OTEK
AUSTRALIA PTY LTD

Area 1 Environmental Site Assessment

Location
Werribee Fields
Werribee, Victoria

Prepared for
Melbourne Water

Date Prepared
April 2003

Environmental Professionals

Area 1 Environmental Site Assessment

Werribee Fields, New Farm Road
Werribee, Victoria

Prepared for:

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EXECUTIVE SUMMARY

OTEK Australia Pty Ltd was retained by Sinclair Knight Merz on behalf of Melbourne Water to perform an Environmental Site Assessment of Melbourne Water Werribee Fields – Area 1, located at New Farm Road, Werribee, Victoria. Dr Fouad Abo of GHD Pty Ltd, who is appointed by the Environment Protection Authority (EPA) as an Auditor for Contaminated Land, was commissioned to undertake an independent review of the Environmental Site Assessment.

The site, which previously formed part of the Werribee Complex, is presently occupied by Powercor Australia Ltd. Melbourne Water is proposing to sell the site by public tender for an ongoing industrial land use.

The property is shown as Lot 1 on Plan of Subdivision PS 511425S, derived from Certificate of Title Volume 10446, Folio 721, and comprises an area of 8.256 hectares. It is bound to the north by Werribee Fields – Area 4A, where the Melbourne Water Administration Complex is located, to the east by New Farm Road, to the west by Princes Highway (Geelong Road) and to the south by Werribee Fields – Area 2, also known as the "Grassing Paddock".

The results of the Environmental Site Assessment undertaken at the site have shown that the concentrations of potential contaminants in the soil across the majority of the site are generally low and well below guideline levels for an industrial land use.

Slightly elevated heavy metal concentrations are present in both shallow fill material and deeper natural soil at the site, the majority of which are considered to be naturally elevated. Elevated arsenic and zinc concentrations in two localised areas of the site are considered to have resulted from Powercor's storage of chromated copper arsenate (CCA) treated timber power poles and other equipment on the site.

The heavy metal concentrations in the soil at the site are not considered to present a risk to human health or the environment for an ongoing industrial land use. However, if a more sensitive land use was proposed in the future, remediation of two small localised areas of arsenic and cobalt contaminated near surface fill material would be necessary.

Hydrocarbon concentrations in oil-stained soil at a number of small areas within the Powercor Transformer Storage Area on the site were measured to exceed health-based guideline levels for an industrial land use. These small areas of oil-staining should be remediated.

Management measures should be implemented in order to prevent future oil spills from transformers stored on the site. It should be noted that polychlorinated biphenyls (PCBs) were not detected in the oil-stained soil within the Powercor Transformer Storage Area or on the remainder of the property.

Four soil borings were drilled and one groundwater monitor well was installed adjacent to the disused underground storage tank (UST) for waste oil located to the north of the workshop. Based on the results of the soil and groundwater sampling at this location, there is no evidence to suggest that the UST has caused any soil or groundwater contamination. Should the future purchaser of the property not propose to use the UST, the tank and associated pipelines should be decommissioned in accordance with industry guidelines and environmental best practice.

Elevated concentrations of copper, selenium and nitrate were measured in the groundwater in the basalt aquifer beneath the site. However, these are not considered to have resulted from on-site activities and are not considered significant for an ongoing industrial land use.

The results of the Environmental Site Assessment undertaken at Werribee Fields – Area 1 indicate that the site is suitable for an ongoing industrial land use. However, the small quantity of oil-stained soil in the Powercor Transformer Storage Area should be remediated. Also, based on the results of this Environmental Site Assessment, only minor remediation would be necessary in the event that a more sensitive land use (i.e. residential) was proposed for the property.

1 INTRODUCTION

OTEK Australia Pty Ltd (OTEK) was retained by Melbourne Water to perform an Environmental Site Assessment (ESA) of the property referred to as Werribee Fields – Area 1, located at New Farm Road, Werribee, Victoria (the site), which is occupied by Powercor Australia Ltd (Powercor). The ESA was undertaken in order to evaluate the existence, extent (if present), and potential sources of contamination that may have resulted from the past uses of the site, including occupation of the site by Powercor.

Area 1 is bordered by New Farm Road to the east, Princes Highway to the west, the parcel of land referred to as Werribee Fields - Area 2 to the south, and the Melbourne Water Administration Complex to the north (Area 4A). The site and the surrounding properties are shown in the Vicinity Map (Figure 1). The Site Map (Figure 2) provides a layout of the site, including the locations of site structures, the disused underground storage tank (UST) for waste oil, the suspected UST area where trenching was undertaken, the transformer storage area, the treated timber power pole storage area and other pertinent features at the site.

2 PURPOSE

The purpose of the ESA was to evaluate the local geological and hydrogeological conditions at the site, and assess the nature, extent, likely sources, and potential impacts of any contamination present at the site.

The ESA was commissioned by Melbourne Water prior to the proposed sale of the site. Dr Fouad Abo of GHD Pty Ltd (GHD), an EPA appointed Auditor for Contaminated Land, has been retained by Melbourne Water as an Independent Reviewer of the work undertaken by OTEK. However, the site is not subject to a Statutory Environmental Audit in accordance with Part IXD of the *Environment Protection Act 1970*, as a change in land use to a more sensitive use is not proposed.

3 SCOPE

The scope of the ESA included:

- Review of relevant documentation held by Sinclair Knight Merz, Melbourne Water, Powercor and OTEK;
- Site inspections;
- Appraisal of the hydrogeology, geology and soil chemistry at the site as recommended by the Victorian EPA;

- Excavation of trenches in the west of the site where a UST may have previously been located;
- Hydrostatic pressure testing of oil delivery pipelines embedded in the concrete floor of the workshop;
- Soil sampling at 121 locations across the site for screening of potential contaminants. These comprised 102 shallow soil borings up to a maximum depth of one metre and 19 deep soil borings to depths of between three and ten metres;
- Installation of three groundwater monitor wells (two to 12 metres and one to 14 metres) on the site and sampling of groundwater from the three wells;
- Laboratory analysis of soil and groundwater samples for potential contaminants;
- Assessment of analytical data and quality assurance/quality control;
- Evaluation of contaminant characteristics, fate and transport, potential harm to human health and the environment, off-site impacts and exposure pathways;
- Appraisal of the magnitude and extent of contamination identified at the site based on the results of the ESA; and
- Preparation of a report on the results of the ESA for submission to Sinclair Knight Merz, Melbourne Water and GHD.

4 BACKGROUND INFORMATION

The following reports provide background information regarding land use and archaeologically significant sites at Werribee Fields:

- Biosis Archaeological and Cultural Heritage Survey report (project reference number 1471, dated March 2000) provided detailed assessment of the archaeological and cultural heritage of the Werribee Fields;
- Milsearch Review of World War II Era Military Activity at Werribee Fields report (dated April 2000) provided background information regarding the previous military landuse and other historically significant sites at Werribee Fields;
- Enterra Pty Limited Sub Surface Survey Report (dated 31 May 2001) provided information on potential USTs, munition burials, the extent of ferrous and non-ferrous debris and the presence of unexploded ordnances; and

- Sinclair Knight Consulting Engineers ESA report (dated 17 February 1993) provides limited analytical results and historical site information.

The Biosis report found no evidence of areas of cultural or archaeological significance within Area 1.

The Milsearch report did not identify any potential contaminants used during the Royal Australian Air Force occupation at the site for approximately ten years from 1942 within Area 1 except for a possible UST near the western boundary of the site. The possible existence of a UST was highlighted in historical Melbourne Metropolitan Board of Works records reviewed by Milsearch.

The Enterra report did not identify any areas within Area 1 that required additional investigation. The report did not identify any areas of unexploded ordinance (UXO) and did not identify any existing USTs in the western portion of Area 1. However, information provided in the Milsearch report suggested that a UST may have previously been located in the west of the site. In view of this, direct investigation via trenching was considered necessary in order to determine whether a UST had been located on the site.

The Sinclair Knight report did not identify any contamination in samples obtained from Area 1.

A more detailed summary of background information on the site and surrounding Melbourne Water land is presented in OTEK's site history investigation report entitled; *Phase One Report, Werribee Fields, Werribee, Victoria*, dated 10th October 2002 (Report No. M003R200).

4.1 PHYSIOGRAPHY

The site is located at New Farm Road, Werribee, Victoria, at Australian Map Grid coordinates 292 600 m east and 5 800 700 m north. The location of the site is shown in Figure 1.

The site is bound to the north by Werribee Fields – Area 4A, where the Melbourne Water Werribee Administration Complex is located. The site is bound to east by New Farm Road, to the west by Princes Highway (Geelong Road) and to the south by Werribee Fields – Area 2, also known as the "Grassing Paddock". The topography in the vicinity of the site is generally flat. The site and surrounding land are shown in Figure 2.

The site is shown as Lot 1 on Plan of Subdivision PS 511425S, derived from Certificate of Title Volume 10446, Folio 721, and comprises an area of 8.256 hectares. We were advised by Bosco Jonson Pty Ltd, licensed

surveyors for the subdivision, that the fenced tree-lined buffer zones along the southern and western boundaries are part of the site. Title information is presented in Appendix A.

4.2 SITE HISTORY

The site history was reviewed in OTEK's Phase One report, dated 10th October 2002, Milsearch's April 2000 report and the previous environmental investigation reports prepared by Geo-Eng Australia Pty Ltd and Sinclair Knight Consulting Engineers (reviewed in Section 5.3).

The site was previously part of the Melbourne Water Werribee Complex, and has been owned by Melbourne Water since the 1920's. The site has been leased by Powercor since approximately 1997 as an office and depot for the storage and maintenance of vehicles and equipment.

There is no evidence to suggest that any portion of Area 1 was used by the Royal Australian Air Force during World War II, or has been used for waste water irrigation from the Werribee Treatment Complex.

4.3 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

An ESA of the site was undertaken in 1997 by Geo-Eng Australia Pty Ltd (Geo-Eng) on behalf of Powercor. The ESA was undertaken prior to Powercor leasing the site from Melbourne Water in order to establish the baseline soil contamination status of the property. Geo-Eng's ESA report is entitled: *Preliminary Environmental Baseline Study, Melbourne Water Depot, New Farm Road, Werribee. Report: 52097-10, July 1997.*

The ESA undertaken by Geo-Eng involved sampling from ten soil borings drilled on the site. The areas targeted during the ESA included the flammable goods store, treated pine power pole storage area, vehicle wash bay, loading ramp and a drum storage area. Investigation of groundwater at the site was not undertaken. The results of the ESA showed slightly elevated total chromium (maximum 46 mg/kg) in two composite soil samples analysed and slightly elevated nickel concentrations (maximum 98 mg/kg) in all except one sample analysed. Also, elevated total petroleum hydrocarbon concentrations (maximum 18,900 mg/kg) were measured in three areas where surficial oil staining was observed.

Geo-Eng did not sample in the vicinity of the waste oil tank as the tank was not proposed to be used by Powercor during the term of the lease. The underground fuel storage tanks referred to in the Geo-Eng report are no longer located on the site, as the northern boundary of the site has been

adjusted since the 1997 ESA was undertaken. The fuel USTs are now part of Area 4A, to the north of the site.

It is understood that Sinclair Knight Consulting Engineers undertook a limited ESA of the entire Melbourne Water Werribee Treatment Complex in 1993. Based on the sample location plan provided in the Sinclair Knight report, it appears that two samples were retrieved from Area 1, which is now occupied by Powercor. Contamination was not identified in the samples obtained from Area 1.

Prior to this ESA, OTEK undertook a Phase One Assessment of the site and adjoining Melbourne Water land. The report included a review of the available information pertaining to the site including subsurface geophysical investigations, previous environmental assessments, cultural and historical investigations, site geology and hydrogeology, and evaluated the potential sources of contamination. The report is entitled; *Phase One Report, Werribee Fields, Werribee, Victoria*, dated 10th October 2002 (Report No. M003R200). The Phase One report considered the potential for contamination to be present on Area 1 to be high primarily due to the ongoing maintenance activities and storage of transformers on the site.

4.4 GEOPHYSICAL SURVEY

Based on information provided in the Milsearch report, which indicated a possible UST near the western boundary of the site, a geophysical survey of the possible UST area was undertaken by Enterra Pty Limited (Enterra) between November 2000 and February 2001.

The results of a digital imaging magnetometer survey of a 0.75 hectare area at the west of the site did not indicate the potential presence of a UST. The results are presented in Enterra's Sub Surface Investigation Report, dated 31 May 2001.

4.5 REGIONAL GEOLOGY AND HYDROGEOLOGY

According to the Geological Survey of Victoria 'Melbourne' 1:63,360 series geological map sheet, the site is situated on Quaternary Age 'Deutgam Silt'. The Deutgam Silt comprises grey to grey-brown silt with abundant carbonate nodules, and some gravel, sand and silty sand in the lower part of the sequence. The Deutgam Silt overlies the Quaternary Age Newer Volcanics Formation, which predominantly comprises dark to light grey olivine basalt. Based on the geological map, the following stratigraphic profile is expected at the site:

- Approximately 10 m of Deutgam Silt;

- Underlain by approximately 40 m thickness of olivine basalt of the Newer Volcanics Formation;
- Underlain by the Tertiary Age Brighton Group Formation (approximately 20 m in thickness); and
- Underlain by a substantial thickness of the Tertiary Age marine sediments of the Newport Formation.

The Newer Volcanics and Brighton Group Formations are the two primary aquifer systems in the vicinity of the site. Groundwater flow is expected to be toward the Werribee River and Port Phillip Bay, located approximately 900 m to the east and 7 km to the south east of the site respectively. The Deutgam Silt is not expected to constitute a significant aquifer system in the vicinity of the site.

A search of the Victorian Groundwater Database (GDB) records by OTEK has identified five bores within a one kilometre radius of the site. Registered details for the five bores are listed in Table 1 below.

Table 1 – GDB Search Summary

GDB Bore ID	Registered Use	Approximate Distance & Direction from Site	Standing Water Level (m)	Total Depth of Bore (m)
77092	Not Known	310 m NNW	8.2	16.15
77093	Not Known	200 m W	7.9	15.24
77094	Not Known	200 m W	-	33.52
77097	Domestic	810 m NW	9.1	18.29
115051	Domestic	720 m WSW	-	21

Bore 77092 is listed in the GDB as having been installed in gravel, and bores 77093, 77097 and 115051 are installed in basalt. No details are provided for bore 77094.

4.6 POTENTIAL RECEPTORS

Many contaminants, being mobile in soil and groundwater, are deemed capable of potentially impacting off-site receptors. Potential receptors in the vicinity of the site include:

- The Werribee River (nearest surface water body) located approximately 900 m to the east of the site; and
- Residential properties located across Princes Highway to the northwest of the site.

The five registered groundwater bores located within a one-kilometre radius of the site are not considered to be potential receptors as they are located up-gradient of the site.

4.7 POTENTIAL OFF-SITE SOURCES

Potential off-site sources of migrating contaminants were investigated at the time of OTEK's field activities. Potential off-site sources of contamination include:

- Werribee Fields - Area 4, to the north of the site. Area 4 is known to contain numerous potential sources of contamination, primarily relating to the previous use of the property by the Royal Australian Air Force during World War II; and
- Werribee Fields – Area 2, to the south of the site. An ESA of Area 2 undertaken by OTEK indicated elevated arsenic concentrations in the eastern portion of Area 2. The mean arsenic concentration in Area 2 was approximately 25 mg/kg. However, the elevated arsenic concentrations did not appear to be associated with elevated copper or chromium concentrations, indicating that the arsenic contamination was not likely to have resulted from the possible use or disposal of chromated copper arsenate (CCA) at Area 2. A large proportion of the elevated arsenic concentrations were still within the natural background range for Australian soils of 1 to 50 mg/kg reported in the National Environment Protection (Assessment of Site Contamination) Measure (NEPM). The potential for significant quantities of soil with elevated arsenic concentrations to have migrated onto the site (Area 1) through wind and stormwater action is considered to be low.

4.8 POTENTIAL ON-SITE SOURCES

The historical and existing use of the site as a workshop and storage area indicates that potential sources of contaminants on the site include:

- The potential former location of a suspected UST near the western boundary of the site;
- Disused waste oil UST located between the workshop and northern boundary of the site;
- Disused oil delivery pipelines embedded in the concrete floor of the workshop;
- Vehicle service/inspection pits in the workshop;
- Flammable goods store;
- Transformer storage area;

- Treated timber power pole storage area;
- Truckwash bay;
- Potentially contaminated fill material; and
- Potential historical use of pesticides on-site.

Based on these potential sources of contamination, the following contaminants may be present in on-site soils:

- Benzene, toluene, ethylbenzene and total xylene's (BTEX);
- Total petroleum hydrocarbons (TPH);
- Polycyclic aromatic hydrocarbons (PAH);
- Polychlorinated biphenyls (PCB);
- Organochlorine pesticides (OCP);
- Phenols and cresols; and
- Heavy metals (primarily arsenic, chromium and copper).

5 *FIELD ASSESSMENT*

Physical assessment of the subsurface at the site was achieved by an investigation consisting of an exploratory soil boring program, the installation of groundwater monitor wells and groundwater sampling. The field activities were performed on the following dates:

- Trenching Program – 3rd to 5th February 2003;
- Soil Boring Program – 10th to 18th February 2003;
- Groundwater Monitor Well Installation – 18th February 2003; and
- Groundwater Sampling – 5th March 2003.

Prior to commencement of field activities the relevant utility companies in the area were notified and their underground services located. On-site underground services and the UST system were located by an independent contractor prior to commencement of subsurface drilling activities. The following paragraphs describe the data gathered and the methods utilised in the field activities conducted as part of the field investigation. Photographs taken during the ESA are presented in Appendix B.

Field activities were performed in accordance with:

- Victorian EPA guidelines for site assessment;
- Australian Standard AS 4482.1 (1997) *Guidelines to the sampling and investigation of potentially contaminated soil – Part 1: Non-volatile and semi-volatile compounds*; and

- *The National Environment Protection (Assessment of Site Contamination) Measure* (NEPM), National Environment Protection Council, December 1999.

5.1 HYDROSTATIC PIPELINE TESTING

OTEK engaged Tanknology Pty Ltd (Tanknology) to undertake hydrostatic pressure testing of five disused copper pipelines embedded in the concrete floor of the workshop. The disused pipelines were previously used to supply oil and various automotive fluids to the vehicle inspection/service pits in the workshop. The results of the pressure testing have shown the pipelines to be in sound condition. In view of this it is considered unlikely that significant soil contamination has resulted from the previous use of the pipelines embedded in the floor of the workshop. A copy of the Tanknology report is presented in Appendix C.

5.2 TRENCHING PROGRAM

In order to verify the results of the geophysical survey and confirm that a UST had not been previously located in the western portion of the site, a series of trenches were excavated in this vicinity. Approximately 700 metres of trenching to a depth of 0.5 m was undertaken. Samples were retrieved from a depth of 0.5 m at approximately 25 m intervals along each trench and submitted to the laboratory for analysis. The analytical program for the samples retrieved during the trenching program is outlined in Section 5.5.3. The location of the trenches and samples retrieved during the trenching program are shown in Figure 3.

No evidence of the presence or previous existence of USTs or burial pits was observed during the trenching program. No areas of disturbed soil were noted. All trenches were inspected by the Auditor's representative prior to backfilling. The presence of a high iron bearing geological anomaly was observed and a sample was taken for analysis by the Auditor's representative.

5.3 SOIL BORING PROGRAM

A soil-boring program was undertaken in order to assess the site for potential soil contamination. Ninety-one soil borings were cored to depths ranging from 1 to 4 metres below ground surface (mBGS) using a truck-mounted Geoprobe. Three soil bores were also drilled to a maximum depth of between 12 - 14 m using a Gemco H13 drilling rig, prior to the installation of three groundwater monitor wells on the site.

The Geoprobe utilises 56 mm diameter 1.2 metre lengths of disposable plastic tubing to collect the undisturbed soil samples. As the drilling rods do not come into contact with the soil samples, decontamination of the drilling rods was not required as soils were collected in new disposable push tubes.

Boring locations were selected by the OTEK project scientist using available site plans and correlated with the site sampling plan as agreed with the Auditor.

Soil samples were placed in resealable plastic bags for subsequent field screening. Where samples were to be submitted for analytical testing a subsample was placed in a new 250 mL glass jar, filled completely with no headspace and capped with a Teflon lined lid. The samples were uniquely labelled in accordance with the sample plan, placed on ice in an esky and transferred to the analytical laboratories using appropriate sample preservation procedures and chain of custody documentation.

To the maximum extent possible, all portions of each sample were carefully examined and the physical properties described by the field scientist. All soil samples were visually classified using the Unified Soil Classification System. All field notes, sampling procedures, sample descriptions, etc. are maintained on field log sheets. These field boring logs are used to prepare the soil boring logs contained within this document. The locations of all soil borings are shown in Figure 3. Soil boring logs are provided in Appendix D.

All sampling locations were field screened for volatile organic compounds (VOCs) using a photo ionisation detector (PID). The PID was calibrated prior to each field event and calibration certificates were issued for each day of use. The PID measurements recorded at each soil sampling location are shown on the soil boring logs in Appendix D.

5.4 MONITOR WELL INSTALLATION PROGRAM

Three on-site monitor wells comprising B-1/MW1, B-2/MW-2 and B-3/MW3, were installed within select completed soil borings. Details pertaining to the installation, construction, development, and sampling associated with the monitor well program are provided in Appendix E.

A level survey was performed to determine the elevations of each monitor well relative to a nominated temporary benchmark (TBM). The TBM location selected was adjacent to the south wall of the workshop building and is not permanently marked. The locations of the wells are shown in Figure 3.

Groundwater sampling was undertaken in accordance with EPA's (2000) *Groundwater Sampling Guidelines* using a low-flow QED Sample Pro

MicroPurge bladder pump. Purging of each well prior to sampling was undertaken at between 0.2-0.4 L/min until stabilisation of the groundwater's physical and chemical parameters had occurred, indicating that equilibrium had been reached and the water being extracted was formation water. The field purging logs completed during the groundwater sampling program are provided in Appendix E.

Groundwater samples were placed in appropriately preserved sample bottles supplied by the laboratory, before being placed on ice in an esky and transferred to the analytical laboratory with chain of custody documentation.

5.5 SAMPLING PLAN & SAMPLE ANALYSIS

The sampling plan was designed to determine the presence, type and concentrations of contaminants (if any) within the subsurface soils at the site. Grid sampling in accordance with the sampling density recommended in the Australian Standard 4482.1-1997 was undertaken over the majority of the site and judgmental (targeted) sampling was undertaken in the vicinity of potentially contaminating site facilities.

According to the Plan of Subdivision No. PS 511425S, Area 1 comprises a total area of 8.256 ha. For the purposes of the ESA, Area 1 was divided into four sub-areas:

Area 1A – Approximately 6 ha comprising the majority of the site;

Area 1B – Transformer storage area comprising an area of approximately 0.3 ha;

Area 1C – Western portion of the site comprising approximately 2 ha where a UST may have previously been located; and

Area 1D – Location of a waste oil UST situated in between the workshop and northern boundary of the site.

The sampling and analytical program for each of the four areas is shown in Figure 3 and detailed below. Please note that soil borings B-5 to B-9, B-29, B-34, B-42, B-43, B-55, B-60, B-74 and B-83 do not exist. These soil borings were initially proposed to be drilled along the southern boundary of the site which is occupied by the tree-lined buffer zone. Access to this area could not be gained with the GeoProbe used for the remainder of the soil sampling. As the tree-lined buffer zone has not been used for potentially contaminating activities and will remain a buffer zone in the future, sampling in this area was not considered necessary. Furthermore, the sampling density on the remainder of the site is sufficient to characterise the site in accordance with the Australian Standard AS 4482.1-1997.

5.5.1 *Area 1A - General Site*

The Australian Standard AS 4482.1-1997 recommends a sampling density of 11 sample locations per hectare for a site greater than 5 ha. Thus a 6 ha site requires 66 sample locations for site characterization on a grided sampling plan. In addition to the 66 grid sample locations the following targeted samples were retrieved:

- 2 sample locations inside the workshop in the base of the vehicle inspection pits;
- 1 sample location adjacent to the flammable goods store;
- 2 sample locations immediately down-gradient of the discharge from the triple interceptor trap from the transformer storage area;
- 4 sample locations at the treated power pole storage area;
- 1 groundwater monitor well installed down-gradient of the workshop; and
- 1 groundwater monitor well installed down-gradient of the transformer storage area.

Soil was sampled from a total of 75 locations and groundwater was sampled from two locations in Area 1A.

As the potential for widespread soil contamination across Area 1A was considered to be low, the majority of samples retrieved from grid locations have been analysed in composites of two and three samples in order to maximise site coverage whilst minimising analytical requirements. Figure 3 shows the composite sample groups which were formed. All compositing was undertaken by the analytical laboratory.

Analysis of samples was as follows:

- 100 soil samples from 50 sample locations, both 0.2 m and 0.5 m samples from adjoining locations were composited at the laboratory prior to analysis for selected metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), pH and EC. A total of 32 three sample composites and 2 two sample composites were formed);
- 14 individual soil samples from 7 locations were analysed for the EPAV Screen comprising: BTEX, TPH, PAH, speciated phenols; volatile chlorinated hydrocarbons (VCH), OCP, PCB, pH, electrical conductivity (EC), sulphur, sulphate, phosphorus, total cyanide and extended metals (arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, tin, vanadium and zinc);

- 27 additional discrete soil samples for pH and EC;
- 18 additional discrete soil samples for TPH;
- 11 additional discrete soil samples for PAH;
- 10 additional discrete soil samples for PCB;
- 30 additional discrete soil samples for total arsenic;
- 9 additional discrete soil samples for total copper;
- 6 discrete soil samples for hexavalent chromium (CrVI);
- 4 additional discrete soil samples for selected metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc);
- 4 discrete soil samples for toxicity characteristic leaching procedure (TCLP);
- 2 groundwater samples for dissolved metals (arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, tin, vanadium and zinc), TPH, BTEX, PAH, PCB, total dissolved solids (TDS); and
- 1 groundwater sample for sodium, potassium, calcium, magnesium, sulphate, chloride, nitrate, alkalinity, hardness and EC.

5.5.2 Area 1B – Transformer Storage Area

The Australian Standard AS 4482.1-1997 recommends 9 sample locations for a 0.3 ha site for site characterization on a grided sampling plan. Sampling was undertaken on an approximate grid from a total of 12 sample locations in Area 1B. Where heavily stained soil was observed, nearby grid sample locations were repositioned into these areas so that the magnitude of soil contamination in Area 1B could be adequately assessed.

Analysis of samples was as follows:

- 6 individual soil samples from 3 locations were analysed for the EPAV Screen comprising: BTEX, TPH >C16-C35 Aromatics, >C16-C35 Aliphatics, >C35 Aliphatics, PAH, speciated phenols, VCH, OCP, PCB, pH, EC, sulphur, sulphate, phosphorus, total cyanide and extended metals (arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, tin, vanadium and zinc);
- 18 additional discrete soil samples for pH and EC;
- 12 additional discrete soil samples for TPH;
- 3 additional discrete soil samples for PCB;
- 3 discrete soil samples for CrVI;

- 3 discrete soil samples for TCLP; and
- 1 additional discrete soil sample for speciated TPH.

5.5.3 *Area 1C – Suspected UST Area*

The Australian Standard AS 4482.1-1997 recommends 30 sample locations for a 2 ha site. Sampling was undertaken at approximately 25 m intervals from almost 700 linear metres of trenches excavated to a depth of 0.5 m in Area 1C. Samples were retrieved from a total of 29 sample locations in Area 1C.

Analysis of samples was as follows:

- 27 individual soil samples were analysed for BTEX, TPH, selected metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), pH and EC. Two samples were placed on hold at the laboratory for analysis if required.

5.5.4 *Area 1D – Waste Oil UST*

Soil samples were retrieved from five soil borings drilled around the waste oil UST. A groundwater monitor well was subsequently installed in one of the five soil borings.

Analysis of samples as follows:

- 2 individual soil samples from 1 locations were analysed for the EPAV Screen comprising: BTEX, TPH, PAH, speciated phenols, VCH, OCP, PCB, pH, EC, sulphur, sulphate, phosphorus, total cyanide and extended metals (arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, tin, vanadium and zinc);
- 7 additional discrete soil samples for pH and EC;
- 5 additional discrete soil samples for TPH;
- 3 discrete soil samples for TCLP;
- 2 additional discrete soil samples for selected metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc); and
- 1 groundwater sample for dissolved metals (arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, tin, vanadium and zinc), TPH, BTEX, PAH, PCB, and TDS.

5.6 QUALITY CONTROL / QUALITY ASSURANCE

Primary analytical laboratory testing was performed by Amdel Laboratories Limited (Amdel) of Notting Hill, Victoria. Secondary laboratory testing was performed by WSL Consultants Pty Ltd (WSL), of Richmond, Victoria. Amdel and WSL's analytical methods are certified by the National Association of Testing Authorities (NATA). Detection limits and analytical methodologies were checked prior to analysis of samples.

Quality Control sampling and analysis is regularly conducted as part of OTEK's Quality Assurance/Quality Control (QA/QC) program (Appendix F) in order to validate the integrity of field procedures and assess the accuracy and precision of laboratory analyses. As part of the QA/QC program duplicate (blind replicate samples) and triplicate (split samples) samples were analysed at a rate of one per ten in accordance with the NEPM.

The following table outlines the quality control samples obtained and analysis performed as part of the QA/QC Program.

Table 2 – QA/QC Program

QA/QC Sample ID	Analyses Conducted	Comments
QA-1 (soil)	TPH, BTEX, 8 Metals, pH, EC	QA-1 is a duplicate of 1C/TS-6 0.5
QS-1 (soil)	TPH, BTEX, 8 Metals, pH, EC	QS-1 is a triplicate of 1C/TS-6 0.5
QA-2 (soil)	TPH, BTEX, 8 Metals, pH, EC	QA-2 is a duplicate of 1C/TS-20 0.5
QS-2 (soil)	TPH, BTEX, 8 Metals, pH, EC	QS-2 is a triplicate of 1C/TS-20 0.5
QA-3 (soil)	TPH, BTEX, 8 Metals, pH, EC	QA-3 is a duplicate of 1C/TS-23 0.5
QS-3 (soil)	TPH, BTEX, 8 Metals, pH, EC	QS-3 is a triplicate of 1C/TS-23 0.5
QA-4 (soil)	8 Metals, pH, EC	QA-4 is a duplicate of 1A/67/0.5
QS-4 (soil)	8 Metals, pH, EC	QS-4 is a triplicate of 1A/67/0.5
QA-5 (soil)	8 Metals, pH, EC	QA-5 is a duplicate of 1A/57/0.5
QS-5 (soil)	8 Metals, pH, EC	QS-5 is a triplicate of 1A/57/0.5
QA-6 (soil)	8 Metals, pH, EC	QA-6 is a duplicate of 1A/48/0.5
QS-6 (soil)	8 Metals, pH, EC	QS-6 is a triplicate of 1A/48/0.5
QA-7 (soil)	8 Metals, pH, EC	QA-7 is a duplicate of 1A/21/0.5
QS-7 (soil)	8 Metals, pH, EC	QS-7 is a triplicate of 1A/21/0.5
QA-8 (soil)	8 Metals, pH, EC	QA-8 is a duplicate of 1A/18/0.5
QS-8 (soil)	8 Metals, pH, EC	QS-8 is a triplicate of 1A/18/0.5
QA-9 (soil)	TPH, BTEX, 8 Metals, pH, EC	QA-9 is a duplicate of 1D/81/0.5
QS-9 (soil)	TPH, BTEX, 8 Metals, pH, EC	QS-9 is a triplicate of 1D/81/0.5

QA-10 (soil)	TPH, BTEX, 8 Metals, pH, EC	QA-10 is a duplicate of 1A/101/0.1
QS-10 (soil)	TPH, BTEX, 8 Metals, pH, EC	QS-10 is a triplicate of 1A/101/0.1
QA-11 (soil)	8 Metals, pH, EC	QA-11 is a duplicate of 1A/104/0.1
QS-11 (soil)	8 Metals, pH, EC	QS-11 is a triplicate of 1A/104/0.1
QW-1 (water)	17 Metals, TPH, BTEX, PCB, PAH	QW-1 is a duplicate of MW-2
QWA-1 (water)	17 Metals, TPH, BTEX, PCB, PAH	QW-1A is a triplicate of MW-2
RB-1 (water)	8 Metals	Rinsate Blank
TB-1 (water)	8 Metals	Trip Blank
RB-2 (water)	8 Metals	Rinsate Blank
TB-2 (water)	8 Metals	Trip Blank
RB-3 (water)	TPH, BTEX, 8 Metals	Rinsate Blank
TB-3 (water)	TPH, BTEX, 8 Metals	Trip Blank
RB-4 (water)	TPH, BTEX, 8 Metals	Rinsate Blank
TB-4 (water)	TPH, BTEX, 8 Metals	Trip Blank
RB-5 (water)	8 Metals	Rinsate Blank
TB-5 (water)	TPH, BTEX, 8 Metals	Trip Blank
RB-1b (water)	16 Metals	Rinsate Blank
TB-1b (water)	-	Trip Blank

A labelling system identifies the origin of each soil sample collected, e.g. 1A/67/0.5. The letter 'A' identifies the sub-area of the site, the number 67 refers to the soil boring number and 0.5 refers to the depth in metres at which the sample was taken. The label 'TS' refers to samples retrieved from a trench. Samples labelled QA-# are duplicate samples analysed by the primary laboratory in order to determine the precision of the laboratory analyses and samples labelled QS-# are triplicate samples analysed by a second laboratory in order to determine the accuracy of the laboratory analyses. RB and TB refer to rinsate and trip blank samples respectively which are analysed in order to determine the potential for cross contamination to have occurred during sampling and sample storage and transport.

According to the Australian Standard AS 4482.1-1997 the relative percentage differences (RPDs) between duplicate samples should in general be less than 30-50%. This variation can be expected to be higher for organic analyses than for in-organic and for low concentrations of analytes. Discussions with laboratories indicate that where detected concentrations are less than five times the PQL, higher RPDs (up to 200%) are common and considered acceptable.

In situations where detected concentrations are more than or equal to five times the PQL, RPDs of 50% and 75% are considered acceptable for sandy soils and clayey soils respectively.

5.7 HYDRAULIC CONDUCTIVITY TESTING

Hydraulic conductivity testing was performed on the 5th March 2003 at Monitor Well MW-3 using a saturated zone slug (rising head) test. The test is performed to provide an indication of the hydraulic conductivity of the aquifer. A description of the test method used is presented in Appendix E.

The results of the hydraulic conductivity testing are discussed in Section 6.4.

6 *SITE CONDITIONS*

The following sections describe OTEK's findings at the time of the ESA with respect to subsurface soil and groundwater, and impact to the shallow subsurface.

6.1 SURFACE CONDITIONS

A large workshop building, approximately 2,400 m^2 in area, is located adjacent to the northern boundary of the site. The eastern portion of the workshop building is also used for administrative purposes. A number of small structures are also present on the site including a flammable goods store near the south east corner of the workshop, a large shed near the north west corner of the workshop, and a small shed to the south of the transformer storage area.

