

**PHASE 1 PRELIMINARY SITE
INVESTIGATION
PROPOSED DEVELOPMENT, NETBALL
CENTRE OLYMPIC PARK, NSW**

Prepared for:
Netball NSW
C/O Crown Project Services Pty Ltd
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Report Date: 20 January 2012
Project Ref: GEOTLCOV24420AA-AD

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20 January 2012

Netball NSW
C/O Crown Project Services Pty Ltd
Level 15, 3 Spring Street
Sydney
NSW 2000

Attention: Phoebe George

Dear Phoebe

RE: Phase 1 Preliminary Site Investigation, Proposed Development Netball Centre, Olympic Park, NSW

Coffey Environments Australia Pty Ltd is pleased to provide this Phase 1 Preliminary Site Investigation report for the proposed development of Netball Central, Olympic Park, NSW.

This report has been prepared to support part 3A planning application to the Department of Planning and provide information to assist in the development of the concept design for the site.

Please do not hesitate to contact the undersigned should you have any questions.

For and on behalf of Coffey Environments Australia Pty Ltd



Tot Le
Principal

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ABBREVIATIONS

ACM	Asbestos containing material
AEC	Areas of environmental concern
AHD	Australian height datum
BGS	Below ground surface
EPA	Environment Protection Authority of New South Wales
LEP	Local environmental plan
OEH	Office of Environment and Heritage (formerly the Department of Environment, Climate Change and Water (DECCW))
P1 PSI	Phase 1 Preliminary Site Investigation
PAH	Polycyclic aromatic hydrocarbon
PCOC	Potential contaminants of concern
SCID	Stored Chemical Information Database
SMF	Synthetic mineral fibre
SOPA	Sydney Olympic Park Authority
SOP	Sydney Olympic Park
TCLP	Toxicity characteristic leaching procedure
TPH	Total petroleum hydrocarbon

EXECUTIVE SUMMARY

This report presents the findings of a Phase 1 Preliminary Site Investigation (P1 PSI) undertaken by Coffey Environments Australia Pty Ltd (Coffey) for the proposed development of the Netball Central, Olympic Boulevard, Sydney Olympic Park (the site).

Sydney Olympic Park Authority (SOPA) C/O Phoebe George of Crown Project Services (CPS) via Request for Proposal document, dated 10 October 2011 and was carried out in general accordance with our fee proposal Ref: GEOTLCOV24420AA-AA, dated 14 October 2011, and subsequent revision Ref: GEOTLCOV24420AA-AB, dated 2 November 2011.

Based on the supplied Geotechnical Scope of Works document supplied by CPS, Coffey understands that the project will comprise a four storey building to house the following;

- Five indoor netball courts of international standard;
- One 'Show Court' with provision for approximately 800 spectators;
- Provision of amenities for players, officials and the public including a cafe and merchandise area, medical rooms, storage and equipment areas and office space.

The objectives of this P1 PSI were to:

- Identify past and present potentially contaminating activities;
- Identify potential contamination types;
- Discuss the site condition;
- Provide a preliminary assessment of site contamination; and
- Assess the need for further investigations.

Coffey's P1 PSI focussed on potential contamination risks for the proposed redevelopment at the site.

The scope of works undertaken for this assessment included a desktop review, site walkover, data assessment, preliminary site sampling and reporting.

Based on the scope of work undertaken, Coffey makes the following conclusions:

- The concentrations of TPH, BTEX, PAHs, OCP, OPP and metals in soil samples analysed were reported either below the laboratory limits of reporting (LORs) or below the adopted assessment criteria.
- The Golf Driving Range landfill site, located immediately to the east of the site, which encroaches into the southeastern corner of the site.
- Asbestos fibres in soil detected in the southeastern corner and northern portion of the site, located on the southern and northern edges of the proposed development footprint.

Based on the findings, Coffey considers that the site is suitable for the proposed development of the Netball Central subject to:

The asbestos containing soil material in the shallow soil in the vicinity of TP7 should be delineated by collection of additional soil samples surrounding the test pit location and asbestos containing material should be removed and the site validated. Asbestos containing soil in the deeper soil samples in TP1 should be delineated by additional soil sample collection surrounding the test pit and asbestos

containing soil can be managed on site. Management of asbestos contaminated soils may include capping of soils under a suitable barrier, consisting of either:

- Hard pavement (concrete or bitumen); or
- A marker layer of geo-fabric or mesh, covered by a minimum thickness of clean landscape materials (topsoil). The landscape materials will need to be stabilised with suitable vegetation to minimise erosion of the cap.

Removal or disturbance (during construction) of the asbestos containing soil material should be carried out under an Asbestos Removal Plan with supervision by a NSW WorkCover licensed (AS1) contractor. The potential for any dusts generated during construction works will need to be managed with periodic spraying of water etc. during works, along with suitable erosion and sediment controls.

This report must be read in conjunction with the attached "Important Information About Your Coffey Environmental Report".

1 INTRODUCTION

This report presents the findings of a Phase 1 Preliminary Site Investigation (P1 PSI) undertaken by Coffey Environments Australia Pty Ltd (Coffey) for the proposed development of the Netball Central, Olympic Boulevard, Sydney Olympic Park (the site).

This report was commissioned by Sydney Olympic Park Authority (SOPA) C/O Phoebe George of Crown Project Services (CPS) via Request for Proposal document, dated 10 October 2011 and was carried out in general accordance with our fee proposal Ref: GEOTLCOV24420AA-AA, dated 14 October 2011, and subsequent revision Ref: GEOTLCOV24420AA-AB, dated 2 November 2011.

1.1 Background

It is understood that CPS requires this environmental assessment of potential land contamination at the site to support a part 3A planning application and provide information to assist with the concept design for proposed development at the site.

The site is owned by the SOPA and is located at the southern end of Olympic Boulevard at Sydney Olympic Park (SOP), within Lot 201 of DP1041756. The site is located immediately in front of the SOP Sports Centre and has an area of roughly 9,000sqm.

Based on the supplied Geotechnical Scope of Works document supplied by CPS, Coffey understands that the project will comprise a four storey building to house the following;

- Five indoor netball courts of international standard;
- One 'Show Court' with provision for approximately 800 spectators;
- Provision of amenities for players, officials and the public including a cafe and merchandise area, medical rooms, storage and equipment areas and office space.

1.2 Objectives

The objectives of this P1 PSI were to:

- Identify past and present potentially contaminating activities;
- Identify potential contamination types;
- Discuss the site condition;
- Provide a preliminary assessment of site contamination; and
- Assess the need for further investigations.

1.3 Scope of Works

The scope of works undertaken for this P1 PSI included the following:

1.3.1 Desktop Review

Coffey undertook a desktop review of historical use of the site, including:

- review of selected historical aerial photographs for the site;

- review of land titles for the site;
- review of the local council Section 149(2) certificate;
- search of dangerous goods records held by NSW WorkCover;
- search of the contaminated land register held by NSW Office of Environment and Heritage (OEH), formerly the Department of Environment, Climate Change and Water (DECCW);
- search of licensed groundwater bore records within a 500m radius of the site; and
- review of local geology, hydrogeology and topography information maps.

1.3.2 Site Walkover

Coffey undertook a site walkover to observe current site activities, potential contamination sources and visible evidence of potential contamination (staining, odours etc). No anecdotal information was available at the time of this assessment.

1.3.3 Data Assessment & Reporting

- Preparation of this P1 PSI report which summarises the assessment and information collected during the historical activity review and site walkover.

1.3.4 Preliminary Soil Sampling

Coffey obtained environmental soil samples from ten of the test pits/boreholes excavated across the site as part of the geotechnical assessment.

- Samples were collected from representative soil samples from each test pits and soil bores at typical intervals of 0.2m, 0.5m and every half meter to the end of the bore hole or test pit, or where changes in lithology were identified.
- Laboratory analysis of a selection of soil samples from selected boreholes and test pits for a suite of contaminants of potential concern including total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and total xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), organochlorine pesticides (OCP) and organophosphorus pesticides (OPP), heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni and Zn) and asbestos.

1.4 Methodology

The assessment was undertaken in general accordance with standard industry practice and relevant sections of the following:-

- NSW EPA 1997, 'Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites', ISBN 0 7310 3892 4
- NEPC 1999, 'National Environment Protection (Assessment of Site Contamination) Measure'. ISBN 0-642-32312-7
- NSW OEH (2011) 'Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites'.

2 SITE IDENTIFICATION

A site locality map is presented in Figure 1 and site features showing borehole and test pit locations are presented in Figure 2.

Table A - Site Identification

Site Address:	Sydney Olympic Park, NSW
Site Identification:	Lot 201 of DP1041756
Site Area:	Approximately 9,000 sqm
Current Land use:	The carpark and landscaped garden areas of the current SOP Sports Centre.
Current Zoning:	The land is excluded land under Auburn Local Environmental Plan 2010. The land zoning and land use provisions of State Environmental Planning Policy (Major Development) 2005 apply to the land.
Adjoining Site Uses:	The site is surrounded by the following: North: Car park of the SOP Aquatic Centre. East: Olympic Boulevard with the SOP Golf Centre and driving range beyond. South: The SOP Tennis Centre. West: Two hockey fields with a car park beyond.
Site co-ordinates	151°4'14.27"E 33°51'11.49"S (based on the eastern car park entrance)

2.1 Site Condition and Environment

The northern portion of the site is the landscaped grassed and hardstand area in front of the Sports Centre, located immediately to the west of the site, and the southern part of the site comprises an asphalt paved car park.

The site slopes towards the south from approximately RL12m AHD near the northern boundary of the site to the carpark in the south of the site which is separated from the site by a grassed slope where the ground elevation reduces to approximately RL 7m AHD at the base of the slope. Ground elevations reduce again from the base of the slope across the carpark to the southern boundary of the car park by approximately 2m.

2.2 Regional Topography & Drainage

The NSW Department of Lands Spatial Imagery Exchange (<http://imagery.maps.nsw.gov.au>) indicates that the northern portion of the site lies at an elevation of approximately 12 m Australian Height Datum

(AHD). The southern portion of the site comprising the car park is at an approximate elevation of 5 m AHD.

It is expected that site surface waters would either percolate into sub-surface soils (where permeability allows) or become run-off and enter sub-surface drainage services via off-site kerbside drains.

2.3 Regional Geology & Soils

The Sydney 1:100,000 Soil Landscape Map produced by the Soil Conservation Service of NSW indicates that the site is underlain by the Blacktown Soil Landscape Group whose landscape is gently undulating rising on Wianamatta Group Shale and Hawkesbury Sandstone. Local topography is described as rising to a maximum of 30 m in the area. Broad, rounded crests and ridges with gently inclined slopes of less than 5 % gradient are common. The map indicated that soils are shallow to moderately deep (less than 100cm deep). Red and brown Podzolic soils occur in crests, upper slopes and well drained areas and yellow Podzolic soils and Soloths occur on lower slopes and areas of poor drainage. The subsoil is considered to be moderately reactive, have highly plasticity, low fertility and poor drainage.

Review of the 1:100,000 Sydney Geological Series Sheet 9130 indicates that the foreshores of Homebush Bay and Parramatta River in the vicinity of Sydney Olympic Park are underlain by man-made fill overlying Quaternary-aged stream sediments.

The man-made fill is expected to comprise dredged estuarine sand and mud, demolition rubble, and industrial and household wastes.

The sediments are expected to comprise silty to peaty quartz sand, silt and clay that exhibits ferruginous (i.e. iron rich) and humic (i.e. organic) sedimentation in places. Shell layers are also common.

The fill is underlain by the Triassic Bringelly Shale, Minchinbury Sandstone and Ashfield Shale of the Wianamatta Group comprising shale with some sandstone beds.

Bringelly Shale is the uppermost unit and is described as carbonaceous claystone and laminite with fine to medium grained lithic sandstone. The Ashfield Shale is described as black to dark grey. An intermediate unit, Minchinbury Sandstone, described as fine to medium grained sandstone is situated between the Bringelly and Ashfield Shale units.

2.4 Regional Hydrogeology

A search for registered groundwater bores within a 500 m radius of the site was undertaken using the NSW Natural Resources Atlas (NSW-NRA, <http://nratlas.nsw.gov.au>) on 21 November 2011. No records were reported for bores in this radius. The search was expanded to a 1 km radius and records for 10 registered groundwater bores were found. A summary of these records are presented below:

- Three bores (GW111341 - GW111343) located approximately 550 m northeast of the site are reported to be used for monitoring purposes. The final recorded depths of the bores were 8.0 m bgs. No information on the standing water level (SWL) was provided and the geology encountered in the three bores comprised gravelly road base to 0.4 m bgs, overlying clay to 0.6 m bgs over shale to 8.0m bgs.

- One bore (GW102562) located approximately 590 m east northeast of the site is reported to be used for monitoring purposes. The final recorded depth of the bore was 4.0 m BGL and standing water level is 1.83 m bgs but no information on the water bearing strata was provided.
- One bore (GW102561) located approximately 690 m east of the site is reported to be used for monitoring purposes. The final recorded depth of the bore was 4.0 m BGL and standing water level is 1.83 m bgs but no information on the water bearing strata was provided.
- One bore (GW102559) located approximately 790 m east of the site is reported to be used for monitoring purposes. The final recorded depth of the bore was 4.0 m BGL and standing water level is 1.83 m bgs but no information on the water bearing strata was provided.
- One bore (GW107558) located approximately 830 m east of the site is reported to be used for monitoring purposes. The final recorded depth of the bore was 4.0 m bgl and standing water level is 1.83 m bgs but no information on the water bearing strata was provided.
- One bore (GW102556) located approximately 840 m northeast of the site is reported to be used for monitoring purposes. The final recorded depth of the bore was 4.0 m bgl and standing water level is 1.83 m bgs but no information on the water bearing strata was provided.
- One bore (GW102557) located approximately 840 m northeast of the site is reported to be used for monitoring purposes. The final recorded depth of the bore was 4.0 m bgl but no standing water level or water bearing strata information was provided.
- One bore (GW102550) located approximately 860 m northeast of the site is reported to be used for monitoring purposes. The final recorded depth of the bore was 4.0 m bgl and standing water level is 1.80 m bgs but no information on the water bearing strata was provided.

Groundwater flow on the site is considered likely to be in a northerly direction toward Haslams Creek and the Parramatta River, the nearest surface water bodies to the site.

A copy of the bore search work summary is presented in Appendix B.

3 SITE HISTORY

3.1 Land Title Certificates

Land title certificates obtained for the site were reviewed to assess the current and historical ownership.

A summary of the land title certificates is presented in Table B.

Table B - Land Title Information

Date	Registered Proprietor
1910 – 1929	The Minister for Public Works of the Shire of New South Wales
1929 – 1948	Metropolitan Meat Industry Board Commissioner
1948 – 1983	The Metropolitan Meat Industry Board
1983 – 1986	The Minister for Public Works
1986 – 1996	State Sports Centre Trust
1996 – date	Sydney Olympic Park Authority, formerly the Olympic Co-ordination Authority

During this period the site has been subject to several subdivisions to create the existing Lot 201 in Deposited Plan 1041756 (the site).

Land title certificates are presented in Appendix F.

3.2 Local Council Records

Coffey reviewed one land use planning certificates issued by Auburn City Council on 29 November 2011 (under Section 149(2) of the Amended Environmental Planning and Assessment Act 1979) for the site.

The site is identified as excluded land under the Auburn Local Environment Plan 2010. The land zoning and land use provisions of State Environmental planning Policy (SEPP) (Major Development) apply to the land. The planning certificate notes that the site is located within an Environmental Conservation Area under the provision of SEPP (Major Development) 2005.

The land is significantly contaminated land (or part of the land) within the meaning of the Contaminated Lands Management Act 1997 at the date when the certificate is issued.

Copies of the planning certificates are presented in Appendix A.

3.3 Aerial Photography

Current and historical aerial photographs of the site for the years 1951, 1961, 1970, 1978, 1986 and 1999 were provided by the Department of Lands for review and Google Earth was used from the aerial photograph from 2009. These photographs are presented in Appendix E.

A summary of the aerial photography is presented in Table C.

Table C - Aerial Photography Review

Year of Photo	Site Description	Surrounding Area Description
1951	The site is undeveloped but has been divided into paddocks with a few trees.	The site is located immediately to the north of an unnamed stream that drains into Lake Belvedere which is located approximately 520m east of the site. The surrounding land remained undeveloped with the exception of houses which are located approximately 480m to the south of the site.
1961	The site remains undeveloped.	The surrounding land use remains unchanged since 1951.
1970	The site remains undeveloped.	Two new roads have been constructed immediately to the south and to the north of the site. Development has taken place to the south of the site along the Great Western Highway and to the northwest and east of the site. The divisions between the paddocks to the east of the site are no longer visible. Filling may have taken place in this locations.
1978	The site remains undeveloped.	Significant development has taken place to the north of the site. There are still no buildings on the land to the east of the site. The M4 Western Motorway has been constructed to the south of the site. The area which is the current car park at the corner of Sarah Durack Avenue and the M4 motor way has been filled. The unnamed stream is not visible.

Year of Photo	Site Description	Surrounding Area Description
1986	The site has been developed with the SOP Sports Centre building and the northerly hockey pitch. The area of proposed development is now a landscaped area and car park.	A pathway has been cut through the area of filling immediately to the east of the site. The unnamed stream is visible again. A large building (the current shopping centre) has been built approximately 360m southeast of the site.
1999	The second most southerly hockey pitch has been constructed. The car park area to the north and south of the SOP Sports Centre appear to have been resurfaced. A car park has been constructed at the corner of Sarah Durack Avenue and the M4 motorway.	Construction of the tennis centre to the south and southeast of the site is underway. The SOP Golf Centre has been constructed to the east of the site but the driving range does not appear to be complete. Bicentennial Park, located approximately 580m east of the site has been landscaped with grass and trees. Significant redevelopment has taken place around the site in the vicinity of the business park to the south of the site, the aquatic centre and athletic stadiums to the northwest of the site, the education colleges to the north of the site.
2009 (Google Maps Imagery)	The site remained unchanged.	The construction of the tennis centre to the southeast of the site and the gold centre to the east of the site has been completed. The Campus Homebush Business Park and Lidcome Business Park have been constructed on already developed land to the southwest of the site. The ANZ Stadium to the northwest of the site has been remodelled and there has been redevelopment of the commercial area beyond this.

3.4 Contaminated Land Register

Coffey conducted a search of the NSW OEH online contaminated land register on 22 November 2011.

The search identified a maintenance of remediation for waste containment areas (Notice Number: 28040) within Sydney Olympic Park, those areas being the Aquatic Centre Car Park Landfill, Bicentennial Park Landfill, Blaxland Common Landfill, Golf Driving Range Landfill, Kronos Hill Landfill,

Woo-La-Ra Landfill and Wilson Park Bioremediation. The site is located immediately to the west of the Golf Driving Range Landfill which also encroaches slightly on to the site in the southeast corner of the site.

The notice states that SOP was used for uncontrolled landfilling for many years before it was redeveloped as the major Olympic Games venue in 2000. This resulted in wide spread contamination of the area. Assessment of the contamination in the areas began in the late 1980s and site remediation began in the early 1990s.

The remediation strategy was to consolidate and re-contain the waste into several areas within the SOP and consequently the majority of the SOP area had the buried waste removed before it was redeveloped for the Games. The excavated waste was transferred to the designated waste containment areas named above. These areas were capped, landscaped and turned into parkland. Leachate collection and transfer systems were also built to prevent leachate from escaping.

Wilson Park was a former Gasworks site and the waste was not removed from this particular site as it was for the remainder of the SOP. The nature of the contamination here is waste liquid tar rather than uncontrolled landfilling. However, the remediation strategy adopted was also “cap-and-contain” similar to the remediation of the landfilling areas within the SOP.

A copy of the search record is presented in Appendix C.

3.4.1 Dangerous Goods

A search of the Stored Chemical Information Database (SCID) by NSW WorkCover Authority was conducted on 9 December 2011. The search indicated that WorkCover NSW identified no records of licences pertaining to the storage of dangerous goods on the site.

A copy of the search results is presented in Appendix D.

3.5 NSW State Heritage Register

The NSW OEH Heritage Branch online database (<http://www.heritage.nsw.gov.au>) was viewed on 14 December 2011.

No heritage-listed structures were listed as registered for the site, however, the Sydney Olympic Games Cauldron, used during the Sydney 2000 Olympic Games is located approximately 900m north northwest of the site.

The heritage item listing is presented in Appendix G.

4 SITE WALKOVER

A site walkover was conducted by Coffey on 1 December 2011.

The site visit involved observations of readily accessible site features for evidence of site contamination. A summary of the observations is presented below:

- The northern portion of the site was observed to be generally covered by grass with asphalt pavements and some established and landscaped trees. The southern portion of the site was mainly asphalt car park. Obvious evidence of distressed vegetation phytotoxic impact (e.g. stress or dieback) was not observed.
- A small pond was observed approximately 55m south and down gradient of the site.
- There were no direct indicators observed of fill material being present across the site, however, the building area is elevated by approximately 4m in relation to the car park area. The car park area is located down an embankment which may have been formed by filling or reworking of natural material.
- No evidence of potential hydrocarbon storage or historic releases were identified.
- Minor evidence of staining was observed at ground surface in the southern car park area of the site.

5 SURROUNDING LAND USE

During the site walkover, it was observed that the general land use surrounding the site is predominantly sports centres and car parks.

Table D - Surrounding Land Use

Boundary	Land Use surrounding Site
North	Olympic Boulevard with Australian College of Physical Education beyond
East	Olympic Boulevard with Golf Driving Range beyond
West	Sports Centre building with Hockey Field beyond
South	Car park of the Sports Centre with Tennis Centre beyond

6 INTEGRITY ASSESSMENT OF HISTORICAL DATA

The following sources of historical data were relied upon for this assessment:

- NSW OEH;
- NSW WorkCover;
- NSW Natural Resources Atlas;
- NSW Land and Property Management Authority;
- Auburn Council; and
- Observations made in the field during the site walkover.

The observations made during the site walkover were generally consistent with the documented records provided by third parties.

The historical data assessed was considered to be generally accurate, reliable and suitable for the objective of this assessment.

7 CONCEPTUAL SITE MODEL

7.1 Geological Model

The site specific geology in the more elevated northern portion of the site comprised fill to a depth of 2.6m to 6.3m bgs overlying weathered shale bedrock. Silty clay alluvium over silty clay residual soil was reported in the northern portion of the site in the vicinity of the eastern site boundary only. Site specific geology in the lower southern portion of the site comprised fill to approximately 1.2m bgs overlying alluvium comprising sandy silty clay and residual soil comprising silty clay to approximately 2.7m bgs, over extremely to moderately weathered shale bedrock.

The site is located within the SOP which has been used for uncontrolled landfilling for many years prior to remediation and redevelopment in 2000 and this has resulted in widespread contamination. The landfill waste was excavated during remediation and re-contained within several landfill area, one of which is the Gold Driving Range Landfill which encroaches on the southeast corner of the site.

