2006	Normal	0.68	-	-	0.0002	-	-	-	-	-	-	0.001	-	-	-	-	-
Groundwater Monitoring Well	MB306	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	13/03/2013	Normal	220	<1	87	0.2	<0.005	<1	4	<1	-	-	8	120	<0.05	3	<1	37
Groundwater Monitoring Well	MB306	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																			
Number of Results				24	14	14	114	14	14	14	14	96	93	424	14	14	14	14	15
Number of Detects				20	1	14	80	0	1	13	5	96	92	356	14	0	14	0	15
Minimum Concentration				0.005	<0.01	0.18	0.00005	<0.005	0.006	0.005	0.005	0.025	0.025	0.0005	0.33	<0.01	0.008	<0.005	0.032
Minimum Detect				0.005	2	0.18	0.00005	ND	0.006	0.005	0.005	0.025	0.025	0.0005	0.33	ND	0.008	ND	0.032
Maximum Concentration				1400	2	200	11	<0.01	<1	13	39	481	87.3	81	820	<0.05	20	<1	220
Maximum Detect				1400	2	200	11	ND	0.006	13	39	481	87.3	81	820	ND	20	ND	220
Average Concentration				83	0.47	108	0.13	0.0032	0.36	4.1	4.8	42	22	0.46	296	0.019	7.4	0.36	59
Geometric Average				2.8	0.15	22	0.00023	0.003	0.14	0.74	0.31	15	5.6	0.079	57	0.016	1.3	0.11	9.7
Median Concentration				4.7	0.5	145	0.00005	0.0025	0.5	4	0.5	23	13.8	0.001	220	0.025	5	0.5	34
Standard Deviation				286	0.5	79	1	0.0012	0.23	4	11	65	26	4.7	277	0.0094	7.5	0.23	75
Geometric Standard Deviation				22	9.5	22	18	1.4	8.5	22	19	5.8	9.4	7.2	20	2.1	23	12	19

Appendix D
Table D2
Groundwater Quality Data

				TRH - NEPM 1999				BTEX & MAH				
				C6 - C 9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%								950			350	
ANZECC 2000 FW Med-Low Reliability								950	180	80	350	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**									
Groundwater Monitoring Well	MB001	1/02/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/03/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/04/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/05/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/06/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/07/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/08/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/09/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/10/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/11/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/12/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/01/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/02/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/03/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	16/07/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	14/08/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	17/09/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	9/10/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/11/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	10/12/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	29/01/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	18/02/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/03/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	23/04/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/05/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	18/06/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	22/07/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/08/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	18/09/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	16/10/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	21/11/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	12/12/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	5/02/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	5/03/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	5/05/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	3/06/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/07/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	3/08/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	2/09/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/10/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	4/11/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	8/12/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	6/01/1999	Normal	-	-	-	-	<0.5	<1	<1	-	-
Groundwater Monitoring Well	MB001	3/03/1999	Normal	-	-	-	-	<0.5	<1	<2	-	-
Groundwater Monitoring Well	MB001	2/06/1999	Normal	-	-	-	-	<0.5	<1	<3	-	-
Groundwater Monitoring Well	MB001	2/09/1999	Normal	-	-	-	-	<0.5	<1	<4	-	-
Groundwater Monitoring Well	MB001	2/12/1999	Normal	-	-	-	-	<0.5	<1	<5	-	-
Groundwater Monitoring Well	MB001	2/03/2000	Normal	-	-	-	-	<0.5	<1	<6	-	-
Groundwater Monitoring Well	MB001	1/06/2000	Normal	-	-	-	-	<0.5	<1	<7	-	-
Groundwater Monitoring Well	MB001	1/09/2000	Normal	-	-	-	-	<0.5	<1	<8	-	-
Groundwater Monitoring Well	MB001	20/11/2000	Normal	-	-	-	-	<0.5	<1	<9	-	-
Groundwater Monitoring Well	MB001	8/12/2000	Normal	-	-	-	-	<0.5	<1	<10	-	-
Groundwater Monitoring Well	MB001	7/03/2001	Normal	-	-	-	-	<0.5	<1	<11	-	-
Groundwater Monitoring Well	MB001	1/06/2001	Normal	-	-	-	-	<0.5	<1	<12	-	-
Groundwater Monitoring Well	MB001	13/09/2001	Normal	-	-	-	-	<0.5	<1	<13	-	-
Groundwater Monitoring Well	MB001	11/12/2001	Normal	-	-	-	-	<0.5	<1	<14	-	-
Groundwater Monitoring Well	MB001	12/03/2002	Normal	-	-	-	-	<0.5	<1	<15	-	-
Groundwater Monitoring Well	MB001	26/06/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB001	13/08/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB001	17/10/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB001	16/12/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB001	20/03/2003	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB001	30/06/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB001	25/09/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB001	11/12/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB001	15/03/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	1/02/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/03/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/04/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/05/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/06/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/07/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/08/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/09/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/10/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/11/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/12/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/01/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/02/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/03/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/04/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/05/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/06/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	16/07/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	15/08/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	18/09/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	10/10/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/11/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/12/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	31/01/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	19/02/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/03/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	23/04/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/05/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	17/06/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	22/07/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	19/08/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	18/09/1997	Normal	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				TRH - NEPM 1999				BTEX & MAH				
				C6 - C 9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%								950			350	
ANZECC 2000 FW Med-Low Reliability								950	180	80	350	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**									
Groundwater Monitoring Well	MB008	16/10/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/11/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/12/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	8/01/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/02/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/03/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/04/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/05/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	3/06/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/07/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	3/08/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/09/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/10/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	4/11/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	8/12/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/01/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	3/03/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	2/06/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	2/09/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	2/12/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	2/03/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	1/06/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	1/09/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	20/11/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	8/12/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	7/03/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	1/06/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	13/09/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB008	11/12/2001	Normal	-	-	-	-	<0.5	<1	<1	0.5	<3
Groundwater Monitoring Well	MB008	12/03/2002	Normal	-	-	-	-	<0.5	<1	<1	0.5	<3
Groundwater Monitoring Well	MB008	26/06/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	13/08/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	17/10/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	16/12/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	20/03/2003	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	30/06/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	25/09/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	11/12/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	15/03/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	30/06/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	8/09/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	13/12/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB008	16/03/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB008	30/06/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB008	28/09/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	7/12/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/03/2006	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB008	6/06/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	27/09/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/06/2012	Normal	<50	<50	<200	<50	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/09/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB008	17/12/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB008	13/03/2013	Normal	28	<50	<100	<100	<1	20	<1	<1	<2
Groundwater Monitoring Well	MB008	24/06/2014	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/02/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/03/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/04/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/05/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/06/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/07/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/08/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/09/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/10/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/11/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/12/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/01/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/02/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/03/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/04/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/05/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/06/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	16/07/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	14/08/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	17/09/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	10/10/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/11/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	10/12/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	30/01/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/02/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/03/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	23/04/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	20/05/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	17/06/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	22/07/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/08/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	18/09/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	16/10/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	20/11/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	11/12/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	8/01/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	6/02/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	5/03/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/04/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	6/05/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	3/06/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/07/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	3/08/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/09/1998	Normal	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				TRH - NEPM 1999				BTEX & MAH				
				C6 - C 9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%								950			350	
ANZECC 2000 FW Med-Low Reliability								950	180	80	350	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**									
Groundwater Monitoring Well	MB016	1/10/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	4/11/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	8/12/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	6/01/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	3/03/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	2/06/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	2/09/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	2/12/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	2/03/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	1/06/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	1/09/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	20/11/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	8/12/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	7/03/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	1/06/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	13/09/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB016	11/12/2001	Normal	-	-	-	-	<0.5	<1	<1	0.5	<3
Groundwater Monitoring Well	MB016	12/03/2002	Normal	-	-	-	-	<0.5	<1	<1	0.5	<3
Groundwater Monitoring Well	MB017	1/02/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/03/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/04/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/05/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/06/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/07/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/08/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/09/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/10/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/11/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/12/1995	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/01/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/02/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/03/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/04/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/05/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	16/07/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	14/08/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	17/09/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	9/10/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/11/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	10/12/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	29/01/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	18/02/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/03/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	23/04/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/05/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	18/06/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	22/07/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/08/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	18/09/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	16/10/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	21/11/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	12/12/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	5/02/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	5/03/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/04/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	5/05/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	3/06/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/07/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	3/08/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/09/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/10/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	4/11/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	8/12/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	6/01/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	3/03/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	2/06/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	2/09/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	2/12/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	2/03/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	1/06/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	1/09/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	20/11/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	8/12/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	7/03/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	1/06/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	13/09/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB017	11/12/2001	Normal	-	-	-	-	<0.5	<1	<1	0.5	<3
Groundwater Monitoring Well	MB017	12/03/2002	Normal	-	-	-	-	<0.5	<1	<1	0.5	<3
Groundwater Monitoring Well	MB017	26/06/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB017	13/08/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB017	17/10/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB017	16/12/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB017	20/03/2003	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB017	30/06/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB017	25/09/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB017	11/12/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB017	15/03/2004	Normal	-	-	-	-	0.5	1	0.5	0.5	1
Groundwater Monitoring Well	MB018	1/01/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/02/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/03/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/04/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/05/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/06/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	17/07/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	14/08/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	17/09/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	10/10/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	20/11/1996	Normal	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				TRH - NEPM 1999				BTEX & MAH				
				C6 - C 9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%								950			350	
ANZECC 2000 FW Med-Low Reliability								950	180	80	350	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**									
Groundwater Monitoring Well	MB018	10/12/1996	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	31/01/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	19/02/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	19/03/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	23/04/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	20/05/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	18/06/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	22/07/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	19/08/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	18/09/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	16/10/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	21/11/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	11/12/1997	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	8/01/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	5/02/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	5/03/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/04/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	6/05/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	3/06/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/07/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	3/08/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/09/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/10/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	23/11/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	8/12/1998	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	6/01/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	3/03/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	2/06/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	2/09/1999	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	2/12/1999	Normal	-	-	-	-	<0.5	<1	<1	-	>3
Groundwater Monitoring Well	MB018	2/03/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	1/06/2000	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/09/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	20/11/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	8/12/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	7/03/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	1/06/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	13/09/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	11/12/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	12/03/2002	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB018	26/06/2002	Normal	-	-	-	-	0.25	0.5	0.5	-	1
Groundwater Monitoring Well	MB018	13/08/2002	Normal	-	-	-	-	0.25	0.5	0.5	-	1
Groundwater Monitoring Well	MB018	17/10/2002	Normal	-	-	-	-	0.25	0.5	0.5	-	1
Groundwater Monitoring Well	MB018	16/12/2002	Normal	-	-	-	-	0.25	0.5	0.5	-	1
Groundwater Monitoring Well	MB018	20/03/2003	Normal	-	-	-	-	0.25	0.5	0.5	-	1
Groundwater Monitoring Well	MB018	30/06/2003	Normal	-	-	-	-	0.5	0.5	0.5	-	1
Groundwater Monitoring Well	MB018	25/09/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB018	11/12/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB018	15/03/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB018	30/06/2004	Normal	-	-	-	-	0.5	1	1	1	1
Groundwater Monitoring Well	MB018	8/09/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB018	13/12/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB018	16/03/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB018	30/06/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB023	5/06/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB025	1/06/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB025	1/09/2000	Normal	-	-	-	-	<0.05	<1	<1	-	<3
Groundwater Monitoring Well	MB025	20/11/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB025	8/12/2000	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB025	7/03/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB025	1/06/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB025	13/09/2001	Normal	-	-	-	-	<0.5	<1	<1	-	<3
Groundwater Monitoring Well	MB025	11/12/2001	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	12/03/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	26/06/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	13/08/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	16/10/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	16/12/2002	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	20/03/2003	Normal	-	-	-	-	0.25	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	30/06/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	25/09/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	11/12/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	15/03/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	30/06/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	8/09/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	13/12/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB025	16/03/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB025	30/06/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB025	28/09/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	7/12/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	6/03/2006	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB025	6/06/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	13/12/2006	Normal	<50	<50	<200	<50	-	-	-	-	-
Groundwater Monitoring Well	MB032	23/05/2007	Normal	<50	<50	<200	100	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB032	12/07/2007	Normal	<50	<50	<200	80	-	-	-	-	-
Groundwater Monitoring Well	MB032	7/06/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB032	12/09/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB032	17/12/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB032	13/03/2013	Normal	210	<50	<100	<100	<1	160	<1	<1	<2
Groundwater Monitoring Well	MB032	24/06/2014	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB033	13/12/2006	Normal	<50	<50	<200	<50	-	-	-	-	-
Groundwater Monitoring Well	MB033	23/05/2007	Normal	<50	<50	<200	<50	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB033	12/07/2007	Normal	<50	<50	<200	<50	-	-	-	-	-
Groundwater Monitoring Well	MB033	7/06/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB033	12/09/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB033	17/12/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB033	13/03/2013	Normal	28	<50	<100	<100	<1	20	<1	<1	<2
Groundwater Monitoring Well	MB033	24/06/2014	Normal	<10	<50	<100	<100	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				TRH - NEPM 1999				BTEX & MAH				
				C6 - C 9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%								950			350	
ANZECC 2000 FW Med-Low Reliability								950	180	80	350	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**									
Groundwater Monitoring Well	MB034	13/12/2006	Normal	<50	<50	<200	<50	-	-	-	-	-
Groundwater Monitoring Well	MB034	23/05/2007	Normal	<50	<50	<200	<50	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB034	12/07/2007	Normal	<50	<50	<200	<50	-	-	-	-	-
Groundwater Monitoring Well	MB034	7/06/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB034	12/09/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB034	17/12/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB034	13/03/2013	Normal	<10	<50	<100	<100	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB034	24/06/2014	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB035	13/12/2006	Normal	<50	<50	<200	<50	-	-	-	-	-
Groundwater Monitoring Well	MB035	16/01/2007	Normal	<50	<50	<200	<50	-	-	-	-	-
Groundwater Monitoring Well	MB035	23/05/2007	Normal	<50	<50	<200	<50	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB035	12/07/2007	Normal	<50	<50	<200	<50	-	-	-	-	-
Groundwater Monitoring Well	MB035	7/06/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB035	12/09/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB035	17/12/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB035	13/03/2013	Normal	<10	<50	<100	<100	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB035	24/06/2014	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB038	7/06/2012	Normal	<50	<100	<100	-	-	-	-	-	-
Groundwater Monitoring Well	MB038	12/09/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB038	17/12/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB038	13/03/2013	Normal	<10	<50	<100	<100	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB038	24/06/2014	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB040	7/06/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB040	12/09/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB040	17/12/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB040	13/03/2013	Normal	<10	<50	<100	<100	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB040	24/06/2014	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB041	7/06/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB041	12/09/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB041	17/12/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB041	13/03/2013	Normal	<10	<50	<100	<100	<1	4	<1	<1	<2
Groundwater Monitoring Well	MB041	24/06/2014	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB044	7/06/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB045	7/06/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB101	12/08/2004	Normal	25	25	100	25	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB101	7/09/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	13/12/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB101	16/03/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB101	29/06/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB101	28/09/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	7/12/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	6/03/2006	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB101	6/06/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	15/08/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	12/08/2004	Normal	25	25	100	25	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB104	8/09/2004	Normal	25	25	100	25	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB104	14/12/2004	Normal	25	25	100	25	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB104	16/03/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB104	29/06/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB104	28/09/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	7/12/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	6/03/2006	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB104	6/06/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	15/08/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	30/06/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB114	25/09/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB114	11/12/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB114	15/03/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB114	30/06/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB114	8/09/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB114	14/12/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB114	16/03/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB114	29/06/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB114	28/09/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	7/12/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	7/03/2006	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB114	6/06/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	27/09/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	30/06/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB115	25/09/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB115	11/12/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB115	15/03/2004	Normal	-	-	-	-	0.5	6	0.5	0.5	1
Groundwater Monitoring Well	MB115	30/06/2004	Normal	-	-	-	-	0.5	18	3	3	11
Groundwater Monitoring Well	MB115	8/09/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB115	14/12/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB115	16/03/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB115	29/06/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB115	28/09/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	7/12/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	7/03/2006	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB115	6/06/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	27/09/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	30/06/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB116	25/09/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB116	11/12/2003	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB116	15/03/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB116	30/06/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB116	8/09/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB116	14/12/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB116	16/03/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB116	29/06/2005	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB116	28/09/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	7/12/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	7/03/2006	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB116	6/06/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	27/09/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	3/09/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	8/09/2004	Normal	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				TRH - NEPM 1999				BTEX & MAH				
				C6 - C 9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%								950			350	
ANZECC 2000 FW Med-Low Reliability								950	180	80	350	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**									
Groundwater Monitoring Well	MB301	14/10/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB301	11/11/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	14/12/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	31/01/2005	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB302	12/08/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	8/09/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	14/10/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB302	11/11/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	14/12/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	31/01/2005	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB303	12/08/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	8/09/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	14/10/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB303	11/11/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	14/12/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	31/01/2005	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB304	12/08/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	8/09/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	14/10/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	11/11/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	14/12/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	31/01/2005	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB305	12/08/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	8/09/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	14/10/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	11/11/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	14/12/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB305	31/01/2005	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB305	28/09/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/12/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/03/2006	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB305	6/06/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	27/09/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/06/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB305	12/09/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB305	17/12/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB305	13/03/2013	Normal	74	<50	<100	<100	<1	58	<1	<1	<2
Groundwater Monitoring Well	MB305	24/06/2014	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB306	3/09/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	8/09/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	14/10/2004	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB306	11/11/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	14/12/2004	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	31/01/2005	Normal	-	-	-	-	0.5	0.5	0.5	0.5	1
Groundwater Monitoring Well	MB306	28/09/2005	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	7/03/2006	Normal	-	-	-	-	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB306	6/06/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	27/09/2006	Normal	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	7/06/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB306	12/09/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB306	17/12/2012	Normal	<10	<50	<100	<100	-	-	-	-	-
Groundwater Monitoring Well	MB306	13/03/2013	Normal	<10	<50	<100	<100	<1	<1	<1	<1	<2
Groundwater Monitoring Well	MB306	24/06/2014	Normal	<10	<50	<100	<100	-	-	-	-	-
Statistical Summary												
Number of Results				70	70	70	69	213	213	213	132	198
Number of Detects				8	4	4	6	93	98	93	93	94
Minimum Concentration				<10	25	<100	25	<0.05	0.5	0.5	0.5	1
Minimum Detect				25	25	100	25	0.25	0.5	0.5	0.5	1
Maximum Concentration				210	<100	<200	100	<1	160	<15	3	11
Maximum Detect				210	25	100	100	0.5	160	3	3	11
Average Concentration				15	25	63	45	0.37	1.8	0.76	0.52	1.2
Geometric Average				8.9	25	60	43	0.35	0.57	0.58	0.51	1.2
Median Concentration				5	25	50	50	0.25	0.5	0.5	0.5	1
Standard Deviation				26	3	22	13	0.13	12	1.1	0.22	0.75
Geometric Standard Deviation				2.4	1.1	1.4	1.4	1.5	2	1.7	1.2	1.3

Appendix D
Table D2
Groundwater Quality Data

				PAH																Phenols		VOCs	
				Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	PAHs (Sum of total) - Lab calc	Phenol	Phenolics	TCE	Tetrachloroethene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%																	16			320			
ANZECC 2000 FW Med-Low Reliability							0.01		0.1					1			16	0.6		320		330	70
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																				
Groundwater Monitoring Well	MB001	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	9/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	29/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	18/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	12/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	5/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-
Groundwater Monitoring Well	MB001	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB001	26/06/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB001	13/08/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB001	17/10/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB001	16/12/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB001	20/03/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB001	30/06/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB001	25/09/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB001	11/12/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB001	15/03/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB008	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	15/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	18/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	31/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	19/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	17/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				PAH																Phenols		VOCs	
				Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	PAHs (Sum of total) - Lab calc	Phenol	Phenolics	TCE	Tetrachloroethene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%																	16			320			
ANZECC 2000 FW Med-Low Reliability							0.01		0.1					1			16	0.6		320		330	70
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																				
Groundwater Monitoring Well	MB008	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB008	26/06/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB008	13/08/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB008	17/10/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB008	16/12/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB008	20/03/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB008	30/06/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	60	-	-	-
Groundwater Monitoring Well	MB008	25/09/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB008	11/12/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	720	-	-	-
Groundwater Monitoring Well	MB008	15/03/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB008	30/06/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	10	-	-	-
Groundwater Monitoring Well	MB008	8/09/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB008	13/12/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB008	16/03/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	70	-	-	-
Groundwater Monitoring Well	MB008	30/06/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB008	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/03/2006	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB008	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/06/2012	Normal	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/09/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB008	17/12/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB008	13/03/2013	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<50	<1	<1
Groundwater Monitoring Well	MB008	24/06/2014	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	30/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	17/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	20/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	6/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	6/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				PAH																Phenols		VOCs	
				Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	PAHs (Sum of total) - Lab calc	Phenol	Phenolics	TCE	Tetrachloroethene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%																	16			320			
ANZECC 2000 FW Med-Low Reliability							0.01		0.1					1			16	0.6		320		330	70
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																				
Groundwater Monitoring Well	MB016	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB016	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-
Groundwater Monitoring Well	MB016	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-
Groundwater Monitoring Well	MB017	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	9/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	29/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	18/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	12/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	5/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-
Groundwater Monitoring Well	MB017	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB017	26/06/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB017	13/08/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB017	17/10/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB017	16/12/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB017	20/03/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB017	30/06/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB017	25/09/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB017	11/12/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB017	15/03/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB018	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	17/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	20/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				PAH																Phenols		VOCs	
				Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	PAHs (Sum of total) - Lab calc	Phenol	Phenolics	TCE	Tetrachloroethene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%																	16			320			
ANZECC 2000 FW Med-Low Reliability							0.01		0.1					1			16	0.6		320		330	70
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																				
Groundwater Monitoring Well	MB018	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	31/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	19/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	6/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	23/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-
Groundwater Monitoring Well	MB018	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB018	26/06/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB018	13/08/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB018	17/10/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB018	16/12/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB018	20/03/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB018	30/06/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB018	25/09/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB018	11/12/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB018	15/03/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB018	30/06/2004	Normal	0.5	0.5	0.5	0.5	0.5	0.25	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-	25	-	-	-
Groundwater Monitoring Well	MB018	8/09/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB018	13/12/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB018	16/03/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB018	30/06/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB023	5/06/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB025	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB025	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB025	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB025	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB025	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB025	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB025	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	-	-	-
Groundwater Monitoring Well	MB025	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-
Groundwater Monitoring Well	MB025	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-
Groundwater Monitoring Well	MB025	26/06/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB025	13/08/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB025	16/10/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB025	16/12/2002	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB025	20/03/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB025	30/06/2003	Normal	0.1	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.2	5	-	-	-
Groundwater Monitoring Well	MB025	25/09/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB025	11/12/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB025	15/03/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB025	30/06/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB025	8/09/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB025	13/12/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	50	-	-	-
Groundwater Monitoring Well	MB025	16/03/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB025	30/06/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB025	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	6/03/2006	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB025	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	13/12/2006	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB032	23/05/2007	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<10	<5	<5
Groundwater Monitoring Well	MB032	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	7/06/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB032	12/09/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB032	17/12/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB032	13/03/2013	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<50	<1	<1
Groundwater Monitoring Well	MB032	24/06/2014	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB033	13/12/2006	Normal	0.1	<1	<1	<1	0.1	0.06	0.3	0.3	<1	<1	0.1	<1	<1	0.1	0.2	-	-	-	-	-
Groundwater Monitoring Well	MB033	23/05/2007	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<10	<5	<5
Groundwater Monitoring Well	MB033	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	7/06/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB033	12/09/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB033	17/12/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB033	13/03/2013	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<50	<1	<1
Groundwater Monitoring Well	MB033	24/06/2014	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				PAH															Phenols		VOCs	
				Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	PAHs (Sum of total) - Lab calc	Phenol	Phenolics	TCE	Tetrachloroethene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%																	16			320			
ANZECC 2000 FW Med-Low Reliability							0.01		0.1					1			16	0.6		320		330	70
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																				
Groundwater Monitoring Well	MB034	13/12/2006	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB034	23/05/2007	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<10	<5	<5
Groundwater Monitoring Well	MB034	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB034	7/06/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB034	12/09/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB034	17/12/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB034	13/03/2013	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<50	<1	<1
Groundwater Monitoring Well	MB034	24/06/2014	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB035	13/12/2006	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB035	16/01/2007	Normal	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB035	23/05/2007	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<10	<5	<5
Groundwater Monitoring Well	MB035	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	7/06/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB035	12/09/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB035	17/12/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB035	13/03/2013	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<50	<1	<1
Groundwater Monitoring Well	MB035	24/06/2014	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB038	7/06/2012	Normal	<1	<1	<1	<1	<1	<1	<1	<10	<2	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB038	12/09/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB038	17/12/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB038	13/03/2013	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<50	<1	<1
Groundwater Monitoring Well	MB038	24/06/2014	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB040	7/06/2012	Normal	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB040	12/09/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB040	17/12/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB040	13/03/2013	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<50	<1	<1
Groundwater Monitoring Well	MB040	24/06/2014	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB041	7/06/2012	Normal	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB041	12/09/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB041	17/12/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB041	13/03/2013	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<50	<1	<1
Groundwater Monitoring Well	MB041	24/06/2014	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB044	7/06/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB045	7/06/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB101	12/08/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB101	7/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	13/12/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB101	16/03/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<10	-	-	-
Groundwater Monitoring Well	MB101	29/06/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB101	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	6/03/2006	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-
Groundwater Monitoring Well	MB101	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	15/08/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	12/08/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB104	8/09/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB104	14/12/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB104	16/03/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB104	29/06/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB104	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	6/03/2006	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	10	-	-	-
Groundwater Monitoring Well	MB104	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	15/08/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	30/06/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.4	0.4	20	-	-	-
Groundwater Monitoring Well	MB114	25/09/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	40	-	-	-
Groundwater Monitoring Well	MB114	11/12/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	90	-	-	-
Groundwater Monitoring Well	MB114	15/03/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	20	-	-	-
Groundwater Monitoring Well	MB114	30/06/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	10	-	-	-
Groundwater Monitoring Well	MB114	8/09/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB114	14/12/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	10	-	-	-
Groundwater Monitoring Well	MB114	16/03/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	0.07	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.27	10	-	-	-
Groundwater Monitoring Well	MB114	29/06/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB114	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	7/03/2006	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB114	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	30/06/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	10	-	-	-
Groundwater Monitoring Well	MB115	25/09/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB115	11/12/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	30	-	-	-
Groundwater Monitoring Well	MB115	15/03/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	30	-	-	-
Groundwater Monitoring Well	MB115	30/06/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB115	8/09/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB115	14/12/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB115	16/03/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	180	-	-	-
Groundwater Monitoring Well	MB115	29/06/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB115	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	7/03/2006	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB115	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	30/06/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	140	-	-	-
Groundwater Monitoring Well	MB116	25/09/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB116	11/12/2003	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	780	-	-	-
Groundwater Monitoring Well	MB116	15/03/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	20	-	-	-
Groundwater Monitoring Well	MB116	30/06/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB116	8/09/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	5	-	-	-
Groundwater Monitoring Well	MB116	14/12/2004	Normal	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	10	-	-	-
Groundwater Monitoring Well	MB116	16/03/2005	Normal	0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<10	-	-	-
Groundwater Monitoring Well	MB116	29/06/2005	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	920	-	-	-
Groundwater Monitoring Well	MB116	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	7/03/2006	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB116	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	3/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				PAH																Phenols		VOCs	
				Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	PAHs (Sum of total) - Lab calc	Phenol	Phenolics	TCE	Tetrachloroethene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%																	16			320			
ANZECC 2000 FW Med-Low Reliability							0.01		0.1					1			16	0.6		320		330	70
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																				
Groundwater Monitoring Well	MB301	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/03/2006	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	1300	-	-	-
Groundwater Monitoring Well	MB305	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/06/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB305	12/09/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB305	17/12/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB305	13/03/2013	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<50	<1	<1
Groundwater Monitoring Well	MB305	24/06/2014	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB306	3/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	7/03/2006	Normal	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	-	-	-
Groundwater Monitoring Well	MB306	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	7/06/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB306	12/09/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB306	17/12/2012	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Groundwater Monitoring Well	MB306	13/03/2013	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<50	<1	<1
Groundwater Monitoring Well	MB306	24/06/2014	Normal	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-
Statistical Summary																							
Number of Results				167	167	167	167	167	167	166	167	167	167	167	167	167	167	167	5	187	14	14	14
Number of Detects				82	80	80	80	81	82	83	81	80	80	81	80	80	81	81	5	93	0	0	0
Minimum Concentration				0.05	0.05	0.05	0.05	0.05	<0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	5	<10	<1	<1
Minimum Detect				0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	5	ND	ND	ND
Maximum Concentration				<1	<1	<1	<1	<1	<1	<2	<10	<2	<1	<1	<1	<1	<1	<1	0.4	1300	<50	<5	<5
Maximum Detect				0.5	0.5	0.5	0.5	0.5	0.25	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	1300	ND	ND	ND
Average Concentration				0.22	0.22	0.22	0.22	0.22	0.21	0.42	0.25	0.23	0.22	0.22	0.22	0.22	0.22	0.22	0.23	29	19	1.1	1.1
Geometric Average				0.12	0.12	0.12	0.12	0.12	0.11	0.23	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.21	6.9	16	0.79	0.79
Median Concentration				0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	5	25	0.5	0.5
Standard Deviation				0.22	0.22	0.22	0.22	0.22	0.22	0.42	0.43	0.24	0.22	0.22	0.22	0.22	0.22	0.22	0.11	139	9.4	0.94	0.94
Geometric Standard Deviation				3	3.1	3.1	3.1	3	3.3	3	3.2	3.1	3.1	3	3.1	3.1	3	3.1	1.7	2.6	2.1	2.1	2.1

Appendix D
Table D2
Groundwater Quality Data

				OC Pesticides																	
				a endosulfan	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	4,4 DDD	4,4 DDT	Dieldrin	Endosulfan II	Endosulfan sulphate	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor
				mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%													0.01					0.2	0.09			
ANZECC 2000 FW Med-Low Reliability				0.0000002	0.03		0.001						0.006	0.01	0.007			0.2	0.01		0.05	0.005
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																			
Groundwater Monitoring Well	MB001	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	9/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	29/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	18/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	12/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	5/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	26/06/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	13/08/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	17/10/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	16/12/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	20/03/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	15/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	18/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	31/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	19/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	17/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				OC Pesticides																	
				a endosulfan	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	4,4 DDD	4,4 DDT	Dieldrin	Endosulfan II	Endosulfan sulphate	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor
				mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%													0.01					0.2	0.09			
ANZECC 2000 FW Med-Low Reliability				0.0000002	0.03		0.001						0.006	0.01	0.007			0.2	0.01		0.05	0.005
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																			
Groundwater Monitoring Well	MB008	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	26/06/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	13/08/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	17/10/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	16/12/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	20/03/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	30/06/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	13/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	30/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	11/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	13/03/2013	Normal	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Groundwater Monitoring Well	MB008	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	30/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	17/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	20/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	6/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	6/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				OC Pesticides																		
				a endosulfan	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	4,4 DDD	4,4 DDT	Dieldrin	Endosulfan II	Endosulfan sulphate	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor
				mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%													0.01					0.2	0.09			
ANZECC 2000 FW Med-Low Reliability				0.0000002	0.03		0.001						0.006	0.01	0.007			0.2	0.01		0.05	0.005
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																			
Groundwater Monitoring Well	MB016	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB016	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	9/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	29/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	18/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	12/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	5/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	26/06/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	13/08/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	17/10/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	16/12/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	20/03/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB017	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	17/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	20/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				OC Pesticides																		
				a endosulfan	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	4,4 DDD	4,4 DDT	Dieldrin	Endosulfan II	Endosulfan sulphate	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor
				mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%													0.01					0.2	0.09			
ANZECC 2000 FW Med-Low Reliability				0.0000002	0.03		0.001						0.006	0.01	0.007			0.2	0.01		0.05	0.005
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																			
Groundwater Monitoring Well	MB018	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	31/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	19/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	6/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	23/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	26/06/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	13/08/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	17/10/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	16/12/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	20/03/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	30/06/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	13/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	30/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB023	5/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	26/06/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	13/08/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	16/10/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	16/12/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	20/03/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	30/06/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	13/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	30/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB025	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	13/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	23/05/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB032	13/03/2013	Normal	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Groundwater Monitoring Well	MB032	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	13/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	23/05/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB033	13/03/2013	Normal	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Groundwater Monitoring Well	MB033	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				OC Pesticides																	
				a endosulfan	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	4,4 DDD	4,4 DDT	Dieldrin	Endosulfan II	Endosulfan sulphate	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor
				mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%													0.01					0.2	0.09			
ANZECC 2000 FW Med-Low Reliability				0.0000002	0.03		0.001						0.006	0.01	0.007			0.2	0.01		0.05	0.005
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																			
Groundwater Monitoring Well	MB034	13/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB034	23/05/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB034	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB034	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB034	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB034	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB034	13/03/2013	Normal	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Groundwater Monitoring Well	MB034	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	13/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	16/01/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	23/05/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB035	13/03/2013	Normal	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Groundwater Monitoring Well	MB035	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB038	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB038	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB038	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB038	13/03/2013	Normal	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Groundwater Monitoring Well	MB038	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB040	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB040	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB040	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB040	13/03/2013	Normal	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Groundwater Monitoring Well	MB040	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB041	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB041	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB041	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB041	13/03/2013	Normal	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Groundwater Monitoring Well	MB041	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB044	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB045	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	7/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	13/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	29/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	15/08/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	29/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB104	15/08/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	30/06/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	29/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	7/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB114	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	30/06/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	29/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	7/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	30/06/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	29/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	7/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	3/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				OC Pesticides																	
				a endosulfan	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	4,4 DDD	4,4 DDT	Dieldrin	Endosulfan II	Endosulfan sulphate	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor
				mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%													0.01					0.2	0.09			
ANZECC 2000 FW Med-Low Reliability				0.0000002	0.03		0.001						0.006	0.01	0.007			0.2	0.01		0.05	0.005
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																			
Groundwater Monitoring Well	MB301	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	13/03/2013	Normal	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Groundwater Monitoring Well	MB305	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	3/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	7/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	13/03/2013	Normal	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Groundwater Monitoring Well	MB306	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																						
Number of Results				10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of Detects				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration				<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Minimum Detect				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration				<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Maximum Detect				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration				0.0001	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Geometric Average				0.0001	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Median Concentration				0.0001	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Standard Deviation				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Geometric Standard Deviation																						