The surface cover at the site consists of concrete and asphalt around the perimeter of the workshop and in vehicle parking areas and driveways to the south and east of the workshop. The remainder of the central portion of the site is primarily covered with gravel/crushed rock, whilst the eastern and western portions are primarily covered with grass. Narrow tree-lined buffer zones are present along the southern and western boundaries of the site. The buffer zones are fenced and are not known to have been used for potentially contaminating activities.

A number of stained areas were observed on the site including oil stains in the vehicle inspection pits and oil storeroom in the workshop building, the transformer storage area and truckwash bay.

6.2 SOIL CONDITIONS

The subsurface soil profile was found to typically consist of a generally shallow surface layer of fill material, which primarily comprised crushed rock

(basalt/scoria). This stratum was underlain by naturally occurring brown to red-brown silty clay of varying consistency to a maximum depth of 10 mBGS. Hard bluish-grey basalt was intersected beneath the silty clay at depths of between 8.7-10 mBGS in the three soil borings that were drilled to facilitate the installation of monitor wells.

6.3 FIELD SOIL VAPOUR ASSESSMENT

Field-screening results did not indicate the presence of volatile organic compounds within the subsurface. Readings taken with a photo-ionisation detector (PID) were generally low for all samples.

6.4 GROUNDWATER CONDITIONS

Groundwater was encountered at depths ranging from approximately 11 to 13 metres during the soil boring program, and stabilised at depths of between 8.153 and 8.609 metres in the completed monitor wells.

Based on the measured depth to groundwater in each monitor well and the results of the level survey, groundwater was calculated to be flowing in an easterly direction towards the Werribee River. Figure 4 (Groundwater Elevation Map) illustrates the location, depth to water and direction of groundwater flow based on lines of equal potential derived from the groundwater elevation in each monitor well. Table 3 summarises these levels.

Table 3 – Groundwater Summary

Monitor Well	Elevation of Top of Well Casing(1) (m)	Groundwater Depth From Top of Casing as at 5th March 2003 (m)	Groundwater Elevation as at 5th March 2003 (m)
MW-1	49.780	8.593	41.187
MW-2	49.805	8.609	41.196
MW-3	49.337	8.153	41.184

Notes: (1) Elevation relative to TBM as shown in Figure 4 (TBM = 50.000m).

The hydraulic conductivity of the basalt aquifer beneath the site was estimated at 3.1×10^{-5} m/sec, using a modification of the Bouwer-Rice method (Kruseman & de Ridder, 1994). An estimated effective porosity value of 0.10 for fractured basalt has been used (U.S. Department of Interior). Using these estimated values and applying Darcy's Law, the linear groundwater velocity has been calculated at approximately 3.2 m/year. The groundwater was calculated to be moving to the east towards the Werribee River.

7 *REGULATORY CRITERIA*

7.1 SOIL QUALITY CRITERIA

The Victorian Environment Protection Authority (EPAV) endorses the soil quality criteria outlined by National Environmental Protection Measure (NEPM, 1999). Health-based and ecological-based investigation levels, as defined by land use type and beneficial uses are outlined in the State Environment Protection Policy (SEPP) for Prevention and Management of Contamination of Land (EPAV, 2002).

The policy goal of the Land SEPP is to maintain and where appropriate and practicable, improve the condition of the land environment sufficient to protect current and future beneficial uses of land from the detrimental effects of contamination by:

(a) preventing contamination of land: and

(b) where pollution has occurred, adopting management practices that will ensure:

(i) unacceptable risks to human health and the environment are prevented; and

(ii) pollution is cleaned-up or otherwise managed to protect beneficial uses. (EPAV, 2002)

Land uses and their associated beneficial uses, as defined by the Land SEPP (EPAV, 2002) are presented in the following table.

Table 4 – Protected Beneficial Uses of Land

Beneficial Use	Land Use						
	Parks & Reserves	Agricultural	Sensitive use		Recreation/ Open space	Commercial	Industrial
			High Density	*Other*			
Maintenance of Ecosystems							
Natural Ecosystems	Yes	No	No	No	No	No	No
Modified Ecosystems	Yes	Yes	No	Yes	Yes	No	No
Highly Modified Ecosystems	No	Yes	Yes	Yes	Yes	Yes	Yes
Human Health	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Buildings & Structures	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Aesthetics	Yes	No	Yes	Yes	Yes	Yes	No
Production of Food Flora and Fibre	Yes	Yes	No	Yes	No	No	No

The beneficial uses, as defined by the existing industrial land use of the site, are:

- Maintenance of highly modified ecosystems;
- Human health; and
- Buildings and structures.

According to the Land SEPP, contaminant concentrations should not cause an adverse effect on human health and the levels of any indicator should not exceed the NEPM health-based investigation levels (HILs) or levels derived using an appropriate risk assessment methodology. Due to the ongoing use of the site as an industrial facility, the NEPM "F" HILs for a commercial/industrial land use are appropriate investigation levels for an assessment of potential human health risk. The results have also been compared against the NEPM "A" HILs for a standard residential land use in order to characterise the magnitude of contamination on the site and to identify areas of potential concern should a more sensitive land use be proposed in the future.

The Land SEPP refers to the NEPM Interim Urban Ecological Investigation Levels (EILs) as the objectives for the maintenance of relevant ecosystems. Where EILs have not been provided in the NEPM, the former ANZECC 1992 "B" levels have been used.

As the NEPM has no specific criteria for benzene, toluene, ethyl-benzene, total xylenes, the NSW EPA (1994) *Guidelines for Assessing Service Station Sites* (1994) criteria have been adopted for these contaminants.

7.2 GROUNDWATER QUALITY CRITERIA

The Victorian Environment Protection Authority (EPAV) endorses the groundwater quality criteria outlined by Australian New Zealand Environment Conservation Council (ANZECC 1992), as defined by the State Environment Protection Policy (SEPP) Groundwaters of Victoria (EPAV, 1997). The SEPP requires that groundwater assessment criteria be based on the protection of groundwater beneficial uses, as defined by the TDS content.

The groundwater segments and their respective beneficial uses to be protected are outlined in Table 5.

Table 5 – Protected Beneficial Uses of Groundwater

Beneficial Uses		Segments (mg/L TDS)				
		A1	A2	B	C	D
		0-500	501-1,000	1,001-3,500	3,501-13,000	Greater than 13,000
Maintenance of Ecosystems		Yes	Yes	Yes	Yes	Yes
Potable Water Supply	Desirable	Yes	N/A	No	No	No
	Acceptable	N/A	Yes	No	No	No
Potable Mineral Water		Yes	Yes	Yes	No	No
Agriculture, Parks & Gardens		Yes	Yes	Yes	No	No
Stock Water		Yes	Yes	Yes	Yes	No
Industrial		Yes	Yes	Yes	Yes	Yes
Primary Contact Recreation		Yes	Yes	Yes	Yes	No
Building & Structures		Yes	Yes	Yes	Yes	Yes

Based on the mean TDS concentration of 6,300 mg/L in groundwater retrieved from the three on-site wells, the groundwater at the site is classified as Segment C groundwater in accordance with the Groundwater SEPP. The beneficial uses of Segment C water include:

- Maintenance of Ecosystems;
- Livestock Watering;
- Industrial Water Use;
- Primary Contact Recreation - should the groundwater be abstracted for use in a swimming pool or surface water body in which people may bathe; and
- Protection of Buildings and Structures.

The adopted groundwater assessment criteria for each beneficial use are listed in Table 6.

Table 6– Adopted Groundwater Criteria

Beneficial uses		Relevant Assessment Criteria
Maintenance of Ecosystems		Australian and New Zealand Environment and Conservation Council (ANZECC) 1992 – Freshwater Ecosystem
Potable Water Supply	Desirable	N/A
	Acceptable	N/A
Potable Mineral Water		N/A
Agriculture, Parks & Gardens		N/A
Stock Water		ANZECC 1992 – Stock Water
Industrial		ANZECC 1992 – Industrial Water Quality
Primary Contact Recreation		ANZECC 1992 – Raw Waters for Drinking Water Supply.
Building & Structures		Groundwater SEPP 1997

Where no criteria have been specified for potential contaminants in the ANZECC 1992 guidelines, criteria were adopted from either the NSW EPA (1994) *Guidelines for Assessing Service Station Sites* or the ANZECC (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Please note that the Victorian EPA have not yet formally endorsed the ANZECC 2000 criteria.

8 ANALYTICAL RESULTS

The analytical results are summarised in Tables 9 to 22. Complete copies of the NATA endorsed analytical reports, with analytical methods and analytical results, laboratory QC data, and accompanying chain of custody documentation, are provided in Appendix G, provided on compact disc (CD).

8.1 SOIL ANALYSIS

8.1.1 Metals

A total of 125 individual samples, 34 composite samples, and 22 QA/QC soil samples were analysed for total metals. TCLP testing was also undertaken on 10 soil samples in order to determine the proportion of the total metal concentrations in the samples that were bioavailable.

The concentrations of total metals in all samples analysed were measured to be below the NEPM "F" HILs for a commercial/ industrial land use (Tables 9A-9G). However concentrations of arsenic, barium, hexavalent chromium, copper, manganese, nickel, vanadium and zinc were measured to exceed the NEPM EILs in some samples. Also, the arsenic concentration in one soil sample, retrieved from an area where treated timber power poles are

stored, was measured to be in excess of the NEPM "A" HIL for a sensitive land use. A cobalt concentration in excess of the NEPM "A" HIL was also measured in a sample of fill material retrieved from adjacent to the waste oil UST. The samples with metal concentrations exceeding the NEPM EILs and NEPM "A" HILs (arsenic and cobalt) are discussed below.

Arsenic

The arsenic concentrations in 12 of 32 three-part composite samples exceeded the equivalent NEPM EIL of 6.7 mg/kg for three-part composite samples. Subsequent analysis of the individual samples that were used to form the 12 composite samples showed arsenic concentrations to be below the NEPM EIL of 20 mg/kg.

The arsenic concentration in near surface soil samples 1A/104/0.1 and 1A/105/0.1, retrieved from an area where treated timber power poles are stored, were measured to exceed the NEPM EIL. In particular, sample 1A/104/0.1 was measured to have an arsenic concentration of 130 mg/kg, which is in excess the NEPM "A" HIL of 100 mg/kg for a sensitive land use, but is significantly below the NEPM "F" HIL of 500 mg/kg for a commercial/industrial land use.

Barium

The barium concentrations in two individual samples of natural soil marginally exceeded the NEPM EIL for barium of 300 mg/kg. However the concentrations (maximum 330 mg/kg) were well within the NEPM background range for barium in Australian soils of 100-3,000 mg/kg and are not considered significant.

Chromium

Total chromium concentrations were measured to be well below the NEPM EIL for trivalent chromium (CrIII) of 400 mg/kg and were also well within the NEPM background range for total chromium of 5-1,000 mg/kg in all samples analysed. However the total chromium concentrations in a significant number of samples exceeded the former ANZECC 1992 "B" level of 50 mg/kg. In view of this, the 10 samples measured to have the highest total chromium concentrations were analysed for hexavalent chromium (CrVI).

The results of the CrVI analysis showed that three of the ten samples analysed were measured to have CrVI concentrations marginally above the NEPM EIL for CrVI of 1 mg/kg. The slightly elevated CrVI concentrations (maximum 1.6 mg/kg) were measured in samples of natural soil retrieved from depths of 0.5 m, 1.0 m and 8.0 m. The CrVI concentrations are

significantly below the NEPM "F" HIL of 500 mg/kg and are not considered to be significant.

Cobalt

The cobalt concentration in one individual sample of fill material, retrieved from adjacent to the waste oil UST, was measured to exceed the NEPM "A" HIL for cobalt of 100 mg/kg. However the concentration of 140 mg/kg was well below NEPM "F" HIL for cobalt of 500 mg/kg and is not considered significant for an industrial land use. The elevated cobalt concentration is likely to have originated in the fill material used in the vicinity of the waste oil UST.

Copper

The copper concentrations in 3 of 32 three-part composite samples exceeded the equivalent NEPM EIL of 33.3 mg/kg for three-part composite samples. Subsequent analysis of the individual samples that were used to form the three composite samples showed copper concentrations to be below the NEPM EIL of 100 mg/kg in the individual samples.

A copper concentration of 200 mg/kg was measured in near surface soil sample 1A/104/0.1, retrieved from an area where treated timber power poles are stored. Whilst the copper concentration exceeds the EIL of 100 mg/kg, it is significantly below the NEPM "F" HIL of 5,000 mg/kg. The elevated copper concentration is associated with a high arsenic concentration (130 mg/kg) and elevated total chromium concentration (190 mg/kg) and is considered to be sourced from CCA on the treated timber power poles that are stored in this area of the site.

Manganese

The manganese concentrations in five individual samples of near surface fill material (crushed rock) and one individual sample of natural soil marginally exceeded the NEPM EIL for manganese of 500 mg/kg. However the maximum concentration of 620 mg/kg was still below the NEPM background concentration for manganese in Australian soils of 850 mg/kg. Slightly elevated manganese concentrations are commonly associated with crushed rock of a volcanic origin (basalt/scoria) and are not considered significant. The one sample of natural soil that was measured to have a slightly elevated manganese concentration was sampled from beneath a layer of scoria. This sample may have had particles of scoria inadvertently introduced during sampling, as the manganese concentrations in the

remaining samples of natural soil retrieved from the site were measured to be below the EIL.

Nickel

The nickel concentrations in all 32 three-part composite samples and both two-part composite samples exceeded the equivalent NEPM EIL for nickel. Also the nickel concentrations in 35 individual fill and natural soil samples exceeded the EIL of 60 mg/kg. However, the maximum nickel concentration of 130 mg/kg was well within the NEPM background range of 5-500 mg/kg, and was well below the NEPM "F" HIL for nickel of 3,000 mg/kg for a commercial/industrial land use. Elevated nickel concentrations are also commonly associated with crushed rock of a volcanic origin (basalt/scoria). The occurrence of elevated nickel concentrations on the site appear to be generally associated with the presence of crushed rock.

Vanadium

The vanadium concentrations in 16 individual fill and natural soil samples exceeded the EIL of 50 mg/kg. However, the vanadium concentrations were well within the NEPM background range of 20-500 mg/kg in all samples analysed. The slightly elevated vanadium concentrations are not considered significant for an industrial land use.

Zinc

The zinc concentration in one individual sample of near surface fill material exceeded the NEPM EIL for zinc of 200 mg/kg. A zinc concentration of 340 mg/kg was measured in a sample retrieved from a storage area adjacent to the northern boundary of the site. The slightly elevated zinc concentration may have resulted from the storage of galvanised metal items in this area of the site. The zinc concentration is well below the NEPM "F" HIL of 35,000 mg/kg for a commercial/industrial land use.

Other Metals

The concentrations of the remaining metals in the samples of soil retrieved from the site were measured to be below the NEPM EILs and HILs, and were within the natural background ranges for Australian soils.

Statistical Analysis of Metal Concentrations

In order to characterise the elevated heavy metal concentrations identified in on-site soils, statistical analysis of the concentrations measured in individual soil samples was undertaken. The results are presented in Table 7 below.

Table 7 – Summary of Statistical Analysis

Metal	Maximum Concentration (mg/kg)	Mean Concentration (mg/kg)	95% UCL[1] (mg/kg)	NEPM EIL (mg/kg)	Number of Samples
Arsenic	130	6.8	9	20	119
Barium	330	171	197	300	22
Total Chromium	190	66.3	73.1	5-1000[2]	89
ChromiumVI	1.6	0.62	1.06	1	10
Cobalt	140	27.5	39	1-40[2]	22
Copper	200	27.3	31.4	100	98
Manganese	620	395	451	500	22
Nickel	130	59.3	65.1	60	89
Vanadium	110	67.8	77.3	50	22
Zinc	340	53.4	61.6	200	89

Note: [1] UCL = Upper Confidence Limit.
[2] NEPM background range in absence of an EIL.

The results of the statistical analysis show that the 95% upper confidence limits (UCLs) of the arithmetic means of the heavy metal concentrations are below the EILs for arsenic, barium, copper, manganese and zinc. The 95% UCL for chromium VI only marginally exceeds the EIL. Whilst the 95% UCLs for nickel and vanadium slightly exceed the EILs, they are also well within the NEPM background ranges of up to 500 mg/kg for both nickel and vanadium.

In the absence of EILs for total chromium and cobalt, the 95% UCLs have been compared to the NEPM background ranges. The 95% UCLs for chromium and cobalt are within the range of natural background concentrations in Australian soils.

Elutriation Testing

The samples that were measured to have the highest arsenic, barium, chromium, cobalt, manganese, nickel, vanadium and zinc concentrations in each soil type were submitted for elutriation testing using the TCLP method. This was undertaken in order to conservatively estimate the bioavailable proportion of metals in the soil.

The results of the elutriation testing (Tables 9D-9F) show that the elutriability of the metals in on-site soil is generally very low. The available proportion of the total metal concentration in all samples analysed was below the NEPM EIL and/or NEPM HIL for each metal. This indicates that the potential for phytotoxicity to occur as a result of the elevated metal concentrations is low.

8.1.2 *Benzene, Toluene, Ethylbenzene, Xylene (BTEX), Total Petroleum Hydrocarbons (TPH) and Hydrocarbon Fractionation*

A total of 89 primary soil samples retrieved from the four areas on the site were analysed for BTEX and TPH, and a further 10 soil samples were analysed for BTEX and TPH for QA/QC purposes. Seven samples were analysed for their aliphatic and aromatic constituents (hydrocarbon fractionation). With the exception of two soil samples retrieved from Area 1B – Transformer Storage Area, the laboratory analytical results reported concentrations of BTEX and TPH to below laboratory Practical Quantitation Limits (PQLs) and NSW EPA (1994) guideline levels in all samples (Tables 10A-10C).

Sample 1B/96/0.2, retrieved from the near surface fill material in Area 1B, was measured to have a TPH (C_{10}-C_{36} fractions) concentration of 11,430 mg/kg, in excess of the NSW EPA criterion of 1,000 mg/kg for a sensitive land use. Fractionation testing of this sample showed a C_{16}-C_{35} aromatics concentration of 720 mg/kg, which is in excess of the NEPM "F" HIL of 450 mg/kg for a commercial/industrial land use. Also sample 1B/89/0.2 was measured to have a C_{16}-C_{35} aromatics concentration of 1,470 mg/kg, which is also in excess of the NEPM "F" HIL of 450 mg/kg. Both samples were retrieved from localised patches of oil stained soil within the Transformer Storage Area. The remaining samples retrieved from Area 1B were measured to have TPH concentrations below guideline levels or laboratory PQLs.

8.1.3 *Volatile Chlorinated Hydrocarbons (VCH)*

The VCH concentrations in 22 samples analysed were reported to be below laboratory PQLs (Table 11).

8.1.4 *Polycyclic Aromatic Hydrocarbons (PAH)*

The PAH concentrations in 33 samples analysed were reported to be below laboratory PQLs (Table 12).

8.1.5 *Polychlorinated Biphenyls (PCB)*

Thirty-five samples were analysed for PCB. The PCB concentrations were reported to be below laboratory PQLs in all samples analysed (Table 13).

8.1.6 *Organochlorine Pesticides (OCP)*

Twenty-two samples were analysed for a suite of OCP. The OCP concentrations were reported to be below laboratory PQLs in all samples analysed (Table 14).

8.1.7 *Phenols and Cresols*

Twenty-two samples were analysed for total phenols and 20 individual phenol and cresol species. The results showed the concentrations of phenols and cresols to be below laboratory PQLs in all samples analysed (Table 15).

8.1.8 *Sulphur, Sulphate, Phosphorus and Total Cyanide*

The sulphur, sulphate and phosphorus concentrations in 22 samples analysed were measured to be below the NEPM EILs. The total cyanide concentrations in 22 samples analysed were well below the NEPM HILs for "free" cyanides (Table 16).

8.1.9 *pH and EC*

Laboratory analysis of 139 samples for soil pH and EC showed that the pH of the majority of the samples was within the ANZECC 1992 background pH range of 6-8 for Australian soils. Eighteen of the 139 samples were measured to have a pH slightly more alkaline than 8, which is considered consistent with the site geology. The mean pH for the 139 samples was calculated to be 7.3. The soil at the site would be classified as slightly to moderately alkaline (Table 17A-17B).

The mean EC for the 139 samples was calculated to be 225 µS/cm, which indicates generally low concentrations of salts in the soil at the site. Slightly elevated EC measurements were observed to correlate with elevated metal concentrations in areas of the site such as the treated timber power pole storage area and the general storage area adjacent to the north boundary of the site.

8.2 GROUNDWATER ANALYSIS

The results of groundwater sampling undertaken on the 5th March 2003 are presented in Tables 18 – 22 and discussed below.

8.2.1 *Metals*

Arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, lead, manganese, mercury, molybdenum, nickel, tin, vanadium and zinc concentrations in groundwater samples from the three monitor wells were measured to be below the adopted ANZECC 1992 guideline levels. Selenium concentrations in all three monitor wells, and a copper concentration in MW-2 were measured to exceed the adopted guideline levels (Table 18A). These are further discussed below.

Copper

A copper concentration of 0.008 mg/L was measured in a groundwater sample retrieved from MW-2. This is marginally in excess of the ANZECC 1992 freshwater ecosystem criterion of 0.005 mg/L.

The slightly elevated copper concentration in MW-2 is not considered to have originated from on-site activities as the copper concentrations in the soil are generally low. Also, the copper in MW-2 is not considered likely to adversely impact on the Werribee River, as the copper concentration at MW-1, which is down-gradient of MW-2 does not exceed the ANZECC 1992 freshwater ecosystem criterion. It should also be noted that copper was not detected above the laboratory PQL in the triplicate sample analysed by the secondary laboratory.

Selenium

Selenium concentrations in excess of the ANZECC 1992 freshwater ecosystem, recreational water and livestock criteria of 0.005 mg/L, 0.01 mg/L and 0.02 mg/L respectively, were measured in groundwater samples retrieved from all three bores. The selenium concentrations ranged from 0.028 mg/L in MW-3 to 0.051 mg/L in MW-1A, the triplicate sample of MW-2 analysed by the secondary laboratory.

The elevated selenium concentrations are relatively uniform in all three monitor wells, suggesting that the selenium concentrations may be naturally elevated in the basalt aquifer beneath the site. The elevated selenium concentrations are not considered to have originated from on-site activities as the selenium concentrations in the soil are very low, reported to be below laboratory PQL in the majority of samples. Also, selenium containing products are not known to have been historically used on the site.

8.2.2 BTEX and TPH

The concentrations of BTEX and TPH were reported to be below laboratory PQLs in all groundwater samples (Table 19A).

8.2.3 PAH

The PAH concentrations were reported to be below laboratory PQLs in all groundwater samples (Table 20).

8.2.4 PCB

The PCB concentrations were reported to be below laboratory PQLs in all groundwater samples (Table 21).

8.2.5 *TDS*

The TDS concentration measured in the groundwater at the site ranged from 5,300 mg/L in MW-3 to 7,500 mg/L in MW-2, with a mean concentration of 6,300 mg/L. The groundwater at the site is classified as brackish water (Table 19A).

8.2.6 *Ion Balance*

Plotting the results of the major ion analyses undertaken on a groundwater sample retrieved from MW-3 on a trilinear diagram, indicates that the groundwater in the basalt aquifer at the site is classed as sodium and chloride dominant based on the cation and anion ratios respectively (Table 22).

The alkalinity in MW-3 of 330 mg/L indicates a substantial buffering capacity of the aquifer to prevent significant pH changes. This is consistent with the neutral to slightly alkaline pH measured on-site during groundwater sampling.

A nitrate concentration in excess of the ANZECC 1992 livestock watering guideline level of 30 mg/L was measured in MW-3. The nitrate concentration in MW-3 was measured to be 55 mg/L. Due to the absence of any significant organic contamination at the site, the elevated nitrate is not considered to have resulted from on-site activities. It is uncertain whether nitrate is elevated in the two remaining monitor wells on the site, as it was not possible to undertake nitrate analysis on groundwater samples from the remaining wells once the elevated nitrate concentration was measured in MW-3. This was due to the short holding time for nitrate analysis in groundwater.

8.3 QA/QC RESULTS

A total of 22 duplicate and triplicate soil samples, two duplicate and triplicate groundwater samples, and 12 field blank samples were collected during the ESA for QA/QC purposes. A list of the QA/QC samples is presented in Table 2 of this report. The results of the analysis of QA/QC samples are presented in Tables 9G, 10B, 12, 17B, 18A-B, 19A-B, 20 and 21 and discussed below.

8.3.1 *QA/QC Soil Samples*

The results of the analysis of duplicate and triplicate quality control soil samples (blind replicate samples and split samples respectively) show that a high degree of precision and accuracy was achieved in the soil sampling and analytical program as the majority of the relative percentage differences

(RPDs) were below the acceptance criteria of up to 50% recommended by Australian Standard AS 4482.1 - 1997.

Minor discrepancies were observed for some QA/QC analyses for heavy metals and EC. The discrepancies were not generally biased to either the primary or secondary laboratories, indicating that sample heterogeneity was the likely cause of the discrepancies, rather than laboratory error. The minor discrepancies for the heavy metals and EC analyses are not considered to affect the outcome of the ESA. Excellent agreement was achieved for BTEX, TPH and pH QA/QC analyses with all RPDs acceptable.

8.3.2 QA/QC Groundwater Samples

The results of the analysis of duplicate and triplicate quality control groundwater samples show that a high degree of precision and accuracy was achieved in the groundwater sampling and analytical program as the majority of the RPDs were below the acceptance criteria of 50%.

Excellent agreement was achieved for the BTEX, TPH, PAH and PCB QA/QC analyses with all RPDs acceptable. Good agreement was also achieved for the heavy metals analyses, with the majority of RPDs acceptable. However some discrepancies were observed, including an RPD for boron of 67% between the primary and triplicate samples, and chromium, copper, nickel and zinc concentrations reported to be below PQLs by the secondary laboratory in the triplicate sample.

Since good agreement was achieved between the primary laboratory and secondary laboratory for the remaining heavy metal analyses, the duplicate and triplicate samples are considered to have been homogenous. In view of this, the chromium, copper, nickel and zinc concentrations measured by the primary laboratory may indicate the possible contamination of the primary samples at the laboratory during analysis. This is consistent with low-level copper and zinc concentrations measured in blank samples analysed by the primary laboratory (discussed further below). Therefore the chromium, copper, nickel and zinc concentrations reported by the primary laboratory for the groundwater samples should be viewed as estimates. This is not considered to affect the outcome of the ESA.

8.3.3 Blank Samples

The analysis of rinsate and trip blanks during the soil and groundwater sampling programs indicates that significant cross contamination between samples and sample locations is not likely to have occurred. Low-level copper concentrations were measured in almost all rinsate and trip blank samples collected and zinc concentrations were measured in two blank

samples collected during the ESA. Based on the similar concentrations measured in each set of rinsate and trip blank samples, the copper is considered to have resulted from contaminated rinsate water supplied by the primary laboratory, rather than inadequate decontamination procedures. BTEX and TPH were not detected in any of the blank samples analysed.

The results of the analysis of blank samples indicate that the decontamination procedures implemented during the ESA were appropriate.

8.3.4 Laboratory QA/QC

The QA/QC programs of the laboratories used for this ESA have been reviewed to ensure that the data is reliable and complete. Chain of custody documentation and/or sample receipt advice were signed and dated by the laboratories to confirm that samples were received in good condition within acceptable time limits. The analytical methods used for the laboratories' internal QA/QC program are NATA accredited and details of the methods are provided in the laboratory reports.

The laboratories' QA/QC programs include analysis of internal duplicate samples, spike recoveries, surrogate standards and laboratory blanks. A review of the results of the internal QA/QC has shown that the majority of these were within the laboratories' recommended range for acceptable reproducibility. Therefore, the laboratory data obtained in this ESA is considered to be of acceptable precision, accuracy and reliability and representative of the site conditions encountered.

8.3.5 Overall QA/QC Data Evaluation

The data quality objectives were met during the ESA, as demonstrated throughout the report. Documentation was maintained and complete, sufficient data was collected to characterise the site in accordance with EPA requirements, the data has been shown to be comparable and representative of the site, while precision and accuracy has been demonstrated in the field and laboratory QA/QC programs.

9 DISCUSSION OF RESULTS

The results of the ESA undertaken at Werribee Fields – Area 1 have shown that the concentrations of potential contaminants in the soil at the site are generally low and well below guideline levels for an industrial land use. Elevated arsenic, barium, cobalt, total chromium, hexavalent chromium, copper, manganese, nickel, vanadium and zinc concentrations were observed in some soil samples.

The slightly elevated manganese, nickel and vanadium concentrations appear to correlate with the presence of crushed rock (basalt/scoria) at the sampling locations. The barium, total chromium and hexavalent chromium concentrations appear to be naturally elevated. The elevated arsenic and copper concentrations are considered to be associated with CCA from treated timber power poles that are stored on the site, and zinc is considered to be associated with the storage of goods and debris (some galvanised) adjacent to the northern boundary of the site.

Elutriation testing has shown that generally only a small proportion of the total metal concentration in the samples is available, indicating that phytotoxicity is unlikely to occur. The heavy metal concentrations in the soil at the site are not considered to present a risk for an ongoing industrial land use.

A number of small areas of heavily oil-stained soil were observed in the Powercor Transformer Storage Area on the site. The analytical results for soil samples retrieved from this area indicate TPH C_{16}-C_{35} Aromatics concentrations above the NEPM "F" HIL for a commercial/industrial land use. In view of this, the soil contamination in this area should be remediated.

Elevated nitrate and selenium, and slightly elevated copper concentrations were measured in the groundwater at the site. In view of the depth to groundwater and absence of significant contamination in on-site soils, the elevated contaminant concentrations in groundwater are not considered to have resulted from on-site activities. The selenium and nitrate concentrations are considered to preclude the relevant beneficial uses Stock Watering and Primary Contact Recreation of the groundwater in the basalt aquifer beneath the site.

10 CONCLUSIONS AND RECOMMENDATIONS

Based on the ESA undertaken at Werribee Fields – Area 1 the following conclusions and recommendations are made:

- The concentrations of potential contaminants in the soil across the majority of the site are generally low and well below guideline levels for an industrial land use.
- Slightly elevated heavy metal concentrations are present in the soil at the site. Some of the elevated concentrations appear to correlate with the presence of crushed rock (basalt/scoria), whilst others appear to be naturally elevated. Elevated arsenic in two samples and copper in one sample are considered to have resulted from the storage of CCA treated timber power poles on the site, and slightly elevated zinc in one sample is considered to have resulted from the storage of goods and debris (some galvanised) adjacent to the northern boundary of the site.
- Elutriation testing has shown that generally only a small proportion of the total metal concentration in the samples is available, indicating that phytotoxicity is unlikely to occur.
- The heavy metal concentrations in the soil at the site are not considered to present a risk for an ongoing industrial land use. However, if a more sensitive land use was proposed in the future, remediation of the two small localised "hot-spots" of arsenic and cobalt contamination above the NEPM "A" HILs would be necessary.
- Hydrocarbon concentrations in oil-stained soil at a number of small areas within the Powercor Transformer Storage Area on the site were measured to exceed health-based guideline levels for an industrial land use and should be remediated. Management measures should be implemented in order to prevent future oil spills from transformers in this area.
- There is no evidence of soil or groundwater contamination in the vicinity of the disused waste oil UST to the north of the workshop. However, if the UST is not proposed to be used by the future purchaser of the property, the tank and associated pipelines should be decommissioned in accordance with industry guidelines and environmental best practice.
- Hydrostatic pressure testing of disused pipelines embedded in the floor of the workshop has shown that the pipelines are unlikely to have caused significant soil contamination beneath the workshop floor.
- Elevated concentrations of copper, selenium and nitrate measured in the groundwater are considered to preclude the relevant beneficial uses Stock Watering and Primary Contact Recreation of the groundwater in the basalt aquifer beneath the site. However, these are not considered to have resulted from on-site activities and are not considered significant for an ongoing industrial land use.

11 LIMITATIONS

The conclusions presented in this report are relevant to the conditions of the site and the state of legislation currently enacted as at the date of this report. We do not make any representation or warranty that the conclusions in this report were applicable in the future as there may be changes in the condition of the site, applicable legislation or other factors that would affect the conclusions contained in this report.

OTEK has used a degree of skill and care ordinarily exercised by reputable members of our profession practicing in the same or similar locality. Conclusions are based on representative samples or locations at the site, the intensity of those samples being in accordance with the usual levels of testing carried out for this type of investigation. Due to the inherent variability in natural soils we cannot warrant that the whole overall condition of the site is identical or substantially similar to the representative samples.

This report has been prepared for Melbourne Water and for the specific purpose to which it refers. No responsibility is accepted to any third party and neither the whole of the report or any part or reference thereto may be published in any document, statement or circular nor in any communication with third parties without our prior written approval of the form and context in which it will appear.

This report and the information contained in it is the intellectual property of OTEK. Melbourne Water is granted an exclusive licence for the use of the report for the purpose described in the report.

12 REFERENCES

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13 GLOSSARY OF SELECTED TERMS

blank samples are samples of a particular medium (eg. soil or water) containing none of the analyte of interest. There are different types of blank samples that are designed to validate the integrity of the sampling and analysis process.

duplicate samples of a particular medium (eg. soil or water) are obtained and analysed to validate the integrity of laboratory analysis.

hydraulic conductivity, like permeability, is a measure of the ability of a soil or rock to transmit fluids, but is dependent on the properties of the fluid. It is expressed in units of velocity (eg. m/day).

hydraulic gradient is defined as change in total head (elevation + pressure head) per unit of distance measured in the direction of the steepest change.

method detection limit (MDL) is the minimum concentration of a substance that can be measured and reported with a 99% level of confidence that the analyte concentration is greater than zero. It is determined from analysis of a sample in a given matrix containing the analyte. MDLs do not take into account background contributions. For example, common laboratory solvents used in the laboratory are often found as contaminants in blanks above the MDL.

not detectable means below the limit of detection of a specified method of analysis.

permeability is a measure of the ability of a soil or rock to transmit fluids by the interconnectivity of the pore spaces, and is commonly expressed in square micrometres $(um)^2$ or darcys (1 darcy = 0.987 $(um)^2$). It is a property of the medium only, and is independent of fluid properties.

porosity is a measure of the ratio of openings (voids) to the total volume of a soil or rock, expressed as a decimal fraction or percentage.

potable water is defined by ANZECC (1992) as water suitable, on the basis of both health and aesthetic considerations, for drinking or culinary purposes.

practical quantitation limit (PQL) is the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine operating conditions. The PQL may be for example 10 to 100,000 times greater than the MDL for a specific method.

raw water is defined by ANZECC (1992) as surface or groundwater that is available as a source of drinking water but has not received any treatment.

spike samples are samples of a particular medium (eg. soil or water) containing a known concentration of the analyte of interest.

14 GENERAL TERMS AND CONDITIONS

OTEK AUSTRALIA PTY LTD
ACN 054 371 596

PROFESSIONAL RESPONSIBILITY. OTEK shall perform services consistent with skill and care ordinarily exercised by other professional consultants under similar circumstances at the time service are performed, subject to any limitations established by MELBOURNE WATER as to degree of care, time or expense were incurred or other limitations of this Agreement. No other representation, warranty or guarantee, express or implied is included in or intended by OTEK's services, proposals, agreements or reports.