7.2 Potential Areas of Environmental Concern and Potential Contaminants of Concern

The following potential areas of Environmental concern (PAEC) and associated potential contaminants of concern (PCOC) have been identified during the P1 PSI and considered for the site.

Table E - Potential Areas and Contaminants of Concern

Potential Contaminating Activity / Area	Potential Contaminants of Concern
Potential fill material on the whole site.	TPH, BTEX, PAH metals and asbestos
Potential landfill material in the southeastern corner of the site from encroachment of the Golf Driving Range Landfill	TPH, BTEX, PAH metals and asbestos
Potential use of pesticides for pest/weed control on the site.	OCP and OPP

8 FIELDWORK

8.1 Soil Assessment

Field activities were conducted by Coffey on 1 and 2 December 2011 and are summarised in Table F.

Table F - Soil Sampling Methodology and QA/QC

Activity	Details
Date of Fieldwork	1 and 2 October 2011
Sampling Locations	Eight (8) test pits (TP1 to TP8) were excavated across the site and eight (8) boreholes (BH1 to BH8) were drilled across the site as requested in CPS (2011) Geotechnical Scope of Works (Ref: 222450-00). Test pit and bore hole locations are presented on Figure 2.
Soil Sampling	At each location, prior to the commencement of intrusive works, Dial-Before-You-Dig (DBYD) plans were reviewed, and the subsurface was screened for the presence of services and utilities by an experienced and qualified cable locator. Representative soil samples were collected from each test pit and bore hole from typical intervals of 0.2m, 0.5m and every half meter to the end of the test pit or bore hole, or where changes in lithology or evidence of contamination was identified.
Soil Logging	Soil logging was carried out in general accordance with Coffey's relevant Standard Operating Procedure (SOP) by a suitably qualified and experienced environmental scientist. The presence or absence of potential asbestos containing material, anthropogenic fill, staining or odours was also noted on the logs. Soil logs are presented in Appendix H and in the Geotechnical Investigation Report (ref: GEOTLCOV24420AA-AC).
Soil Screening	A portion of the sample was placed inside a sealed plastic bag for soil headspace screening and asbestos analysis. Soil samples were screened using a Photoionisation Detector (PID) which was calibrated at the start of each day of fieldwork to 100ppm isobutylene calibration gas. The PID readings, together with other field observations, were used to assess which samples should be analysed for volatile contaminants (BTEX and TPH C₆-C₉). The field screening results are included in Table 1.

Activity	Details
QA/QC Samples	Two field duplicate soil samples were collected and analysed for the contaminants of potential concern as part of the investigation.
Sample Handling and Transportation	Sample collection, storage and transport were conducted in general accordance with the Coffey's relevant SOP. Soil samples were immediately placed into laboratory supplied jars, with Teflon lined seals to limit volatile loss and placed into an ice chilled cooler. The samples were dispatched to NATA accredited laboratories MGT/Labmark as the primary laboratory under chain of custody control.
Decontamination of sampling equipment	All non-disposable sampling equipment was decontaminated with approximately 5% Decon 90 solution in potable water, and rinsed with potable water prior to use and between each sample location.
Disposal of soil cuttings	Excavated soil from test pits and boreholes was backfilled into the test pits and boreholes immediately following completion.

8.2 Site Specific Geology

Site specific geology is presented on the logs presented in the Geotechnical Investigation Report (ref: GEOTLCOV24420AA-AC)

In general the more elevated landscaped and grassed area in the northern portion of the site comprised fill to a depth of 2.6m to 6.3m bgs, overlying extremely to moderately weathered shale bedrock. Alluvium, comprising silty clay was reported in the northern portion of the site in BH7 only and residual soil comprising silty clay was encountered in BH7 only.

The site specific geology in the southern portion of the site, which is the carpark area, comprised asphalt overlying fill to approximately 1.2m bgs, overlying alluvium comprising sandy silty clay and residual soil comprising silty clay to approximately 2.7m bgs, overlying extremely to moderately weathered shale bedrock.

8.3 Laboratory Analysis

A selection of primary soil samples was submitted for laboratory analysis for a suite of contaminants of potential concern as follows:

- Heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) – 18 soil samples;
- TPH – 10 soil samples;
- BTEX – 10 soil samples;
- PAH – 18 soil samples;
- OCP – 6 samples; and

- Asbestos – 18 soil samples.

Sample holding times were within acceptable range (based on USEPA SW846, NEPM B3-1999) from collection to extraction:

- metals $\leq$ 6 months (except mercury & chromium VI – 28 days) for soil;
- TPH $\leq$ 7 days at 4°C for soil;
- BTEX $\leq$ 7 days at 4°C for soils;
- PAHs $\leq$ 7 days at 4°C for soils; and
- OCP $\leq$ 14 days at 4°C for soil.

8.4 Soil Assessment Criteria

The soil assessment criteria presented in the following references are generally the primary criteria used in NSW when setting acceptance criteria for chemical contaminants in soil:

- Guidelines for the NSW Auditor Scheme (Second Edition) (NSW DEC, 2006);
- National Environment Protection (Assessment of Site Contamination) Measure (1999) Schedule B(1) 'Guideline on the Investigation Levels for Soil and Groundwater, (NEPC 1999); and
- Guidelines for Assessing Service Station Sites (NSW EPA, 1994).

For assessing contamination levels in soil in urban settings, the *Guidelines for the NSW Site Auditor Scheme* (NSW DEC, 2006) present Health-based Investigation Levels (HILs) for different land uses (e.g. industrial/commercial, residential, recreational etc.).

Based on information provided by CPS and the understanding that the site is to be redeveloped for use as netball courts and office space, the HILs for parks and recreational open space (NEHF E) and commercial / industrial (NEHF F) from NSW DEC (2006) are considered the most applicable acceptance criteria to the site for the protection of human health.

NSW DEC (2006) guidelines do not provide levels for volatile petroleum hydrocarbon compounds. The *Guidelines for Assessing Service Station Sites* (NSW EPA, 1994) provide an indication of acceptable levels for sensitive land use for petroleum hydrocarbons compounds. The NSW OEH has advised that these guidelines should also be used without multiplication for less sensitive land uses. For semi-volatile petroleum hydrocarbons (C₁₆–C₃₅ and >C₃₅) investigation levels are provided in the NSW DEC (2006) Guidelines, however, these are based on the NEPC (1999) health-based investigation levels, which require the laboratory analysis to unequivocally differentiate between aromatic and aliphatic compounds. The relevant values in NSW EPA service station guidelines will be applied in the first instance as broad criteria to assess TPH concentrations. If TPH impacts are identified in soil, then aromatic/aliphatic investigation levels from NSW DEC (2006) may be utilised to assess the aromatic/aliphatic speciation of TPH if considered necessary.

CRC for Contamination Assessment and Remediation of the Environment (CRC CARE) (2011) have developed Health Screening Levels (HSLs) for petroleum hydrocarbons in soil and groundwater for Australian contaminated land assessments and health risk assessment.

Currently there are no OEH approved guidelines in NSW for the assessment of asbestos in soils. A criterion of “no asbestos detected” will be adopted as a screening level for assessing soil asbestos analytical results.

The adopted assessment criteria are summarised alongside the laboratory results in Tables 1 and 2.

8.5 Laboratory Results

Copies of the laboratory certificates providing analytical results are provided in Appendix H. The results of the laboratory analysis are presented in Tables 1 and 2. The laboratory results indicated that:

- The samples analysed returned TPH, BTEX, PAH, OCP and OPP concentrations below the laboratory limits of reporting (LORs) with the exception of a low concentration (210 mg/kg) of TPH C₂₉-C₃₆ which was below the assessment criteria in a soil sample collected from TP4.

All metals concentrations were below the adopted assessment criteria in all samples analysed.

- Asbestos fibres were detected in the samples TP1 (2.8-3.0 (chrysotile and amosite)) and TP7 (0.5-0.6 (chrysotile)).

Three QA/QC samples were collected to assess the completeness, comparability, representativeness, precision and accuracy of the field and laboratory program. Based on the QA/QC results, the analytical results for this soil sampling are considered to be of sufficient quality for the purposes of this investigation. A QA/QC data validation report for this assessment is presented in Appendix I.

8.6 Discussion

8.6.1 Detection of TPH in Samples

TPH C₂₉-C₃₆ was detected at sampling location TP4 at a shallow depth (0.0-0.1m) in the silty sand fill material. This test pit was located in the centre of a landscaped area to the east of the sports centre building (see Figure 2).

It is noted that this concentration is well below the adopted NSW EPA (1994) assessment criteria for TPH C₁₀-C₃₆ and CRC CARE (2011) assessment criteria for TPH >C₁₆-C₃₄ and thus this TPH concentration is not considered to present a risk to human health or the environment in the Netball Central construction area.

8.6.2 Detection of Metals in Samples

Low concentrations of metals detected in most of the soil samples analysed from the site were likely attributed to the presence of fill material on-site as well as background metal concentrations in the alluvium, residual soil and weathered shale material.

8.6.3 Detection of Asbestos

Asbestos fibres have been identified at sample locations TP1 at a depth of 2.8-3.0 m bgs in the fill material and TP7 at a depth of 0.5-0.6 m bgs in fill material. Presence of asbestos is likely to be attributed to the fill material at the site.

Asbestos fibres present a risk to health of workers in the Netball Central construction area and to the public in the future use of Netball Central, where they are disturbed and may become airborne. Prior to

construction of Netball Central, the deeper asbestos containing soil material in the vicinity TP1 should be delineated and managed on-site during construction and the shallower asbestos containing soil material in the vicinity of TP7 should be delineated and removed from the site. Management of asbestos contaminated soils may include capping of soils under a suitable barrier, consisting of either:

- Hard pavement (concrete or bitumen); or
- A marker layer of geo-fabric or mesh, covered by a minimum thickness of clean landscape materials (topsoil). The landscape materials will need to be stabilised with suitable vegetation to minimise erosion of the cap.

Removal or disturbance (during construction) of the asbestos containing soil material should be carried out under an Asbestos Removal Plan with supervision by a NSW WorkCover licensed (AS1) contractor. The potential for any dusts generated during construction works will need to be managed with periodic spraying of water etc. during works, along with suitable erosion and sediment controls.

Where asbestos contaminated soils are retained under a suitable cap, a Site Management Plan should be documented for the ongoing management of these materials.

8.6.4 Waste Classification

In the case that the redevelopment works require the off-site disposal of excavated soils from the site, preliminary waste classification has identified that the majority of the fill at each investigation location would generally be classified as General Solid Waste, with the exception of:

- Restricted Solid Waste in the vicinity of BH1 due to the concentration of nickel in this location; and
- General Solid Waste, to be managed as asbestos waste in the vicinity of TP1 and TP7.

The above classifications may be revised following toxicity characteristic leaching procedure (TCLP) testing of selected samples. Based on the concentration of nickel detected in BH1, it is considered that the soil can be reclassified as general solid waste if the TCLP testing of nickel is undertaken for the soil sample.

Groundwater was not encountered in any of the test pits excavated on-site as part of the investigation. Given that groundwater is expected to be located at depth within the shale bedrock underlying the site, and the generally low levels of contamination in soils, it is considered that there is a low risk to groundwater from contamination identified in the test pits and bore holes.

9 CONCLUSIONS

Historical land use for the site appears to be limited to the Sports Centre and associated car park. The site appears to have been substantially filled to form the more elevated landscaped area and Sports Centre and in addition the whole SOP area was used for uncontrolled landfilling before redevelopment for the Olympic Games in 2000. The site is located immediately to the west of the Golf Driving Range Landfill which also encroaches slightly on to the site in the southeast corner of the site.

Historical land use in the areas surrounding the site appears to be predominantly residential to the south of the site and undeveloped with uncontrolled filling to the north, east and west of the site followed development of the SOP commencing in the year 2000. There is an unnamed stream approximately 520m to the east of the site. The field observations indicate a risk of contamination from the surrounding uncontrolled landfilling.

The concentrations of BTEX, PAHs, OCP and OPP were reported below the LOR, therefore not considered to be significant, or present a risk for the construction area or future use of the site.

Concentrations of TPH were reported below the LORs, with the exception of one low concentration of TPH C₂₉-C₃₆ which was well below the adopted assessment criteria, reported in the grass landscaped area in the northern portion of the site. This contamination is not considered to be significant, or to present a risk for the construction zone or the future use of the site.

The concentrations of reported metals were below the adopted assessment criteria for the site. Based on laboratory analytical results, the metals concentrations are not considered to be significant, or present a risk for the construction area or the future use of the site and concentrations maybe indicative of background concentrations in fill material.

Chrysotile and amosite asbestos fibres have been identified at sample locations TP1 in the deeper fill and chrysotile asbestos fibres have been identified in TP7 in the shallow fill. Presence of asbestos is likely to be attributed to the fill material at the site and the historic use of filling at and in the vicinity of the site.

Asbestos fibres present a risk to health of workers in the Netball Central construction area and to the public in the future use of the Netball Central facilities, where they are disturbed and may become airborne. Coffey recommends that the asbestos containing soil material in the shallow soil in the vicinity of TP7 should be delineated by collection of additional soil samples surrounding the test pit location and asbestos containing soil material should be removed from the site. The area must be validated following removal of asbestos containing soil material. Asbestos containing soil in the deeper soil samples in TP1 should be delineated by additional soil sample collection surrounding the test pit and asbestos containing soil can be managed on site. Management of asbestos contaminated soils may include capping of soils under a suitable barrier, consisting of either:

- Hard pavement (concrete or bitumen); or
- A marker layer of geo-fabric or mesh, covered by a minimum thickness of clean landscape materials (topsoil). The landscape materials will need to be stabilised with suitable vegetation to minimise erosion of the cap.

Removal or disturbance (during construction) of the asbestos containing soil material should be carried out under an Asbestos Removal Plan with supervision by a NSW WorkCover licensed (AS1) contractor.

The potential for any dusts generated during construction works will need to be managed with periodic spraying of water etc. during works, along with suitable erosion and sediment controls.

Where asbestos contaminated soils are retained under a suitable cap, a Site Management Plan should be documented for the ongoing management of these materials.

The results of the desktop review, site walkover and soil sampling suggest that there is a low risk of significant soil contamination being present on the site, with the exception of asbestos present in the fill material in two AECs in the vicinity of TP1 and TP7. Based on these results, Coffey considers that the site is suitable for the proposed Netball Central construction and land use, with respect to the potential for soil contamination, subject to the removal/management of asbestos containing soil material identified at the site. The asbestos containing soil material at the site will need to be either appropriately managed or removed from the site.

Soil sample and analysis results indicate a preliminary waste classification as *General Solid Waste to be managed as asbestos waste* for soil material in the vicinity of TP1 and TP7, in accordance with the NSW DECCW (2009) Waste Classification Guidelines: Part 1 Classifying Waste and *Restricted Solid Waste* in the vicinity of BH1. However, TCLP tests are recommended to be undertaken for nickel for samples in the vicinity of BH1 in order to be able to reclassify the soil as general solid waste prior to be disposed off site. It is recommended further waste classification testing is undertaken on waste to be disposed of off-site during the site redevelopment works.

This report must be read in conjunction with the attached "Important Information About Your Coffey Environmental Report".

10 REFERENCES

- CRC CARE (2011) *Technical Report 10, Health screening levels for petroleum hydrocarbons in soil and groundwater*, CRC Contamination Assessment and Remediation of the Environment
- NSW Department of Mines (1966) Edition 1, 1:250 000, Geological series sheet Sydney
- NEPC. (1999) *National Environment Protection (Assessment of Site Contamination) Measure*. ISBN 0-642-32312-7
- NSW DEC. (2006). *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd edition)*. Department of Environment and Conservation NSW.
- NSW EPA (1994) Guidelines for Assessing Service Station Sites.
- NSW OEH. (2011). *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*. NSW Environment Protection Authority.

Important information about your **Coffey** Environmental Report

Uncertainties as to what lies below the ground on potentially contaminated sites can lead to remediation costs blow outs, reduction in the value of the land and to delays in the redevelopment of land. These uncertainties are an inherent part of dealing with land contamination. The following notes have been prepared by Coffey to help you interpret and understand the limitations of your report.

Your report has been written for a specific purpose

Your report has been developed on the basis of a specific purpose as understood by Coffey and applies only to the site or area investigated. For example, the purpose of your report may be:

- To assess the environmental effects of an on-going operation.
- To provide due diligence on behalf of a property vendor.
- To provide due diligence on behalf of a property purchaser.
- To provide information related to redevelopment of the site due to a proposed change in use, for example, industrial use to a residential use.
- To assess the existing baseline environmental, and sometimes geological and hydrological conditions or constraints of a site prior to an activity which may alter the sites environmental, geological or hydrological condition.

For each purpose, a specific approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible, quantify risks that both recognised and unrecognised contamination pose to the proposed activity. Such risks may be both financial (for example, clean up costs or limitations to the site use) and physical (for example, potential health risks to users of the site or the general public).

Scope of Investigations

The work was conducted, and the report has been prepared, in response to specific instructions from the client to whom this report is addressed, within practical time and budgetary constraints, and in reliance on certain data and information made available to Coffey.

The analyses, evaluations, opinions and conclusions presented in this report are based on those instructions, requirements, data or information, and they could change if such instructions etc. are in fact inaccurate or incomplete.

Subsurface conditions can change

Subsurface conditions are created by natural processes and the activity of man and may change with time.

For example, groundwater levels can vary with time, fill may be placed on a site and pollutants may migrate with time.

Because a report is based on conditions which existed at the time of the subsurface exploration, decisions should not be based on a report whose adequacy may have been affected by time.

Consult Coffey to be advised how time may have impacted on the project and/or on the property.

Interpretation of factual data

Environmental site assessments identify actual subsurface conditions only at those points where samples are taken and when they are taken. Data derived from indirect field measurements and sometimes other reports on the site are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions.

Actual conditions may differ from those inferred to exist, because no professional, no matter how well qualified, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions.

For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of Coffey through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other problems encountered on site.

Your report will only give preliminary recommendations

Your report is based on the assumption that the site conditions as revealed through selective point sampling are indicative of actual conditions throughout an area.

This assumption cannot be substantiated until project implementation has commenced and therefore your report recommendations can only be regarded as preliminary. Only Coffey, who prepared the report, is fully familiar with the background information needed to assess whether or not the report's recommendations are valid and whether or not changes should be considered with redevelopment or on-going use of the site. If another party undertakes the implementation of the recommendations of this report there is a risk that the report will be misinterpreted and Coffey cannot be held responsible for such misinterpretation.

Important information about your **Coffey** Environmental Report

Your report is prepared for specific purposes and persons

To avoid misuse of the information contained in your report it is recommended that you confer with Coffey before passing your report on to another party who may not be familiar with the background and the purpose of the report. In particular, a due diligence report for a property vendor may not be suitable for satisfying the needs of a purchaser. Your report should not be applied for any purpose other than that originally specified at the time the report was issued.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, retain Coffey to work with other professionals who are affected by the report. Have Coffey explain the report implications to professionals affected by them and then review plans and specifications produced to see how they have incorporated the report findings.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists, engineers or geologists based on their interpretation of field logs (assembled by field personnel), field testing and laboratory evaluation of field samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

Contact Coffey for additional assistance

Coffey is familiar with a variety of techniques and approaches that can be used to help reduce risks for all parties to land development and land use. It is common that not all approaches will be necessarily dealt with in your environmental site assessment report due to concepts proposed at that time. As a project progresses through planning and design toward construction and/or maintenance, speak with Coffey to develop alternative approaches to problems that may be of genuine benefit both in time and cost.

Responsibility

Environmental reporting relies on interpretation of factual information based on judgement and opinion and has a level of uncertainty attached to it, which is far less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. To help prevent this problem, a number of clauses have been developed for use in contracts, reports and other documents.

Responsibility clauses do not transfer appropriate liabilities from Coffey to other parties but are included to identify where Coffey's responsibilities begin and end. Their use is intended to help all parties involved to recognise their individual responsibilities. Read all documents from Coffey closely and do not hesitate to ask any questions you may have.