Appendix D
Table D2
Groundwater Quality Data

				OP Pesticides						PCBs							Major Ions					
				Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dimethoate	Ethion	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%					0.01		0.01	0.15					0.6		0.03							
ANZECC 2000 FW Med-Low Reliability					0.01		0.01	0.15		0.001	1	0.3	0.3	0.03	0.01							
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																			
Groundwater Monitoring Well	MB001	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Groundwater Monitoring Well	MB001	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Groundwater Monitoring Well	MB001	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05
Groundwater Monitoring Well	MB001	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Groundwater Monitoring Well	MB001	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Groundwater Monitoring Well	MB001	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Groundwater Monitoring Well	MB001	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Groundwater Monitoring Well	MB001	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Groundwater Monitoring Well	MB001	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2
Groundwater Monitoring Well	MB001	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2
Groundwater Monitoring Well	MB001	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.1
Groundwater Monitoring Well	MB001	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7
Groundwater Monitoring Well	MB001	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Groundwater Monitoring Well	MB001	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Groundwater Monitoring Well	MB001	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Groundwater Monitoring Well	MB001	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Groundwater Monitoring Well	MB001	9/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Groundwater Monitoring Well	MB001	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Groundwater Monitoring Well	MB001	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Groundwater Monitoring Well	MB001	29/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	14	2	69	10
Groundwater Monitoring Well	MB001	18/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.8	-	11	1.3	49	11
Groundwater Monitoring Well	MB001	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	11	1	50	12
Groundwater Monitoring Well	MB001	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	11	1	52	10
Groundwater Monitoring Well	MB001	19/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	10	2	50	10
Groundwater Monitoring Well	MB001	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	9	1	44	9
Groundwater Monitoring Well	MB001	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	10	1	55	7
Groundwater Monitoring Well	MB001	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	11	1	53	11
Groundwater Monitoring Well	MB001	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB001	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	10	1	48	12
Groundwater Monitoring Well	MB001	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	10	0.25	46	11
Groundwater Monitoring Well	MB001	12/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	10	1	47	10
Groundwater Monitoring Well	MB001	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	10	1	48	10
Groundwater Monitoring Well	MB001	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	10	1	48	9
Groundwater Monitoring Well	MB001	5/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	-	9.4	1.2	47.5	9
Groundwater Monitoring Well	MB001	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.3	-	12	1.6	58.1	10
Groundwater Monitoring Well	MB001	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.3	-	8.7	1	46	9
Groundwater Monitoring Well	MB001	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.3	-	9.6	1.4	48.4	10
Groundwater Monitoring Well	MB001	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	-	9.8	1.5	50.8	9
Groundwater Monitoring Well	MB001	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.5	-	10.4	1.7	55.8	11
Groundwater Monitoring Well	MB001	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.8	-	10.5	1.5	51.3	9
Groundwater Monitoring Well	MB001	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.8	-	10.2	1.6	48.4	9
Groundwater Monitoring Well	MB001	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.9	-	10.5	1.7	52	9
Groundwater Monitoring Well	MB001	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.1	-	9.4	1.4	47.2	6
Groundwater Monitoring Well	MB001	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4	86	9.9	1.4	50.5	10
Groundwater Monitoring Well	MB001	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4	95	9.7	1.5	53	9
Groundwater Monitoring Well	MB001	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	97	10	2	47	11
Groundwater Monitoring Well	MB001	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	97	9.8	1.4	50	11
Groundwater Monitoring Well	MB001	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4	98	9.4	1.4	47	12
Groundwater Monitoring Well	MB001	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	100	11	1.4	52	11
Groundwater Monitoring Well	MB001	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	100	10	1.6	50	11
Groundwater Monitoring Well	MB001	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4	97	9.8	1.4	48	10
Groundwater Monitoring Well	MB001	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	93	10	1.2	48	10
Groundwater Monitoring Well	MB001	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	96	10	1.6	53	10
Groundwater Monitoring Well	MB001	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.8	94	11	1.6	50	10
Groundwater Monitoring Well	MB001	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.8	93	10	1.4	50	10
Groundwater Monitoring Well	MB001	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4	96	10	1.6	53	11
Groundwater Monitoring Well	MB001	26/06/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	4.2	90	9.2	1.2	49	12
Groundwater Monitoring Well	MB001	13/08/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	93	10	1.4	49	9
Groundwater Monitoring Well	MB001	17/10/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	95	9.8	1.4	49	10
Groundwater Monitoring Well	MB001	16/12/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.8	91	11	1.6	51	8
Groundwater Monitoring Well	MB001	20/03/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	80	10	1.4	53	15
Groundwater Monitoring Well	MB001	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.3	98	12	2.2	52	11
Groundwater Monitoring Well	MB001	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	4.3	93	11	2.6	56	3
Groundwater Monitoring Well	MB001	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5	95	12	2.1	55	5
Groundwater Monitoring Well	MB001	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	89	12	2.4	60	11
Groundwater Monitoring Well	MB008	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Groundwater Monitoring Well	MB008	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Groundwater Monitoring Well	MB008	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Groundwater Monitoring Well	MB008	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Groundwater Monitoring Well	MB008	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Groundwater Monitoring Well	MB008	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Groundwater Monitoring Well	MB008	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Groundwater Monitoring Well	MB008	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Groundwater Monitoring Well	MB008	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5
Groundwater Monitoring Well	MB008	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.6
Groundwater Monitoring Well	MB008	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.6
Groundwater Monitoring Well	MB008	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.9
Groundwater Monitoring Well	MB008	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Groundwater Monitoring Well	MB008	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Groundwater Monitoring Well	MB008	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Groundwater Monitoring Well	MB008	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Groundwater Monitoring Well	MB008	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.8
Groundwater Monitoring Well	MB008	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Groundwater Monitoring Well	MB008	15/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Groundwater Monitoring Well	MB008	18/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Groundwater Monitoring Well	MB008	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Groundwater Monitoring Well	MB008	20/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Groundwater Monitoring Well	MB008	11/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Groundwater Monitoring Well	MB008	31/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	13	2	49	11
Groundwater Monitoring Well	MB008	19/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.1	-	9.5	0.25	34	9
Groundwater Monitoring Well	MB008	20/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	9	1	37	9
Groundwater Monitoring Well	MB008	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	11	1	38	9
Groundwater Monitoring Well	MB008	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	10	1	39	9
Groundwater Monitoring Well	MB008	17/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	7	0.25	32	8
Groundwater Monitoring Well	MB008	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	7	0.25	35	8
Groundwater Monitoring Well	MB008	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	10	0.25	40	9
Groundwater Monitoring Well	MB008	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	8	0.25	35	9

Appendix D
Table D2
Groundwater Quality Data

				OP Pesticides						PCBs							Major Ions					
				Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dimethoate	Ethion	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%					0.01		0.01	0.15					0.6		0.03							
ANZECC 2000 FW Med-Low Reliability					0.01		0.01	0.15		0.001	1	0.3	0.3	0.03	0.01							
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																			
Groundwater Monitoring Well	MB008	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	8	0.25	36	9
Groundwater Monitoring Well	MB008	20/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	8	0.25	33	9
Groundwater Monitoring Well	MB008	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	8	0.25	34	8
Groundwater Monitoring Well	MB008	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	8	1	37	9
Groundwater Monitoring Well	MB008	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	8	0.25	37	9
Groundwater Monitoring Well	MB008	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	9	0.25	37	8
Groundwater Monitoring Well	MB008	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	9.2	0.9	33.9	9
Groundwater Monitoring Well	MB008	6/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	9	1	37	9
Groundwater Monitoring Well	MB008	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	-	11.1	1.2	46.2	9
Groundwater Monitoring Well	MB008	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.8	-	8.1	0.8	33.1	9
Groundwater Monitoring Well	MB008	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.3	-	8.2	1	37	8
Groundwater Monitoring Well	MB008	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	8.4	1	39	9
Groundwater Monitoring Well	MB008	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	-	9.3	1.4	43.5	7
Groundwater Monitoring Well	MB008	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	8.1	1.01	36.9	6
Groundwater Monitoring Well	MB008	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	7.9	1.1	35.4	8
Groundwater Monitoring Well	MB008	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	-	8.1	1.3	37.9	8
Groundwater Monitoring Well	MB008	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	-	8.1	1.1	35.4	8
Groundwater Monitoring Well	MB008	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	65	8.2	1	36.4	7
Groundwater Monitoring Well	MB008	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	70	8.2	1	39.1	7
Groundwater Monitoring Well	MB008	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3	73	8.2	2.4	38	8
Groundwater Monitoring Well	MB008	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	73	7.6	1	36	9
Groundwater Monitoring Well	MB008	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	74	7.4	1	33	11
Groundwater Monitoring Well	MB008	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	73	7.6	0.8	36	8
Groundwater Monitoring Well	MB008	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	73	7.6	1	34	7
Groundwater Monitoring Well	MB008	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4	97	9.8	1	35	10
Groundwater Monitoring Well	MB008	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	71	7.8	0.8	33	8
Groundwater Monitoring Well	MB008	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	72	7	1.4	39	7
Groundwater Monitoring Well	MB008	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	72	8	1	36	7
Groundwater Monitoring Well	MB008	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	69	7.8	1.2	37	8
Groundwater Monitoring Well	MB008	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	72	7.8	1.2	36	8
Groundwater Monitoring Well	MB008	26/06/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	69	8	1	37	7
Groundwater Monitoring Well	MB008	13/08/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	70	7.8	0.05	37	7
Groundwater Monitoring Well	MB008	17/10/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	70	7.8	9.8	35	8
Groundwater Monitoring Well	MB008	16/12/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	67	8.4	1	37	7
Groundwater Monitoring Well	MB008	20/03/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	59	8.4	1	41	13
Groundwater Monitoring Well	MB008	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	76	8.4	2	36	9
Groundwater Monitoring Well	MB008	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	70	8.6	1.9	43	2
Groundwater Monitoring Well	MB008	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	70	8.2	2.9	44	10
Groundwater Monitoring Well	MB008	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.6	68	8.7	1.6	39	8
Groundwater Monitoring Well	MB008	30/06/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	71	8.4	1.8	38	17
Groundwater Monitoring Well	MB008	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.9	72	7.6	1.4	33	3
Groundwater Monitoring Well	MB008	13/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.1	70	8.2	1.3	40	7
Groundwater Monitoring Well	MB008	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.9	70	8.4	1.1	31	6
Groundwater Monitoring Well	MB008	30/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	12	82	13	7.1	41	29
Groundwater Monitoring Well	MB008	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	65	8.5	1.3	38	6
Groundwater Monitoring Well	MB008	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	75	7.8	1.2	37	6
Groundwater Monitoring Well	MB008	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	74	8.1	1	36	6
Groundwater Monitoring Well	MB008	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	65	9.1	1.7	36	9
Groundwater Monitoring Well	MB008	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB008	5/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3	76	7.8	1.2	42	9
Groundwater Monitoring Well	MB008	11/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	70	8.8	1.2	38	5
Groundwater Monitoring Well	MB008	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	81	8.6	1.2	40	6
Groundwater Monitoring Well	MB008	13/03/2013	Normal	<0.2	<0.2	<0.2	<200	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	3.8	73	8.8	1.7	44	6
Groundwater Monitoring Well	MB008	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	78	9.6	1.5	44	7
Groundwater Monitoring Well	MB016	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50
Groundwater Monitoring Well	MB016	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
Groundwater Monitoring Well	MB016	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38
Groundwater Monitoring Well	MB016	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
Groundwater Monitoring Well	MB016	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
Groundwater Monitoring Well	MB016	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
Groundwater Monitoring Well	MB016	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Groundwater Monitoring Well	MB016	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Groundwater Monitoring Well	MB016	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Groundwater Monitoring Well	MB016	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
Groundwater Monitoring Well	MB016	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
Groundwater Monitoring Well	MB016	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Groundwater Monitoring Well	MB016	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Groundwater Monitoring Well	MB016	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
Groundwater Monitoring Well	MB016	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.5
Groundwater Monitoring Well	MB016	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Groundwater Monitoring Well	MB016	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
Groundwater Monitoring Well	MB016	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42
Groundwater Monitoring Well	MB016	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61
Groundwater Monitoring Well	MB016	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48
Groundwater Monitoring Well	MB016	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29
Groundwater Monitoring Well	MB016	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53
Groundwater Monitoring Well	MB016	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52
Groundwater Monitoring Well	MB016	30/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	60	5	313	49
Groundwater Monitoring Well	MB016	19/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	45	1.4	249	46
Groundwater Monitoring Well	MB016	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	52	4	290	53
Groundwater Monitoring Well	MB016	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	55	3	305	50
Groundwater Monitoring Well	MB016	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	52	3	287	50
Groundwater Monitoring Well	MB016	17/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	50	4	282	52
Groundwater Monitoring Well	MB016	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	52	4	292	51
Groundwater Monitoring Well	MB016	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	59	5	309	55
Groundwater Monitoring Well	MB016	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	53	5	295	51
Groundwater Monitoring Well	MB016	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	53	5	292	62
Groundwater Monitoring Well	MB016	20/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	51	4	287	57
Groundwater Monitoring Well	MB016	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	48	3	296	54
Groundwater Monitoring Well	MB016	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	53	4	286	48
Groundwater Monitoring Well	MB016	6/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	46	4	265	50
Groundwater Monitoring Well	MB016	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	48	5	278	49
Groundwater Monitoring Well	MB016	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16.9	-	49.3	3.8	273	49
Groundwater Monitoring Well	MB016	6/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	14.9	-	45.7	3.2	237	45
Groundwater Monitoring Well	MB016	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	58.1	3.1	308	46
Groundwater Monitoring Well	MB016	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	51.8	3.1	219	47
Groundwater Monitoring Well	MB016	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	13.5	-	42.9	3.5	242	48
Groundwater Monitoring Well	MB016	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	15.2	-	46.5	4.4	263	46

Appendix D
Table D2
Groundwater Quality Data

				OP Pesticides						PCBs							Major Ions					
				Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dimethoate	Ethion	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%					0.01		0.01	0.15					0.6		0.03							
ANZECC 2000 FW Med-Low Reliability					0.01		0.01	0.15		0.001	1	0.3	0.3	0.03	0.01							
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																			
Groundwater Monitoring Well	MB016	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	15.3	-	47.5	4.8	273	47
Groundwater Monitoring Well	MB016	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16.6	-	50.1	4.4	292	48
Groundwater Monitoring Well	MB016	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16.8	-	50.9	4.5	284	49
Groundwater Monitoring Well	MB016	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	17.1	-	51.4	4.9	304	52
Groundwater Monitoring Well	MB016	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	13.6	-	41.5	3.8	249	47
Groundwater Monitoring Well	MB016	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	14.8	524	45.5	4.1	265	47
Groundwater Monitoring Well	MB016	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	13.8	514	41.9	3.8	160	42
Groundwater Monitoring Well	MB016	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	14	520	42	3.8	250	50
Groundwater Monitoring Well	MB016	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	14	600	46	4.6	280	55
Groundwater Monitoring Well	MB016	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	15	580	44	4	260	58
Groundwater Monitoring Well	MB016	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16	630	49	4	320	52
Groundwater Monitoring Well	MB016	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	14	600	45	3.8	260	52
Groundwater Monitoring Well	MB016	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	13	530	43	3.6	250	57
Groundwater Monitoring Well	MB016	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	15	560	45	4	260	58
Groundwater Monitoring Well	MB016	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	13	540	42	4	300	57
Groundwater Monitoring Well	MB016	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	15	550	45	4	270	57
Groundwater Monitoring Well	MB016	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	17	620	52	4.6	310	54
Groundwater Monitoring Well	MB016	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	13	540	45	4	260	57
Groundwater Monitoring Well	MB017	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Groundwater Monitoring Well	MB017	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Groundwater Monitoring Well	MB017	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5
Groundwater Monitoring Well	MB017	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5
Groundwater Monitoring Well	MB017	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Groundwater Monitoring Well	MB017	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Groundwater Monitoring Well	MB017	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Groundwater Monitoring Well	MB017	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Groundwater Monitoring Well	MB017	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Groundwater Monitoring Well	MB017	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Groundwater Monitoring Well	MB017	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5
Groundwater Monitoring Well	MB017	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2
Groundwater Monitoring Well	MB017	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7
Groundwater Monitoring Well	MB017	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Groundwater Monitoring Well	MB017	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2
Groundwater Monitoring Well	MB017	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Groundwater Monitoring Well	MB017	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Groundwater Monitoring Well	MB017	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Groundwater Monitoring Well	MB017	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Groundwater Monitoring Well	MB017	9/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Groundwater Monitoring Well	MB017	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Groundwater Monitoring Well	MB017	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Groundwater Monitoring Well	MB017	29/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	14	2	65	11
Groundwater Monitoring Well	MB017	18/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.1	-	11	1.4	48	14
Groundwater Monitoring Well	MB017	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	11	1	51	12
Groundwater Monitoring Well	MB017	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	11	1	53	10
Groundwater Monitoring Well	MB017	19/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	11	2	52	11
Groundwater Monitoring Well	MB017	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	10	1	46	11
Groundwater Monitoring Well	MB017	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	10	1	48	10
Groundwater Monitoring Well	MB017	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	11	2	55	11
Groundwater Monitoring Well	MB017	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	10	1	49	7
Groundwater Monitoring Well	MB017	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	11	1	49	9
Groundwater Monitoring Well	MB017	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	10	1	47	11
Groundwater Monitoring Well	MB017	12/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	10	1	49	10
Groundwater Monitoring Well	MB017	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	11	1	50	11
Groundwater Monitoring Well	MB017	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	10	1	49	10
Groundwater Monitoring Well	MB017	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.8	-	9.4	1.4	47.4	11
Groundwater Monitoring Well	MB017	5/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.7	-	10.1	1.2	48.4	10
Groundwater Monitoring Well	MB017	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	7.5	-	14	1.4	62.2	10
Groundwater Monitoring Well	MB017	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	10.1	1.4	47.6	10
Groundwater Monitoring Well	MB017	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.8	-	10.1	1.5	50.2	10
Groundwater Monitoring Well	MB017	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	7.4	-	10.3	1.6	52	10
Groundwater Monitoring Well	MB017	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	-	11.2	1.9	58	11
Groundwater Monitoring Well	MB017	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.5	-	11.1	1.7	51.9	0.5
Groundwater Monitoring Well	MB017	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.4	-	10.8	1.6	49.3	9
Groundwater Monitoring Well	MB017	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.6	-	11	1.9	52.7	4
Groundwater Monitoring Well	MB017	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	10.3	1.6	49.6	8
Groundwater Monitoring Well	MB017	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.3	91	10.8	1.6	52	10
Groundwater Monitoring Well	MB017	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	99	10.3	1.6	55.3	10
Groundwater Monitoring Well	MB017	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.6	99	11	2.2	49	11
Groundwater Monitoring Well	MB017	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	100	10	1.6	53	11
Groundwater Monitoring Well	MB017	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	100	10	1.6	48	12
Groundwater Monitoring Well	MB017	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	100	11	1.4	52	11
Groundwater Monitoring Well	MB017	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	100	10	1.6	50	11
Groundwater Monitoring Well	MB017	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	99	11	1.6	50	11
Groundwater Monitoring Well	MB017	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	97	11	1.4	49	10
Groundwater Monitoring Well	MB017	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.4	100	11	1.6	57	10
Groundwater Monitoring Well	MB017	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.6	96	11	1.6	51	10
Groundwater Monitoring Well	MB017	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.8	94	11	1.8	52	12
Groundwater Monitoring Well	MB017	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.4	97	11	1.8	53	11
Groundwater Monitoring Well	MB017	26/06/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6	93	11	1.4	53	11
Groundwater Monitoring Well	MB017	13/08/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.4	94	11	1.6	51	7
Groundwater Monitoring Well	MB017	17/10/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	96	10	1.4	51	7
Groundwater Monitoring Well	MB017	16/12/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.6	91	11	1.6	53	3
Groundwater Monitoring Well	MB017	20/03/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	81	11	1.6	56	13
Groundwater Monitoring Well	MB017	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.1	99	12	2.3	53	9
Groundwater Monitoring Well	MB017	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	93	11	2.6	57	3
Groundwater Monitoring Well	MB017	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4	95	13	2.2	60	5
Groundwater Monitoring Well	MB017	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.5	91	12	2.6	58	7
Groundwater Monitoring Well	MB018	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Groundwater Monitoring Well	MB018	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Groundwater Monitoring Well	MB018	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Groundwater Monitoring Well	MB018	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Groundwater Monitoring Well	MB018	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Groundwater Monitoring Well	MB018	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.7
Groundwater Monitoring Well	MB018	17/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Groundwater Monitoring Well	MB018	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Groundwater Monitoring Well	MB018	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
Groundwater Monitoring Well	MB018	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Groundwater Monitoring Well	MB018	20/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9

Appendix D
Table D2
Groundwater Quality Data

				OP Pesticides						PCBs							Major Ions					
				Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dimethoate	Ethion	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%					0.01		0.01	0.15					0.6		0.03							
ANZECC 2000 FW Med-Low Reliability					0.01		0.01	0.15		0.001	1	0.3	0.3	0.03	0.01							
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																			
Groundwater Monitoring Well	MB018	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Groundwater Monitoring Well	MB018	31/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	9	0.25	64	11
Groundwater Monitoring Well	MB018	19/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7	0.25	47	9
Groundwater Monitoring Well	MB018	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7	0.25	51	9
Groundwater Monitoring Well	MB018	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	8	0.25	54	9
Groundwater Monitoring Well	MB018	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	8	0.25	51	10
Groundwater Monitoring Well	MB018	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7	0.25	46	9
Groundwater Monitoring Well	MB018	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	7	0.25	50	9
Groundwater Monitoring Well	MB018	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	8	0.25	65	10
Groundwater Monitoring Well	MB018	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7	0.25	50	10
Groundwater Monitoring Well	MB018	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7	0.25	50	8
Groundwater Monitoring Well	MB018	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7	0.25	46	8
Groundwater Monitoring Well	MB018	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7	0.25	49	8
Groundwater Monitoring Well	MB018	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	8	0.25	53	10
Groundwater Monitoring Well	MB018	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7	0.25	51	9
Groundwater Monitoring Well	MB018	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7	0.25	48	7
Groundwater Monitoring Well	MB018	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7	0.25	48.2	9
Groundwater Monitoring Well	MB018	6/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7.2	0.25	50.3	8
Groundwater Monitoring Well	MB018	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	9.5	0.25	63.7	8
Groundwater Monitoring Well	MB018	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	6.9	0.25	46.8	8
Groundwater Monitoring Well	MB018	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	6.8	0.25	49.3	8
Groundwater Monitoring Well	MB018	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7.2	0.5	51.9	9
Groundwater Monitoring Well	MB018	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7.6	0.8	58.3	9
Groundwater Monitoring Well	MB018	23/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	8	0.25	47.6	8
Groundwater Monitoring Well	MB018	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	-	7.3	0.25	48.9	9
Groundwater Monitoring Well	MB018	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	7.4	0.6	51.8	8
Groundwater Monitoring Well	MB018	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	6.85	<0.5	48.2	6
Groundwater Monitoring Well	MB018	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	99	7.1	0.4	50.3	9
Groundwater Monitoring Well	MB018	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	108	6.8	0.4	52.3	11
Groundwater Monitoring Well	MB018	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	110	7	0.4	46	20
Groundwater Monitoring Well	MB018	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	120	6.8	0.4	50	45
Groundwater Monitoring Well	MB018	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB018	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	110	7	0.4	51	8
Groundwater Monitoring Well	MB018	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	110	7.6	0.5	48	8
Groundwater Monitoring Well	MB018	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	110	7.2	0.3	49	9
Groundwater Monitoring Well	MB018	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	110	7.2	0.3	47	8
Groundwater Monitoring Well	MB018	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	110	7	0.4	53	9
Groundwater Monitoring Well	MB018	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110	7.4	0.4	51	8
Groundwater Monitoring Well	MB018	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	7.2	0.4	49	8
Groundwater Monitoring Well	MB018	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	110	7.2	0.6	50	9
Groundwater Monitoring Well	MB018	26/06/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	100	7.2	0.5	52	8
Groundwater Monitoring Well	MB018	13/08/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	110	7	0.05	49	9
Groundwater Monitoring Well	MB018	17/10/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	110	7	0.05	50	9
Groundwater Monitoring Well	MB018	16/12/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	100	7.4	0.05	50	8
Groundwater Monitoring Well	MB018	20/03/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	88	7.4	0.05	56	14
Groundwater Monitoring Well	MB018	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	100	6.8	0.8	48	8
Groundwater Monitoring Well	MB018	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	100	6.8	1.1	53	2
Groundwater Monitoring Well	MB018	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	100	6.7	0.5	57	7
Groundwater Monitoring Well	MB018	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	100	7.7	0.9	55	8
Groundwater Monitoring Well	MB018	30/06/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	95	7	7	43	7
Groundwater Monitoring Well	MB018	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	100	6.6	0.4	46	3
Groundwater Monitoring Well	MB018	13/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	99	6.8	0.7	51	6
Groundwater Monitoring Well	MB018	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	>0.1	97	7.2	0.5	43	7
Groundwater Monitoring Well	MB018	30/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	100	6.5	0.4	44	8
Groundwater Monitoring Well	MB023	5/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	23	1900	110	31	1200	260
Groundwater Monitoring Well	MB025	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	15	900	66	3.4	290	83
Groundwater Monitoring Well	MB025	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16	910	71	3.6	430	62
Groundwater Monitoring Well	MB025	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	19	1100	83	4	470	74
Groundwater Monitoring Well	MB025	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	19	1000	85	3.8	470	74
Groundwater Monitoring Well	MB025	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	18	930	79	3.6	440	68
Groundwater Monitoring Well	MB025	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	19	1000	84	4.2	510	71
Groundwater Monitoring Well	MB025	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	20	1000	87	4.2	450	70
Groundwater Monitoring Well	MB025	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	18	900	77	3.8	430	64
Groundwater Monitoring Well	MB025	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	17	950	75	3.8	420	67
Groundwater Monitoring Well	MB025	26/06/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	19	930	81	4	460	69
Groundwater Monitoring Well	MB025	13/08/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	18	940	77	3.8	420	67
Groundwater Monitoring Well	MB025	16/10/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	18	920	74	4.6	19	65
Groundwater Monitoring Well	MB025	16/12/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	19	1300	84	4	440	64
Groundwater Monitoring Well	MB025	20/03/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	18	880	77	3.8	450	62
Groundwater Monitoring Well	MB025	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	12	930	79	5.9	514	73
Groundwater Monitoring Well	MB025	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	12	900	88	8.6	491	66
Groundwater Monitoring Well	MB025	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	20	900	94	6	496	62
Groundwater Monitoring Well	MB025	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	22	960	100	8.4	483	72
Groundwater Monitoring Well	MB025	30/06/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	18	1070	85	4.8	412	63
Groundwater Monitoring Well	MB025	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	18	940	79	5.1	424	48
Groundwater Monitoring Well	MB025	13/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	20	950	79	7.4	433	65
Groundwater Monitoring Well	MB025	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	14	900	81	4.1	412	67
Groundwater Monitoring Well	MB025	30/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	19	980	71	4.3	408	61
Groundwater Monitoring Well	MB025	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	19	990	81	4.3	439	54
Groundwater Monitoring Well	MB025	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	17	970	74	4.9	410	63
Groundwater Monitoring Well	MB025	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	20	950	72	3.9	437	74
Groundwater Monitoring Well	MB025	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	22	920	93	4.8	475	63
Groundwater Monitoring Well	MB032	13/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	30	98	16	13	83	42
Groundwater Monitoring Well	MB032	23/05/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	12	110	12	3.3	66	7
Groundwater Monitoring Well	MB032	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	8.1	94	11.9	2.5	60.3	10
Groundwater Monitoring Well	MB032	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	31	6.3	53	240	-
Groundwater Monitoring Well	MB032	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	7.2	94	11	2.2	57	9
Groundwater Monitoring Well	MB032	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	8.2	110	14	3.1	54	10
Groundwater Monitoring Well	MB032	13/03/2013	Normal	<0.2	<0.2	<0.2	<200	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	12	93	17	5.2	63	11
Groundwater Monitoring Well	MB032	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	9.6	100	12	2.4	61	2
Groundwater Monitoring Well	MB033	13/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	16	98	18	9.8	61	40
Groundwater Monitoring Well	MB033	23/05/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	7.4	100	11	2.2	58	12
Groundwater Monitoring Well	MB033	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	4	91	17.9	8.5	25.5	12
Groundwater Monitoring Well	MB033	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	29	5.4	53	220	-
Groundwater Monitoring Well	MB033	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	90	11	1.9	54	9
Groundwater Monitoring Well	MB033	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.1	100	12	2.6	54	9
Groundwater Monitoring Well	MB033	13/03/2013	Normal	<0.2	<0.2	<0.2	<200	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	6	90	11	2.1	58	10
Groundwater Monitoring Well	MB033	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.1	96	12	2.2	59	12

Appendix D
Table D2
Groundwater Quality Data

				OP Pesticides						PCBs							Major Ions					
				Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dimethoate	Ethion	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%					0.01		0.01	0.15					0.6		0.03							
ANZECC 2000 FW Med-Low Reliability					0.01		0.01	0.15		0.001	1	0.3	0.3	0.03	0.01							
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																			
Groundwater Monitoring Well	MB034	13/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	100	6.8	0.8	47	9
Groundwater Monitoring Well	MB034	23/05/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	110	7.8	0.7	57	6
Groundwater Monitoring Well	MB034	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	95	7.8	0.8	57	8
Groundwater Monitoring Well	MB034	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1	13	1.8	52	310	-
Groundwater Monitoring Well	MB034	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.1	93	7.8	1	55	8
Groundwater Monitoring Well	MB034	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.9	110	7.6	0.8	54	8
Groundwater Monitoring Well	MB034	13/03/2013	Normal	<0.2	<0.2	<0.2	<200	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	2.4	92	7.9	1	58	9
Groundwater Monitoring Well	MB034	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.9	98	8.1	0.9	60	9
Groundwater Monitoring Well	MB035	13/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	110	6.5	2.1	54	19
Groundwater Monitoring Well	MB035	16/01/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	96.9	6	2	53	17
Groundwater Monitoring Well	MB035	23/05/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1	100	7.1	1	56	10
Groundwater Monitoring Well	MB035	12/07/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1	100	7.3	1	59.3	11
Groundwater Monitoring Well	MB035	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	4.8	<5	1	52	240	-
Groundwater Monitoring Well	MB035	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	91	6.8	2	53	10
Groundwater Monitoring Well	MB035	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	100	6.8	1.7	50	7
Groundwater Monitoring Well	MB035	13/03/2013	Normal	<0.2	<0.2	<0.2	<200	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	1.1	90	7.1	2	55	9
Groundwater Monitoring Well	MB035	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	91	5.3	2	57	9
Groundwater Monitoring Well	MB038	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	<5	1.1	74	280	-
Groundwater Monitoring Well	MB038	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1	130	11	1.6	76	20
Groundwater Monitoring Well	MB038	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	150	14	2.2	81	7
Groundwater Monitoring Well	MB038	13/03/2013	Normal	<0.2	<0.2	<0.2	<200	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	1.4	140	12	1.8	82	10
Groundwater Monitoring Well	MB038	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1	150	13	1.7	85	35
Groundwater Monitoring Well	MB040	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	4.2	98	7	2.2	54	8
Groundwater Monitoring Well	MB040	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	55	8.9	1.7	45	54
Groundwater Monitoring Well	MB040	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	100	7	1.3	54	4
Groundwater Monitoring Well	MB040	13/03/2013	Normal	<0.2	<0.2	<0.2	<200	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	4.4	96	12	5.9	62	6
Groundwater Monitoring Well	MB040	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.2	99	9.3	4.1	58	8
Groundwater Monitoring Well	MB041	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	57	7.4	2.6	43	63
Groundwater Monitoring Well	MB041	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	96	7.6	2.4	54	6
Groundwater Monitoring Well	MB041	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	57	8.3	2.5	49	43
Groundwater Monitoring Well	MB041	13/03/2013	Normal	<0.2	<0.2	<0.2	<200	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	1.3	58	9.2	3.4	51	52
Groundwater Monitoring Well	MB041	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1	64	9.6	1.6	51	51
Groundwater Monitoring Well	MB044	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	69	9.4	1.7	40	8
Groundwater Monitoring Well	MB045	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	68	8	1.9	37	6
Groundwater Monitoring Well	MB101	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.5	91	9.6	1.5	41	11
Groundwater Monitoring Well	MB101	7/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB101	13/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	93	11	2.2	56	8
Groundwater Monitoring Well	MB101	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	5.7	92	12	1.7	54	9
Groundwater Monitoring Well	MB101	29/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	100	12	1.7	55	10
Groundwater Monitoring Well	MB101	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	87	11	1.8	53	8
Groundwater Monitoring Well	MB101	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.1	98	10	1.8	48	8
Groundwater Monitoring Well	MB101	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.4	98	11	1.5	52	9
Groundwater Monitoring Well	MB101	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.6	95	12	1.8	55	10
Groundwater Monitoring Well	MB101	15/08/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	93	10	0.1	-	11
Groundwater Monitoring Well	MB104	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.3	81	6.5	1.1	36	10
Groundwater Monitoring Well	MB104	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	93	6.6	1	38	19
Groundwater Monitoring Well	MB104	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	95	8.3	1.2	49	8
Groundwater Monitoring Well	MB104	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	93	8.5	1.4	42	7
Groundwater Monitoring Well	MB104	29/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2	110	8.4	1.2	52	9
Groundwater Monitoring Well	MB104	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	49	95	7.5	1.1	49	8
Groundwater Monitoring Well	MB104	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.1	99	7.8	1	47	9
Groundwater Monitoring Well	MB104	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	98	8.8	1.2	50	9
Groundwater Monitoring Well	MB104	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	92	9	1.2	52	9
Groundwater Monitoring Well	MB104	15/08/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	96	7.2	0.1	-	9
Groundwater Monitoring Well	MB114	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	80	7.3	1.5	43	42
Groundwater Monitoring Well	MB114	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	150	13	2.9	84	24
Groundwater Monitoring Well	MB114	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	160	13	3	101	20
Groundwater Monitoring Well	MB114	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	130	8.1	4.2	72	12
Groundwater Monitoring Well	MB114	30/06/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.8	200	15	2.2	92	17
Groundwater Monitoring Well	MB114	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	4.1	250	18	1.8	113	6
Groundwater Monitoring Well	MB114	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.4	230	17	2.3	110	21
Groundwater Monitoring Well	MB114	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	400	28	3.4	186	17
Groundwater Monitoring Well	MB114	29/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	410	29	2.2	160	34
Groundwater Monitoring Well	MB114	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	7.7	470	32	2.5	180	21
Groundwater Monitoring Well	MB114	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	7.4	470	34	2.8	198	28
Groundwater Monitoring Well	MB114	7/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	12	750	57	3.1	299	47
Groundwater Monitoring Well	MB114	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	9.2	440	39	7.5	206	21
Groundwater Monitoring Well	MB114	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB115	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	20	300	22	9	174	47
Groundwater Monitoring Well	MB115	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	25	390	36	12	250	36
Groundwater Monitoring Well	MB115	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	28	410	40	8.9	249	41
Groundwater Monitoring Well	MB115	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	30	390	37	15	246	41
Groundwater Monitoring Well	MB115	30/06/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	26	430	34	6.6	253	32
Groundwater Monitoring Well	MB115	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	23	420	31	6.3	232	21
Groundwater Monitoring Well	MB115	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	23	420	32	6	223	39
Groundwater Monitoring Well	MB115	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	24	400	3.7	6.9	240	35
Groundwater Monitoring Well	MB115	29/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	28	510	34	6.2	246	36
Groundwater Monitoring Well	MB115	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	27	520	35	6.3	247	31
Groundwater Monitoring Well	MB115	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	24	470	34	6.8	231	39
Groundwater Monitoring Well	MB115	7/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	30	750	32	6.5	232	44
Groundwater Monitoring Well	MB115	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	30	410	37	6.7	229	34
Groundwater Monitoring Well	MB115	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB116	30/06/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	66	260	35	13	175	100
Groundwater Monitoring Well	MB116	25/09/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	86	200	34	15	173	130
Groundwater Monitoring Well	MB116	11/12/2003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	31	350	84	30	355	110
Groundwater Monitoring Well	MB116	15/03/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	75	280	48	13	301	440
Groundwater Monitoring Well	MB116	30/06/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	67	340	38	8.9	266	94
Groundwater Monitoring Well	MB116	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	69	350	37	9	257	84
Groundwater Monitoring Well	MB116	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	62	330	39	8.4	266	100
Groundwater Monitoring Well	MB116	16/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	57	330	41	7.9	262	100
Groundwater Monitoring Well	MB116	29/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	70	350	45	9.6	289	100
Groundwater Monitoring Well	MB116	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	24	400	38	8.8	271	70
Groundwater Monitoring Well	MB116	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	59	380	38	9.6	253	81
Groundwater Monitoring Well	MB116	7/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	64	360	35	8.9	244	73
Groundwater Monitoring Well	MB116	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	81	310	50	13	255	60
Groundwater Monitoring Well	MB116	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	3/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				OP Pesticides						PCBs							Major Ions					
				Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dimethoate	Ethion	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%					0.01		0.01	0.15					0.6		0.03							
ANZECC 2000 FW Med-Low Reliability					0.01		0.01	0.15		0.001	1	0.3	0.3	0.03	0.01							
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																			
Groundwater Monitoring Well	MB301	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB301	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB302	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB303	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB304	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	12/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	12	110	7.6	0.8	56	16
Groundwater Monitoring Well	MB305	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	6.9	94	4.3	1.6	75	13
Groundwater Monitoring Well	MB305	7/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	8.1	100	5.1	2	71	14
Groundwater Monitoring Well	MB305	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	21	95	20	6.9	67	12
Groundwater Monitoring Well	MB305	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB305	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	4	92	8.7	1.6	53	10
Groundwater Monitoring Well	MB305	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	4.6	90	9.9	1.5	54	9
Groundwater Monitoring Well	MB305	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	4.2	100	9.6	1.8	52	9
Groundwater Monitoring Well	MB305	13/03/2013	Normal	<0.2	<0.2	<0.2	<200	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	7.9	93	13	4	58	10
Groundwater Monitoring Well	MB305	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	4.2	96	11	1.7	56	10
Groundwater Monitoring Well	MB306	3/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	14/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	11/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	14/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	31/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	12	110	7.6	0.8	56	7
Groundwater Monitoring Well	MB306	7/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	10	110	7.3	0.6	52	9
Groundwater Monitoring Well	MB306	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	11	110	7.8	0.8	56	8
Groundwater Monitoring Well	MB306	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater Monitoring Well	MB306	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	100	6.6	0.6	54	7
Groundwater Monitoring Well	MB306	12/09/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.6	100	7.6	0.7	56	8
Groundwater Monitoring Well	MB306	17/12/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	3.4	110	7.3	0.6	56	7
Groundwater Monitoring Well	MB306	13/03/2013	Normal	<0.2	<0.2	<0.2	<200	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	5.6	100	7.8	1.1	62	8
Groundwater Monitoring Well	MB306	24/06/2014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	4.4	110	8.3	0.7	61	8
Statistical Summary																						
Number of Results				10	10	10	10	10	10	10	10	10	10	10	10	10	396	272	398	398	396	492
Number of Detects				0	0	0	0	0	0	0	0	0	0	0	0	0	386	270	398	397	396	492
Minimum Concentration				<0.2	<0.2	<0.2	<200	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	0.05	<5	1	0.05	19	0.05
Minimum Detect				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.05	13	1	0.05	19	0.05
Maximum Concentration				<0.2	<0.2	<0.2	<200	<0.2	<0.2	<2	<2	<2	<2	<2	<2	<2	86	1900	110	74	1200	440
Maximum Detect				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	86	1900	110	74	1200	440
Average Concentration				0.1	0.1	0.1	100	0.1	0.1	1	1	1	1	1	1	1	8.9	246	20	3.3	119	21
Geometric Average				0.1	0.1	0.1	100	0.1	0.1	1	1	1	1	1	1	1	3.8	147	14	1.6	13	12
Median Concentration				0.1	0.1	0.1	100	0.1	0.1	1	1	1	1	1	1	1	5.4	100	10	1.6	53	10
Standard Deviation				0	0	0	0	0	0	0	0	0	0	0	0	0	12	298	22	6.9	133	31
Geometric Standard Deviation																	4.9	2.6	2.3	3.1	2.3	2.8