RELATIONSHIP OF PARTIES. Nothing shall be construed or interpreted as requiring OTEK to assume the status of owner, operator, generator, person who arranges for disposal, transporter or storer, as those terms or any other similar terms are used in any federal state or local stature, regulation, ordinance or order governing the treatment, handling, storage or disposal of any toxic or hazardous substance or waste.

BILLING AND PAYMENT. Invoices were submitted monthly and shall be due and payable on receipt. Interest at the rate of one and one-half percent (1.5%), but not exceeding the maximum rate allowable by law, shall be payable on any amounts that are due but unpaid within fourteen (14) days from receipt of invoice, payment were applied first to accrued late payment charges and then to the principal unpaid amount. OTEK may, as its option withhold delivery of reports or any other data pending receipt of payment for services rendered.

LIMITATION OF LIABILITY. In consideration of potential liabilities which may be disproportionate to the fees were earned by OTEK, MELBOURNE WATER agrees to limit the liability of OTEK, its officers, directors, shareholders, employees, agents, and representatives to MELBOURNE WATER for all claims or legal proceedings of any type arising out of or relating to the performance of services under this Agreement (including but not limited to OTEK's breach of the Agreement, it's professional negligence, errors and omissions and other acts) to the greater of $100,000 or the amount of OTEK's fee, Failure of MELBOURNE WATER to give written notice to OTEK of any claim of negligent act, error or omission within one (1) year of performance shall constitute a waiver of such claim by MELBOURNE WATER. Neither party shall be liable for any indirect, special or consequential loss or damages arising from this Agreement.

INDEMNIFICATION. Subject to the limitation of liability above, each party agrees to indemnify, defend and hold harmless the other from any claim, suit, liability, damage, injury, cost or expense, including attorneys fees, (hereafter collectively called "Loss") arising out of a) breach of this Agreement or b) wilful misconduct or negligence in connection with the performance of this Agreement.

In addition to and without limiting the generality of the forgoing, MELBOURNE WATER agrees to indemnify OTEK to the fullest extent permitted by law against any Loss (whether or not under any federal, state or local environmental regulation, order or ordinance) a) arising out of any actual or potential environmental contamination or pollution, including without limitation, any actual or threatened release of toxic or hazardous materials, unless the result of OTEK's wilful misconduct or professional negligence, b) arising out of any acts taken or alleged failure to act with respect to matters covered in the section titled REPORTING AND DISPOSAL, or c) in excess of the liability limit set forth in the section titled LIMITATION OF LIABILITY above.

TIME OF PERFORMANCE. OTEK makes no warranties regarding the time of completion of services and shall not be in default of performance under this Agreement where such performance is prevented, suspended or delayed by any cause beyond OTEK's control. Neither party will hold the other responsible for damages for delays in performances caused by acts of God or other events beyond the control of the other party and which could not have been reasonably foreseen or prevented. Such delays will extend completion dates commensurately.

CHANGED CONDITIONS. If, during the course of the performance of Services, conditions or circumstances develop or are discovered which were not contemplated by OTEK and which materially affect OTEK's ability to perform or which would materially increase the costs to OTEK of performing, then OTEK will notify MELBOURNE WATER in writing, and OTEK and MELBOURNE WATER shall negotiate in good faith the terms of this Agreement within thirty (30) days. Alternatively, either party shall thereupon have the right to terminate the Agreement; provided, however, that upon any such termination, OTEK shall be compensated for services rendered to the date of termination.

HAZARDOUS OR UNSAFE CONDITIONS. MELBOURNE WATER has fully informed OTEK of, and shall immediately inform OTEK when it becomes aware of any new information regarding the type, quantity and location of any hazardous, toxic or dangerous materials or unsafe or unhealthy conditions known or suspected at all real property where services are were performed ("the Project Site'). Fees shall be adjusted to compensate OTEK if conditions require OTEK to take emergency measures to protect the health and safety of the parties, the public or the environment.

SUBSURFACE OBSTRUCTIONS. MELBOURNE WATER shall supply to OTEK plans, which designate the location of all subsurface structures at the Project Site, and shall be responsible for any damage and shall indemnify OTEK for all Loss inadvertently caused by OTEK to any structure not so designated, or by MELBOURNE WATER's inaccurate identification of underground obstructions. MELBOURNE WATER warrants the accuracy of any and all information so supplied without independently verifying its accuracy.

RIGHT OF ENTRY. MELBOURNE WATER agrees to grant or arrange for right of entry at the Project Site whether or not owned by MELBOURNE WATER. The cost of repairing any reasonably unavoidable damages is not part of the services or fee contemplated by this Agreement and shall be borne by MELBOURNE WATER.

REPORTING AND DISPOSAL. MELBOURNE WATER shall be solely responsible for notifying all appropriate federal, state, local or other governmental agencies of the existence of any hazardous, toxic or dangerous materials on or in the Project Site or discovered during performance of this Agreement. If requested by MELBOURNE WATER, OTEK may, as its option, agree to notify such agencies on behalf of MELBOURNE WATER, as MELBOURNE WATER's agent. MELBOURNE WATER shall be solely responsible for arranging for and paying the costs to lawfully transport, store, treat, recycle, dispose of, or otherwise handle, hazardous or toxic substances or wastes and samples.

NO THIRD PARTY BENEFICIARIES. There are no third party beneficiaries of this Agreement entitled to rely on any work performed or reports prepared by OTEK hereunder for any purpose, MELBOURNE WATER shall indemnify and hold OTEK harmless against any liability for any Loss arising out of or relating to reliance by any third party on any work performed or reports issued hereunder.

DESIGNS AND DISCOVERIES; OWNERSHIP AND REUSE. All designs, ideas, discoveries, intentions or improvements utilized or developed by OTEK hereunder shall be deemed property of OTEK. MELBOURNE WATER is given no right in the form of ownership or license to such items. Any documents furnished by OTEK are not intended or represented as suitable for reuse by MELBOURNE WATER or others; any reuse without specific written approval and/or adaptation by OTEK for the specific purpose intended were at the reuser's sole risk and without liability or exposure to OTEK. Any transfer of electronic data hereunder is solely for MELBOURNE WATER's convenience "as is" without warranty as to contents, and is not project deliverable unless specifically agreed to the contrary. OTEK disclaims all warranties express or implied with regard to any electronic date provided hereunder, including any warranties of merchantability or fitness for a particular purpose.

The prevailing party in any action to enforce or interpret provisions of this Agreement shall be entitled to recover all reasonable fees, costs and expenses, including staff time at current billing rates, court costs and other claim-related expenses. If OTEK is requested to respond to any mandatory orders for the production of documents or witnesses on MELBOURNE WATER's behalf regarding work performed by OTEK. MELBOURNE WATER agrees to pay all costs and expenses incurred by OTEK not reimbursed by others in responding to such order, including attorney's fees, staff time at current billing rates and reproduction expenses. Any provisions of this Agreement held in violation of any law shall be deemed stricken and all remaining provisions will remain binding on the parties. The obligations of the parties to indemnify and the limitations on liability set forth in this Agreement shall survive the expiration or termination of this Agreement. This Agreement, consisting of all documents attached hereto constitutes the entire agreement between the parties and supersedes any and all prior written or oral agreements with respect to the subject matter hereof. No amendment hereto were binding unless reduced to writing and signed by authorized representatives of each party. This Agreement shall be subject to the laws of the state from which services of OTEK are procured.

TABLE 8
COMPOSITE SAMPLE IDENTIFICATION
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Composite	Sample ID
COMP1	1A/76/0.2 1A/75/0.2 1A/72/0.2
COMP2	1A/76/0.5 1A/75/0.5 1A/72/0.5
COMP3	1A/77/0.2 1A/71/0.2 1A/70/0.2
COMP4	1A/77/0.5 1A/71/0.5 1A/70/0.5
COMP5	1A/69/0.2 1A/68/0.2 1A/66/0.2
COMP6	1A/69/0.5 1A/68/0.5 1A/66/0.5
COMP7	1A/63/0.2 1A/62/0.2 1A/56/0.2
COMP8	1A/63/0.5 1A/62/0.5 1A/56/0.5
COMP9	1A/61/0.2 1A/59/0.2 1A/58/0.2
COMP10	1A/61/0.5 1A/59/0.5 1A/58/0.5
COMP11	1A/64/0.2 1A/55/0.2 1A/54/0.2
COMP12	1A/64/0.5 1A/55/0.5 1A/54/0.5
COMP13	1A/53/0.2 1A/52/0.2 1A/51/0.2
COMP14	1A/53/0.5 1A/52/0.5 1A/51/0.5
COMP15	1A/46/0.2 1A/45/0.2 1A/44/0.2
COMP16	1A/46/0.5 1A/45/0.5 1A/44/0.5
COMP17	1A/50/0.2 1A/49/0.2 1A/47/0.2

Composite	Sample ID
COMP18	1A/50/0.5 1A/49/0.5 1A/47/0.5
COMP19	1A/37/0.5 1A/36/0.5
COMP20	1A/37/1.0 1A/36/1.0
COMP21	1A/41/0.2 1A/40/0.2 1A/31/0.2
COMP22	1A/41/0.5 1A/40/0.5 1A/31/0.5
COMP23	1A/35/0.2 1A/25/0.2 1A/24/0.2
COMP24	1A/35/0.5 1A/25/0.5 1A/24/0.5
COMP25	1A/33/0.2 1A/28/0.2 1A/26/0.2
COMP26	1A/33/0.5 1A/28/0.5 1A/26/0.5
COMP27	1A/20/0.2 1A/15/0.2 1A/14/0.2
COMP28	1A/20/0.5 1A/15/0.5 1A/14/0.5
COMP29	1A/23/0.2 1A/22/0.2 1A/13/0.2
COMP30	1A/23/0.5 1A/22/0.5 1A/13/0.5
COMP31	1A/19/0.2 1A/16/0.2 1A/12/0.2
COMP32	1A/19/0.5 1A/16/0.5 1A/12/0.5
COMP33	1A/17/0.2 1A/11/0.2 1A/10/0.2
COMP34	1A/17/0.5 1A/11/0.5 1A/10/0.5

TABLE 9A
SOIL ANALYTICAL SUMMARY
METALS - INDIVIDUAL SAMPLES
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Id	Sample Depth (m)	Sample Date	Arsenic As (mg/kg)	Barium Ba (mg/kg)	Beryllium Be (mg/kg)	Boron B (mg/kg)	Cadmium Cd (mg/kg)	Total Chromium Cr (mg/kg)	Chromium (VI) Cr (mg/kg)	Cobalt Co (mg/kg)	Copper Cu (mg/kg)	Lead Pb (mg/kg)	Manganese Mn (mg/kg)	Molybdenum Mb (mg/kg)	Nickel Ni (mg/kg)	Selenium Se (mg/kg)	Tin Sn (mg/kg)	Vanadium V (mg/kg)	Zinc Zn (mg/kg)	Mercury Hg (mg/kg)
1A/10/0.2	0.2	12/02/03	5.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/10/0.5	0.5	12/02/03	8.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/11/0.2	0.2	12/02/03	6.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/11/0.5	0.5	12/02/03	7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/12/0.5	0.5	12/02/03	7.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/13/0.2	0.2	12/02/03	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-
1A/13/0.5	0.5	12/02/03	9.7	-	-	-	-	-	-	-	37	-	-	-	-	-	-	-	-	-
1A/14/0.5	0.5	12/02/03	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/15/0.5	0.5	12/02/03	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/16/0.5	0.5	12/02/03	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/17/0.2	0.2	12/02/03	9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/17/0.5	0.5	12/02/03	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/18/0.2	0.2	12/02/03	10.0	-	-	-	<1.0	100	<0.2	-	32	23	-	-	76	-	-	-	64	0.05
1A/18/0.5	0.5	12/02/03	10.0	-	-	-	<1.0	110	<0.2	-	35	26	-	-	80	-	-	-	57	0.05
1A/19/0.5	0.5	12/02/03	7.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/20/0.5	0.5	12/02/03	<2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/21/0.2	0.2	12/02/03	<2.0	-	-	-	<1.0	25	-	-	27	3.6	-	-	84	-	-	-	43	0.03
1A/21/0.5	0.5	12/02/03	<2.0	-	-	-	<1.0	42	-	-	29	<2.0	-	-	86	-	-	-	39	0.04
1A/22/0.2	0.2	12/02/03	-	-	-	-	-	-	-	-	32	-	-	-	-	-	-	-	-	-
1A/22/0.5	0.5	12/02/03	11.0	-	-	-	-	-	-	-	37	-	-	-	-	-	-	-	-	-
1A/23/0.2	0.2	12/02/03	-	-	-	-	-	-	-	-	33	-	-	-	-	-	-	-	-	-
1A/23/0.5	0.5	12/02/03	7.5	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-
1A/24/0.5	0.5	12/02/03	<2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/25/0.5	0.5	12/02/03	<2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/26/0.2	0.2	12/02/03	-	-	-	-	-	-	-	-	35	-	-	-	-	-	-	-	-	-
1A/27/0.2	0.2	12/02/03	7.6	130	<1.0	5.0	<1.0	73	-	14	24	19	200	<5.0	54	<2.0	2.9	66	46	0.05
1A/27/0.5	0.5	12/02/03	9.8	180	1.1	9.5	<1.0	100	-	32	30	22	480	<5.0	71	<2.0	2.1	85	57	0.06
1A/28/0.2	0.2	12/02/03	-	-	-	-	-	-	-	-	39	-	-	-	-	-	-	-	-	-
1A/31/0.5	0.5	11/02/03	10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/32/0.2	0.2	11/02/03	8.0	-	-	-	<1.0	90	-	-	20	22	-	-	47	-	-	-	46	0.05
1A/32/0.5	0.5	11/02/03	7.7	-	-	-	<1.0	110	1.2	-	30	27	-	-	58	-	-	-	49	0.05
1A/33/0.2	0.2	11/02/03	-	-	-	-	-	-	-	-	43	-	-	-	-	-	-	-	-	-
1A/34/0.2	0.2	11/02/03	<2.0	120	1.5	<2.0	<1.0	68	-	25	27	2.3	220	<5.0	56	<2.0	3.2	43	50	0.05
1A/34/1.0	1.0	11/02/03	8.8	200	1.5	8.4	<1.0	110	<0.2	35	29	22	280	<5.0	74	2.2	4.2	62	50	0.06
1A/35/0.5	0.5	11/02/03	<2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/38/0.2	0.2	11/02/03	<2.0	-	-	-	<1.0	26	-	-	11	9.7	-	-	19	-	-	-	22	0.08
1A/38/0.5	0.5	11/02/03	5.4	-	-	-	<1.0	74	-	-	27	18	-	-	57	-	-	-	40	0.17
1A/39/0.2	0.2	11/02/03	<2.0	130	1.3	<2.0	<1.0	39	-	21	25	5	430	<5.0	48	<2.0	3.3	37	39	0.05
1A/39/0.5	0.5	11/02/03	7.9	180	1.9	5.9	<1.0	110	-	18	33	25	210	<5.0	74	2.6	3.1	80	53	0.05
1A/40/0.5	0.5	11/02/03	8.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/41/0.5	0.5	11/02/03	8.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/44/0.5	0.5	11/02/03	8.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/45/0.5	0.5	11/02/03	7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/46/0.5	0.5	11/02/03	9.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/48/0.2	0.2	11/02/03	5.0	-	-	-	<1.0	71	-	-	17	20	-	-	40	-	-	-	42	0.05
1A/48/0.5	0.5	11/02/03	4.9	-	-	-	<1.0	64	-	-	17	19	-	-	37	-	-	-	42	0.03
1A/48/1.0	1.0	11/02/03	8.8	-	-	-	<1.0	95	-	-	28	20	-	-	56	-	-	-	51	0.06
1A/57/0.2	0.2	11/02/03	4.8	150	<1.0	<2.0	<1.0	66	-	14	13	17	420	<5.0	33	<2.0	6.3	61	38	0.04
1A/57/0.5	0.5	11/02/03	6.2	300	<1.0	<2.0	<1.0	73	-	19	24	17	350	<5.0	56	<2.0	<3.5	82	50	0.05
1A/58/0.5	0.5	11/02/03	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/59/0.5	0.5	11/02/03	8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/61/0.5	0.5	10/02/03	7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/65/0.2	0.2	10/02/03	6.0	180	1.0	2.5	<1.0	73	-	16	19	19	320	<5.0	44	<2.0	8.9	84	44	0.05
1A/65/0.5	0.5	10/02/03	5.8	190	1.1	2.6	<1.0	77	-	16	21	19	340	<5.0	47	<2.0	8	90	45	0.05
1A/65/1.0	1.0	10/02/03	5.8	-	-	-	<1.0	82	-	-	19	19	-	-	46	-	-	-	45	0.04
1A/67/0.2	0.2	10/02/03	5.4	160	1.1	11.0	<1.0	76	-	16	16	18	460	<5.0	36	<2.0	2.1	71	44	0.04
1A/67/0.5	0.5	10/02/03	5.8	130	1.3	8.2	<1.0	89	-	13	18	16	180	<5.0	49	<2.0	<2.0	76	43	0.03
1A/72/0.5	0.5	10/02/03	4.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/73/0.2	0.2	10/02/03	5.1	120	<1.0	<2.0	<1.0	74	-	14	15	15	350	<5.0	37	<2.0	<2.0	67	42	0.03
1A/73/0.5	0.5	10/02/03	7.3	300	1.3	7.5	<1.0	99	-	26	26	16	370	<5.0	49	<2.0	<2.0	82	49	0.08
1A/75/0.5		10/02/03	4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/76/0.5		10/02/03	5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1A/83/0.5	0.5	13/02/03	<2.0	-	-	-	<1.0	52	-	-	26	<2.0	-	-	100	-	-	-	43	0.04
1A/84/1.0	1.0	13/02/03	8.4	-	-	-	<1.0	100	1.3	-	30	22	-	-	58	-	-	-	60	0.05
1A/85/0.5	0.5	13/02/03	<2.0	-	-	-	<1.0	14	-	-	4.5	3.2	-	-	8.8	-	-	-	10	0.01
1A/86/0.5	0.5	14/02/03	<2.0	-	-	-	<1.0	14	-	-	4.6	4.3	-	-	5.5	-	-	-	11	0.02
1A/87/0.5	0.5	14/02/03	<2.0	-	-	-	<1.0	13	-	-	4.2	4.2	-	-	4.5	-	-	-	9.8	0.03
1A/88/0.5	0.5	13/02/03	6.9	-	-	-	<1.0	110	-	-	23	23	-	-	62	-	-	-	59	0.02
1A/101/0.1	0.1	14/02/03	6.8	-	-	-	<1.0	69	-	-	18	21	-	-	44	-	-	-	56	0.02
1A/103/0.1	0.1	14/02/03	4.3	-	-	-	<1.0	35	-	-	34	15	-	-	100	-	-	-	130	0.04
1A/104/0.1	0.1	14/02/03	130	-	-	-	<1.0	190	0.9	-	210	22	-	-	110	-	-	-	130	0.08
1A/105/0.1	0.1	14/02/03	28	-	-	-	<1.0	73	-	-	81	45	-	-	100	-	-	-	150	0.04
1A/106/0.1	0.1	14/02/03	<2.0	-	-	-	<1.0	40	-	-	51	280	-	-	110	-	-	-	340	0.01
1A/107/0.3	0.3	17/02/03	8.7	-	-	-	<1.0	52	-	-	20	20	-	-	42	-	-	-	44	0.05
1A/108/0.3	0.3	17/02/03	7.7	-	-	-	<1.0	50	-	-	21	22	-	-	40	-	-	-	46	0.05
1B/89/0.2	0.2	14/02/03	<2.0	120	1.3	<2.0	<1.0	58	-	26	29	3.9	510	<5.0	84	<2.0	<2.0	40	55	0.03
1B/89/0.5	0.5	14/02/03	11.0	210	1.9	14.0	<1.0	110	0.6	21	36	27	270	<5.0	62	2.4	2.3	66	72	0.04
1B/91/0.2	0.2	13/02/03	<2.0	-	-	-	<1.0	48	-	-	30	2.5	-	-	110	-	-	-	47	0.03
1B/91/0.5	0.5	13/02/03	10.0	-	-	-	<1.0	140	0.6	-	38	27	-	-	90	-	-	-	68	0.02
1B/93/0.2	0.2	13/02/03	<2.0	120	1.7	3.4	<1.0	63	-	29	30	<2.0	320	<5.0	120	<2.0	<2.0	49	54	0.04
1B/93/0.5	0.5	13/02/03	8.8	150	2.2	14.0	<1.0	120	<0.2	22	42	26	350	<5.0	95	2.1	<2.0	110	71	0.04
1B/95/0.2	0.2	14/02/03	<2.0	130	1.2	<2.0	<1.0	42	-	26	31	<2.0	320	<5.0	100	<2.0	<2.0	38	50	0.03
1B/95/0.5	0.5	14/02/03	12.0	230	2.0	16.0	<1.0	120	-	28	39	29	360	<5.0	91	2.7	2.5	100	75	0.03
1B/98/0.2	0.2	14/02/03	<2.0	-	-	-	<1.0	55	-	-	30	2.3	-	-	100	-	-	-	53	0.03
1B/98/0.5	0.5	14/02/03	11.0	-	-	-	<1.0	97	-	-	36	28	-	-	79	-	-	-	74	<0.01
1C/TS-01 0.5	0.5	03/02/03	4.0	-	-	-	<1.0	40	-	-	13	24	-	-	25	-	-	-	37	0.12
1C/TS-02 0.5	0.5	03/02/03	8.0	-	-	-	1.9	110	-	-	53	94	-	-	36	-	-	-	180	0.89
1C/TS-03 0.5	0.5	03/02/03	5.1	-	-	-	<1.0	44	-	-	17	22	-	-	35	-	-	-	41	0.09
1C/TS-04 0.5	0.5	03/02/03	4.8	-	-	-	<1.0	55	-	-	19	29	-	-	36	-	-	-	48	0.15
1C/TS-05 0.5	0.5	03/02/03	6.2	-	-	-	<1.0	53	-	-	23	20	-	-	51	-	-	-	41	0.08
1C/TS-06 0.5	0.5	03/02/03	7.4	-	-	-	<1.0	45	-	-	22	21	-	-	41	-	-	-	42	0.03
1C/TS-08 0.5	0.5	03/02/03	7.7	-	-	-	<1.0	47	-	-	23	21	-	-	43	-	-	-	44	0.05
1C/TS-09 0.5	0.5	03/02/03	4.8	-	-	-	<1.0	45	-	-	16	23	-	-	33	-	-	-	38	0.04
1C/TS-10 0.5	0.5	03/02/03	6.4	-	-	-	<1.0	51	-	-	23	21	-	-	47	-	-	-	44	0.07
1C/TS-11 0.5	0.5	04/02/03	8.1	-	-	-	<1.0	47	-	-	24	23	-	-	44	-	-	-	44	0.06
1C/TS-12 0.5	0.5	04/02/03	6.3	-	-	-	<1.0	38	-	-	20	20	-	-	35	-	-	-	43	0.08
1C/TS-13 0.5	0.5	04/02/03	6.0	-	-	-	<1.0	44	-	-	19	20	-	-	35	-	-	-	41	0.05
1C/TS-14 0.5	0.5	04/02/03	7.1	-	-	-	<1.0	66	-	-	35	43	-	-	39	-	-	-	62	0.3
1C/TS-15 0.5	0.5	04/02/03	5.6	-	-	-	<1.0	34	-	-	18	18	-	-	35	-	-	-	42	0.04
1C/TS-16 0.5	0.5	04/02/03	4.7	-	-	-	<1.0	17	-	-	14	14	-	-	18	-	-	-	24	0.08
1C/TS-18 0.5	0.5	05/02/02	6.0	-	-	-	<1.0	51	-	-	21	22	-	-	43	-	-	-	43	0.07
1C/TS-19 0.5	0.5	05/02/02	6.1	-	-	-	<1.0	44	-	-	22	19	-	-	44	-	-	-	43	0.05
1C/TS-20 0.5	0.5	05/02/02	7.0	-	-	-	<1.0	52	-	-	26	20	-	-	48	-	-	-	41	0.04
1C/TS-21 0.5	0.5	05/02/02	6.0	-	-	-	<1.0	46	-	-	22	21	-	-	45	-	-	-	48	0.05
1C/TS-22 0.5	0.5	05/02/02	4.3	-	-	-	<1.0	30	-	-	13	11	-	-	29	-	-	-	29	0.03
1C/TS-23 0.5	0.5	05/02/02	6.8	-	-	-	<1.0	46	-	-	23	21	-	-	46	-	-	-	51	0.03
1C/TS-24 0.5	0.5	05/02/02	5.3	-	-	-	<1.0	49	-	-	17	20	-	-	37	-	-	-	41	0.04
1C/TS-25 0.5	0.5	05/02/02	6.1	-	-	-	<1.0	54	-	-	20	20	-	-	45	-	-	-	45	0.04
1C/TS-26 0.5	0.5	05/02/02	7.5	-	-	-	<1.0	71	-	-	25	24	-	-	58	-	-	-	50	0.03
1C/TS-27 0.5	0.5	05/02/02	6.7	-	-	-	<1.0	47	-	-	24	21	-	-	48	-	-	-	49	0.04
1C/TS-28 0.5	0.5	05/02/02	7.3	-	-	-	<1.0	48	-	-	22	20	-	-	43	-	-	-	45	0.03
1C/TS-29 0.5	0.5	05/02/02	6.9	-	-	-	<1.0	56	-	-	23	19	-	-	51	-	-	-	42	0.02
1D/79/0.2	0.2	13/02/03	<2.0	-	-	-	<1.0	34	-	-	25	3.2	-	-	80	-	-	-	41	0.03
1D/79/0.5	0.5	13/02/03	4.1	-	-	-	<1.0	72	-	-	16	18	-	-	41	-	-	-	46	0.02
1D/80/0.2	0.2	13/02/03	<2.0	140	1.4	<2.0	<1.0	57	-	140	28	9	320	<5.0	36	<2.0	<2.0	45	54	0.04
1D/80/0.5	0.5	13/02/03	<2.0	130	1.4	<2.0	<1.0	68	-	33	31	3.4	300	<5.0	130	<2.0	<2.0	90	52	0.03
1D/81/0.2	0.2	12/02/03	3.0	-	-	-	1.3	34	-	-	23	3.8	-	-	75	-	-	-	45	0.03
1D/81/0.5	0.5	12/02/03	7.5	-	-	-	<1.0	85	-	-	23	18	-	-	52	-	-	-	49	0.03
1D/82/0.2	0.2	13/02/03	<2.0	-	-	-	<1.0	55	-	-	29	11	-	-	60	-	-	-	47	0.03
B-1/3.5	3.5	17/02/03	5.2	-	-	-	<1.0	36	-	-	14	17	-	-	35	-	-	-	30	0.03
B-1/8.0	8.0	17/02/03	<2.0	-	-	-	<1.0	90	-	-	9.6	16	-	-	35	-	-	-	27	0.03
B-2/4.5	4.5	17/02/03	6.8	-	-	-	<1.0	49	-	-	20	27	-	-	39	-	-	-	45	0.04
B-2/8.0	8.0	17/02/03	<2.0	-	-	-	<1.0	180	1.3	-	22	12	-	-	100	-	-	-	41	0.03
B-3/0.75	0.75	18/02/03	8.1	-	-	-	<1.0	77	-	-	27	26	-	-	57	-	-	-	58	0.05
B-3/4.5	4.5	18/02/03	6.2	-	-	-	<1.0	74	-	-	23	23	-	-	56	-	-	-	43	0.04
NEPM EILs			20	300	*	*	3	1 (CrVI) 400 (CrIII)	1	*	100	600	500	*	60	*	*	50	200	1
NEPM "A" HILs - Residential			100	*	20	3000	20	100 (CrVI) 12% (CrIII)	100	100	1,000	300	1500	*	600	*	*	*	7,000	15
NEPM "F" HILs - Commercial/Industrial			500	*	100	15000	100	500 (CrVI) 60% (CrIII)	500	500	5,000	1500	7500	*	3000	*	*	*	35,000	75
ANZECC 1992 Environmental Criteria			20	*	*	*	3	50	*	*	60	300	500	*	60	*	50	*	200	1
NEPM Background ranges **			1-50	100-3000	*	1-75**	1	5-1000	*	1-40	2-100	2-200	850	<1-20**	5-500	*	1-25**	20-500	10-300	0.03
Practical Quantitation Limits			2.0	1.0	1.0	2.0	1.0	2.0	0.02	2.0	2.0	2.0	2.0	5.0	2.0	2.0	2.0	2.0	2.0	0.01
Laboratory Methodology			406-MS Elements by ICP-MS, Dry Weight																	404FIMS

Notes:
"*" = criterion not specified.
"**" = ANZECC 1992 background range in the absence of a NEPM range.
Light grey shading indicates concentrations above NEPM EILs.
Dark grey shading indicates concentrations above NEPM "F" HILs (no exceedances).

TABLE 9B
SOIL ANALYTICAL SUMMARY
METALS - COMPOSITES OF 3
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	Arsenic As (mg/kg)	Cadmium Cd (mg/kg)	Chromium Cr (mg/kg)	Copper Cu (mg/kg)	Lead Pb (mg/kg)	Nickel Ni (mg/kg)	Zinc Zn (mg/kg)	Mercury Hg (mg/kg)
COMP 1	0.2	10/02/03	5.4	<1.0	79	20	19	38	48	0.09
COMP 2	0.5	10/02/03	5.3	<1.0	87	18	13	47	41	0.03
COMP 3	0.2	10/02/03	7.4	<1.0	110	26	17	67	49	0.04
COMP 4	0.5	10/02/03	6.5	<1.0	89	24	16	52	48	0.04
COMP 5	0.2	10/02/03	6.4	<1.0	110	24	20	57	54	0.05
COMP 6	0.5	10/02/03	6.7	<1.0	88	23	16	54	47	0.06
COMP 7	0.2	11/02/03	4.2	<1.0	64	18	14	48	40	0.05
COMP 8	0.5	11/02/03	6.7	<1.0	87	26	20	58	50	0.07
COMP 9	0.2	11/02/03	5.8	<1.0	95	19	19	56	44	0.04
COMP 10	0.5	11/02/03	7.3	<1.0	99	28	21	66	53	0.08
COMP 11	0.2	11/02/03	5.8	<1.0	80	24	17	63	41	0.04
COMP 12	0.5	11/02/03	6.3	<1.0	90	23	19	54	45	0.06
COMP 13	0.2	11/02/03	<2.0	<1.0	34	17	3.5	48	31	0.03
COMP 14	0.5	11/02/03	6.3	<1.0	95	24	22	58	46	0.05
COMP 15	0.2	11/02/03	5.4	<1.0	85	17	21	44	45	0.05
COMP 16	0.5	11/02/03	7.6	<1.0	110	31	24	69	54	0.06
COMP 17	0.2	11/02/03	4.1	<1.0	77	24	18	64	47	0.05
COMP 18	0.5	11/02/03	5.7	<1.0	96	22	21	51	46	0.05
COMP 21	0.2	11/02/03	5.3	<1.0	83	18	23	41	46	0.05
COMP 22	0.5	11/02/03	7.9	<1.0	120	33	26	75	57	0.07
COMP 23	0.2	12/02/03	<2.0	<1.0	37	30	3.4	100	50	0.03
COMP 24	0.5	12/02/03	8	<1.0	81	27	15	64	51	0.07
COMP 25	0.2	12/02/03	3.8	<1.0	69	36	8.7	100	58	0.04
COMP 26	0.5	12/02/03	4.3	<1.0	63	22	8.4	61	43	0.04
COMP 27	0.2	12/02/03	<2.0	<1.0	59	29	2.6	100	49	0.04
COMP 28	0.5	12/02/03	9.4	<1.0	97	30	20	76	60	0.02
COMP 29	0.2	12/02/03	<2.0	<1.0	47	36	<2.0	120	55	0.05
COMP 30	0.5	12/02/03	9.3	<1.0	120	40	20	90	63	0.06
COMP 31	0.2	12/02/03	<2.0	<1.0	48	30	<2.0	110	52	0.04
COMP 32	0.5	12/02/03	9.7	<1.0	86	27	19	66	55	0.02
COMP 33	0.2	12/02/03	9.7	<1.0	110	30	23	72	63	0.03
COMP 34	0.5	12/02/03	9.2	<1.0	88	30	17	72	57	0.08
NEPM EILs			6.7	1	0.3 (CrVI) 133(CrIII)	33.3	200	30	66.7	0.33
NEPM "A" HILs - Residential			33.3	6.7	33 (CrVI) 4% (CrIII)	333	100	200	2,333	5.0
NEPM "F" HILs - Commercial/Industrial			166.7	5000	166.7 (CrVI) 20% (CrIII)	1,667	500	1000	7,000	25.0
Practical Quantitation Limits			2	1	2	2	2	2	5	0.01
Laboratory Methodology			406-MS Elements by ICP-MS, Dry Weight							404FIMS

Notes: Light grey shading indicates concentrations above equivalent NEPM EILs.
Dark grey shading indicates concentrations above equivalent NEPM "F" HILs (no exceedances).

TABLE 9C
SOIL ANALYTICAL SUMMARY
METALS - COMPOSITES OF 2
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	Arsenic As (mg/kg)	Cadmium Cd (mg/kg)	Chromium Cr (mg/kg)	Copper Cu (mg/kg)	Lead Pb (mg/kg)	Nickel Ni (mg/kg)	Zinc Zn (mg/kg)	Mercury Hg (mg/kg)
COMP 19	0.5	11/02/03	<2.0	<1.0	86	29	2.4	110	50	0.05
COMP 20	1.0	11/02/03	8.3	<1.0	130	34	25	80	56	0.08
NEPM EILs			10	2	0.5 (CrVI) 200 (CrIII)	50	300	30	100	0.5
NEPM "A" HILs - Residential			50	10	50 (CrVI) 6% (CrIII)	500	150	300	3,500	7.5
NEPM "F" HILs - Commercial/Industrial			250	50	250 (CrVI) 30% (CrIII)	2,500	750	1500	17,500	38.0
Practical Quantitation Limits			2	1	2	2	2	2	2	0.01
Laboratory Methodology			406-MS Elements by ICP-MS, Dry Weight							404FIMS

Notes: Light grey shading indicates concentrations above equivalent NEPM EILs
Dark grey shading indicates concentrations above equivalent NEPM "F" HILs.