Figures

**Phase 1 Preliminary Site Investigation
Proposed Development, Netball Centre, Olympic Park, NSW**

DWG FILE: F:\PROJECTS\OTHER OFFICES\GEOTLCOV24420AA\ENR\HDD0423AAA PHASE 1\DRAWINGS\GEOTLCOV24420AA-D01.DWG



LEGEND

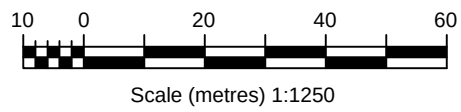
TP APPROXIMATE TESTPIT LOCATION

BH APPROXIMATE BOREHOLE LOCATION

PROPOSED NETBALL CENTRAL DEVELOPMENT

AERIAL IMAGE SOURCE: GOOGLE EARTH PRO 6.0.1
AERIAL IMAGE ©: SINCLAIR KNIGHT MERZ 2010

Coffey Environments Australia Pty Ltd



drawn	MV
approved	CC
date	16/12/11
scale	AS SHOWN
original size	A4

coffey
environments
SPECIALISTS IN ENVIRONMENTAL,
SOCIAL AND SAFETY PERFORMANCE

client:	CROWN PROJECT SERVICES PTY LTD	
project:	NETBALL CENTRAL PHASE 1 PRELIMINARY SITE INVESTIGATION, OLYMPIC BOULEVARD, SYDNEY OLYMPIC PARK, NSW	
title:	BOREHOLE AND TESTPIT LOCATIONS	
project no:	GEOTLCOV24420AA-D01	figure no: FIGURE 2

Tables

**Phase 1 Preliminary Site Investigation
Proposed Development, Netball Centre, Olympic Park, NSW**

Table 1
Soil Analytical Results - TPH, BTEX, PAHs, Metals and Asbestos
Netball Central

Field ID								BH1	BH1	BH2	BH2	BH7	BH7	BH8	DUP1	RPD	TP1	TP1	TP2	
Sample Depth								0.1-0.2	3-3.2	0.1-0.2	1.5-1.6	0.1-0.2	4.5-4.7	1.5-1.7			0.2-0.3	2.8-3	0-0.1	
Sampled Date								1/12/2011	1/12/2011	1/12/2011	1/12/2011	1/12/2011	1/12/2011	1/12/2011	1/12/2011			2/12/2011	2/12/2011	2/12/2011
Lab ID								S11-De02195	S11-De02196	S11-De02197	S11-De02198	S11-De02209	S11-De02211	S11-De02213	S11-De02232			S11-De02215	S11-De02216	S11-De02217
Lab Report Number								320832	320832	320832	320832	320832	320832	320832	320832			320832	320832	320832
PID (ppm)								0	0	0	0	0	0	0	0			0.1	0	0
Comment															Duplicate of BH8 1.5-1.7					
Analyte	Units	LOR	CRC CARE HSL-D 0-<2m ⁽¹⁾	Recreational Guidelines (NEHF E) (2006) ⁽²⁾	Commercial/ Industrial Guidelines (NEHF F) (2006) ⁽³⁾	Service Stations Use NSW EPA (1994) ⁽⁴⁾	NSW 2008 General Solid Waste (CT1)													
TPH C6 - C9	mg/kg	10	260-370			65		<10	-	<10	-	<10	-	<10	<10	NA	<10	-	<10	
TPH C10 - C14	mg/kg	50	NL					<50	-	<50	-	<50	-	<50	<50	NA	<50	-	<50	
TPH C15 - C28	mg/kg	100						<100	-	<100	-	<100	-	<100	<100	NA	<100	-	<100	
TPH C29-C36	mg/kg	100						<100	-	<100	-	<100	-	<100	<100	NA	<100	-	<100	
TPH+C10 - C36 (Sum of total)	mg/kg	100				1000		<100	-	<100	-	<100	-	<100	<100	NA	<100	-	<100	
Benzene	mg/kg	0.5	3			1	10	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	NA	<0.5	-	<0.5	
Ethylbenzene	mg/kg	0.5	NL			1.3	600	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	NA	<0.5	-	<0.5	
Toluene	mg/kg	0.5	NL			1.4	288	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	NA	<0.5	-	<0.5	
Xylene (m & p)	mg/kg	1						<1	-	<1	-	<1	-	<1	<1	NA	<1	-	<1	
Xylene (o)	mg/kg	0.5						<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	NA	<0.5	-	<0.5	
Xylene Total	mg/kg	1.5	230			14	1000	<1.5	-	<1.5	-	<1.5	-	<1.5	<1.5	NA	<1.5	-	<1.5	
Acenaphthene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Acenaphthylene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Anthracene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Benz(a)anthracene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Benzo(a) pyrene	mg/kg	0.5		2	5		0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Benzo(b)&(k)fluoranthene	mg/kg	1						<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	
Benzo(g,h,i)perylene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Chrysene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Dibenz(a,h)anthracene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Fluoranthene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Fluorene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Naphthalene	mg/kg	0.5	NL					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Phenanthrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
Pyrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	
PAHs (Sum of total)	mg/kg	1		40				<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	
Arsenic	mg/kg	1		200	500		100	1.1	7.2	1.8	3.5	2.1	6.3	6.1	4.4	32%	7.9	4.4	2	
Cadmium	mg/kg	0.1		40	100		20	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	0.1	<0.1	<0.1	
Chromium (III+VI)	mg/kg	2		200*	500*		100	6.8	6.5	9.5	13	3.4	16	11	9.2	18%	12	13	3	
Copper	mg/kg	2		2000	5000			4.9	31	18	4.8	9.3	10	20	20	0%	18	13	7	
Lead	mg/kg	2		600	1500		100	7.3	24	6.2	8	13	16	22	16	32%	45	18	9.9	
Mercury	mg/kg	0.05		30	75		4	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	0.07	<0.05	<0.05	
Nickel	mg/kg	1		600	3000		40	6.4	72	33	1.9	4.3	2.3	9.8	8.5	14%	9.8	1.4	5.5	
Zinc	mg/kg	5		14000	35,000			11	240	24	<5	25	14	65	55	17%	69	8.3	20	
Asbestos	mg/kg	NA						ND	ND	ND	ND	ND	ND	ND	-	-	ND	Chrysotile and	ND	

Comments:

(1) 2011 CRC CARE Health Screening Levels for vapour intrusion for soil (commercial/industrial (HSL-D))

(2) 2006 Guidelines for the NSW Site Auditor Scheme 2nd Edition. NEHF E - Parks recreational open space, playing fields including secondary schools

(3) 2006 Guidelines for the NSW Site Auditor Scheme 2nd Edition. NEHF F - Commercial/Industrial: includes permits such as shops and offices as well as factories

(4) 1994 NSW EPA Guide for Assessing Service Stations - Health & Ecological

Highlighted Exceeds the nominated investigation level

BOLD RPD outside acceptance range

* As Chromium VI

NL Not Limiting - indication that the HSL exceeds the saturation concentration and therefore would not result in an unacceptable health risk from vapours

Table 1
Soil Analytical Results - TPH, BTEX, PAHs, Metals and Asbestos
Netball Central

Field ID								TP2	DUP2	RPD	TP3	TP3	TP4	TP4	TP7	TP7	TP8
Sample Depth								0.4-0.5			0.5-0.6	1.5-1.6	0-0.1	0.4-0.6	0.5-0.6	1.4-1.6	0.1-0.2
Sampled Date								2/12/2011	2/12/2011		2/12/2011	2/12/2011	2/12/2011	2/12/2011	2/12/2011	2/12/2011	2/12/2011
Lab ID								S11-De02218	S11-De02233		S11-De02220	S11-De02221	S11-De02223	S11-De02224	S11-De02228	S11-De02229	S11-De02230
Lab Report Number								320832	320832		320832	320832	320832	320832	320832	320832	320832
PID (ppm)								0	0		0	0	0	0	0	0	0
Comment									Duplicate of TP2 0.4-0.5								
Analyte	Units	LOR	CRC CARE HSL-D 0-<2m ⁽¹⁾	Recreational Guidelines (NEHF E) (2006) ⁽²⁾	Commercial/Industrial Guidelines (NEHF F) (2006) ⁽³⁾	Service Stations Use NSW EPA (1994) ⁽⁴⁾	NSW 2008 General Solid Waste (CT1)										
TPH C6 - C9	mg/kg	10	260-370			65		-	-	-	<10	-	<10	-	<10	-	<10
TPH C10 - C14	mg/kg	50	NL					-	-	-	<50	-	<50	-	<50	-	<50
TPH C15 - C28	mg/kg	100						-	-	-	<100	-	<100	-	<100	-	<100
TPH C29-C36	mg/kg	100						-	-	-	<100	-	210	-	<100	-	<100
TPH+C10 - C36 (Sum of total)	mg/kg	100				1000		-	-	-	<100	-	210	-	<100	-	<100
Benzene	mg/kg	0.5	3			1	10	-	-	-	<0.5	-	<0.5	-	<0.5	-	<0.5
Ethylbenzene	mg/kg	0.5	NL			1.3	600	-	-	-	<0.5	-	<0.5	-	<0.5	-	<0.5
Toluene	mg/kg	0.5	NL			1.4	288	-	-	-	<0.5	-	<0.5	-	<0.5	-	<0.5
Xylene (m & p)	mg/kg	1						-	-	-	<1	-	<1	-	<1	-	<1
Xylene (o)	mg/kg	0.5						-	-	-	<0.5	-	<0.5	-	<0.5	-	<0.5
Xylene Total	mg/kg	1.5	230			14	1000	-	-	-	<1.5	-	<1.5	-	<1.5	-	<1.5
Acenaphthene	mg/kg	0.5						<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5						<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5						<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5						<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a) pyrene	mg/kg	0.5		2	5		0.8	<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)&(k)fluoranthene	mg/kg	1						<1	<1	NA	<1	<1	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	mg/kg	0.5						<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5						<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5						<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5						<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5
Fluorene	mg/kg	0.5						<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5						<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.5	NL					<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5						<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5						<0.5	<0.5	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PAHs (Sum of total)	mg/kg	1		40				<1	<1	NA	<1	<1	<1	<1	<1	<1	<1
Arsenic	mg/kg	1		200	500		100	3.2	2.2	37%	3.7	3.7	1.9	3.4	6.8	3.3	1.7
Cadmium	mg/kg	0.1		40	100		20	<0.1	0.2	67%	0.2	0.1	0.2	<0.1	0.6	<0.1	<0.1
Chromium (III+VI)	mg/kg	2		200*	500*		100	15	5.5	93%	9.5	6.5	5.2	5.3	22	5.7	<2
Copper	mg/kg	2		2000	5000			23	17	30%	19	10	24	11	21	11	11
Lead	mg/kg	2		600	1500		100	11	9.6	14%	23	11	16	11	69	12	6.8
Mercury	mg/kg	0.05		30	75		4	<0.05	<0.05	NA	<0.05	<0.05	0.06	<0.05	0.09	<0.05	<0.05
Nickel	mg/kg	1		600	3000		40	49	<1	192%	2.4	1.7	3.4	<1	7.2	<1	1.2
Zinc	mg/kg	5		14000	35,000			31	<5	144%	18	7.5	58	<5	300	<5	9.4
Asbestos	mg/kg	NA						ND	-	-	ND	ND	ND	ND	Chrysotile	ND	ND

Comments:

(1) 2011 CRC CARE Health Screening Levels for vapour intrusion for soil (commercial/industrial (HSL-D))

(2) 2006 Guidelines for the NSW Site Auditor Scheme 2nd Edition. NEHF E - Parks recreational open space, playing fields including secondary schools

(3) 2006 Guidelines for the NSW Site Auditor Scheme 2nd Edition. NEHF F - Commercial/Industrial: includes permits such as shops and offices as well as factories

(4) 1994 NSW EPA Guide for Assessing Service Stations - Health & Ecological

Highlighted Exceeds the nominated investigation level

BOLD RPD outside acceptance range

* As Chromium VI

NL Not Limiting - indication that the HSL exceeds the saturation concentration and therefore would not result in an unacceptable health risk from vapours

Appendix A

Section 149 Planning Certificate

**Phase 1 Preliminary Site Investigation
Proposed Development, Netball Centre, Olympic Park, NSW**



1 Susan Street, P.O. Box 118, Auburn NSW Australia 1835

Telephone: 9735 1222 Facsimile: 9643 1120
ABN 63 914 691 587

Coffey Environments
Level 1, 3 Rider Boulevard
RHODES NSW 2138

PLANNING CERTIFICATE

Issued under Section 149(2) of the
Environmental Planning and Assessment Act, 1979

Certificate No: 15632
Receipt No: 590987
Date: 29 November 2011
Your Reference: NETBALL
CENTRAL:6487

Property Details

Address: Lot 201 Australia Avenue, SYDNEY OLYMPIC PARK

Legal Description: Lot 201 DP 1041756, Lot 10 DP 839591

Owner(s) Name (as recorded by Council):

State Sports Centre Trust and Hockey Centre and Sydney Olympic Park Authority
C/- Sydney Olympic Park Authority
7 Figtree Drive
SYDNEY OLYMPIC PARK NSW 2127

In accordance with the requirements of Section 149(2) of the *Environmental Planning and Assessment Act, 1979* (as amended), the following prescribed matters relate to the land at the date of this certificate.

Note: The information contained in Planning Certificates issued for a lot within Strata-Titled development relates to the land the development is situated on.

1. Names of Relevant Planning Instruments and DCPs

The name of:

- (a) *each environmental planning instrument that applies to the carrying out of development on the land.*
- (b) *each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless the Director-General has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved).*
- (c) *each development control plan that applies to the carrying out of development on the land.*

In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

1(a) Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005.

State Environmental Planning Policy No. 4	Development without Consent and Miscellaneous Exempt and Complying Development.
State Environmental Planning Policy No. 6	Number of Storeys in a Building.
State Environmental Planning Policy No. 19	Bushland in Urban Areas.
State Environmental Planning Policy No. 21	Caravan Parks.
State Environmental Planning Policy No. 22	Shops and Commercial Premises.
State Environmental Planning Policy No. 30	Intensive Agriculture.
State Environmental Planning Policy No. 32	Urban Consolidation (Redevelopment of Urban Land).
State Environmental Planning Policy No. 33	Hazardous and Offensive Development.
State Environmental Planning Policy No. 50	Canal Estate Development.
State Environmental Planning Policy No. 55	Remediation of Land.
State Environmental Planning Policy No. 62	Sustainable Aquaculture.
State Environmental Planning Policy No. 64	Advertising and Signage.
State Environmental Planning Policy No. 65	Design Quality of Residential Flat Development.
State Environmental Planning Policy No. 70	Affordable Housing (Revised Schemes).
State Environmental Planning Policy	(Affordable Rental Housing) 2009
State Environmental Planning Policy	Building Sustainability Index: BASIX 2004.
State Environmental Planning Policy	(Major Development) 2005.
State Environmental Planning Policy	(Exempt and Complying Development Codes) 2008
State Environmental Planning Policy	(Infrastructure) 2007.
State Environmental Planning Policy	(Mining, Petroleum Production and Extractive Industries) 2007.
State Environmental Planning Policy	(Housing for Seniors or People with a Disability) 2004.
State Environmental Planning Policy	(State and Regional Development) 2011.
State Environmental Planning Policy	(Temporary Structures) 2007.
1(b)	Draft State Environmental Planning Policy (Competition) 2010.
1(c)	There are no development control plans applying to the land.

2. Zoning and Land Use under relevant LEPs

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

- (a) *the identity of the zone, whether by reference to a name (such as "Residential Zone" or "Heritage Area") or by reference to a number (such as "Zone No. 2(a")),*
- (b) *the purpose for which the plan or instrument provides that development may be carried out within the zone without the need for development consent,*
- (c) *the purposes for which the plan or instrument provides that development may not be carried out within the zone except with development consent,*
- (d) *the purposes for which the plan or instrument provides that development is prohibited within the zone,*
- (e) *whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed,*
- (f) *whether the land includes or comprises critical habitat,*

- (g) *whether the land is in a conservation area (however described),*
- (h) *whether an item of environmental heritage (however described) is situated on the land.*
- (a) The land is excluded land under Auburn Local Environmental Plan 2010. The land zoning and land use provisions of State Environmental Planning Policy (Major Development) 2005 apply to the land.

The State Environmental Planning Policy (Major Development) 2005 may be obtained via the internet from www.legislation.nsw.gov.au or by contacting NSW Department of Planning.

- (b) Refer to State Environmental Planning Policy (Major Development) 2005.
- (c) Refer to State Environmental Planning Policy (Major Development) 2005.
- (d) Refer to State Environmental Planning Policy (Major Development) 2005.
- (e) There are no development standards applying to this land that fix a minimum land dimension for the erection of a dwelling-house.
- (f) The land does not include or comprise critical habitat.
- (g) The land is not located within a Heritage Conservation Area under the provisions of State Environmental Planning Policy (Major Development) 2005.

The land is located within an Environmental Conservation Area under the provisions of State Environmental Planning Policy (Major Development) 2005.

- (h) The land has not been identified as containing an item of environmental heritage significance under the provisions of State Environmental Planning Policy (Major Development) 2005.

3. Complying Development

- (1) *Whether or not the land is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (c) and (d) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.*
- (2) *If complying development may not be carried out on that land because of the provisions of clauses 1.17A (c) and (d) and 1.19 of that Policy, the reasons why it may not be carried out under that clause.*

General Housing Code

Refer to State Environmental Planning Policy (Major Development) 2005.

Rural Housing Code

Refer to State Environmental Planning Policy (Major Development) 2005.

Housing Alterations Code

Refer to State Environmental Planning Policy (Major Development) 2005.

General Development Code

Refer to State Environmental Planning Policy (Major Development) 2005.

General Commercial and Industrial Code

Refer to State Environmental Planning Policy (Major Development) 2005.

Subdivisions Code

Refer to State Environmental Planning Policy (Major Development) 2005.

Demolition Code

Refer to State Environmental Planning Policy (Major Development) 2005.

4. Coastal Protection

Whether or not the land is affected by the operation of section 38 or 39 of the Coastal Protection Act 1979, but only to the extent that the council has been so notified by the Department of Services, Technology and Administration.

Council has not been notified by the Department of Public Works that the land is affected by the operation of Section 38 or 39 of the Coastal Protection Act, 1979.

4a Certain information relating to beaches and coasts

- (1) *In relation to a coastal council—whether an order has been made under Part 4D of the Coastal Protection Act 1979 in relation to emergency coastal protection works (within the meaning of that Act) on the land (or on public land adjacent to that land), except where the council is satisfied that such an order has been fully complied with.*
- (2) *In relation to a Coastal Council:*
 - (a) *whether the council has been notified under section 55X of the Coastal Protection Act 1979 that emergency coastal protection works (within the meaning of that Act) have been placed on the land (or on public land adjacent to that land), and*
 - (b) *if works have been so placed—whether the council is satisfied that the works have been removed and the land restored in accordance with that Act.*
- (3) *In relation to a Coastal Council—such information (if any) as is required by the regulations under section 56B of the Coastal Protection Act 1979 to be included in the planning certificate and of which the council has been notified pursuant to those regulations.*

4a The land is currently not affected by provisions included under this part.

4b Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works

In relation to a coastal council—whether the owner (or any previous owner) of the land has consented in writing to the land being subject to annual charges under section 496B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).

Note. "Existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as sea walls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the Local Government Act 1993.

4b The land is currently not affected by provisions included under this part.

5. Mine Subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of Section 15 of the Mine Subsidence Compensation Act, 1961.

The land is not located in an area proclaimed to be a mine subsidence district within the meaning of Section 15 of the Mine Subsidence Compensation Act, 1961.

6. Road Widening and Road Realignment

Whether or not the land is affected by any road widening or road realignment under:

- (a) Division 2 of Part 3 of the Roads Act, 1993, or*
- (b) Any Environmental Planning Instrument, or*
- (c) Any resolution of the Council.*

- (a) The land is not affected by any road widening or road realignment under Division 2 of Part 3 of the Roads Act 1993.
- (b) The land is not affected by any road widening or road realignment under any Environmental Planning Instrument.
- (c) The land is not affected by any road widening or road realignment under a Council resolution.

7. Council and other public authority policies on Hazard Risk Restriction

Whether or not the land is affected by a policy:

- (a) adopted by the Council, or*
- (b) adopted by any other public authority and notified to the Council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the Council.*

that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

- (a) The land is excluded land under Auburn Local Environmental Plan 2010 and the applicant should refer to State Environmental Planning Policy (Major Development) 2005 on www.legislation.nsw.gov.au.

The land is not affected by a policy that has been adopted by Council that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence or any other risk.

- (b) The land is excluded land under Auburn Local Environmental Plan 2010 and the applicant should refer to State Environmental Planning Policy (Major Development) 2005 on www.legislation.nsw.gov.au.

Council has not been notified of any policies adopted by other public authorities that restrict development of the land because of the likelihood of land slip, bushfire, flooding, tidal inundation, subsidence or other risk.

Council has been notified that the Department of Planning has adopted the *New South Wales Coastal Planning Guideline: Adapting to Sea Level Rise (August 2010)*. The guideline can be viewed at www.planning.nsw.gov.au.

The applicant should also refer to projected sea level rise low, medium and high scenario maps on http://www.ozcoasts.org.au/climate/Map_images/Sydney/mapLevel2.jsp for further information.

7a Flood related Development Controls Information

- (1) *Whether or not the development on that land or part of the land for the purposes of dwellings, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls.*

The land is excluded land under Auburn Local Environmental Plan 2010 and the applicant should refer to State Environmental Planning Policy (Major Development) 2005 on www.legislation.nsw.gov.au.

- (2) *Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls.*

The land is excluded land under Auburn Local Environmental Plan 2010 and the applicant should refer to State Environmental Planning Policy (Major Development) 2005 on www.legislation.nsw.gov.au.

- (3) *Words and expressions in this clause have the same meanings as in the instrument set out in the Schedule to the Standard Instrument (Local Environmental Plans) Order 2006.*

Words and expressions in this clause have the same meanings as in the instrument set out in the Schedule to the Standard Instrument (Local Environmental Plans) Order 2006.

8. Land Reserved for Acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

The land is excluded land under Auburn Local Environmental Plan 2010. The applicant should refer to State Environmental Planning Policy (Major Development) 2005 on www.legislation.nsw.gov.au.

9. Contributions Plans

The name of each Contributions Plan applying to the land:

The land is not affected by the Auburn Council Development Contributions Plan 2007.

9A Biodiversity Certified Land

If the land is biodiversity certified land (within the meaning of Part 7A A of the Threatened Species Conservation Act 1995), a statement to that effect.

The land is not biodiversity certified land within the meaning of the above Act.

10. Biobanking Agreements

If the land is land to which a biobanking agreement under Part 7A of the Threatened Species Conservation Act 1995 relates, a statement to that effect (but only if the council has been notified of the existence of the agreement by the Director – General of the Department of Environment, Climate Change and Water).

The land is not affected by a Bio-banking agreement under the Act.

11. Bush Fire Prone Land

If any of the land is bush fire prone land (as defined in the Act), a statement that all or, as the case may be, some of the land is bush fire prone land. If none of the land is bush fire prone land, a statement to that effect.

The land is not located within an area that is bush fire prone as defined by the Environmental Planning and Assessment Act, 1979.

12. Property Vegetation Plans

If the land is land to which a Property Vegetation Plan under the Native Vegetation Act, 2003 applies, a statement to that effect (but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act).

The land is not affected by a Property Vegetation Plan under the *Native Vegetation Act, 2003*.

13. Orders under the Trees (Disputes Between Neighbours) Act 2006

Whether an order has been made under the Trees (Disputes Between Neighbours) Act, 2006 to carry out work in relation to a tree on the land (but only if the Council has been notified of the order).

The land is not affected by an order issued under the Trees (Disputes between Neighbours) Act 2006.

14. Directions under Part 3A (Environmental Planning and Assessment Act 1979)

If there is a direction by the Minister in force under section 75P (2) (c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

There are no ministerial directions in force under section 75P (2) (c1) of the Environmental Planning and Assessment Act 1979.

15. Site compatibility certificates and conditions for seniors housing

If the land is land to which State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 applies:

- (a) *a statement of whether there is a current site compatibility certificate (seniors housing), of which the Council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:*

- (i) *the period for which the certificate is current, and*
 - (ii) *that a copy may be obtained from the head office of the Department of Planning, and*
- (b) *a statement setting out any terms of a kind referred to in clause 18 (2) of that Policy that have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.*

(a) & (b) The land is not subject to a site compatibility certificate.

16. Site Compatibility Certificates for Infrastructure

A statement of whether there is a valid site compatibility certificate (infrastructure), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

- (a) *the period for which the certificate is valid, and*
- (b) *that a copy may be obtained from the head office of the Department of Planning.*

(a) & (b) There is no site compatibility certificate issued under the State Environmental Planning Policy (Infrastructure 2007) in respect of the land.

17. Site Compatibility Certificates and Conditions for Affordable Rental Housing

- (1) *A statement of whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:*

- (a) *the period of which the certificate is current, and*
- (b) *that a copy may be obtained from the head office of the Department of Planning.*

- (2) *A statement setting out any terms of a kind referred to in clause 17 (1) or 38 (1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 that have been imposed as a condition of consent to a development application in respect of the land.*

(1) & (2) There is no current site compatibility certificate (affordable rental housing) of which council is aware or a statement setting out any terms of a kind referred to in clause 17(1) or 38(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 that has been imposed as a condition of consent to a development application for the land.