Appendix D
Table D2
Groundwater Quality Data

				Nutrients			
				Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total)
				mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				0.9	0.158		
ANZECC 2000 FW Med-Low Reliability					0.7		
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**				
Groundwater Monitoring Well	MB001	1/02/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB001	1/03/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB001	1/04/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB001	1/05/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB001	1/06/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB001	1/07/1995	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB001	1/08/1995	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB001	1/09/1995	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB001	1/10/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB001	1/11/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB001	1/12/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB001	1/01/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB001	1/02/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB001	1/03/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB001	16/07/1996	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB001	14/08/1996	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB001	17/09/1996	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB001	9/10/1996	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB001	19/11/1996	Normal	0.043	-	-	-
Groundwater Monitoring Well	MB001	10/12/1996	Normal	0.033	-	-	-
Groundwater Monitoring Well	MB001	29/01/1997	Normal	0.075	-	-	-
Groundwater Monitoring Well	MB001	18/02/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB001	19/03/1997	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB001	23/04/1997	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB001	19/05/1997	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB001	18/06/1997	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB001	22/07/1997	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB001	19/08/1997	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB001	18/09/1997	Normal	-	-	-	-
Groundwater Monitoring Well	MB001	16/10/1997	Normal	0.1	-	-	-
Groundwater Monitoring Well	MB001	21/11/1997	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB001	12/12/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB001	5/02/1998	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB001	5/03/1998	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB001	5/05/1998	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB001	3/06/1998	Normal	0.09	-	-	-
Groundwater Monitoring Well	MB001	1/07/1998	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB001	3/08/1998	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB001	2/09/1998	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB001	1/10/1998	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB001	4/11/1998	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB001	8/12/1998	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB001	6/01/1999	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB001	3/03/1999	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB001	2/06/1999	Normal	0.02	<0.01	-	-
Groundwater Monitoring Well	MB001	2/09/1999	Normal	0.06	<0.01	-	-
Groundwater Monitoring Well	MB001	2/12/1999	Normal	0.03	<0.01	-	-
Groundwater Monitoring Well	MB001	2/03/2000	Normal	0.06	<0.01	-	-
Groundwater Monitoring Well	MB001	1/06/2000	Normal	0.04	<0.01	-	-
Groundwater Monitoring Well	MB001	1/09/2000	Normal	0.04	<0.01	-	-
Groundwater Monitoring Well	MB001	20/11/2000	Normal	0.01	0.01	-	-
Groundwater Monitoring Well	MB001	8/12/2000	Normal	0.04	<0.01	-	-
Groundwater Monitoring Well	MB001	7/03/2001	Normal	0.02	<0.01	-	-
Groundwater Monitoring Well	MB001	1/06/2001	Normal	0.03	<0.01	-	-
Groundwater Monitoring Well	MB001	13/09/2001	Normal	0.02	<0.01	-	-
Groundwater Monitoring Well	MB001	11/12/2001	Normal	0.04	<0.01	-	-
Groundwater Monitoring Well	MB001	12/03/2002	Normal	0.03	0.01	-	-
Groundwater Monitoring Well	MB001	26/06/2002	Normal	0.02	0.005	-	-
Groundwater Monitoring Well	MB001	13/08/2002	Normal	0.04	0.01	-	-
Groundwater Monitoring Well	MB001	17/10/2002	Normal	0.05	0.005	-	-
Groundwater Monitoring Well	MB001	16/12/2002	Normal	0.04	0.005	-	-
Groundwater Monitoring Well	MB001	20/03/2003	Normal	0.03	0.63	-	-
Groundwater Monitoring Well	MB001	30/06/2003	Normal	0.07	0.005	-	-
Groundwater Monitoring Well	MB001	25/09/2003	Normal	0.05	0.005	-	-
Groundwater Monitoring Well	MB001	11/12/2003	Normal	0.02	0.005	-	-
Groundwater Monitoring Well	MB001	15/03/2004	Normal	0.04	0.005	-	-
Groundwater Monitoring Well	MB008	1/02/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	1/03/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	1/04/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	1/05/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	1/06/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	1/07/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB008	1/08/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB008	1/09/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB008	1/10/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB008	1/11/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB008	1/12/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB008	1/01/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB008	1/02/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB008	1/03/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB008	1/04/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB008	1/05/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB008	1/06/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB008	16/07/1996	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	15/08/1996	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	18/09/1996	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB008	10/10/1996	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	20/11/1996	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	11/12/1996	Normal	0.06	-	-	-
Groundwater Monitoring Well	MB008	31/01/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	19/02/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	20/03/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	23/04/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	20/05/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	17/06/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	22/07/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	19/08/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	18/09/1997	Normal	0.01	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				Nutrients			
				Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total)
				mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				0.9	0.158		
ANZECC 2000 FW Med-Low Reliability					0.7		
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**				
Groundwater Monitoring Well	MB008	16/10/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	20/11/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	11/12/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	8/01/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	5/02/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	5/03/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	2/04/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	6/05/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	3/06/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	1/07/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	3/08/1998	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	2/09/1998	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	1/10/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	4/11/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	8/12/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	6/01/1999	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	3/03/1999	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	2/06/1999	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	2/09/1999	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	2/12/1999	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	2/03/2000	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	1/06/2000	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	1/09/2000	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	20/11/2000	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	8/12/2000	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	7/03/2001	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	1/06/2001	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	13/09/2001	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	11/12/2001	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	12/03/2002	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	26/06/2002	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB008	13/08/2002	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB008	17/10/2002	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB008	16/12/2002	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB008	20/03/2003	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB008	30/06/2003	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB008	25/09/2003	Normal	0.05	0.01	-	-
Groundwater Monitoring Well	MB008	11/12/2003	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB008	15/03/2004	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB008	30/06/2004	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB008	8/09/2004	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB008	13/12/2004	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB008	16/03/2005	Normal	0.02	<0.01	-	-
Groundwater Monitoring Well	MB008	30/06/2005	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB008	28/09/2005	Normal	0.0025	-	-	-
Groundwater Monitoring Well	MB008	7/12/2005	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	6/03/2006	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB008	6/06/2006	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB008	27/09/2006	Normal	-	-	-	-
Groundwater Monitoring Well	MB008	5/06/2012	Normal	<0.005	-	-	-
Groundwater Monitoring Well	MB008	11/09/2012	Normal	<0.005	-	-	-
Groundwater Monitoring Well	MB008	17/12/2012	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB008	13/03/2013	Normal	<0.005	0.027	<0.005	-
Groundwater Monitoring Well	MB008	24/06/2014	Normal	0.011	-	-	-
Groundwater Monitoring Well	MB016	1/02/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB016	1/03/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB016	1/04/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB016	1/05/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB016	1/06/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB016	1/07/1995	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB016	1/08/1995	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB016	1/09/1995	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB016	1/10/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB016	1/11/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB016	1/12/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB016	1/01/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB016	1/02/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB016	1/03/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB016	1/04/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB016	1/05/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB016	1/06/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB016	16/07/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB016	14/08/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB016	17/09/1996	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB016	10/10/1996	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB016	19/11/1996	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB016	10/12/1996	Normal	0.051	-	-	-
Groundwater Monitoring Well	MB016	30/01/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB016	19/02/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB016	19/03/1997	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB016	23/04/1997	Normal	0.06	-	-	-
Groundwater Monitoring Well	MB016	20/05/1997	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB016	17/06/1997	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB016	22/07/1997	Normal	0.06	-	-	-
Groundwater Monitoring Well	MB016	19/08/1997	Normal	0.06	-	-	-
Groundwater Monitoring Well	MB016	18/09/1997	Normal	0.06	-	-	-
Groundwater Monitoring Well	MB016	16/10/1997	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB016	20/11/1997	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB016	11/12/1997	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB016	8/01/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB016	6/02/1998	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB016	5/03/1998	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB016	2/04/1998	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB016	6/05/1998	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB016	3/06/1998	Normal	0.06	-	-	-
Groundwater Monitoring Well	MB016	1/07/1998	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB016	3/08/1998	Normal	0.1	-	-	-
Groundwater Monitoring Well	MB016	2/09/1998	Normal	0.07	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				Nutrients			
				Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total)
				mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				0.9	0.158		
ANZECC 2000 FW Med-Low Reliability					0.7		
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**				
Groundwater Monitoring Well	MB016	1/10/1998	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB016	4/11/1998	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB016	8/12/1998	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB016	6/01/1999	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB016	3/03/1999	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB016	2/06/1999	Normal	0.03	<0.01	-	-
Groundwater Monitoring Well	MB016	2/09/1999	Normal	0.08	0.04	-	-
Groundwater Monitoring Well	MB016	2/12/1999	Normal	0.05	<0.01	-	-
Groundwater Monitoring Well	MB016	2/03/2000	Normal	0.05	<0.01	-	-
Groundwater Monitoring Well	MB016	1/06/2000	Normal	0.07	<0.01	-	-
Groundwater Monitoring Well	MB016	1/09/2000	Normal	0.06	<0.01	-	-
Groundwater Monitoring Well	MB016	20/11/2000	Normal	0.02	0.02	-	-
Groundwater Monitoring Well	MB016	8/12/2000	Normal	0.04	0.01	-	-
Groundwater Monitoring Well	MB016	7/03/2001	Normal	0.04	0.02	-	-
Groundwater Monitoring Well	MB016	1/06/2001	Normal	0.03	<0.01	-	-
Groundwater Monitoring Well	MB016	13/09/2001	Normal	0.03	0.01	-	-
Groundwater Monitoring Well	MB016	11/12/2001	Normal	0.04	<0.01	-	-
Groundwater Monitoring Well	MB016	12/03/2002	Normal	0.05	0.02	-	-
Groundwater Monitoring Well	MB017	1/02/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB017	1/03/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB017	1/04/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB017	1/05/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB017	1/06/1995	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB017	1/07/1995	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB017	1/08/1995	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB017	1/09/1995	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB017	1/10/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB017	1/11/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB017	1/12/1995	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB017	1/01/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB017	1/02/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB017	1/03/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB017	1/04/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB017	1/05/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB017	16/07/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB017	14/08/1996	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB017	17/09/1996	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB017	9/10/1996	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB017	19/11/1996	Normal	0.042	-	-	-
Groundwater Monitoring Well	MB017	10/12/1996	Normal	0.045	-	-	-
Groundwater Monitoring Well	MB017	29/01/1997	Normal	0.043	-	-	-
Groundwater Monitoring Well	MB017	18/02/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB017	19/03/1997	Normal	0.06	-	-	-
Groundwater Monitoring Well	MB017	23/04/1997	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB017	19/05/1997	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB017	18/06/1997	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB017	22/07/1997	Normal	0.06	-	-	-
Groundwater Monitoring Well	MB017	19/08/1997	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB017	18/09/1997	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB017	16/10/1997	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB017	21/11/1997	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB017	12/12/1997	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB017	5/02/1998	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB017	5/03/1998	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB017	2/04/1998	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB017	5/05/1998	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB017	3/06/1998	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB017	1/07/1998	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB017	3/08/1998	Normal	0.07	-	-	-
Groundwater Monitoring Well	MB017	2/09/1998	Normal	0.06	-	-	-
Groundwater Monitoring Well	MB017	1/10/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB017	4/11/1998	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB017	8/12/1998	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB017	6/01/1999	Normal	0.06	-	-	-
Groundwater Monitoring Well	MB017	3/03/1999	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB017	2/06/1999	Normal	0.03	<0.01	-	-
Groundwater Monitoring Well	MB017	2/09/1999	Normal	0.06	<0.01	-	-
Groundwater Monitoring Well	MB017	2/12/1999	Normal	0.03	<0.01	-	-
Groundwater Monitoring Well	MB017	2/03/2000	Normal	0.05	<0.01	-	-
Groundwater Monitoring Well	MB017	1/06/2000	Normal	0.07	<0.01	-	-
Groundwater Monitoring Well	MB017	1/09/2000	Normal	0.04	<0.01	-	-
Groundwater Monitoring Well	MB017	20/11/2000	Normal	<0.01	0.01	-	-
Groundwater Monitoring Well	MB017	8/12/2000	Normal	<0.01	<0.01	-	-
Groundwater Monitoring Well	MB017	7/03/2001	Normal	0.02	<0.01	-	-
Groundwater Monitoring Well	MB017	1/06/2001	Normal	0.04	<0.01	-	-
Groundwater Monitoring Well	MB017	13/09/2001	Normal	0.03	<0.01	-	-
Groundwater Monitoring Well	MB017	11/12/2001	Normal	0.05	<0.01	-	-
Groundwater Monitoring Well	MB017	12/03/2002	Normal	0.03	<0.01	-	-
Groundwater Monitoring Well	MB017	26/06/2002	Normal	0.03	0.005	-	-
Groundwater Monitoring Well	MB017	13/08/2002	Normal	0.04	0.02	-	-
Groundwater Monitoring Well	MB017	17/10/2002	Normal	0.06	0.005	-	-
Groundwater Monitoring Well	MB017	16/12/2002	Normal	0.02	0.005	-	-
Groundwater Monitoring Well	MB017	20/03/2003	Normal	0.03	0.02	-	-
Groundwater Monitoring Well	MB017	30/06/2003	Normal	0.1	0.005	-	-
Groundwater Monitoring Well	MB017	25/09/2003	Normal	0.05	0.005	-	-
Groundwater Monitoring Well	MB017	11/12/2003	Normal	0.03	0.005	-	-
Groundwater Monitoring Well	MB017	15/03/2004	Normal	0.06	0.005	-	-
Groundwater Monitoring Well	MB018	1/01/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB018	1/02/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB018	1/03/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB018	1/04/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB018	1/05/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB018	1/06/1996	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB018	17/07/1996	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	14/08/1996	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	17/09/1996	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	10/10/1996	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	20/11/1996	Normal	0.01	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				Nutrients			
				Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total)
				mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				0.9	0.158		
ANZECC 2000 FW Med-Low Reliability					0.7		
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**				
Groundwater Monitoring Well	MB018	10/12/1996	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	31/01/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	19/02/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	19/03/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	23/04/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	20/05/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	18/06/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	22/07/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	19/08/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	18/09/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	16/10/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	21/11/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	11/12/1997	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB018	8/01/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	5/02/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	5/03/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	2/04/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	6/05/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	3/06/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	1/07/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	3/08/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	2/09/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	1/10/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	23/11/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	8/12/1998	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	6/01/1999	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	3/03/1999	Normal	0.005	-	-	-
Groundwater Monitoring Well	MB018	2/06/1999	Normal	0.005	0.03	-	-
Groundwater Monitoring Well	MB018	2/09/1999	Normal	0.005	0.04	-	-
Groundwater Monitoring Well	MB018	2/12/1999	Normal	0.005	0.04	-	-
Groundwater Monitoring Well	MB018	2/03/2000	Normal	0.005	0.03	-	-
Groundwater Monitoring Well	MB018	1/06/2000	Normal	-	-	-	-
Groundwater Monitoring Well	MB018	1/09/2000	Normal	0.005	0.02	-	-
Groundwater Monitoring Well	MB018	20/11/2000	Normal	0.005	0.04	-	-
Groundwater Monitoring Well	MB018	8/12/2000	Normal	0.005	0.04	-	-
Groundwater Monitoring Well	MB018	7/03/2001	Normal	0.005	0.03	-	-
Groundwater Monitoring Well	MB018	1/06/2001	Normal	0.08	0.04	-	-
Groundwater Monitoring Well	MB018	13/09/2001	Normal	0.005	0.04	-	-
Groundwater Monitoring Well	MB018	11/12/2001	Normal	0.005	0.04	-	-
Groundwater Monitoring Well	MB018	12/03/2002	Normal	0.005	0.04	-	-
Groundwater Monitoring Well	MB018	26/06/2002	Normal	0.005	0.03	-	-
Groundwater Monitoring Well	MB018	13/08/2002	Normal	0.005	0.03	-	-
Groundwater Monitoring Well	MB018	17/10/2002	Normal	0.01	0.03	-	-
Groundwater Monitoring Well	MB018	16/12/2002	Normal	0.03	0.005	-	-
Groundwater Monitoring Well	MB018	20/03/2003	Normal	0.005	0.02	-	-
Groundwater Monitoring Well	MB018	30/06/2003	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB018	25/09/2003	Normal	0.005	0.02	-	-
Groundwater Monitoring Well	MB018	11/12/2003	Normal	0.005	0.02	-	-
Groundwater Monitoring Well	MB018	15/03/2004	Normal	0.005	0.03	-	-
Groundwater Monitoring Well	MB018	30/06/2004	Normal	0.09	0.03	-	-
Groundwater Monitoring Well	MB018	8/09/2004	Normal	0.005	0.03	-	-
Groundwater Monitoring Well	MB018	13/12/2004	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB018	16/03/2005	Normal	0.005	0.24	-	-
Groundwater Monitoring Well	MB018	30/06/2005	Normal	0.005	0.02	-	-
Groundwater Monitoring Well	MB023	5/06/2012	Normal	0.083	-	-	-
Groundwater Monitoring Well	MB025	1/06/2000	Normal	0.13	<0.01	-	-
Groundwater Monitoring Well	MB025	1/09/2000	Normal	0.05	0.01	-	-
Groundwater Monitoring Well	MB025	20/11/2000	Normal	0.05	0.02	-	-
Groundwater Monitoring Well	MB025	8/12/2000	Normal	0.05	0.03	-	-
Groundwater Monitoring Well	MB025	7/03/2001	Normal	0.04	0.02	-	-
Groundwater Monitoring Well	MB025	1/06/2001	Normal	0.05	<0.01	-	-
Groundwater Monitoring Well	MB025	13/09/2001	Normal	0.05	<0.01	-	-
Groundwater Monitoring Well	MB025	11/12/2001	Normal	0.03	0.005	-	-
Groundwater Monitoring Well	MB025	12/03/2002	Normal	0.05	0.02	-	-
Groundwater Monitoring Well	MB025	26/06/2002	Normal	0.06	0.03	-	-
Groundwater Monitoring Well	MB025	13/08/2002	Normal	0.06	0.04	-	-
Groundwater Monitoring Well	MB025	16/10/2002	Normal	0.13	0.02	-	-
Groundwater Monitoring Well	MB025	16/12/2002	Normal	0.08	0.01	-	-
Groundwater Monitoring Well	MB025	20/03/2003	Normal	0.09	0.005	-	-
Groundwater Monitoring Well	MB025	30/06/2003	Normal	0.1	0.005	-	-
Groundwater Monitoring Well	MB025	25/09/2003	Normal	0.05	0.005	-	-
Groundwater Monitoring Well	MB025	11/12/2003	Normal	0.04	0.005	-	-
Groundwater Monitoring Well	MB025	15/03/2004	Normal	0.05	0.005	-	-
Groundwater Monitoring Well	MB025	30/06/2004	Normal	0.07	0.005	-	-
Groundwater Monitoring Well	MB025	8/09/2004	Normal	0.12	0.005	-	-
Groundwater Monitoring Well	MB025	13/12/2004	Normal	0.01	0.005	-	-
Groundwater Monitoring Well	MB025	16/03/2005	Normal	0.14	<0.01	-	-
Groundwater Monitoring Well	MB025	30/06/2005	Normal	0.05	<0.01	-	-
Groundwater Monitoring Well	MB025	28/09/2005	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB025	7/12/2005	Normal	0.08	-	-	-
Groundwater Monitoring Well	MB025	6/03/2006	Normal	0.06	-	-	-
Groundwater Monitoring Well	MB025	6/06/2006	Normal	0.09	-	-	-
Groundwater Monitoring Well	MB032	13/12/2006	Normal	0.11	-	-	-
Groundwater Monitoring Well	MB032	23/05/2007	Normal	0.02	<0.01	<0.01	-
Groundwater Monitoring Well	MB032	12/07/2007	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB032	7/06/2012	Normal	-	-	-	0.02
Groundwater Monitoring Well	MB032	12/09/2012	Normal	0.032	-	-	-
Groundwater Monitoring Well	MB032	17/12/2012	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB032	13/03/2013	Normal	0.12	0.025	<0.005	-
Groundwater Monitoring Well	MB032	24/06/2014	Normal	0.87	-	-	-
Groundwater Monitoring Well	MB033	13/12/2006	Normal	<0.01	-	-	-
Groundwater Monitoring Well	MB033	23/05/2007	Normal	<0.01	<0.01	<0.01	-
Groundwater Monitoring Well	MB033	12/07/2007	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB033	7/06/2012	Normal	-	-	-	0.01
Groundwater Monitoring Well	MB033	12/09/2012	Normal	0.022	-	-	-
Groundwater Monitoring Well	MB033	17/12/2012	Normal	<0.005	-	-	-
Groundwater Monitoring Well	MB033	13/03/2013	Normal	0.009	0.022	<0.005	-
Groundwater Monitoring Well	MB033	24/06/2014	Normal	0.044	-	-	-

Appendix D
Table D2
Groundwater Quality Data

				Nutrients			
				Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total)
				mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				0.9	0.158		
ANZECC 2000 FW Med-Low Reliability					0.7		
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**				
Groundwater Monitoring Well	MB034	13/12/2006	Normal	<0.01	-	-	-
Groundwater Monitoring Well	MB034	23/05/2007	Normal	<0.01	<0.01	<0.01	-
Groundwater Monitoring Well	MB034	12/07/2007	Normal	<0.01	-	-	-
Groundwater Monitoring Well	MB034	7/06/2012	Normal	-	-	-	<0.005
Groundwater Monitoring Well	MB034	12/09/2012	Normal	0.009	-	-	-
Groundwater Monitoring Well	MB034	17/12/2012	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB034	13/03/2013	Normal	0.039	0.006	<0.005	-
Groundwater Monitoring Well	MB034	24/06/2014	Normal	0.008	-	-	-
Groundwater Monitoring Well	MB035	13/12/2006	Normal	0.31	-	-	-
Groundwater Monitoring Well	MB035	16/01/2007	Normal	0.284	-	-	-
Groundwater Monitoring Well	MB035	23/05/2007	Normal	<0.01	<0.01	<0.01	-
Groundwater Monitoring Well	MB035	12/07/2007	Normal	<0.01	-	-	-
Groundwater Monitoring Well	MB035	7/06/2012	Normal	-	-	-	<0.005
Groundwater Monitoring Well	MB035	12/09/2012	Normal	<0.005	-	-	-
Groundwater Monitoring Well	MB035	17/12/2012	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB035	13/03/2013	Normal	0.021	0.016	<0.005	-
Groundwater Monitoring Well	MB035	24/06/2014	Normal	0.31	-	-	-
Groundwater Monitoring Well	MB038	7/06/2012	Normal	-	-	-	0.008
Groundwater Monitoring Well	MB038	12/09/2012	Normal	0.038	-	-	-
Groundwater Monitoring Well	MB038	17/12/2012	Normal	0.073	-	-	-
Groundwater Monitoring Well	MB038	13/03/2013	Normal	<0.005	0.09	<0.005	-
Groundwater Monitoring Well	MB038	24/06/2014	Normal	0.12	-	-	-
Groundwater Monitoring Well	MB040	7/06/2012	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB040	12/09/2012	Normal	0.36	-	-	-
Groundwater Monitoring Well	MB040	17/12/2012	Normal	0.008	-	-	-
Groundwater Monitoring Well	MB040	13/03/2013	Normal	0.009	1.8	0.005	-
Groundwater Monitoring Well	MB040	24/06/2014	Normal	0.009	-	-	-
Groundwater Monitoring Well	MB041	7/06/2012	Normal	0.34	-	-	-
Groundwater Monitoring Well	MB041	12/09/2012	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB041	17/12/2012	Normal	0.4	-	-	-
Groundwater Monitoring Well	MB041	13/03/2013	Normal	0.18	0.16	<0.005	-
Groundwater Monitoring Well	MB041	24/06/2014	Normal	0.2	-	-	-
Groundwater Monitoring Well	MB044	7/06/2012	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB045	7/06/2012	Normal	<0.005	-	-	-
Groundwater Monitoring Well	MB101	12/08/2004	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB101	7/09/2004	Normal	0.05	<0.01	-	-
Groundwater Monitoring Well	MB101	13/12/2004	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB101	16/03/2005	Normal	0.06	<0.01	-	-
Groundwater Monitoring Well	MB101	29/06/2005	Normal	0.05	<0.01	-	-
Groundwater Monitoring Well	MB101	28/09/2005	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB101	7/12/2005	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB101	6/03/2006	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB101	6/06/2006	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB101	15/08/2006	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB104	12/08/2004	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB104	8/09/2004	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB104	14/12/2004	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB104	16/03/2005	Normal	0.03	<0.01	-	-
Groundwater Monitoring Well	MB104	29/06/2005	Normal	0.03	<0.01	-	-
Groundwater Monitoring Well	MB104	28/09/2005	Normal	0.39	-	-	-
Groundwater Monitoring Well	MB104	7/12/2005	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB104	6/03/2006	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB104	6/06/2006	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB104	15/08/2006	Normal	-	-	-	-
Groundwater Monitoring Well	MB114	30/06/2003	Normal	0.005	0.02	-	-
Groundwater Monitoring Well	MB114	25/09/2003	Normal	0.02	0.005	-	-
Groundwater Monitoring Well	MB114	11/12/2003	Normal	0.02	0.005	-	-
Groundwater Monitoring Well	MB114	15/03/2004	Normal	0.005	0.005	-	-
Groundwater Monitoring Well	MB114	30/06/2004	Normal	0.04	0.04	-	-
Groundwater Monitoring Well	MB114	8/09/2004	Normal	0.07	0.01	-	-
Groundwater Monitoring Well	MB114	14/12/2004	Normal	0.005	<0.01	-	-
Groundwater Monitoring Well	MB114	16/03/2005	Normal	0.05	<0.01	-	-
Groundwater Monitoring Well	MB114	29/06/2005	Normal	0.04	<0.01	-	-
Groundwater Monitoring Well	MB114	28/09/2005	Normal	0.09	-	-	-
Groundwater Monitoring Well	MB114	7/12/2005	Normal	0.04	-	-	-
Groundwater Monitoring Well	MB114	7/03/2006	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB114	6/06/2006	Normal	0.09	-	-	-
Groundwater Monitoring Well	MB114	27/09/2006	Normal	-	-	-	-
Groundwater Monitoring Well	MB115	30/06/2003	Normal	0.05	0.005	-	-
Groundwater Monitoring Well	MB115	25/09/2003	Normal	0.1	0.05	-	-
Groundwater Monitoring Well	MB115	11/12/2003	Normal	0.02	0.005	-	-
Groundwater Monitoring Well	MB115	15/03/2004	Normal	0.05	0.005	-	-
Groundwater Monitoring Well	MB115	30/06/2004	Normal	0.05	0.005	-	-
Groundwater Monitoring Well	MB115	8/09/2004	Normal	0.07	0.01	-	-
Groundwater Monitoring Well	MB115	14/12/2004	Normal	0.05	0.02	-	-
Groundwater Monitoring Well	MB115	16/03/2005	Normal	0.09	<0.01	-	-
Groundwater Monitoring Well	MB115	29/06/2005	Normal	0.1	<0.01	-	-
Groundwater Monitoring Well	MB115	28/09/2005	Normal	0.1	-	-	-
Groundwater Monitoring Well	MB115	7/12/2005	Normal	0.08	-	-	-
Groundwater Monitoring Well	MB115	7/03/2006	Normal	0.07	-	-	-
Groundwater Monitoring Well	MB115	6/06/2006	Normal	0.08	-	-	-
Groundwater Monitoring Well	MB115	27/09/2006	Normal	-	-	-	-
Groundwater Monitoring Well	MB116	30/06/2003	Normal	0.24	0.005	-	-
Groundwater Monitoring Well	MB116	25/09/2003	Normal	0.03	0.03	-	-
Groundwater Monitoring Well	MB116	11/12/2003	Normal	0.31	0.005	-	-
Groundwater Monitoring Well	MB116	15/03/2004	Normal	0.21	0.02	-	-
Groundwater Monitoring Well	MB116	30/06/2004	Normal	0.17	0.17	-	-
Groundwater Monitoring Well	MB116	8/09/2004	Normal	0.19	0.2	-	-
Groundwater Monitoring Well	MB116	14/12/2004	Normal	0.06	0.36	-	-
Groundwater Monitoring Well	MB116	16/03/2005	Normal	0.22	0.24	-	-
Groundwater Monitoring Well	MB116	29/06/2005	Normal	0.26	0.02	-	-
Groundwater Monitoring Well	MB116	28/09/2005	Normal	0.17	-	-	-
Groundwater Monitoring Well	MB116	7/12/2005	Normal	0.03	-	-	-
Groundwater Monitoring Well	MB116	7/03/2006	Normal	0.19	-	-	-
Groundwater Monitoring Well	MB116	6/06/2006	Normal	0.25	-	-	-
Groundwater Monitoring Well	MB116	27/09/2006	Normal	-	-	-	-
Groundwater Monitoring Well	MB301	3/09/2004	Normal	0.34	0.08	-	-
Groundwater Monitoring Well	MB301	8/09/2004	Normal	0.37	0.06	-	-