TABLE 9D
SOIL ANALYTICAL SUMMARY
TCLP METALS
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Date	Depth (m)	Total Arsenic As (mg/kg)	Elutriable Arsenic As (TCLP mg/L)	Available As (Adjusted for 40x Dilution) (TCLP mg/kg)	% of Total Concentration Available	Total Barium Ba (TCLP mg/L)	Elutriable Barium Ba (TCLP mg/L)	Available Ba (Adjusted for 40x Dilution) (TCLP mg/kg)	% of Total Concentration Available	Total Chromium Cr (TCLP mg/L)	Elutriable Chromium Cr (TCLP mg/L)	Available Cr (Adjusted for 40x Dilution) (TCLP mg/kg)	% of Total Concentration Available
1A/57/0.5	11/02/03	0.5	-	-	-	-	330	0.450	18	5.5%	-	-	-	-
1A/104/0.1	14/02/03	0.1	130	0.44	18	13.5%	-	-	-	-	190	0.039	1.6	0.8%
1B/91/0.5	13/02/03	0.5	-	-	-	-	-	-	-	-	140	<0.005	Neg	Neg
B-2/8.0	17/02/03	8.0	-	-	-	-	-	-	-	-	160	<0.005	Neg	Neg
NEPM EILs			20	-	20	-	300	-	300	-	*	-	*	-
NEPM "A" HILs - Residential			100	-	100	-	*	-	*	-	*	-	*	-
NEPM "F" HILs - Commercial/Industrial			500	-	500	-	*	-	*	-	*	-	*	-
Practical Quantitation Limits			2.0	0.005	NA		1.0	0.005	NA		2.0	0.005	NA	
Laboratory Methodology			406MS	406MS	NA		406MS	406MS	NA		406MS	406MS	NA	

Notes:

- "-" = not sampled for this specific compound.
- "*" = no criteria available.
- "ND" = below laboratory practical quantitation limits.
- "Neg" = neglible proportion of total concentration available
- Shading indicates concentrations above NEPM EILs/HILs.

TABLE 9E
SOIL ANALYTICAL SUMMARY
TCLP METALS
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Date	Depth (m)	Total Cobalt Co (mg/kg)	Elutriable Cobalt Co (TCLP mg/L)	Available Co (Adjusted for 40x Dilution) (TCLP mg/kg)	% of Total Concentration Available	Total Copper Cu (TCLP mg/L)	Elutriable Copper Cu (TCLP mg/L)	Available Cu (Adjusted for 40x Dilution) (TCLP mg/kg)	% of Total Concentration Available	Total Manganese Mn (TCLP mg/L)	Elutriable Manganese Mn (TCLP mg/L)	Available Mn (Adjusted for 40x Dilution) (TCLP mg/kg)	% of Total Concentration Available
1A/104/0.1	14/02/03	0.1	-	-	-	-	200	0.350	14	7.0%	-	-	-	-
1B/93/0.2	13/02/03	0.2	-	-	-	-	-	-	-	-	620	0.42	17	2.7%
1D/80/0.2	13/02/03	0.2	140	2.0	80	57.1%	-	-	-	-	530	0.93	37	7.0%
1D/80/0.5	13/02/03	0.5	-	-	-	-	-	-	-	-	600	0.7	28	4.7%
NEPM EILs			-	-	-	-	100	-	100	-	500	-	500	-
NEPM "A" HILs - Residential			100	-	100	-	1000	-	1000	-	1500	-	1500	-
NEPM "F" HILs - Commercial/Industrial			500	-	500	-	5000	-	5000	-	7500	-	7500	-
Practical Quantitation Limits			2.0	0.005	NA		2.0	0.005	NA		2.0	0.005	NA	
Laboratory Methodology			406MS	406MS	NA		406MS	406MS	NA		406MS	406MS	NA	

Notes:

- "-" = not sampled for this specific compound.
- "*" = no criteria available.
- "ND" = below laboratory practical quantitation limits.
- "Neg" = neglible proportion of total concentration available
- Shading indicates concentrations above NEPM EILs/HILs.

TABLE 9F
SOIL ANALYTICAL SUMMARY
TCLP METALS
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Date	Depth (m)	Total Nickel Ni (mg/kg)	Elutriable Nickel Ni (TCLP mg/L)	Available Ni (Adjusted for 40x Dilution) (TCLP mg/kg)	% of Total Concentration Available	Total Vanadium V (TCLP mg/L)	Elutriable Vanadium V (TCLP mg/L)	Available V (Adjusted for 40x Dilution) (TCLP mg/kg)	% of Total Concentration Available	Total Zinc Zn (TCLP mg/L)	Elutriable Zinc Zn (TCLP mg/L)	Available Zn (Adjusted for 40x Dilution) (TCLP mg/kg)	% of Total Concentration Available
1A/27/0.2	12/02/03	0.2	-	-	-	-	68	<0.005	Neg	Neg	-	-	-	-
1A/104/0.1	14/02/03	0.1	100	0.037	1.5	1.5%	-	-	-	-	-	-	-	-
1A/106/0.1	14/02/03	0.1	-	-	-	-	-	-	-	-	340	0.37	15	4.4%
1B/93/0.2	13/02/03	0.2	120	0.016	0.6	0.5%	-	-	-	-	-	-	-	-
1B/93/0.5	13/02/03	0.5	-	-	-	-	110	<0.005	Neg	Neg	-	-	-	-
1D/80/0.2	13/02/03	0.2	99	0.027	1.1	1.1%	-	-	-	-	-	-	-	-
1D/80/0.5	13/02/03	0.5	130	<0.005	Neg	Neg	-	-	-	-	-	-	-	-
NEPM EILs			60	-	60	-	50	-	50	-	200	-	200	-
NEPM "A" HILs - Residential			600	-	600	-	*	-	*	-	7000	-	7000	-
NEPM "F" HILs - Commercial/Industrial			3000	-	3000	-	*	-	*	-	35000	-	35000	-
Practical Quantitation Limits			2.0	0.005	NA		2.0	0.005	NA		2.0	0.005	NA	
Laboratory Methodology			406MS	406MS	NA		406MS	406MS	NA		406MS	406MS	NA	

Notes:

- "-" = not sampled for this specific compound.
- "*" = no criteria available.
- "ND" = below laboratory practical quantitation limits.
- "Neg" = neglible proportion of total concentration available
- Shading indicates concentrations above NEPM EILs/HILs.

TABLE 9G
SOIL ANALYTICAL SUMMARY
METALS - QA/QC SAMPLES
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Laboratory	Sample Date	Arsenic As (mg/kg)	Cadmium Cd (mg/kg)	Chromium Cr (mg/kg)	Copper Cu (mg/kg)	Lead Pb (mg/kg)	Nickel Ni (mg/kg)	Zinc Zn (mg/kg)	Mercury Hg (mg/kg)
1C/TS-06 0.5	0.5	03/02/03	7.4	<1.0	45	22	21	41	42	0.03
QA-1 (Duplicate of 1C/TS-06 0.5)			7.2	<1.0	44	21	20	40	40	0.06
QS-1 (Triplicate of 1C/TS-06 0.5)			8	<0.2	62	22	26	44	55	0.11
Relative Percent Difference Amdel			*3%*	*N/A*	*2%*	*5%*	*5%*	*2%*	*5%*	*67%*
Relative Percent Difference WSL			*8%*	*N/A*	*32%*	*0%*	*21%*	*7%*	*27%*	*114%*
1C/TS-20 0.5	0.5	05/02/02	7.0	<1.0	52	26	20	48	41	0.04
QA-2 (Duplicate of 1C/TS-20 0.5)			6.8	<1.0	57	24	22	54	44	0.05
QS-2 (Triplicate of 1C/TS-20 0.5)			8	<0.2	68	24	24	54	46	0.08
Relative Percent Difference Amdel			*3%*	*N/A*	*9%*	*8%*	*10%*	*12%*	*7%*	*22%*
Relative Percent Difference WSL			*13%*	*N/A*	*27%*	*8%*	*18%*	*12%*	*11%*	*67%*
1C/TS-26 0.5	0.5	05/02/02	7.5	<1.0	71	25	24	58	50	0.03
QA-3 (Duplicate of 1C/TS-26 0.5)			6	<1.0	51	19	21	43	42	0.03
QS-3 (Triplicate of 1C/TS-26 0.5)			7	<0.2	61	18	23	42	44	<0.05
Relative Percent Difference Amdel			*22%*	*N/A*	*33%*	*27%*	*13%*	*30%*	*17%*	*0%*
Relative Percent Difference WSL			*7%*	*N/A*	*15%*	*33%*	*4%*	*32%*	*13%*	*N/A*
1A/67/0.5	0.5	10/02/03	5.8	<1.0	89	18	16	49	43	0.03
QA-4 (Duplicate of 1A/67/0.5)			5.2	<1.0	86	16	15	41	42	0.03
QS-4 (Triplicate of 1A/67/0.5)			<5	<0.2	8	<5	70	10	150	0.22
Relative Percent Difference Amdel			*11%*	*N/A*	*3%*	*12%*	*6%*	*18%*	*2%*	*0%*
Relative Percent Difference WSL			*N/A*	*N/A*	*167%*	*N/A*	*126%*	*132%*	*111%*	*152%*
1A/57/0.5	0.5	11/02/03	6.2	<1.0	73	24	17	56	50	0.05
QA-5 (Duplicate of 1A/57/0.5)			7.9	<1.0	110	30	22	70	52	0.04
QS-5 (Triplicate of 1A/57/0.5)			8	<0.2	79	27	25	60	61	<0.05
Relative Percent Difference Amdel			*24%*	*N/A*	*40%*	*22%*	*26%*	*22%*	*4%*	*22%*
Relative Percent Difference WSL			*25%*	*N/A*	*8%*	*12%*	*38%*	*7%*	*20%*	*N/A*
1A/48/0.5	0.5	11/02/03	4.9	<1.0	64	17	19	37	42	0.03
QA-6 (Duplicate of 1A/48/0.5)			7.4	<1.0	90	33	23	62	51	0.09
QS-6 (Triplicate of 1A/48/0.5)			6	<0.2	58	18	23	35	56	<0.05
Relative Percent Difference Amdel			*41%*	*N/A*	*34%*	*64%*	*19%*	*51%*	*19%*	*100%*
Relative Percent Difference WSL			*20%*	*N/A*	*10%*	*6%*	*19%*	*6%*	*29%*	*N/A*
1A/21/0.5	0.5	12/02/03	<2.0	<1.0	42	29	<2.0	95	39	0.04
QA-7 (Duplicate of 1A/21/0.5)			<2.0	<1.0	42	27	<2.0	97	40	0.03
QS-7 (Triplicate of 1A/21/0.5)			<5	<0.2	68	37	<5	140	71	<0.05
Relative Percent Difference Amdel			*N/A*	*N/A*	*0%*	*7%*	*N/A*	*2%*	*3%*	*29%*
Relative Percent Difference WSL			*N/A*	*N/A*	*47%*	*24%*	*N/A*	*38%*	*58%*	*N/A*
1A/18/0.5	0.5	12/02/03	10.0	<1.0	110	35	26	80	57	0.05
QA-8 (Duplicate of 1A/18/0.5)			6.4	<1.0	64	21	13	56	41	0.08
QS-8 (Triplicate of 1A/18/0.5)			7	<0.2	77	27	26	61	54	<0.05
Relative Percent Difference Amdel			*44%*	*N/A*	*53%*	*50%*	*67%*	*35%*	*33%*	*46%*
Relative Percent Difference WSL			*35%*	*N/A*	*35%*	*26%*	*0%*	*27%*	*5%*	*N/A*
1D/81/0.5	0.5	12/02/03	7.5	<1.0	85	23	18	52	49	0.03
QA-9 (Duplicate of 1D/81/0.5)			8.2	<1.0	88	28	18	65	51	0.03
QS-9 (Triplicate of 1D/81/0.5)			6	<0.2	80	24	24	54	52	<0.05
Relative Percent Difference Amdel			*9%*	*N/A*	*3%*	*20%*	*0%*	*22%*	*4%*	*0%*
Relative Percent Difference WSL			*22%*	*N/A*	*6%*	*4%*	*29%*	*4%*	*6%*	*N/A*
1A/101/0.1	0.1	14/02/03	6.8	<1.0	69	18	21	44	56	0.02
QA-10 (Duplicate of 1A/101/0.1)			6	<1.0	67	17	20	40	53	0.02
QS-10 (Triplicate of 1A/101/0.1)			10	<0.2	58	18	20	43	42	<0.05
Relative Percent Difference Amdel			*13%*	*N/A*	*3%*	*6%*	*5%*	*10%*	*6%*	*0%*
Relative Percent Difference WSL			*38%*	*N/A*	*17%*	*0%*	*5%*	*2%*	*29%*	*N/A*
1A/104/0.1	0.1	14/02/03	130	<1.0	190	200	22	100	130	0.08
QA-11 (Duplicate of 1A/104/0.1)			66	<1.0	110	120	14	100	100	0.04
QS-11 (Triplicate of 1A/104/0.1)			160	0.4	200	180	21	100	140	<0.05
Relative Percent Difference Amdel			*65%*	*N/A*	*53%*	*50%*	*44%*	*0%*	*26%*	*67%*
Relative Percent Difference WSL			*21%*	*N/A*	*5%*	*11%*	*5%*	*0%*	*7%*	*N/A*
Practical Quantitation Limits (WSL)			5.0	0.2	5.0	5.0	5.0	5.0	5.0	0.05
Practical Quantitation Limits (Amdel)			2.0	1.0	2.0	2.0	2.0	2.0	2.0	0.01
Laboratory Methodology (WSL)			WSL 032							
Laboratory Methodology (Amdel)			406 - MS							404 - FIMS

Notes:

"RPD" denotes the Relative Percent Difference between the original sample and it's associated duplicate or triplicate sampl
Shading indicates RPDs above the Australian Standard AS 4482.1-1997 recommended range of 30-50%
QA samples are duplicate samples analysed by the primary laboratory (Amdel)
QA samples are triplicate samples analysed by the secondary laboratory (WSL)
"N/A" denotes RPD values that cannot be calculated because one or two of the values are below PQLs

TABLE 10A
SOIL ANALYTICAL SUMMARY
BTEX & TPH
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

			BTEX				TPH			
Sample ID	Sample Depth (m)	Sample Date	Benzene (mg/kg)	Ethyl-Benzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	C_6-C_9 (mg/kg)	C_{10}-C_{14} (mg/kg)	C_{15}-C_{28} (mg/kg)	C_{29}-C_{36} (mg/kg)
1A/27/0.2	0.2	12/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/27/0.5	0.5	12/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/34/0.2	0.2	11/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/34/1.0	1.0	11/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/39/0.2	0.2	11/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/39/0.5	0.5	11/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/57/0.2	0.2	11/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/57/0.5	0.5	11/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/65/0.2	0.2	10/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/65/0.5	0.5	10/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/67/0.2	0.2	10/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	30
1A/67/0.5	0.5	10/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	53
1A/73/0.2	0.2	10/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	25
1A/73/0.5	0.5	10/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/78/0.5	0.5	11/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/78/1.0	1.0	11/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/83/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/84/1.0	1.0	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/85/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/86/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/87/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/88/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	65
1A/101/0.1	0.1	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	43
1A/103/0.1	0.1	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	21	<20
1A/104/0.1	0.1	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	36	76
1A/105/0.1	0.1	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/107/0.3	0.3	17/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1A/108/0.3	0.3	17/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1B/90/0.2	0.2	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1B/90/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1B/91/0.2	0.2	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1B/91/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	36
1B/92/0.2	0.2	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	35	<20
1B/92/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	24
1B/94/0.2	0.2	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1B/94/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	53
1B/96/0.2	0.2	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	130	11000	300
1B/96/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	26	40
1B/97/0.2	0.2	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	450	26
1B/97/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	21	<20
1B/98/0.2	0.2	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	320	20
1B/98/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	43
1B/99/0.2	0.2	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1B/99/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1B/100/0.2	0.2	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	21
1B/100/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS01 0.5	0.5	03/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	22	<20
1C/TS02 0.5	0.5	03/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	48	54
1C/TS03 0.5	0.5	03/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS04 0.5	0.5	03/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	21
1C/TS05 0.5	0.5	03/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS06 0.5	0.5	03/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS08 0.5	0.5	03/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS09 0.5	0.5	03/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS10 0.5	0.5	03/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS11 0.5	0.5	04/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS12 0.5	0.5	04/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS13 0.5	0.5	04/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS14 0.5	0.5	04/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS15 0.5	0.5	04/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS16 0.5	0.5	04/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS-18 0.5	0.5	05/02/02	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS-19 0.5	0.5	05/02/02	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS-20 0.5	0.5	05/02/02	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS-21 0.5	0.5	05/02/02	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS-22 0.5	0.5	05/02/02	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS-23 0.5	0.5	05/02/02	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS-24 0.5	0.5	05/02/02	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS-25 0.5	0.5	05/02/02	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS-26 0.5	0.5	05/02/02	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS-27 0.5	0.5	05/02/02	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS-28 0.5	0.5	05/02/02	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1C/TS-29 0.5	0.5	05/02/02	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1D/79/0.2	0.2	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1D/79/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1D/79/2.0	2.0	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1D/80/0.2	0.2	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1D/80/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1D/80/2.0	2.0	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1D/81/0.2	0.2	12/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1D/81/0.5	0.5	12/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	26
1D/81/2.0	2.0	12/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
1D/82/0.2	0.2	13/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
B-1/3.5	3.5	17/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
B-1/8.0	8.0	17/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
B-2/4.5	4.5	17/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
B-2/8.0	8.0	17/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
B-3/0.75	0.75	18/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
B-3/4.5	4.5	18/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
NSW EPA Criteria (1)			1	3.1	1.4	14	65	1,000		
Practical Quantitation Limits			0.1	0.1	0.1	0.1	20	20	20	20
Laboratory Methodology			504P&T BTEX/MAH (Purge & Trap)				504P&T	501-FID Total Petroleum Hydrocarbons		

Notes:

"**" = criterion not specified.

(1) New South Wales Environment Protection Authority (NSW EPA) threshold criteria for the assessment of service station sites. Levels at or below these thresholds indicate suitability for sensitive land use (NSW EPA, 1994).

TABLE 10B
SOIL ANALYTICAL SUMMARY
BTEX & TPH - QA/QC SAMPLES
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	BTEX				TPH			
			Benzene (mg/kg)	Ethyl-Benzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	C_6-C_9 (mg/kg)	C_{10}-C_{14} (mg/kg)	C_{15}-C_{28} (mg/kg)	C_{29}-C_{36} (mg/kg)
1C/TS-06 0.5	0.5	3/02/2003	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
QA-1 (Duplicate of 1C/TS-6 0.5)			<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
QS-1 (Triplicate of 1C/TS-6 0.5)			<0.5	<0.5	<0.5	<0.5	<20	<20	<50	<50
Relative Percent Difference Amdel			***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Relative Percent Difference WSL			***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
1C/TS-20 0.5	0.5	5/02/2002	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
QA-2 (Duplicate of 1C/TS-20 0.5)			<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
QS-2 (Triplicate of 1C/TS-20 0.5)			<0.5	<0.5	<0.5	<0.5	<20	<20	<50	<50
Relative Percent Difference Amdel			***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Relative Percent Difference WSL			***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
1C/TS-23 0.5	0.5	5/02/2002	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
QA-3 (Duplicate of 1C/TS-23 0.5)			<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
QS-3 (Triplicate of 1C/TS-23 0.5)			<0.5	<0.5	<0.5	<0.5	<20	<20	<50	<50
Relative Percent Difference Amdel			***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Relative Percent Difference WSL			***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
1D/81/0.5	0.5	12/02/03	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	26
QA-9 (Duplicate of 1D/81/0.5)			<0.1	<0.1	<0.1	<0.1	<20	<20	<20	<20
QS-9 (Triplicate of 1D/81/0.5)			<0.5	<0.5	<0.5	<0.5	<20	<20	<50	<50
Relative Percent Difference Amdel			***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Relative Percent Difference WSL			***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
1A/101/0.1	0.1	14/02/2003	<0.1	<0.1	<0.1	<0.1	<20	<20	<20	43
QA-10 (Duplicate of 1A/101/0.1)			<0.1	<0.1	<0.1	<0.1	<20	<20	29	45
QS-10 (Duplicate of 1A/101/0.1)			<0.5	<0.5	<0.5	<0.5	<20	<20	<50	<50
Relative Percent Difference Amdel			***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***5%***
Relative Percent Difference WSL			***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Practical Quantitation Limits Amdel			0.1	0.1	0.1	0.1	20	20	20	20
Laboratory Methodology Amdel			504P&T BTEX/MAH (Purge & Trap)				504P&T	501-FID Total Petroleum Hydrocarbons		
Practical Quantitation Limits WSL			0.5	0.5	0.5	0.5	20	20	50	50
Laboratory Methodology WSL			WSL3810A				WSL3810A	WSL030		

Notes:

"RPD" denotes the Relative Percent Difference between the original sample and it's associated duplicate or triplicate sample
Shading indicates RPDs above the Australian Standard AS 4482.1-1997 recommended range of 30-50%
QA samples are duplicate samples analysed by the primary laboratory (Amdel)
QA samples are triplicate samples analysed by the secondary laboratory (WSL)
"N/A" denotes RPD values that cannot be calculated because one or two of the values are below PQLs

TABLE 10C
SOIL ANALYTICAL SUMMARY
HYDROCARBON ALIPHATIC/AROMATIC FRACTIONATION
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	ALIPHATICS				AROMATICS			
			C_{10}-C_{12} (mg/kg)	C_{12}-C_{16} (mg/kg)	C_{16}-C_{21} (mg/kg)	C_{21}-C_{35} (mg/kg)	C_{10}-C_{12} (mg/kg)	C_{12}-C_{16} (mg/kg)	C_{16}-C_{21} (mg/kg)	C_{21}-C_{35} (mg/kg)
1B/89/0.2	0.2	14/02/03	27	1100	5700	9300	<10	230	760	710
1B/89/0.5	0.5	14/02/03	<10	<10	<40	<40	<10	<10	<40	<40
1B/93/0.2	0.2	13/02/03	<10	<10	<40	<40	<10	<10	<40	<40
1B/93/0.5	0.5	13/02/03	<10	<10	<40	<40	<10	<10	<40	<40
1B/95/0.2	0.2	14/02/03	<10	<10	140	200	<10	<10	<40	<40
1B/95/0.5	0.5	14/02/03	<10	<10	<40	<40	<10	<10	<40	<40
1B/96/0.2	0.2	14/02/03	<10	460	3300	2900	<10	110	450	270
NEPM "F" HILs - Commercial/Industrial			*	*	28,000		*	*	450	
Practical Quantitation Limits			10	10	40	40	10	10	40	40
Laboratory Methodology			E1223				E1223			

Notes: "*" = criterion not specified.
Shading indicates concentrations above NEPM "F" HILs.

TABLE 11
SOIL ANALYTICAL SUMMARY
VOLATILE CHLORINATED HYDROCARBONS (VCH)
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	1.1.1-Trichloroethane	1.1.2.2-Tetrachloroethane	1.1.2-Trichloroethane	1.1-Dichloroethene	1.2(cis)-Dichloroethene	1.2(trans)-Dichloroethene	1.2-Dichloroethane	1.2-Dichloropropane	1.3-Dichloropropane	2-Chlorotoluene	4-Chlorotoluene	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorobenzene	Chloroform	Dibromochloromethane	Dibromomethane	Dichloromethane	Tetrachloroethene	Trichloroethene
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
1A/27/0.2	0.2	12/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/27/0.5	0.6	12/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/34/0.2	0.2	11/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/34/1.0	1.0	11/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/39/0.2	0.2	11/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/39/0.5	0.5	11/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/57/0.2	0.2	11/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/57/0.5	0.5	11/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/65/0.2	0.2	10/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/65/0.5	0.5	10/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/67/0.2	0.2	10/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/67/0.5	0.5	10/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/73/0.2	0.2	10/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1A/73/0.5	0.5	10/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1B/89/0.2	0.2	14/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1B/89/0.5	0.5	14/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1B/93/0.2	0.2	13/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1B/93/0.5	0.5	13/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1B/95/0.2	0.2	14/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1B/95/0.5	0.5	14/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1D/80/0.2	0.2	13/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
1D/80/0.5	0.5	13/02/03	<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	<0.5	<0.1	<0.1	<0.5	<0.1	<0.1
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "F" HILs - Commercial/Industrial			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Practical Quantitation Limits			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	0.5	0.1	0.1	0.5	0.1	0.1
Laboratory Methodology			504P&T Halogenated Volatile (P&T), Dry Weight																				

Notes: "*" = criterion not specified

TABLE 12
SOIL ANALYTICAL SUMMARY
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	Polycyclic Aromatic Hydrocarbons																	
			Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(b)Fluoranthene	Benzo(g,h,i)Perylene	Benzo(k)Fluoranthene	Chrysene	Dibenz(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,-cd)Pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
1A/27/0.2	0.2	12/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/27/0.5	0.5	12/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/34/0.2	0.2	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/34/1.0	1.0	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/39/0.2	0.2	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/39/0.5	0.5	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/57/0.2	0.2	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/57/0.5	0.5	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/65/0.2	0.2	10/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/65/0.5	0.5	10/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/67/0.2	0.2	10/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/67/0.5	0.5	10/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/73/0.2	0.2	10/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/73/0.5	0.5	10/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/78/0.5	0.5	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/78/1.0	1.0	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/83/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/84/1.0	1.0	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/85/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/86/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/87/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/88/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/101/0.1	0.1	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
QA-10 (Duplicate of 1A/101/0.1)			<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
QA-11 (Triplicate of 1A/101/0.1)			<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	<1
Relative Percent Difference Amdel			***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Relative Percent Difference WSL			***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
1A/107/0.3	0.3	17/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1A/108/0.3	0.3	17/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1B/89/0.2	0.2	14/02/03	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<17
1B/89/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1B/93/0.2	0.2	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1B/93/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1B/95/0.2	0.2	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1B/95/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1D/80/0.2	0.2	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
1D/80/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*	1	*	*	*	*	*	*	*	*	*	*	*	20
NEPM "F" HILs - Commercial/Industrial			*	*	*	*	5	*	*	*	*	*	*	*	*	*	*	*	100
Practical Quantitation Limits			0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.0
Laboratory Methodology			505-MS Polyaromatic Hydrocarbons, Dry Weight																

Notes: "*" = criterion not specified.
"N/A" denotes relative percent differences could not be calcultaed because one or two of the values are below laboratory PQLs.

TABLE 13

SOIL ANALYTICAL SUMMARY

POLYCHLORINATED BIPHENYLS (PCB)

AREA 1 ESA

MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Total PCB (mg/kg)
1A/27/0.2	0.2	12/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/27/0.5	0.5	12/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/34/0.2	0.2	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/34/1.0	1.0	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/39/0.2	0.2	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/39/0.5	0.5	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/57/0.2	0.2	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/57/0.5	0.5	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/65/0.2	0.2	10/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/65/0.5	0.5	10/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/67/0.2	0.2	10/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/67/0.5	0.5	10/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/73/0.2	0.2	10/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/73/0.5	0.5	10/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/78/0.5	0.5	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/78/1.0	1.0	11/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/83/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/84/1.0	1.0	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/85/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/86/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/87/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/88/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/107/0.3	0.3	17/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1A/108/0.3	0.3	17/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1B/89/0.2	0.2	14/02/03	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
1B/89/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1B/93/0.2	0.2	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1B/93/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1B/95/0.2	0.2	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1B/95/0.5	0.5	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1B/96/0.2	0.2	14/02/03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1B/97/0.2	0.2	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1B/98/0.2	0.2	14/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1D/80/0.2	0.2	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1D/80/0.5	0.5	13/02/03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
NEPM EILs			*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*	*	*	*	10
NEPM "F" HILs - Commercial/Industrial			*	*	*	*	*	*	*	50
Practical Quantitation Limits			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Laboratory Methodology			507-ECD Polychlorinated Biphenyls, Dry Weight							

Notes: "*" = criterion not specified.

TABLE 14
SOIL ANALYTICAL SUMMARY
ORGANOCHLORINE PESTICIDES (OCP)
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	Aldrin (mg/kg)	a-BHC (mg/kg)	Endosulphan 1 (mg/kg)	b-BHC (mg/kg)	Endosulphan 2 (mg/kg)	Chlordane (mg/kg)	DDD (mg/kg)	DDE (mg/kg)	DDT (mg/kg)	d-BHC (mg/kg)	Dieldrin (mg/kg)	Endosulphan sulphate (mg/kg)	Endrin (mg/kg)	Endrin Aldehyd (mg/kg)	Heptachlor (mg/kg)	Heptachlor epoxide (mg/kg)	Heptachloro benzene (mg/kg)	Lindane (g-BHC) (mg/kg)	Methoxychlor (mg/kg)
1A/27/0.2	0.2	12/02/03	<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	<0.1
1A/27/0.5	0.5	12/02/03	<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	<0.1
1A/34/0.2	0.2	11/02/03	<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	<0.1
1A/34/1.0	1.0	11/02/03	<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	<0.1
1A/39/0.2	0.2	11/02/03	<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	<0.1
1A/39/0.5	0.5	11/02/03	<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	<0.1
1A/57/0.2	0.2	11/02/03	<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	<0.1
1A/57/0.5	0.5	11/02/03	<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	<0.1
1A/65/0.2	0.2	10/02/03	<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	<0.1
1A/65/0.5	0.5	10/02/03	<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	<0.1
1A/67/0.2	0.2	10/02/03	<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	<0.1
1A/67/0.5	0.5	10/02/03	<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	<0.1
1A/73/0.2	0.2	10/02/03	<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	<0.1
1A/73/0.5	0.5	10/02/03	<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	<0.1
1B/89/0.2	0.2	14/02/03	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
1B/89/0.5	0.5	14/02/03	<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	<0.1
1B/93/0.2	0.2	13/02/03	<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	<0.1
1B/93/0.5	0.5	13/02/03	<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	<0.1
1B/95/0.2	0.2	14/02/03	<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	<0.1
1B/95/0.5	0.5	14/02/03	<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	<0.1
1D/80/0.2	0.2	13/02/03	<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	<0.1
1D/80/0.5	0.5	13/02/03	<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	<0.1
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			$10_{(1)}$	*	*	*	*	50	$200_{(2)}$	$200_{(2)}$	$200_{(2)}$	*	*	*	*	*	10	*	*	*	*
NEPM "F" HILs - Commercial/Industrial			$50_{(1)}$	*	*	*	*	250	$1000_{(2)}$	$1000_{(2)}$	$1000_{(2)}$	*	*	*	*	*	50	*	*	*	*
Practical Quantitation Limits			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	0.1
Laboratory Methodology			E1081																		

Notes: "*" = criterion not specified.

(1) This criterion applies to the sum of the determined concentrations of Aldrin and Dieldrin.

(2) This criterion applies to the sum of the determined concentrations of DDD, DDE and DDT.

TABLE 15
SOIL ANALYTICAL SUMMARY
PHENOLS AND CREOSOLS
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	2,3,4,6-Tetrachlorophenol	2,3,4-Trichlorophenol	2,3,5,6-Tetrachlorophenol	2,3,5-Trichlorophenol	2,3,6-Trichlorophenol	2,3- Dichlorophenol	2,4 Dichlorophenol	2,4,6-Trichlorophenol	2,5- Dichlorophenol	2,6- Dichlorophenol	2-Chlorophenol	2-Methylphenol (o-Cresol)#	3 & 4 -Chlorophenol	3 & 4 -Methylphenol # (m & p -Cresol)	3,4 Dichlorophenol	3,5-Dichlorophenol	4-Chloro-3-methylphenol	Pentachlorophenol	Phenol	Total Cresol	Total Phenolics
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
1A/27/0.2	0.2	12/02/03	<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	<0.1	<0.1	<0.1
1A/27/0.5	0.5	12/02/03	<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	<0.1	<0.1	<0.1
1A/34/0.2	0.2	11/02/03	<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	<0.1	<0.1	<0.1
1A/34/1.0	1.0	11/02/03	<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	<0.1	<0.1	<0.1
1A/39/0.2	0.2	11/02/03	<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	<0.1	<0.1	<0.1
1A/39/0.5	0.5	11/02/03	<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	<0.1	<0.1	<0.1
1A/57/0.2	0.2	11/02/03	<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	<0.1	<0.1	<0.1
1A/57/0.5	0.5	11/02/03	<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	<0.1	<0.1	<0.1
1A/65/0.2	0.2	10/02/03	<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	<0.1	<0.1	<0.1
1A/65/0.5	0.5	10/02/03	<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	<0.1	<0.1	<0.1
1A/67/0.2	0.2	10/02/03	<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	<0.1	<0.1	<0.1
1A/67/0.5	0.5	10/02/03	<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	<0.1	<0.1	<0.1
1A/73/0.2	0.2	10/02/03	<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	<0.1	<0.1	<0.1
1A/73/0.5	0.5	10/02/03	<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	<0.1	<0.1	<0.1
1B/89/0.2	0.2	14/02/03	<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	<0.1	<0.1	<0.1
1B/89/0.5	0.5	14/02/03	<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	<0.1	<0.1	<0.1
1B/93/0.2	0.2	13/02/03	<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	<0.1	<0.1	<0.1
1B/93/0.5	0.5	13/02/03	<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	<0.1	<0.1	<0.1
1B/95/0.2	0.2	14/02/03	<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	<0.1	<0.1	<0.1
1B/95/0.5	0.5	14/02/03	<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	<0.1	<0.1	<0.1
1D/80/0.2	0.2	13/02/03	<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	<0.1	<0.1	<0.1
1D/80/0.5	0.5	13/02/03	<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	<0.1	<0.1	<0.1
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	8,500	*	*
NEPM "F" HILs - Commercial/Industrial			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	42,500	*	*
Practical Quantitation Limits			<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	<0.1	<0.1	<0.1
Laboratory Methodology			508- MS Individual Phenols & Creosols																				244 Total distillable Phenolics

Notes: "*" = criterion not specified.

TABLE 16
SOIL ANALYTICAL SUMMARY
SULPHATE (SO4), PHOSPHORUS (P), SULPHUR (S), TOTAL CYANIDE (CN)
AREA 1
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	Sulphate mg/kg	Phosphorus mg/kg	Sulphur mg/kg	Total Cyanide mg/kg
1A/27/0.2	0.2	12/02/03	6.1	320	95	0.2
1A/27/0.5	0.5	12/02/03	47	390	89	0.1
1A/34/0.2	0.2	11/02/03	210	800	40	<0.1
1A/34/1.0	1.0	11/02/03	31	300	64	0.1
1A/39/0.2	0.2	11/02/03	5.2	510	24	<0.1
1A/39/0.5	0.5	11/02/03	23	280	120	0.2
1A/57/0.2	0.2	11/02/03	<2.0	340	120	0.4
1A/57/0.5	0.5	11/02/03	88	430	63	0.1
1A/65/0.2	0.2	10/02/03	15	340	170	0.2
1A/65/0.5	0.5	10/02/03	23	320	55	0.1
1A/67/0.2	0.2	10/02/03	12	450	250	0.4
1A/67/0.5	0.5	10/02/03	73	260	96	0.2
1A/73/0.2	0.2	10/02/03	3.3	280	55	0.2
1A/73/0.5	0.5	10/02/03	12	430	50	0.1
1B/89/0.2	0.2	14/02/03	84	660	91	<0.1
1B/89/0.5	0.5	14/02/03	37	190	100	0.1
1B/93/0.2	0.2	13/02/02	7.9	390	31	<0.1
1B/93/0.5	0.5	13/02/02	60	330	54	0.2
1B/95/0.2	0.2	14/02/03	3.8	620	53	<0.1
1B/95/0.5	0.5	14/02/03	23	400	87	0.1
1D/80/0.2	0.2	13/02/03	46	410	52	<0.1
1D/80/0.5	0.5	13/02/02	23	400	41	<0.1
NEPM EILs			2000	2000	600	*
NEPM "A" HILs - Residential			*	*	*	250(1)
NEPM "F" HILs - Commercial/Industrial			*	*	*	1250(1)
Practical Quantitation Limits			2.0	5.0	5.0	0.1
Laboratory Methodology			208- IC	402- AES	402- AES	236

Notes: "*" = criterion not specified.