Note:

Section 59(2) of the Contaminated Lands Management Act 1997 prescribes the following matters that are to be specified in a Planning Certificate:

- a) *That the land to which the certificate relates is significantly contaminated land within the meaning of that Act – if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,*
- b) *That the land to which the certificate relates is subject to a management order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,*
- c) *That the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act - if it is the subject of such an approved proposal at the date when the certificate is issued,*

- d) *That the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,*
- e) *That the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act – if a copy of such a statement has been provided any time to the local authority issuing the certificate.*
- (a) The land is significantly contaminated land (or part of the land) within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.
- (b) The land is not subject to a management order within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.
- (c) The land is not the subject of an approved voluntary management proposal within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.
- (d) The land is not subject to an ongoing maintenance order within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.
- (e) The land is not subject to a site audit statement within the meaning of the *Contaminated Lands Management Act 1997*.

Note:

Section 26 of the *Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009* provides that a planning certificate must include advice about any exemption under section 23 or authorisation under section 24 of that Act if the council is provided with a copy of the exemption or authorisation by the Co-ordinator General under that Act.

Not applicable.



John Burgess
General Manager

Per: Specialist Development
Administration Officer

Please Note:

A Section 149(5) Certificate provides additional information relating to the subject land, including:

- Resolutions by Council to prepare a Draft Local Environmental Plan;
- Draft Development Control Plans;
- Cumberland Plain Native Vegetation.

Appendix B

Groundwater Bore Search

**Phase 1 Preliminary Site Investigation
Proposed Development, Netball Centre, Olympic Park, NSW**

Groundwater Works Summary

For information on the meaning of fields please see [Glossary](#)

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[Works Details](#) [Site Details](#) [Form A](#) [Licensed](#) [Construction](#) [Water Bearing Zones](#) [Drillers Log](#)

Work Requested -- GW102550

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

GROUNDWATER NUMBER	GW102550
LIC-NUM	10BL157703
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Bore
WORK-STATUS	(Unknown)
CONSTRUCTION-METHOD	
OWNER-TYPE	
COMMENCE-DATE	
COMPLETION-DATE	1996-01-01
FINAL-DEPTH (metres)	4.00
DRILLED-DEPTH (metres)	
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N/A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	1.80
SALINITY	
YIELD	

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

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	
AREA-DISTRICT	
CMA-MAP	
GRID-ZONE	
SCALE	
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6253109.00
EASTING	322033.00
LATITUDE	33 50' 50"
LONGITUDE	151 4' 35"
GS-MAP	

AMG-ZONE 56
COORD-SOURCE
REMARK

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

no details

Licensed [\(top\)](#)

COUNTY CUMBERLAND
PARISH CONCORD
PORTION-LOT-DP LOTS 2,6&7 DP740600

Construction [\(top\)](#)

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

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	4.00				
1	1	Casing	P.V.C.	0.00	0.00	50			

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

no details

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

no details

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Groundwater Works Summary

For information on the meaning of fields please see [Glossary](#)

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Work Requested -- GW102556

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

GROUNDWATER NUMBER	GW102556
LIC-NUM	10BL157703
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Bore
WORK-STATUS	(Unknown)
CONSTRUCTION-METHOD	
OWNER-TYPE	
COMMENCE-DATE	
COMPLETION-DATE	1996-01-01
FINAL-DEPTH (metres)	4.00
DRILLED-DEPTH (metres)	
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N/A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	1.83
SALINITY	
YIELD	

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

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	
AREA-DISTRICT	
CMA-MAP	
GRID-ZONE	
SCALE	
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6252900.00
EASTING	322371.00
LATITUDE	33 50' 57"
LONGITUDE	151 4' 48"
GS-MAP	

AMG-ZONE 56
COORD-SOURCE
REMARK

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

no details

Licensed [\(top\)](#)

COUNTY CUMBERLAND
PARISH CONCORD
PORTION-LOT-DP LOTS 2,6&7 DP740600

Construction [\(top\)](#)

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

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	4.00				
1	1	Casing	P.V.C.	0.00	0.00	50			

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

no details

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

no details

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Groundwater Works Summary

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Work Requested -- GW102557

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

GROUNDWATER NUMBER	GW102557
LIC-NUM	10BL157703
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Bore
WORK-STATUS	(Unknown)
CONSTRUCTION-METHOD	
OWNER-TYPE	
COMMENCE-DATE	
COMPLETION-DATE	1996-01-01
FINAL-DEPTH (metres)	4.00
DRILLED-DEPTH (metres)	
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N/A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	
SALINITY	
YIELD	

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

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	
AREA-DISTRICT	
CMA-MAP	
GRID-ZONE	
SCALE	
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6252778.00
EASTING	322425.00
LATITUDE	33 51' 1"
LONGITUDE	151 4' 50"
GS-MAP	

AMG-ZONE 56
COORD-SOURCE
REMARK

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

no details

Licensed [\(top\)](#)

COUNTY CUMBERLAND
PARISH CONCORD
PORTION-LOT-DP LOTS 2,6&7 DP740600

Construction [\(top\)](#)

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

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	4.00				
1	1	Casing	P.V.C.	0.00	0.00	50			

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

no details

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

no details

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Groundwater Works Summary

For information on the meaning of fields please see [Glossary](#)

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Work Requested -- GW102558

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

GROUNDWATER NUMBER	GW102558
LIC-NUM	10BL157703
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Bore
WORK-STATUS	(Unknown)
CONSTRUCTION-METHOD	
OWNER-TYPE	
COMMENCE-DATE	
COMPLETION-DATE	1996-01-01
FINAL-DEPTH (metres)	4.00
DRILLED-DEPTH (metres)	
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N/A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	1.83
SALINITY	
YIELD	

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

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	
AREA-DISTRICT	
CMA-MAP	
GRID-ZONE	
SCALE	
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6252682.00
EASTING	322272.00
LATITUDE	33 51' 4"
LONGITUDE	151 4' 44"
GS-MAP	

AMG-ZONE 56
COORD-SOURCE
REMARK

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

no details

Licensed [\(top\)](#)

COUNTY CUMBERLAND
PARISH CONCORD
PORTION-LOT-DP LOTS 2,6&7 DP740600

Construction [\(top\)](#)

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

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	4.00				
1	1	Casing	P.V.C.	0.00	0.00	50			

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

no details

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

no details

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Groundwater Works Summary

For information on the meaning of fields please see [Glossary](#)

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Work Requested -- GW102559

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

GROUNDWATER NUMBER	GW102559
LIC-NUM	10BL157703
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Bore
WORK-STATUS	(Unknown)
CONSTRUCTION-METHOD	
OWNER-TYPE	
COMMENCE-DATE	
COMPLETION-DATE	1996-01-01
FINAL-DEPTH (metres)	4.00
DRILLED-DEPTH (metres)	
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N/A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	1.83
SALINITY	
YIELD	

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

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	
AREA-DISTRICT	
CMA-MAP	
GRID-ZONE	
SCALE	
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6252559.00
EASTING	322275.00
LATITUDE	33 51' 8"
LONGITUDE	151 4' 44"
GS-MAP	

AMG-ZONE 56
COORD-SOURCE
REMARK

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

no details

Licensed [\(top\)](#)

COUNTY CUMBERLAND
PARISH CONCORD
PORTION-LOT-DP LOTS 2,6&7 DP740600

Construction [\(top\)](#)

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

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	4.00				
1	1	Casing	P.V.C.	0.00	0.00	50			

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

no details

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

no details

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Groundwater Works Summary

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Work Requested -- GW102561

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

GROUNDWATER NUMBER	GW102561
LIC-NUM	10BL157703
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Bore
WORK-STATUS	(Unknown)
CONSTRUCTION-METHOD	
OWNER-TYPE	
COMMENCE-DATE	
COMPLETION-DATE	1996-01-01
FINAL-DEPTH (metres)	4.00
DRILLED-DEPTH (metres)	
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N/A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	1.83
SALINITY	
YIELD	

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

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	
AREA-DISTRICT	
CMA-MAP	
GRID-ZONE	
SCALE	
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6252741.00
EASTING	322117.00
LATITUDE	33 51' 2"
LONGITUDE	151 4' 38"
GS-MAP	

AMG-ZONE 56
COORD-SOURCE
REMARK

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

no details

Licensed [\(top\)](#)

COUNTY CUMBERLAND
PARISH CONCORD
PORTION-LOT-DP LOTS 2,6&7 DP740600

Construction [\(top\)](#)

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

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	4.00				
1	1	Casing	P.V.C.	0.00	0.00	50			

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

no details

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

no details

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Groundwater Works Summary

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Work Requested -- GW102562

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

GROUNDWATER NUMBER	GW102562
LIC-NUM	10BL157703
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Bore
WORK-STATUS	(Unknown)
CONSTRUCTION-METHOD	
OWNER-TYPE	
COMMENCE-DATE	
COMPLETION-DATE	1996-01-01
FINAL-DEPTH (metres)	4.00
DRILLED-DEPTH (metres)	
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N/A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	1.83
SALINITY	
YIELD	

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

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	
AREA-DISTRICT	
CMA-MAP	
GRID-ZONE	
SCALE	
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6252830.00
EASTING	321935.00
LATITUDE	33 50' 59"
LONGITUDE	151 4' 31"
GS-MAP	

AMG-ZONE 56
COORD-SOURCE
REMARK

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

no details

Licensed [\(top\)](#)

COUNTY CUMBERLAND
PARISH CONCORD
PORTION-LOT-DP LOTS 2,6&7 DP740600

Construction [\(top\)](#)

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

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	4.00				
1	1	Casing	P.V.C.	0.00	0.00	50			

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

no details

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

no details

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Groundwater Works Summary

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Work Requested -- GW111341

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

GROUNDWATER NUMBER GW111341
LIC-NUM 10BL604349
AUTHORISED-PURPOSES MONITORING BORE
INTENDED-PURPOSES MONITORING BORE
WORK-TYPE Well
WORK-STATUS
CONSTRUCTION-METHOD Auger - Solid Flight
OWNER-TYPE Private
COMMENCE-DATE
COMPLETION-DATE 2010-11-06
FINAL-DEPTH (metres) 8.00
DRILLED-DEPTH (metres) 8.00
CONTRACTOR-NAME
DRILLER-NAME
PROPERTY SYDNEY WATER
GWMA -
GW-ZONE -
STANDING-WATER-LEVEL
SALINITY
YIELD

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

REGION 10 - SYDNEY SOUTH COAST
RIVER-BASIN
AREA-DISTRICT
CMA-MAP
GRID-ZONE
SCALE
ELEVATION
ELEVATION-SOURCE
NORTHING 6253031.00
EASTING 321544.00
LATITUDE 33 50' 53"
LONGITUDE 151 4' 16"
GS-MAP

AMG-ZONE 56
 COORD-SOURCE
 REMARK

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

COUNTY CUMBERLAND
 PARISH CONCORD
 PORTION-LOT-DP 52 747909

Licensed [\(top\)](#)

COUNTY CUMBERLAND
 PARISH CONCORD
 PORTION-LOT-DP 52 747909

Construction [\(top\)](#)

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

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	8.00	100			Auger - Solid Flight
1	1	Casing	PVC Class 12	0.00	5.00	50	40		Seated on Bottom; End cap
1	1	Opening	Slots	5.00	8.00	50	40		PVC Class 12; Casing - Machine Slotted; A: 1mm; Screwed
1		Annulus	Crushed Aggregate	3.50	8.00	100	50		Graded; GS: 2- 3mm; Q: 40m ³

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

no details

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

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	0.20	0.20	BITUMEN		
0.20	0.40	0.20	GRAVELLY ROAD BASE,GREY/BROWN		
0.40	0.60	0.20	CLAY BROWN,GRAVELS MOIST		
0.60	8.00	7.40	SHALE BROWN,HARD,DRY		

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Groundwater Works Summary

For information on the meaning of fields please see [Glossary](#)

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Work Requested -- GW111342

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

GROUNDWATER NUMBER	GW111342
LIC-NUM	10BL604349
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Well
WORK-STATUS	
CONSTRUCTION-METHOD	Auger - Solid Flight
OWNER-TYPE	Private
COMMENCE-DATE	
COMPLETION-DATE	2010-11-06
FINAL-DEPTH (metres)	8.00
DRILLED-DEPTH (metres)	8.00
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	SYDNEY WATER
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	
SALINITY	
YIELD	

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

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	
AREA-DISTRICT	
CMA-MAP	
GRID-ZONE	
SCALE	
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6253037.00
EASTING	321547.00
LATITUDE	33 50' 52"
LONGITUDE	151 4' 16"
GS-MAP	

AMG-ZONE 56
COORD-SOURCE
REMARK

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

COUNTY CUMBERLAND
PARISH CONCORD
PORTION-LOT-DP 52//747909

Licensed [\(top\)](#)

COUNTY CUMBERLAND
PARISH CONCORD
PORTION-LOT-DP 52 747909

Construction [\(top\)](#)

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

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	8.00	100			Auger - Solid Flight
1	1	Casing	PVC Class 12	0.00	5.00	50	40		Screwed; Seated on Bottom; Open End
1	1	Opening	Slots - Horizontal	5.00	8.00	50			PVC Class 12; Casing - Machine Slotted; A: 1mm; Screwed
1		Annulus	Crushed Aggregate	3.50	8.00				Graded; GS: 2-3mm

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

no details

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

FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	0.20	0.20	BITUMEN		
0.20	0.40	0.20	GRAVELLY ROAD BASE,GREY BROWN,MOIST		
0.40	0.60	0.20	CLAY BROWN,ANGULAR GRAVELS,MOIST		
0.60	8.00	7.40	SHALE BROWN,HARD,DRY		

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Groundwater Works Summary

For information on the meaning of fields please see [Glossary](#)

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Work Requested -- GW111343

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

GROUNDWATER NUMBER	GW111343
LIC-NUM	10BL604349
AUTHORISED-PURPOSES	MONITORING BORE
INTENDED-PURPOSES	MONITORING BORE
WORK-TYPE	Well
WORK-STATUS	
CONSTRUCTION-METHOD	Auger - Solid Flight
OWNER-TYPE	Private
COMMENCE-DATE	
COMPLETION-DATE	2010-11-06
FINAL-DEPTH (metres)	8.00
DRILLED-DEPTH (metres)	8.00
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	SYDNEY WATER
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	
SALINITY	
YIELD	

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

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	
AREA-DISTRICT	
CMA-MAP	
GRID-ZONE	
SCALE	
ELEVATION	
ELEVATION-SOURCE	
NORTHING	6253040.00
EASTING	321540.00
LATITUDE	33 50' 52"
LONGITUDE	151 4' 16"
GS-MAP	

AMG-ZONE 56
 COORD-SOURCE
 REMARK

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

COUNTY CUMBERLAND
 PARISH CONCORD
 PORTION-LOT-DP 52//747909

Licensed [\(top\)](#)

COUNTY CUMBERLAND
 PARISH CONCORD
 PORTION-LOT-DP 52 747909

Construction [\(top\)](#)

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

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1		Hole	Hole	0.00	8.00	100			Auger - Solid Flight
1	1	Casing	PVC Class 12	0.00	5.00	50	40		Screwed; Seated on Bottom; End cap
1	1	Opening	Slots - Horizontal	5.00	8.00	50			PVC Class 12; Casing - Machine Slotted; A: 1mm; Screwed
1		Annulus	Crushed Aggregate	3.50	8.00				Graded; GS: 2-3mm

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

no details

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

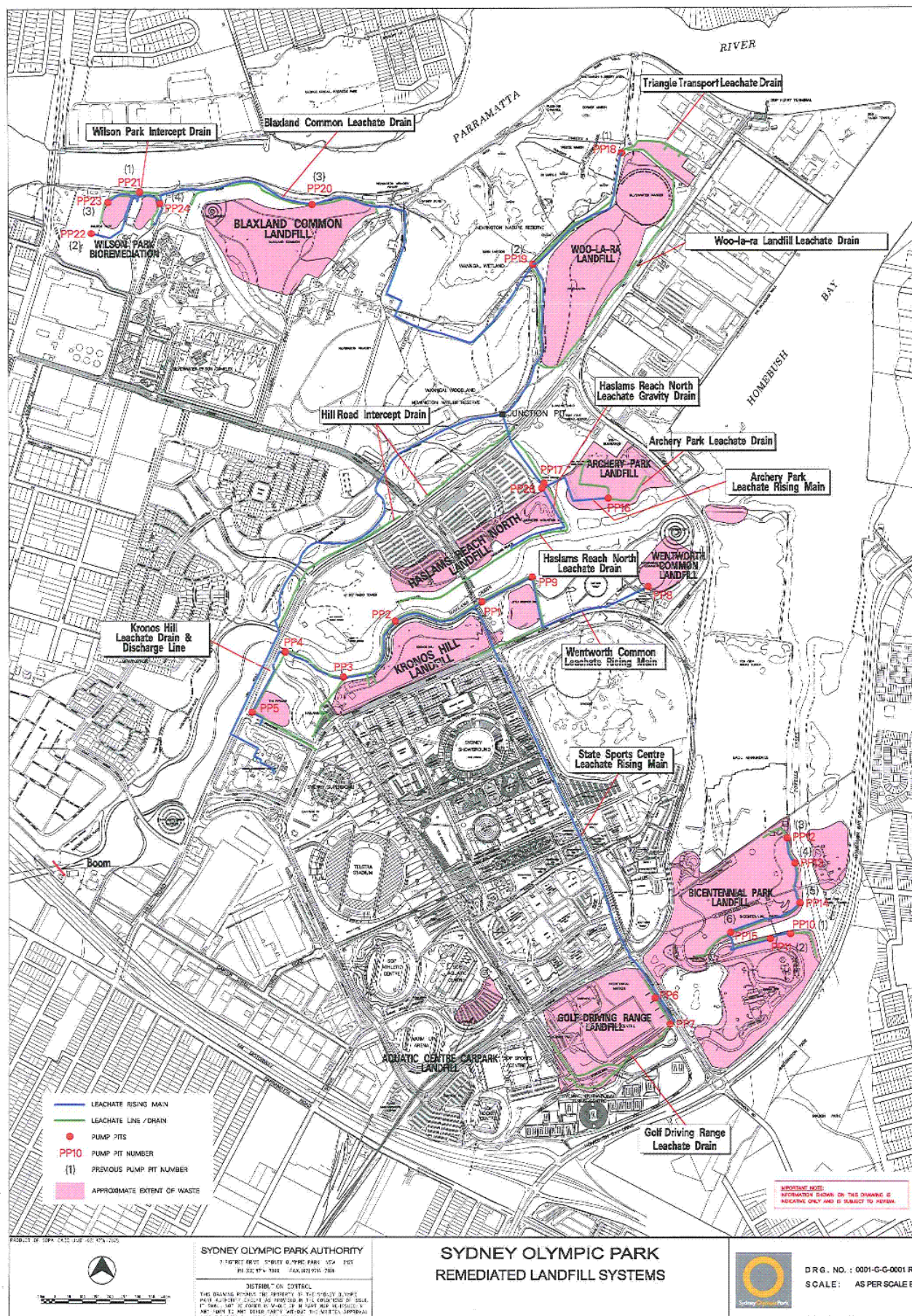
FROM	TO	THICKNESS	DESC	GEO-MATERIAL	COMMENT
0.00	0.20	0.20	BITUMEN		
0.20	0.40	0.20	GRAVELLY ROAD BASE,GREY/BROWN		
0.40	0.60	0.20	CLAY BROWN,GRAVELS MOIST		
0.60	8.00	7.40	SHALE,BROWN,HARD,DRY		

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Appendix C

NSW OEH Online Contaminated Land Register Search Record

**Phase 1 Preliminary Site Investigation
Proposed Development, Netball Centre, Olympic Park, NSW**



Environment Protection Authority**Maintenance of remediation notice****Sections 28 of the Contaminated Land Management Act 1997**

REGISTERED MAIL

Sydney Olympic Park Authority
7 Figtree Drive
SYDNEY OLYMPIC PARK NSW 2127

Attention: Mr David Young, General Manager Operations & Sustainability

Notice Number: 28040

This notice is issued under section 28 of the Contaminated Land Management Act 1997 ("the Act").

Sydney Olympic Park Authority (SOPA), "the recipient", must maintain remediation action in accordance with the requirements set out in this notice.

1. Land to which this notice applies ("the land")

This notice applies to the following waste containment areas within the Sydney Olympic Park:

Aquatic Centre Carpark Landfill; Bicentennial Park Landfill; Blaxland Common Landfill; Golf Driving Range Landfill; Kronos Hill Landfill; Woo-La-Ra Landfill and Wilson Park Bioremediation.

Their locations and boundaries are defined in the [attached map](#). This map is referenced as 001-G-G-0112 Rev. B and is contained in a SOPA document entitled "*Remediated Lands Management Plan January 2009*".

2. Background

The Sydney Olympic Park ("the SOP") was the venue of the Sydney 2000 Olympic Games. It is located at Homebush Bay — a large piece of land that had been used for uncontrolled landfilling for many years before it was redeveloped as the major Games venue. This resulted in wide spread contamination of the area. Assessment of the contamination in the areas began in the late 1980's and site remediation began in the early 1990's.

With the exception of the remediation of Wilson Park, the remediation strategy was to consolidate and re-contain the waste into several areas within the SOP. In the process, the majority of the SOP area had the buried waste removed and was subsequently redeveloped for the Games. The excavated waste was transferred to the designated waste containment areas. These areas, which include but are not limited to the land of which this notice applies, were capped, landscaped and turned into parkland. Leachate collection and transfer systems were also built to prevent leachate from escaping.

Wilson Park was a former Gasworks site. The nature of the contamination is waste liquid tar rather than uncontrolled landfilling. However, the remediation strategy adopted is also "cap-and-contain" similar to the remediation of the landfilling areas within the SOP.

The remediation of the waste containment areas of which this notice applies occurred at different timelines. Therefore, these waste containment areas were regulated by the Environment Protection

Authority ("EPA") on an individual basis. The regulatory instruments include notices issued under section 35 of the Environmentally Hazardous Chemicals Act, voluntary remediation agreement under section 23 of the Act and notices under section 28 of the Act depending on the stage of the remediation at the time the regulatory instruments were issued. The EPA however has envisioned that these regulatory instruments will eventually be converted into a single maintenance of remediation notice under section 28 of the Act.

In March 2007, SOPA provided the EPA with a draft document entitled *Remediated Landfill Systems – Operational Management Plan*. This represents SOPA's attempt to deal with the post-remediation management of the waste containment areas in a holistic way.

This document was subsequently revised and renamed to "*Remediated Lands Management Plan*". The revised document is supplemented with environmental monitoring data collected between years 2002 – 2007. The EPA is generally satisfied with the monitoring results, which suggest that the waste containment areas pose no unacceptable impact on their surrounding environment. The EPA however considers that additional environmental groundwater monitoring points will be required for some of the waste containment areas.

3. Commencement of this notice

This notice takes effect from the date of this notice and continues in force as varied from time to time, until it is revoked.

4. Maintenance and reporting requirements

Implementing the Remediated Lands Management Plan

- A. The recipient must manage the post-remediation of the land in accordance with the SOPA document entitled "*Remediated Lands Management Plan January 2009*" or its subsequent revisions that have been accepted by the EPA ("the RLMP"). In particular, the recipient must carry out the environmental monitoring program in accordance with Section 11 of the RLMP under the heading "*Environmental Monitoring, Performance Assessment and Report*".