Appendix D
Table D2
Groundwater Quality Data

				Nutrients			
				Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total)
				mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				0.9	0.158		
ANZECC 2000 FW Med-Low Reliability					0.7		
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**				
Groundwater Monitoring Well	MB301	14/10/2004	Normal	0.17	0.03	-	-
Groundwater Monitoring Well	MB301	11/11/2004	Normal	0.13	0.05	-	-
Groundwater Monitoring Well	MB301	14/12/2004	Normal	0.04	0.07	-	-
Groundwater Monitoring Well	MB301	31/01/2005	Normal	0.05	0.02	-	-
Groundwater Monitoring Well	MB302	12/08/2004	Normal	0.09	0.11	-	-
Groundwater Monitoring Well	MB302	8/09/2004	Normal	0.07	0.03	-	-
Groundwater Monitoring Well	MB302	14/10/2004	Normal	0.03	0.03	-	-
Groundwater Monitoring Well	MB302	11/11/2004	Normal	0.08	0.02	-	-
Groundwater Monitoring Well	MB302	14/12/2004	Normal	0.16	0.005	-	-
Groundwater Monitoring Well	MB302	31/01/2005	Normal	0.06	0.02	-	-
Groundwater Monitoring Well	MB303	12/08/2004	Normal	0.23	0.04	-	-
Groundwater Monitoring Well	MB303	8/09/2004	Normal	0.19	0.11	-	-
Groundwater Monitoring Well	MB303	14/10/2004	Normal	0.65	0.005	-	-
Groundwater Monitoring Well	MB303	11/11/2004	Normal	0.67	0.07	-	-
Groundwater Monitoring Well	MB303	14/12/2004	Normal	0.34	0.12	-	-
Groundwater Monitoring Well	MB303	31/01/2005	Normal	0.38	0.005	-	-
Groundwater Monitoring Well	MB304	12/08/2004	Normal	0.34	<0.01	-	-
Groundwater Monitoring Well	MB304	8/09/2004	Normal	0.3	0.03	-	-
Groundwater Monitoring Well	MB304	14/10/2004	Normal	0.46	0.005	-	-
Groundwater Monitoring Well	MB304	11/11/2004	Normal	0.4	0.005	-	-
Groundwater Monitoring Well	MB304	14/12/2004	Normal	0.44	0.005	-	-
Groundwater Monitoring Well	MB304	31/01/2005	Normal	0.35	0.005	-	-
Groundwater Monitoring Well	MB305	12/08/2004	Normal	0.08	<0.01	-	-
Groundwater Monitoring Well	MB305	8/09/2004	Normal	0.02	0.02	-	-
Groundwater Monitoring Well	MB305	14/10/2004	Normal	0.03	0.03	-	-
Groundwater Monitoring Well	MB305	11/11/2004	Normal	0.09	0.02	-	-
Groundwater Monitoring Well	MB305	14/12/2004	Normal	0.2	0.01	-	-
Groundwater Monitoring Well	MB305	31/01/2005	Normal	0.2	0.005	-	-
Groundwater Monitoring Well	MB305	28/09/2005	Normal	0.19	-	-	-
Groundwater Monitoring Well	MB305	7/12/2005	Normal	0.2	-	-	-
Groundwater Monitoring Well	MB305	7/03/2006	Normal	0.21	-	-	-
Groundwater Monitoring Well	MB305	6/06/2006	Normal	0.13	-	-	-
Groundwater Monitoring Well	MB305	27/09/2006	Normal	-	-	-	-
Groundwater Monitoring Well	MB305	7/06/2012	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB305	12/09/2012	Normal	0.039	-	-	-
Groundwater Monitoring Well	MB305	17/12/2012	Normal	0.02	-	-	-
Groundwater Monitoring Well	MB305	13/03/2013	Normal	0.007	2	<0.005	-
Groundwater Monitoring Well	MB305	24/06/2014	Normal	0.017	-	-	-
Groundwater Monitoring Well	MB306	3/09/2004	Normal	0.04	0.07	-	-
Groundwater Monitoring Well	MB306	8/09/2004	Normal	0.02	0.05	-	-
Groundwater Monitoring Well	MB306	14/10/2004	Normal	0.005	0.04	-	-
Groundwater Monitoring Well	MB306	11/11/2004	Normal	0.01	0.05	-	-
Groundwater Monitoring Well	MB306	14/12/2004	Normal	0.005	0.05	-	-
Groundwater Monitoring Well	MB306	31/01/2005	Normal	0.01	0.03	-	-
Groundwater Monitoring Well	MB306	28/09/2005	Normal	0.05	-	-	-
Groundwater Monitoring Well	MB306	7/03/2006	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB306	6/06/2006	Normal	0.01	-	-	-
Groundwater Monitoring Well	MB306	27/09/2006	Normal	-	-	-	-
Groundwater Monitoring Well	MB306	7/06/2012	Normal	<0.005	-	-	-
Groundwater Monitoring Well	MB306	12/09/2012	Normal	0.009	-	-	-
Groundwater Monitoring Well	MB306	17/12/2012	Normal	<0.005	-	-	-
Groundwater Monitoring Well	MB306	13/03/2013	Normal	0.041	0.11	<0.005	-
Groundwater Monitoring Well	MB306	24/06/2014	Normal	<0.01	-	-	-

Statistical Summary

Number of Results	529	217	14	5
Number of Detects	510	151	1	3
Minimum Concentration	0.0025	0.005	<0.005	<0.005
Minimum Detect	0.0025	0.005	0.005	0.008
Maximum Concentration	0.87	2	<0.01	0.02
Maximum Detect	0.87	2	0.005	0.02
Average Concentration	0.052	0.043	0.0034	0.0086
Geometric Average	0.098	0.012	0.0032	0.0063
Median Concentration	0.03	0.005	0.0025	0.008
Standard Deviation	0.089	0.19	0.0012	0.0072
Geometric Standard Deviation	3.3	3.3	1.4	2.5

Appendix D
Table D3
Main Site Sediment Dam

				Inorganics					Field				Phenols		Nutrients	
				Dissolved Oxygen (Lab) (Filtered)	pH (Lab)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	Phenol	Phenolics Total	Ammonia	Ammonia as N
				mg/L	pH Units	mg/L	mg/L	NTU	mg/L	uS/cm	µg/L	µg/L	mg/L	mg/L
ANZECC 2000 FW 95%											320		1.094	0.9
ANZECC 2000 FW Med-Low Reliability											320		0.9	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**											
Main Site Surface Water Dam	OF001	18/04/2012	Normal	-	-	-	70	-	-	-	-	-	6.8	-
Main Site Surface Water Dam	OF001	6/06/2012	Normal	9.49	7.5	-	270	-	-	-	<2	-	-	-
Main Site Surface Water Dam	OF001	29/01/2013	Normal	-	-	-	750	-	-	-	-	-	1	-
Main Site Surface Water Dam	OF001	5/04/2013	Normal	-	-	-	120	-	-	-	-	-	2.7	-
Main Site Surface Water Dam	OF005	27/02/2007	Normal	-	6.62	-	-	669	3.68	251	-	-	-	0.6
Main Site Surface Water Dam	OF005	9/06/2007	Normal	-	7.08	-	-	285	7.85	231	-	-	-	0.5
Main Site Surface Water Dam	OF005	19/06/2007	Normal	-	6.83	-	-	>1000	2.42	324	-	-	-	0.5
Main Site Surface Water Dam	OF005	26/06/2007	Normal	-	7.1	-	-	191	1.66	353	-	-	-	3.2
Main Site Surface Water Dam	OF005	27/06/2007	Normal	-	7.09	-	-	183	1.5	324	-	-	-	3.7
Main Site Surface Water Dam	OF005	3/07/2007	Normal	-	7.31	-	-	24.8	3.39	348	-	-	-	3.6
Main Site Surface Water Dam	OF005	21/04/2008	Normal	-	7.7	13	78	-	-	510	-	<10	-	4.46
Main Site Surface Water Dam	OF005	4/06/2008	Normal	-	7.7	-	350	-	-	381	-	<10	-	2.09
Main Site Surface Water Dam	OF005	29/07/2008	Normal	-	7.7	-	210	-	-	383	-	120	-	1.86
Main Site Surface Water Dam	OF005	25/08/2008	Normal	-	7.7	-	130	-	-	376	-	280	-	1.12
Main Site Surface Water Dam	OF005	6/09/2008	Normal	-	7.6	15	288	-	-	416	-	340	-	1.59
Main Site Surface Water Dam	OF005	14/12/2008	Normal	-	7.3	-	511	-	-	257	-	440	-	0.75
Main Site Surface Water Dam	OF005	15/02/2009	Normal	-	7.2	-	654	-	-	265	-	240	-	0.94
Main Site Surface Water Dam	SD005	12/09/2012	Normal	-	-	-	9	-	-	-	-	-	-	2.6
Main Site Surface Water Dam	SD005	12/12/2012	Normal	-	-	-	10	-	-	-	-	-	-	0.25
Main Site Surface Water Dam	SD5	12/09/2006	Normal	-	6.88	-	-	>1000	8.6	255	-	-	-	0.1
Main Site Surface Water Dam	SD5	25/10/2006	Normal	-	7.63	-	-	36.57	11.73	681	-	-	-	3.8
Main Site Surface Water Dam	SD5	29/11/2006	Normal	-	7.72	-	-	41.95	4.51	705	-	-	-	-
Main Site Surface Water Dam	SD5	21/12/2006	Normal	-	6.9	-	-	286	3.98	400	-	-	-	3.1
Main Site Surface Water Dam	SD5	3/01/2007	Normal	-	6.74	-	-	873	5.91	233	-	-	-	1.6
Main Site Surface Water Dam	SD5	23/01/2007	Normal	-	6.99	-	-	110	9.15	276	-	-	-	1.3
Main Site Surface Water Dam	SD5	6/03/2007	Normal	-	6.63	-	-	670	9.64	262	-	-	-	0.8
Main Site Surface Water Dam	SD5	11/04/2007	Normal	-	7.12	-	-	210	3.86	324	-	-	-	0.1
Main Site Surface Water Dam	SD5	22/05/2007	Normal	-	7.39	-	-	374	5.68	245	-	-	-	0.2
Main Site Surface Water Dam	SD5	22/06/2007	Normal	-	7.15	-	-	212	2.12	304	-	-	-	2.2
Main Site Surface Water Dam	SD5	4/07/2007	Normal	-	7.24	-	-	20.01	3.18	334	-	-	-	3.2
Main Site Surface Water Dam	SD5	9/04/2008	Normal	-	7.48	-	-	11.54	6.72	472.1	-	-	-	3.9
Statistical Summary														
Number of Results				1	26	2	13	18	18	25	1	7	3	26
Number of Detects				1	26	2	13	18	18	25	0	5	3	26
Minimum Concentration				9.49	6.62	13	9	11.54	1.5	231	<2	<10	1	0.1
Minimum Detect				9.49	6.62	13	9	11.54	1.5	231	ND	120	1	0.1
Maximum Concentration				9.49	7.72	15	750	1000	11.73	705	<2	440	6.8	4.46
Maximum Detect				9.49	7.72	15	750	1000	11.73	705	ND	440	6.8	4.46
Average Concentration					7.2		265	344	5.3	356		204	3.5	1.8
Geometric Average					7.2		144	172	4.5	339		84	2.6	1.2
Median Concentration				9.49	7.22	14	210	211	4.245	324	1	240	2.7	1.595
Standard Deviation					0.35		242	343	3	125		167	3	1.4
Geometric Standard Deviation					1	1.1	4.1	4.1	1.9	1.4		7.2	2.6	3.1

Appendix D
Table D4
Mill Creek Water Quality

				Inorganics							Field				Metals	BTEX & MAH				
				BOD	Dissolved Oxygen (Lab) (Filtered)	Ortho Phosphorus (as P)	pH (Lab)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)	Lead	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)
				mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%															0.0034	950			350	
ANZECC 2000 FW Med-Low Reliability															0.0034	950	180	80	350	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																	
Mill Creek Monitoring Point	MC1	1/12/2000	Normal	-	-	-	7.9	-	210	190	6.52	679	6.6	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	18/01/2001	Normal	-	-	-	7.5	-	84	90	5.27	162	7.62	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	31/01/2001	Normal	-	-	-	7.4	-	656	330	9.23	318	6.34	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	8/02/2001	Normal	-	-	-	7.6	-	43	60	8.69	304	7.41	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	1/03/2001	Normal	-	-	-	7.3	-	64	110	6.19	392	6.49	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	23/04/2001	Normal	-	-	-	6.2	-	58	80	5.43	185	6.05	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	30/04/2001	Normal	-	-	-	6.8	-	92	130	7.81	192	6.99	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	8/05/2001	Normal	-	-	-	7.1	-	140	150	7.21	342	6.33	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	29/05/2001	Normal	-	-	-	8	-	180	280	8.14	362	7.19	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	11/07/2001	Normal	-	-	-	7.4	-	420	370	6.9	219	7.09	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	25/07/2001	Normal	-	-	-	7	-	70	90	6.79	233	7.45	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	27/08/2001	Normal	-	-	-	7.4	-	120	130	10.4	212	8.2	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	23/02/2003	Normal	-	-	-	7.2	-	380	350	4.08	327	6.08	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	13/03/2003	Normal	-	-	-	7.5	-	790	400	5.38	232	6.95	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	16/03/2003	Normal	-	-	-	7.4	-	150	190	4.17	364	6.79	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	11/04/2003	Normal	-	-	-	6.1	-	-	250	7.11	255	6.93	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	18/04/2003	Normal	-	-	-	7.7	-	-	180	8.14	395	7.02	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	26/04/2003	Normal	-	-	-	7.7	-	37	65	7.91	432	7.18	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	13/05/2003	Normal	-	-	-	7.3	-	1300	1200	7.41	213.6	7.41	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	25/05/2003	Normal	-	-	2.5	7.06	-	710	650	9.16	224	7.06	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	27/06/2003	Normal	-	-	-	8.23	-	170	270	12.36	299	7.36	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	4/07/2003	Normal	-	-	-	7.06	-	110	390	10.57	312	7.29	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	24/08/2003	Normal	-	-	-	7.29	-	160	200	9.19	217.5	7.52	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	4/12/2003	Normal	-	-	-	6.94	-	140	110	5.7	265	7.14	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	12/12/2003	Normal	-	-	-	7.57	-	360	440	8.34	469	7.34	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	26/02/2004	Normal	-	-	-	7.48	-	520	700	5.38	276	7.3	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	10/03/2004	Normal	-	-	-	7.1	-	24	40	4.87	269	6.76	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	22/03/2004	Normal	-	-	-	7.65	-	200	125	8.81	276	7.37	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	4/04/2004	Normal	-	-	-	7.63	-	950	1300	5.92	440	6.89	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	18/08/2004	Normal	-	-	-	7.45	-	1200	1650	14.21	243	6.66	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	8/09/2004	Normal	-	-	-	7.39	-	-	292	8.72	288	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	1/10/2004	Normal	-	-	-	7.43	-	1300	1680	10.52	219	6.57	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	18/10/2004	Normal	-	-	-	7.54	-	460	670	8.57	213	6.74	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	25/10/2004	Normal	-	-	-	7.73	-	250	290	4.63	299	7.21	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	6/11/2004	Normal	-	-	-	7.54	-	270	450	5.72	271	7.09	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	14/12/2004	Normal	-	-	-	7.45	-	300	580	6.02	358	7	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	21/12/2004	Normal	-	-	-	6.82	-	-	-	7.72	334	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	10/01/2005	Normal	-	-	-	7.92	-	-	-	0.75	12,113	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	20/01/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	21/01/2005	Normal	-	-	-	7.32	-	-	-	6.77	500	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	26/01/2005	Normal	-	-	-	6.99	-	-	-	4.7	690	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	28/01/2005	Normal	-	-	-	7.18	-	-	-	5.33	572	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	1/02/2005	Normal	-	-	-	7.18	-	-	-	5.39	499	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	2/02/2005	Normal	-	-	-	6.89	-	-	-	6.45	270	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	3/02/2005	Normal	-	-	-	6.99	-	570	800	7.19	343	7.11	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	10/02/2005	Normal	-	-	-	7.22	-	-	-	4.74	577	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	21/02/2005	Normal	-	-	-	7.42	-	280	480	6.8	313	6.9	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	22/02/2005	Normal	-	-	-	6.68	-	-	261	8.01	369	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	4/03/2005	Normal	-	-	-	7.37	-	-	561	6.74	371	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	4/03/2005	Normal	-	-	-	7.27	-	300	300	6.95	389	6.95	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	9/03/2005	Normal	-	-	-	6.9	-	-	89	3.96	463	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	18/03/2005	Normal	-	-	-	6.89	-	-	222.1	5.79	530	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	23/03/2005	Normal	-	-	-	7.62	-	440	630	9.15	364	7.21	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	4/04/2005	Normal	-	-	-	6.87	-	-	67.4	5.43	455	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	11/04/2005	Normal	-	-	-	6.75	-	-	66.8	4	363	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	19/04/2005	Normal	-	-	-	6.83	-	-	72.5	4.07	406	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	27/04/2005	Normal	-	-	-	6.79	-	-	90.5	3.19	391	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	5/05/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	10/05/2005	Normal	-	-	-	6.81	-	-	80	4.3	396	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	20/05/2005	Normal	-	-	-	6.71	-	-	65.2	7.33	349	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	7/06/2005	Normal	-	-	-	6.72	-	-	108.8	8.35	370	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	24/06/2005	Normal	-	-	-	6.64	-	-	118.7	5.92	360	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	28/06/2005	Normal	-	-	-	6.63	-	-	118.6	6.3	349	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	30/06/2005	Normal	-	-	-	-	-	-	-	10.28	317	6.99	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	5/07/2005	Normal	-	-	-	6.63	-	-	-	6.75	359	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	12/07/2005	Normal	-	-	-	7.21	-	-	-	9.55	365	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	19/07/2005	Normal	-	-	-	6.9	-	-	10.2	8.42	376	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	4/08/2005	Normal	-	-	-	6.63	-	-	-	8.8	394	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	16/08/2005	Normal	-	-	-	6.87	-	-	-	10.38	392	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	25/08/2005	Normal	-	-	-	6.83	-	-	-	9.42	399	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	29/09/2005	Normal	-	-	-	6.81	-	-	-	8.68	410	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	21/10/2005	Normal	-	-	-	6.82	-	-	-	9.52	301	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	2/11/2005	Normal	-	-	-	7.05	-	-	-	7.14	391	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	9/11/2005	Normal	-	-	-	6.94	-	-	-	6.34	386	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	28/11/2005	Normal	-	-	-	7.1	-	-	502	7.46	415	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	29/11/2005	Normal	-	-	-	7.5	-	-	297	7.92	326	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	24/01/2006	Normal	-	-	-	7.05	-	-	195	5.36	494	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	9/03/2006	Normal	-	-	-	7.08	-	-	262.5	4.62	386	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	3/04/2006	Normal	-	-	-	7.32	-	-	12.2	5.99	369	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	11/05/2006	Normal	-	-	-	7.01	-	-	7.46	4.81	385	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	12/09/2006	Normal	-	-	-	7.5	-	-	214	9.96	314	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	25/10/2006	Normal	-	-	-	7.58	-	-	41.32	13.2	553	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	2/01/2007	Normal	-	-	-	7.25	-	-	584	4.48	267	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	12/02/2007	Normal	-	-	-	7.32	-	-	704	8.52	236	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	27/02/2007	Normal	-	-	-	6.86	-	-	551	4.97	234	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	22/05/2007	Normal	-	-	-	7.7	-	-	7.82	9.5	252	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	22/06/2007	Normal	-	-	-	7.67	-	-	8.28	10.2	275	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	27/06/2007	Normal	-	-	-	8.29	-	-	55	7.99	348	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	10/04/2008	Normal	-	-	-	7.9	23	59	-	-	518	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	21/04/2008	Normal	-	-	-	8	15	23	-	-	487	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	21/04/2008	field_D	-	-	-	8	16	33	-	-	492	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	29/05/2008	Normal	-	-	-	7.2	10	160	-	-	352	-	-	-	-	-	-	-	-

Appendix D
Table D4
Mill Creek Water Quality

				Inorganics							Field				Metals	BTEX & MAH				
				BOD	Dissolved Oxygen (Lab) (Filtered)	Ortho Phosphorus (as P)	pH (Lab)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)	Lead	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)
				mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%															0.0034	950			350	
ANZECC 2000 FW Med-Low Reliability															0.0034	950	180	80	350	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																	
Mill Creek Monitoring Point	MC1	4/06/2008	Normal	-	-	-	7.6	-	290	-	-	371	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	29/07/2008	Normal	-	-	-	8.1	-	53	-	-	386	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	25/08/2008	Normal	-	-	-	8	-	36	-	-	409	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	6/09/2008	Normal	-	-	-	7.7	-	198	-	-	394	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	14/12/2008	Normal	-	-	-	7.6	-	274	-	-	309	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	15/02/2009	Normal	-	-	-	7.4	-	486	-	-	267	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	18/04/2012	Normal	-	6.35	-	7.8	-	150	-	-	-	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	6/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	7/06/2012	Normal	6	-	-	-	-	130	170	10.1	402	6.28	144.5	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	12/09/2012	Normal	-	6.61	-	6.85	-	10	-	-	-	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	29/01/2013	Normal	-	6	-	7	-	560	-	-	-	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	13/03/2013	Normal	<5	-	-	7	-	17	19	6.07	381	6.96	398	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	5/04/2013	Normal	-	-	-	7.4	-	42	-	-	-	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC1	24/06/2014	Normal	<5	-	-	6.4	-	18	13	6.61	424	-	-145	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	1/12/2000	Normal	-	-	-	8	-	150	110	6.12	313	6.83	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	18/01/2001	Normal	-	-	-	7.4	-	76	110	6.04	252	7.27	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	31/01/2001	Normal	-	-	-	6.7	-	769	290	8.58	277	6.46	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	8/02/2001	Normal	-	-	-	7.1	-	23	30	9.2	251	7.63	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	1/03/2001	Normal	-	-	-	7.2	-	130	150	6.32	625	7	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	23/04/2001	Normal	-	-	-	6.1	-	68	85	11.34	157.1	6.84	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	30/04/2001	Normal	-	-	-	6.9	-	150	180	7.99	176	7.12	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	8/05/2001	Normal	-	-	-	7	-	170	170	6.89	269	6.61	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	29/05/2001	Normal	-	-	-	7.4	-	78	85	8.08	369	6.1	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	11/07/2001	Normal	-	-	-	7.1	-	430	250	8.4	259	7.02	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	25/07/2001	Normal	-	-	-	7.2	-	27	30	6.3	336	7.54	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	27/08/2001	Normal	-	-	-	7.4	-	76	85	8.31	265	7.55	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	23/02/2003	Normal	-	-	-	7	-	77	85	6.43	217	6.85	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	13/03/2003	Normal	-	-	-	7.5	-	850	350	5.52	239.4	7.45	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	16/03/2003	Normal	-	-	-	7.6	-	150	180	4.89	345	6.79	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	11/04/2003	Normal	-	-	-	-	-	-	-	8.3	364	7.11	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	18/04/2003	Normal	-	-	-	-	-	-	-	8.23	384	6.9	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	26/04/2003	Normal	-	-	-	7.9	-	7	25	8.01	419	6.9	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	13/05/2003	Normal	-	-	-	6.8	-	870	1000	8.58	152.3	6.99	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	25/05/2003	Normal	-	-	2.5	7.19	-	420	500	8.62	253	6.95	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	27/06/2003	Normal	-	-	-	7.88	-	240	360	11.25	322	7.37	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	4/07/2003	Normal	-	-	-	7.15	-	230	340	8.68	393	7.23	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	24/08/2003	Normal	-	-	-	7.25	-	84	120	8.96	232	7.59	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	4/12/2003	Normal	-	-	-	6.95	-	38	25	6.64	219	7.46	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	12/12/2003	Normal	-	-	-	7.43	-	220	300	8.37	293	7.51	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	26/02/2004	Normal	-	-	-	7.3	-	410	590	4.61	247	7.31	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	10/03/2004	Normal	-	-	-	7.2	-	20	70	5.74	252	6.96	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	22/03/2004	Normal	-	-	-	7.5	-	310	135	5.62	222	7.39	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	4/04/2004	Normal	-	-	-	7.53	-	1290	1600	6.25	207	7.68	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	18/08/2004	Normal	-	-	-	7.33	-	900	1300	12.83	237	6.96	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	1/10/2004	Normal	-	-	-	7.11	-	210	240	9.21	174	6.33	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	18/10/2004	Normal	-	-	-	7.43	-	390	630	8.9	154	6.4	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	25/10/2004	Normal	-	-	-	7.19	-	180	300	6.38	279	7.07	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	6/11/2004	Normal	-	-	-	7.46	-	310	470	5.89	253	7.11	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	14/12/2004	Normal	-	-	-	7.39	-	290	530	4.73	297	7.23	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	21/12/2004	Normal	-	-	-	6.87	-	-	-	4.88	366	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	3/02/2005	Normal	-	-	-	7.12	-	450	610	6.39	386	6.97	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	21/02/2005	Normal	-	-	-	7.63	-	270	500	6.59	336	6.84	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	22/02/2005	Normal	-	-	-	6.56	-	-	370	7.69	346	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	4/03/2005	Normal	-	-	-	7.37	-	-	703	6.99	376	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	4/03/2005	Normal	-	-	-	7.52	-	280	300	7.41	374	6.9	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	9/03/2005	Normal	-	-	-	6.68	-	-	95	4.57	393	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	23/03/2005	Normal	-	-	-	7.55	-	400	530	9.43	334	7.02	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	4/04/2005	Normal	-	-	-	6.83	-	-	63.8	7.12	427	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	11/04/2005	Normal	-	-	-	6.96	-	-	93.6	5.41	338	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	19/04/2005	Normal	-	-	-	7.06	-	-	73.7	5.41	353	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	27/04/2005	Normal	-	-	-	7.04	-	-	148.8	4.45	375	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	5/05/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	10/05/2005	Normal	-	-	-	6.98	-	-	91.5	3.15	392	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	20/05/2005	Normal	-	-	-	6.83	-	-	420.6	5.76	298	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	7/06/2005	Normal	-	-	-	6.83	-	-	298.5	6.33	294	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	14/06/2005	Normal	-	-	-	7.02	-	-	313.1	6.62	294	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	24/06/2005	Normal	-	-	-	6.9	-	-	138	5.72	283	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	30/06/2005	Normal	-	-	-	-	-	-	-	8.6	347	7.1	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	5/07/2005	Normal	-	-	-	6.89	-	-	-	7.97	359	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	12/07/2005	Normal	-	-	-	6.85	-	-	-	8.33	343	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	19/07/2005	Normal	-	-	-	7.1	-	-	26.2	8.69	347	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	4/08/2005	Normal	-	-	-	7	-	-	-	9.44	360	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	16/08/2005	Normal	-	-	-	7.17	-	-	-	9.8	372	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	25/08/2005	Normal	-	-	-	7.27	-	-	-	8.9	390	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	29/09/2005	Normal	-	-	-	7.08	-	-	-	6.81	379	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	21/10/2005	Normal	-	-	-	6.79	-	-	-	7.97	175	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	2/11/2005	Normal	-	-	-	7.12	-	-	-	7.01	349	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	9/11/2005	Normal	-	-	-	7.16	-	-	-	6.75	349	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	28/11/2005	Normal	-	-	-	7.22	-	-	329	7.66	386	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	29/11/2005	Normal	-	-	-	7.29	-	-	607	8.15	313	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	24/01/2006	Normal	-	-	-	7.06	-	-	203	3.42	495	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	9/03/2006	Normal	-	-	-	7.08	-	-	289.6	3.08	374	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	3/04/2006	Normal	-	-	-	7.21	-	-	40.2	4.72	327	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	11/05/2006	Normal	-	-	-	7.18	-	-	43.51	5.08	345	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	12/09/2006	Normal	-	-	-	7.09	-	-	288	10.16	329	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	25/10/2006	Normal	-	-	-	7.21	-	-	72	8.1	517	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	2/01/2007	Normal	-	-	-	6.89	-	-	511	4.74	226	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	12/02/2007	Normal	-	-	-	6.83	-	-	791	9.69	192	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	13/02/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	22/05/2007	Normal	-	-	-	7.45	-	-	28.87	9.9	240	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	9/06/2007	Normal	-	-	-	6.63	-	-	363	7.88	161	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	19/06/2007	Normal	-	-	-	7.05	-	-	441	12.16	254	-	-	-	-	-	-	-	-

Appendix D
Table D4
Mill Creek Water Quality

				Inorganics							Field				Metals	BTEX & MAH				
				BOD	Dissolved Oxygen (Lab) (Filtered)	Ortho Phosphorus (as P)	pH (Lab)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)	Lead	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)
				mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%															0.0034	950			350	
ANZECC 2000 FW Med-Low Reliability															0.0034	950	180	80	350	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																	
Mill Creek Monitoring Point	MC3	26/06/2007	Normal	-	-	-	7.62	-	-	153	13.24	289	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	10/04/2008	Normal	-	-	-	7.6	12	46	-	-	391	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	21/04/2008	Normal	-	-	-	7.7	13	210	-	-	420	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	29/05/2008	Normal	-	-	-	7.4	9	2	-	-	384	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	4/06/2008	Normal	-	-	-	7.5	-	370	-	-	295	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	29/07/2008	Normal	-	-	-	7.8	-	86	-	-	346	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	25/08/2008	Normal	-	-	-	7.4	-	140	-	-	254	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	6/09/2008	Normal	-	-	-	8.9	-	174	-	-	343	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	14/12/2008	Normal	-	-	-	7.1	-	424	-	-	297	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	15/02/2009	Normal	-	-	-	7.3	-	254	-	-	281	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3	7/06/2012	Normal	<4	-	-	-	-	<5	8.6	8.51	328.1	6.36	101.7	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3 d/s	10/01/2005	Normal	-	-	-	7.25	-	-	-	7.25	518	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3 d/s	26/01/2005	Normal	-	-	-	6.92	-	-	-	3.18	381	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3 d/s	2/02/2005	Normal	-	-	-	6.87	-	-	-	5.44	319	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3 d/s	10/02/2005	Normal	-	-	-	6.93	-	-	-	4.24	461	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3 u/s	10/01/2005	Normal	-	-	-	7.3	-	-	-	7.29	512	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3 u/s	26/01/2005	Normal	-	-	-	7.03	-	-	-	5.52	406	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3 u/s	2/02/2005	Normal	-	-	-	7.09	-	-	-	6.33	294	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC3 u/s	10/02/2005	Normal	-	-	-	7.1	-	-	-	5.38	461	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MC4	3/09/2004	Normal	-	-	2.5	7.59	4	3	-	10.5	350	7.71	-208	-	-	-	-	-	-
Mill Creek Monitoring Point	MC4	7/09/2004	Normal	-	-	2.5	7.23	5	5	-	9.6	307	6.33	151	-	-	-	-	-	-
Mill Creek Monitoring Point	MC4	14/10/2004	Normal	-	-	2.5	7.66	0.01	6	-	8.54	269	7.18	163	0.002	0.5	0.5	0.5	0.5	1
Mill Creek Monitoring Point	MC4	11/11/2004	Normal	-	-	40	7.34	9	55	-	8.58	182	6.78	206	-	-	-	-	-	-
Mill Creek Monitoring Point	MC4	14/12/2004	Normal	-	-	8	7.37	13	210	-	6.84	247	7.12	-290	-	-	-	-	-	-
Mill Creek Monitoring Point	MC4	31/01/2005	Normal	-	-	10	7.01	6	4	-	6.3	292	7.19	62	0.002	0.5	0.5	0.5	0.5	1
Mill Creek Monitoring Point	MCA	30/12/2004	Normal	-	-	-	7.88	-	-	428	10.2	1169	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	MCB	30/12/2004	Normal	-	-	-	8.31	-	-	191	11.1	708	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	Mill Ck D/S	7/10/2004	Normal	-	-	-	7.04	-	-	-	6.21	636	-	-	-	-	-	-	-	-
Mill Creek Monitoring Point	Mill Ck U/S	7/10/2004	Normal	-	-	-	7.7	-	-	-	8.7	422	-	-	-	-	-	-	-	-
Statistical Summary																				
Number of Results				4	3	8	202	13	107	138	185	204	89	10	2	2	2	2	2	2
Number of Detects				1	3	8	202	13	106	138	185	204	89	10	2	2	2	2	2	2
Minimum Concentration				<4	6	2.5	6.1	0.01	2	7.46	0.75	152.3	6.05	62	0.002	0.5	0.5	0.5	0.5	1
Minimum Detect				6	6	2.5	6.1	0.01	2	7.46	0.75	152.3	6.05	62	0.002	0.5	0.5	0.5	0.5	1
Maximum Concentration				6	6.61	40	8.9	23	1300	1680	14.21	12113	8.2	398	0.002	0.5	0.5	0.5	0.5	1
Maximum Detect				6	6.61	40	8.9	23	1300	1680	14.21	12113	8.2	398	0.002	0.5	0.5	0.5	0.5	1
Average Concentration				3.3	6.3	8.8	7.2	10	272	308	7.3	403	7	187						
Geometric Average				2.9	6.3	4.9	7.2	5.9	135	177	6.9	335	7	166						
Median Concentration				2.5	6.35	2.5	7.2	10	174	201.5	7.12	345	7.02	157	0.002	0.5	0.5	0.5	0.5	1
Standard Deviation				1.8	0.31	13	0.41	6	296	325	2.2	832	0.4	97						
Geometric Standard Deviation				1.6	1	2.8	1.1	7.2	4.2	3.3	1.4	1.5	1.1	1.7						
Number of Guideline Exceedances				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix D
Table D4
Mill Creek Water Quality