(1) Criterion for "free" cyanides

TABLE 17A
SOIL ANALYTICAL SUMMARY
pH/EC
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	pH	EC µS/cm
1A/18/0.2	0.2	12/02/03	5.6	110
1A/18/0.5	0.5	12/02/03	5.9	110
1A/21/0.2	0.2	12/02/03	6.8	140
1A/21/0.5	0.5	12/02/03	7.0	74
1A/27/0.2	0.2	12/02/03	7.2	110
1A/27/0.5	0.5	12/02/03	7.0	150
1A/32/0.2	0.2	11/02/03	6.2	260
1A/32/0.5	0.5	11/02/03	6.5	78
1A/34/0.2	0.2	11/02/03	7.4	68
1A/34/1.0	1.0	11/02/03	7.4	180
1A/38/0.2	0.2	11/02/03	6.2	39
1A/38/0.5	0.5	11/02/03	6.9	96
1A/39/0.2	0.2	11/02/03	7.7	44
1A/39/0.5	0.5	11/02/03	7.0	60
1A/48/0.2	0.2	11/02/03	6.6	83
1A/48/0.5	0.5	11/02/03	7.1	140
1A/48/1.0	1.0	11/02/03	7.5	260
1A/57/0.2	0.2	11/02/03	6.1	50
1A/57/0.5	0.5	11/02/03	7.4	150
1A/65/0.2	0.2	10/02/03	6.4	93
1A/65/0.5	0.5	10/02/03	6.6	72
1A/65/1.0	1.0	10/02/03	7.2	160
1A/67/0.2	0.2	10/02/03	6.3	180
1A/67/0.5	0.5	10/02/03	5.7	250
1A/73/0.2	0.2	10/02/03	6.2	69
1A/73/0.5	0.5	10/02/03	6.3	74
1A/78/0.5	0.5	11/02/03	7.9	38
1A/78/1.0	1.0	11/02/03	7.0	68
1A/83/0.5	0.5	13/02/03	7.7	150
1A/84/1.0	1.0	13/02/03	7.6	160
1A/85/0.5	0.5	13/02/03	7.2	82
1A/86/0.5	0.5	14/02/03	8.2	73
1A/87/0.5	0.5	14/02/03	7.6	110
1A/88/0.5	0.5	13/02/03	6.3	210
1A/101/0.1	0.1	14/02/03	7.4	42
1A/103/0.1	0.1	14/02/03	6.2	160
1A/104/0.1	0.1	14/02/03	6.5	850
1A/105/0.1	0.1	14/02/03	6.9	210
1A/106/0.1	0.1	14/02/03	7.8	1400
1A/107/0.3	0.3	17/02/03	8.6	130
1A/108/0.3	0.3	17/02/03	9.1	250
1B/89/0.2	0.2	14/02/03	7.2	120
1B/89/0.5	0.5	14/02/03	7.5	75
1B/90/0.2	0.2	13/02/03	7.4	200
1B/90/0.5	0.5	13/02/03	7.3	240
1B/91/0.2	0.2	13/02/03	6.4	78
1B/91/0.5	0.5	13/02/03	6.4	110
1B/92/0.2	0.2	13/02/03	6.8	110
1B/92/0.5	0.5	13/02/03	6.6	190
1B/93/0.2	0.2	13/02/03	8.4	35
1B/93/0.5	0.5	13/02/03	7.7	63
1B/94/0.2	0.2	14/02/03	7.3	100
1B/94/0.5	0.5	14/02/03	7.3	150
1B/95/0.2	0.2	14/02/03	7.3	48
1B/95/0.5	0.5	14/02/03	7.2	57
1B/96/0.2	0.2	14/02/03	7.5	82
1B/96/0.5	0.5	14/02/03	7.1	220
1B/97/0.2	0.2	14/02/03	8.6	56
1B/97/0.5	0.5	14/02/03	7.9	98
1B/98/0.2	0.2	14/02/03	8.3	93
1B/98/0.5	0.5	14/02/03	7.7	190
1B/99/0.2	0.2	14/02/03	7.1	91
1B/99/0.5	0.5	14/02/03	7.4	96
1B/100/0.2	0.2	14/02/03	7.3	110
1B/100/0.5	0.5	14/02/03	7.6	98
1C/TS01 0.5	0.5	03/02/03	7.0	220
1C/TS02 0.5	0.5	03/02/03	6.9	260
1C/TS03 0.5	0.5	03/02/03	6.8	220
1C/TS04 0.5	0.5	03/02/03	6.8	230
1C/TS05 0.5	0.5	03/02/03	6.9	82
1C/TS06 0.5	0.5	03/02/03	7.9	680
1C/TS08 0.5	0.5	03/02/03	8.2	350
1C/TS09 0.5	0.5	03/02/03	7.0	94
1C/TS10 0.5	0.5	03/02/03	7.1	400
1C/TS11 0.5	0.5	04/02/03	7.6	710
1C/TS12 0.5	0.5	04/02/03	8.1	610
1C/TS13 0.5	0.5	04/02/03	8.1	540
1C/TS14 0.5	0.5	04/02/03	8.0	670

TABLE 17A
SOIL ANALYTICAL SUMMARY
pH/EC
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	pH	EC µS/cm
1C/TS15 0.5	0.5	04/02/03	8.2	290
1C/TS16 0.5	0.5	04/02/03	7.9	580
1C/TS-18 0.5	0.5	05/02/02	6.2	160
1C/TS-19 0.5	0.5	05/02/02	6.6	460
1C/TS-20 0.5	0.5	05/02/02	6.1	420
1C/TS-21 0.5	0.5	05/02/02	7.8	190
1C/TS-22 0.5	0.5	05/02/02	7 7	47
1C/TS-23 0.5	0.5	05/02/02	7.5	370
1C/TS-24 0.5	0.5	05/02/02	6.9	420
1C/TS-25 0.5	0.5	05/02/02	7.1	280
1C/TS-26 0.5	0.5	05/02/02	6.4	410
1C/TS-27 0.5	0.5	05/02/02	7.7	700
1C/TS-28 0.5	0.5	05/02/02	7.6	190
1C/TS-29 0.5	0.5	05/02/02	7.3	150
1D/79/0.2	0.2	13/02/03	8.0	190
1D/79/0.5	0.5	13/02/03	7.7	87
1D/80/0.2	0.2	13/02/03	8.8	240
1D/80/0.5	0.5	13/02/03	8.7	200
1D/81/0.2	0.2	12/02/03	9.7	840
1D/81/0.5	0.5	12/02/03	8.0	180
1D/82/0.2	0.2	13/02/03	7.6	220
COMP 1	0.2	10/02/03	6.0	78
COMP 2	0.5	10/02/03	6.1	140
COMP 3	0.2	10/02/03	6.3	140
COMP 4	0.5	10/02/03	7.4	450
COMP 5	0.2	10/02/03	6.8	98
COMP 6	0.5	10/02/03	6.9	190
COMP 7	0.2	11/02/03	6.8	170
COMP 8	0.5	11/02/03	7.7	270
COMP 9	0.2	11/02/03	7.3	94
COMP 10	0.5	11/02/03	7.7	390
COMP 11	0.2	11/02/03	7.5	74
COMP 12	0.5	11/02/03	7.5	130
COMP 13	0.2	11/02/03	7.8	130
COMP 14	0.5	11/02/03	7.7	96
COMP 15	0.2	11/02/03	6.8	57
COMP 16	0.5	11/02/03	6.9	68
COMP 17	0.2	11/02/03	6.9	220
COMP 18	0.5	11/02/03	7.2	88
COMP 19	0.5	11/02/03	7.9	85
COMP 20	1.0	11/02/03	7.5	140
COMP 21	0.2	11/02/03	6.6	150
COMP 22	0.5	11/02/03	7.0	180
COMP 23	0.2	12/02/03	7.5	190
COMP 24	0.5	12/02/03	7.7	280
COMP 25	0.2	12/02/03	7.0	140
COMP 26	0.5	12/02/03	7.3	240
COMP 27	0.2	12/02/03	7.3	110
COMP 28	0.5	12/02/03	7.1	110
COMP 29	0.2	12/02/03	7.1	83
COMP 30	0.5	12/02/03	6.9	94
COMP 31	0.2	12/02/03	6.9	94
COMP 32	0.5	12/02/03	6.6	160
COMP 33	0.2	12/02/03	6.2	130
COMP 34	0.5	12/02/03	6.8	320
B-1/3.5	3.5	17/02/03	8.5	590
B-1/8.0	8.0	17/02/03	8.2	1400
B-2/4.5	4.5	17/02/03	8.4	280
B-2/8.0	8.0	17/02/03	8.2	870
B-3/0.75	0.75	18/02/03	8.2	260
B-3/4.5	4.5	18/02/03	7.7	1100
ANZECC 1992 Background Range			6-8	*
Practical Quantitation Limits			0.1	1
Laboratory Methodology			226	220

Notes: Shading indicates outside of ANZECC 1992 background range.

TABLE 17B
SOIL ANALYTICAL SUMMARY
QUALITY pH/EC
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	pH	EC
1C/TS-06 0.5	0.5	03/02/03	7.9	680
QA-1 (Duplicate of 1C/TS-06 0.5)			7.7	620
QS-1 (Triplicate of 1C/TS-06 0.5)			7.2	470
Relative Percent Difference Amdel			***3%***	***9%***
Relative Percent Difference WSL			***9%***	***37%***
1C/TS-20 0.5	0.5	05/02/02	6.1	420
QA-2 (Duplicate of 1C/TS-20 0.5)			6.3	400
QS-2 (Triplicate of 1C/TS-20 0.5)			6	420
Relative Percent Difference Amdel			***3%***	***5%***
Relative Percent Difference WSL			***2%***	***0%***
1C/TS-26 0.5	0.5	05/02/02	6.4	410
QA-3 (Duplicate of 1C/TS-26 0.5)			5.8	370
QS-3 (Triplicate of 1C/TS-26 0.5)			5.2	400
Relative Percent Difference Amdel			***10%***	***10%***
Relative Percent Difference WSL			***21%***	***2%***
1A/67/0.5	0.5	10/02/03	5.7	250
QA-4 (Duplicate of 1A/67/0.5)			4.6	500
QS-4 (Triplicate of 1A/67/0.5)			6.8	73
Relative Percent Difference Amdel			***21%***	***67%***
Relative Percent Difference WSL			***18%***	***110%***
1A/57/0.5	0.5	11/02/03	7.4	150
QA-5 (Duplicate of 1A/57/0.5)			6.8	74
QS-5 (Triplicate of 1A/57/0.5)			6.8	120
Relative Percent Difference Amdel			***8%***	***68%***
Relative Percent Difference WSL			***8%***	***22%***
1A/48/0.5	0.5	11/02/03	7.1	140
QA-6 (Duplicate of 1A/48/0.5)			7	160
QS-6 (Triplicate of 1A/48/0.5)			7.3	110
Relative Percent Difference Amdel			***1%***	***13%***
Relative Percent Difference WSL			***3%***	***24%***
1A/21/0.5	0.5	12/02/03	7	74
QA-7 (Duplicate of 1A/21/0.5)			7	69
QS-7 (Triplicate of 1A/21/0.5)			8.6	44
Relative Percent Difference Amdel			***0%***	***7%***
Relative Percent Difference WSL			***21%***	***51%***
1A/18/0.5	0.5	12/02/03	5.9	110
QA-8 (Duplicate of 1A/18/0.5)			7.2	110
QS-8 (Triplicate of 1A/18/0.5)			6.7	110
Relative Percent Difference Amdel			***20%***	***0%***
Relative Percent Difference WSL			***13%***	***0%***
1D/81/0.5	0.5	12/02/03	8	180
QA-9 (Duplicate of 1D/81/0.5)			6.2	150
QS-9 (Triplicate of 1D/81/0.5)			6.6	170
Relative Percent Difference Amdel			***25%***	***18%***
Relative Percent Difference WSL			***19%***	***6%***
1A/101/0.1	0.1	14/02/03	7.4	42
QA-10 (Duplicate of 1A/101/0.1)			7.9	38
QS-10 (Triplicate of 1A/101/0.1)			6.1	63
Relative Percent Difference Amdel			***7%***	***10%***
Relative Percent Difference WSL			***19%***	***40%***
1A/104/0.1	0.1	14/02/03	6.5	850
QA-11 (Duplicate of 1A/104/0.1)			7.1	740
QS-11 (Triplicate of 1A/104/0.1)			7.8	820
Relative Percent Difference Amdel			***9%***	***14%***
Relative Percent Difference WSL			***18%***	***4%***
ANZECC 1992 Background Range			6-8	*
Practical Quantitation Limits			0.1	1
Laboratory Methodology			226	220

Notes: "RPD" denotes the Relative Percent Difference between the original sample and it's associated duplicate or triplicate sample

Shading indicates RPDs above the Australian Standard AS 4482.1-1997 recommended range of 30-50%

QA samples are duplicate samples analysed by the primary laboratory (Amdel)

QA samples are triplicate samples analysed by the secondary laboratory (WSL)

"N/A" denotes RPD values that cannot be calculated because one or two of the values are below PQLs

TABLE 18A
WATER ANALYTICAL SUMMARY
METALS - GROUNDWATER SAMPLES
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Date	Arsenic As mg/L	Barium Ba mg/L	Beryllium Be mg/L	Boron B mg/L	Cadmium Cd mg/L	Chromium Cr mg/L	Cobalt Co mg/L	Copper Cu mg/L	Lead Pb mg/L	Manganese Mn mg/L	Molybdenum Mb mg/L	Nickel Ni mg/L	Selenium Se mg/L	Tin Sn mg/L	Vanadium V mg/L	Zinc Zn mg/L	Mercury Hg mg/L
MW-1	05/03/03	<0.001	0.039	<0.001	0.20	<0.001	0.007	0.001	0.005	<0.001	0.022	<0.001	0.003	0.031	<0.001	0.002	0.018	<0.0001
MW-2	05/03/03	<0.001	0.059	<0.001	0.21	<0.001	0.006	0.002	0.008	<0.001	0.068	<0.001	0.006	0.043	<0.001	0.002	0.016	<0.0001
QW-1 (Duplicate of MW-2)		<0.001	0.058	<0.001	0.25	<0.001	0.007	0.003	0.008	<0.001	0.068	<0.001	0.006	0.048	<0.001	0.002	0.019	<0.0001
QW-1A (Triplicate of MW-2)		<0.001	0.051	<0.001	0.42	<0.001	<0.001	<0.001	<0.001	<0.001	0.063	<0.001	<0.001	0.051	<0.001	<0.001	<0.001	<0.001
Relative Percent Difference Amdel		***N/A***	***2%***	***N/A***	***17%***	***N/A***	***15%***	***40%***	***0%***	***N/A***	***0%***	***N/A***	***0%***	***11%***	***N/A***	***0%***	***17%***	***N/A***
Relative Percent Difference WSL		***N/A***	***15%***	***N/A***	***67%***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***8%***	***N/A***	***N/A***	***17%***	***N/A***	***N/A***	***N/A***	***N/A***
MW-3	05/03/03	<0.001	0.041	<0.001	0.18	<0.001	0.007	0.001	0.005	<0.001	0.017	<0.001	0.003	0.028	<0.001	0.002	0.015	<0.0001
ANZECC 1992 - Australian Water Quality Guidelines for Fresh and Marine Waters																		
Aquatic Ecosystems - Fresh		0.05	*	0.004	*	0.002	0.01#	*	0.005	0.005	*	*	0.15	0.005	0.000008^	*	0.05	0.0001
Recreational Water (Raw Drinking Water)		0.05	1.0	*	1.0	0.005	0.05	*	1.0	0.05	0.1	*	0.1	0.01	*	*	5.0	0.001
Livestock		0.5	*	0.1	5	0.01	1	1	0.5	0.1	*	0.01	1	0.02	*	0.1	20	0.002
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality																		
Aquatic Ecosystems 99% Protection Level		0.001	*	*	0.09	0.00006	0.00001	*	0.001	0.0010	1.2	*	0.008	0.005	*	*	0.0024	0.00006
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values		0.024	*	*	0.37	0.0002	0.0010	*	0.0014	0.0034	1.9	*	0.011	0.0110	*	*	0.0080	0.0006
Recreational Water		0.050	1.000	*	1.000	0.005	0.050	*	*	0.050	*	*	0.100	0.010	*	*	*	0.001
Livestock		0.5	*	*	5	0.01	1	1	0.4	0.1	*	0.15	1	0.02	*	*	20	0.002
Practical Quantitation Limits		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001/0.0001
Laboratory Methodology		406-MS Elements by ICP-MS																404 FIMS AAS

Notes:

1) Results which are highlighted exceed the adopted ANZECC 1992 guideline levels.
2) "-" denotes sample not analysed.
3) "*" denotes criteria not specified.
4) "#" denotes criterion based on the assumption that all chromium is present as CrVI.
5) "^" Criterion for tributyl tin (TBT). Criterion for total tin not available.
6) "N/A" denotes relative percent difference values are not available because one or two of the values are below PQL hence calculations not possible.
7) The Victorian Environment Protection Authority currently endorses the water quality guidelines defined by the Australian and New Zealand Environment and Conservation Council (ANZECC) in "Australian Water Quality Guidelines for Fresh and Marine Waters", November 1992.

TABLE 18B
WATER ANALYTICAL SUMMARY
METALS - QA/QC BLANK SAMPLES
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Id	Sample Date	Arsenic As mg/L	Barium Ba mg/L	Beryllium Be mg/L	Boron B mg/L	Cadmium Cd mg/L	Chromium Cr mg/L	Cobalt Co mg/L	Copper Cu mg/L	Lead Pb mg/L	Manganese Mn mg/L	Molybdenum Mb mg/L	Nickel Ni mg/L	Selenium Se mg/L	Tin Sn mg/L	Vanadium V mg/L	Zinc Zn mg/L	Mercury Hg mg/L
TB-1	10/02/03	<0.005	-	-	-	<0.005	<0.005	-	0.018	<0.005	-	-	<0.005	-	-	-	<0.005	<0.001
RB-1	10/02/03	<0.005	-	-	-	<0.005	<0.005	-	0.02	<0.005	-	-	<0.005	-	-	-	0.009	<0.001
TB-2	11/02/03	<0.005	-	-	-	<0.005	<0.005	-	0.017	<0.005	-	-	<0.005	-	-	-	<0.005	<0.001
RB-2	11/02/03	<0.005	-	-	-	<0.005	<0.005	-	0.017	<0.005	-	-	<0.005	-	-	-	<0.005	<0.001
TB-3	12/02/03	<0.005	-	-	-	<0.005	<0.005	-	0.019	<0.005	-	-	<0.005	-	-	-	<0.005	<0.001
RB-3	12/02/03	<0.005	-	-	-	<0.005	<0.005	-	0.019	<0.005	-	-	<0.005	-	-	-	<0.005	<0.001
TB-4	13/02/03	<0.005	-	-	-	<0.005	<0.005	-	0.021	<0.005	-	-	<0.005	-	-	-	<0.005	<0.001
RB-4	13/02/03	<0.005	-	-	-	<0.005	<0.005	-	0.021	<0.005	-	-	<0.005	-	-	-	<0.005	<0.001
TB-5	14/02/03	<0.005	-	-	-	<0.005	<0.005	-	0.026	<0.005	-	-	<0.005	-	-	-	<0.005	<0.001
RB-5	14/02/03	<0.005	-	-	-	<0.005	<0.005	-	0.028	<0.005	-	-	<0.005	-	-	-	0.014	<0.001
RB-1b	05/03/03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.005	<0.001	<0.001	<0.001	-
Practical Quantitation Limits		0.005/0.001	0.001	0.001	0.001	0.005/0.001	0.005/0.001	0.001	0.001	0.001	0.001	0.001	0.005/0.001	0.001	0.001	0.001	0.005/0.001	0.001/0.0001
Laboratory Methodology		406-MS Elements by ICP-MS																404 FIMS AAS

Notes: "-" denotes sample not analysed.

TABLE 19A
WATER ANALYTICAL SUMMARY
BTEX, TPH & TDS - GROUNDWATER SAMPLES
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	Selected Monocyclic Aromatic Hydrocarbons (mg/l)					Total Petroleum Hydrocarbons (mg/l)					Total Dissolved Solids mg/L
		Benzene	Ethyl-benzene	Toluene	Total Xylenes	Total BTEX	C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total C_6-C_{36}	
MW-1	05/03/03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.04	<0.1	<0.1	<0.29	6,100
MW-2	05/03/03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.04	<0.1	<0.1	<0.29	7,500
QW-1 (Duplicate of MW-2)	05/03/03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.04	<0.1	<0.1	<0.29	-
QW-1A (Triplicate of MW-2)	05/03/03	<0.001	<0.001	<0.001	<0.001	ND	<0.1	<0.1	<0.1	<0.1	ND	-
Relative Percent Difference Amdel		***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Relative Percent Difference WSL		***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
MW-3	05/03/03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.04	<0.1	<0.1	<0.29	5,300
ANZECC 1992 Aquatic Ecosystems - Freshwater		0.30	*	0.30	*	*	**	**			*	*
NSW EPA 1994 Guidelines		0.30	0.14	0.30	0.38	*	**	**			10	*
Practical Quantitation Limits		0.001	0.001	0.001	0.001	-	0.05	0.04	0.1	0.1	-	-
Laboratory Methodology		504 P&T BTEX/MAH					504 P&T	501-FID Total Petroleum Hydrocarbons				238/246

Notes:

1) "ND" denotes below laboratory practical quantitation limits (PQLs).
2) "*" denotes criteria not specified.
3) "-" denotes sample not analysed.

TABLE 19B
WATER ANALYTICAL SUMMARY
BTEX & TPH - QA/QC BLANK SAMPLES
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Date	Selected Monocyclic Aromatic Hydrocarbons (mg/l)					Total Petroleum Hydrocarbons (mg/l)				
		Benzene	Ethyl-benzene	Toluene	Total Xylenes	Total BTEX	C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total C_6-C_{36}
RB-3	12/02/03	<0.001	<0.001	<0.001	<0.001	<0.004	<0.05	<0.04	<0.1	<0.1	<0.29
TB-3	12/02/03	<0.001	<0.001	<0.001	<0.001	<0.004	<0.05	<0.04	<0.1	<0.1	<0.29
RB-4	13/02/03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.04	<0.1	<0.1	<0.29
TB-4	13/02/03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.04	<0.1	<0.1	<0.29
TB-5	14/02/03	-	-	-	-	-	<0.05	<0.04	<0.1	<0.1	<0.29
Practical Quantitation Limits		0.001	0.001	0.001	0.001	-	0.05	0.04	0.1	0.1	-
Laboratory Methodology		504 P&T BTEX/MAH					504 P&T	501-FID Total Petroleum Hydrocarbons			

Notes: *1) "-" denotes sample not analysed.*

TABLE 20
WATER ANALYTICAL SUMMARY
POLYCYCLIC AROMATIC HYDROCARBONS (PAH) - GROUNDWATER SAMPLES
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Date	Naphtha-lene	Acenap-hthlene	Acenap-hthene	Fluorene	Phenan-threne	Anthra-cene	Fluor-anthene	Pyrene	Benzo-(b) anthra-cene	Chry-sene	Benzo-(b) & (k) fluoran-thene	Benzo-(a) pyrene	Dibenzo-(ah) Anthra-cene	Benzo-(ghi) perylene	Indeno-(1,2,3cd) pyrene	Total PAH
		(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)
MW-1	05/03/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	05/03/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
QW-1 (Duplicate of MW-2)	05/03/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
QW-1A (Triplicate of MW-2)	05/03/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Relative Percent Difference Amdel		***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Relative Percent Difference WSL		***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
MW-3	05/03/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ANZECC 1992 Aquatic Ecosystems - Freshwater		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.003
Practical Quantitation Limits		0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.001
Laboratory Methodology		512-MS															

Notes:
1) "ND" = concentration below laboratory practical quantitation limits.
2) "*" = criteria not specified.
3) "N/A" denotes relative percent difference values could be calculated because one or two of the values are below laboratory PQLs.

TABLE 21
WATER ANALYTICAL SUMMARY
POLYCHLORINATED BIPHENYLS (PCB) - GROUNDWATER SAMPLES
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Date	Aroclor 1016 (µg/L)	Aroclor 1221 (µg/L)	Aroclor 1232 (µg/L)	Aroclor 1242 (µg/L)	Aroclor 1248 (µg/L)	Aroclor 1254 (µg/L)	Aroclor 1260 (µg/L)	Total PCB (µg/L)
MW-1	05/03/03	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	05/03/03	ND	ND	ND	ND	ND	ND	ND	ND
QW-1 (Duplicate of MW-2)		ND	ND	ND	ND	ND	ND	ND	ND
QW-1A (Triplicate of MW-2)		ND	ND	ND	ND	ND	ND	ND	ND
Relative Percent Difference Amdel		***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Relative Percent Difference WSL		***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
MW-3	05/03/03	ND	ND	ND	ND	ND	ND	ND	ND
ANZECC 1992 Aquatic Ecosystems - Freshwater		*	*	*	*	*	*	*	1
Practical Quantitation Limits		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Laboratory Methodology		512-MS							

Notes:

1) "ND" denotes below laboratory practical quantitation limits (PQLs).
2) "*" denotes criteria not specified.
3) "-" denotes sample not analysed.

4) "N/A" denotes RPD values could not be calculated because one or two of the values are below PQLs.

TABLE 22
WATER ANALYTICAL SUMMARY
ION BALANCE - GROUNDWATER SAMPLE
AREA 1 ESA
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID			MW-3	Criteria
Date			5/03/2003	
Alkalinity	Bicarbonate	(mgCaCO3/L)	330	*
	Carbonate	(mgCaCO3/L)	<3.0	*
	Hydroxide	(mgCaCO3/L)	<3.0	*
Anions	Bromide	(mg/L)	<0.5	*
	Chloride	(mg/L)	2800	*
	Fluoride	(mg/L)	<0.5	2.0(1)
	Nitrate	(mg/L)	55	30(1)
	Nitrite	(mg/L)	<0.5	10(1)
	Phosphate	(mg/L)	<0.5	*
	Sulphate	(mg/L)	300	1000(1)
Cations	Calcium	(mg/L)	280	1000(1)
	Iron	(mg/L)	<0.1	*
	Magnesium	(mg/L)	330	*
	Potassium	(mg/L)	28	*
	Sodium	(mg/L)	1100	*
Ion Balance	Total Cations	(me/L)	89	*
	Total Anions	(me/L)	86	*
	Total Ions	(me/L)	175	*
	Ion Balance	%	1.5	*

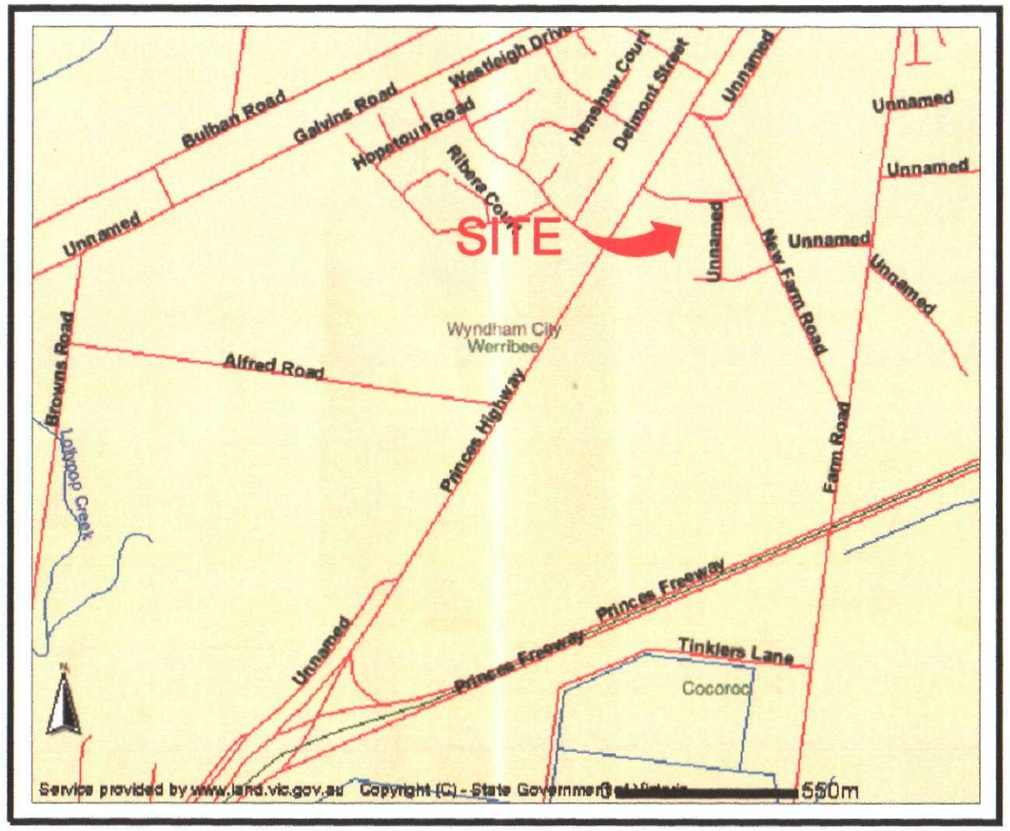
Notes:

"*" = No relevant guideline level available.

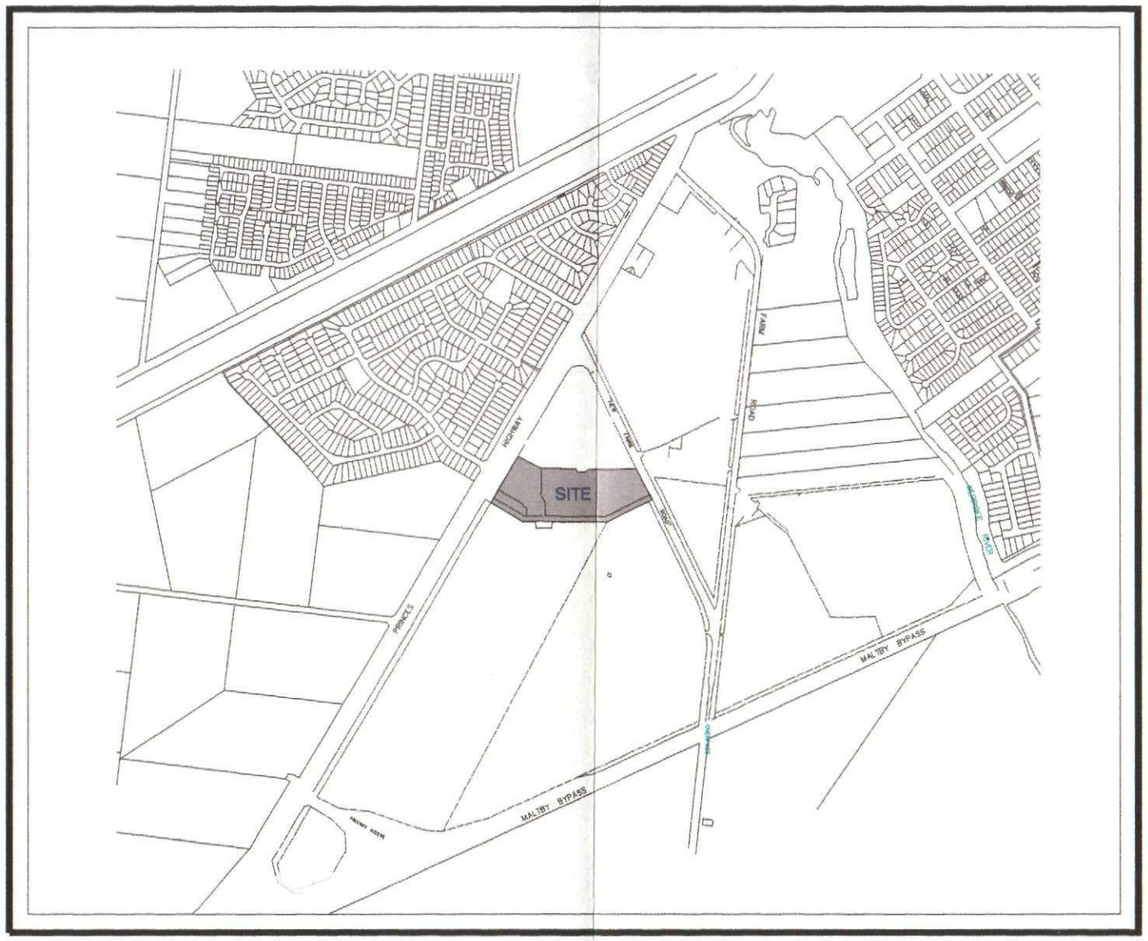
Highlighted results exceed the adopted ANZECC 1992 guideline levels for the relevant beneficial use.

The Victorian EPA currently endorses the ANZECC "Australian Water Quality Guidelines for Fresh and Marine Waters", November 1992. (1) denotes guideline levels for livestock watering.