Additional environmental groundwater monitoring points that may be required

- B. Within 12 months of the date of this notice, the recipient must provide the EPA with a report justifying the groundwater monitoring strategy at Blaxland Common landfill and Kronos Hill landfill, including any additional groundwater monitoring points that have been or will be installed.

Reporting to the EPA

- C. The recipient must prepare a report once every two years. The report must include but is not necessarily limited to:
- 1) The reporting of the operational performance of the waste containment systems in the preceding two years;
 - 2) The sampling and laboratory results of the monitoring program listed in Table 11.1 of the RLMP; and
 - 3) The interpretation of the sampling and laboratory results with respect to the performance of the waste containment systems.
- D. The report must be reviewed by a site auditor accredited under the Act in relation to the performance of waste containment systems.
- E. The first report and the auditor's review of the report must be provided to the EPA within 24 months from the date of this notice.
- F. The subsequent reports and the auditor's review of the reports must be submitted to the EPA in a frequency of once every two years until such time that the EPA varies the frequency of the submission.

5. Notification of change of owner/occupier

At least 30 days prior to the recipient ceasing to be the owner or occupier of the land to which this notice applies the recipient must give written notification to the EPA of the name and contact details of the prospective owner or occupier.

[Signed]

NIALL JOHNSTON
Manager Contaminated Sites

Date: 23 January 2009

NOTE:

Breaches of this Notice

A person who fails to comply with a notice issued under section 28 of the Act is guilty of an offence. Heavy penalties may be imposed where a person fails to comply with directions given in a notice issued under section 28 of the Act.

Information recorded by the EPA

Section 58 of the Contaminated Land Management Act 1997 and clause 6 of the Contaminated Land Regulation requires the EPA to maintain a public record. A copy of this notice will be included in the public record.

Appendix D

NSW WorkCover Authority Dangerous Goods Licence Search

**Phase 1 Preliminary Site Investigation
Proposed Development, Netball Centre, Olympic Park, NSW**



WorkCover NSW
92-100 Donnison Street, Gosford, NSW 2250
Locked Bag 2906, Lisarow, NSW 2252
T 02 4321 5000 F 02 4325 4145
WorkCover Assistance Service 13 10 50
DX 731 Sydney workcover.nsw.gov.au

Our Ref: D11/159824
Your Ref: Imogen Powell

20 December 2011

Attention: Imogen Powell
Coffey Environments
Level 1, 3 Rider Boulevard
RHODES NSW 2138

Dear Ms Powell,

**RE SITE: Cnr of Shirley Strickland Ave & Olympic Blvd,
Sydney Olympic Park NSW 2127**

I refer to your site search request received by WorkCover NSW on 9 December 2011 requesting information on licences to keep dangerous goods for the above site.

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover NSW has not located any records pertaining to the above mentioned premises.

If you have any further queries please contact the Dangerous Goods Licensing Team on (02) 4321 5500.

Yours Sincerely

ne Brent Jones
Senior Licensing Officer
Dangerous Goods Team

Appendix E

Aerial Photographs

**Phase 1 Preliminary Site Investigation
Proposed Development, Netball Centre, Olympic Park, NSW**

Aerial Photographs – 1951, Run 12, Serial Number NSW-467/131



Aerial Photographs – 1961, Run 33E, Serial Number NSW-1068-5026



Aerial Photographs – 1970, Run 17, Serial Number NSW-1901-5125



Aerial Photographs – 1978, Run 16, Serial Number NSW-2713-71



Aerial Photographs – 1986, Run 21, Serial Number NSW-3528-83



Aerial Photographs – 1999, Run 4, Serial Number NSW-4702-0056



Aerial Photographs – 2009, Google Maps Imagery, SKM



Appendix F

Land Title Search

**Phase 1 Preliminary Site Investigation
Proposed Development, Netball Centre, Olympic Park, NSW**

Title Tree
Lot 201 DP 1041756

Folio Identifier 201/1041756

Folio Identifier 102/1036979

Folio Identifier 5/778665

Folio Identifier 1/627506

Certificate of Title Volume 15164 Folio 117

Certificate of Title Volume 6129 Folio 216

Certificate of Title Volume 5326 Folio 143

Certificate of Title Volume 5056 Folio 217

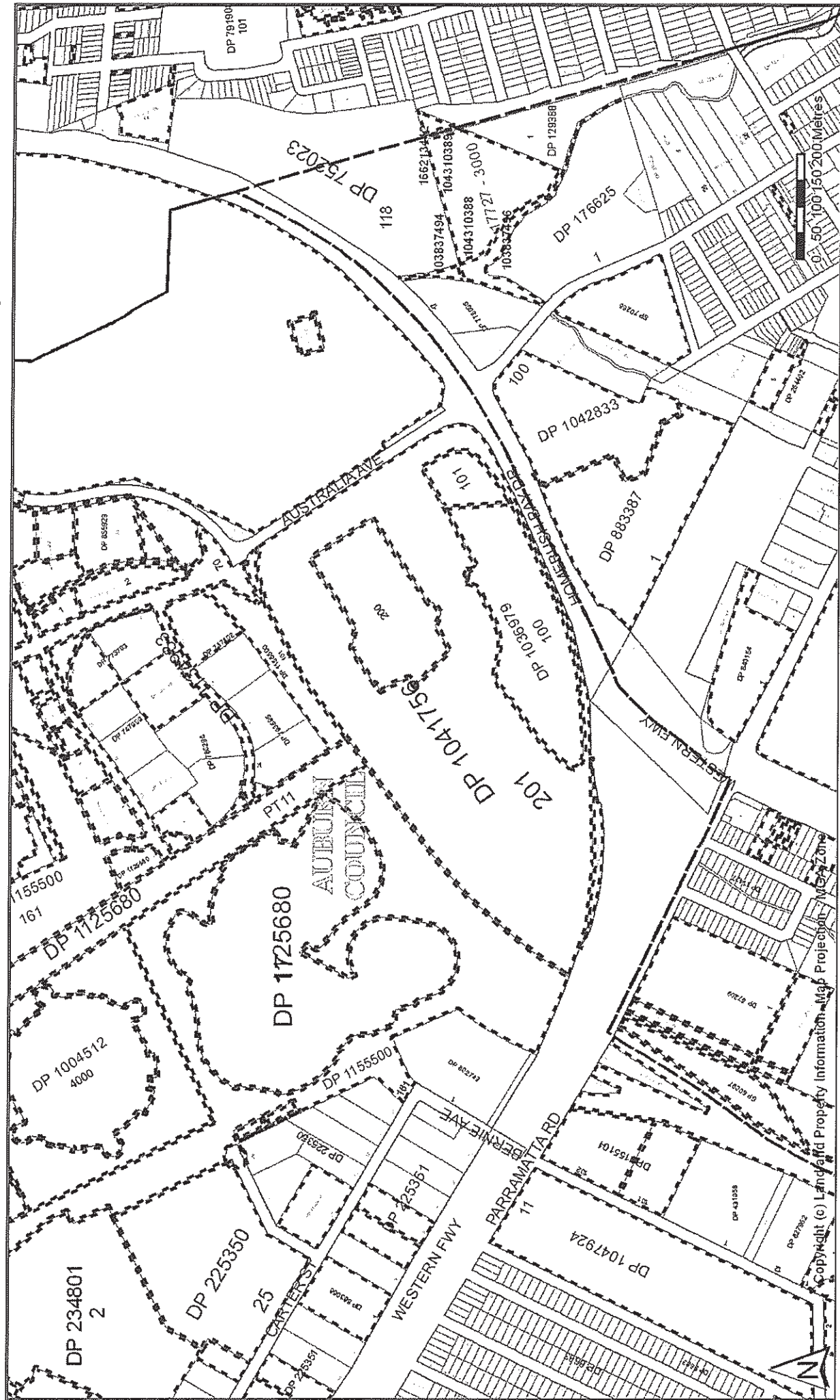
Certificate of Title Volume 4553 Folio 104

Certificate of Title Volume 2106 Folio 53

Cont.

Cont.

	(Part Portion 238 Parish Concord - Area 1031 Acres 1 Rood 10 ¼ perches - CT Vol 4553 Fol 104)
1933 – 1939	The Metropolitan Meat Industry Commissioner
1932 – 1933	Metropolitan Meat Industry Board
<i>(1932 – 1939)</i>	<i>(various commercial leases over parts shown in CTVol 4553 Fol 104)</i>
	(Part Portion 238 Parish Concord - Area 1042 Acres - CT Vol 2106 Fol 53)
1929 – 1932	Metropolitan Meat Industry Board
1910 – 1929	The Minister for Public Works of the Shire of New South Wales





Advance Legal Searchers
Pty Ltd Phone: 02 9754 1590

LPI On-Line

Advance Legal Searchers Pty Ltd hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act. Information provided through Tri-Search an approved LPI/NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 201/1041756

SEARCH DATE	TIME	EDITION NO	DATE
23/11/2011	12:19 PM	2	13/8/2002

LAND

LOT 201 IN DEPOSITED PLAN 1041756
 AT HOMEBUSH
 LOCAL GOVERNMENT AREA AUBURN
 PARISH OF CONCORD COUNTY OF CUMBERLAND
 TITLE DIAGRAM DP1041756

FIRST SCHEDULE

SYDNEY OLYMPIC PARK AUTHORITY

SECOND SCHEDULE (16 NOTIFICATIONS)

- 1 THE LAND ABOVE DESCRIBED IS LIMITED IN STRATUM IN THE MANNER DESCRIBED IN THE TITLE DIAGRAM
- 2 D40474 EASEMENT FOR ELECTRICITY MAINS 3.05 WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 3 D928745 EASEMENT FOR ELECTRICITY PURPOSES 3.05 WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 4 J937238 EASEMENT FOR ELECTRICITY PURPOSES 2.44 WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 5 F708337 EASEMENT FOR GAS PIPELINE 3.05 WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 6 Q618732 EASEMENT FOR PIPELINE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 7 Z946755 EASEMENT FOR PIPELINE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 6774372 AFFECTED BY EXTINGUISHMENT OF EASEMENT IN ACCORDANCE WITH S.21A OF THE PIPELINES ACT, 1967. SEE GOV. GAZ. 26/02/1999 FOL.1411
- 8 Z946756 EASEMENT FOR PIPELINE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 6224851 EASEMENT AFFECTED BY EXTINGUISHMENT IN ACCORDANCE WITH SEC 21A OF THE PIPELINES ACT, 1967 - SEE GOVT GAZ 26/2/1999 FOLIO 1411
- 9 Z946757 EASEMENT FOR PIPELINE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 6677102 EASEMENT AFFECTED BY EXTINGUISHMENT IN ACCORDANCE WITH SEC 21A OF THE PIPELINES ACT, 1967 - SEE GOVT GAZ 26/2/1999 FOLIO 1411

END OF PAGE 1 - CONTINUED OVER

Coffey - Sydney O

PRINTED ON 23/11/2011

*ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF THE CERTIFICATE OF TITLE.
WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER.



Advance Legal Searchers
Pty Ltd Phone: 02 9754 1590



LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 201/1041756

PAGE 2

SECOND SCHEDULE (16 NOTIFICATIONS) (CONTINUED)

- 10 7444723 LEASE TO SYDNEY SPORTS MEDICINE CENTRE PTY LIMITED
OF PART BEING THE SYDNEY SPORTS MEDICINE CENTRE,
(APPROXIMATELY 333 METRES SQUARE) GROUND FLOOR, STATE
SPORTS CENTRE, LOT 5, SARAH DURACK AVENUE, HOMEBUSH
BAY. EXPIRES: 23/11/2005. OPTION OF RENEWAL: 5 YEARS.
- 11 7786255 EASEMENT FOR UNDERGROUND ELECTRICITY CABLES 3.66
WIDE AFFECTING PART SHOWN SO BURDENED IN THE TITLE
DIAGRAM
- 12 DP1036982 EASEMENT FOR UNDERGROUND TRANSMISSION LINE 4.5, 5, 7,
7.5, 9, 11, 12 & 36.575 WIDE AND VARIABLE WIDTH
AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE
DIAGRAM
- 13 DP1036979 EASEMENT FOR SUPPORT OF ROAD BRIDGES AND FOOT BRIDGES
1 METRE(S) WIDE AND VARIABLE APPURTENANT TO THE LAND
ABOVE DESCRIBED
- 14 DP1036979 EASEMENT FOR DRAINAGE 9, 16 METRE(S) WIDE AND VARIABLE
AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE
DIAGRAM
- 15 DP1036979 EASEMENT FOR SERVICES REFERRED TO AND NUMBERED (4) IN
THE S.88B INSTRUMENT APPURTENANT TO THE LAND ABOVE
DESCRIBED
- 16 DP1036979 ACCESS TO ATTACH STRUCTURES REFERRED TO AND NUMBERED
(6) IN THE S.88B INSTRUMENT APPURTENANT TO THE LAND
ABOVE DESCRIBED

NOTATIONS

NOTE: THE CERTIFICATE OF TITLE FOR THIS FOLIO OF THE REGISTER DOES
NOT INCLUDE SECURITY FEATURES INCLUDED ON COMPUTERISED
CERTIFICATES OF TITLE ISSUED FROM 4TH JANUARY, 2004. IT IS
RECOMMENDED THAT STRINGENT PROCESSES ARE ADOPTED IN VERIFYING THE
IDENTITY OF THE PERSON(S) CLAIMING A RIGHT TO DEAL WITH THE LAND
COMPRISED IN THIS FOLIO.

DP1016443 NOTE: PLAN FOR LEASE PURPOSES & PROPOSED EASEMENTS
UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***



Advance Legal Searchers
Pty Ltd

Phone: 02 9754 1590

LPI On-Line

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Information provided through Tri-Search an approved LPI/NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

23/11/2011 12:22PM

FOLIO: 201/1041756

First Title(s): OLD SYSTEM

Prior Title(s): 102/1036979

Recorded	Number	Type of Instrument	C.T. Issue
6/8/2002	DP1041756	DEPOSITED PLAN	FOLIO CREATED EDITION 1
13/8/2002	8858440	DEPARTMENTAL DEALING	EDITION 2
22/10/2002	DP1016443	DEPOSITED PLAN	
21/9/2007	AD419866	REQUEST	

*** END OF SEARCH ***



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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

23/11/2011 12:23PM

FOLIO: 102/1036979

First Title(s): OLD SYSTEM

Prior Title(s): 5/778665

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
5/8/2002	DP1036979	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
6/8/2002	DP1041756	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***



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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

23/11/2011 12:24PM

FOLIO: 5/778665

First Title(s): OLD SYSTEM

Prior Title(s): 1/627506

Recorded	Number	Type of Instrument	C.T. Issue
31/10/1988	DP778665	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
22/7/1996	2297364	REQUEST	FOLIO CREATED EDITION 1
30/6/1998	5089960	DEPARTMENTAL DEALING	
30/11/1999	6331830	TRANSFER OF LEASE	
17/4/2000	DP1012876	DEPOSITED PLAN	
12/5/2000	6774372	DEPARTMENTAL DEALING	
22/6/2000	6224851	REQUEST	
11/9/2000	7080209	DEPARTMENTAL DEALING	
12/9/2000	7083110	DEPARTMENTAL DEALING	
13/9/2000	6677102	REQUEST	
19/9/2000	6677103	REQUEST	
22/11/2000	7237007	DEPARTMENTAL DEALING	
22/3/2001	7444723	LEASE	EDITION 2
3/8/2001	7786255	GRANT OF EASEMENT	EDITION 3
7/8/2001	7523364	REJECTED - CAVEAT	
25/1/2002	8208816	APPLICATION	
25/1/2002	8208817	APPLICATION	
31/1/2002	8315967	DEPARTMENTAL DEALING	
1/2/2002	8322840	DEPARTMENTAL DEALING	
14/5/2002	DP1036982	DEPOSITED PLAN	

END OF PAGE 1 - CONTINUED OVER

Coffey - Sydney O

PRINTED ON 23/11/2011



Advance Legal Searchers
Pty Ltd

Phone: 02 9754 1590

LPI On-Line

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

23/11/2011 12:24PM

FOLIO: 5/778665

PAGE 2

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
5/8/2002	DP1036979	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***



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Pty Ltd Phone: 02 9754 1590

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Information provided through Tri-Search an approved LPI/NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

23/11/2011 12:24PM

FOLIO: 1/627506

First Title(s): SEE PRIOR TITLE(S)
 Prior Title(s): VOL 15164 FOL 117

Recorded	Number	Type of Instrument	C.T. Issue
28/3/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
20/10/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
27/10/1989	DP499044	DEPOSITED PLAN	
12/4/1990	Y760065	GRANT OF EASEMENT	
12/4/1990	Y760066	LEASE	EDITION 1
29/10/1991	Z946755	GRANT OF EASEMENT	
29/10/1991	Z946756	GRANT OF EASEMENT	
29/10/1991	Z946757	GRANT OF EASEMENT	EDITION 2
4/12/1991	E75894	GRANT OF EASEMENT	EDITION 3
29/9/1993	DP831539	DEPOSITED PLAN	
10/11/1993	I786094	DEPARTMENTAL DEALING	
16/11/1995	O671966	LEASE	EDITION 4
22/7/1996	2297364	REQUEST	FOLIO CANCELLED
15/8/2000	7022680	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

NEW SOUTH WALES

CERTIFICATE OF TITLE
REAL PROPERTY ACT, 1900



15164-117

First Title Old System

Prior Title Vol. 6129 Fol. 216



Vol. 15164 Fol. 117

EDITION 14 12 1983
ISSUED

I certify that the person named in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set out below) in the land described subject to the recordings appearing in the Second Schedule and to the provisions of the Real Property Act, 1900.

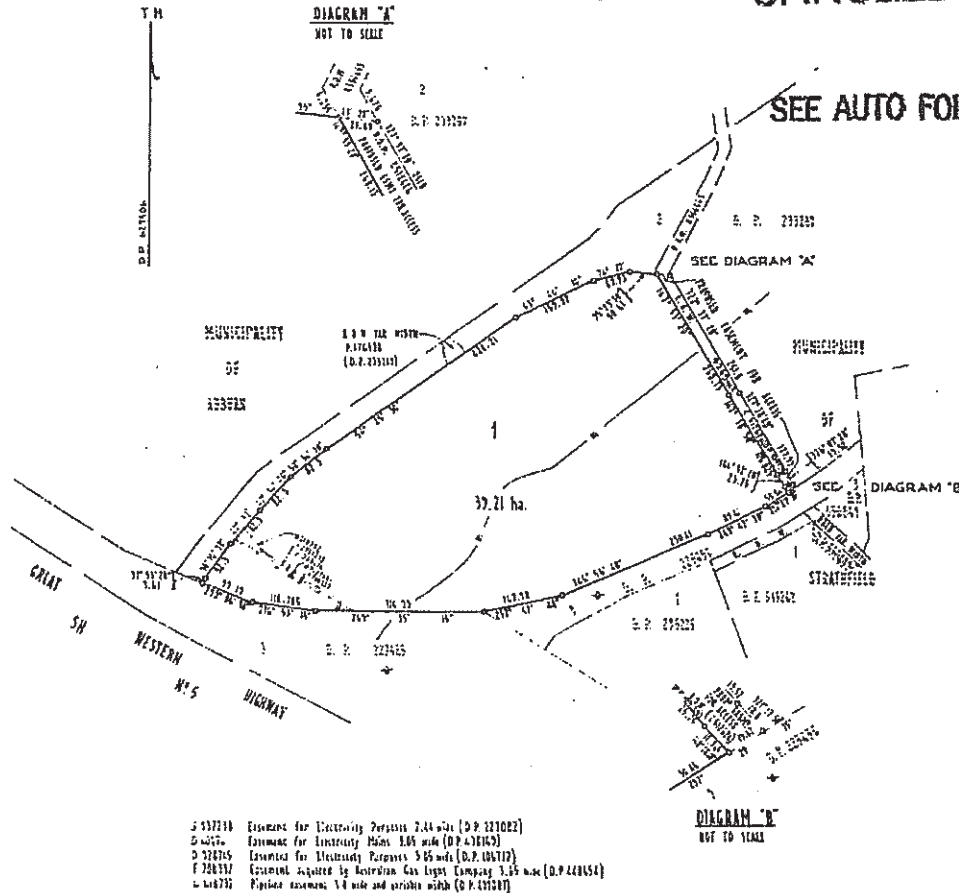
Registrar General.



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES

DIAGRAM 'A'
NOT TO SCALE



CANCELLED

SEE AUTO FOLIO

LAND REFERRED TO

Lot 1 in Deposited Plan 627506 at Homebush Bay in the Municipalities of Auburn and Strathfield Parish of Concord County of Cumberland.

FIRST SCHEDULE

THE MINISTER FOR PUBLIC WORKS.

SECOND SCHEDULE

- EA (S8) 1. D40474¹ Easement for electricity mains affecting the land shown so burdened in the plan hereon.
- ER (S8) 2. D928745^p Easement for electricity purposes affecting the land shown so burdened in the plan hereon.
- EA (S8) 3. F708337^p Easement for gas pipeline affecting the land shown so burdened in the plan hereon.
- ER (S8) 4. J937238^p Easement for electricity purposes affecting the land shown so burdened in the plan hereon.
- EP (S8) 5. Q618732^p Easement for pipeline affecting the land shown so burdened in the plan hereon.
- EA (S8) 6. T377028^p Easement for access affecting the land shown so burdened in the plan hereon.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

(Page 1) Vol. 15164 Fol. 117

M467173 #117
 M. 640806

NOTATIONS AND UNREGISTERED DEALINGS

--	--	--

SECOND SCHEDULE (continued)
 PARTICULARS
 Registrar General CANCELLATION

--	--	--

CANCELLED
 SEE AUTO FOLIO

FIRST SCHEDULE (continued)
 REGISTERED PROPRIETOR
 Registrar General

State Sports Centre Trust by Application M467173. Registered 11.9.1986.