				Phenols			Major Ions		Nutrients			
				Phenol	Phenolics	Phenolics Total	Potassium	Sodium	Ammonia	Ammonia as N	Nitrate (as N)	
				µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
ANZECC 2000 FW 95%				320					1.094	0.9	0.158	
ANZECC 2000 FW Med-Low Reliability				320					0.9		0.7	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**									
Mill Creek Monitoring Point	MC1	1/12/2000	Normal	-	40	-	-	-	-	0.91	-	
Mill Creek Monitoring Point	MC1	18/01/2001	Normal	-	-	-	-	-	-	0.28	-	
Mill Creek Monitoring Point	MC1	31/01/2001	Normal	-	20	-	-	-	-	0.5	-	
Mill Creek Monitoring Point	MC1	8/02/2001	Normal	-	20	-	-	-	-	2.8	-	
Mill Creek Monitoring Point	MC1	1/03/2001	Normal	-	10	-	-	-	-	3.56	-	
Mill Creek Monitoring Point	MC1	23/04/2001	Normal	-	-	-	-	-	-	0.19	-	
Mill Creek Monitoring Point	MC1	30/04/2001	Normal	-	-	-	-	-	-	1.14	-	
Mill Creek Monitoring Point	MC1	8/05/2001	Normal	-	-	-	-	-	-	3.96	-	
Mill Creek Monitoring Point	MC1	29/05/2001	Normal	-	-	-	-	-	-	0.9	-	
Mill Creek Monitoring Point	MC1	11/07/2001	Normal	-	20	-	-	-	-	0.05	-	
Mill Creek Monitoring Point	MC1	25/07/2001	Normal	-	20	-	-	-	-	1.39	-	
Mill Creek Monitoring Point	MC1	27/08/2001	Normal	-	50	-	-	-	-	1.08	-	
Mill Creek Monitoring Point	MC1	23/02/2003	Normal	-	440	-	-	-	-	1.62	-	
Mill Creek Monitoring Point	MC1	13/03/2003	Normal	-	20	-	-	-	-	0.71	-	
Mill Creek Monitoring Point	MC1	16/03/2003	Normal	-	-	-	-	-	-	1.14	-	
Mill Creek Monitoring Point	MC1	11/04/2003	Normal	-	10	-	-	-	-	0.56	-	
Mill Creek Monitoring Point	MC1	18/04/2003	Normal	-	30	-	-	-	-	0.53	-	
Mill Creek Monitoring Point	MC1	26/04/2003	Normal	-	-	-	-	-	-	0.9	-	
Mill Creek Monitoring Point	MC1	13/05/2003	Normal	-	59	-	-	-	-	0.23	-	
Mill Creek Monitoring Point	MC1	25/05/2003	Normal	-	72	-	-	-	-	2	0.15	
Mill Creek Monitoring Point	MC1	27/06/2003	Normal	-	97	-	-	-	-	0.24	-	
Mill Creek Monitoring Point	MC1	4/07/2003	Normal	-	40	-	-	-	-	4	-	
Mill Creek Monitoring Point	MC1	24/08/2003	Normal	-	90	-	-	-	-	3.4	-	
Mill Creek Monitoring Point	MC1	4/12/2003	Normal	-	130	-	-	-	-	0.6	-	
Mill Creek Monitoring Point	MC1	12/12/2003	Normal	-	340	-	-	-	-	2.4	-	
Mill Creek Monitoring Point	MC1	26/02/2004	Normal	-	190	-	-	-	-	1.5	-	
Mill Creek Monitoring Point	MC1	10/03/2004	Normal	-	-	-	-	-	-	0.43	-	
Mill Creek Monitoring Point	MC1	22/03/2004	Normal	-	120	-	-	-	-	0.33	-	
Mill Creek Monitoring Point	MC1	4/04/2004	Normal	-	110	-	-	-	-	1.2	-	
Mill Creek Monitoring Point	MC1	18/08/2004	Normal	-	100	-	-	-	-	1.2	-	
Mill Creek Monitoring Point	MC1	8/09/2004	Normal	-	-	-	-	-	-	1.6	-	
Mill Creek Monitoring Point	MC1	1/10/2004	Normal	-	30	-	-	-	-	1.4	-	
Mill Creek Monitoring Point	MC1	18/10/2004	Normal	-	-	-	-	-	-	0.86	-	
Mill Creek Monitoring Point	MC1	25/10/2004	Normal	-	40	-	-	-	-	0.51	-	
Mill Creek Monitoring Point	MC1	6/11/2004	Normal	-	110	-	-	-	-	0.43	-	
Mill Creek Monitoring Point	MC1	14/12/2004	Normal	-	30	-	-	-	-	1.6	-	
Mill Creek Monitoring Point	MC1	21/12/2004	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC1	10/01/2005	Normal	-	-	-	-	-	-	1040	-	
Mill Creek Monitoring Point	MC1	20/01/2005	Normal	-	-	-	-	-	-	9.9	-	
Mill Creek Monitoring Point	MC1	21/01/2005	Normal	-	-	-	-	-	-	5	-	
Mill Creek Monitoring Point	MC1	26/01/2005	Normal	-	-	-	-	-	-	15.1	-	
Mill Creek Monitoring Point	MC1	28/01/2005	Normal	-	-	-	-	-	-	10.9	-	
Mill Creek Monitoring Point	MC1	1/02/2005	Normal	-	-	-	-	-	-	4.6	-	
Mill Creek Monitoring Point	MC1	2/02/2005	Normal	-	-	-	-	-	-	2.7	-	
Mill Creek Monitoring Point	MC1	3/02/2005	Normal	-	40	-	-	-	-	3.3	-	
Mill Creek Monitoring Point	MC1	10/02/2005	Normal	-	-	-	-	-	-	8.6	-	
Mill Creek Monitoring Point	MC1	21/02/2005	Normal	-	170	-	-	-	-	1.1	-	
Mill Creek Monitoring Point	MC1	22/02/2005	Normal	-	-	-	-	-	-	1.9	-	
Mill Creek Monitoring Point	MC1	4/03/2005	Normal	-	-	-	-	-	-	1.3	-	
Mill Creek Monitoring Point	MC1	4/03/2005	Normal	-	180	-	-	-	-	1	-	
Mill Creek Monitoring Point	MC1	9/03/2005	Normal	-	-	-	-	-	-	3.4	-	
Mill Creek Monitoring Point	MC1	18/03/2005	Normal	-	-	-	-	-	-	4.8	-	
Mill Creek Monitoring Point	MC1	23/03/2005	Normal	-	20	-	-	-	-	2.5	-	
Mill Creek Monitoring Point	MC1	4/04/2005	Normal	-	-	-	-	-	-	2.4	-	
Mill Creek Monitoring Point	MC1	11/04/2005	Normal	-	-	-	-	-	-	1.8	-	
Mill Creek Monitoring Point	MC1	19/04/2005	Normal	-	-	-	-	-	-	1.3	-	
Mill Creek Monitoring Point	MC1	27/04/2005	Normal	-	-	-	-	-	-	0.6	-	
Mill Creek Monitoring Point	MC1	5/05/2005	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC1	10/05/2005	Normal	-	-	-	-	-	-	0.4	-	
Mill Creek Monitoring Point	MC1	20/05/2005	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC1	7/06/2005	Normal	-	-	-	-	-	-	0.5	-	
Mill Creek Monitoring Point	MC1	24/06/2005	Normal	-	-	-	-	-	-	0.2	-	
Mill Creek Monitoring Point	MC1	28/06/2005	Normal	-	-	-	-	-	-	0.8	-	
Mill Creek Monitoring Point	MC1	30/06/2005	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC1	5/07/2005	Normal	-	-	-	-	-	-	0.8	-	
Mill Creek Monitoring Point	MC1	12/07/2005	Normal	-	-	-	-	-	-	1.2	-	
Mill Creek Monitoring Point	MC1	19/07/2005	Normal	-	-	-	-	-	-	0.6	-	
Mill Creek Monitoring Point	MC1	4/08/2005	Normal	-	-	-	-	-	-	0.2	-	
Mill Creek Monitoring Point	MC1	16/08/2005	Normal	-	-	-	-	-	-	0.1	-	
Mill Creek Monitoring Point	MC1	25/08/2005	Normal	-	-	-	-	-	-	0.1	-	
Mill Creek Monitoring Point	MC1	29/09/2005	Normal	-	-	-	-	-	-	0.2	-	
Mill Creek Monitoring Point	MC1	21/10/2005	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC1	2/11/2005	Normal	-	-	-	-	-	-	1.1	-	
Mill Creek Monitoring Point	MC1	9/11/2005	Normal	-	-	-	-	-	-	1.3	-	
Mill Creek Monitoring Point	MC1	28/11/2005	Normal	-	-	-	-	-	-	0.9	-	
Mill Creek Monitoring Point	MC1	29/11/2005	Normal	-	-	-	-	-	-	0.7	-	
Mill Creek Monitoring Point	MC1	24/01/2006	Normal	-	-	-	-	-	-	1.3	-	
Mill Creek Monitoring Point	MC1	9/03/2006	Normal	-	-	-	-	-	-	0.6	-	
Mill Creek Monitoring Point	MC1	3/04/2006	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC1	11/05/2006	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC1	12/09/2006	Normal	-	-	-	-	-	-	0.1	-	
Mill Creek Monitoring Point	MC1	25/10/2006	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC1	2/01/2007	Normal	-	-	-	-	-	-	1.1	-	
Mill Creek Monitoring Point	MC1	12/02/2007	Normal	-	-	-	-	-	-	1.1	-	
Mill Creek Monitoring Point	MC1	27/02/2007	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC1	22/05/2007	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC1	22/06/2007	Normal	-	-	-	-	-	-	0.1	-	
Mill Creek Monitoring Point	MC1	27/06/2007	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC1	10/04/2008	Normal	-	-	380	-	-	-	0.29	-	
Mill Creek Monitoring Point	MC1	21/04/2008	Normal	-	-	50	-	-	-	2.52	-	
Mill Creek Monitoring Point	MC1	21/04/2008	field_D	-	-	170	-	-	-	2.52	-	
Mill Creek Monitoring Point	MC1	29/05/2008	Normal	-	-	80	-	-	-	0.53	-	

Appendix D
Table D4
Mill Creek Water Quality

				Phenols			Major Ions		Nutrients			
				Phenol	Phenolics	Phenolics Total	Potassium	Sodium	Ammonia	Ammonia as N	Nitrate (as N)	
				µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
ANZECC 2000 FW 95%				320					1.094	0.9	0.158	
ANZECC 2000 FW Med-Low Reliability				320					0.9		0.7	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**									
Mill Creek Monitoring Point	MC1	4/06/2008	Normal	-	-	200	-	-	-	1.6	-	
Mill Creek Monitoring Point	MC1	29/07/2008	Normal	-	-	140	-	-	-	0.92	-	
Mill Creek Monitoring Point	MC1	25/08/2008	Normal	-	-	150	-	-	-	0.69	-	
Mill Creek Monitoring Point	MC1	6/09/2008	Normal	-	-	220	-	-	-	0.87	-	
Mill Creek Monitoring Point	MC1	14/12/2008	Normal	-	-	380	-	-	-	0.4	-	
Mill Creek Monitoring Point	MC1	15/02/2009	Normal	-	-	310	-	-	-	0.72	-	
Mill Creek Monitoring Point	MC1	18/04/2012	Normal	<2	-	-	-	-	4.8	-	-	
Mill Creek Monitoring Point	MC1	6/06/2012	Normal	-	-	-	-	-	2.1	-	-	
Mill Creek Monitoring Point	MC1	7/06/2012	Normal	-	<1000	-	-	-	-	2.3	-	
Mill Creek Monitoring Point	MC1	12/09/2012	Normal	<50	-	-	-	-	-	0.6	-	
Mill Creek Monitoring Point	MC1	29/01/2013	Normal	60	-	-	-	-	0.77	-	-	
Mill Creek Monitoring Point	MC1	13/03/2013	Normal	-	<50	-	-	-	-	0.8	-	
Mill Creek Monitoring Point	MC1	5/04/2013	Normal	<10	-	-	-	-	1.5	-	-	
Mill Creek Monitoring Point	MC1	24/06/2014	Normal	-	<50	-	-	-	-	0.38	-	
Mill Creek Monitoring Point	MC3	1/12/2000	Normal	-	50	-	-	-	-	2.18	-	
Mill Creek Monitoring Point	MC3	18/01/2001	Normal	-	-	-	-	-	-	0.26	-	
Mill Creek Monitoring Point	MC3	31/01/2001	Normal	-	80	-	-	-	-	2.88	-	
Mill Creek Monitoring Point	MC3	8/02/2001	Normal	-	-	-	-	-	-	1.74	-	
Mill Creek Monitoring Point	MC3	1/03/2001	Normal	-	30	-	-	-	-	2.56	-	
Mill Creek Monitoring Point	MC3	23/04/2001	Normal	-	10	-	-	-	-	0.27	-	
Mill Creek Monitoring Point	MC3	30/04/2001	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC3	8/05/2001	Normal	-	-	-	-	-	-	2.37	-	
Mill Creek Monitoring Point	MC3	29/05/2001	Normal	-	-	-	-	-	-	2.7	-	
Mill Creek Monitoring Point	MC3	11/07/2001	Normal	-	-	-	-	-	-	2.23	-	
Mill Creek Monitoring Point	MC3	25/07/2001	Normal	-	-	-	-	-	-	3.7	-	
Mill Creek Monitoring Point	MC3	27/08/2001	Normal	-	20	-	-	-	-	3.1	-	
Mill Creek Monitoring Point	MC3	23/02/2003	Normal	-	-	-	-	-	-	0.12	-	
Mill Creek Monitoring Point	MC3	13/03/2003	Normal	-	60	-	-	-	-	0.68	-	
Mill Creek Monitoring Point	MC3	16/03/2003	Normal	-	20	-	-	-	-	1.05	-	
Mill Creek Monitoring Point	MC3	11/04/2003	Normal	-	10	-	-	-	-	0.15	-	
Mill Creek Monitoring Point	MC3	18/04/2003	Normal	-	-	-	-	-	-	0.82	-	
Mill Creek Monitoring Point	MC3	26/04/2003	Normal	-	10	-	-	-	-	0.32	-	
Mill Creek Monitoring Point	MC3	13/05/2003	Normal	-	49	-	-	-	-	0.31	-	
Mill Creek Monitoring Point	MC3	25/05/2003	Normal	-	26	-	-	-	-	1.6	0.25	
Mill Creek Monitoring Point	MC3	27/06/2003	Normal	-	94	-	-	-	-	1.4	-	
Mill Creek Monitoring Point	MC3	4/07/2003	Normal	-	10	-	-	-	-	4.2	-	
Mill Creek Monitoring Point	MC3	24/08/2003	Normal	-	150	-	-	-	-	1.3	-	
Mill Creek Monitoring Point	MC3	4/12/2003	Normal	-	10	-	-	-	-	0.03	-	
Mill Creek Monitoring Point	MC3	12/12/2003	Normal	-	380	-	-	-	-	1.6	-	
Mill Creek Monitoring Point	MC3	26/02/2004	Normal	-	110	-	-	-	-	0.97	-	
Mill Creek Monitoring Point	MC3	10/03/2004	Normal	-	20	-	-	-	-	0.26	-	
Mill Creek Monitoring Point	MC3	22/03/2004	Normal	-	200	-	-	-	-	0.5	-	
Mill Creek Monitoring Point	MC3	4/04/2004	Normal	-	30	-	-	-	-	1.2	-	
Mill Creek Monitoring Point	MC3	18/08/2004	Normal	-	70	-	-	-	-	1.2	-	
Mill Creek Monitoring Point	MC3	1/10/2004	Normal	-	40	-	-	-	-	0.59	-	
Mill Creek Monitoring Point	MC3	18/10/2004	Normal	-	10	-	-	-	-	0.59	-	
Mill Creek Monitoring Point	MC3	25/10/2004	Normal	-	30	-	-	-	-	0.65	-	
Mill Creek Monitoring Point	MC3	6/11/2004	Normal	-	80	-	-	-	-	0.39	-	
Mill Creek Monitoring Point	MC3	14/12/2004	Normal	-	20	-	-	-	-	1.7	-	
Mill Creek Monitoring Point	MC3	21/12/2004	Normal	-	-	-	-	-	-	0.6	-	
Mill Creek Monitoring Point	MC3	3/02/2005	Normal	-	20	-	-	-	-	3.8	-	
Mill Creek Monitoring Point	MC3	21/02/2005	Normal	-	300	-	-	-	-	0.95	-	
Mill Creek Monitoring Point	MC3	22/02/2005	Normal	-	-	-	-	-	-	1.3	-	
Mill Creek Monitoring Point	MC3	4/03/2005	Normal	-	-	-	-	-	-	1.8	-	
Mill Creek Monitoring Point	MC3	4/03/2005	Normal	-	290	-	-	-	-	0.86	-	
Mill Creek Monitoring Point	MC3	9/03/2005	Normal	-	-	-	-	-	-	0.7	-	
Mill Creek Monitoring Point	MC3	23/03/2005	Normal	-	40	-	-	-	-	1.8	-	
Mill Creek Monitoring Point	MC3	4/04/2005	Normal	-	-	-	-	-	-	0.6	-	
Mill Creek Monitoring Point	MC3	11/04/2005	Normal	-	-	-	-	-	-	0.5	-	
Mill Creek Monitoring Point	MC3	19/04/2005	Normal	-	-	-	-	-	-	0.4	-	
Mill Creek Monitoring Point	MC3	27/04/2005	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC3	5/05/2005	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC3	10/05/2005	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC3	20/05/2005	Normal	-	-	-	-	-	-	0.4	-	
Mill Creek Monitoring Point	MC3	7/06/2005	Normal	-	-	-	-	-	-	0.1	-	
Mill Creek Monitoring Point	MC3	14/06/2005	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC3	24/06/2005	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC3	30/06/2005	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC3	5/07/2005	Normal	-	-	-	-	-	-	0.4	-	
Mill Creek Monitoring Point	MC3	12/07/2005	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC3	19/07/2005	Normal	-	-	-	-	-	-	0.2	-	
Mill Creek Monitoring Point	MC3	4/08/2005	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC3	16/08/2005	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC3	25/08/2005	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC3	29/09/2005	Normal	-	-	-	-	-	-	0.1	-	
Mill Creek Monitoring Point	MC3	21/10/2005	Normal	-	-	-	-	-	-	0.1	-	
Mill Creek Monitoring Point	MC3	2/11/2005	Normal	-	-	-	-	-	-	0.7	-	
Mill Creek Monitoring Point	MC3	9/11/2005	Normal	-	-	-	-	-	-	0.6	-	
Mill Creek Monitoring Point	MC3	28/11/2005	Normal	-	-	-	-	-	-	0.7	-	
Mill Creek Monitoring Point	MC3	29/11/2005	Normal	-	-	-	-	-	-	0.6	-	
Mill Creek Monitoring Point	MC3	24/01/2006	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC3	9/03/2006	Normal	-	-	-	-	-	-	0.4	-	
Mill Creek Monitoring Point	MC3	3/04/2006	Normal	-	-	-	-	-	-	0.7	-	
Mill Creek Monitoring Point	MC3	11/05/2006	Normal	-	-	-	-	-	-	0.2	-	
Mill Creek Monitoring Point	MC3	12/09/2006	Normal	-	-	-	-	-	-	0.3	-	
Mill Creek Monitoring Point	MC3	25/10/2006	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC3	2/01/2007	Normal	-	-	-	-	-	-	0.2	-	
Mill Creek Monitoring Point	MC3	12/02/2007	Normal	-	-	-	-	-	-	1	-	
Mill Creek Monitoring Point	MC3	13/02/2007	Normal	-	-	-	-	-	-	0.5	-	
Mill Creek Monitoring Point	MC3	22/05/2007	Normal	-	-	-	-	-	-	0.2	-	
Mill Creek Monitoring Point	MC3	9/06/2007	Normal	-	-	-	-	-	-	0.6	-	
Mill Creek Monitoring Point	MC3	19/06/2007	Normal	-	-	-	-	-	-	0.1	-	

Appendix D
Table D4
Mill Creek Water Quality

				Phenols			Major Ions		Nutrients			
				Phenol	Phenolics	Phenolics Total	Potassium	Sodium	Ammonia	Ammonia as N	Nitrate (as N)	
				µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
ANZECC 2000 FW 95%				320					1.094	0.9	0.158	
ANZECC 2000 FW Med-Low Reliability				320					0.9		0.7	
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**									
Mill Creek Monitoring Point	MC3	26/06/2007	Normal	-	-	-	-	-	-	0.4	-	
Mill Creek Monitoring Point	MC3	10/04/2008	Normal	-	-	100	-	-	-	0.11	-	
Mill Creek Monitoring Point	MC3	21/04/2008	Normal	-	-	460	-	-	-	2.45	-	
Mill Creek Monitoring Point	MC3	29/05/2008	Normal	-	-	<10	-	-	-	0.05	-	
Mill Creek Monitoring Point	MC3	4/06/2008	Normal	-	-	120	-	-	-	0.61	-	
Mill Creek Monitoring Point	MC3	29/07/2008	Normal	-	-	100	-	-	-	0.78	-	
Mill Creek Monitoring Point	MC3	25/08/2008	Normal	-	-	<10	-	-	-	0.45	-	
Mill Creek Monitoring Point	MC3	6/09/2008	Normal	-	-	260	-	-	-	0.98	-	
Mill Creek Monitoring Point	MC3	14/12/2008	Normal	-	-	300	-	-	-	0.17	-	
Mill Creek Monitoring Point	MC3	15/02/2009	Normal	-	-	450	-	-	-	0.24	-	
Mill Creek Monitoring Point	MC3	7/06/2012	Normal	-	<1000	-	-	-	-	0.066	-	
Mill Creek Monitoring Point	MC3 d/s	10/01/2005	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC3 d/s	26/01/2005	Normal	-	-	-	-	-	-	0.2	-	
Mill Creek Monitoring Point	MC3 d/s	2/02/2005	Normal	-	-	-	-	-	-	1.3	-	
Mill Creek Monitoring Point	MC3 d/s	10/02/2005	Normal	-	-	-	-	-	-	2.9	-	
Mill Creek Monitoring Point	MC3 u/s	10/01/2005	Normal	-	-	-	-	-	-	-	-	
Mill Creek Monitoring Point	MC3 u/s	26/01/2005	Normal	-	-	-	-	-	-	0.4	-	
Mill Creek Monitoring Point	MC3 u/s	2/02/2005	Normal	-	-	-	-	-	-	1.5	-	
Mill Creek Monitoring Point	MC3 u/s	10/02/2005	Normal	-	-	-	-	-	-	2.4	-	
Mill Creek Monitoring Point	MC4	3/09/2004	Normal	5	-	-	-	-	-	0.14	2.1	
Mill Creek Monitoring Point	MC4	7/09/2004	Normal	5	-	-	-	-	-	0.15	2	
Mill Creek Monitoring Point	MC4	14/10/2004	Normal	5	-	-	-	-	-	0.42	0.77	
Mill Creek Monitoring Point	MC4	11/11/2004	Normal	10	-	-	13	32	-	0.03	0.25	
Mill Creek Monitoring Point	MC4	14/12/2004	Normal	170	-	-	-	-	-	1.1	1.4	
Mill Creek Monitoring Point	MC4	31/01/2005	Normal	5	-	-	10	35	-	0.05	0.04	
Mill Creek Monitoring Point	MCA	30/12/2004	Normal	-	-	-	-	-	-	4.8	-	
Mill Creek Monitoring Point	MCB	30/12/2004	Normal	-	-	-	-	-	-	0.4	-	
Mill Creek Monitoring Point	Mill Ck D/S	7/10/2004	Normal	-	-	-	-	-	-	3.2	-	
Mill Creek Monitoring Point	Mill Ck U/S	7/10/2004	Normal	-	-	-	-	-	-	0.4	-	
Statistical Summary												
Number of Results				10	64	19	2	2	4	196	8	
Number of Detects				7	60	17	2	2	4	196	8	
Minimum Concentration				<2	10	<10	10	32	0.77	0.03	0.04	
Minimum Detect				5	10	50	10	32	0.77	0.03	0.04	
Maximum Concentration				170	<1000	460	13	35	4.8	1040	2.1	
Maximum Detect				170	440	460	13	35	4.8	1040	2.1	
Average Concentration				29	93	204			2.3	6.6	0.87	
Geometric Average				9.8	50	130			1.8	0.73	0.45	
Median Concentration				5	40	170	11.5	33.5	1.8	0.7	0.51	
Standard Deviation				53	119	143			1.8	74	0.85	
Geometric Standard Deviation				4.4	3	3.7	1.2	1.1	2.1	3.5	4.1	
Number of Guideline Exceedances				0	0	0	0	0	0	0	0	
Number of Guideline Exceedances(Detects Only)				0	0	0	0	0	0	0	0	

Appendix D
Table D5
Water Quality for Unidentified Locations

				Inorganics								Field					
				Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)	Aluminium	Cadmium
				mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV	mg/L	mg/L
ANZECC 2000 FW 95%																0.055	0.0002
ANZECC 2000 FW Med-Low Reliability																0.0008	0.0002
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**														
Site Location Unknown	DS3	5/05/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Polished water	21/12/2004	Normal	-	-	-	-	7.33	-	-	-	6.93	435	-	-	-	-
Site Location Unknown	Polished water	12/12/2005	Normal	-	-	-	-	7.56	-	-	48.38	7.08	301	-	-	-	-
Site Location Unknown	Polished water	9/03/2006	Normal	-	-	-	-	8.72	-	-	43.2	6.96	300	-	-	-	-
Site Location Unknown	Polished water	5/07/2006	Normal	-	-	-	-	8.55	-	-	172.8	10.59	576	-	-	-	-
Site Location Unknown	Recirc water	7/10/2004	Normal	-	-	-	-	7.07	-	-	113.6	7.8	356	-	-	-	-
Site Location Unknown	Recirc water	27/10/2004	Normal	-	-	-	-	7	-	-	320.3	5.95	445	-	-	-	-
Site Location Unknown	Recirc water	2/11/2004	Normal	-	-	-	-	7.47	-	-	140.3	7.65	471	-	-	-	-
Site Location Unknown	Recirc water	9/11/2004	Normal	-	-	-	-	7.14	-	-	125.8	6.03	393	-	-	-	-
Site Location Unknown	SW002	1/02/1995	Normal	-	-	-	-	6.2	2	28	-	5.5	-	-	-	-	-
Site Location Unknown	SW002	1/03/1995	Normal	-	-	-	-	6.1	6	110	-	4.7	-	-	-	-	-
Site Location Unknown	SW002	1/04/1995	Normal	-	-	-	-	7.3	5.9	9	-	3.19	-	-	-	-	-
Site Location Unknown	SW002	1/05/1995	Normal	-	-	-	-	7.1	9.2	270	-	4.32	-	-	-	-	-
Site Location Unknown	SW002	1/06/1995	Normal	-	-	-	-	6.6	9.3	74	-	5.2	-	-	-	-	-
Site Location Unknown	SW002	1/07/1995	Normal	-	-	-	-	5.73	5	28	-	6.1	-	-	-	-	-
Site Location Unknown	SW002	1/08/1995	Normal	-	-	-	-	5.8	7	21	-	4.55	-	-	-	-	-
Site Location Unknown	SW002	1/09/1995	Normal	-	-	-	-	5.4	12	18	-	5.3	-	-	-	-	-
Site Location Unknown	SW002	1/10/1995	Normal	-	-	-	-	6.2	5	49	-	6.4	-	-	-	-	-
Site Location Unknown	SW002	1/11/1995	Normal	-	-	-	-	6.2	4	21	-	8.4	-	-	-	-	-
Site Location Unknown	SW002	1/12/1995	Normal	-	-	-	-	6.1	2	79	-	7.1	-	-	-	-	-
Site Location Unknown	SW002	1/01/1996	Normal	-	-	-	-	6.1	4	66	-	8	-	-	-	-	-
Site Location Unknown	SW002	1/02/1996	Normal	-	-	-	-	6.2	5	27	-	7.4	-	-	-	-	-
Site Location Unknown	SW002	1/03/1996	Normal	-	-	-	-	6.3	76	25	-	8.7	-	-	-	-	-
Site Location Unknown	SW002	1/04/1996	Normal	-	-	-	-	5.8	15	46	-	3.96	-	-	-	-	-
Site Location Unknown	SW002	1/05/1996	Normal	-	-	-	-	6.3	7	83	-	5.03	-	-	-	-	-
Site Location Unknown	SW002	1/06/1996	Normal	-	-	-	-	6.58	13	54	-	7.57	-	-	-	-	-
Site Location Unknown	SW002	16/07/1996	Normal	-	-	-	-	6	6	13	-	10.4	-	-	-	-	-
Site Location Unknown	SW002	14/08/1996	Normal	-	-	-	-	6	3	26	-	8.5	-	-	-	-	-
Site Location Unknown	SW002	17/09/1996	Normal	-	-	-	-	6.5	27	112	-	8	-	-	-	-	-
Site Location Unknown	SW002	10/10/1996	Normal	-	-	-	-	6.5	5	31	-	7.9	-	-	-	-	-
Site Location Unknown	SW002	19/11/1996	Normal	-	-	-	-	6.4	6	143	-	9.5	-	-	-	-	-
Site Location Unknown	SW002	10/12/1996	Normal	-	-	-	-	6	11	47	-	5.4	-	-	-	-	-
Site Location Unknown	SW002	29/01/1997	Normal	-	-	-	-	6.5	17	129	-	6.4	-	-	-	-	-
Site Location Unknown	SW002	18/02/1997	Normal	-	-	-	-	6.9	6	26	-	5.1	-	-	-	-	-
Site Location Unknown	SW002	19/03/1997	Normal	-	-	-	-	6.6	12	76	-	7.9	-	-	-	-	-
Site Location Unknown	SW002	23/04/1997	Normal	-	-	-	-	6.4	3	6	-	6.1	-	-	-	-	-
Site Location Unknown	SW002	20/05/1997	Normal	-	-	-	-	6.6	7	41	-	10.6	-	-	-	-	-
Site Location Unknown	SW002	18/06/1997	Normal	-	-	-	-	6.5	8	24	-	8.6	-	-	-	-	-
Site Location Unknown	SW002	22/07/1997	Normal	-	-	-	-	5.9	2	10	-	8.6	-	-	-	-	-
Site Location Unknown	SW002	19/08/1997	Normal	-	-	-	-	6.5	7	11	-	6.9	-	-	-	-	-
Site Location Unknown	SW002	18/09/1997	Normal	-	-	-	-	6.4	7	9	-	6.2	-	-	-	-	-
Site Location Unknown	SW002	16/10/1997	Normal	-	-	-	-	6.3	6	30	-	4.7	-	-	-	-	-
Site Location Unknown	SW002	21/11/1997	Normal	-	-	-	-	6.8	5	15	-	6.89	-	-	-	-	-
Site Location Unknown	SW002	11/12/1997	Normal	-	-	-	-	6.7	6	10	-	7.04	-	-	-	-	-
Site Location Unknown	SW002	8/01/1998	Normal	-	-	-	-	6.3	5	6	-	4.3	296	5.91	-	-	-
Site Location Unknown	SW002	6/02/1998	Normal	-	-	-	-	6.8	16	8	-	5.41	290	6.41	-	-	-
Site Location Unknown	SW002	5/03/1998	Normal	-	-	-	-	5.6	7	11	-	6.07	290	7.2	-	-	-
Site Location Unknown	SW002	2/04/1998	Normal	-	-	-	-	6.3	5	5	-	6.73	308	7.18	-	-	-
Site Location Unknown	SW002	5/05/1998	Normal	-	-	-	-	6.2	10	168	-	8.6	223	6.1	-	-	-
Site Location Unknown	SW002	3/06/1998	Normal	-	-	-	-	5.7	8	94	-	7.49	118	6.52	-	-	-
Site Location Unknown	SW002	1/07/1998	Normal	-	-	-	-	7.2	5	187	-	9.48	165	7.59	-	-	-
Site Location Unknown	SW002	3/08/1998	Normal	-	-	-	-	5.8	5	27	-	6.77	238	6.08	-	-	-
Site Location Unknown	SW002	2/09/1998	Normal	-	-	-	-	6.8	5	24	-	8.9	135	6.9	-	-	-
Site Location Unknown	SW002	1/10/1998	Normal	-	-	-	-	6.6	3	2	-	7.7	255	6.45	-	-	-
Site Location Unknown	SW002	4/11/1998	Normal	-	-	-	-	6.6	4	10	-	7.5	247	6.28	-	-	-
Site Location Unknown	SW002	8/12/1998	Normal	-	-	-	-	6.3	4	6	-	6.7	267	6.3	-	-	-
Site Location Unknown	SW002	6/01/1999	Normal	-	-	-	-	6.3	4	38	-	4.04	291	6.43	-	-	-
Site Location Unknown	SW002	3/03/1999	Normal	-	-	-	-	6.8	8	79	-	7.08	218	7.28	-	-	-
Site Location Unknown	SW002	2/06/1999	Normal	43	-	-	-	6.8	4	5	-	8.14	339	7.11	-	-	-
Site Location Unknown	SW002	2/09/1999	Normal	43	-	-	-	6.7	4	9	-	7.07	341	6.88	-	-	-
Site Location Unknown	SW002	2/12/1999	Normal	52	-	<0.1	20	6.5	6	3	-	7.07	265	6.93	-	-	-
Site Location Unknown	SW002	2/03/2000	Normal	22	-	<0.1	10	5.7	4	10	-	6.37	280	7.22	-	-	-
Site Location Unknown	SW002	1/06/2000	Normal	17	-	<0.1	20	6.6	5	10	-	7.03	217	6.01	-	-	-
Site Location Unknown	SW002	1/09/2000	Normal	23	-	<0.1	100	6.4	4	8	-	9.57	344	6.12	-	-	-
Site Location Unknown	SW002	20/11/2000	Normal	140	-	<0.1	560	6.4	44	37	-	4.06	664	6.56	-	-	-
Site Location Unknown	SW002	8/12/2000	Normal	75	-	<0.1	50	7	11	14	-	4.61	509	6	-	-	-
Site Location Unknown	SW002	7/03/2001	Normal	22	-	<0.1	120	8.8	9	130	-	9.6	163	8.28	-	-	-
Site Location Unknown	SW002	1/06/2001	Normal	54	-	<0.1	10	6.7	7	11	-	6.38	389	6.6	-	-	-
Site Location Unknown	SW002	13/09/2001	Normal	33	-	<0.1	20	6.5	4	6	-	7.77	313	6.49	-	-	-
Site Location Unknown	SW002	11/12/2001	Normal	29	-	<0.1	10	6.8	4	6	-	6.21	437	6.36	-	-	-
Site Location Unknown	SW002	12/03/2002	Normal	62	-	0.05	240	7.2	11	57	-	8.38	341	6.63	-	-	-
Site Location Unknown	SW002	26/06/2002	Normal	40	2.5	0.05	5	7	4	7	-	7.06	410	6.57	11	0.15	-
Site Location Unknown	SW002	13/08/2002	Normal	36	2.5	0.05	100	6.9	4	6	-	5.65	311	6.42	76	0.12	0.00005
Site Location Unknown	SW002	17/10/2002	Normal	23	2.5	0.05	5	6.7	3	6	-	4.52	402	6.23	42	0.22	0.00005
Site Location Unknown	SW002	16/12/2002	Normal	31	5	0.05	5	7.1	12	16	-	4.15	336	6.37	43	0.42	0.00005
Site Location Unknown	SW002	20/03/2003	Normal	51	1	0.05	5	7.3	9	19	-	4.18	379	7.03	199	0.26	0.00005
Site Location Unknown	SW002	30/06/2003	Normal	62	5	0.05	16	7.21	11	9	-	5.83	400	6.67	107	0.75	0.00005
Site Location Unknown	SW002	25/09/2003	Normal	28	2.5	0.05	8	6.74	6	4	-	5.31	340	7.58	96	0.14	0.00005
Site Location Unknown	SW002	11/12/2003	Normal	39	8	0.05	20	7.29	7	5	-	3.48	343	7.13	47	0.2	0.00005
Site Location Unknown	SW002	15/03/2004	Normal	45	0.5	0.05	2.5	7.41	6	6	-	4.65	287	6.75	59	0.1	0.00005
Site Location Unknown	SW002	30/06/2004	Normal	33	0.5	0.05	2.5	7.77	4	5	-	15.16	384	8	35	0.15	0.00005
Site Location Unknown	SW002	7/09/2004	Normal	33	0.5	0.05	2.5	7.19	5	10	-	8.06	298	7.61	189	0.37	0.001
Site Location Unknown	SW002	13/12/2004	Normal	47	<1	<0.1	120	7.12	14	27	-	4.58	303	6.32	-201	5.1	0.0001
Site Location Unknown	SW002	16/03/2005	Normal	73	7	<0.1	10	7.39	12	9	-	5.36	518	6.77	-240	250	<0.0001
Site Location Unknown	SW002	29/06/2005	Normal	26	6	<0.1	6	7.49	12	38	-	8.23	266	8.2	59	-	0.0002
Site Location Unknown	SW002	28/09/2005	Normal	-	1	-	-	-	-	5	-	8.28	353	6.81	42	-	-
Site Location Unknown	SW002	7/12/2005	Normal	-	1	-	-	7.3	-	32	-	6.56	329	6.91	20	-	-
Site Location Unknown	SW002	6/03/2006	Normal	-	-	-	-	6.9	-	17	-	6.32	266	7.64	23	-	-
Site Location Unknown	SW002	6/06/2006	Normal	-	2	-	-	6.9	-	21	-	5.72	278	6.87	185	-	-
Site Location Unknown	SW002	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	774	8.25	38	-	-
Site Location Unknown	SW005	1/02/1995	Normal	-	-	-	-	6.5	6.3	11	-	6.8	-	-	-	-	-
Site Location Unknown	SW005	1/03/1995	Normal	-	-	-	-	6.3	6	75	-	6.1	-	-	-	-	-