FIG No **Figure 1**



Reference : www.land.vic.gov.au



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0	11/04/03	ORIGINAL ISSUE	CGT	ADK							
ISSUE	DATE	AMENDMENTS	DRN	CKD	ISSUE	DATE	AMENDMENTS		DRN	CKD	

cadfile: - \\REPORTS\2003\M3020\DRAFTING\M020SM103.DWG

DIMENSIONS IN mm DO NOT SCALE

DRAWING PRACTICE TO AS1100

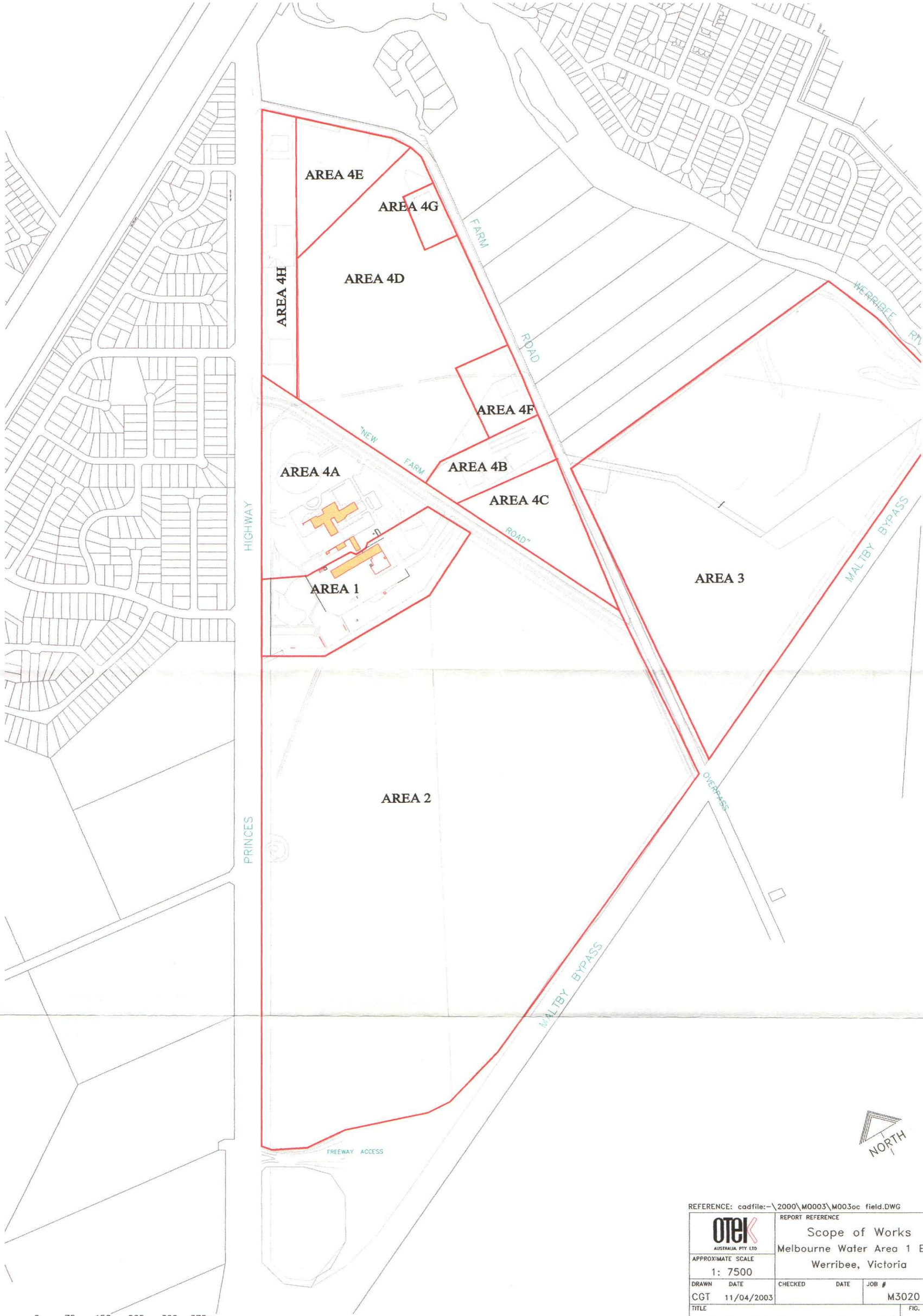
OTEK AUSTRALIA PTY LTD
MELBOURNE OFFICE
408 ALBERT STREET
EAST MELBOURNE, VIC 3002
TEL (03) 9662 9200
FAX (03) 9662 4580

OTEK AUSTRALIA PTY LTD

A3

SCOPE OF WORKS
VICINITY MAP
MELBOURNE WATER - AREA 1 ESA
WERRIBEE, VICTORIA

DRAWN: CGT	DATE: 11/04/2003	CHECKED	APPROVED	JOB No M3020
SCALE: 1:20000	PLOT: 1:1			



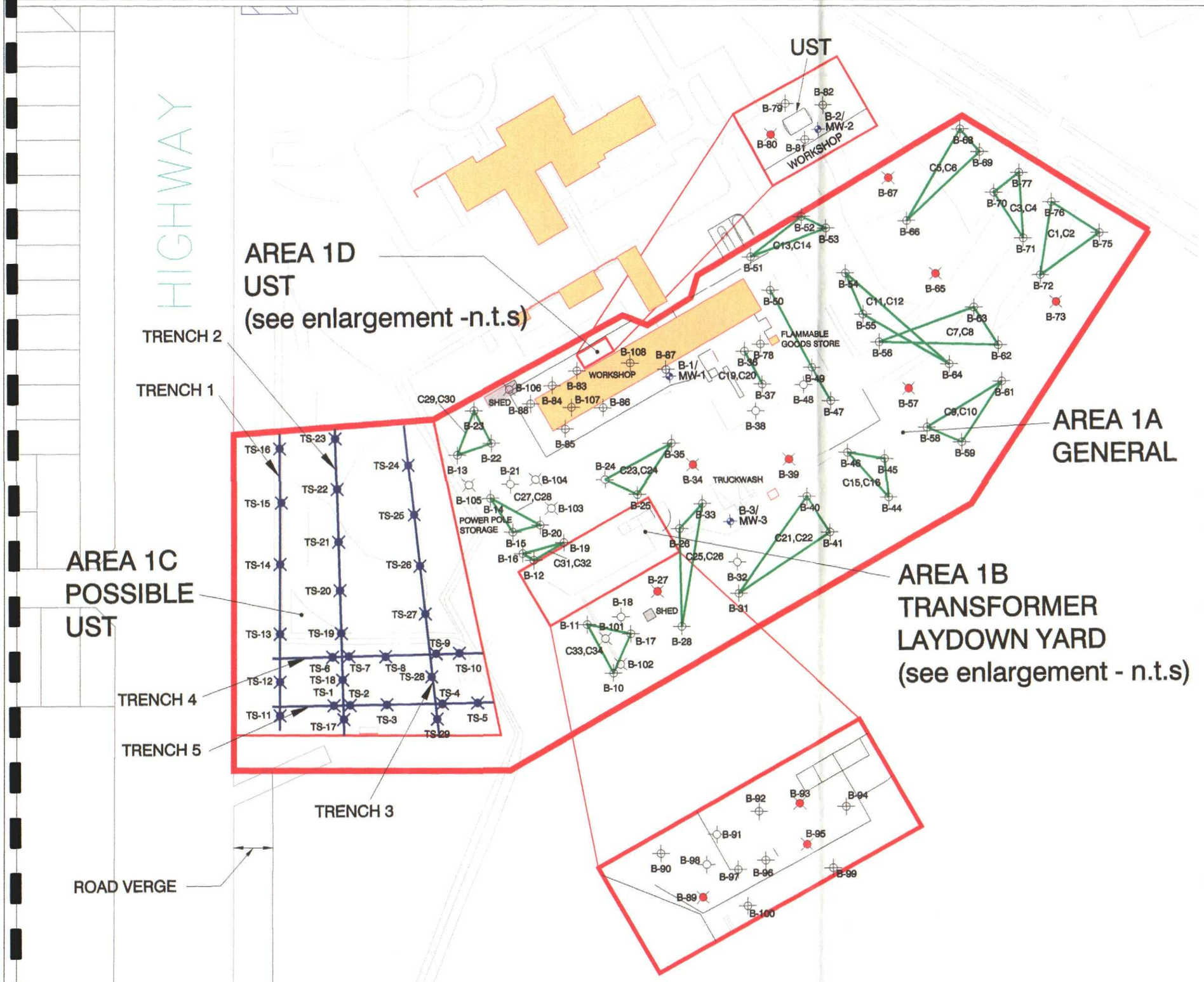
1:7500 0 75 150 225 300 375m

REFERENCE: cadfile:-\2000\M0003\M003oc field.DWG

OTEK AUSTRALIA PTY LTD		REPORT REFERENCE	Scope of Works Melbourne Water Area 1 ESA Werribee, Victoria
APPROXIMATE SCALE	1: 7500		
DRAWN DATE	CGT 11/04/2003	CHECKED DATE	JOB # M3020
TITLE	ENTIRE PROJECT – SITE MAP		FIG. # 2

cadfile:-\\REPORTS\2003\M3020\DRAFTING\M020SM203.DWG

Figure 3



LEGEND

NORTH

- B-1/ MW-1 — GROUNDWATER MONITOR WELL LOCATION
- B-# — SHALLOW SOIL BORING TO 1.0m
- B-# — SELECTED METALS SAMPLE TO 1.0m (Note: Area 1B samples to 3.0m)
- B-# — EPA SCREEN SAMPLES TO 3.0m
- TS-# — TRENCH SAMPLES TO 0.5m
- B-# — SURFACE SAMPLE
- COMPOSITE SAMPLES - C-#
- 0.5m DEEP TRENCHES
- UNDERGROUND STORAGE TANK (UST) LOCATION

1:2000 0 20 40 60 80 100m

ISSUE	DATE	AMENDMENTS	DRN	CKD
0	11/04/03	ORIGINAL ISSUE	CGT	ADK

cadfile: - \\REPORTS\2003\M3020\M0206SM203.DWG

DIMENSIONS IN mm DO NOT SCALE

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EAST MELBOURNE, VIC 3002
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FAX (03) 9662 4680
OTEK AUSTRALIA PTY LTD

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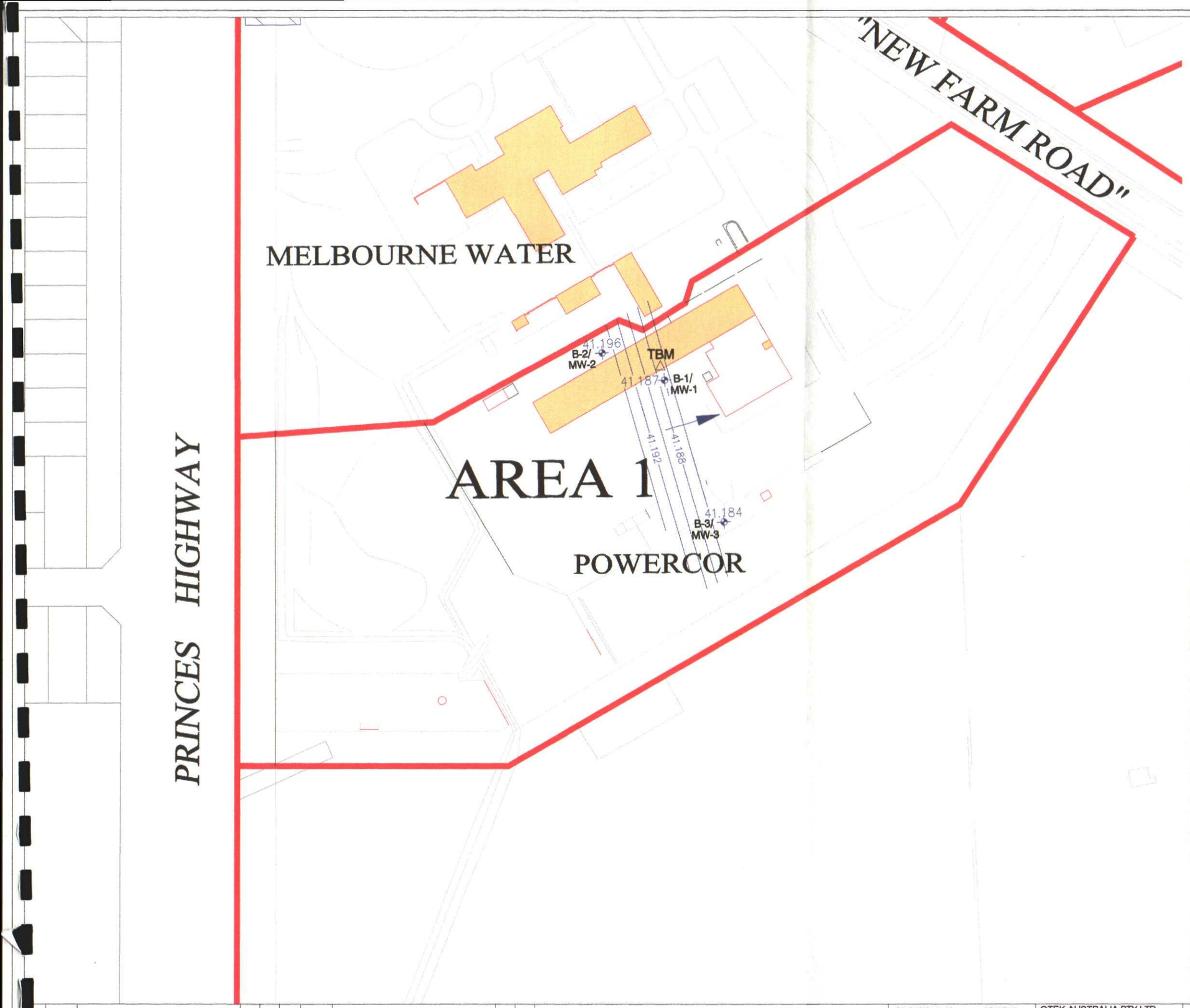
SCOPE OF WORKS
SAMPLING LOCATIONS
MELBOURNE WATER AREA 1 ESA
WERRIBEE, VICTORIA

DRAWN	CGT	DATE: 11/04/2003	CHECKED	APPROVED	JOB No
SCALE:	1:2000	PLOT: 1:1			M3020

FIG No Figure 4



NORTH

LEGEND

- GROUNDWATER MONITOR WELL LOCATION
- 48.350 GROUNDWATER ELEVATION CONTOURS (m) AND INFERRED FLOW DIRECTION AS AT 05/03/2003
- TBM TEMPORARY BENCH MARK USED FOR LEVEL SURVEY (WORKSHOP ENTRANCE) (TBM = 50.000 m)

1:2000 0 20 40 60 80 100m

ISSUE	DATE	AMENDMENTS	DRN	CKD	ISSUE	DATE	AMENDMENTS	DRN	CKD
0	11/04/03	ORIGINAL ISSUE	CGT	ADK					

cadfile: - \\REPORTS\2003\M3020\DRAFTING\M0206SM403.DWG

DIMENSIONS IN mm DO NOT SCALE

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A3

SCOPE OF WORKS
GROUNDWATER ELEVATION MAP
MELBOURNE WATER AREA 1 ESA
WERRIBEE, VICTORIA

DRAWN: CGT	DATE: 11/04/2003	CHECKED	APPROVED	JOB No
SCALE: 1:2000	PLOT: 1:1			M3020

APPENDIX A

Stage No. LR use only Plan Number

Location of Land

Parish: MAMBOURIN
Township: WERRIBEE
Crown Allotment: 22A
Section: 7
Crown Allotment: 4A, 5A, 6A, 7A, 8A, 9A, & H PART
Section: 8
Crown Allotment: 8 (PART)

Title Reference: VOL 10446 FOL 721

Last Plan Reference: PS 412756U LOT 1

Postal Address: PRINCES HIGHWAY
(at time of subdivision) WERRIBEE 3030

AMG Co-ordinates (of approx. centre of land in plan) 292800 5800800 55

Vesting of Roads and/or Reserves

Identifier	Council/Body/Person
RESERVE No.1	WYNDHAM CITY COUNCIL

Council Certification and Endorsement

WYNDHAM CITY COUNCIL

1. This plan is certified under section 6 of the Subdivision Act 1988.
2. This plan is certified under section 11(7) of the Subdivision Act 1988.
   Date of original certification under section 6 / /
3. This is a statement of compliance issued under section 21 of the Subdivision Act 1988.

(i) A requirement for public open space under section 18 of the Subdivision Act 1988 has/has not been made.
(ii) The requirement has been satisfied.
(iii) The requirement is to be satisfied in Stage.....

Council Delegate
Council Seal
Date / /

Re-certified under section 11(7) of the Subdivision Act 1988

Council Delegate
Council Seal
Date / /

Notations

Staging This is/is not a staged subdivision
Planning Permit No.

Depth Limitation DOES NOT APPLY

This plan is/is not based on survey

This survey has been connected to permanent marks no(s)
In Proclaimed Survey Area No.

Easement Information

Legend: E – Encumbering Easement, Condition in Crown Grant in the Nature of an Easement or Other Encumbrance
A – Appurtenant Easement
R – Encumbering Easement (Road)

Subject Land	Purpose	Width (metres)	Origin	Land Benefited/In Favour Of
E-1	SEWERAGE	SEE DIAG	PS 412756U	CITY WEST WATER LIMITED
E-2	DRAINAGE, SEWERAGE, SUPPLY OF WATER, ELECTRICITY, GAS & TELEPHONE	SEE DIAG	THIS PLAN	LOT A ON THIS PLAN
E-3	SEWERAGE	SEE DIAG	PS 412756U	CITY WEST WATER LIMITED
	DRAINAGE, SEWERAGE, SUPPLY OF WATER, ELECTRICITY, GAS & TELEPHONE	SEE DIAG	THIS PLAN	LOT A ON THIS PLAN

LR use only

Statement of Compliance/ Exemption Statement

Received

Date / /

LR use only

PLAN REGISTERED

TIME

DATE / /

Assistant Registrar of Titles

Sheet 1 of 3 sheets

Bosco Jonson Pty Ltd
A.B.N 95 282 532 642
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71 Palmerston Crescent South Melbourne
Vic 3205 Australia DX 20524 Emerald Hill
Tel 03) 9699 1400 Fax 03) 9699 5992

LICENSED SURVEYOR (PRINT) ROSS NICHOLSON

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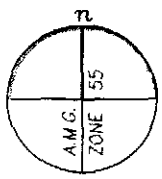
COUNCIL DELEGATE SIGNATURE

Original sheet size A3

		Stage No.	Plan Number



Bosco Jonson Pty Ltd
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71 Palmerston Crescent South Melbourne
Vic 3205 Australia DX 20524 Emerald Hill
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ORIGINAL

SCALE

SCALE SHEET SIZE A3

50 0 100 200

LENGTHS ARE IN METRES

Sheet 2 of 3 sheets

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SIGNATURE _____ DATE / /

REF

DWG

VERSION

DATE / /

COUNCIL DELEGATE SIGNATURE

Original sheet size A3

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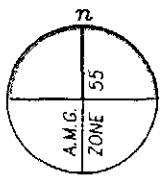
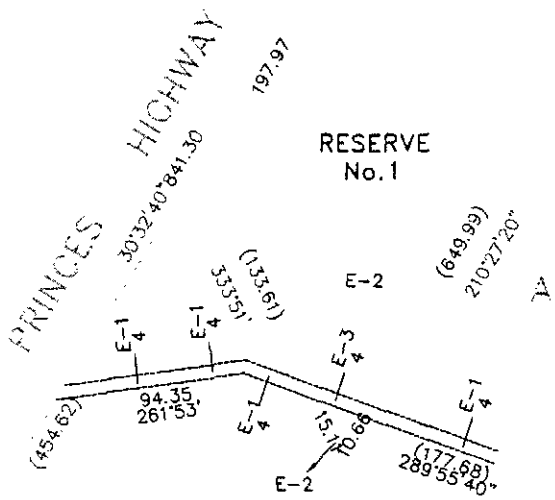
		Stage No.	Plan Number





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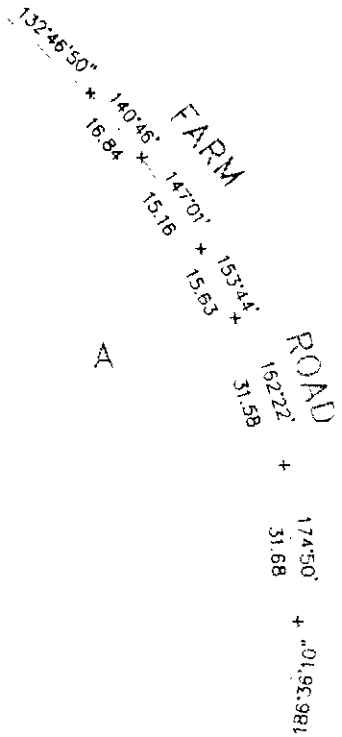
NOT TO SCALE



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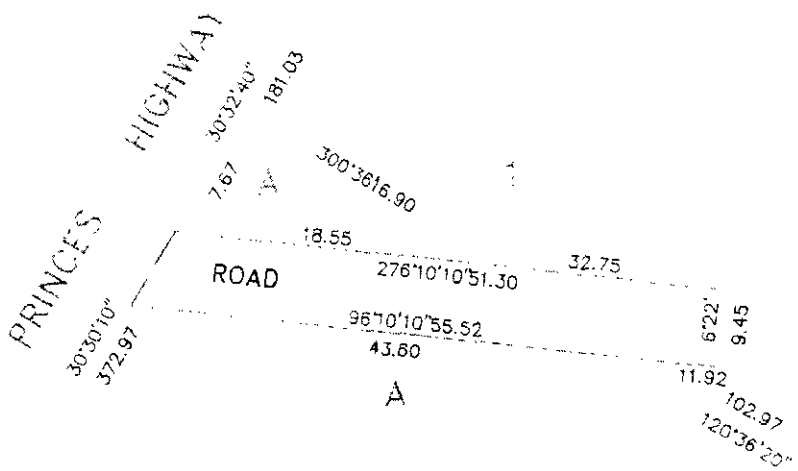

ENLARGEMENT 3
NOT TO SCALE

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Vic 3205 Australia DX 20524 Emerald Hill
Tel 03) 9699 1400 Fax 03) 9699 5992

Sheet 3 of 3 sheets

ORIGINAL

SCALE

SCALE SHEET SIZE A3

0

LENGTHS ARE IN METRES

0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 mm

LICENSED SURVEYOR (PRINT) ROSS NICHOLSON .....

SIGNATURE ..... DATE / /

DATE / /

REF

DWG

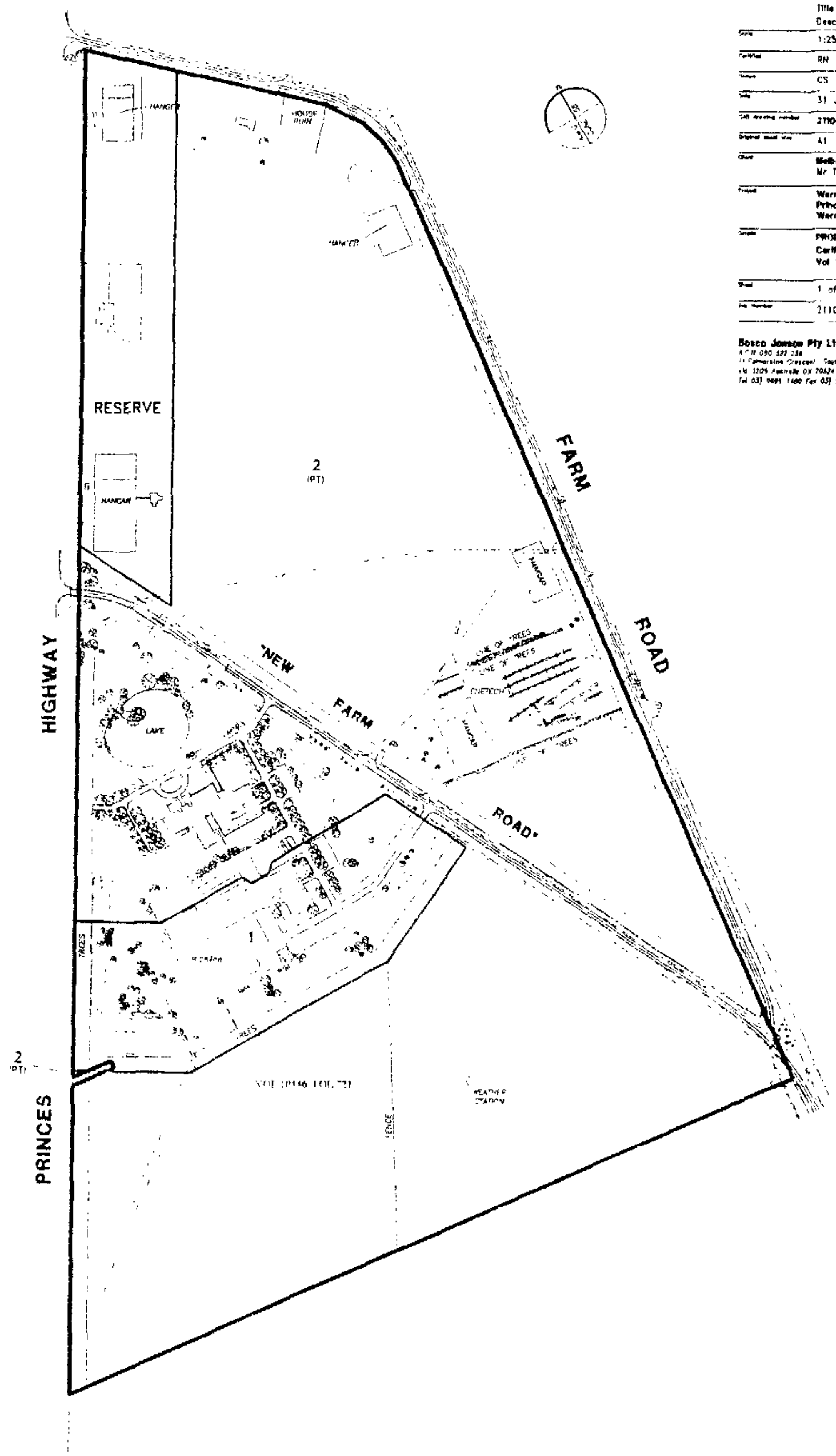
VERSION

COUNCIL DELEGATE SIGNATURE

Original sheet size A3

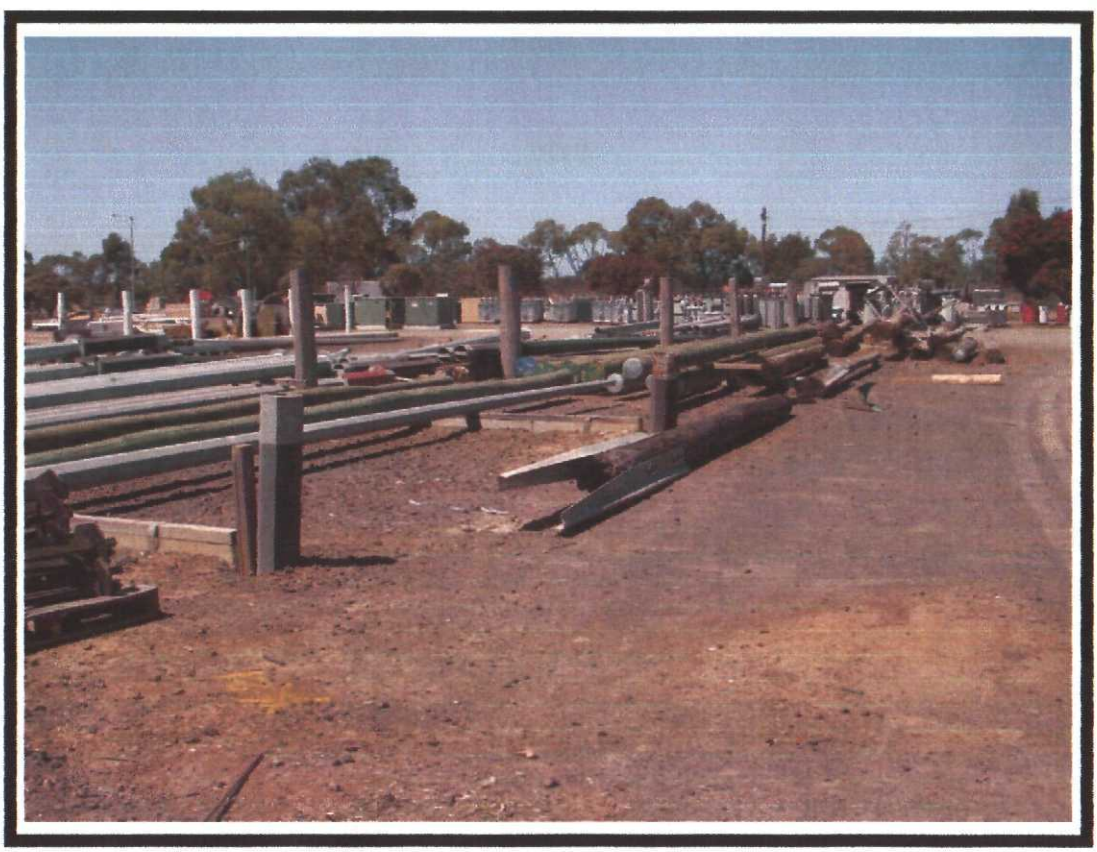
	See C/T Vol 10446 Fol 721 for Title Dimensions and Easement Descriptions.
	1:2500
	RN
	CS
	31 July 2002
	2110000E
	A1
	Melbourne Water Mr Timm Kurth
	Werribee Fields Princes Highway Werribee
	PROPOSED SUBDIVISION Certificate of Title - Vol 10446 Fol 721
	1 of 1
	2110 002

Bosco Jonson Pty Ltd



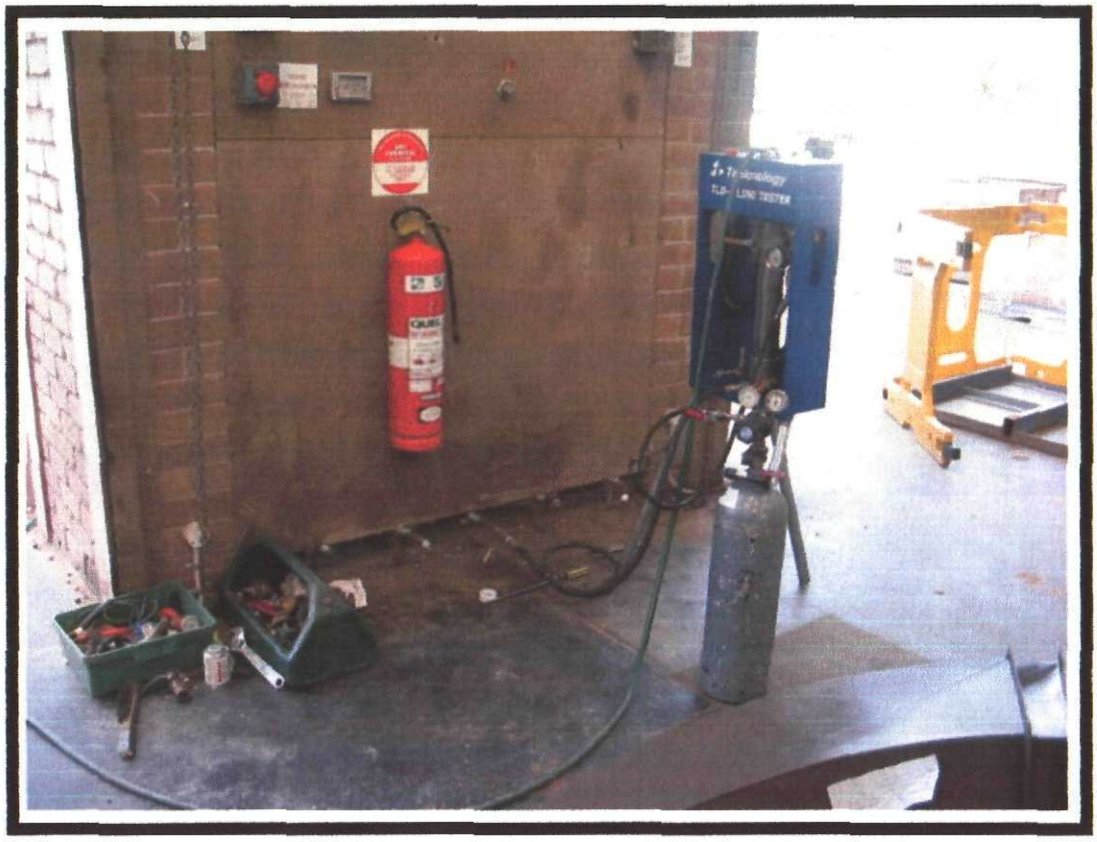
APPENDIX B

Photograph 1 – Oil staining in the transformer storage area.



Photograph 2 – Treated timber power pole storage area.

Photograph 3 – Waste oil UST located to the north of the workshop.



Photograph 4 – Pressure testing of the oil pipelines in the workshop floor.

TANKNOLOGY AUSTRALIA
P.O. Box 619, South Melbourne, VIC 3205
Tel: (03) 9646 8815 Fax: (03) 9646 7783 A.C.N. # 090 813 960

VACUTECT®

TANK & LINE CONDITION REPORT

Prepared for: **Otek Australia Pty Ltd**

Attention: **Andrew Kita / Anne Zetterberg**

Test Location: **Powercor Werribee - New Farm Road, Werribee**

Test Date: **05/03/03** S.O.#: **10353**

Tank No.	Size	Product	Status

Line No.	Product	Status
2	* H_2O	Tight
3	* H_2O	Tight
4	* H_2O	Tight
5	* H_2O	Tight
6	* H_2O	Tight

* Water used for test purposes.

Testing Technician: **Shane Waata**

Certification No.: **TN2002-09-01**

Quality Audit by: **Dan Simmons**

.....
Signed

VACUTECT®

Precision Tank Test exceeds the U.S. EPA required leak detection criteria of 0.1 GPH and complies with U.S. Specifications:
CFR - 40 Parts 280 - 281 & NFPA 329 Specifications

The enclosed Test Results are valid at the time of testing only and make no warrantee as to future status.