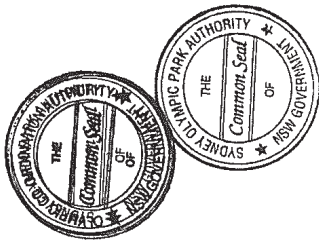


SIGNATURES, AND SEALS ONLY

Signed by me Diana Leeson as Delegate of the Sydney Olympic Park Authority and I hereby declare that I have no notice of the existence of any such delegation in the presence of:

Signature of witness: Bryan Hassam
Signature of witness: Bea Leeson
Signature of witness: SOPA by the Delegate

Print Name of witness: Bryan Hassam
Print Name of witness: Bea Leeson



PLAN APPROVED

Crown Lands Office Approval
Land District: _____
Paper No.: _____
Field Book: _____, pages _____

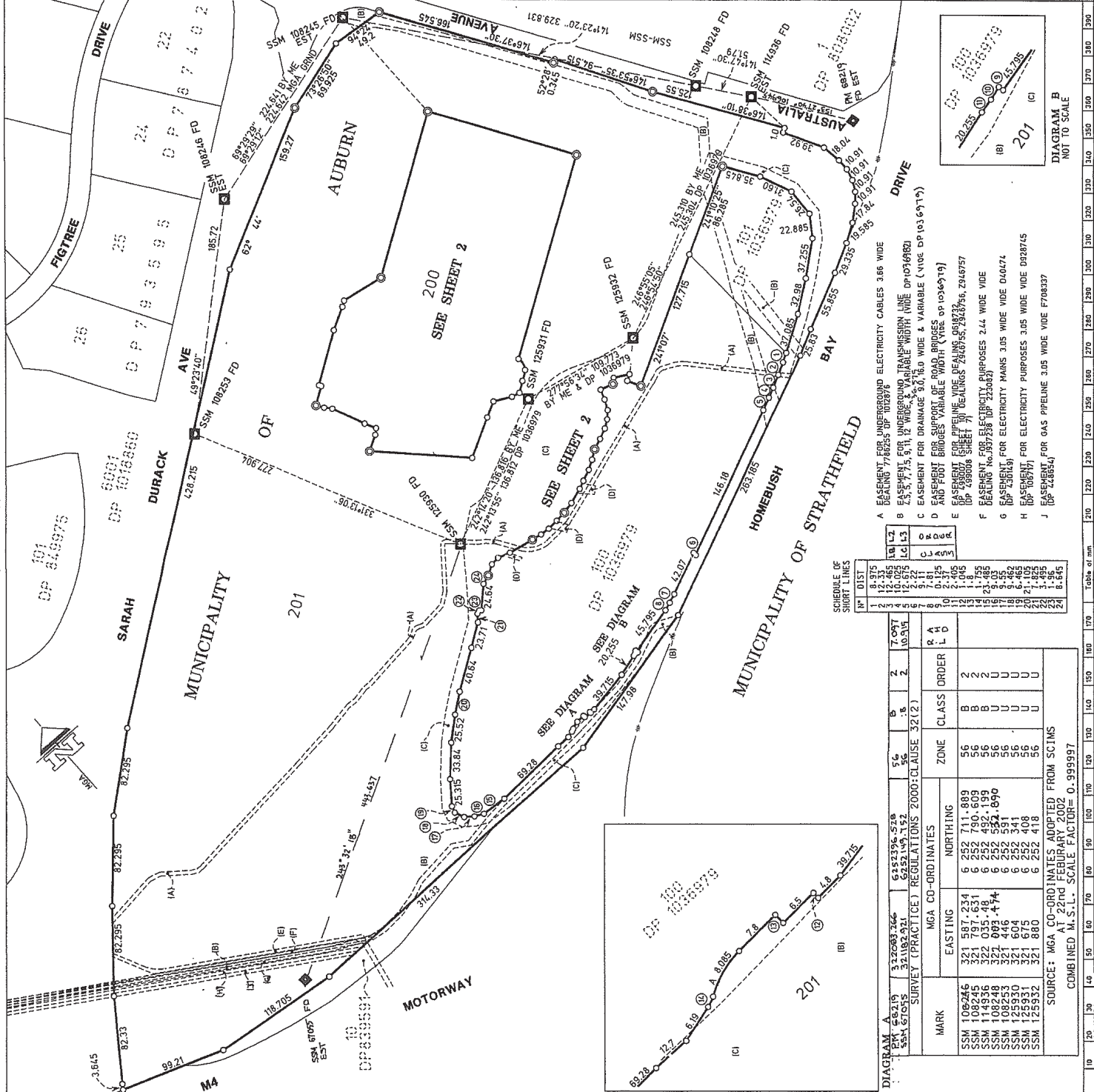
Subdivision Certificate

I certify that the provisions of s.109 of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to the proposed subdivision.

Consent Authority: SYDNEY OLYMPIC PARK AUTHORITY
Date of endorsement: 2002.02.22
Subdivision Certificate No.: 101/1015979

When the plan is to be lodged electronically in the Land Titles Office, it should include a signature in an electronic or digital format approved by the Registrar-General.

* Delete if inapplicable.



DP1041756

Registered: 08/08/2002C.A.: SEE CERTIFICATETitle System: TORRENSPurpose: SUBDIVISIONRelMap: U0045-31#Last Plan: U0052-93#Last Plan: DP1036979

PLAN OF SUBDIVISION OF LOT 102

DP 1036979 FOR LEASE PURPOSES.

Lengths are in metres. Reduction Ratio 1:2500

LGA: AUBURNLocality: HOMEBUSH BAYParish: CONCORDCounty: CUMBERLAND

This is sheet 1 of my plan in 3 sheets.

Surveyors (Practical Regulation 1996)

Surveyors: PETER W. CORNISHof MARCO & FORESTER PT LTD

a surveyor registered under the Surveyors Act 2002.

This survey has been made in accordance with the Surveyors Practice Directions 2001 and was completed on 22.02.2002.

The survey relates to LOT 102.

These specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.

Datum: Line X-YZone: Suburban/General

Surveyor registered under the Surveyors Act 2001

Plans used in preparation of survey/compilation 1036979

PANEL FOR USE ONLY for statements of intention to dedicate public roads, to create public reserves, drainage reserves, easements, or for the use of land or positive covenants

DP1041756

Registered:

This is about 2 of my plan in 3 schools

Surveyor registered under Surveyors Act 2001

This is sheet 2 of the plan of 2 sheets
covered by submission certificate No.
of 508 5102.

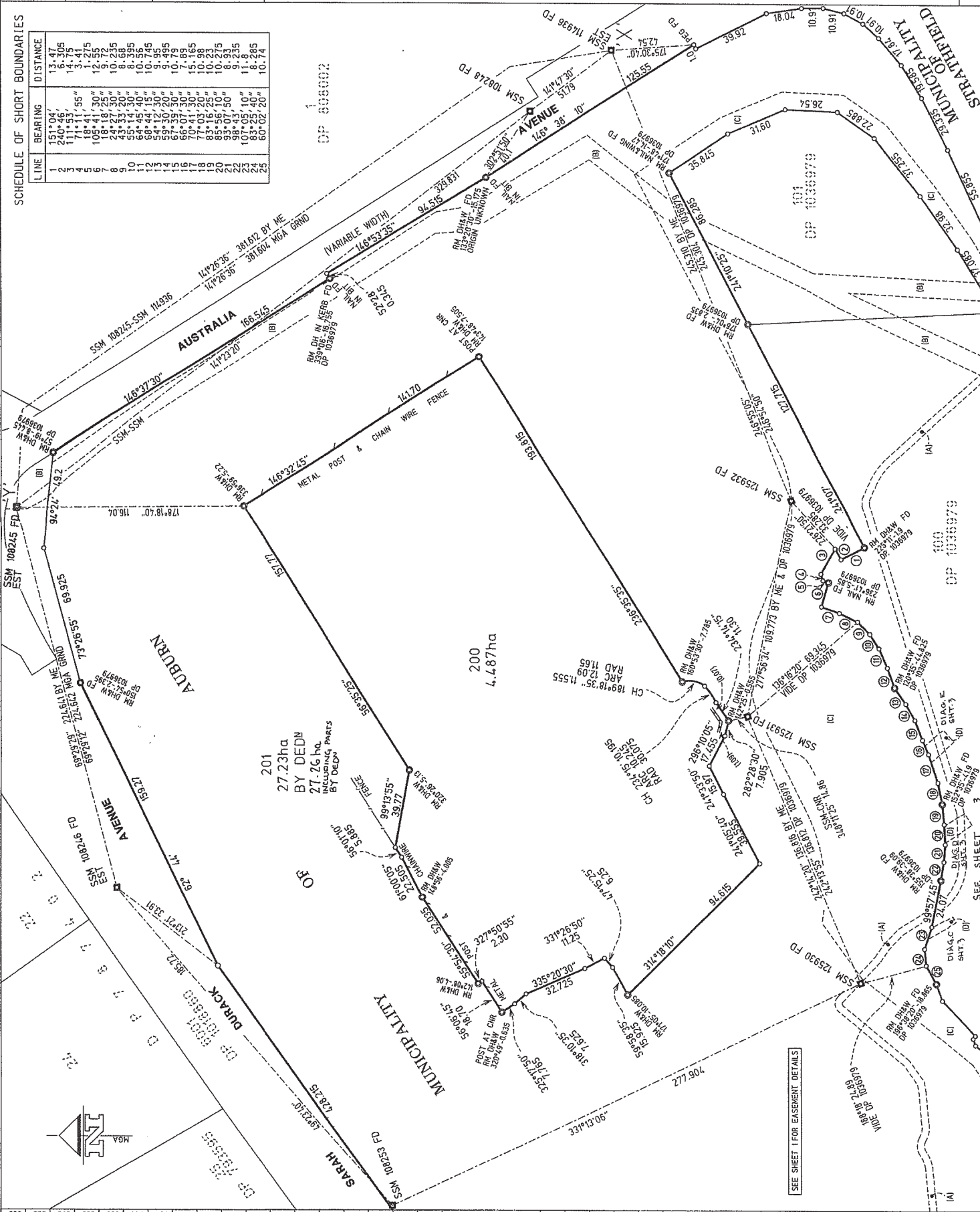
Beecon

University of Connecticut / Storrs / Storrs, CT 06269-3043

For use where space is insufficient in any panel on Plan Form 2.

SCHEDULE OF SHORT BOUNDARIES

LINE	BEARING	DISTANCE
1	151°04'	13.47
2	204°55'	16.30
3	151°55'	13.47
4	184°1'	12.25
5	109°41'	12.25
6	28°39'	8.66
7	23°20'	8.66
8	355°14'	10.56
9	55°14'	10.56
10	83°16'	10.56
11	33°39'	10.79
12	66°01'	15.95
13	74°04'	15.95
14	83°16'	10.22
15	55°59'	10.22
16	93°01'	8.93
17	107°10'	12.65
18	33°23'	8.93
19	60°02'	10.74



Reduction Ratio 1: 1250

ALL REDUCED LEVELS RELATE TO AHD

227°57'

DP1041756

Registered: 6.8.2002.

This is sheet 3 of my plan in 3 sheets dated

Surveyor registered under Surveyors Act 1929

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Authorized Person/General Manager/Accredited Certifier
For use where space is insufficient in any panel on Plan Form 2.

Signed by me Dianne Leeson as Delegate of the Sydney Olympic Park Authority and I hereby declare that I have no notice of the revocation of such Delegation in the presence of:

.....

..... SOPA by its Delegate

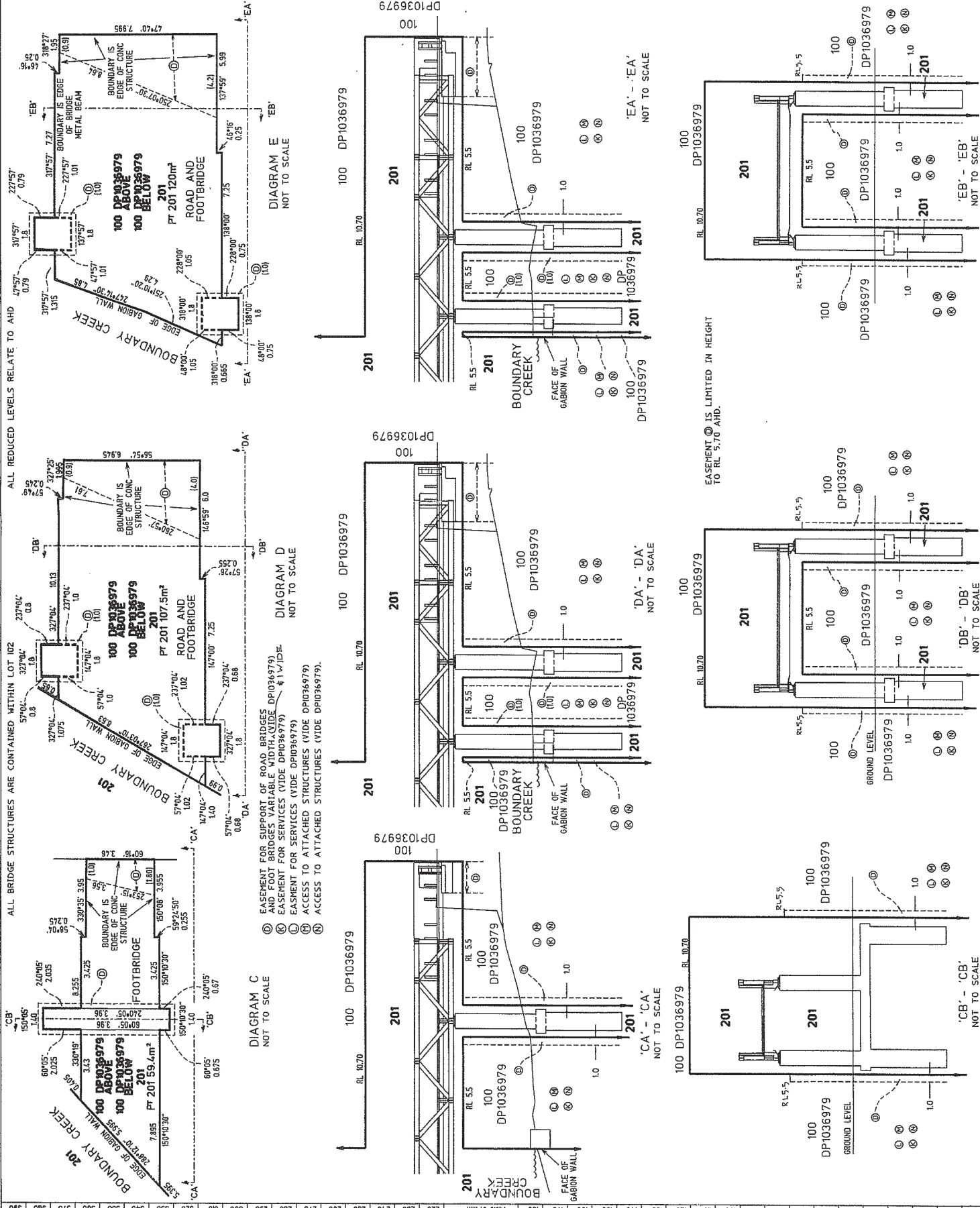
Print Name of Witness
Bryan Hagman



Reduction Ratio is: N.T.S.

Plan Drawing only to appear in this space

SURVEYOR'S REFERENCE: S320565 (20565) rev D



Appendix G

Heritage Item Listing

**Phase 1 Preliminary Site Investigation
Proposed Development, Netball Centre, Olympic Park, NSW**



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Olympic Cauldron at Sydney Olympic Park

Item

Name of Item: Olympic Cauldron at Sydney Olympic Park

Other Name/s: The Cauldron, Sydney Olympic Games Cauldron, Millenium Games Cauldron, Sydney 2000 Games Cauldron

Type of Item: Built

Group/Collection: Recreation and Entertainment

Category: Olympic Facility

Primary Address: The Overflow near corner of Olympic Boulevard and the Grand Parade, Sydney Olympic Park, NSW 2127

Local Govt. Area: Auburn

Property Description:

Lot/Volume Code	Lot/Volume Number	Section Number	Plan/Folio Code	Plan/Folio Number
PART LOT	1000	-	DP	1127564
PART LOT	161	-	DP	1155500

All Addresses

Street Address	Suburb/Town	LGA	Parish	County	Type
The Overflow near corner of Olympic Boulevard and the Grand Parade	Sydney Olympic Park	Auburn	Concord	Cumberland	Primary

Owner/s

Organisation Name	Owner Category	Date Ownership Updated
Sydney Olympic Park Authority	State Government	

Statement of Significance

The Olympic Cauldron at Sydney Olympic Park is of State historic significance as the culmination of the opening ceremony of the Sydney Olympic Games on 15 September 2000 and a reminder of Sydney's success and honour in having hosted the Millenium Games. The opening ceremony is considered to be a triumph of Australian showmanship which was watched by hundreds of millions of people around the world. The Olympic Cauldron is also of State significance for its associations with the Olympic athletes who participated in the Sydney 2000 Games and particularly with the Aboriginal athlete Cathy Freeman, who was chosen to be the final Australian link in the Olympic Torch relay to light the cauldron, thus marking the commencement of the games. The image of the lit cauldron flowing with fire and water as it rose around Freeman is one of the most memorable images of the Sydney Olympic Games. The Olympic Cauldron is of State significance for the esteem in which it is held by Australians proud of the success of the Sydney Olympic Games. It is also of social significance to Sydney Olympic Park visitors for its later role as a popular fountain in the Overflow next to the

Olympic Stadium. The Olympic Cauldron is of representative and rarity State significance as the only cauldron designed and built to hold an Olympic flame in NSW.

Date Significance Updated: 04 Aug 11

Note: There are incomplete details for a number of items listed in NSW. The Heritage Branch intends to develop or upgrade statements of significance and other information for these items as resources become available.

Description

Designer/Maker: Michael Scott-Mitchell

Builder/Maker: Engineers Tierney and Partners with the assistance of LUSAS Civil and Structural

Construction Years: 2000 - 2000

Physical Description: 'The 8.5 tonne cauldron is a perforated, corrugated shell structure fabricated from stainless steel. It has an overall diameter of 10m and tapers from 0.85m thick at centre down to 0.15m thick at the edge.' (Lusas consultant engineers, <http://www.lusas.com/case/civil/cauldron.html>) [The cauldron] was designed to rise out of a circular pond after the flame was lit, and ascend, as though floating, up a waterfall to the top of the northern stand. It was collected by a 50 metre mast rising from behind the stand, and the main burner in the tip of the mast was lit. (NLA catalogue entry)

In 2001 the end stand on the northern part of the stadium was removed and the cauldron relocated nearby to the Overflow, where its stem was removed and it was repositioned on top of a group of 24 steel poles organized in a haphazard arrangement, approximately 12 metres above the ground.

'The retrofitted cauldron is complete with a new burner system, and a water feature inside the perforated cladding. Both of these features are fed via services in an underground plant room, directly below the cauldron. This plant room is included within the curtilage and also houses: the light fittings lighting the cauldron; irrigation pumps and manifold; potable and non potable water meters; and filtration and chemical treatment of the water to the water feature.' (SOPA Manual, Section 1.2)

The cauldron is surrounded by a decorative elliptical pavement inlaid with the names of all those who won gold, silver and bronze medals at the Sydney Olympic Games, known as the 'Roll of Honour'. The Roll of Honour is an Olympic traditional whereby medal-winning athletes are permanently acknowledged, typically in the vicinity of the Olympic Stadium. [It includes] both Paralympic and Olympic athletes. (OCA Tender, 2001)

Current Use: Fountain, capable of being lit on approved ceremonial occasions

Former Use: Ceremonial flame holder for the Sydney Olympic Games & Paralympic Games 2000.

History

Historical Notes: Aboriginal land

Aboriginal people have been associated with the Homebush Bay area for many thousands of years. When Europeans arrived in 1788, the Homebush Bay area formed part of the traditional lands of the Wanngal clan. The lands of the Wanngal clan extended along the southern shore of the Parramatta River between about Leichhardt and Auburn. The Wanngal clan would have had access rights to the resources of the Homebush Bay area, but would have routinely interacted with neighbouring clan groups.

Shortly after the British colonisation of Sydney several smallpox epidemics ravaged the local Aboriginal population, leaving many of the clans seriously depleted. By way of adaptation, members of neighbouring clan groups are

known to have joined together to ensure their survival. Aboriginal people were still using the Homebush Bay area in the early 1800s even after their lands were granted to Europeans. Several encounters and conflicts between Europeans and Aboriginal people are documented for the Homebush Bay area throughout the 1790s, and in the early 1800s Aboriginal people (perhaps of the Wanngal clan) were working for and supplying fish to Europeans in the area (Cameo, 2002: 46). For the period after the 1810s, no references have yet been located which describe Aboriginal people living in the Homebush Bay area (although this is the subject of ongoing research through the Aboriginal History & Connections Program. This program was launched by the Sydney Olympic Park Authority in April 2002, a long-term program aimed at documenting Aboriginal connections to the Homebush Bay area before and after the arrival of Europeans).

Today the Homebush Bay area is within the asserted traditional cultural boundary of the Darug language group, of which the Wanngal clan is said to have belonged. The descendants of Darug traditional owners of the Sydney area play a custodial role in the preservation of Aboriginal cultural heritage and are actively involved with archaeological and historical research in and around Homebush Bay. The area also falls within the administrative boundary of the Metropolitan Local Aboriginal Land Council which also plays a major role in the investigation and preservation of Aboriginal culture and heritage.

Colonisation

The Sydney Olympic Park locality was first known to Europeans as 'The Flats', as described by Lieutenant Bradley in his charting of the river in 1788. The name 'Liberty Plains' was also given to the locality but referred to the higher and drier lands along Parramatta Road and referred to the first group of settlers who were free rather than convict, who established farms there in 1793. (Carney & Mider, 1996: 11) The first European settler was Thomas Laycock (1756?-1809), who was granted 40 hectares between Parramatta Road and Homebush Bay in October 1794. He named his farm, Home Bush and ran sheep and cattle there. Laycock was Quartermaster of the NSW Corps and also held other government positions. D'Arcy Wentworth (c.1762-1827) purchased the 318 hectare holding from the Laycock family in January 1808. With additional grants Wentworth's holdings at Homebush Bay totalled 372 hectares by 1810. Wentworth established a horse stud and a private racetrack adjoining Parramatta Road and was influential among the early government officials and free settlers. He died at Homebush on 7 July 1827 (ADB, Vol. II).

Homebush was inherited by William Wentworth (1790-1872), who continued in his father's tradition of controversial public service. With his neighbour Gregory Blaxland, he was in the first exploration party to find a route through the Blue Mountains. He expanded and developed his father's bequest of properties, becoming one of the colony's richest men by his death in 1872. The property was let to numerous tenants throughout William's ownership, while he lived at Vaucluse House in Sydney. William, who was elected president of the Sydney Turf Club in 1832, gave permission for the existing racetrack to be upgraded for public race meetings. The racetrack included grandstands, stables and spelling paddocks which stretched over the Sydney Olympic Park site. The property was inherited by William Wentworth's son, Fitzwilliam. (Painter & Waterhouse, 1992:15-22).

State Abattoir

In 1907 367 hectares, most of the Wentworth estate, was resumed for the building of the State Abattoirs. Specifications for the general arrangement and layout of the site and drawings of the gatehouse, administration buildings, mutton, pork, beef and veal houses were completed in 1909 by the Department of Public Works under Government Architect Walter Liberty Vernon and construction completed in 1913. The gardens were also designed in 1913 by Joseph Maiden, Director of the Sydney Botanic Gardens, including the historic formal avenue of trees that is located on the eastern boundary of the Overflow. Consisting of Brush Box (*Lophostemon confertus*) and Spotted Gum (*Eucalyptus maculata*) this row of trees is referred to as 'the allee' (OCA Tender documents, 2001). The cauldron is

located in the Overflow, a park just west of the former main abattoir administration precinct and allee, on land which formed a car park for the abattoir.