Appendix D
Table D5
Water Quality for Unidentified Locations

				Inorganics								Field					
				Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)	Aluminium	Cadmium
				mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV	mg/L	mg/L
ANZECC 2000 FW 95%																0.055	0.0002
ANZECC 2000 FW Med-Low Reliability																0.0008	0.0002
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**														
Site Location Unknown	SW005	1/04/1995	Normal	-	-	-	-	7.5	4.6	6	-	5.59	-	-	-	-	-
Site Location Unknown	SW005	1/05/1995	Normal	-	-	-	-	6.4	12	370	-	6	-	-	-	-	-
Site Location Unknown	SW005	1/06/1995	Normal	-	-	-	-	6.9	7.7	18	-	4.67	-	-	-	-	-
Site Location Unknown	SW005	1/07/1995	Normal	-	-	-	-	6.81	5	17	-	10.5	-	-	-	-	-
Site Location Unknown	SW005	1/08/1995	Normal	-	-	-	-	6.33	8	22	-	8.84	-	-	-	-	-
Site Location Unknown	SW005	1/09/1995	Normal	-	-	-	-	5.68	1	15	-	9.25	-	-	-	-	-
Site Location Unknown	SW005	1/10/1995	Normal	-	-	-	-	6.25	6	10	-	7.68	-	-	-	-	-
Site Location Unknown	SW005	1/11/1995	Normal	-	-	-	-	6.61	8	29	-	9.02	-	-	-	-	-
Site Location Unknown	SW005	1/12/1995	Normal	-	-	-	-	6.36	3	71	-	9.06	-	-	-	-	-
Site Location Unknown	SW005	1/01/1996	Normal	-	-	-	-	6.24	45	25	-	8.01	-	-	-	-	-
Site Location Unknown	SW005	1/02/1996	Normal	-	-	-	-	6.29	5	8	-	4.92	-	-	-	-	-
Site Location Unknown	SW005	1/03/1996	Normal	-	-	-	-	6.15	13	8	-	7.84	-	-	-	-	-
Site Location Unknown	SW005	1/04/1996	Normal	-	-	-	-	6.4	15	4	-	12.29	-	-	-	-	-
Site Location Unknown	SW005	1/05/1996	Normal	-	-	-	-	6.92	5	23	-	4.22	-	-	-	-	-
Site Location Unknown	SW005	1/06/1996	Normal	-	-	-	-	6.63	4	52	-	7.69	-	-	-	-	-
Site Location Unknown	SW005	16/07/1996	Normal	-	-	-	-	6.2	6	22	-	10.8	-	-	-	-	-
Site Location Unknown	SW005	14/08/1996	Normal	-	-	-	-	6.4	4	18	-	9	-	-	-	-	-
Site Location Unknown	SW005	17/09/1996	Normal	-	-	-	-	6.8	4	21	-	7.9	-	-	-	-	-
Site Location Unknown	SW005	10/10/1996	Normal	-	-	-	-	6.8	4	16	-	8.6	-	-	-	-	-
Site Location Unknown	SW005	19/11/1996	Normal	-	-	-	-	6.8	5	33	-	9	-	-	-	-	-
Site Location Unknown	SW005	10/12/1996	Normal	-	-	-	-	6.4	5	16	-	9	-	-	-	-	-
Site Location Unknown	SW005	29/01/1997	Normal	-	-	-	-	6.2	6	15	-	7.7	-	-	-	-	-
Site Location Unknown	SW005	18/02/1997	Normal	-	-	-	-	6.6	6	11	-	6.5	-	-	-	-	-
Site Location Unknown	SW005	19/03/1997	Normal	-	-	-	-	6.8	4	25	-	7.2	-	-	-	-	-
Site Location Unknown	SW005	23/04/1997	Normal	-	-	-	-	5.7	5	5	-	6.2	-	-	-	-	-
Site Location Unknown	SW005	20/05/1997	Normal	-	-	-	-	6.6	6	42	-	10.1	-	-	-	-	-
Site Location Unknown	SW005	18/06/1997	Normal	-	-	-	-	5.6	7	25	-	8.3	-	-	-	-	-
Site Location Unknown	SW005	22/07/1997	Normal	-	-	-	-	6.6	4	7	-	8.7	-	-	-	-	-
Site Location Unknown	SW005	19/08/1997	Normal	-	-	-	-	6.2	8	16	-	6.1	-	-	-	-	-
Site Location Unknown	SW005	18/09/1997	Normal	-	-	-	-	6.6	4	7	-	3.2	-	-	-	-	-
Site Location Unknown	SW005	16/10/1997	Normal	-	-	-	-	6.5	5	49	-	10.3	-	-	-	-	-
Site Location Unknown	SW005	21/11/1997	Normal	-	-	-	-	7.1	5	4	-	7.72	-	-	-	-	-
Site Location Unknown	SW005	11/12/1997	Normal	-	-	-	-	6.7	8	43	-	5.1	-	-	-	-	-
Site Location Unknown	SW005	8/01/1998	Normal	-	-	-	-	6.5	10	17	-	6.17	336	5.69	-	-	-
Site Location Unknown	SW005	5/02/1998	Normal	-	-	-	-	6.3	8	9	-	6.97	390	6.25	-	-	-
Site Location Unknown	SW005	5/03/1998	Normal	-	-	-	-	6.3	7	6	-	5.45	296	6.56	-	-	-
Site Location Unknown	SW005	2/04/1998	Normal	-	-	-	-	6.3	8	15	-	6.3	367	6.1	-	-	-
Site Location Unknown	SW005	5/05/1998	Normal	-	-	-	-	5.9	10	163	-	8.38	223	6.09	-	-	-
Site Location Unknown	SW005	3/06/1998	Normal	-	-	-	-	6.7	4	50	-	6.84	95	5.98	-	-	-
Site Location Unknown	SW005	1/07/1998	Normal	-	-	-	-	7.5	4	62	-	9.45	196	6.6	-	-	-
Site Location Unknown	SW005	3/08/1998	Normal	-	-	-	-	5.9	6	27	-	6.29	269	6.28	-	-	-
Site Location Unknown	SW005	2/09/1998	Normal	-	-	-	-	7.1	9	52	-	7.8	260	6.87	-	-	-
Site Location Unknown	SW005	1/10/1998	Normal	-	-	-	-	6.5	3	15	-	8.8	259	6.27	-	-	-
Site Location Unknown	SW005	4/11/1998	Normal	-	-	-	-	6.6	4	15	-	6.5	286	6.31	-	-	-
Site Location Unknown	SW005	8/12/1998	Normal	-	-	-	-	6.6	5	13	-	6.9	263	6.77	-	-	-
Site Location Unknown	SW005	6/01/1999	Normal	-	-	-	-	6.9	7	8	-	6.8	383	6.9	-	-	-
Site Location Unknown	SW005	3/03/1999	Normal	-	-	-	-	6.6	7	75	-	6.5	200	6.65	-	-	-
Site Location Unknown	SW005	2/06/1999	Normal	36	-	-	-	7	4	9	-	6.74	362	7.09	-	-	-
Site Location Unknown	SW005	2/09/1999	Normal	59	-	-	-	6.7	8	10	-	7.35	587	6.53	-	-	-
Site Location Unknown	SW005	2/12/1999	Normal	28	-	0.1	<10	6.7	5	2	-	6.6	285	6.22	-	-	-
Site Location Unknown	SW005	2/03/2000	Normal	40	-	0.1	10	6.9	9	8	-	6.14	389	6.6	-	-	-
Site Location Unknown	SW005	1/06/2000	Normal	36	-	<0.1	20	7.8	6	15	-	9.03	297	6.74	-	-	-
Site Location Unknown	SW005	1/09/2000	Normal	38	-	<0.1	40	7.8	7	41	-	8.17	407	6.41	-	-	-
Site Location Unknown	SW005	20/11/2000	Normal	65	-	<0.1	120	7.6	17	30	-	6.89	408	6.17	-	-	-
Site Location Unknown	SW005	8/12/2000	Normal	43	-	<0.1	20	7.2	9	9	-	6.31	414	6.56	-	-	-
Site Location Unknown	SW005	7/03/2001	Normal	35	-	<0.1	30	6.9	8	19	-	6.85	342	7.08	-	-	-
Site Location Unknown	SW005	1/06/2001	Normal	38	-	0.1	30	6.9	8	34	-	7.62	329	6.4	-	-	-
Site Location Unknown	SW005	13/09/2001	Normal	19	-	<0.1	20	6.4	4	19	-	8.2	206	6.29	-	-	-
Site Location Unknown	SW005	11/12/2001	Normal	33	-	0.1	20	7	7	86	-	3.13	397	7.3	-	-	-
Site Location Unknown	SW005	12/03/2002	Normal	37	-	<0.1	40	7.2	8	25	-	6.72	275	6.18	-	-	-
Site Location Unknown	SW005	26/06/2002	Normal	29	2.5	0.05	5	7	4	16	-	5.7	375	6.7	112	0.47	-
Site Location Unknown	SW005	13/08/2002	Normal	26	3	0.05	40	6.8	5	90	-	5.15	389	6.59	44	1.28	0.00005
Site Location Unknown	SW005	16/10/2002	Normal	32	2.5	0.05	5	7.2	7	19	-	5.5	405	6.5	25	0.67	0.00005
Site Location Unknown	SW005	16/12/2002	Normal	39	9	0.05	5	7	26	58	-	1.26	297	6.3	10	3.01	0.00005
Site Location Unknown	SW005	20/03/2003	Normal	47	2.5	0.05	5	7.4	11	61	-	4.31	367	7.03	58	0.45	0.00005
Site Location Unknown	SW005	30/06/2003	Normal	40	2	0.05	14	7.06	8	7	-	6.24	363	6.93	171	0.28	0.00005
Site Location Unknown	SW005	25/09/2003	Normal	21	2.5	0.05	5	6.77	5	4	-	6.15	336	6.99	-50	0.13	0.00005
Site Location Unknown	SW005	11/12/2003	Normal	30	10	0.1	9	7.11	7	8	-	6.4	323	6.86	56	0.34	0.00005
Site Location Unknown	SW005	15/03/2004	Normal	45	<1	0.05	<5	7.17	9	38	-	2.8	362	7.6	240	1.8	0.00005
Site Location Unknown	SW005	30/06/2004	Normal	61	<1	0.05	<5	7.24	11	25	-	13.42	1354	7.46	177	0.51	0.00005
Site Location Unknown	SW005	7/09/2004	Normal	26	<1	0.05	<5	7.03	6	25	-	7.82	288	6.81	135	1.1	0.0002
Site Location Unknown	SW005	13/12/2004	Normal	38	3	<0.1	110	7.1	16	31	-	4.59	256	6.69	-212	7.3	<0.0001
Site Location Unknown	SW005	16/03/2005	Normal	60	<1	<0.1	10	7.66	14	27	-	4.83	442	6.94	-270	18,000	<0.0001
Site Location Unknown	SW005	29/06/2005	Normal	12	<1	<0.1	<5	7.3	9	43	-	8.18	166	6.61	108	2.3	<0.0001
Site Location Unknown	SW005	28/09/2005	Normal	-	3	-	-	-	-	200	-	6.3	312	6.49	163	-	-
Site Location Unknown	SW005	7/12/2005	Normal	-	1	-	-	7.1	-	41	-	4.83	317	6.88	50	-	-
Site Location Unknown	SW005	6/03/2006	Normal	-	-	-	-	7.1	-	19	-	4.5	358	7.45	23	-	-
Site Location Unknown	SW005	6/06/2006	Normal	-	-	-	-	6.7	-	220	-	-	57.1	6.73	48	-	-
Site Location Unknown	SW005	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	649	8.22	23	-	-
Site Location Unknown	SW008	26/02/2004	Normal	-	-	-	-	6.89	-	130	200	3.8	69	7.61	-	-	-
Site Location Unknown	SW009	26/02/2004	Normal	-	-	-	-	6.81	-	240	340	3.68	415	7.09	-	-	-
Site Location Unknown	SW010	9/04/2008	Normal	-	-	-	-	6.6	<1	2	-	-	12	-	-	-	-
Site Location Unknown	SW010	9/04/2008	Normal	-	-	-	-	7.9	26	11	-	-	561	-	-	-	-
Site Location Unknown	SW010	9/04/2008	field_D	-	-	-	-	7.62	-	-	7.8	9.25	533.8	-	-	-	-
Site Location Unknown	SW010	21/04/2008	Normal	-	-	-	-	7.8 - 7.89	24	35	34.51	14.24	496 - 500	-	-	-	-
Site Location Unknown	SW010	4/06/2008	Normal	-	-	-	-	7.8	17	73	-	-	349	-	-	-	-
Site Location Unknown	SW010	4/06/2008	field_D	-	-	-	-	7.8	17	68	-	-	349	-	-	-	-
Site Location Unknown	SW010	6/06/2008	field_D	-	-	-	-	7	<1	<1	-	-	1	-	-	-	-
Site Location Unknown	SW010	25/07/2008	Normal	-	-	-	-	7.9	20	7	-	-	533	-	-	-	-
Site Location Unknown	SW010	25/07/2008	field_D	-	-	-	-	7.9	20	5	-	-	535	-	-	-	-
Site Location Unknown	SW010	25/07/2008	field_D	-	-	-	-	7.6	<1	1	-	-	2	-	-	-	-
Site Location Unknown	SW010	29/07/2008	Normal	-	-	-	-	7.84 - 7.9	22	18	81	12.21	436 - 448.4	-	-	-	-

Appendix D
Table D5
Water Quality for Unidentified Locations

				Inorganics								Field					
				Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)	Aluminium	Cadmium
				mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV	mg/L	mg/L
ANZECC 2000 FW 95%																0.055	0.0002
ANZECC 2000 FW Med-Low Reliability																0.0008	0.0002
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**														
Site Location Unknown	SW010	25/08/2008	field_D	-	-	-	-	7.2	<1	<1	-	-	3	-	-	-	-
Site Location Unknown	SW010	25/08/2008	Normal	-	-	-	-	8.1	14	10	-	-	560	-	-	-	-
Site Location Unknown	SW010	25/08/2008	field_D	-	-	-	-	8	14	14	-	-	565	-	-	-	-
Site Location Unknown	SW010	6/09/2008	Normal	-	-	-	-	8	16	55	-	-	359	-	-	-	-
Site Location Unknown	SW010	6/09/2008	field_D	-	-	-	-	7.8	16	62	-	-	360	-	-	-	-
Site Location Unknown	SW010	6/09/2008	field_D	-	-	-	-	7.7	<1	<5	-	-	1	-	-	-	-
Site Location Unknown	SW010	15/10/2008	Normal	-	-	-	-	7.9	16	11	-	-	504	-	-	-	-
Site Location Unknown	SW010	15/10/2008	field_D	-	-	-	-	8	16	16	-	-	510	-	-	-	-
Site Location Unknown	SW010	15/10/2008	field_D	-	-	-	-	7.1	<1	<5	-	-	2	-	-	-	-
Site Location Unknown	SW010	14/12/2008	Normal	-	-	-	-	7.57 - 7.8	17	5	14.57	11.61	451 - 454.7	-	-	-	-
Site Location Unknown	SW010	15/02/2009	Normal	-	-	-	-	7.7 - 8.39	19	<5	23.08	6.78	303 - 358.8	-	-	-	-
Site Location Unknown	SW011	9/04/2008	Normal	-	-	-	-	7.8	13	52	-	-	426	-	-	-	-
Site Location Unknown	SW011	21/04/2008	Normal	-	-	-	-	7.8	13	220	-	-	383	-	-	-	-
Site Location Unknown	SW011	29/05/2008	Normal	-	-	-	-	7.9	-	20	-	-	460	-	-	-	-
Site Location Unknown	SW011	29/05/2008	field_D	-	-	-	-	7.8	16	11	-	-	479	-	-	-	-
Site Location Unknown	SW011	4/06/2008	Normal	-	-	-	-	7.9	12	510	-	-	288	-	-	-	-
Site Location Unknown	SW011	25/07/2008	Normal	-	-	-	-	7.9	8	20	-	-	546	-	-	-	-
Site Location Unknown	SW011	29/07/2008	Normal	-	-	-	-	7.7	21	360	-	-	338	-	-	-	-
Site Location Unknown	SW011	25/08/2008	Normal	-	-	-	-	8.2	7	42	-	-	376	-	-	-	-
Site Location Unknown	SW011	6/09/2008	Normal	-	-	-	-	7.6	11	646	-	-	283	-	-	-	-
Site Location Unknown	SW011	15/10/2008	Normal	-	-	-	-	8	8	9	-	-	445	-	-	-	-
Site Location Unknown	SW011	23/10/2008	Normal	-	-	-	-	8	8	12	-	-	762	-	-	-	-
Site Location Unknown	SW011	23/10/2008	field_D	-	-	-	-	7.9	8	14	-	-	447	-	-	-	-
Site Location Unknown	SW011	20/11/2008	field_D	-	-	-	-	7.4	19	740	-	-	479	-	-	-	-
Site Location Unknown	SW011	20/11/2008	Normal	-	-	-	-	7.5	11	189	-	-	476	-	-	-	-
Site Location Unknown	SW011	14/12/2008	Normal	-	-	-	-	7.3	7	78	-	-	377	-	-	-	-
Site Location Unknown	SW011	14/12/2008	field_D	-	-	-	-	7.2	7	68	-	-	377	-	-	-	-
Site Location Unknown	SW011	14/12/2008	field_D	-	-	-	-	7.1	<1	<5	-	-	3	-	-	-	-
Site Location Unknown	SW011	12/02/2009	Normal	-	-	-	-	7.7 - 7.83	10	127	-	12.97	423 - 490	-	-	-	-
Site Location Unknown	SW011	12/02/2009	field_D	-	-	-	-	7	9	78	-	-	430	-	-	-	-
Site Location Unknown	SW011	12/02/2009	field_D	-	-	-	-	6.7	2	<5	-	-	4	-	-	-	-
Site Location Unknown	SW011	15/02/2009	Normal	-	-	-	-	7.4 - 8.21	11	520	419	6.09	198 - 220.3	-	-	-	-
Site Location Unknown	SW012	10/04/2008	Normal	-	-	-	-	7.2	12	7	-	-	320	-	-	-	-
Site Location Unknown	SW012	21/04/2008	Normal	-	-	-	-	7.4	16	45	-	-	234	-	-	-	-
Site Location Unknown	SW012	29/05/2008	Normal	-	-	-	-	7	18	62	-	-	325	-	-	-	-
Site Location Unknown	SW012	4/06/2008	Normal	-	-	-	-	7.4	15	9	-	-	137	-	-	-	-
Site Location Unknown	SW012	25/07/2008	Normal	-	-	-	-	7	10	8	-	-	454	-	-	-	-
Site Location Unknown	SW012	29/07/2008	Normal	-	-	-	-	7.6	18	33	-	-	306	-	-	-	-
Site Location Unknown	SW012	29/07/2008	field_D	-	-	-	-	7.11 - 7.5	<1 - 17	<1 - 29	-	10.69	2 - 307	-	-	-	-
Site Location Unknown	SW012	25/08/2008	Normal	-	-	-	-	7	13	36	-	-	331	-	-	-	-
Site Location Unknown	SW012	6/09/2008	Normal	-	-	-	-	7.5	17	21	-	-	260	-	-	-	-
Site Location Unknown	SW012	23/10/2008	Normal	-	-	-	-	7	20	305	-	-	435	-	-	-	-
Site Location Unknown	SW012	14/12/2008	Normal	-	-	-	-	6.5	21	13	-	-	256	-	-	-	-
Site Location Unknown	SW012	15/02/2009	Normal	-	-	-	-	7	18	12	-	-	158	-	-	-	-
Site Location Unknown	SW012	15/02/2009	field_D	-	-	-	-	7	18	<5	-	-	160	-	-	-	-
Site Location Unknown	SW012	15/02/2009	field_D	-	-	-	-	6.9	<1	<5	-	-	2	-	-	-	-
Site Location Unknown	SW013	10/04/2008	Normal	-	-	-	-	7.8	15	23	-	-	510	-	-	-	-
Site Location Unknown	SW013	21/04/2008	Normal	-	-	-	-	7.9	46	7	-	-	514	-	-	-	-
Site Location Unknown	SW013	29/05/2008	Normal	-	-	-	-	7.2	14	19	-	-	381	-	-	-	-
Site Location Unknown	SW013	4/06/2008	Normal	-	-	-	-	7.7	27	90	-	-	342	-	-	-	-
Site Location Unknown	SW013	25/07/2008	Normal	-	-	-	-	7.8	16	95	-	-	481	-	-	-	-
Site Location Unknown	SW013	29/07/2008	Normal	-	-	-	-	-	24	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	25/08/2008	Normal	-	-	-	-	8.3	21	23	-	-	577	-	-	-	-
Site Location Unknown	SW013	6/09/2008	Normal	-	-	-	-	7.8	25	24	-	-	421	-	-	-	-
Site Location Unknown	SW013	15/10/2008	Normal	-	-	-	-	7.8	13	124	-	-	511	-	-	-	-
Site Location Unknown	SW013	23/10/2008	Normal	-	-	-	-	8.4	16	44	-	-	474	-	-	-	-
Site Location Unknown	SW013	20/11/2008	Normal	-	-	-	-	7.8	15	123	-	-	495	-	-	-	-
Site Location Unknown	SW013	14/12/2008	Normal	-	-	-	-	8.6	22	7	-	-	408	-	-	-	-
Site Location Unknown	SW013	12/02/2009	Normal	-	-	-	-	7.1	16	362	-	-	161	-	-	-	-
Site Location Unknown	SW013	15/02/2009	Normal	-	-	-	-	7.6	40	24	-	-	509	-	-	-	-
Site Location Unknown	SW014	10/04/2008	Normal	-	-	-	-	7.6	8	6	-	-	803	-	-	-	-
Site Location Unknown	SW014	21/04/2008	Normal	-	-	-	-	7.1	250	180	-	-	1059	-	-	-	-
Site Location Unknown	SW014	29/05/2008	Normal	-	-	-	-	7.1	13	180	-	-	574	-	-	-	-
Site Location Unknown	SW014	4/06/2008	Normal	-	-	-	-	7.1	54	2000	-	-	376	-	-	-	-
Site Location Unknown	SW014	25/07/2008	Normal	-	-	-	-	7.8	15	40	-	-	732	-	-	-	-
Site Location Unknown	SW014	29/07/2008	Normal	-	-	-	-	7.7	28	400	-	-	555	-	-	-	-
Site Location Unknown	SW014	25/08/2008	Normal	-	-	-	-	7.8	9	16	-	-	670	-	-	-	-
Site Location Unknown	SW014	6/09/2008	Normal	-	-	-	-	7.3	76	1490	-	-	422	-	-	-	-
Site Location Unknown	SW014	15/10/2008	Normal	-	-	-	-	7.9	9	23	-	-	770	-	-	-	-
Site Location Unknown	SW014	23/10/2008	Normal	-	-	-	-	7.7	16	105	-	-	807	-	-	-	-
Site Location Unknown	SW014	14/12/2008	Normal	-	-	-	-	7.5	28	144	-	-	636	-	-	-	-
Site Location Unknown	SW014	12/02/2009	Normal	-	-	-	-	7.5	14	210	-	-	609	-	-	-	-
Site Location Unknown	SW014	15/02/2009	Normal	-	-	-	-	7.4	72	1500	-	-	512	-	-	-	-
Site Location Unknown	SW015	10/04/2008	Normal	-	-	-	-	7.9	13	33	-	-	512	-	-	-	-
Site Location Unknown	SW015	21/04/2008	Normal	-	-	-	-	8	23	72	-	-	476	-	-	-	-
Site Location Unknown	SW015	29/05/2008	Normal	-	-	-	-	7.7	10	95	-	-	346	-	-	-	-
Site Location Unknown	SW015	4/06/2008	Normal	-	-	-	-	8	21	150	-	-	278	-	-	-	-
Site Location Unknown	SW015	25/07/2008	Normal	-	-	-	-	7.9	9	6	-	-	396	-	-	-	-
Site Location Unknown	SW015	29/07/2008	Normal	-	-	-	-	8.1	11	22	-	-	277	-	-	-	-
Site Location Unknown	SW015	25/08/2008	Normal	-	-	-	-	7.9	8	5	-	-	384	-	-	-	-
Site Location Unknown	SW015	6/09/2008	Normal	-	-	-	-	7.6	10	1590	-	-	161	-	-	-	-
Site Location Unknown	SW015	15/10/2008	Normal	-	-	-	-	8.9	14	28	-	-	280	-	-	-	-
Site Location Unknown	SW015	23/10/2008	Normal	-	-	-	-	9	12	88	-	-	273	-	-	-	-
Site Location Unknown	SW015	20/11/2008	Normal	-	-	-	-	8.5	14	239	-	-	313	-	-	-	-
Site Location Unknown	SW015	14/12/2008	Normal	-	-	-	-	8.5	11	<5	-	-	347	-	-	-	-
Site Location Unknown	SW015	12/02/2009	Normal	-	-	-	-	7.2	17	128	-	-	253	-	-	-	-
Site Location Unknown	SW015	15/02/2009	Normal	-	-	-	-	7.8	12	8	-	-	256	-	-	-	-
Site Location Unknown	SWD05	7/06/2012	Normal	-	16	-	-	-	-	310	580	5.87	409.8	6.93	116.6	-	-
Site Location Unknown	Test Cell	30/07/2004	Normal	-	-	-	-	7.35	-	-	145	8.2	473	-	-	-	-
Site Location Unknown	Test Cell	23/08/2004	Normal	-	-	-	-	6.81	-	-	264.5	6.41	420	-	-	-	-
Site Location Unknown	Test Cell	8/09/2004	Normal	-	-	-	-	7.31	-	-	425	5.11	441	-	-	-	-
Site Location Unknown	Test Cell	14/09/2004	Normal	-	-	-	-	7.28	-	-	-	7.11	448	-	-	-	-

Appendix D
Table D5
Water Quality for Unidentified Locations

				Inorganics								Field					
				Alkalinity (total)	BOD	Fluoride	Ortho Phosphorus (as P)	pH (Lab)	Total Organic Carbon	Total Suspended Solids	Turbidity	Dissolved Oxygen (mg/L) (Field) (Filtered)	Electrical conductivity (field)	pH (Field)	Redox (Field)	Aluminium	Cadmium
				mg/L	mg/L	mg/L	µg/L	pH Units	mg/L	mg/L	NTU	mg/L	uS/cm	pH Units	mV	mg/L	mg/L
ANZECC 2000 FW 95%																0.055	0.0002
ANZECC 2000 FW Med-Low Reliability																0.0008	0.0002
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**														
Site Location Unknown	Test Cell	7/10/2004	Normal	-	-	-	-	7.07	-	-	137.1	2.67	381	-	-	-	-
Site Location Unknown	Test Cell	13/10/2004	Normal	-	-	-	-	7.3	-	-	129.9	5.52	408	-	-	-	-
Site Location Unknown	Test Cell	27/10/2004	Normal	-	-	-	-	7.32	-	-	176.4	4.11	570	-	-	-	-
Site Location Unknown	Test Cell	2/11/2004	Normal	-	-	-	-	7.21	-	-	160.4	4.14	472	-	-	-	-
Site Location Unknown	Test Cell	9/11/2004	Normal	-	-	-	-	7.16	-	-	84.2	4.35	399	-	-	-	-
Site Location Unknown	Test Cell	2/02/2005	Normal	-	-	-	-	7.97	-	-	-	6.83	347	-	-	-	-
Site Location Unknown	Test Cell	18/03/2005	Normal	-	-	-	-	7.35	-	-	139.5	4.47	439	-	-	-	-
Site Location Unknown	Test Cell	4/04/2005	Normal	-	-	-	-	7.57	-	-	48.6	7.04	381	-	-	-	-
Site Location Unknown	Test Cell Dam	14/06/2005	Normal	-	-	-	-	7.69	-	-	62.9	7.19	519	-	-	-	-
Site Location Unknown	Test Cell Dam	5/07/2005	Normal	-	-	-	-	7.18	-	-	-	3.95	494	-	-	-	-
Site Location Unknown	Test Cell Dam	16/08/2005	Normal	-	-	-	-	7.56	-	-	-	7.97	639	-	-	-	-
Site Location Unknown	Test Cell Dam	9/03/2006	Normal	-	-	-	-	7.57	-	-	45.5	4.9	490	-	-	-	-
Site Location Unknown	Test Cell Dam	3/04/2006	Normal	-	-	-	-	8.02	-	-	60.9	8.17	372	-	-	-	-
Site Location Unknown	Test Cell Dam	25/10/2006	Normal	-	-	-	-	7.45	-	-	20.5	7.69	545	-	-	-	-
Site Location Unknown	Test Cell Dam	21/12/2006	Normal	-	-	-	-	7.12	-	-	349	3.4	320	-	-	-	-
Site Location Unknown	Test Cell Dam	3/01/2007	Normal	-	-	-	-	7.06	-	-	774	3.8	268	-	-	-	-
Site Location Unknown	Test Cell Dam	6/03/2007	Normal	-	-	-	-	7	-	-	338	7.84	296	-	-	-	-
Site Location Unknown	Test Cell Dam	11/04/2007	Normal	-	-	-	-	7.28	-	-	79	4.69	350	-	-	-	-
Site Location Unknown	Test Cell Dam	22/05/2007	Normal	-	-	-	-	7.62	-	-	291	3.46	265	-	-	-	-
Site Location Unknown	Test Cell Dam	22/06/2007	Normal	-	-	-	-	7.34	-	-	100	2.88	720	-	-	-	-
Site Location Unknown	TMC	1/09/2006	Normal	-	-	-	-	5.29	-	-	<100	1.77	324	-	-	-	-
Statistical Summary																	
Number of Results				54	34	50	50	290	248	259	37	203	225	95	39	27	26
Number of Detects				54	28	27	45	290	240	249	36	203	225	95	39	27	22
Minimum Concentration				12	0.5	0.05	2.5	5.29	<1	<1	7.8	1.26	1	5.69	10	0.1	0.00005
Minimum Detect				12	0.5	0.05	2.5	5.29	1	1	7.8	1.26	1	5.69	10	0.1	0.00005
Maximum Concentration				140	16	0.1	560	9	250	2000	774	15.16	1354	8.28	270	18000	0.001
Maximum Detect				140	16	0.1	560	9	250	2000	774	15.16	1354	8.28	270	18000	0.001
Average Concentration				41	3.2	0.055	41	7.1	12	81	177	6.8	372	6.8	98	677	0.0001
Geometric Average				37	1.9	0.054	14	7	8.2	25	111	6.4	293	6.7	69	0.93	0.000064
Median Concentration				37.5	2.5	0.05	10	7.1	8	22	129.9	6.78	359	6.67	59	0.45	0.00005
Standard Deviation				20	3.4	0.015	88	0.68	18	221	170	2.2	173	0.55	76	3462	0.00019
Geometric Standard Deviation				1.5	2.8	1.2	3.8	1.1	2.4	4.1	2.9	1.4	2.9	1.1	2.4	13	2

Appendix D
Table D5
Water Quality for Unidentified Locations

				Metals			PAH														
				Iron	Iron (Filtered)	Lead	Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene
				mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%						0.0034														16	
ANZECC 2000 FW Med-Low Reliability				0.3	0.3	0.0034				0.01		0.1					1			16	0.6
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																		
Site Location Unknown	DS3	5/05/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Polished water	21/12/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Polished water	12/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Polished water	9/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Polished water	5/07/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Recirc water	7/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Recirc water	27/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Recirc water	2/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Recirc water	9/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	29/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	18/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	6/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	5/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	11/12/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	12/03/2002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	26/06/2002	Normal	1.89	1.82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	13/08/2002	Normal	0.78	0.67	0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	17/10/2002	Normal	1.16	0.95	0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	16/12/2002	Normal	1.13	0.12	0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	20/03/2003	Normal	1.71	0.3	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	30/06/2003	Normal	0.59	0.32	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	25/09/2003	Normal	0.74	0.78	0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	11/12/2003	Normal	0.81	0.11	0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	15/03/2004	Normal	1.1	0.17	0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	30/06/2004	Normal	0.73	0.07	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	7/09/2004	Normal	1	0.025	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	13/12/2004	Normal	4.8	<0.05	0.017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	16/03/2005	Normal	1.4	1.2	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	29/06/2005	Normal	8.5	7.6	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW002	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D5
Water Quality for Unidentified Locations

				Metals			PAH														
				Iron	Iron (Filtered)	Lead	Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene
				mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%						0.0034														16	
ANZECC 2000 FW Med-Low Reliability				0.3	0.3	0.0034				0.01		0.1					1			16	0.6
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																		
Site Location Unknown	SW005	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	29/01/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	18/02/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	5/05/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	6/01/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	3/03/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	2/06/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	2/09/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	2/12/1999	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	2/03/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/06/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/09/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	20/11/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	8/12/2000	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	7/03/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/06/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	13/09/2001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	11/12/2001	Normal	-	-	-	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Site Location Unknown	SW005	12/03/2002	Normal	-	-	-	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Site Location Unknown	SW005	26/06/2002	Normal	0.97	0.89	-	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Site Location Unknown	SW005	13/08/2002	Normal	2.06	1.28	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	16/10/2002	Normal	1.06	0.025	0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	16/12/2002	Normal	3.86	0.61	0.027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	20/03/2003	Normal	0.96	0.19	0.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	30/06/2003	Normal	1.2	0.12	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	25/09/2003	Normal	0.8	0.88	0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	11/12/2003	Normal	1.3	0.0025	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	15/03/2004	Normal	2.4	0.12	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	30/06/2004	Normal	1.1	0.68	0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	7/09/2004	Normal	0.79	0.38	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	13/12/2004	Normal	7.1	0.98	0.022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	16/03/2005	Normal	2.2	1.3	0.003	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	29/06/2005	Normal	1.6	0.11	0.004	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW008	26/02/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW009	26/02/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	9/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	9/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	9/04/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	21/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	4/06/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	4/06/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	6/06/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	25/07/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	25/07/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	25/07/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	29/07/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D5
Water Quality for Unidentified Locations