Tanknology

VacuTect™ TEST REPORT

S.O. # 10353

Owner

Date : 05/03/03

Invoice Name / Address Otek Australia-Albert St, East Melbourne

Phone (03) 9662 9299

Site Name / Address Powercor Werribee - New Farm Road, Werribee

Attention A.Kita/A. Zetterberg

TANKS

See Diag. For Loc. Tank #	Tank Product	Tank Capacity	Tank Diam/ Material ST / FRP / Lined	Dipped Water Level START END	Dipped Product Level START END	Probe Water Level START END	Water Ingress Detected Yes / No	Bubble Ingress Detected Yes / No	Ullage Air Ingress Detected Yes / No	Tank Tight Or Fail	VR Tight Or Fail	RF Tight Or Fail	Vent Tight Or Fail
			Diameter										
			Material	Start Time:		% Filled :		Other Water Dipped:		START:			
				End Time :		Test psi:		Probe Entry:		END			
			Diameter										
			Material	Start Time		% Filled :		Other Water Dipped:		START:			
				End Time		Test psi:		Probe Entry:		END			
			Diameter										
			Material	Start Time:		% Filled :		Other Water Dipped:		START:			
				End Time :		Test psi:		Probe Entry:		END			
			Diameter										
			Material	Start Time:		% Filled :		Other Water Dipped:		START:			
				End Time :		Test psi:		Probe Entry:		END:			
			Diameter										
			Material	Start Time:		% Filled :		Other Water Dipped:		START:			
				End Time		Test psi:		Probe Entry:		END:			
			Diameter										
			Material	Start Time:		% Filled :		Other Water Dipped:		START:			
				End Time :		Test psi:		Probe Entry:		END:			

LINES

Line #	Line Material ST / FRP	Line Delivery Syst. Type PS/SS/ GS	LINE TEST START TIME	LINE TEST END TIME	Final Leak Rate GPH	Line Tight Or Fail
2			1040	1110	-0.000	T
3			1120	1150	-0.000	T
4			1400	1430	-0.003	T
5			1310	1340	-0.007	T
6			1530	1600	-0.016	T

Unit Manager: Shane Waata Unit # : 001 Certificate # : 20020901 State : VIC

TANKNOLOGY Pty Ltd
P.O. Box 619, South Melbourne, VIC 3205
Tel: (03) 9646 8815 Fax: (03) 9646 7783

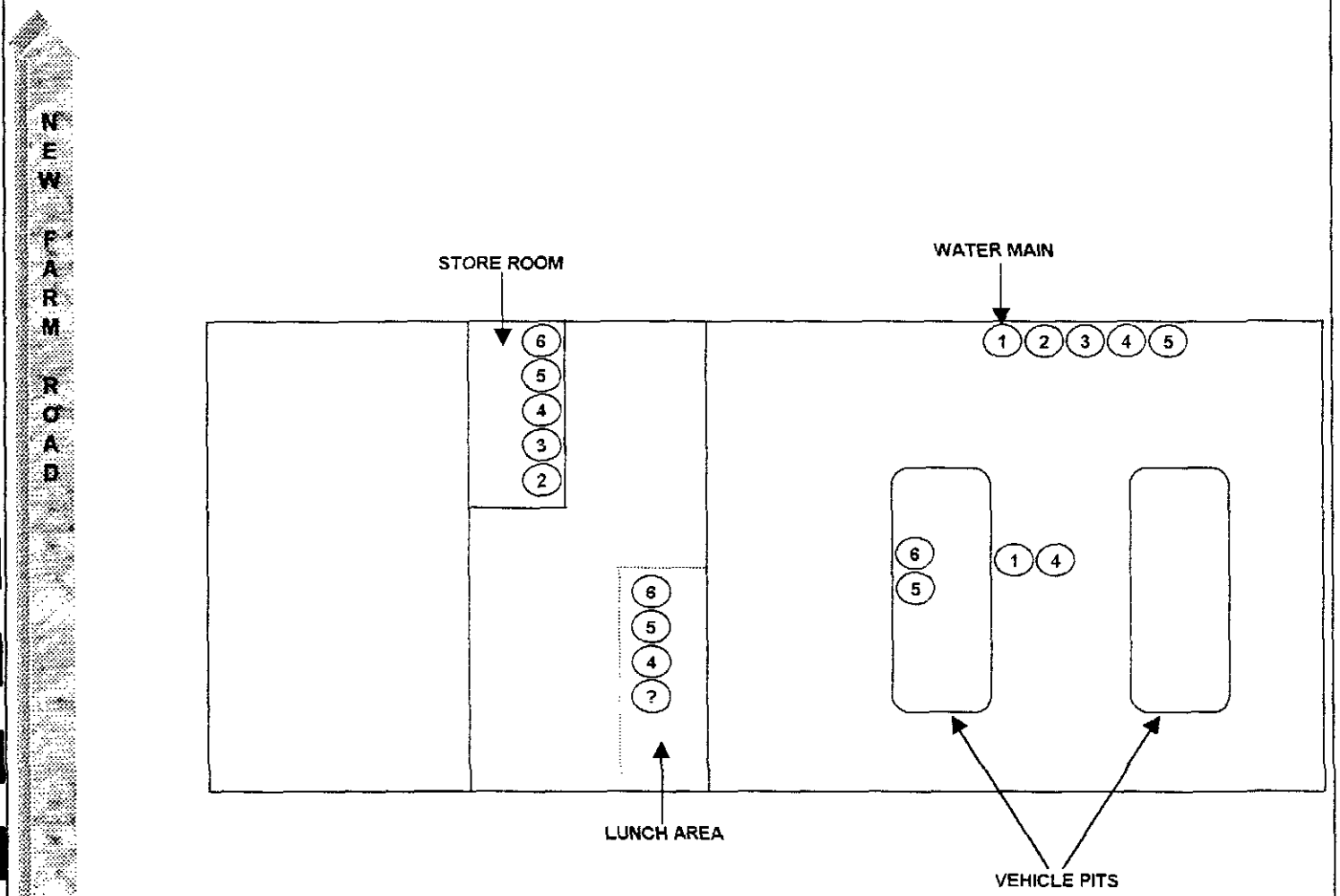
TANKNOLOGY AUSTRALIA
P.O. Box 619, South Melbourne, VIC 3205
Tel : (03) 9646 8815 Fax : (03) 9646 7783
Freecall : 1 800 625 513

S.O. No. **10353** Owner : Date : **05/03/03**

MONITOR WELLS

Well Number	1	2	3	4	5	6	7	8	9	10	11	12
Well Depth												
Depth to Water												
Product Detected (inches)												

Location Diagram (Schematic)



Standard Symbols :-
Valve
Spill box Drain Valve
V = Vent Ballfloat
OB = Observation Well
VR = Vapour Recovery Riser
RF = Remote Fill D=Dip Point
WE = Water Extract Pt ◇ **M/W** △
CP = Cathod. Protect.

Unit Manager's Name : **Shane Waata** Certification No. : **TN2002-09-01**

Signature : Completion Date : **05/03/03**

S.O. # : **10353** Client : **Otek Australia Pty Ltd**

Location : **Powercor Werribee - New Farm Road, Werribee, VIC** Date : **05/03/03**

Parts and Labour used : (to be charged by Tanknology)

Accommodation : (Nights)

Mobilisation : (km's to/from site)

GENERAL COMMENTS :

Associated suction/ delivery line testing only required;

All of the required lines which were subjected to integrity testing at this site are copper lines and had not been in use for some time prior to testing. As per agreed method - water was used as the medium for priming of the lines in order to conduct hydrostatic pressure testing.

The attached basic diagram shows general positioning of termination points of lines which were tested.

All of the associated lines which were tested at this site passed hydrostatic pressure testing.

Line #2 tested tight.

Line #3 tested tight.

Line #4 tested tight.

Line #5 tested tight.

Line #6 tested tight.

Note: One line with accessibility in the lunch room area has unknown routing and remains untested.

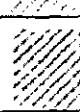
Line #6 teed to 3x points as per diagram.

Recommendations :

Should reinstating of these lines be required - recommend flushing of lines before use.

Report sent to :	**A. Kita / A. Zetterberg**		
Reported via (Fax / Email / Other):	**Fax/ Mail**	Date :	**11/03/03**
Name Of Certified Tester :	**Shane Waata**	Cert. No. :	**TN2002-09-01**
Certified Testers Signature :		Date Tested :	**05/03/03**

SOIL BORING LOGS: LEGEND

MAJOR DIVISIONS				GRAPHIC SYMBOL	GROUP SYMBOL	TYPICAL NAMES
COURSE-GRAINED SOILS (Less than 50% passes No.200 sieve)	GRAVELS (50% or less of course fraction passes No 4 sieve)	CLEAN GRAVELS (Less than 5% passes No 200 sieve)			GW	Well graded gravels, gravel-sand mixtures, or sand-gravel-cobble mixtures
					GP	Poorly graded gravels, gravel-sand mixtures or sand-gravel-cobble mixtures
		GRAVELS WITH FINES (More than 12% passes No.200 sieve)	Limits plot below "A" line & hatched zone on plasticity chart		GM	Silty gravels, gravel-sand-silt mixtures
			Limits plot above "A" line & hatched zone on plasticity chart		GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS (50% or more of course fraction passes No 4 sieve)	CLEAN SANDS (Less than 5% passes No 200 sieve)			SW	Well graded sands, gravelly sands
					SP	Poorly graded sands, gravelly sands
		SANDS WITH FINES (More than 12% passes No 200 sieve)	Limits plot below "A" line & hatched zone on plasticity chart		SM	Silty sands, sand-silt mixtures
			Limits plot above "A" line & hatched zone on plasticity chart		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more passes No.200 sieve)	SILTS Limits plot below "A" line & hatched zone on plasticity chart	SILTS OF LOW PLASTICITY (Liquid limit less than 50)			ML	Inorganic silts, clayey silts of low to medium plasticity
		SILTS OF HIGH PLASTICITY (Liquid limit 50 or more)			MH	Inorganic silts, micaceous or diatomaceous silty soils, elastic silts
	CLAYS Limits plot above "A" line & hatched zone on plasticity chart	CLAYS OF LOW PLASTICITY (Liquid limit less than 50)			CL	Inorganic clays of low to medium plasticity, gravelly, sandy and silty clays
		CLAYS OF HIGH PLASTICITY (Liquid limit 50 or more)			CH	Inorganic clays of high plasticity, fat clays, sandy clays of high plasticity
	ORGANIC SILTS AND CLAYS	ORGANIC SILTS AND CLAYS OF LOW (Liquid limit less than 50)			OL	Organic silts and clays of low to medium plasticity, organic silts and clays
		ORGANIC SILTS AND CLAYS OF HIGH (Liquid limit 50 or more)			OH	Organic silts and clays of high plasticity, organic silts and clays
ORGANIC SOILS		PRIMARILY ORGANIC MATTER (dark in color and organic odor)			PT	Peat

United soil classification system

SOIL BORING LOGS: M3020 WERRIBEE AREA 1A ESA

BORE ID	SAMPLING DATE	SURFACE TYPE	DEPTH (m)	SOIL TYPE	CONSISTENCY	MOISTURE	PLASTICITY	COLOUR	COMMENTS	SAMPLE ID	SAMPLE DEPTH	PID	QA/QC SAMPLES
B-10	12/02/2003	Grass							No staining	1A/10/0 2	0 2	0	
			0-0 75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/10/0.5	0.5	0	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/10/1 0	1.0	0	
B-11	12/02/2003	Grass							No staining	1A/11/0.2	0 2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/11/0 5	0 5	0	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/11/1.0	1.0	0	
B-12	12/02/2003	Crushed Rock								1A/12/0.2	0.2	0	
			0-0 3	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/12/0.5	0.5	0	
			0 3-1 0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/12/1.0	1 0	0	
B-13	12/02/2003	Crushed Rock								1A/13/0 2	0 2	0	
			0-0.5	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/13/0 5	0 5	0	
			0.5-1.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/13/1.0	1 0	0	
B-14	12/02/2003	Crushed Rock								1A/14/0 2	0.2	0	
			0-0 5	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/14/0.5	0.5	0	
			0.5-1.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/14/1.0	1.0	0	
B-15	12/02/2003	Crushed Rock								1A/15/0.2	0.2	0	
			0-0.5	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/15/0.5	0.5	0	
			0 5-1 0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/15/1.0	1 0	0	
B-16	12/02/2003	Crushed Rock								1A/16/0 2	0 2	0	
			0-0.4	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/16/0 5	0 5	0	
			0.4-1.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/16/1 0	1.0	0	
B-17	12/02/2003	Grass							No staining	1A/17/0 2	0.2	0 3	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/17/0 5	0.5	0 1	
			0.75-1 0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/17/1.0	1.0	0.1	
B-18	12/02/2003	Grass							No staining	1A/18/0 2	0 2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/18/0 5	0 5	0	QA-8,QS-8
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/18/1 0	1 0	0	
B-19	12/02/2003	Crushed Rock								1A/19/0 2	0.2	0.9	
			0-0 4	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/19/0 5	0.5	0	
			0.4-1.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/19/1 0	1.0	0	
B-20	12/02/2003	Crushed Rock								1A/20/0.2	0.2	0 5	
			0-0.8	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/20/0.5	0.5	0	
			0.8-1.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/20/1.0	1.0	0	
B-21	12/02/2003	Crushed Rock								1A/21/0.2	0 2	1.6	
			0-0.7	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/21/0 5	0 5	0	QA-7,QS-7
			0.7-1.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/21/1.0	1.0	0	
B-22	12/02/2003	Crushed Rock								1A/22/0 2	0 2	0	
			0-0.5	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/22/0.5	0 5	0	
			0 5-1.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/22/1.0	1 0	0	

SOIL BORING LOGS: M3020 WERRIBEE AREA 1A ESA

BORE ID	SAMPLING DATE	SURFACE TYPE	DEPTH (m)	SOIL TYPE	CONSISTENCY	MOISTURE	PLASTICITY	COLOUR	COMMENTS	SAMPLE ID	SAMPLE DEPTH	PID	QA/QC SAMPLES
B-23	12/02/2003	Crushed Rock								1A/23/0 2	0.2	0	
			0-0 5	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/23/0 5	0.5	0	
			0 5-1.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/23/1 0	1.0	0	
B-24	12/02/2003	Crushed Rock								1A/24/0.2	0.2	3.3	
			0-0 5	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/24/0.5	0.5	0.3	
			0.5-1.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/24/1.0	1.0	0.3	
B-25	12/02/2003	Crushed Rock								1A/25/0 2	0 2	0	
			0-0.5	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/25/0.5	0.5	0 3	
			0.5-1.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/25/1 0	1.0	33	
B-26	12/02/2003	Crushed Rock								1A/26/0 2	0 2	1 2	
			0-0.4	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/26/0 5	0 5	0 3	
			0.4-1 0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/26/1.0	1.0	0.3	
B-27	12/02/2003	Crushed Rock								1A/27/0.2	0 2	0.1	
			0-0 4	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/27/0.5	0.5	0	
			0.5-3 0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/27/1.0	1.0	0	
										1A/27/2.0	2.0	0	
										1A/27/3.0	3 0	0	
B-28	12/02/2003	Asphalt	0-0.1						No staining	1A/28/0.2	0 2	0	
			0.1-0 70	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/28/0.5	0.5	0	
			0.70-1 0	CL	Stiff	SL-Mod	Low	Red Brown	No odour/staining	1A/28/1.0	1 0	0	
B-30	11/02/2003	Crushed Rock							No staining	1A/30/0 2	0 2	0	
			0 0 6	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/30/0 5	0 5	0	
			0 6-2.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/30/1 0	1 0	0	
			2 0-3.0	CL	Very Stiff	Slight	Low	Brown	No odour/staining	1A/30/2 0	2 0	0	
										1A/30/3.0	3.0	0	
B-31	11/02/2003	Crushed Rock							No staining	1A/31/0.2	0.2	7	
			0-0.1	FILL	Crushed rock	Slight	N/A	Black	No odour/staining	1A/31/0.5	0 5	8.6	
			0.1-1 0	CL	Very Stiff	Slight	Low	Brown	No odour/staining	1A/31/1.0	1 0	14.1	
B-32	11/02/2003	Crushed Rock							No staining	1A/32/0 2	0 2	0	
			0-0 1	FILL	Crushed rock	Slight	N/A	Black	No odour/staining	1A/32/0 5	0 5	0	
			0 1-1 0	CL	Very Stiff	Slight	Low	Brown	No odour/staining	1A/32/1 0	1.0	0	
B-33	12/02/2003	Crushed Rock								1A/33/0 2	0.2	0 3	
			0-0 6	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/33/0.5	0.5	0 3	
			0 6-1 0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/33/1.0	1.0	0	
B-35	12/02/2003	Crushed Rock							No staining	1A/35/0.2	0 2	0.3	
			0-0 5	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/35/0.5	0 5	0.4	
			0.5-1.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/35/1.0	1 0	0.3	

SOIL BORING LOGS: M3020 WERRIBEE AREA 1A ESA

BORE ID	SAMPLING DATE	SURFACE TYPE	DEPTH (m)	SOIL TYPE	CONSISTENCY	MOISTURE	PLASTICITY	COLOUR	COMMENTS	SAMPLE ID	SAMPLE DEPTH	PID	QA/QC SAMPLES
B-36	11/02/2003	Asphalt	0-0.1						No staining	1A/36/0.2	0.2	0	
			0.1-0.80	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/36/0.5	0.5	2.3	
			0.80-2.0	CL	Stiff	SL-Mod	Low	Red Brown	No odour/staining	1A/36/1.0	1.0	3.9	
			2.0-3.0	CL	Very Stiff	Slight	Low	Red Brown	No odour/staining	1A/36/2.0	2.0	3.1	
										1A/36/3.0	3.0	0	
B-37	11/02/2003	Asphalt	0-0.1						No staining	1A/37/0.2	0.2	0	
			0.1-0.80	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/37/0.5	0.5	0	
			0.80-2.0	CL	Stiff	SL-Mod	Low	Red Brown	No odour/staining	1A/37/1.0	1.0	0	
			2.0-3.0	CL	Very Stiff	Slight	Low	Red Brown	No odour/staining	1A/37/2.0	2.0	0	
										1A/37/3.0	3.0	0	
B-38	11/02/2003	Grass							No staining				
			0-0.4	FILL	Topsoil, Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/38/0.2	0.2	0	
			0.4-0.75	CL	Hard	Slight	Low	Red Brown	No odour/staining	1A/38/0.5	0.5	0	
			0.75-1.0	CL	Very Stiff	Slight	Low	Red Brown	No odour/staining	1A/38/1.0	1.0	0	
B-39	11/02/2003	Crushed Rock							No staining	1A/39/0.2	0.2	0	
			0-0.35	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/39/0.5	0.5	0	
			0.3-2.0	CL	Stiff	SL-Mod	Low	Brown	No odour/staining	1A/39/1.0	1.0	0	
			2.0 3.0	CL	Very Stiff	Slight	Low	Brown	No odour/staining	1A/39/2.0	2.0	0	
										1A/39/3.0	3.0	0	
B-40	11/02/2003	Crushed Rock							No staining	1A/40/0.2	0.2	0	
			0-0.1	FILL	Crushed rock	Slight	N/A	Black	No odour/staining	1A/40/0.5	0.5	0	
			0.1-1.0	CL	Very Stiff	Slight	Low	Brown	No odour/staining	1A/40/1.0	1.0	0	
B-41	11/02/2003	Crushed Rock							No staining	1A/41/0.2	0.2	0	
			0.0.1	FILL	Crushed rock	Slight	N/A	Black	No odour/staining	1A/41/0.5	0.5	0	
			0.1.1.0	CL	Very Stiff	Slight	Low	Brown	No odour/staining	1A/41/1.0	1.0	0	
B-44	11/02/2003	Grass							No staining	1A/44/0.2	0.2	7.8	
			0-0.75	CL	Hard	Slight	Zero	Red Brown	No odour/staining	1A/44/0.5	0.5	0	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Red Brown	No odour/staining	1A/44/1.0	1.0	0.8	
B-45	11/02/2003	Grass							No staining	1A/45/0.2	0.2	1.6	
			0-0.75	CL	Hard	Slight	Zero	Red Brown	No odour/staining	1A/45/0.5	0.5	3.9	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Red Brown	No odour/staining	1A/45/1.0	1.0	0	
B-46	11/02/2003	Grass							No staining	1A/46/0.2	0.2	0	
			0-0.75	CL	Hard	Slight	Zero	Red Brown	No odour/staining	1A/46/0.5	0.5	0.8	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Red Brown	No odour/staining	1A/46/1.0	1.0	1.6	
B-47	11/02/2003	Crushed Rock							No staining	1A/47/0.2	0.2	10.2	
			0-0.45	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/47/0.5	0.5	3.9	
			0.45-1.0	CL	Stiff	SL-Mod	Low	Red Brown	No odour/staining	1A/47/1.0	1.0	5.5	
B-48	11/02/2003	Grass							No staining	1A/48/0.2	0.2	0	
			0-0.75	CL	Hard	Slight	Zero	Red Brown	No odour/staining	1A/48/0.5	0.5	0	QA-6,QS-6
			0.75-1.0	CL	Very Stiff	Slight	Zero	Red Brown	No odour/staining	1A/48/1.0	1.0	0	

SOIL BORING LOGS: M3020 WERRIBEE AREA 1A ESA

BORE ID	SAMPLING DATE	SURFACE TYPE	DEPTH (m)	SOIL TYPE	CONSISTENCY	MOISTURE	PLASTICITY	COLOUR	COMMENTS	SAMPLE ID	SAMPLE DEPTH	PID	QA/QC SAMPLES
B-49	11/02/2003	Grass							No staining	1A/49/0 2	0 2	0	
			0-0 75	CL	Hard	Slight	Zero	Red Brown	No odour/staining	1A/49/0.5	0 5	0	
			0 75-1 0	CL	Very Stiff	Slight	Zero	Red Brown	No odour/staining	1A/49/1 0	1 0	0 8	
B-50	11/02/2003	Grass							No staining	1A/50/0.2	0 2	0	
			0-0 75	CL	Hard	Slight	Zero	Red Brown	No odour/staining	1A/50/0.5	0 5	0	
			0 75-1 0	CL	Very Stiff	Slight	Zero	Red Brown	No odour/staining	1A/50/1 0	1 0	0	
B-51	11/02/2003	Asphalt	0-0 1						No staining	1A/51/0.2	0 2	0	
			0.1-0.40	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/51/0.5	0 5	7	
			0.40-1 0	CL	Stiff	SL-Mod	Low	Red Brown	No odour/staining	1A/51/1.0	1.0	5.5	
B-52	10/02/2003	Crushed rock	0-0 3					Grey	No staining	1A/52/0.2	0 2	0	
			0 3-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/52/0.5	0 5	0	
			0 75-1 0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/52/1.0	1 0	0	
B-53	10/02/2003	Asphalt	0 0.1						No staining	1A/53/0.2	0.2	0	
			0 1-0 3	FILL	Scoria, Gravel	Slight	N/A	Black	No odour/staining	1A/53/0.5	0 5	0	
			0.3-1.0	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/53/1.0	1 0	0	
B-54	10/02/2003	Asphalt	0-0 1						No staining	1A/54/0 2	0.2	0	
			0 1-0.3	FILL	Scoria, Gravel	Slight	N/A	Black	No odour/staining	1A/54/0 5	0.5	0	
			0 3-1 0	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/54/1 0	1 0	0	
B-56	11/02/2003	Grass							No staining	1A/56/0 2	0 2	0	
			0-0 4	FILL	Gravel Crushed Rock	Slight	N/A	Black/Brown	No odour/staining	1A/56/0.5	0 5	0	
			0 4-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/56/1.0	1 0	0	
B-57	11/02/2003	Grass							No staining	1A/57/0.2	0.2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/57/0.5	0.5	0	QA-5 QS-5
			0.75-3.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/57/1.0	1.0	0	
										1A/57/2.0	2.0	0	
										1A/57/3 0	3.0	0	
B-58	11/02/2003	Grass							No staining	1A/58/0 2	0 2	0	
			0-0 75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/58/0 5	0.5	0	
			0 75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/58/1.0	1.0	0	
B-59	11/02/2003	Grass							No staining	1A/59/0.2	0.2	0	
			0-0 75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/59/0.5	0.5	0	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/59/1.0	1 0	0	
B-61	10/02/2003	Grass							No staining	1A/61/0 2	0 2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/61/0 5	0 5	0	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/61/1 0	1.0	0	
B-62	10/02/2003	Grass							No staining	1A/62/0.2	0.2	0	
			0-0 75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/62/0 5	0 5	0	
			0 75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/62/1.0	1.0	0	
B-63	10/02/2003	Grass							No staining	1A/63/0 2	0 2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/63/0 5	0 5	0	
			0.75-1 0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/63/1 0	1 0	0	

SOIL BORING LOGS: M3020 WERRIBEE AREA 1A ESA

BORE ID	SAMPLING DATE	SURFACE TYPE	DEPTH (m)	SOIL TYPE	CONSISTENCY	MOISTURE	PLASTICITY	COLOUR	COMMENTS	SAMPLE ID	SAMPLE DEPTH	PID	QA/QC SAMPLES
B-64	10/02/2003	Grass							No staining	1A/64/0.2	0.2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/64/0.5	0.5	0	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/64/1.0	1.0	0	
B-65	10/02/2003	Grass							No staining	1A/65/0.2	0.2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/65/0.5	0.5	0	
			0.75-3.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/65/1.0	1.0	0	
										1A/65/2.0	2.0	0	
										1A/65/3.0	3.0	0	
B-66	10/02/2003	Grass							No staining	1A/66/0.2	0.2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/66/0.5	0.5	0	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/66/1.0	1.0	0	
B-67	10/02/2003	Grass							No staining	1A/67/0.2	0.2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/67/0.5	0.5	0	QA-4,QS-4
			0.75-3.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/67/1.0	1.0	0	
										1A/67/2.0	2.0	0	
										1A/67/3.0	3.0	0	
B-68	10/02/2003	Grass							No staining	1A/68/0.2	0.2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/68/0.5	0.5	0	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/68/1.0	1.0	0	
B-69	10/02/2003	Grass							No staining	1A/69/0.2	0.2	9.6	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/69/0.5	0.5	0	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/69/1.0	1.0	0	
B-70	10/02/2003	Grass							No staining	1A/70/0.2	0.2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/70/0.5	0.5	0	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/70/1.0	1.0	0	
B-71	10/02/2003	Grass							No staining	1A/71/0.2	0.2	1.9	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/71/0.5	0.5	1.4	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/71/1.0	1.0	0	
B-72	10/02/2003	Grass							No staining	1A/72/0.2	0.2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/72/0.5	0.5	0	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/72/1.0	1.0	0	
B-73	10/02/2003	Grass							No staining	1A/73/0.2	0.2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/73/0.5	0.5	0	
			0.75-3.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/73/1.0	1.0	0	
										1A/73/2.0	2.0	0	
										1A/73/3.0	3.0	0	
B-75	10/02/2003	Grass							No staining	1A/75/0.2	0.2	28.5	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/75/0.5	0.5	0	
			0.75-1.0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/75/1.0	1.0	0	

SOIL BORING LOGS: M3020 WERRIBEE AREA 1A ESA

BORE ID	SAMPLING DATE	SURFACE TYPE	DEPTH (m)	SOIL TYPE	CONSISTENCY	MOISTURE	PLASTICITY	COLOUR	COMMENTS	SAMPLE ID	SAMPLE DEPTH	PID	QA/QC SAMPLES
B-76	10/02/2003	Grass							No staining	1A/76/0 2	0 2	0	
			0-0.75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/76/0.5	0.5	0	
			0.75-1 0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/76/1.0	1.0	0	
B-77	10/02/2003	Grass							No staining	1A/77/0 2	0 2	0	
			0-0 75	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/77/0.5	0.5	0	
			0 75-1 0	CL	Very Stiff	Slight	Zero	Brown	No odour/staining	1A/77/1 0	1.0	0	
B-78	11/02/2003	Asphalt	0-0 1						No staining				
			0.1-0.70	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/78/0.5	0 5	4 7	
			0.70-1 0	CL	Stiff	SL-Mod	Low	Red Brown	No odour/staining	1A/78/1.0	1 0	4.7	
B-84	13/02/2003	Concrete	0-0.15						No staining	1A/84/0.2	0 2	0	
			0.15-0 45	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/84/0.5	0 5	0	
			0 45-1.0	CL	Stiff	Slight	Low	Brown	No odour/staining	1A/84/1.0	1 0	0	
B-85	13/02/2003	Concrete	0 0 15						No staining	1A/85/0 2	0.2	0	
			0.15-0 35	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/85/0 5	0 5	0	
			0 35-1.0	CL	Stiff	Slight	Low	Brown	No odour/staining	1A/85/1 0	1.0	0	
B-86	14/02/2003	Concrete	0-0.15						No staining	1A/86/0 2	0 2	0	
			0 15-0 6	FILL	Gravel, Bitumen, Sand	Slight	N/A	Black	No odour/staining	1A/86/0.5	0 5	0.2	
			0 6-1.0	CL	Stiff	Slight	Low	Brown	No odour/staining	1A/86/1.0	1 0	0 2	
B-87	14/02/2003	Concrete	0-0.15						No staining	1A/87/0.2	0 2	0 2	
			0.15-0 55	FILL	Gravel, Bitumen, Sand	Slight	N/A	Black	No odour/staining	1A/87/0.5	0.5	0 2	
			0 55-1 0	CL	Stiff	Slight	Low	Brown	No odour/staining	1A/87/1.0	1.0	0 2	
B-88	13/02/2003	Concrete	0-0 15						No staining	1A/88/0 2	0 2	0	
			0 15-0 6	FILL	Gravel, Bitumen	Slight	N/A	Black	No odour/staining	1A/88/0.5	0 5	0	
			0.6-1 0	CL	Stiff	Slight	Low	Brown	No odour/staining	1A/88/1 0	1 0	0	
B-101	14/02/2003	Grass	0-0.1	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/101/0.2	0.1	0 2	QA-10,QS-10
B-102	14/02/2003	Grass	0-0.1	CL	Hard	Slight	Zero	Brown	No odour/staining	1A/102/0.2	0.1	0 2	
B-103	14/02/2003	Crushed rock	0-0 1	FILL	Crushed rock	Dry	N/A	Grey	No staining	1A/103/0 2	0 1	0.4	
B-104	14/02/2003	Crushed rock	0-0.1	FILL	Crushed rock	Dry	N/A	Grey	No staining	1A/104/0 2	0 1	9.6	QA-11,QS-11
B-105	14/02/2003	Crushed rock	0-0 1	FILL	Crushed rock	Dry	N/A	Grey	No staining	1A/105/0 2	0 1	2 6	
B-106	14/02/2003	Crushed rock	0-0 1	FILL	Crushed rock	Dry	N/A	Grey	No staining	1A/106/0 2	0 1	21.2	
B-107	17/02/2003	Concrete	0-0 25						Staining	1A/107/0.3	0 2	0	
			0.25-1 0	CL	Very Soft	Slight	Low	Brown	No odour/staining	1A/107/0.5	0.5	0	
										1A/107/0.75	0.75	0	
										1A/107/1.0	1 0	0	
B-108	17/02/2003	Concrete	0-0 25						Staining	1A/108/0 3	0 2	0	
			0 25-1 0	CL	Very Soft	Slight	Low	Brown	No odour/staining	1A/108/0 5	0 5	0	
										1A/108/0.75	0 75	0	
										1A/108/1.0	1 0	0	

SOIL BORING LOGS: M3020 WERRIBEE AREA 1B ESA

BORE ID	SAMPLING DATE	SURFACE TYPE	DEPTH (m)	SOIL TYPE	CONSISTENCY	MOISTURE	PLASTICITY	COLOUR	COMMENTS	SAMPLE ID	SAMPLE DEPTH	PID	QA/QC SAMPLES
B-89	14/02/2003	Crushed rock							Staining	1A/89/0.2	0.2	2.6	
			0-0.4	FILL	Scoria, Gravel, Bitumen	Slight	N/A	Grey/Black	No odour/staining	1A/89/0.5	0.5	0.2	
			0.4-1.0	CL	Soft-Stiff	Slight	Low	Brown	No odour/staining	1A/89/1.0	1.0	0.6	
			1.0-3.0	CL	Soft	Slight	Low	Brown	No odour/staining	1A/89/2.0	2.0	0.4	
										1A/89/3.0	3.0	0	
B-90	13/02/2003	Crushed rock							No staining	1A/90/0.2	0.2	1.1	
			0-0.4	FILL	Scoria, Gravel, Bitumen	Slight	N/A	Grey/Black	No odour/staining	1A/90/0.5	0.5	0.6	
			0.4-1.0	CL	Soft-Stiff	Slight	Low	Brown	No odour/staining	1A/90/1.0	1.0	0.9	
B-91	13/02/2003	Crushed rock							No staining	1A/91/0.2	0.2	1	
			0.0.4	FILL	Scoria, Gravel, Bitumen	Slight	N/A	Grey/Black	No odour/staining	1A/91/0.5	0.5	0.6	
			0.4-1.0	CL	Soft-Stiff	Slight	Low	Brown	No odour/staining	1A/91/1.0	1.0	0.2	
			1.0-3.0	CL	Soft	Slight	Low	Brown	No odour/staining	1A/91/2.0	2.0	0.2	
										1A/91/3.0	3.0	0.1	
B-92	13/02/2003	Crushed rock							No staining	1A/92/0.2	0.2	0.5	
			0-0.4	FILL	Scoria, Gravel, Bitumen	Slight	N/A	Grey/Black	No odour/staining	1A/92/0.5	0.5	0.5	
			0.4-1.0	CL	Soft-Stiff	Slight	Low	Brown	No odour/staining	1A/92/1.0	1.0	0.5	
B-93	13/02/2003	Crushed rock							No staining	1A/93/0.2	0.2	0.6	
			0-0.4	FILL	Scoria, Gravel, Bitumen	Slight	N/A	Grey/Black	No odour/staining	1A/93/0.5	0.5	1	
			0.4-1.0	CL	Soft-Stiff	Slight	Low	Brown	No odour/staining	1A/93/1.0	1.0	0.5	
			1.0-3.0	CL	Soft	Slight	Low	Brown	No odour/staining	1A/93/2.0	2.0	0.4	
										1A/93/3.0	3.0	0.3	
B-94	14/02/2003	Crushed rock							No staining	1A/94/0.2	0.2	0	
			0-0.35	FILL	Scoria, Gravel, Bitumen	Slight	N/A	Grey/Black	No odour/staining	1A/94/0.5	0.5	0	
			0.35-1.0	CL	Soft-Stiff	Slight	Low	Brown	No odour/staining	1A/94/1.0	1.0	0	
B-95	14/02/2003	Crushed rock							Staining	1A/95/0.2	0.2	0	
			0-0.4	FILL	Scoria, Gravel, Bitumen	Slight	N/A	Grey/Black	No odour/staining	1A/95/0.5	0.5	0	
			0.4-1.0	CL	Soft-Stiff	Slight	Low	Brown	No odour/staining	1A/95/1.0	1.0	0.4	
			1.0-3.0	CL	Soft	Slight	Low	Brown	No odour/staining	1A/95/2.0	2.0	0	
										1A/95/3.0	3.0	0.2	
B-96	14/02/2003	Crushed rock							Staining	1A/96/0.2	0.2	0.8	
			0-0.35	FILL	Scoria, Gravel, Bitumen	Slight	N/A	Grey/Black	No odour/staining	1A/96/0.5	0.5	0.6	
			0.35-1.0	CL	Soft-Stiff	Slight	Low	Brown	No odour/staining	1A/96/1.0	1.0	0.4	
B-97	14/02/2003	Crushed rock							No staining	1A/97/0.2	0.2	0.4	
			0-0.35	FILL	Scoria, Gravel, Bitumen	Slight	N/A	Grey/Black	No odour/staining	1A/97/0.5	0.5	0.8	
			0.35-1.0	CL	Soft-Stiff	Slight	Low	Brown	No odour/staining	1A/97/1.0	1.0	0.4	

SOIL BORING LOGS: M3020 WERRIBEE AREA 1B ESA

BORE ID	SAMPLING DATE	SURFACE TYPE	DEPTH (m)	SOIL TYPE	CONSISTENCY	MOISTURE	PLASTICITY	COLOUR	COMMENTS	SAMPLE ID	SAMPLE DEPTH	PID	QA/QC SAMPLES
B-98	14/02/2003	Crushed rock							Staining	1A/98/0 2	0.2	0 4	
			0-0 4	FILL	Scoria, Gravel, Bitumen	Slight	N/A	Grey/Black	No odour/staining	1A/98/0.5	0.5	0.6	
			0.4-1.0	CL	Soft-Stiff	Slight	Low	Brown	No odour/staining	1A/98/1.0	1.0	0.6	
			1 0-3 0	CL	Soft	Slight	Low	Brown	No odour/staining	1A/98/2 0	2.0	0 6	
										1A/98/3.0	3.0	0.6	
B-99	14/02/2003	Grass							No staining	1A/99/0 2	0 2	1.2	
			0-0 6	CL	Stiff	Slight	Low	Brown	No odour/staining	1A/99/0 5	0.5	0	
			0.6-1 0	CL	Soft-Stiff	Slight	Low	Brown	No odour/staining	1A/99/1.0	1 0	0	
B-100	14/02/2003	Grass							No staining	1A/100/0 2	0.2	1.2	
			0-0 6	CL	Stiff	Slight	Low	Brown	No odour/staining	1A/100/0 5	0.5	0	
			0 6-1.0	CL	Soft-Stiff	Slight	Low	Brown	No odour/staining	1A/100/1 0	1 0	0	