By 1923 the State Abattoir employed 1,600 people and had a killing capacity of 25,000 animals a week, making it one of the largest abattoirs in Australia. The abattoirs continued to expand during World War II and into the 1950s with works provided for the treatment of offal, refrigeration, the preparation of tallow, fertilizers, meat for export and canning of pet foods (Godden & Associates 1989: 21ff). By the 1970s the facilities required rebuilding and a decision was taken not to upgrade but to redevelop surplus land for industrial use. The area to the east of the administration precinct, endorsed as an Advanced Technology Park at the beginning of 1984, is now known as the Australia Centre (Fox & Associates 1986: 48-50). The State Abattoir officially closed on 10 June 1988 and the Homebush Abattoir Corporation wound up on June 30 1992.

After 1992 the Abattoir precinct was occupied by a number of organisations that ultimately became the Sydney Olympic Park Authority (SOPA). Sydney won the right to host the Olympic Games on 23 September 1993, after being selected over Beijing, Berlin, Istanbul and Manchester at the 101st IOC Session in Monte Carlo, Monaco. (Wikipedia, '2000 Summer Olympics').

Sydney 2000 Summer Olympic Games

The Sydney 2000 Games, officially known as the Games of the XXVII Olympiad or the Millennium Games, was an international multi-sport event which was celebrated between 15 September and 1 October 2000 in Sydney. It was the second time that the Summer Olympics were held in the southern hemisphere (the first being in Melbourne in 1956). (Wikipedia, '2000 Summer Olympics').

The Sydney 2000 Games was considered to be a great sporting event and national success story: 'From the moment the first stock horse and rider galloped in to the centre of the opening-ceremony stage. . . the public sentiment became one of overwhelming confidence. The weather remained friendly. . . The venues, the crowd control and the public transport system were perfect, the volunteers a delight. . . For 17 days, from opening to closing, the whole experience had an almost other-worldly quality to it. To be in the streets was to be surrounded by a smile. . . The mood of mutual enjoyment was infectious and at times a little dream-like. . . Like all Olympic Games, Sydney 2000 showcased heroes and heroines and yielded lifetime memories that encapsulated proud and improbably spectacles, as well as performances that prickled our deepest emotions. . . 10,561 athletes from 200 countries competed for 300 gold medals. . . (Gordon, 2003, p191-3)

Juan Antonio Samaranch, President of International Olympic Committee (IOC) famously stated at the conclusion to the games: 'You have presented to the world the best Olympic Games ever' (Gordon, 2003, 191).

The Sydney Olympic Games opening ceremony

'At sunset on Friday, September 15, 2000, approximately 100,000 spectators and over 12,000 performers celebrated the opening of the 27th Olympiad in Sydney, Australia. Four billion viewers joined them world wide (IOC/ TWI, 2000).

'Ric Birch, the Director of Ceremonies and David Atkins, the artistic director, produced an epic pageant of Australian culture. From a lone rider on a chestnut stallion to the 120 stock horses and riders who started the show at a gallop, to the 11 minutes corroboree, Awakening, where 900 indigenous citizens created the most haunting segment of the opening ceremony to the performers who breathed flames to recreate a bushfire, the audience saw a visual tapestry of this country (IOC/ TWI, 2000).

'In Deep Sea Dreaming, 13 year old Nicki Webster floated amongst giant luminous jellyfish, seahorses, and anemones above the arena, while the sea floor flickered with schools of human fish. Dreamtime spirits represented by Djakapurra Munyarryn and hundreds of clan members filled the stadium with images of the original Australians, which led into a magical wildflower carpet, with people dressed as honey myrtles, waterlilies, banksias, and

Sturt Desert peas, with waratahs glowing a vibrant crimson. Hundreds of students sprouted petals and leaves (IOC/ TWI, 2000).

'Captain Cook's First Fleet arrived, then Ned Kelly came out in force in Tin Symphony, which paid tribute to Australia's rural beginnings. Then, 'Arrivals' introduced the many people from every continent who have chosen to call Australian home, culminating in a thunderous tribute to industry in the form of Adam Garcia's large troupe of tappers, who made the sparks fly. They were then joined by many of the 12,600 performers for a huge finale before welcoming to the arena a 2,000 piece marching band with participants from around the globe. Their stirring renditions of 'Waltzing Matilda', 'Chariots of Fire' and the LA Olympic fanfare and theme introduced the athletes who were to follow (IOC/ TWI, 2000).

'A seemingly endless parade of 12,000 athletes and coaches, from 200 countries - the largest representation of any Olympic games. North and South Korea marched united for the first time in nearly a century, and a wave of emotion swept the stadium, but nothing compared to the roar that greeted the Australian team (IOC/ TWI, 2000).

'Herb Elliot, 1,500m gold medallist at Rome, ran with the torch into Stadium Australia and handed it to Betty Cuthbert, whose wheelchair was pushed by Raelene Boyle. Dawn Fraser, Shirley Strickland-de la Hunty, Shane Gould and Debbie Flintoff-King then carried the flame in tribute to 100 years of women's participation in the Olympics (IOC/ TWI, 2000).

'Finally the Torch was handed to Cathy Freeman, Australia's favourite who was given the honour of lighting the cauldron, in a magnificent display of fire and water against a backdrop of the seventy-metre waterfall' (IOC/ TWI, 2000).

The lighting of the Olympic Cauldron at the Sydney 2000 Olympics

On 10 May 2000 in Olympia, Greece, the Sydney 2000 Olympic Torch Relay was commenced with a flame which would be carried by various means of transport across the world to Australia (Costain, 2000, p8). In Australia the torch followed a circuitous 27,000 km journey around the country visiting many towns and communities,, starting in Uluru and ending in Sydney. the Torch relay ceremony became characterised by 'a blend of pride, enjoyment, wonder and bonding - a reinforced sense of national identity' (Gordon, 2003, p144).

'[Finally reaching Stadium Australia during the opening ceremony] The final lap with the torch offered not only the opportunity to for the 110,000 crowd to salute a magnificent medley of six Australian women who had between them won 15 gold medals. Inevitably it also involved a kind of crossing-off process in solving the identity of the person a the core of the big secret. So it wasn't Betty? Not Dawn either? Not Shirley, eh? After Gould skipped her way to Flintoff-King, who then passed the torch to Freeman, the picture was suddenly clear, and somehow just right. Homage had been paid to the past, with a treasured group of female champions making a centenary of women's participation in the games. A wonderful relay that had begun with one young indigenous woman, Nova Peris-Kneebone, had ended with another. The Freeman culmination, at the end of a ceremony that had emphasised Aboriginal heritage and addressed the issue of reconciliation, amounted to a quietly eloquent statement about the kind of nation Australia aspired to be. It underlined itself boldly as a significant moment in the nation's history. 'Freeman ascended four flights of stairs carrying the torch, then walked across a shallow circular pond to an island in the centre, where she dipped the torch low, then swept it around her to ignite a ring of fire. The pond concealed a submerged cauldron, and the circle of fire consisted of 150 nozzles around the rim of its gas-burner. The whole concept, this tableau that represented a memorable marriage of fire and water, was the brainchild of Ric Birch; he had nursed it since he first took it to engineers and project managers in 1995, and had somehow kept it secret. Freeman stood motionless as the now-flaming cauldron rose around her, like a cascading umbrella, then walked from the pond and stood, a solitary figure, torch aloft. She stayed like that for a long time, because a freak signal had caused a glitch in the computer that drove the cauldron on the rails to its place above the stadium. For what seemed an eternity, it didn't move, and Freeman remained there, space-suited, still as a sculpture, and very wet.

Then two attendant engineers, Peter Tait and Rob Ironside, re-programmed the computer, made the winch system work, and the cauldron made its slow, majestic voyage upwards, against a waterfall background.' (Gordon, 2003, pp186-9)

Despite the temporary glitch, the television footage of Cathy Freeman lighting the cauldron was declared 'the sporting image of the year' by Sportel, a major international sports television convention held annually in Monaco, which awarded its coveted 'Golden Podium' award to the Sydney Olympic Broadcasting Organisation for the cauldron lighting sequence. (Sydney Morning Herald, 22/11/2000)

Cathy Freeman

Catherine Astrid Salome Freeman, OAM (known as Cathy Freeman) (born 16 February 1973) is an Australian Aboriginal sprinter who is particularly associated with the 400 metres running race. She became the Olympic champion for 400 m in the 2000 Sydney games, at which she lit the Olympic Flame. Freeman was born in Slade Point, Mackay, Queensland, where the local athletics track is named after her. (Wikipedia, 'Cathy Freeman')

Freeman's first coach was her stepfather, Bruce Barber. By her early teens she had a collection of regional and national titles, from competing in the 100 metres, 200 metres and high jump. In 1990, Freeman was chosen as a member of Australia's 4x100 m relay team for the 1990 Commonwealth Games in Auckland, New Zealand. The team won the gold medal, making Freeman the first Aboriginal Commonwealth Games gold medallist, as well as one of the youngest, at 16 years old. In 1992, Freeman competed in her first Olympic Games, reaching the second round of the 400 metres.

Competing at the 1994 Commonwealth Games in Canada, Freeman won gold in both the 200 m and 400 m. At the 1996 Olympics in Atlanta, Freeman won the silver medal behind France's Marie-Jose Perec in an Australian record of 48.63 seconds. In 1997 at the World Championships in Athens, Freeman won the World title in 49.77 seconds and in 1999, successfully defended her World title. (Wikipedia, 'Cathy Freeman')

Freeman was the home favourite for the 400 m title at the 2000 Olympics in Sydney, where she was expected to face-off with rival Perec. This showdown never happened, as Perec left the Games after an encounter with an Australian photographer. Freeman won the Olympic title in a time of 49.11 seconds. After the race, Freeman took a victory lap, carrying both the Aboriginal and Australian flags, despite the fact that unofficial flags are banned at the Olympic Games. (Wikipedia, 'Cathy Freeman')

After her Olympic triumph, Freeman chose to take a break from the track, not competing during the 2001 season. During 2002, Freeman returned to the track to compete as a member of Australia's victorious 4x400 m relay team at the 2002 Commonwealth Games. Freeman announced her retirement in 2003. (Wikipedia, 'Cathy Freeman')

'The selection of Freeman to light the Olympic cauldron seemed highly appropriate to most Australians - she excelled in her sport, protested against injustices to Aboriginal people, and spoke proudly of her Aboriginal heritage. These qualities stirred a nation that was debating reconciliation with its indigenous people. Perceptively, a columnist for the Los Angeles Times wrote during the Olympics: 'Freeman has emerged at the Sydney 2000 Games as the most potent symbol of a nation's hopes both for Olympic glory and reconciliation for sins of the past' (as quoted by Paul Sheehan in "Cathy who? Condoms and controversy make a world of difference", Sydney Morning Herald, 27 Sep. 2000, p.2). Moreover, Freeman's prominence at the opening ceremony encapsulated the Olympic ideals of promoting sport and celebrating the history and culture of the host country. (Reade, Powerhouse Museum, 2010)

The lighting of the cauldron at the Sydney 2000 Paralympics

The lighting of the Olympic Cauldron by wheelchair racer Louise Sauvage at the opening ceremony for the Sydney Paralympic Games on 18 October 2000 was another spectacle highlight. It was the culmination of another torch relay, but one that had commenced with a lighting ceremony at Parliament House, Canberra on 5 October 2000. Involving 920 torchbearers, each of whom carried the flame an average of 500 metres, it visited each

Australian capital city by air. Then within New South Wales it travelled from Moss Vale through the Southern Highlands, Illawarra, Campbelltown, Penrith, Windsor, Hunter and Central Coast areas before heading to Sydney. Like the Olympic Torch Relay before it, the Paralympic Torch Relay succeeded in generating community and media support for the Games, with crowds in many areas and significant crowds lining the Sydney metropolitan route in the final two days of the relay.

The lighting of the cauldron for the Paralympic Sydney Games 2000 was reported in a Sydney newspaper the following morning:

'The lighting of the cauldron, the same one that burned for two weeks during the Olympic Games, was less elaborate than the breathtaking fire-and-water sequence that was the climax of the Olympic opening ceremony. First a miniature cauldron, specially designed and constructed by AGL, which had risen from beneath the centre stage, was lit. The aluminium disc, fuelled by LPG and filled with fibreglass material to enhance the flame, flared brightly as it rose even higher. Then, in the style of a fire breather, it threw a seven-metre-long gas-fuelled flame in the direction of the cauldron high above the stadium floor at the top of the grandstand. That set off a series of relay flames fireworks synchronised by computer to music along the field, on the main stage and up through the stand. It gave the appearance of the flame being whisked up to the main cauldron (also fuelled by gas) which re-ignited to the delight of the 100,000 crowd. The mast was extended to once again lift the cauldron high above the stadium, where it will remain for the next 11 days.' (Sydney Morning Herald, 19/10/2000)

The design of the Olympic Cauldron

The idea of a cauldron lighting ceremony that combined fire and water was conceived by Ric Birch, Director of Ceremonies for the opening ceremony. The cauldron itself was designed by Michael Scott-Mitchell. The structural design of cauldron, mast and transport components was largely undertaken by Tierney and Partners with the assistance of LUSAS Civil and Structural. Its construction involved two years of planning, design and rigorous implementation by a team of design engineers, manufacturers and suppliers covering structural, mechanical, electrical and hydraulic engineering, gas-burner technology and computer control. (NLA catalogue entry for MSM)

On the day of the opening ceremony (15 September 2000), a press release offered Michael Scott-Mitchell's description of his experience of the design process and his understanding of the symbolism of the spectacle:

'In early January 1997, I met with Ric Birch to discuss a 'little project' he had in mind for me which turned out to be the design for the Olympic Cauldron. Ric had already thought of using a release of water from the top of the northern stand in some form or other. A suggestion had been made that the Cauldron could be presented by pushing it through the resulting 'waterfall'. Neither Ric nor I thought this was a particularly appropriate solution although it was a springboard in my mind for the notion of using a water effect with the Cauldron. By the end of our meeting, Ric had presented me with the fabulous brief of working out how to combine fire and water in the presentation of the Olympic Cauldron.

'By the time I had reached my car parked outside Ric's house, I had conceptually resolved the design that exists today. The salient components were that the athlete would appear to walk across a still body of water ('the pond') backed by a turbulent waterfall. Then, in a simple gesture the athlete would apply the Olympic torch to this still body of water in a circle around him or herself and become surrounded by a ring of fire.

'The fire would then lift 'magically' revealing it to be the Cauldron rising from under the water and around the athlete. With the athlete remaining at the centre of the pond, the lit Cauldron would continue to rise above the athlete with the waterfall as a backdrop and would appear to 'float' above the water torrent cascading down the northern stand as it continued its journey towards the very top.

'I was genuinely excited about the combination of these two natural elements: Fire and Water. Each has its own very particular attributes, which in an unexpected way compliment one another perfectly. They are perhaps the two elements that resonate most profoundly with the Australian landscape. Both have cleansing and restorative qualities that cyclically

regenerate our land. It is their ability to cleanse and regenerate that symbolically most excited me. Each ceremony lighting the Olympic Cauldron has had a profound and symbolic resonance with its particular period in history. I couldn't help being mindful of the fact that the lighting of the Cauldron for the Sydney 2000 Olympics is the first in a new Millenium, and I was keen to express the notion of the regeneration of the Olympic Spirit in the design.'

'... the technological demands of the design have been daunting, and the intervening years have involved the talents of many people in bringing the design to fruition, befitting the Olympic Spirit. These have included theatrical production managers, mechanical engineers, fire and gas experts, water experts, weather experts, risk management experts; the list goes on . Ric Birch, Michael Knight and latterly David Atkins have been unswerving in their endeavour to see the project fully realised. Finally Director Richard Wherrett was charged with choreographing and directing the entrance of the torch into the stadium, and the lighting of the flame.'

'At the end of the day, the lighting of the Cauldron is really about an athlete lighting a flame and providing a symbol that allows our spirits to soar and celebrate all that is positive in human endeavour, whether it be sporting, creative or scientific. It is my hope that we have embodied this in the Sydney 2000 Olympic Cauldron.' (Scott-Mitchell in SOCOG, 2000)

The tradition of the Olympic flame, torch relay and cauldron

The Olympic Flame or Olympic Torch is a symbol of the Olympic Games. Commemorating the theft of fire from the Greek god Zeus by Prometheus, its origins lie in ancient Greece, where a fire was kept burning throughout the celebration of the ancient Olympics. The fire was reintroduced at the 1928 Summer Olympics in Amsterdam, and it has been part of the modern Olympic Games ever since. According to legend, the torch's flame has been kept burning, ever since the first Olympics. (Wikipedia, 'Olympic flame', August 2010)

For the ancient Greeks, fire had divine connotations - it was thought to have been stolen from the gods by Prometheus. Therefore, fire was also present at many of the sanctuaries in Olympia, Greece. A fire permanently burned on the altar of Hestia in Olympia, Greece. During the Olympic Games, which honored Zeus, additional fires were lit at his temple and that of his wife, Hera. The modern Olympic flame is ignited at the site where the temple of Hera used to stand. (Wikipedia, 'Olympic flame', August 2010)

The Olympic Torch today is ignited several months before the opening celebration of the Olympic Games at the site of the ancient Olympics in Olympia, Greece. Eleven women, representing the Vestal Virgins, perform a ceremony in which the torch is kindled by the light of the Sun, its rays concentrated by a parabolic mirror. (Wikipedia, 'Olympic flame', August 2010)

In contrast to the Olympic flame proper, the torch relay of modern times, which transports the flame from Greece to the various designated sites of the games, had no ancient precedent and was introduced by Carl Diem at the controversial 1936 Berlin Olympics. (Wikipedia, 'Olympic flame', August 2010)

The Olympic Torch Relay ends on the day of the opening ceremony in the central stadium of the Games. The final carrier is often kept unannounced until the last moment, and is usually a sports celebrity of the host country. The final bearer of the torch runs towards the cauldron, often placed at the top of a grand staircase, and then uses the torch to start the flame in the stadium. It is considered a great honor to be asked to light the Olympic Flame. After being lit, the flame continues to burn throughout the Olympics, and is extinguished on the day of the closing ceremony. (Wikipedia, 'Olympic flame', August 2010)

Historic Themes

Australian Theme (abbrev)	New South Wales Theme	Local Theme

2. Peopling - Peopling the continent	Aboriginal cultures and interactions with other cultures - Activities associated with maintaining, developing, experiencing and remembering Aboriginal cultural identities and practices, past and present.	All nations - reconciliation events -
2. Peopling - Peopling the continent	Ethnic influences - Activities associated with common cultural traditions and peoples of shared descent, and with exchanges between such traditions and peoples.	Multi-national sporting events -
3. Economy - Developing local, regional and national economies	Events - Activities and processes that mark the consequences of natural and cultural occurrences	Holding opening and dedication ceremonies -
3. Economy - Developing local, regional and national economies	Events - Activities and processes that mark the consequences of natural and cultural occurrences	Holding international shows -
3. Economy - Developing local, regional and national economies	Technology - Activities and processes associated with the knowledge or use of mechanical arts and applied sciences	Technologies for creating spectacles -
8. Culture - Developing cultural institutions and ways of life	Sport - Activities associated with organised recreational and health promotional activities	Managing the Olympic Games in Sydney 2000 -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	Associations with Cathy Freeman, Aboriginal Olympic athlete -

Assessment of Significance

SHR Criteria a)

[Historical Significance]

The Sydney Olympic Park Cauldron is of State historic significance as the culmination of the opening ceremony of the Sydney Olympic Games on 15 September 2000. The opening ceremony is considered to be a triumph of Australian showmanship which was watched by hundreds of millions of people around the world. It is also a reminder of Sydney's success and honour in having hosted the Millennium Games.

SHR Criteria b)

[Associative Significance]

The Sydney Olympic Park Cauldron is of State significance for its associations with the Olympic athletes who participated in the Sydney 2000 Games and particularly with the Aboriginal athlete Cathy Freeman, who was chosen to be the final Australian link in the Olympic Torch relay to light the cauldron, thus symbolising the commencement of the games. The image of the lit cauldron flowing with water as it rose around Freeman is one of the most memorable images of the Sydney Olympic Games.

SHR Criteria d)

[Social Significance]

The Sydney Olympic Park Cauldron is of State significance as a symbolic focal point for the Sydney 2000 Olympic Games, which is held in high esteem by many Australians. It is also likely to be of significance for its later role as a popular fountain in the Overflow next to the Olympic Stadium.

SHR Criteria f)

[Rarity]

The Sydney Olympic Park Cauldron is of State significance as the only Olympic cauldron to be designed and to hold the Olympic flame in NSW.

SHR Criteria g)

[Representativeness]

The Sydney Olympic Park Cauldron is of State significance as the Australian and NSW representative of Olympic cauldrons internationally.

Integrity/Intactness:

The integrity and aesthetic significance of the cauldron has been impacted by its change of position since the Sydney 200 Games. Detached from its stem and removed from its elevated position 50 metres above the ground at the northern end of the Olympic stadium, the cauldron is now perched atop a haphazard arrangement of steel rods in a park near the stadium, where its constantly flowing water forms a popular fountain feature. It can still be lit with a flame for ceremonial occasions.

Assessment Criteria

Items are assessed against the  **State Heritage Register (SHR) Criteria** to determine the level of significance. Refer to the Listings below for the level of

statutory protection.