	Metals			PAH															
	Iron	Iron (Filtered)	Lead	Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene
	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%			0.0034														16	
ANZECC 2000 FW Med-Low Reliability	0.3	0.3	0.0034				0.01		0.1					1			16	0.6

Monitoring_Zone	Location_Code	Sampled_Date_Time	Sample_Type																	
Site Location Unknown	SW010	25/08/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	25/08/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	25/08/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	6/09/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	6/09/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	6/09/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	15/10/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	15/10/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	15/10/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	14/12/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW010	15/02/2009	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	9/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	21/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	29/05/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	29/05/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	4/06/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	25/07/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	29/07/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	25/08/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	6/09/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	15/10/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	23/10/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	23/10/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	20/11/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	20/11/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	14/12/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	14/12/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	14/12/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	12/02/2009	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	12/02/2009	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	12/02/2009	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW011	15/02/2009	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	10/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	21/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	29/05/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	4/06/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	25/07/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	29/07/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	29/07/2008	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	25/08/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	6/09/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	23/10/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	14/12/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	15/02/2009	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	15/02/2009	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW012	15/02/2009	field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	10/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	21/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	29/05/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	4/06/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	25/07/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	29/07/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	25/08/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	6/09/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	15/10/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	23/10/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	20/11/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	14/12/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	12/02/2009	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW013	15/02/2009	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	10/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	21/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	29/05/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	4/06/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	25/07/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	29/07/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	25/08/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	6/09/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	15/10/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	23/10/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	14/12/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	12/02/2009	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW014	15/02/2009	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	10/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	21/04/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	29/05/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	4/06/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	25/07/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	29/07/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	25/08/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	6/09/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	15/10/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	23/10/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	20/11/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	14/12/2008	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	12/02/2009	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW015	15/02/2009	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SWD05	7/06/2012	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell	30/07/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell	23/08/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell	14/09/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D5
Water Quality for Unidentified Locations

	Metals			PAH															
	Iron	Iron (Filtered)	Lead	Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene
	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC 2000 FW 95%			0.0034														16	
ANZECC 2000 FW Med-Low Reliability	0.3	0.3	0.0034				0.01		0.1					1			16	0.6
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**																
Site Location Unknown	Test Cell	7/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell	13/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell	27/10/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell	2/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell	9/11/2004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell	2/02/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell	18/03/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell	4/04/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	14/06/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	5/07/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	16/08/2005	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	9/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	3/04/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	25/10/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	21/12/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	3/01/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	6/03/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	11/04/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	22/05/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	22/06/2007	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	TMC	1/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																			
Number of Results				28	28	26	3	3	3	3	3	3	9	3	3	3	3	3	3	3
Number of Detects				28	27	25	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Minimum Concentration				0.59	0.0025	0.0005	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Minimum Detect				0.59	0.0025	0.0005	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Maximum Concentration				8.5	7.6	0.027	0.05	0.05	0.05	0.05	0.05	0.05	<0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Maximum Detect				8.5	7.6	0.027	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Average Concentration				1.9	0.78	0.0051	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Geometric Average				1.4	0.28	0.0023	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Median Concentration				1.145	0.35	0.002	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Standard Deviation				1.9	1.4	0.0072	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Geometric Standard Deviation				2	5.4	3.6														

Appendix D
Table D5
Water Quality for Unidentified Locations

				Phenols			Major Ions							Nutrients	
				Phenol	Phenolics	Phenolics Total	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate	Ammonia as N	Nitrate (as N)
				µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				320									0.9	0.158
ANZECC 2000 FW Med-Low Reliability				320										0.7
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**											
Site Location Unknown	DS3	5/05/2005	Normal	-	-	-	-	-	-	-	-	-	3.2	-
Site Location Unknown	Polished water	21/12/2004	Normal	-	-	-	-	-	-	-	-	-	0.3	-
Site Location Unknown	Polished water	12/12/2005	Normal	-	-	-	-	-	-	-	-	-	0.3	-
Site Location Unknown	Polished water	9/03/2006	Normal	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Polished water	5/07/2006	Normal	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Recirc water	7/10/2004	Normal	-	-	-	-	-	-	-	-	-	0.3	-
Site Location Unknown	Recirc water	27/10/2004	Normal	-	-	-	-	-	-	-	-	-	0.2	-
Site Location Unknown	Recirc water	2/11/2004	Normal	-	-	-	-	-	-	-	-	-	0.6	-
Site Location Unknown	Recirc water	9/11/2004	Normal	-	-	-	-	-	-	-	-	-	0.5	-
Site Location Unknown	SW002	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	0.1	-
Site Location Unknown	SW002	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	0.33	-
Site Location Unknown	SW002	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	0.26	-
Site Location Unknown	SW002	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	0.51	-
Site Location Unknown	SW002	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	0.7	-
Site Location Unknown	SW002	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	0.5	-
Site Location Unknown	SW002	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	0.05	-
Site Location Unknown	SW002	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	0.05	-
Site Location Unknown	SW002	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	0.62	-
Site Location Unknown	SW002	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW002	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW002	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW002	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW002	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW002	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW002	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW002	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW002	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	0.3	-
Site Location Unknown	SW002	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	0.17	-
Site Location Unknown	SW002	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	2	-
Site Location Unknown	SW002	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	0.3	-
Site Location Unknown	SW002	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	0.23	-
Site Location Unknown	SW002	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	0.3	-
Site Location Unknown	SW002	29/01/1997	Normal	-	-	-	-	-	-	-	-	-	0.31	-
Site Location Unknown	SW002	18/02/1997	Normal	-	-	-	-	-	-	-	-	-	0.17	-
Site Location Unknown	SW002	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	0.26	-
Site Location Unknown	SW002	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	0.12	-
Site Location Unknown	SW002	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	0.01	-
Site Location Unknown	SW002	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	0.24	-
Site Location Unknown	SW002	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	0.17	-
Site Location Unknown	SW002	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	0.45	-
Site Location Unknown	SW002	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	0.2	-
Site Location Unknown	SW002	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	0.34	-
Site Location Unknown	SW002	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	0.46	-
Site Location Unknown	SW002	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	0.15	-
Site Location Unknown	SW002	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	0.005	-
Site Location Unknown	SW002	6/02/1998	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW002	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	0.43	-
Site Location Unknown	SW002	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	0.09	-
Site Location Unknown	SW002	5/05/1998	Normal	-	-	-	-	-	-	-	-	-	0.37	-
Site Location Unknown	SW002	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	0.57	-
Site Location Unknown	SW002	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	0.47	-
Site Location Unknown	SW002	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	0.72	-
Site Location Unknown	SW002	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	0.39	-
Site Location Unknown	SW002	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	0.66	-
Site Location Unknown	SW002	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	0.14	-
Site Location Unknown	SW002	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	0.21	-
Site Location Unknown	SW002	6/01/1999	Normal	<10	-	-	-	-	-	-	-	-	2	-
Site Location Unknown	SW002	3/03/1999	Normal	<10	-	-	-	-	-	-	-	-	0.3	-
Site Location Unknown	SW002	2/06/1999	Normal	<10	-	-	-	-	-	-	-	-	1.8	-
Site Location Unknown	SW002	2/09/1999	Normal	<10	-	-	-	-	-	-	-	-	0.59	-
Site Location Unknown	SW002	2/12/1999	Normal	<10	-	-	17	39	4	7.8	17	9	0.63	0.2
Site Location Unknown	SW002	2/03/2000	Normal	<10	-	-	9.6	69	4.4	4.6	34	7	0.02	0.02
Site Location Unknown	SW002	1/06/2000	Normal	<10	-	-	8.2	39	3	5.2	19	13	0.51	0.47
Site Location Unknown	SW002	1/09/2000	Normal	<10	-	-	13	79	5.4	4.6	39	15	0.17	0.33
Site Location Unknown	SW002	20/11/2000	Normal	20	-	-	37	100	8.8	56	45	24	1.78	0.04
Site Location Unknown	SW002	8/12/2000	Normal	<10	-	-	19	84	6.2	24	41	17	4.36	0.13
Site Location Unknown	SW002	7/03/2001	Normal	<10	-	-	9.6	20	1.4	5.2	12	9	<0.01	<0.01
Site Location Unknown	SW002	1/06/2001	Normal	<10	-	-	15	64	6	12	40	17	2.97	0.36
Site Location Unknown	SW002	13/09/2001	Normal	<10	-	-	18	57	5.6	7.6	32	21	0.6	0.59
Site Location Unknown	SW002	11/12/2001	Normal	<10	-	-	14	82	6	9.4	44	15	0.16	0.23
Site Location Unknown	SW002	12/03/2002	Normal	<10	-	-	18	61	5.8	20	36	20	2.85	0.87
Site Location Unknown	SW002	26/06/2002	Normal	5	-	-	18	79	7	9.8	45	21	0.74	0.74
Site Location Unknown	SW002	13/08/2002	Normal	5	-	-	19	81	6.8	10	42	25	0.31	0.93
Site Location Unknown	SW002	17/10/2002	Normal	5	-	-	20	97	8.8	9.6	65	17	0.06	0.05
Site Location Unknown	SW002	16/12/2002	Normal	5	-	-	15	64	6	7.2	36	21	0.15	0.54
Site Location Unknown	SW002	20/03/2003	Normal	5	-	-	21	65	6.8	13	43	26	0.59	0.005
Site Location Unknown	SW002	30/06/2003	Normal	20	-	-	26	69	5.9	19	33	26	3.4	0.86
Site Location Unknown	SW002	25/09/2003	Normal	5	-	-	15	80	7	7.2	47	10	0.22	0.2
Site Location Unknown	SW002	11/12/2003	Normal	5	-	-	18	64	6.5	10	40	16	0.16	0.36
Site Location Unknown	SW002	15/03/2004	Normal	10	-	-	20	60	6.1	12	37	17	0.27	0.34
Site Location Unknown	SW002	30/06/2004	Normal	5	-	-	17	90	7.2	7.4	48	11	0.03	0.04
Site Location Unknown	SW002	7/09/2004	Normal	5	-	-	151	73	5.7	6.7	31	8	0.33	1.1
Site Location Unknown	SW002	13/12/2004	Normal	140	-	-	24	49	5.9	15	34	27	1.7	1.8
Site Location Unknown	SW002	16/03/2005	Normal	20	-	-	23	91	7.9	18	48	17	4.2	2
Site Location Unknown	SW002	29/06/2005	Normal	<10	-	-	16	69	5.3	8.2	35	17	0.59	1.1
Site Location Unknown	SW002	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	0.16	-
Site Location Unknown	SW002	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	0.31	-
Site Location Unknown	SW002	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	0.1	-
Site Location Unknown	SW002	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	0.22	-
Site Location Unknown	SW002	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW005	1/02/1995	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	1/03/1995	Normal	-	-	-	-	-	-	-	-	-	0.18	-

Appendix D
Table D5
Water Quality for Unidentified Locations

				Phenols			Major Ions							Nutrients	
				Phenol	Phenolics	Phenolics Total	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate	Ammonia as N	Nitrate (as N)
				µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				320									0.9	0.158
ANZECC 2000 FW Med-Low Reliability				320										0.7
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**											
Site Location Unknown	SW005	1/04/1995	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	1/05/1995	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	1/06/1995	Normal	-	-	-	-	-	-	-	-	-	0.18	-
Site Location Unknown	SW005	1/07/1995	Normal	-	-	-	-	-	-	-	-	-	0.34	-
Site Location Unknown	SW005	1/08/1995	Normal	-	-	-	-	-	-	-	-	-	0.05	-
Site Location Unknown	SW005	1/09/1995	Normal	-	-	-	-	-	-	-	-	-	0.05	-
Site Location Unknown	SW005	1/10/1995	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	1/11/1995	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	1/12/1995	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	1/01/1996	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	1/02/1996	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	1/03/1996	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	1/04/1996	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	1/05/1996	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	1/06/1996	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	16/07/1996	Normal	-	-	-	-	-	-	-	-	-	0.01	-
Site Location Unknown	SW005	14/08/1996	Normal	-	-	-	-	-	-	-	-	-	0.08	-
Site Location Unknown	SW005	17/09/1996	Normal	-	-	-	-	-	-	-	-	-	0.77	-
Site Location Unknown	SW005	10/10/1996	Normal	-	-	-	-	-	-	-	-	-	0.6	-
Site Location Unknown	SW005	19/11/1996	Normal	-	-	-	-	-	-	-	-	-	0.072	-
Site Location Unknown	SW005	10/12/1996	Normal	-	-	-	-	-	-	-	-	-	0.025	-
Site Location Unknown	SW005	29/01/1997	Normal	-	-	-	-	-	-	-	-	-	0.07	-
Site Location Unknown	SW005	18/02/1997	Normal	-	-	-	-	-	-	-	-	-	0.22	-
Site Location Unknown	SW005	19/03/1997	Normal	-	-	-	-	-	-	-	-	-	0.06	-
Site Location Unknown	SW005	23/04/1997	Normal	-	-	-	-	-	-	-	-	-	0.03	-
Site Location Unknown	SW005	20/05/1997	Normal	-	-	-	-	-	-	-	-	-	0.03	-
Site Location Unknown	SW005	18/06/1997	Normal	-	-	-	-	-	-	-	-	-	0.5	-
Site Location Unknown	SW005	22/07/1997	Normal	-	-	-	-	-	-	-	-	-	0.03	-
Site Location Unknown	SW005	19/08/1997	Normal	-	-	-	-	-	-	-	-	-	0.18	-
Site Location Unknown	SW005	18/09/1997	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	16/10/1997	Normal	-	-	-	-	-	-	-	-	-	0.14	-
Site Location Unknown	SW005	21/11/1997	Normal	-	-	-	-	-	-	-	-	-	0.14	-
Site Location Unknown	SW005	11/12/1997	Normal	-	-	-	-	-	-	-	-	-	0.08	-
Site Location Unknown	SW005	8/01/1998	Normal	-	-	-	-	-	-	-	-	-	0.005	-
Site Location Unknown	SW005	5/02/1998	Normal	-	-	-	-	-	-	-	-	-	0.005	-
Site Location Unknown	SW005	5/03/1998	Normal	-	-	-	-	-	-	-	-	-	0.04	-
Site Location Unknown	SW005	2/04/1998	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	5/05/1998	Normal	-	-	-	-	-	-	-	-	-	0.27	-
Site Location Unknown	SW005	3/06/1998	Normal	-	-	-	-	-	-	-	-	-	0.1	-
Site Location Unknown	SW005	1/07/1998	Normal	-	-	-	-	-	-	-	-	-	0.14	-
Site Location Unknown	SW005	3/08/1998	Normal	-	-	-	-	-	-	-	-	-	0.39	-
Site Location Unknown	SW005	2/09/1998	Normal	-	-	-	-	-	-	-	-	-	1.13	-
Site Location Unknown	SW005	1/10/1998	Normal	-	-	-	-	-	-	-	-	-	0.2	-
Site Location Unknown	SW005	4/11/1998	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW005	8/12/1998	Normal	-	-	-	-	-	-	-	-	-	0.16	-
Site Location Unknown	SW005	6/01/1999	Normal	<10	-	-	-	-	-	-	-	-	1.02	-
Site Location Unknown	SW005	3/03/1999	Normal	<10	-	-	-	-	-	-	-	-	0.18	-
Site Location Unknown	SW005	2/06/1999	Normal	<10	-	-	-	-	-	-	-	-	0.17	-
Site Location Unknown	SW005	2/09/1999	Normal	10	-	-	-	-	-	-	-	-	0.1	-
Site Location Unknown	SW005	2/12/1999	Normal	<10	-	-	12	46	4.2	5.8	24	12	0.2	0.43
Site Location Unknown	SW005	2/03/2000	Normal	<10	-	-	13	86	6.6	11	45	9	0.27	0.06
Site Location Unknown	SW005	1/06/2000	Normal	<10	-	-	13	46	3.8	8.6	25	14	1.25	0.58
Site Location Unknown	SW005	1/09/2000	Normal	<10	-	-	17	82	6.8	8.4	42	25	0.02	<0.01
Site Location Unknown	SW005	20/11/2000	Normal	20	-	-	16	70	5.6	22	34	18	2.8	0.09
Site Location Unknown	SW005	8/12/2000	Normal	<10	-	-	14	80	6	14	39	12	0.65	0.58
Site Location Unknown	SW005	7/03/2001	Normal	<10	-	-	12	62	5.2	12	32	12	1.1	0.61
Site Location Unknown	SW005	1/06/2001	Normal	<10	-	-	12	55	5.2	10	34	17	2.42	0.65
Site Location Unknown	SW005	13/09/2001	Normal	<10	-	-	11	66	5.4	7.4	35	16	0.3	0.81
Site Location Unknown	SW005	11/12/2001	Normal	<10	-	-	14	81	6.4	8.2	41	11	0.27	0.03
Site Location Unknown	SW005	12/03/2002	Normal	10	-	-	11	56	4.8	11	31	16	1.13	0.57
Site Location Unknown	SW005	26/06/2002	Normal	5	-	-	14	77	6.6	8.2	43	19	0.11	0.7
Site Location Unknown	SW005	13/08/2002	Normal	5	-	-	16	85	7	12	43	24	0.33	1.2
Site Location Unknown	SW005	16/10/2002	Normal	5	-	-	16	130	9.4	12	62	19	0.01	0.005
Site Location Unknown	SW005	16/12/2002	Normal	10	-	-	16	55	8.8	11	33	31	0.005	0.005
Site Location Unknown	SW005	20/03/2003	Normal	10	-	-	22	58	7	17	38	33	0.32	0.6
Site Location Unknown	SW005	30/06/2003	Normal	70	-	-	20	64	5.9	12	30	24	1.9	0.6
Site Location Unknown	SW005	25/09/2003	Normal	5	-	-	13	86	6.8	8.2	48	11	0.07	0.02
Site Location Unknown	SW005	11/12/2003	Normal	5	-	-	13	80	7.2	8.6	41	11	0.06	0.06
Site Location Unknown	SW005	15/03/2004	Normal	10	-	-	21	53	6.2	13	32	21	0.29	0.18
Site Location Unknown	SW005	30/06/2004	Normal	5	-	-	26	85	8.8	18	48	26	0.01	0.05
Site Location Unknown	SW005	7/09/2004	Normal	5	-	-	16	65	5	10	28	13	0.18	2
Site Location Unknown	SW005	13/12/2004	Normal	600	-	-	19	45	5.4	14	3	22	1.2	1.4
Site Location Unknown	SW005	16/03/2005	Normal	130	-	-	23	78	7.5	15	36	25	0.1	0.13
Site Location Unknown	SW005	29/06/2005	Normal	170	-	-	7.9	45	3.4	7	24	13	0.03	0.31
Site Location Unknown	SW005	28/09/2005	Normal	-	-	-	-	-	-	-	-	-	0.03	-
Site Location Unknown	SW005	7/12/2005	Normal	-	-	-	-	-	-	-	-	-	0.11	-
Site Location Unknown	SW005	6/03/2006	Normal	-	-	-	-	-	-	-	-	-	0.01	-
Site Location Unknown	SW005	6/06/2006	Normal	-	-	-	-	-	-	-	-	-	0.04	-
Site Location Unknown	SW005	27/09/2006	Normal	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	SW008	26/02/2004	Normal	-	40	-	-	-	-	-	-	-	0.05	-
Site Location Unknown	SW009	26/02/2004	Normal	-	-	-	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW010	9/04/2008	Normal	-	-	40	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	9/04/2008	Normal	-	-	80	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	9/04/2008	field_D	-	-	-	-	-	-	-	-	-	0.5	-
Site Location Unknown	SW010	21/04/2008	Normal	-	-	<10	-	-	-	-	-	-	<0.01 - 0.6	-
Site Location Unknown	SW010	4/06/2008	Normal	-	-	690	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	4/06/2008	field_D	-	-	<10	-	-	-	-	-	-	0.01	-
Site Location Unknown	SW010	6/06/2008	field_D	-	-	40	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	25/07/2008	Normal	-	-	360	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	25/07/2008	field_D	-	-	450	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	25/07/2008	field_D	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	29/07/2008	Normal	-	-	340	-	-	-	-	-	-	<0.01	-

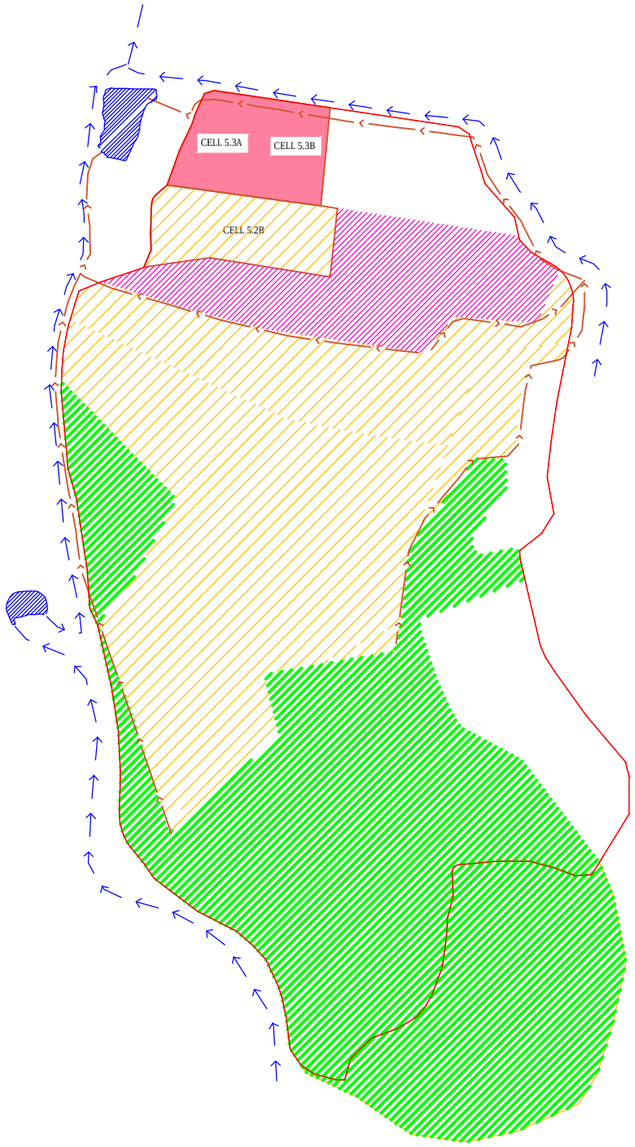
Appendix D
Table D5
Water Quality for Unidentified Locations

				Phenols			Major Ions							Nutrients	
				Phenol	Phenolics	Phenolics Total	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate	Ammonia as N	Nitrate (as N)
				µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				320									0.9	0.158
ANZECC 2000 FW Med-Low Reliability				320										0.7
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**											
Site Location Unknown	SW010	25/08/2008	field_D	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	25/08/2008	Normal	-	-	120	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	25/08/2008	field_D	-	-	<10	-	-	-	-	-	-	<0.001	-
Site Location Unknown	SW010	6/09/2008	Normal	-	-	520	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW010	6/09/2008	field_D	-	-	390	-	-	-	-	-	-	0.01	-
Site Location Unknown	SW010	6/09/2008	field_D	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	15/10/2008	Normal	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	15/10/2008	field_D	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	15/10/2008	field_D	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	14/12/2008	Normal	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	14/12/2008	field_D	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW010	15/02/2009	Normal	-	-	<10	-	-	-	-	-	-	<0.01 - 0.2	-
Site Location Unknown	SW011	9/04/2008	Normal	-	-	260	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	21/04/2008	Normal	-	-	110	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	29/05/2008	Normal	-	-	<10	-	-	-	-	-	-	0.14	-
Site Location Unknown	SW011	29/05/2008	field_D	-	-	490	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	4/06/2008	Normal	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	25/07/2008	Normal	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	29/07/2008	Normal	-	-	330	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	25/08/2008	Normal	-	-	480	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	6/09/2008	Normal	-	-	20	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	15/10/2008	Normal	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	23/10/2008	Normal	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	23/10/2008	field_D	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	20/11/2008	field_D	-	-	240	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	20/11/2008	Normal	-	-	470	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	14/12/2008	Normal	-	-	300	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	14/12/2008	field_D	-	-	390	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	14/12/2008	field_D	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	12/02/2009	Normal	-	-	80	-	-	-	-	-	-	0.02 - 0.2	-
Site Location Unknown	SW011	12/02/2009	field_D	-	-	70	-	-	-	-	-	-	0.01	-
Site Location Unknown	SW011	12/02/2009	field_D	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW011	15/02/2009	Normal	-	-	750	-	-	-	-	-	-	<0.02 - 0.5	-
Site Location Unknown	SW012	10/04/2008	Normal	-	-	10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW012	21/04/2008	Normal	-	-	260	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW012	29/05/2008	Normal	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW012	4/06/2008	Normal	-	-	<10	-	-	-	-	-	-	0.01	-
Site Location Unknown	SW012	25/07/2008	Normal	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW012	29/07/2008	Normal	-	-	230	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW012	29/07/2008	field_D	-	-	<10 - 1280	-	-	-	-	-	-	<0.01 - 0.1	-
Site Location Unknown	SW012	25/08/2008	Normal	-	-	120	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW012	6/09/2008	Normal	-	-	380	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW012	23/10/2008	Normal	-	-	30	-	-	-	-	-	-	0.03	-
Site Location Unknown	SW012	14/12/2008	Normal	-	-	60	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW012	15/02/2009	Normal	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW012	15/02/2009	field_D	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW012	15/02/2009	field_D	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW013	10/04/2008	Normal	-	-	90	-	-	-	-	-	-	0.09	-
Site Location Unknown	SW013	21/04/2008	Normal	-	-	2130	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW013	29/05/2008	Normal	-	-	210	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW013	4/06/2008	Normal	-	-	270	-	-	-	-	-	-	0.14	-
Site Location Unknown	SW013	25/07/2008	Normal	-	-	140	-	-	-	-	-	-	0.34	-
Site Location Unknown	SW013	29/07/2008	Normal	-	-	80	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW013	25/08/2008	Normal	-	-	80	-	-	-	-	-	-	0.01	-
Site Location Unknown	SW013	6/09/2008	Normal	-	-	880	-	-	-	-	-	-	0.05	-
Site Location Unknown	SW013	15/10/2008	Normal	-	-	140	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW013	23/10/2008	Normal	-	-	30	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW013	20/11/2008	Normal	-	-	360	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW013	14/12/2008	Normal	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW013	12/02/2009	Normal	-	-	430	-	-	-	-	-	-	0.38	-
Site Location Unknown	SW013	15/02/2009	Normal	-	-	420	-	-	-	-	-	-	0.13	-
Site Location Unknown	SW014	10/04/2008	Normal	-	-	10	-	-	-	-	-	-	1.73	-
Site Location Unknown	SW014	21/04/2008	Normal	-	-	250	-	-	-	-	-	-	15.2	-
Site Location Unknown	SW014	29/05/2008	Normal	-	-	200	-	-	-	-	-	-	1.26	-
Site Location Unknown	SW014	4/06/2008	Normal	-	-	<10	-	-	-	-	-	-	3.73	-
Site Location Unknown	SW014	25/07/2008	Normal	-	-	400	-	-	-	-	-	-	2.61	-
Site Location Unknown	SW014	29/07/2008	Normal	-	-	300	-	-	-	-	-	-	2.48	-
Site Location Unknown	SW014	25/08/2008	Normal	-	-	120	-	-	-	-	-	-	1.57	-
Site Location Unknown	SW014	6/09/2008	Normal	-	-	1340	-	-	-	-	-	-	4.75	-
Site Location Unknown	SW014	15/10/2008	Normal	-	-	<10	-	-	-	-	-	-	0.73	-
Site Location Unknown	SW014	23/10/2008	Normal	-	-	160	-	-	-	-	-	-	0.97	-
Site Location Unknown	SW014	14/12/2008	Normal	-	-	330	-	-	-	-	-	-	1.13	-
Site Location Unknown	SW014	12/02/2009	Normal	-	-	450	-	-	-	-	-	-	0.91	-
Site Location Unknown	SW014	15/02/2009	Normal	-	-	430	-	-	-	-	-	-	3.2	-
Site Location Unknown	SW015	10/04/2008	Normal	-	-	20	-	-	-	-	-	-	0.32	-
Site Location Unknown	SW015	21/04/2008	Normal	-	-	320	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW015	29/05/2008	Normal	-	-	80	-	-	-	-	-	-	0.38	-
Site Location Unknown	SW015	4/06/2008	Normal	-	-	40	-	-	-	-	-	-	0.18	-
Site Location Unknown	SW015	25/07/2008	Normal	-	-	<10	-	-	-	-	-	-	1.21	-
Site Location Unknown	SW015	29/07/2008	Normal	-	-	<10	-	-	-	-	-	-	0.51	-
Site Location Unknown	SW015	25/08/2008	Normal	-	-	90	-	-	-	-	-	-	0.35	-
Site Location Unknown	SW015	6/09/2008	Normal	-	-	790	-	-	-	-	-	-	0.73	-
Site Location Unknown	SW015	15/10/2008	Normal	-	-	160	-	-	-	-	-	-	0.09	-
Site Location Unknown	SW015	23/10/2008	Normal	-	-	400	-	-	-	-	-	-	0.07	-
Site Location Unknown	SW015	20/11/2008	Normal	-	-	370	-	-	-	-	-	-	0.02	-
Site Location Unknown	SW015	14/12/2008	Normal	-	-	<10	-	-	-	-	-	-	<0.01	-
Site Location Unknown	SW015	12/02/2009	Normal	-	-	470	-	-	-	-	-	-	0.58	-
Site Location Unknown	SW015	15/02/2009	Normal	-	-	110	-	-	-	-	-	-	0.05	-
Site Location Unknown	SWD05	7/06/2012	Normal	-	<1000	-	-	-	-	-	-	-	3.5	-
Site Location Unknown	Test Cell	30/07/2004	Normal	-	-	-	-	-	-	-	-	-	0.8	-
Site Location Unknown	Test Cell	23/08/2004	Normal	-	-	-	-	-	-	-	-	-	0.4	-
Site Location Unknown	Test Cell	8/09/2004	Normal	-	-	-	-	-	-	-	-	-	0.4	-
Site Location Unknown	Test Cell	14/09/2004	Normal	-	-	-	-	-	-	-	-	-	1.1	-

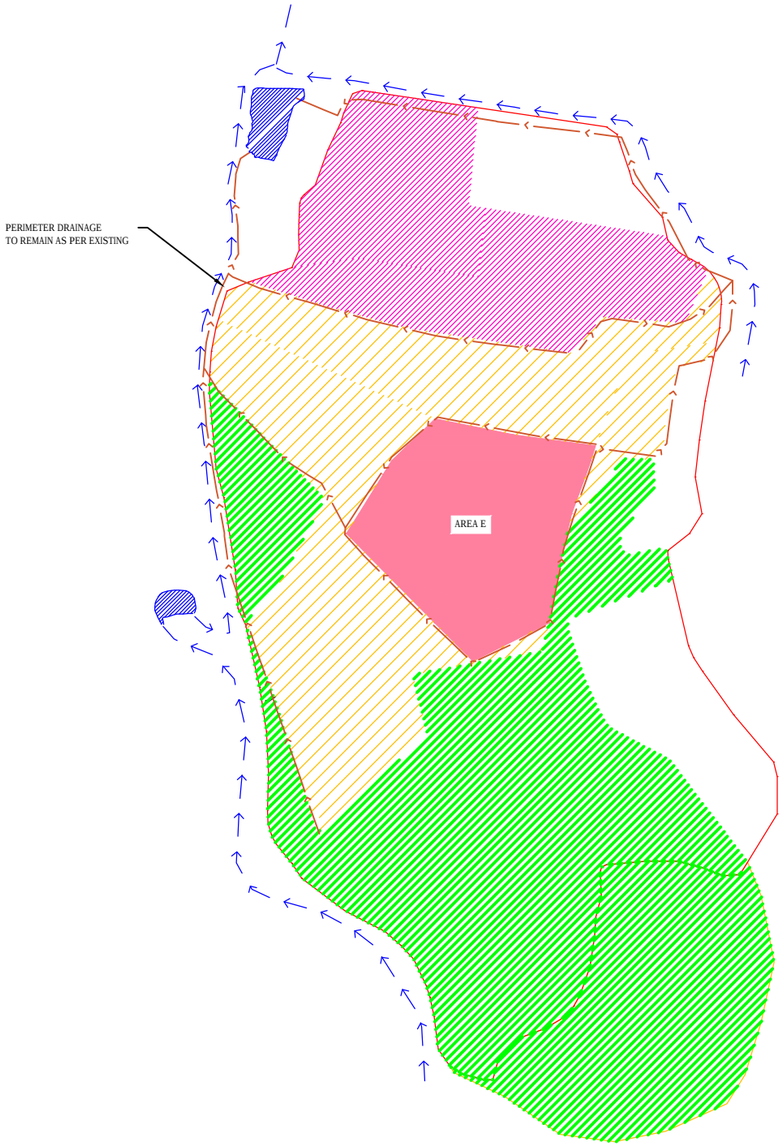
Appendix D
Table D5
Water Quality for Unidentified Locations