SOIL BORING LOGS: M3020 WERRIBEE AREA 1C ESA

BORE ID	SAMPLING DATE	SURFACE TYPE	DEPTH (m)	SOIL TYPE	CONSISTENCY	MOISTURE	PLASTICITY	COLOUR	COMMENTS	SAMPLE ID	SAMPLE DEPTH	pH	QA/QC SAMPLES
TS-1	3/02/2003	Grass							No staining				
			0-0.5	CL	Hard	Dry	Zero	Red/Brown	No odour/staining	1C/TS-1/0.5	0.5	9	
TS-2	3/02/2003	Grass							No staining				
			0-0.5	CL	Hard	Dry	Zero	Red/Brown	No odour/staining	1C/TS-2/0.5	0.5	9	
TS-3	3/02/2003	Grass							No staining				
			0-0.5	CL	Hard	Dry	Zero	Red/Brown	No odour/staining	1C/TS-3/0.5	0.5	9	
TS-4	3/02/2003	Grass							No staining				
			0-0.5	CL	Hard	Dry	Zero	Red/Brown	No odour/staining	1C/TS-4/0.5	0.5	9.5	
TS-5	3/02/2003	Grass							No staining				
			0-0.5	CL	Hard	Dry	Zero	Red/Brown	No odour/staining	1C/TS-5/0.5	0.5	9	
TS-6	3/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry- Slight	Zero	Red/Brown	No odour/staining	1C/TS-6/0.5	0.5	9.5	QA-1,QS-1
TS-7	3/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry- Slight	Zero	Red/Brown	No odour/staining	1C/TS-7/0.5	0.5	9	
TS-8	3/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry- Slight	Zero	Red/Brown	No odour/staining	1C/TS-8/0.5	0.5	10	
TS-9	3/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry- Slight	Zero	Red/Brown	No odour/staining	1C/TS-9/0.5	0.5	9	
TS-10	3/02/2003	Grass							No staining				
			0-0.5	CL	Hard	Dry	Zero	Red/Brown	No odour/staining	1C/TS-10/0.5	0.5	9	
TS-11	3/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry- Slight	Zero	Red/Brown	No odour/staining	1C/TS-11/0.5	0.5	9	
TS-12	3/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry- Slight	Zero	Red/Brown	No odour/staining	1C/TS-12/0.5	0.5	9.5	
TS-13	3/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry- Slight	Zero	Red/Brown	No odour/staining	1C/TS-13/0.5	0.5	9.5	
TS-14	3/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry- Slight	Zero	Red/Brown	No odour/staining	1C/TS-14/0.5	0.5	9.5	
TS-15	4/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry	Zero	Red/Brown	No odour/staining	1C/TS-15/0.5	0.5	9	

SOIL BORING LOGS: M3020 WERRIBEE AREA 1C ESA

BORE ID	SAMPLING DATE	SURFACE TYPE	DEPTH (m)	SOIL TYPE	CONSISTENCY	MOISTURE	PLASTICITY	COLOUR	COMMENTS	SAMPLE ID	SAMPLE DEPTH	pH	QA/QC SAMPLES
TS-16	4/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry	Zero	Red/Brown	No odour/staining	1C/TS-16/0.5	0.5	10	
TS-17	4/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry	Zero	Red/Brown	No odour/staining	1C/TS-17/0.5	0.5	9	
TS-18	4/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry	Zero	Red/Brown	No odour/staining	1C/TS-18/0.5	0.5	9.5	
TS-19	4/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry	Zero	Red/Brown	No odour/staining	1C/TS-19/0.5	0.5	8	
TS-20	4/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry	Zero	Red/Brown	No odour/staining	1C/TS-20/0.5	0.5	8.5	QA-2,QS-2
TS-21	4/02/2003	Grass							No staining				
			0-0.5	CL	Stiff	Dry	Zero	Red/Brown	No odour/staining	1C/TS-21/0.5	0.5	9	
TS-22	4/02/2003	Grass							No staining				
			0-0.5	ML	Very Dense	Dry	Zero	Red/Brown	No odour/staining	1C/TS-22/0.5	0.5	8	
TS-23	4/02/2003	Grass							No staining				
			0-0.5	ML	Very Dense	Dry	Zero	Red/Brown	No odour/staining	1C/TS-23/0.5	0.5	8	
TS-24	4/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry	Zero	Red/Brown	No odour/staining	1C/TS-24/0.5	0.5	8.5	
TS-25	4/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry	Zero	Red/Brown	No odour/staining	1C/TS-25/0.5	0.5	8	
TS-26	4/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry	Zero	Red/Brown	No odour/staining	1C/TS-26/0.5	0.5	8	QA-3,QS-3
TS-27	4/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry	Zero	Red/Brown	No odour/staining	1C/TS-27/0.5	0.5	8	
TS-28	4/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry	Zero	Red/Brown	No odour/staining	1C/TS-28/0.5	0.5	8	
TS-29	4/02/2003	Grass							No staining				
			0-0.5	CL	Soft	Dry	Zero	Red/Brown	No odour/staining	1C/TS-29/0.5	0.5	8	

SOIL BORING LOGS: M3020 WERRIBEE AREA 1D ESA

BORE ID	SAMPLING DATE	SURFACE TYPE	DEPTH (m)	SOIL TYPE	CONSISTENCY	MOISTURE	PLASTICITY	COLOUR	COMMENTS	SAMPLE ID	SAMPLE DEPTH	PID	QA/QC SAMPLES
B-79	13/02/2003	CONCRETE	0-0.17						No staining	1D/79/0.2	0.2	0.2	
			0.17-0.5	FILL	Scoria, gravel	Slight	N/A	Black/Grey	No odour/staining	1D/79/0.5	0.5	0.3	
			0.5-2.0	CL	Stiff	Slight	Slight	Brown	No odour/staining	1D/79/1.0	1.0	0.3	
			2-2.5	CL	Soft	Saturated	Zero	Brown	No odour/staining	1D/79/2.0	2.0	0.2	
			2.5-4	CL	Stiff	Slight	Zero	Red/Brown	No odour/staining	1D/79/3.0	3.0	0.3	
									No odour/staining	1D/79/4.0	4.0	0.2	
B-80	13/02/2003	CONCRETE	0-0.17						No staining	1D/80/0.2	0.2	0.5	
			0.17-0.5	FILL	Scoria, gravel	Slight	N/A	Black/Grey	No odour/staining	1D/80/0.5	0.5	0.5	
			0.5-2.0	CL	Stiff	Slight	Slight	Brown	No odour/staining	1D/80/1.0	1.0	0.2	
			2-2.5	CL	Soft	Saturated	Zero	Brown	No odour/staining	1D/80/2.0	2.0	0.3	
			2.5-4	CL	Stiff	Slight	Zero	Red/Brown	No odour/staining	1D/80/3.0	3.0	0.2	
									No odour/staining	1D/80/4.0	4.0	0.2	
B-81	12/02/2003	CONCRETE	0-0.17						No staining	1D/81/0.2	0.2	0	
			0.15-0.3	FILL	Scoria, gravel	Slight	N/A	Black/Grey	No odour/staining	1D/81/0.5	0.5	0	QA-9,QS-9
			0.3-2.0	CL	Stiff	Slight	Zero	Brown	No odour/staining	1D/81/1.0	1.0	0.6	
			2.0-3.0	CL	Stiff	Slight	Zero	Red/Brown	No odour/staining	1D/81/2.0	2.0	0.5	
			3.0-4.0	CL	Stiff	Slight	Zero	Red/Brown	No odour/staining	1D/81/3.0	3.0	0.4	
										1D/81/4.0	4.0	0	
B-82	13/02/2003	CONCRETE	0-0.17						No staining				
			0.15-0.4	FILL	Scoria, gravel	Slight	N/A	Black/Grey	No odour/staining	1D/82/0.2	0.2	0.2	

SOIL BORING AND MONITOR WELL INSTALLATION PROGRAM

1. *SOIL BORING PROGRAM*

A soil boring program provides visual identification of the subsurface soil strata and the collection of samples for field screening and analytical testing. The following paragraphs describe the field procedures used during soil boring programs. The resulting boring logs are also provided within this appendix.

1.1. FIELD PROCEDURES

Soil borings were advanced using nominal 100 mm solid steel augers in the initial sampling round and a Geoprobe was used in the final round. Boring locations were selected by the OTEK project scientist using available site plans and correlated with the validation sampling plan as agreed with the auditor.

Hand Auger samples are denoted with a wavy line in the samples column of the boring logs. The stainless steel hand auger was cleaned between borings to prevent cross-contamination with soils from the previous borings or other foreign materials. The procedure used to clean the sampling equipment was to wash with potable water using a bucket and scouring cloth. The rinsate water was changed once a day and a sample of the water was sent to the labs as a rinsate blank.

Soil samples were placed in resealable plastic bags for subsequent field screening. Where samples were to be submitted for analytical testing a subsample was placed in a glass jar, capped and placed on ice. Procedures used to field screen for potential volatile contaminants are presented in Section .1.2 of this appendix.

To the maximum extent possible, all portions of each sample were carefully examined and the physical properties described by the field scientist. All soil samples were visually classified using the Unified Soil Classification System. All field notes, sampling procedures, sample descriptions, etc. are maintained on field log sheets. These field boring logs are used to prepare the soil boring logs contained within this appendix.

1.2. FIELD SCREENING PROCEDURES

Soil samples from each sampling interval were screened for the presence of volatile constituents using a photoionisation detector

(PID) in the initial sampling round. The PID was calibrated with the appropriate span gas (as specified by the devices manufacturer) prior to commencing field activities.

As described in the previous paragraphs, several samples were field screened. The soil sample was placed in a resealable plastic bag and labeled. After the head-space within the sample bag is allowed to equilibrate (approximately 10 minutes), the bag is punctured with the tip of the PID probe and an internal vacuum pump draws in a sample of the headspace gases for analysis. The PID then provides a total concentration of all gases in the sample with an ionisation potential less than that of the energy emitted by the ultra-violet lamp in the device. The result is expressed in parts per million by volume (ppm_v). Typically a PID with a 10.2eV lamp is used in investigations for petroleum hydrocarbon contaminants.

The results of the field screening were presented on the boring logs within this appendix, expressed numerically in the "PID Reading" column. The symbol "ND" in the column indicates that the PID used did not detect the presence of any volatile organic constituents. All samples were also visually inspected for the presence of petroleum hydrocarbons, particularly long chain products such as diesel, kerosene and lubricating oils, which do not have a high percentage of volatile components. The presence of these products is not always indicated by field screening using a PID.

1.3. SOIL DISPOSITION AND BOREHOLE ABANDONMENT

Soil cuttings generated throughout the soil boring program were either backfilled into the borehole and compacted or spread on site. Where groundwater was encountered, a minimum of three soil borings were used for the construction of groundwater monitor wells. The placement and construction of monitor wells is discussed in the following sections.

2. *MONITOR WELL INSTALLATION PROGRAM*

Groundwater monitor wells provide a continual source of information on physical and chemical groundwater conditions at a site. Monitor wells permit the sampling of groundwater from the static geographic point over time. As groundwater is constantly moving, sampling and gauging monitor wells can provide

information on water table (potentiometric surface) fluctuations and migration of contaminants as dissolved or phase-separated components of the groundwater system. Monitor well locations were selected by the OTEK project scientist using a map supplied by the Auditor. The following paragraphs describe the field procedures used during a monitor well program. The resulting well logs are provided within this appendix on the soil boring logs.

2.1. MONITOR WELL INSTALLATION METHOD AND MATERIALS

A 50 mm diameter Class 18 PVC riser and well screen (0.4 mm slot, respectively) with flush threaded joiners are used for construction of monitor wells. The PVC riser and screens are washed in a neutral detergent solution (active ingredient 15% alkybenzene sulphonic acid amine neutralised) and placed in a clean plastic bag awaiting use. All well materials were cleaned prior to placement in the reamed borehole.

After placing the well materials in the soil boring a 2 mm graded filtered sand is placed around the well screens to depths above the top of the screen using the gravity pour down method. A granular bentonite seal is then placed above the sand pack and the remainder of the hole grouted with a cement-bentonite slurry. A cast iron cover was then concreted over the top of the well to protect it from damage by traffic and cattle An expandable, lockable cap was used to cap and seal the top of the well casing.

2.2. MONITOR WELL SCREEN PLACEMENT

The positioning and length of the screened interval takes into account the following:

- Isolation of the screened interval (and therefore groundwater) from soil contamination possibly present above the watertable and prevention of cross-contamination; and
- Assessment of the rate of groundwater recharge to the well.

2.2.1. GROUNDWATER RECHARGE TO THE WELL

In cases where the aquifer is fine grained and of low permeability, the recharge rate to the well will be slow, and a

considerable period of time may pass before the groundwater level is fully stabilised.

Time constraints in the field often require the well to be constructed soon after completion of the borehole. Typically, ten minutes to one hour (depending on measured recharge rate) is allowed for estimation of the final stabilised groundwater level. Very slow recharging aquifers may, however, continue to recharge after well completion, resulting in the higher than anticipated stabilised groundwater levels.

In this case, the screened interval is lengthened to allow for this potential situation, at the same time ensuring that the lengthened screen does not intersect any impacted soil.

2.3. WELL DEVELOPMENT AND SAMPLING

Well development is achieved by vigorously bailing and purging the well with a polyethylene bailer. All wells are developed on the day they are installed. The procedure used to sample monitor wells includes:

1) Measure the standing water level in the well from the top of the casing;

2) Lower a new, disposable, polyethylene bailer into the well to check for the presence of phase-separated hydrocarbons (PSH);

3) If no PSH is observed, the bailer contents are used to rinse the sample containers (typically these containers include one 40 mL vial for BTEX analysis, one litre amber glass bottle for TPH and PAH analyses, and one 250 mL plastic bottle for metals analysis);

4) The well is purged to remove any stagnant water present, and draw in fluids surrounding the well which are more representative of true conditions. The well is bailed until three well volumes have been removed.

5) The bailer is then used to fill the sample containers with groundwater from the well. The sample containers for BTEX, TPH and PAH

analyses are filled so that no headspace remains; and

6) All sample containers are placed on ice and transported to an analytical laboratory using Chain-of-Custody documentation and procedures for testing.

2.4. LEVEL SURVEY

After the completion of the soil borings and the installation of monitor wells, a professional level survey was performed to determine relative elevations of each well. The survey information is generally summarised in the tables section of the report and used to establish the relative elevations of groundwater in the respective wells which enables the calculation of the direction of groundwater flow and the hydraulic gradient based on the wells installed. (See figure 5)

Soil Boring B-1 Monitor Well MW-1

OTEK AUSTRALIA PTY LTD

PROJECT: SKM - Werribee Area 1 **Address:** New Farm Road, Werribee, Victoria

Project No.:	M3020	**Drill Method:**	150mm Hammer	**Water Struck (mBGS):**	11.0
Logged by:	AVZ	**Drilling Co.:**	Aqua Drilling	**Static Water Level (mBGS):**	8.593
Date Drilled:	17/02/03	**Borehole Depth (m):**	12.0	**Casing Elevation (mTBM):**	49.780
Drill Rig:	Gemco H13	**Well Diameter (mm):**	50	**Reduced Water Level (mTBM):**	41.187

Graphic Symbol	Lithological Description	Depth (m)	Sample Type	PID (ppm)	BTEX (mg/kg)	TPH (mg/kg)	Water Level (m)	Well Details
	Concrete surface	0		0.0				
	Crushed rock basalt and sandy clay, very dense, dry (FILL)			0.0				
	Silty clay, moderately stiff, slightly moist, low plasticity, orange brown, no odours (CL)	1		0.0				
	Silty clay, hard, slightly moist, low plasticity, orange brown, no odours (CL)	2		0.0				
		3		0.0				
	Silty clay with minor sand, hard, slightly moist, low plasticity, orange brown, no odours (CL)			0.0	ND	ND		
		4		0.0				
		5						
		6		1.1				
	Clay, hard, slightly moist, low plasticity, grey, no odours (CL)	7						
		8		2.2				
				-			SWL	
	Basalt, hard, dry, bluish grey, no odours	9						
	Basalt, hard, moist, bluish grey, no odours							
		10		0.0				
	Basalt, hard, saturated, bluish grey, no odours							
		11					WS	
		12		0.0				
	Boring terminated at 12.0 mBGS							
		13						
		14						

SAMPLE TYPES

AUGER SPLIT SPOON HAMMER

WELL MATERIALS

GROUT BENTONITE GRAVEL

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Soil Boring B-2 Monitor Well MW-2

OTEK AUSTRALIA PTY LTD

PROJECT: SKM - Werribee Area 1 **Address:** New Farm Road, Werribee, Victoria

Project No.:	M3020	**Drill Method:**	150mm Hammer	**Water Struck (mBGS):**	12.0
Logged by:	AVZ	**Drilling Co.:**	Aqua Drilling	**Static Water Level (mBGS):**	8.609
Date Drilled:	17/02/03	**Borehole Depth (m):**	12.0	**Casing Elevation (mTBM):**	49.805
Drill Rig:	Gemco H13	**Well Diameter (mm):**	50	**Reduced Water Level (mTBM):**	41.196

Graphic Symbol	Lithological Description	Depth (m)	Sample Type	PID (ppm)	BTEX (mg/kg)	TPH (mg/kg)	Water Level (m)	Well Details
	Concrete Surface	0		0.0				
	Crushed scoria and gravel, very dense, brown (FILL)			2.8				
				0.0				
	Silty clay, soft, slightly moist, zero plasticity, brown (CL)	1		0.0				
		2		0.0				
		3		0.0				
	Silty clay, soft, slightly moist, zero plasticity, red brown (CL)	4		0.0				
	Silty clay, very soft, slightly moist, zero plasticity, red brown (CL)			0.0	ND	ND		
	Silty clay, very soft, slightly moist, zero plasticity, brown (CL)	5						
		6		0.0				
	Silty clay, very soft, moist, zero plasticity, brown (CL)							
		7		2.2				
	Silty clay with minor basalt chips, soft, slightly moist to moist, zero plasticity, brown (CL)	8		1.1	ND	ND		
							SWL	
		9						
		10		0.0				
	Basalt, hard, slightly moist, black brown							
		11		0.0				
	Basalt, hard, slightly moist, black brown							
	Basalt, hard, moist, black brown	12		0.0			WS	
	Boring terminated at 12.0 mBGS							
		13						
		14						

SAMPLE TYPES

AUGER SPLIT SPOON HAMMER

WELL MATERIALS

GROUT BENTONITE GRAVEL

Soil Boring B-3 Monitor Well MW-3

OTEK AUSTRALIA PTY LTD

PROJECT: SKM - Werribee Area 1 **Address:** New Farm Road, Werribee, Victoria

Project No.:	M3020	**Drill Method:**	150mm Hammer	**Water Struck (mBGS):**	13.0
Logged by:	AVZ	**Drilling Co.:**	Aqua Drilling	**Static Water Level (mBGS):**	8.153
Date Drilled:	18/02/03	**Borehole Depth (m):**	14.0	**Casing Elevation (mTBM):**	49.337
Drill Rig:	Gemco H13	**Well Diameter (mm):**	50	**Reduced Water Level (mTBM):**	41.184

Graphic Symbol	Lithological Description	Depth (m)	Sample Type	PID (ppm)	BTEX (mg/kg)	TPH (mg/kg)	Water Level (m)	Well Details
	Grass surface	0		0.0				
	Silty clay, hard, slightly moist, zero plasticity, brown (CL)	1		4.1 18.4 2.0	ND	ND		
		2		-				
		3		4.1				
		4		0.0	ND	ND		
		5						
	Silty clay, hard, slightly moist, zero plasticity, brown grey (CL)	6		2.0				
	Clay, hard, slightly moist, zero plasticity, grey (CL)	7		-				
	Basalt, hard, slightly moist, light grey	8		-			SWL	
		9		-				
	Basalt, hard, slightly moist, light brown	10		-				
	Basalt, hard, slightly moist, grey	11		-				
		12		-				
	Basalt, hard, slightly moist to moist, dark brown	13		6.1			WS	
	Boring terminated at 14.0 mBGS	14		-				

SAMPLE TYPES

AUGER SPLIT SPOON HAMMER

WELL MATERIALS

GROUT BENTONITE GRAVEL

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Monitor Well Sampling Log Sheet

OTEK AUSTRALIA PTY LTD

Project Name: WERRIBEE FIELDS AREA 1	Project Number: M3020	Date Completed: 5/3/03	By: ADK/AVZ

Air Temperature:	not recorded
Weather Conditions:	Sunny

Quality Samples	QW-1 = QW-1A = MW-2 RB1, RB2, TB1, TB2

Sampling Device (s)	QED MicroPurge Pump & Waterra Foot Valve
Water Quality Meter	TPS - 90FLMV
Flow Cell	Yes

Monitor Well & Sample Name	Cumulative Time (min)	Purge rate (mL/min)	Cumulative Volume Purged to Achieve Stabilisation (L)	Pre-Depth to Water (m)	Post-Depth to Water (m)	Total Well Depth (m)	Well Volume (excluding annulus) (L)	Stabilised Field Measurements					Physical Observations	
								Dissolved Oxygen (mg/L)	Temperature (°C)	Redox Potential (mV)	pH (units)	Electrical Conductivity (uS/cm)	Colour	Odour
MW-1	4	250	1	8.593	8.594	12.015	6.7	3.92	21	152	7.54	10.73	Clear/Brown	No
	9	250	2.25					3.61	20.9	149	7.55	10.68	Clear/Brown	No
	14	250	3.5					3.71	20.8	148	7.56	10.62	Clear/Brown	No
	19	250	4.75					3.72	20.9	143	7.56	10.53	Clear/Brown	No
	24	250	5					3.87	20.8	143	7.56	10.48	Clear/Brown	No
	29	250	6.25					4.34	20.6	141	7.61	10.44	Clear/Brown	No
	34	250	9.05					4.51	20.7	137	7.62	10.31	Clear/Brown	No
MW-2	5	200	1	8.609	8.618	11.99	6.6	3.36	21.5	209	7.25	15.82	Clear/Brown	No
	10	200	2					3.32	21.4	200	7.26	15.05	Clear/Brown	No
	15	200	3	FAULTY BLADDER - BLADDER REPLACED									Clear/Brown	No
	25	400	5					4.49	21.6	169	7.41	14.29	Clear/Brown	No
	30	400	7					4.01	21.6	168	7.45	14.21	Clear/Brown	No
	35	400	9					4.04	21.6	166	7.52	13.78	Clear/Brown	No
	40	400	11					4.11	21.6	162	7.56	13.53	Clear/Brown	No
	43	400	12					4.12	21.6	160	7.58	13.46	Clear/Brown	No
MW-3	5	400	1	8.153	8.153	13.97	11.4	5.37	21.7	149	7.62	9.65	Clear/Brown	No
	15	400	5					5.14	20.9	142	7.64	9.58	Clear/Brown	No
	20	400	7					5.09	20.8	139	7.65	9.56	Clear/Brown	No
	25	400	11					5.06	20.8	136	7.65	9.55	Clear/Brown	No

Quality Assurance and Quality control procedures adopted by OTEK conform to Australian Standard 4482.1 - 1997 Quality control results are shown in the table in this section.

1. *COLLECTION OF QUALITY CONTROL SAMPLES*

10% of samples tested were tested as quality control samples.

Sample jars were labelled with the following:

1. Job number;
2. Unique sample number referring to a particular sample location and depth;
3. Sampler's identification.
4. Date and time that the sample was taken.

All samples were placed in laboratory clean sampling jars in a chilled 'esky' for transportation to a NATA registered laboratory under chain of custody conditions.

1.1. FIELD SAMPLING FORMS

Sample details were recorded on Chain of Custody forms that accompanied the samples from their time of collection until receipt at the laboratory.

1.2. BLIND REPLICATE SAMPLES.

10% of all samples collected were taken as Blind Replicate Samples duplicate and triplicate and placed in laboratory clean sampling jars in a chilled 'esky' for transportation to a NATA registered laboratory under chain of custody conditions for quality control of the sampling program.

1.3. RELETIVE PERCENTAGE DIFFERENCE (RPD).

The analytical results and quality control data, were evaluated following recognised procedures to allow the interpretation of accuracy, precision and representativeness of the data.

The equation for calculating Relative Percent Difference (RPD) is as follows:

$$RPD = \frac{D1 - D2}{(D1 + D2)/2} \times 100$$

Where: $D1$ = reported concentration for original sample

$D2$ = reported concentration for blind replicate sample

1.3.1. TYPICAL RPD OF QUALITY CONTROL SAMPLES.

As per the AS 4482.1 RPD levels to be expected from blind replicate samples should be in the area of 30% - 50%.

APPENDIX G

APPENDIX G

Primary Laboratory (Amdel)
Analytical Results & Chain of Custody Documentation
Provided on Compact Disc (CD)

Secondary Laboratory (WSL)
Analytical Results Provided on CD
Chain of Custody Documentation Provided in Hardcopy

OTEK AUSTRALIA PTY LTD

OTEK Australia Pty Ltd
408 Albert Street
East Melbourne 3002
ACN 054 371 596
Ph (03) 9662 9299
Fx (03) 9662 4680

CHAIN OF CUSTODY & ANALYSIS REQUEST

LAB: WSL
ADDRESS: 2-8 Harvey St, Richmond
LAB CONTACT: Nick Bray
PHONE: 9429 4666

PROJECT #: M3020
PROJECT NAME: Werribee - Area 1
COLLECTORS NAME: Andrew Kita
LAB JOB #:

PRELIM. RESULTS BY: 14-Mar-03 ☐ VERBAL ☐ FAX ☐ EMAIL
FINAL REPORT BY: 14 Mar-03
LAB QUOTE REF: 2002-293 MC
OTEK PO No: 22879
REMARKS

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED & METHOD CODE: Dissolved Metals* (1 µg/l)	Dissolved Hg (0.1 µg/l)	TPH (Std)	BTEX (Std)	PCB (0.1 µg/l)	PAH (0.1 µg/l)
DISCRETE SAMPLE REQUEST														ICP-MS	FIMS (USEPA7470)	USEPA 8015B	USEPA 8021A	USEPA 8270C	USEPA 8270C
QW-1A			X				X	X		X	5-Mar-03	7		X	X	X	X	X	X
COMPOSITE SAMPLE REQUEST																			

PQLs Required

*See below for list of metals (samples field filtered)

Relinquished by:	Date	Time	Received by:	Date	Time
	6/3/03	11:??			
Relinquished by:	Date	Time	Received by:	Date	Time

Custody Seals Intact? Yes / No

Samples Received Chilled? Yes / No

Additional Comments:

*Metals include As, Ba, Be, Bo, Cd, Cr, Co, Cu, Pb, Mn, Mo, Ni, Se, Sn, V, Zn

OTEK Australia Pty Ltd
408 Albert St, East Melbourne, Vic
PH 9097 5000 FAX 9662 4646
OTEK CONTACT: Adam Ferwerda (03) 9662 9297

Chain of custody and analysis request form

Lab: ... Richmond, Vic
LAB CONTACT: Nick Gray
PHONE: 9429 4660

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Project	Project name
M3020	AREA 1: WERRIBEE FIELD

Collected by: ANNE ZETTERBERG
P.O. 22866

COC # 12

Sample ID	Depth	Lab #	Soil matrix	Preservation: Ice	Sampling date	No. of containers	Ohec	Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Hg)	BTEX	TPH C6-C9	TPH C10-C36	PAH & Phenols GCMS
QS-10		537383	x	x	14/2/03	1	✓	✓	✓	✓	✓	✓
QS-11		84	x	x	14/2/03	1	✓	✓				

Other analyses listed on the form (none ticked): Form composite sample; Victorian EPA Screen Soil; PCB; Total Lead; Volatile Chlorinated Hydrocarbons; Organochlorine Pesticides; >C16-C35 Aromatics; >C16-C35 Aliphatics; >C35 Aliphatics; CEC; Hold; Comments.

Relinquished by: [signature]

GOODS RECEIVED UNCHECKED 17 FEB 2003 SIGNED: [signature]

Preliminary Results by: 21/2/03
Final Report by: 21/2/03
Samples Received Chilled? Yes / No
Custody Seals Intact? Yes / No

** The Victorian EPA Soil Screen consists of: Individual Phenols and Cresols, Cyanide, PAH, OCP, PCB, TPH C6-C9, C10-C36 Aromatics, C10-C36 Aliphatics, >C35 Aliphatics, CEC, pH, Sulphur, Sulphide, Phosphorus, and Metals (As, Cd, Cr, Cu, Pb, Hg, Mo, Ni, Se, Sn, Zn, B, Ba, Be, Mn, & V)

OTEL

Chain of custody and analysis request form

Job No.: M3620 — AREA 1: WERRIBEE FIELD

Collected by: ANNE ZETTERBERG

P.O. 22868

COC # 9

SAMPLE ID	LAB #	SOIL MATRIX	PRESERVATION ICE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	Victorian EPA Screen	[illegible]	Metals	BTEX	TPH (C6-C9)	TPH (C10-C36)	PCB	PAH (16 priority)	Total Lead	Volatile Chlorinated Hydrocarbons	Organochlorine Pesticides	>C10-C36 Aromatic	>C16-C35 Aliphatic	>C35 Aliphatic	[illegible]	[illegible]	COMMENTS
QS-7	536604	x	x	12/2/03	1			✓	✓														
QS-8	05	x	x		1			✓	✓														
QS-9	06	x	x	↓	1			✓	✓	✓	✓	✓											

Relinquished by: [signature] 11/2/03 3:10

Received by: [signature] 12/2/03 5:10

Preliminary Results by: 11/2/03

Final Report By: 19/2/03

Samples Received Chilled? YES / NO

Custody Seals Intact? YES / NO

* The Victorian EPA Soils Screen consists of: Individual Phenols and Cresols, Cyanide, PAH, OCP, PCB, TPH >C6-C36 Aromatic, >C16-C35 Aliphatic, >C35 Aliphatic, CHC, pH, Sulphur, Sulphate, Phosphorus, and Metals (As, Cd, Cr, Co, Cu, Pb, Hg, Mo, Ni, Sn, Se, Zn, B, Ba, Be, Mn, & V)

OTEK AUSTRALIA PTY LTD

OTEK Australia Pty Ltd
405 Albert St East Melbourne Vic
PH 9662 9252, FAX 9662 468
OTEK CONTACTS: [illegible]

Chain of custody and analysis request form

ADDRESS: [illegible] Richmond Vic
CONTACT: [illegible]
PHONE: [illegible] 4666

Page 1 of 1

PROJECT #	PROJECT NAME
M3020	AREA 1: WERRIBEE FIELD

COLLECTORS NAME: Anne Zetterberg

P.O. 22868

COC # 7

SAMPLE ID	DEPTH metres	LAB #	SOIL MATRIX	PRESERVATION ICE	SAMPLING DATE	No. OF CONTAINERS	Analysis (ticked)	Analysis (ticked)	COMMENTS
05-5		536084	x	x	11/2/03	1	✓	✓	
05-6		85	x	x	↓	1	✓	✓	

Relinquished by: Ashley (Andel) Date/Time: 12/2 11:00

Received by: [illegible] Date: 12/2/03

Preliminary Results by: 18/2/03

Final Report By: 18/2/03

Samples Received chilled? Yes / No

Custody Seals intact? Yes / No

** The Victorian EPA Soils Screen consists of: Individual Phenols and Cresols, Cyanide, TCE, OCP, PCB, TPH C6-C9 Aromatics, C10-C35 Aliphatics, >C35 Aliphatics, TOC, pH, Sulphur, Sulphate, Phosphorus, and Metals (As, Cd, Cr, Cu, Co, Pb, Hg, Mo, Ni, Sn, Se, Zn, B, Ba, Be, Mn & V)

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OTEK Australia Pty Ltd
Albert St, East Melbourne, VIC

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Project #	Project name
M3020	AREA 1, WERRIBEE FIELD

Collector name:

P.O 22868

COC # 5

Sample ID	Depth metres	Lab #	Soil matrix	Preservation ice	Sampling date	No. of containers	Form composite sample	Victorian EPA Screen Soil**	Metals	Metals As Cd Cr Cu Pb Ni Zn, Hg	BTEX, Benzene & TPH	TPH (C6-C9)	TPH (C10-C36)	PCB	PAH 15 Priority	Total Lead	Volatile Chlorinated hydrocarbons	Organochlorine Pesticides	>C16-C35 Aromatic	>C16-C35 Aliphatic	>C35 Aliphatic	CHC	HOLD	COMMENTS
QS-4		536086	x	x	10/2/03	1			✓	✓														

Relinquished by: M.A.D. Date: 17/2/03

Preliminary Report by: 17/2/03

Samples Received Chilled? Yes / No

Final Report by: 17/2/03

Custody Seals Intact? Yes / No

** The Victorian EPA Soils Screen consists of: Individual Phenols and Cresols, Cyanide, PAH, OCP, PCB, TPH C6-C9, C10-C36, >C16-C35 Aromatics, >C16-C35 Aliphatics, >C35 Aliphatics, CHC, pH, Sulphur, Sulphate, Phosphorus, and Metals (As, Cd, Cr, Cu, Co, Pb, Hg, Mo, Ni, Sn, Se, Zn, B, Ba, Be, Mn, & V)

A17 OLIVIA

OTEK Australia Pty Ltd
49a Alfred St, East Melbourne, Vic
PH 9682 8209 FAX 9242 4668
OTEK CONTACTS: Amanda

Chain of custody and analysis request form

LAB: WA
ADDRESS: 2-6 Harvey St, Tottenham Vic
LAB CONTACT: Rick Bray
PHONE: 9423 4060

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PROJECT #: M3820
PROJECT NAME: AREA 1 WERRIBEE FIELD
SOIL SCIENTIST NAME: David Lee
P.O. 22866

COC # 3

SAMPLE ID	DEPTH (m)	LAB #	SOIL MATRIX	PRESERVATION ICE	SAMPLING DATE	No OF CONTAINERS	FORM COMPOSITE SAMPLE	Victorian EPA Soil Screen	pH	Metals: As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	SVOC (PAHs & TRH)	TPH C6-C9	TPH C10-C36	PCP	PAH 16 Priority	Total Lead	Volatile Chlorinated Hydrocarbons	Organochlorine Pesticides	C15-C36 Aromatics	C16-C35 Aliphatics	VOC Aliphatics	CHC	HOLD	COMMENTS
QS-1		53400	x	x	3 Feb 03	1			x	x	x	x	x											
QS-2		881	x	x	4 Feb 03	1			x	x	x	x	x											
QS-3		882	x	x	5 Feb 03	1			x	x	x	x	x											
…			x	x																				

email results to: [illegible]@otek.com.au

Relinquished: | Date | Time | Received by:
Results Required By: 13/02/2003 | Samples Received Chilled? Yes / No
Final Report By: 13/02/2003 | Custody Seals Intact? Yes / No

** The Victorian EPA Soils Screen consists of: Individual Phenols and Cresols, Cyanide, PAH, OCP, PCB, TPH C6-C9, C10-C36 Aromatics, C16-C35 Aliphatics, C35 Aliphatics, CHC, pH, Sulphur, Sulphate, Phosphorus, and Metals (As, Cd, Cr, Cu, Pb, Hg, Mo, Ni, Se, Zn, B, Ba, Be, Mn, & V)