				Phenols			Major Ions							Nutrients	
				Phenol	Phenolics	Phenolics Total	Calcium	Chloride	Magnesium	Potassium	Sodium	Sulphate	Ammonia as N	Nitrate (as N)
				µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ANZECC 2000 FW 95%				320									0.9	0.158
ANZECC 2000 FW Med-Low Reliability				320										0.7
Monitoring_Zone	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**											
Site Location Unknown	Test Cell	7/10/2004	Normal	-	-	-	-	-	-	-	-	-	1.1	-
Site Location Unknown	Test Cell	13/10/2004	Normal	-	-	-	-	-	-	-	-	-	1.4	-
Site Location Unknown	Test Cell	27/10/2004	Normal	-	-	-	-	-	-	-	-	-	2	-
Site Location Unknown	Test Cell	2/11/2004	Normal	-	-	-	-	-	-	-	-	-	2.7	-
Site Location Unknown	Test Cell	9/11/2004	Normal	-	-	-	-	-	-	-	-	-	1	-
Site Location Unknown	Test Cell	2/02/2005	Normal	-	-	-	-	-	-	-	-	-	0.3	-
Site Location Unknown	Test Cell	18/03/2005	Normal	-	-	-	-	-	-	-	-	-	1.2	-
Site Location Unknown	Test Cell	4/04/2005	Normal	-	-	-	-	-	-	-	-	-	0.7	-
Site Location Unknown	Test Cell Dam	14/06/2005	Normal	-	-	-	-	-	-	-	-	-	0.8	-
Site Location Unknown	Test Cell Dam	5/07/2005	Normal	-	-	-	-	-	-	-	-	-	0.4	-
Site Location Unknown	Test Cell Dam	16/08/2005	Normal	-	-	-	-	-	-	-	-	-	0.9	-
Site Location Unknown	Test Cell Dam	9/03/2006	Normal	-	-	-	-	-	-	-	-	-	0.9	-
Site Location Unknown	Test Cell Dam	3/04/2006	Normal	-	-	-	-	-	-	-	-	-	-	-
Site Location Unknown	Test Cell Dam	25/10/2006	Normal	-	-	-	-	-	-	-	-	-	3.1	-
Site Location Unknown	Test Cell Dam	21/12/2006	Normal	-	-	-	-	-	-	-	-	-	0.8	-
Site Location Unknown	Test Cell Dam	3/01/2007	Normal	-	-	-	-	-	-	-	-	-	0.5	-
Site Location Unknown	Test Cell Dam	6/03/2007	Normal	-	-	-	-	-	-	-	-	-	0.4	-
Site Location Unknown	Test Cell Dam	11/04/2007	Normal	-	-	-	-	-	-	-	-	-	0.4	-
Site Location Unknown	Test Cell Dam	22/05/2007	Normal	-	-	-	-	-	-	-	-	-	0.4	-
Site Location Unknown	Test Cell Dam	22/06/2007	Normal	-	-	-	-	-	-	-	-	-	0.8	-
Site Location Unknown	TMC	1/09/2006	Normal	-	-	-	-	-	-	-	-	-	2	-
Statistical Summary														
Number of Results				58	2	97	50	50	50	50	50	50	292	50
Number of Detects				31	1	66	50	50	50	50	50	50	240	48
Minimum Concentration				5	40	<10	7.9	20	1.4	4.6	3	7	<0.001	0.005
Minimum Detect				5	40	10	7.9	20	1.4	4.6	3	7	0.005	0.005
Maximum Concentration				600	<1000	2130	151	130	9.4	56	65	33	15.2	2
Maximum Detect				600	40	2130	151	130	9.4	56	65	33	15.2	2
Average Concentration				25		217	19	69	6.1	12	37	18	0.51	0.5
Geometric Average				8		60	17	66	5.8	11	34	16	0.1	0.21
Median Concentration				5	270	90	16	69	6	10	36.5	17	0.155	0.36
Standard Deviation				83		310	20	19	1.5	7.8	11	6.3	1.2	0.51
Geometric Standard Deviation				2.8	6	7	1.5	1.4	1.4	1.6	1.6	1.5	8	5.7

Appendix E – Proposed landfill re-profiling stages and post closure plan



EXISTING



PHASE 1

LEGEND:

- PROPOSED RE-PROFILING BOUNDARY
- ACTIVE CELL
- INTERMEDIATE COVER - PLATFORM
- INTERMEDIATE COVER - SLOPES
- EXISTING CAP
- PROPOSED FINAL CAP - PLATFORM
- PROPOSED FINAL CAP - SLOPES
- PROPOSED POST-CLOSURE CAP - PLATFORM
- PROPOSED POST-CLOSURE CAP - SLOPES
- INDICATIVE SURFACE WATER DIVERSION DRAIN
- INDICATIVE SURFACE WATER COLLECTION DRAIN

N

0 50 100 150 200 250m

SCALE 1:5000 AT ORIGINAL SIZE

PRELIMINARY

rev	description	app'd	date
C	REVISED		03.07.15
B	INITIAL ISSUE		05.03.15

SITA AUSTRALIA
LUCAS HEIGHTS RRP

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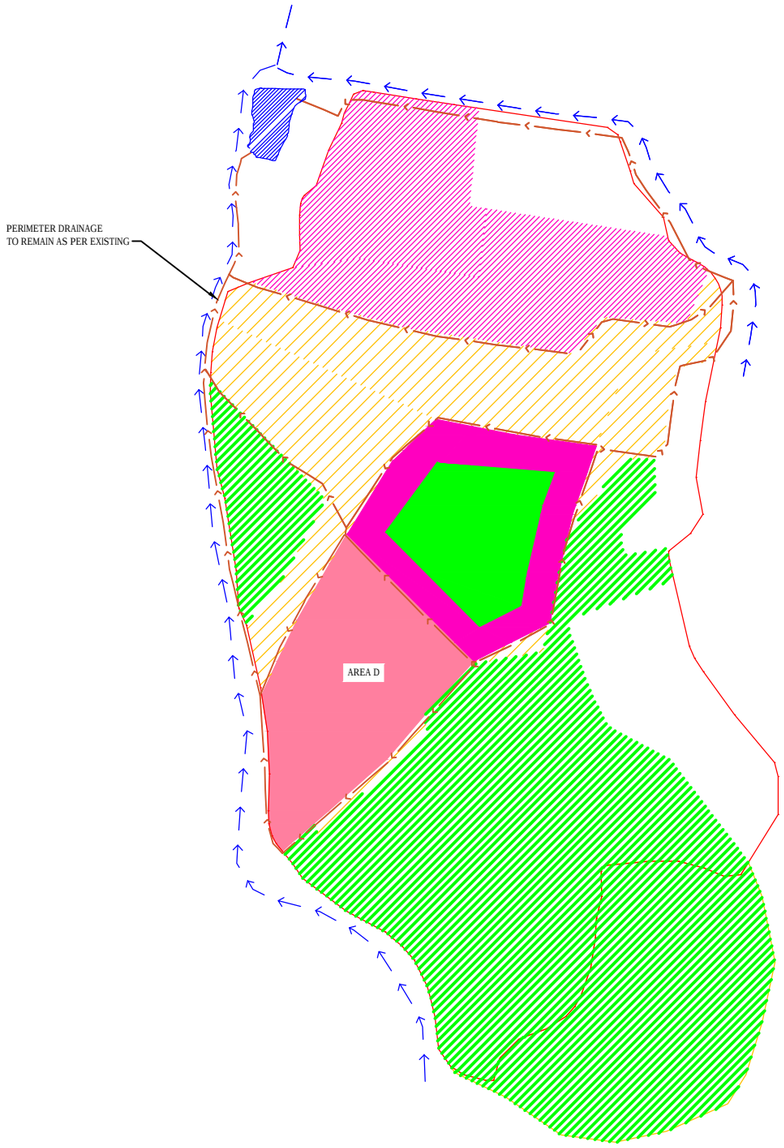
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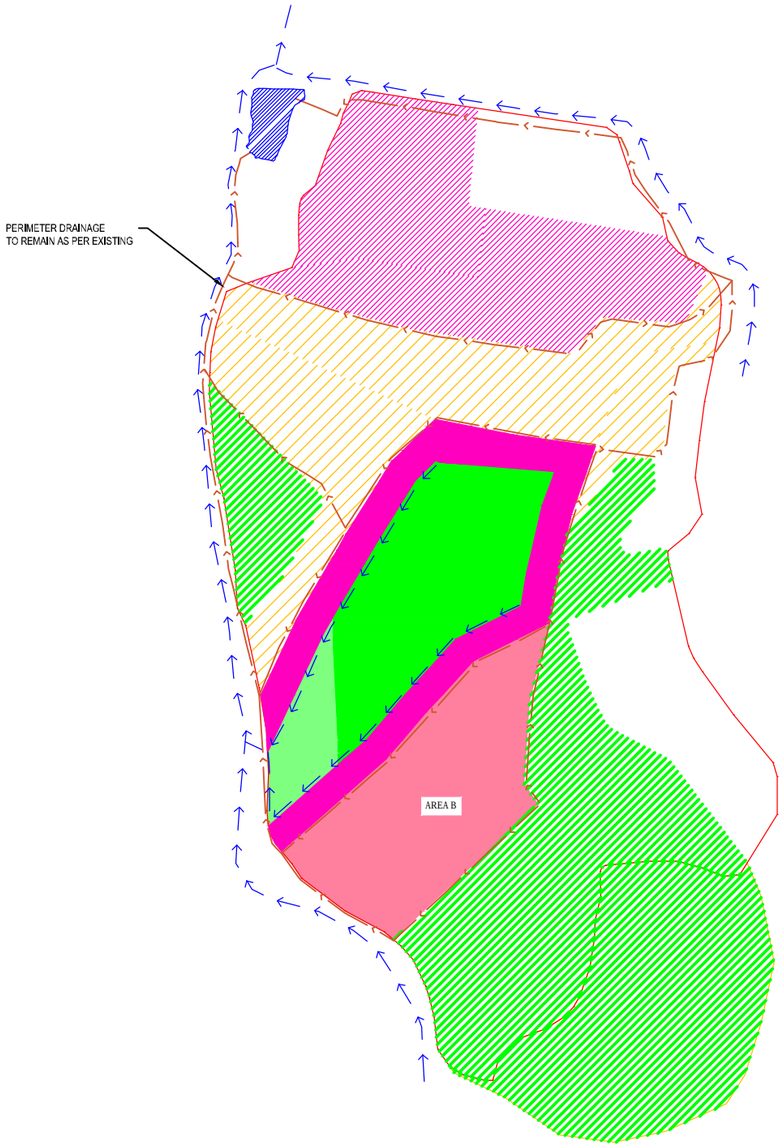
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approved (PD) SK011

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PHASE 2



PHASE 3

LEGEND:

- PROPOSED RE-PROFILING BOUNDARY
- ACTIVE CELL
- INTERMEDIATE COVER - PLATFORM
- INTERMEDIATE COVER - SLOPES
- EXISTING CAP
- PROPOSED FINAL CAP - PLATFORM
- PROPOSED FINAL CAP - SLOPES
- PROPOSED POST-CLOSURE CAP - PLATFORM
- PROPOSED POST-CLOSURE CAP - SLOPES
- INDICATIVE SURFACE WATER DIVERSION DRAIN
- INDICATIVE SURFACE WATER COLLECTION DRAIN

N

0 50 100 150 200 250m

SCALE 1:5000 AT ORIGINAL SIZE

PRELIMINARY

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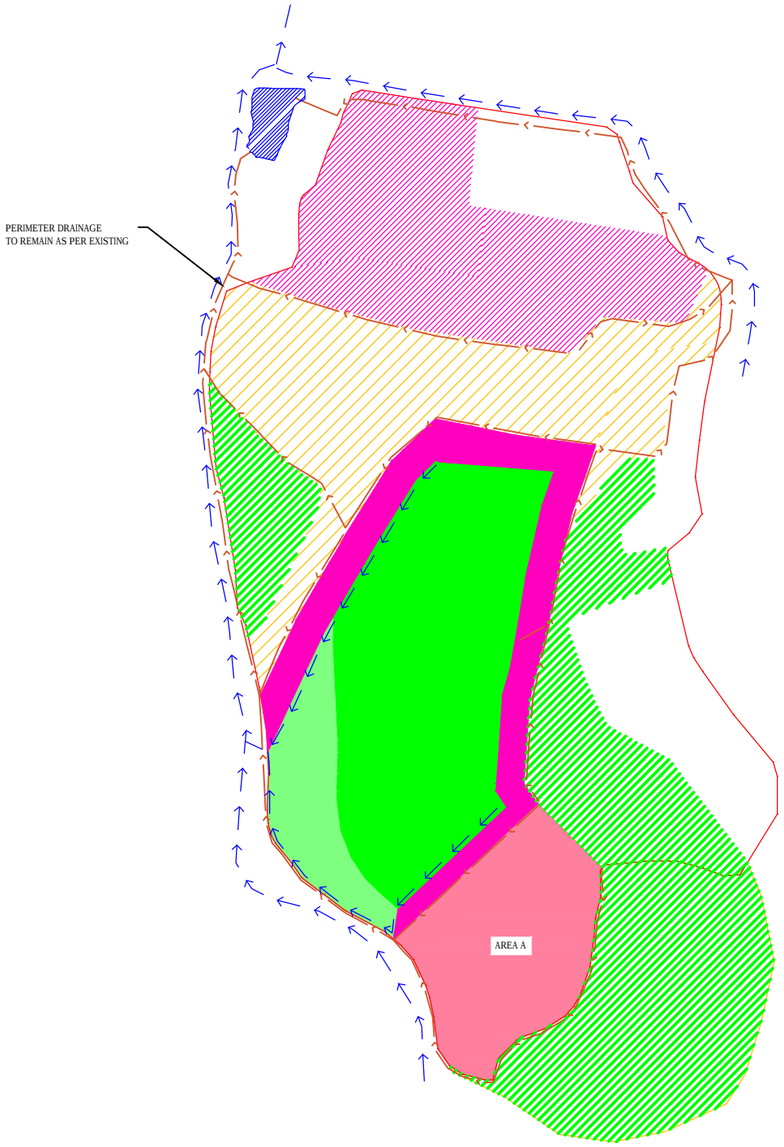
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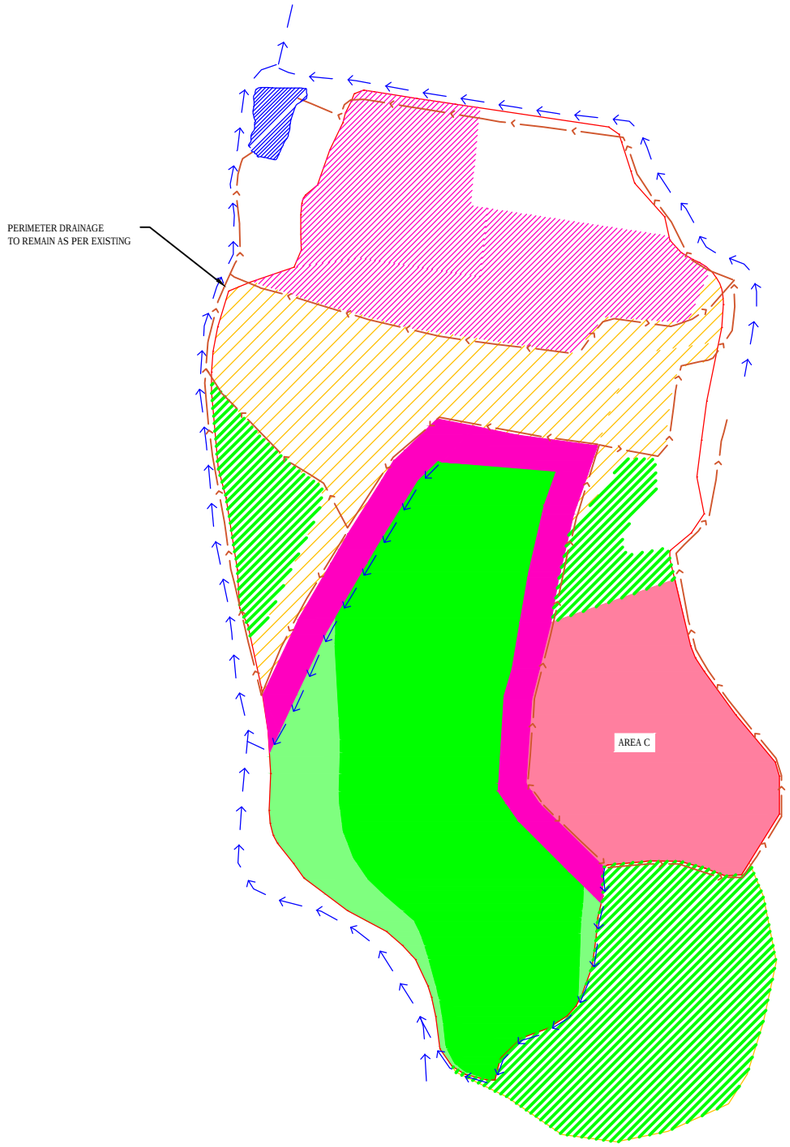
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approved (PD) SK012

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PHASE 4



PHASE 5

LEGEND:

- PROPOSED RE-PROFILING BOUNDARY
- ACTIVE CELL
- INTERMEDIATE COVER - PLATFORM
- INTERMEDIATE COVER - SLOPES
- EXISTING CAP
- PROPOSED FINAL CAP - PLATFORM
- PROPOSED FINAL CAP - SLOPES
- PROPOSED POST-CLOSURE CAP - PLATFORM
- PROPOSED POST-CLOSURE CAP - SLOPES
- INDICATIVE SURFACE WATER DIVERSION DRAIN
- INDICATIVE SURFACE WATER COLLECTION DRAIN

N

0 50 100 150 200 250m

SCALE 1:5000 AT ORIGINAL SIZE

PRELIMINARY

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C	REVISED		03.07.15
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PROPOSED REPROFILING DEVELOPMENT PLAN

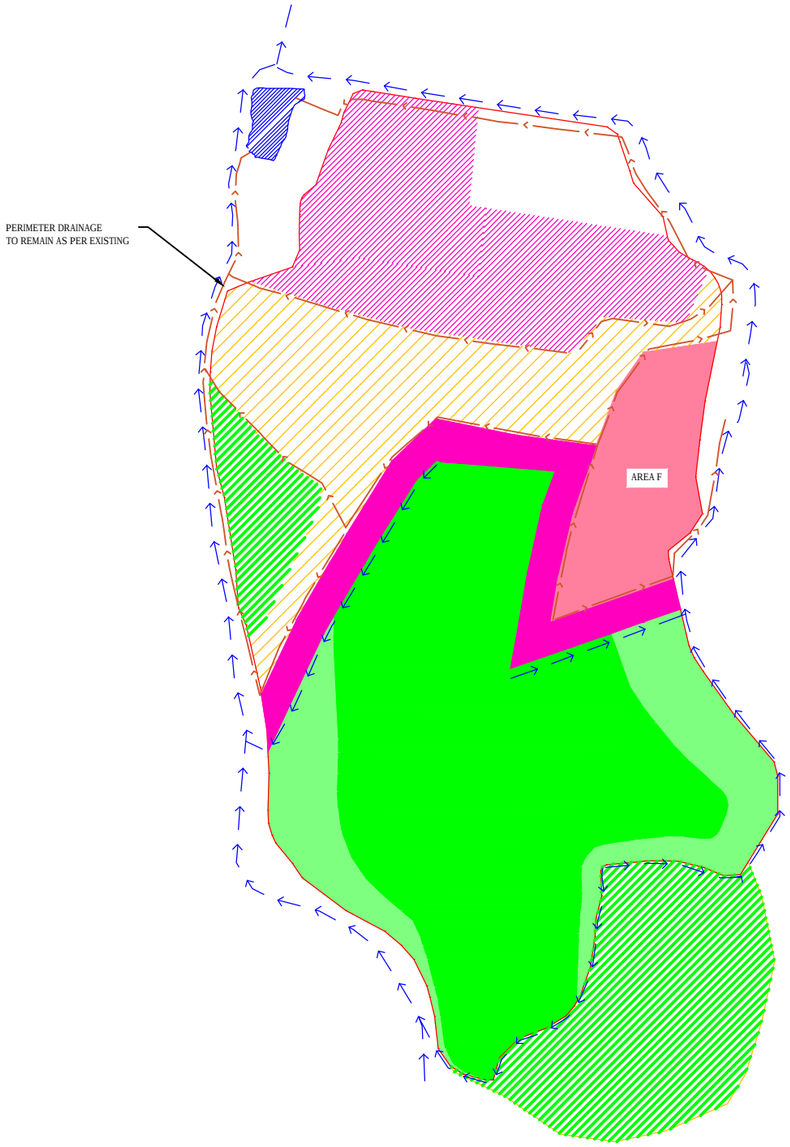
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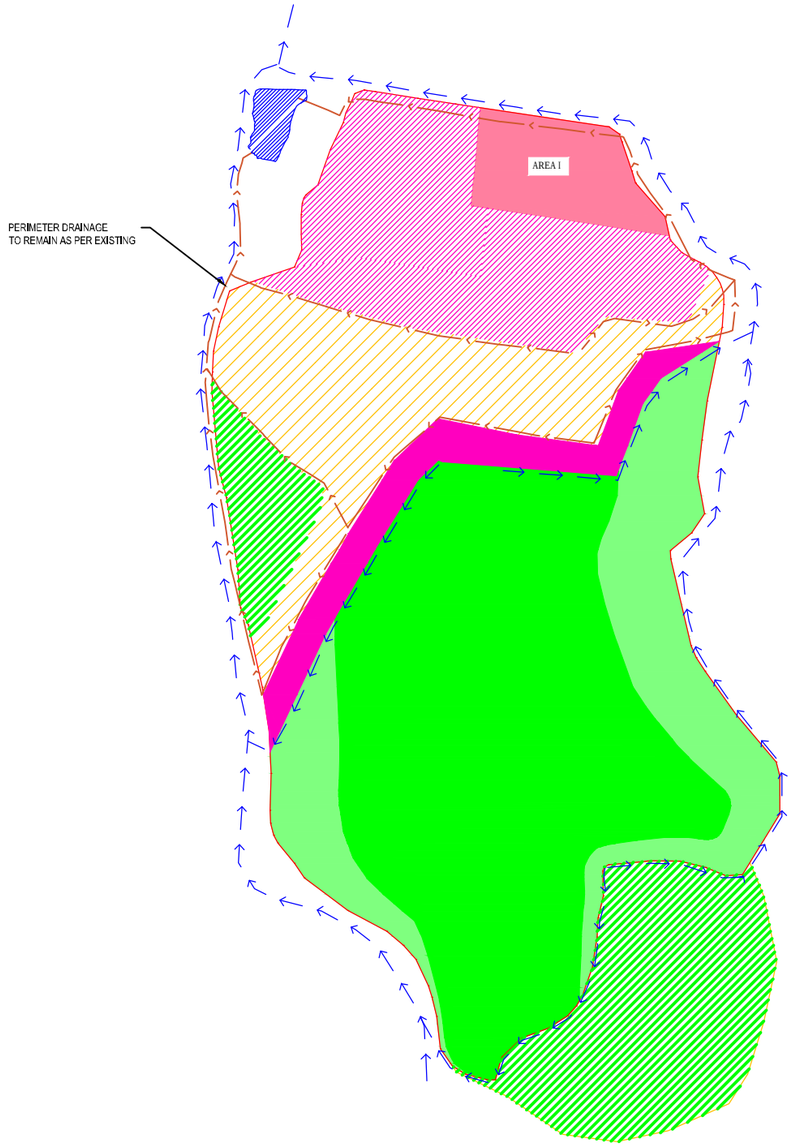
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PHASE 6



PHASE 7

LEGEND:

- PROPOSED RE-PROFILING BOUNDARY
- ACTIVE CELL
- INTERMEDIATE COVER - PLATFORM
- INTERMEDIATE COVER - SLOPES
- EXISTING CAP
- PROPOSED FINAL CAP - PLATFORM
- PROPOSED FINAL CAP - SLOPES
- PROPOSED POST-CLOSURE CAP - PLATFORM
- PROPOSED POST-CLOSURE CAP - SLOPES
- INDICATIVE SURFACE WATER DIVERSION DRAIN
- INDICATIVE SURFACE WATER COLLECTION DRAIN

N

0 50 100 150 200 250m

SCALE 1:5000 AT ORIGINAL SIZE

PRELIMINARY

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PROPOSED REPROFILING DEVELOPMENT PLAN

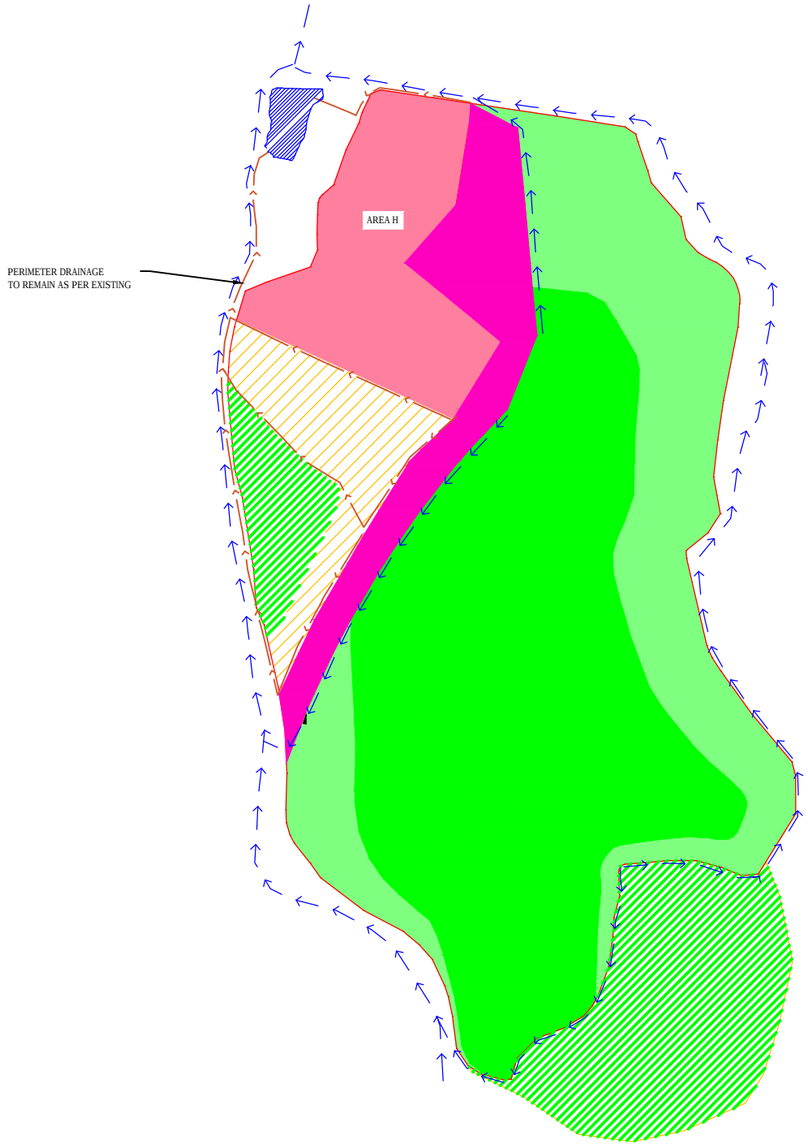
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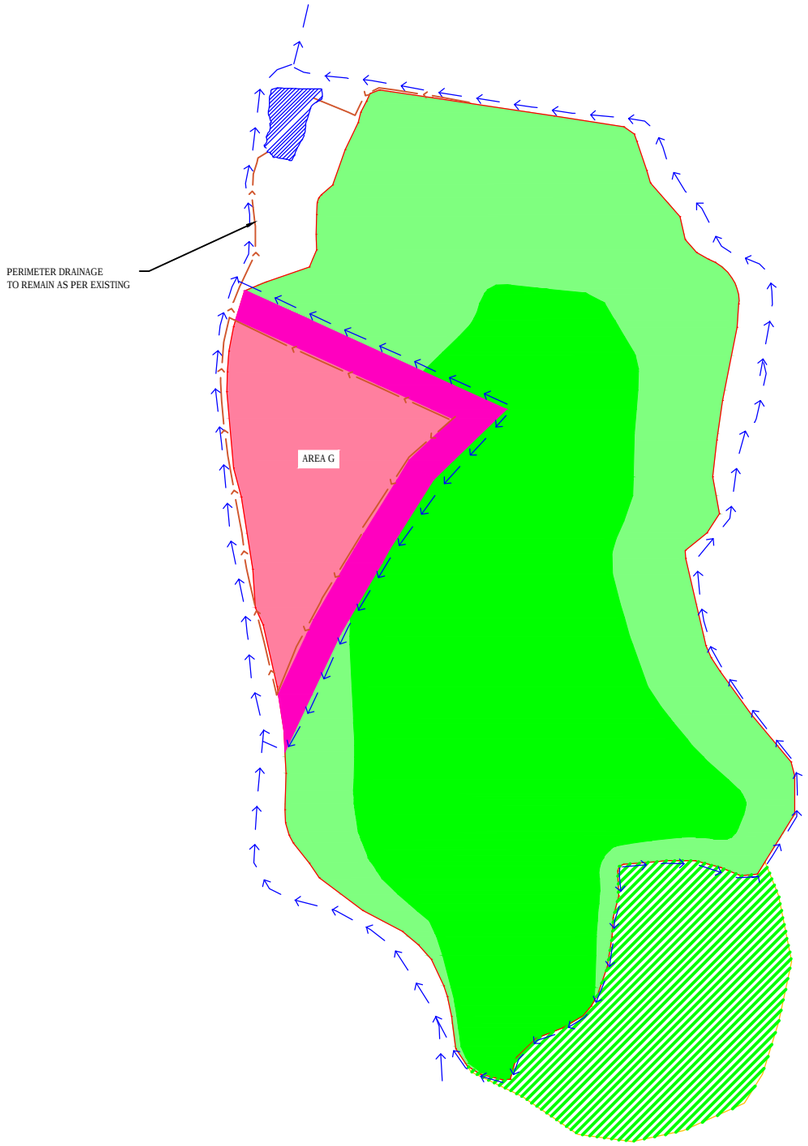
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PHASE 8



PHASE 9

LEGEND:

- PROPOSED RE-PROFILING BOUNDARY
- ACTIVE CELL
- INTERMEDIATE COVER - PLATFORM
- INTERMEDIATE COVER - SLOPES
- EXISTING CAP
- PROPOSED FINAL CAP - PLATFORM
- PROPOSED FINAL CAP - SLOPES
- PROPOSED POST-CLOSURE CAP - PLATFORM
- PROPOSED POST-CLOSURE CAP - SLOPES
- INDICATIVE SURFACE WATER DIVERSION DRAIN
- INDICATIVE SURFACE WATER COLLECTION DRAIN

N

0 50 100 150 200 250m

SCALE 1:5000 AT ORIGINAL SIZE

PRELIMINARY

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C	REVISED		03.07.15
B	INITIAL ISSUE		05.03.15

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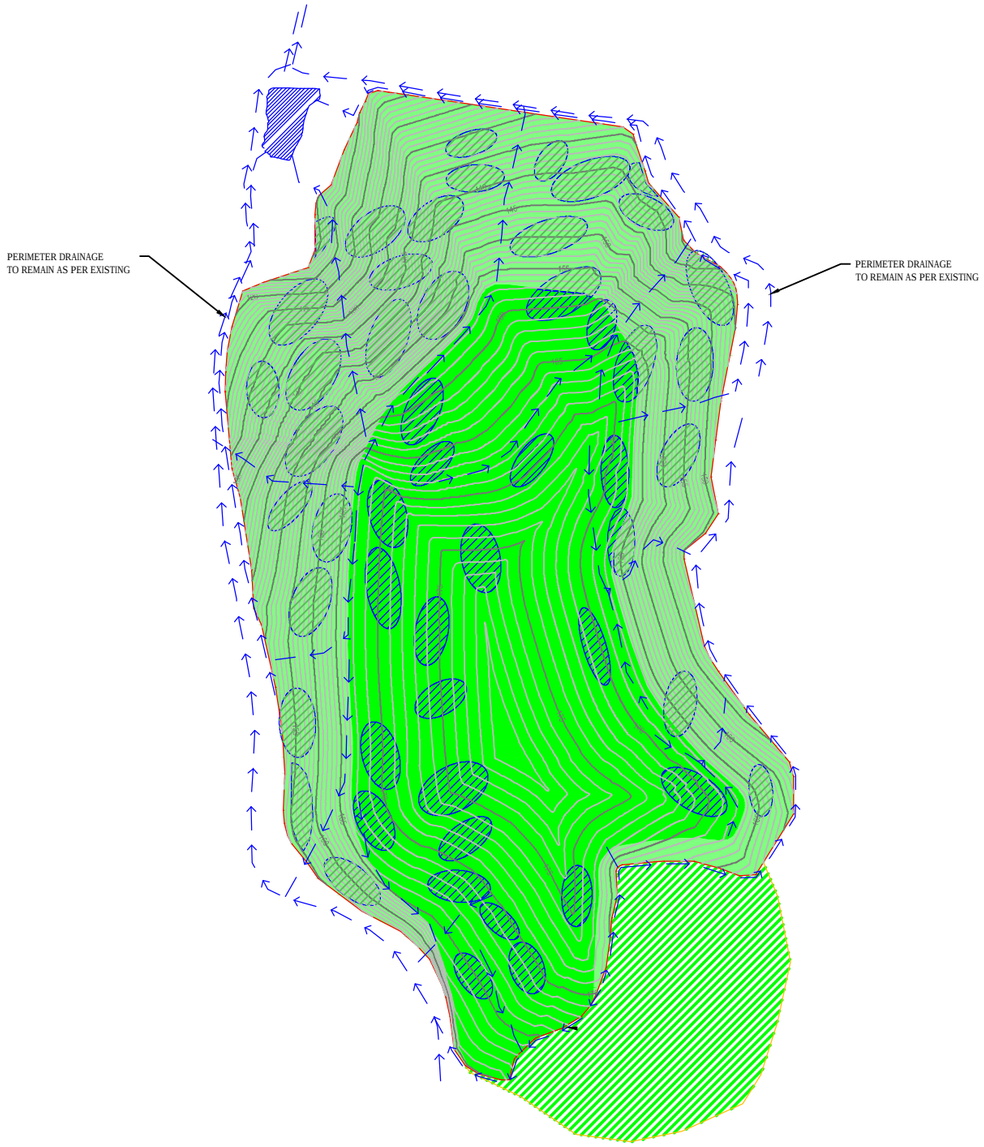
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FINAL POST-CLOSURE

LEGEND:

- PROPOSED RE-PROFILING BOUNDARY
- ACTIVE CELL
- INTERMEDIATE COVER - PLATFORM
- INTERMEDIATE COVER - SLOPES
- EXISTING CAP
- PROPOSED FINAL CAP - PLATFORM
- PROPOSED FINAL CAP - SLOPES
- PROPOSED POST-CLOSURE CAP - PLATFORM
- PROPOSED POST-CLOSURE CAP - SLOPES
- INDICATIVE SURFACE WATER DIVERSION DRAIN
- INDICATIVE SURFACE WATER COLLECTION DRAIN

N

0 50 100 150 200 250m

SCALE 1:5000 AT ORIGINAL SIZE

NOTES:
1. REHABILITATION DESIGN TO INCLUDE GRADING AROUND MOUNDED AREAS AND INTO DRAINAGE LINES
2. CONCENTRATED FLOWS TO BE AVOIDED ADJACENT TO DRAINAGE LINES

PRELIMINARY

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D	REVISED		03.07.15
C	REVISED		10.04.15

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Appendix F – Proposed ARRT and GO facility layout



LEGEND

LHRRP boundary
SICTA boundary
Creek
Landfill area

Paper Size A4

0 15 30 60 90 120

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

SITA Australia
Lucas Heights Resource Recovery Park

GO & ARRT Facility Layout

Job Number 21-23482
Revision A
Date 03 Jun 2015

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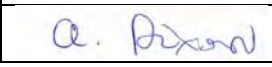
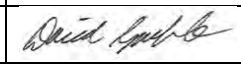
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