Procedures /Exemptions

Section of Act	Description	Title	Comments	Action Date
57(2)	Exemption to allow work	Standard Exemptions	SCHEDULE OF STANDARD EXEMPTIONS HERITAGE ACT 1977 Notice of Order Under Section 57 (2) of the Heritage Act 1977 I, the Minister for Planning, pursuant to subsection 57(2) of the Heritage Act 1977, on the recommendation of the Heritage Council of New South Wales, do by this Order: 1. revoke the Schedule of Exemptions to subsection 57 (1) of the Heritage Act made under subsection 57(2) and published in the Government Gazette on 22 February 2008; and 2. grant standard exemptions from subsection 57(1) of the Heritage Act 1977, described in the Schedule attached. FRANK SARTOR Minister for Planning Sydney, 11 July 2008 To view the schedule click on the Standard Exemptions for Works Requiring Heritage Council Approval link below.	Sep 10 2010
57(2)	Exemption to allow work	Heritage Act - Site Specific Exemption	SCHEDULE C a) All Standard Exemptions. b) Activities and works associated with the use, maintenance and repair of the Olympic Cauldron that do not impact materially on the significance of the Olympic Cauldron and excluding any new development. This exemption includes works on pumps, pipes, gas and electrical installation in the basement plant space beneath the Olympic Cauldron. c) The lighting of the Olympic Cauldron on ceremonial occasions where this has been authorised by the SOPA Cauldron Policy. d) Maintenance and repairs to the Roll of Honour (an elliptical pavement design inlaid with names of athletes who won gold, silver and bronze medals at the Sydney 2000 Olympic Games) including replacement of tiles and plaques. e) All temporary and permanent signage that is consistent with a Heritage Council endorsed Conservation Management Plan for the site and does not obstruct sight lines to and from the Olympic Cauldron.	Nov 10 2010



Standard Exemptions for Works Requiring Heritage Council Approval

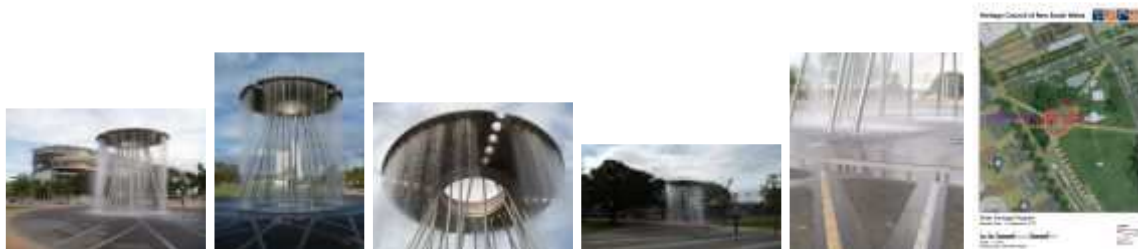
Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
<i>Heritage Act - State Heritage Register</i>		01839	10 Sep 10	114	4439

References, Internet links & Images

Type	Author	Year	Title	Internet Links
Written	National Library of Australia (NLA)	2010	Catalogue entry for "Design for the cauldron of the Sydney Olympic Games, 2000 [technical drawing] / Michael Scott-Mitchell"	Click here
Written	Wikipedia (July 2010)	2010	"2000 Sydney Olympics"	
Written	Sydney Olympic Park Trust	2010	Sydney Olympic Park Master Plan 2030	
Written	Graham Brooks & Associates	2003	Millenium Parklands Heritage Precinct: Conservation Master Plan	
Written	Harry Gordon	2003	The Time of Our Lives, Inside the Sydney Olympics	
Written	Cameo Interpretative Projects	2002	Interpretative Strategy Building 18 Sydney Olympic Park	
Written	Olympic Coordination Authority (OCA)	2001	Tender ("Invitation for Proposal") for Design and Documentation of Overflow Park and Cauldron Relocation Homebush	
Written	SOCOG	2000	Media release: "The Sydney 2000 Olympic Cauldron" 15 September 2000	
Written	International Olympic Committee and TWI (IOC/TWI)	2000	The Opening Ceremony of the 2000 Olympic Games, A Sydney Celebration	
Written	Costain, Meredith for SOCOG	2000	Sydney 2000 Olympic Games	
Written	Olympic Co-ordination Authority	1999	Building Application Assessment Report Project Scott Mitchell No.159/99	
Written	Cathy Reade	1998	Sydney 2000 Olympic Games torch used by Cathy Freeman.	
Written	Carney, Martin & Mider, Dana	1996	Archaeological Assessment of Homebush House and the Former Laycock and Wentworth Estates	
Written	Painter, M & Waterhouse, R	1992	The Principal Club, A History of the Australian Jockey Club	
Written	Godden, Don & Associates	1989	Newington Armaments Depot CMPs for individual sites	
Written	Fox & Associates	1986	Homebush Bay Conservation Study	
Written	Auchmuty, J. J.	1967	'D'Arcy Wentworth', Australian Dictionary of Biography (ADB) Vol.II	

Note: Internet links may be to web pages, documents or images.



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Appendix H

Laboratory Analytical Reports

**Phase 1 Preliminary Site Investigation
Proposed Development, Netball Centre, Olympic Park, NSW**

Coffey Geotechnics Pty Ltd NSW - Lane Cove
8/12 Mars Road
Lane Cove West
New South Wales 2066

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Imogen Powell

Report

Client Reference
Received Date

320832-S
NETBALL CENTRAL GEOTLCOV24420AA
Dec 06, 2011

Client Sample ID			BH1 0.1-0.2	BH1 3.0-3.2	BH2 0.1-0.2	BH2 1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02195	S11-De02196	S11-De02197	S11-De02198
Date Sampled			Dec 01, 2011	Dec 01, 2011	Dec 01, 2011	Dec 01, 2011
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	-	< 10	-
TRH C10-C14	50	mg/kg	< 50	-	< 50	-
TRH C15-C28	100	mg/kg	< 100	-	< 100	-
TRH C29-C36	100	mg/kg	< 100	-	< 100	-
TRH C10-36 (Total)	100	mg/kg	< 100	-	< 100	-
BTEX						
Benzene	0.5	mg/kg	< 0.5	-	< 0.5	-
Toluene	0.5	mg/kg	< 0.5	-	< 0.5	-
Ethylbenzene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total m+p-Xylenes	1	mg/kg	< 1	-	< 1	-
o-Xylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Xylenes(ortho.meta and para)	1.5	mg/kg	< 1.5	-	< 1.5	-
Total BTEX	1.5	mg/kg	< 1.5	-	< 1.5	-
4-Bromofluorobenzene (surr.)	1	%	83	-	89	-
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	-	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-	< 100	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	< 1	< 1	< 1	< 1
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID Sample Matrix mgt-LabMark Sample No. Date Sampled Test/Reference	LOR	Unit	BH1 0.1-0.2 Soil S11-De02195 Dec 01, 2011	BH1 3.0-3.2 Soil S11-De02196 Dec 01, 2011	BH2 0.1-0.2 Soil S11-De02197 Dec 01, 2011	BH2 1.5-1.6 Soil S11-De02198 Dec 01, 2011
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	1	mg/kg	< 1	< 1	< 1	< 1
2-Fluorobiphenyl (surr.)	1	%	95	91	87	90
p-Terphenyl-d14 (surr.)	1	%	104	98	95	94
Heavy Metals						
Arsenic	1	mg/kg	1.1	7.2	1.8	3.5
Cadmium	0.1	mg/kg	< 0.1	0.2	< 0.1	< 0.1
Chromium	2	mg/kg	6.8	6.5	9.5	13
Copper	2	mg/kg	4.9	31	18	4.8
Lead	2	mg/kg	7.3	24	6.2	8.0
Mercury	0.05	mg/kg	< 0.05	0.06	< 0.05	< 0.05
Nickel	1	mg/kg	6.4	72	33	1.9
Zinc	5	mg/kg	11	240	24	< 5
% Moisture	0.1	%	9.5	9.2	7.2	24
Asbestos			ASET Report	ASET Report	ASET Report	ASET Report

Client Sample ID			BH2 3.0-3.2	BH3 0.1-0.2	BH3 1.5-1.7	BH3 3.0-3.1
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02199	S11-De02200	S11-De02201	S11-De02202
Date Sampled			Dec 01, 2011	Dec 01, 2011	Dec 01, 2011	Dec 01, 2011
Test/Reference	LOR	Unit				

Client Sample ID			BH4 0.1-0.2	BH4 0.6-0.8	BH4 1.5-1.7	BH5 0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02203	S11-De02204	S11-De02205	S11-De02206
Date Sampled			Dec 01, 2011	Dec 01, 2011	Dec 01, 2011	Dec 01, 2011
Test/Reference	LOR	Unit				

Client Sample ID			BH5 1.5-1.6	BH6 0.1-0.2	BH7 0.1-0.2	BH7 0.4-0.6
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02207	S11-De02208	S11-De02209	S11-De02210
Date Sampled			Dec 01, 2011	Dec 01, 2011	Dec 01, 2011	Dec 01, 2011
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	-	-	< 10	-
TRH C10-C14	50	mg/kg	-	-	< 50	-
TRH C15-C28	100	mg/kg	-	-	< 100	-
TRH C29-C36	100	mg/kg	-	-	< 100	-
TRH C10-36 (Total)	100	mg/kg	-	-	< 100	-
BTEX						
Benzene	0.5	mg/kg	-	-	< 0.5	-
Toluene	0.5	mg/kg	-	-	< 0.5	-
Ethylbenzene	0.5	mg/kg	-	-	< 0.5	-
Total m+p-Xylenes	1	mg/kg	-	-	< 1	-
o-Xylene	0.5	mg/kg	-	-	< 0.5	-
Xylenes(ortho.meta and para)	1.5	mg/kg	-	-	< 1.5	-
Total BTEX	1.5	mg/kg	-	-	< 1.5	-
4-Bromofluorobenzene (surr.)	1	%	-	-	81	-
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	-	-	< 0.5	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	-	< 20	-
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	-	< 50	-
TRH >C16-C34	100	mg/kg	-	-	< 100	-
TRH >C34-C40	100	mg/kg	-	-	< 100	-
Organochlorine Pesticides (OC)						
4,4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDT	0.2	mg/kg	-	-	< 0.2	-
α-BHC	0.05	mg/kg	-	-	< 0.05	-
α-Chlordane	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
β-BHC	0.05	mg/kg	-	-	< 0.05	-
δ-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
γ-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
γ-Chlordane	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Dibutylchlorodate (surr.)	1	%	-	-	115	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	89	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	< 0.5	-
Coumaphos	0.5	mg/kg	-	-	< 0.5	-
Demeton (total)	1	mg/kg	-	-	< 1	-

Client Sample ID			BH5 1.5-1.6	BH6 0.1-0.2	BH7 0.1-0.2	BH7 0.4-0.6
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02207	S11-De02208	S11-De02209	S11-De02210
Date Sampled			Dec 01, 2011	Dec 01, 2011	Dec 01, 2011	Dec 01, 2011
Test/Reference	LOR	Unit				
Diazinon	0.5	mg/kg	-	-	< 0.5	-
Dichlorvos	0.5	mg/kg	-	-	< 0.5	-
Dimethoate	0.5	mg/kg	-	-	< 0.5	-
Disulfoton	0.5	mg/kg	-	-	< 0.5	-
Ethoprop	0.5	mg/kg	-	-	< 0.5	-
Fenitrothion	0.5	mg/kg	-	-	< 0.5	-
Fensulfothion	0.5	mg/kg	-	-	< 0.5	-
Fenthion	0.5	mg/kg	-	-	< 0.5	-
Methyl azinphos	0.5	mg/kg	-	-	< 0.5	-
Malathion	0.5	mg/kg	-	-	< 0.5	-
Methyl parathion	0.5	mg/kg	-	-	< 0.5	-
Mevinphos	0.5	mg/kg	-	-	< 0.5	-
Monocrotophos	10	mg/kg	-	-	< 10	-
Parathion	0.5	mg/kg	-	-	< 0.5	-
Phorate	0.5	mg/kg	-	-	< 0.5	-
Profenofos	0.5	mg/kg	-	-	< 0.5	-
Prothiofos	0.5	mg/kg	-	-	< 0.5	-
Ronnel	0.5	mg/kg	-	-	< 0.5	-
Stirophos	0.5	mg/kg	-	-	< 0.5	-
Trichloronate	0.5	mg/kg	-	-	< 0.5	-
Triphenylphosphate (surr.)	1	%	-	-	114	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	-	-	< 1	-
Benzo(g,h,i)perylene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a,h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH	1	mg/kg	-	-	< 1	-
2-Fluorobiphenyl (surr.)	1	%	-	-	89	-
p-Terphenyl-d14 (surr.)	1	%	-	-	95	-
Heavy Metals						
Arsenic	1	mg/kg	-	-	2.1	-
Cadmium	0.1	mg/kg	-	-	< 0.1	-
Chromium	2	mg/kg	-	-	3.4	-
Copper	2	mg/kg	-	-	9.3	-
Lead	2	mg/kg	-	-	13	-
Mercury	0.05	mg/kg	-	-	< 0.05	-
Nickel	1	mg/kg	-	-	4.3	-
Zinc	5	mg/kg	-	-	25	-

Client Sample ID			BH5 1.5-1.6	BH6 0.1-0.2	BH7 0.1-0.2	BH7 0.4-0.6
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02207	S11-De02208	S11-De02209	S11-De02210
Date Sampled			Dec 01, 2011	Dec 01, 2011	Dec 01, 2011	Dec 01, 2011
Test/Reference	LOR	Unit				
% Moisture	0.1	%	-	-	12	-
Asbestos			-	-	ASET Report	-

Client Sample ID			BH7 4.5-4.7	BH8 0.1-0.2	BH8 1.5-1.7	BH8 3.0-3.2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02211	S11-De02212	S11-De02213	S11-De02214
Date Sampled			Dec 01, 2011	Dec 01, 2011	Dec 01, 2011	Dec 01, 2011
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	-	-	< 10	-
TRH C10-C14	50	mg/kg	-	-	< 50	-
TRH C15-C28	100	mg/kg	-	-	< 100	-
TRH C29-C36	100	mg/kg	-	-	< 100	-
TRH C10-36 (Total)	100	mg/kg	-	-	< 100	-
BTEX						
Benzene	0.5	mg/kg	-	-	< 0.5	-
Toluene	0.5	mg/kg	-	-	< 0.5	-
Ethylbenzene	0.5	mg/kg	-	-	< 0.5	-
Total m+p-Xylenes	1	mg/kg	-	-	< 1	-
o-Xylene	0.5	mg/kg	-	-	< 0.5	-
Xylenes(ortho.meta and para)	1.5	mg/kg	-	-	< 1.5	-
Total BTEX	1.5	mg/kg	-	-	< 1.5	-
4-Bromofluorobenzene (surr.)	1	%	-	-	86	-
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	-	-	< 0.5	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	-	< 20	-
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	-	< 50	-
TRH >C16-C34	100	mg/kg	-	-	< 100	-
TRH >C34-C40	100	mg/kg	-	-	< 100	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	< 1	-	< 1	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PAH	1	mg/kg	< 1	-	< 1	-
2-Fluorobiphenyl (surr.)	1	%	87	-	81	-
p-Terphenyl-d14 (surr.)	1	%	94	-	85	-
Heavy Metals						
Arsenic	1	mg/kg	6.3	-	6.1	-
Cadmium	0.1	mg/kg	< 0.1	-	< 0.1	-
Chromium	2	mg/kg	16	-	11	-
Copper	2	mg/kg	10	-	20	-
Lead	2	mg/kg	16	-	22	-
Mercury	0.05	mg/kg	< 0.05	-	< 0.05	-
Nickel	1	mg/kg	2.3	-	9.8	-

Client Sample ID			BH7 4.5-4.7	BH8 0.1-0.2	BH8 1.5-1.7	BH8 3.0-3.2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02211	S11-De02212	S11-De02213	S11-De02214
Date Sampled			Dec 01, 2011	Dec 01, 2011	Dec 01, 2011	Dec 01, 2011
Test/Reference	LOR	Unit				
Zinc	5	mg/kg	14	-	65	-
% Moisture	0.1	%	25	-	16	-
Asbestos			ASET Report	-	ASET Report	-

Client Sample ID			TP1 0.2-0.3	TP1 2.8-3.0	TP2 0.0-0.1	TP2 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02215	S11-De02216	S11-De02217	S11-De02218
Date Sampled			Dec 02, 2011	Dec 02, 2011	Dec 02, 2011	Dec 02, 2011
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	-	< 10	-
TRH C10-C14	50	mg/kg	< 50	-	< 50	-
TRH C15-C28	100	mg/kg	< 100	-	< 100	-
TRH C29-C36	100	mg/kg	< 100	-	< 100	-
TRH C10-36 (Total)	100	mg/kg	< 100	-	< 100	-
BTEX						
Benzene	0.5	mg/kg	< 0.5	-	< 0.5	-
Toluene	0.5	mg/kg	< 0.5	-	< 0.5	-
Ethylbenzene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total m+p-Xylenes	1	mg/kg	< 1	-	< 1	-
o-Xylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Xylenes(ortho.meta and para)	1.5	mg/kg	< 1.5	-	< 1.5	-
Total BTEX	1.5	mg/kg	< 1.5	-	< 1.5	-
4-Bromofluorobenzene (surr.)	1	%	86	-	88	-
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	-	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-	< 100	-
Organochlorine Pesticides (OC)						
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
α-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
α-Chlordane	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
β-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
δ-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
γ-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
γ-Chlordane	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorodate (surr.)	1	%	84	100	99	93
Tetrachloro-m-xylene (surr.)	1	%	96	99	98	95
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Demeton (total)	1	mg/kg	< 1	< 1	< 1	< 1

Client Sample ID			TP1 0.2-0.3	TP1 2.8-3.0	TP2 0.0-0.1	TP2 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02215	S11-De02216	S11-De02217	S11-De02218
Date Sampled			Dec 02, 2011	Dec 02, 2011	Dec 02, 2011	Dec 02, 2011
Test/Reference	LOR	Unit				
Diazinon	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenthion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Malathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Monocrotophos	10	mg/kg	< 10	< 10	< 10	< 10
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Profenofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ronnel	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	99	98	105	96
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	< 1	< 1	< 1	< 1
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	1	mg/kg	< 1	< 1	< 1	< 1
2-Fluorobiphenyl (surr.)	1	%	81	84	83	82
p-Terphenyl-d14 (surr.)	1	%	88	91	91	87
Heavy Metals						
Arsenic	1	mg/kg	7.9	4.4	2.0	3.2
Cadmium	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Chromium	2	mg/kg	12	13	3.0	15
Copper	2	mg/kg	18	13	7.0	23
Lead	2	mg/kg	45	18	9.9	11
Mercury	0.05	mg/kg	0.07	< 0.05	< 0.05	< 0.05
Nickel	1	mg/kg	9.8	1.4	5.5	49
Zinc	5	mg/kg	69	8.3	20	31

Client Sample ID			TP1 0.2-0.3	TP1 2.8-3.0	TP2 0.0-0.1	TP2 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02215	S11-De02216	S11-De02217	S11-De02218
Date Sampled			Dec 02, 2011	Dec 02, 2011	Dec 02, 2011	Dec 02, 2011
Test/Reference	LOR	Unit				
% Moisture	0.1	%	14	21	13	13
Asbestos			ASET Report	ASET Report	ASET Report	ASET Report

Client Sample ID			TP2 2.6-2.8	TP3 0.5-0.6	TP3 1.5-1.6	TP3 3.5-3.7
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02219	S11-De02220	S11-De02221	S11-De02222
Date Sampled			Dec 02, 2011	Dec 02, 2011	Dec 02, 2011	Dec 02, 2011
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	-	< 10	-	-
TRH C10-C14	50	mg/kg	-	< 50	-	-
TRH C15-C28	100	mg/kg	-	< 100	-	-
TRH C29-C36	100	mg/kg	-	< 100	-	-
TRH C10-36 (Total)	100	mg/kg	-	< 100	-	-
BTEX						
Benzene	0.5	mg/kg	-	< 0.5	-	-
Toluene	0.5	mg/kg	-	< 0.5	-	-
Ethylbenzene	0.5	mg/kg	-	< 0.5	-	-
Total m+p-Xylenes	1	mg/kg	-	< 1	-	-
o-Xylene	0.5	mg/kg	-	< 0.5	-	-
Xylenes(ortho.meta and para)	1.5	mg/kg	-	< 1.5	-	-
Total BTEX	1.5	mg/kg	-	< 1.5	-	-
4-Bromofluorobenzene (surr.)	1	%	-	86	-	-
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	-	< 0.5	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	< 20	-	-
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	< 100	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	-	< 1	< 1	-
Benzo(g,h,i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibenz(a,h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PAH	1	mg/kg	-	< 1	< 1	-
2-Fluorobiphenyl (surr.)	1	%	-	87	91	-
p-Terphenyl-d14 (surr.)	1	%	-	93	100	-
Heavy Metals						
Arsenic	1	mg/kg	-	3.7	3.7	-
Cadmium	0.1	mg/kg	-	0.2	0.1	-
Chromium	2	mg/kg	-	9.5	6.5	-
Copper	2	mg/kg	-	19	10	-
Lead	2	mg/kg	-	23	11	-
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	-
Nickel	1	mg/kg	-	2.4	1.7	-

Client Sample ID			TP2 2.6-2.8	TP3 0.5-0.6	TP3 1.5-1.6	TP3 3.5-3.7
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02219	S11-De02220	S11-De02221	S11-De02222
Date Sampled			Dec 02, 2011	Dec 02, 2011	Dec 02, 2011	Dec 02, 2011
Test/Reference	LOR	Unit				
Zinc	5	mg/kg	-	18	7.5	-
% Moisture	0.1	%	-	14	19	-
Asbestos			-	ASET Report	ASET Report	-

Client Sample ID			TP4 0.0-0.1	TP4 0.4-0.6	TP4 2.8-3.0	TP5 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02223	S11-De02224	S11-De02225	S11-De02226
Date Sampled			Dec 02, 2011	Dec 02, 2011	Dec 02, 2011	Dec 02, 2011
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	-	-	-
TRH C10-C14	50	mg/kg	< 50	-	-	-
TRH C15-C28	100	mg/kg	< 100	-	-	-
TRH C29-C36	100	mg/kg	210	-	-	-
TRH C10-36 (Total)	100	mg/kg	210	-	-	-
BTEX						
Benzene	0.5	mg/kg	< 0.5	-	-	-
Toluene	0.5	mg/kg	< 0.5	-	-	-
Ethylbenzene	0.5	mg/kg	< 0.5	-	-	-
Total m+p-Xylenes	1	mg/kg	< 1	-	-	-
o-Xylene	0.5	mg/kg	< 0.5	-	-	-
Xylenes(ortho.meta and para)	1.5	mg/kg	< 1.5	-	-	-
Total BTEX	1.5	mg/kg	< 1.5	-	-	-
4-Bromofluorobenzene (surr.)	1	%	91	-	-	-
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-	-	-
TRH C6-C10	20	mg/kg	< 20	-	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	-	-	-
TRH >C10-C16	50	mg/kg	< 50	-	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	-	-	-
TRH >C16-C34	100	mg/kg	250	-	-	-
TRH >C34-C40	100	mg/kg	110	-	-	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	< 1	< 1	-	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH	1	mg/kg	< 1	< 1	-	-
2-Fluorobiphenyl (surr.)	1	%	88	89	-	-
p-Terphenyl-d14 (surr.)	1	%	96	94	-	-
Heavy Metals						
Arsenic	1	mg/kg	1.9	3.4	-	-
Cadmium	0.1	mg/kg	0.2	< 0.1	-	-
Chromium	2	mg/kg	5.2	5.3	-	-
Copper	2	mg/kg	24	11	-	-
Lead	2	mg/kg	16	11	-	-
Mercury	0.05	mg/kg	0.06	< 0.05	-	-
Nickel	1	mg/kg	3.4	< 1	-	-

Client Sample ID			TP4 0.0-0.1	TP4 0.4-0.6	TP4 2.8-3.0	TP5 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02223	S11-De02224	S11-De02225	S11-De02226
Date Sampled			Dec 02, 2011	Dec 02, 2011	Dec 02, 2011	Dec 02, 2011
Test/Reference	LOR	Unit				
Zinc	5	mg/kg	58	< 5	-	-
% Moisture	0.1	%	28	19	-	-
Asbestos			ASET Report	ASET Report	-	-

Client Sample ID			TP5 2.0-2.1	TP7 0.5-0.6	TP7 1.4-1.6	TP8 0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02227	S11-De02228	S11-De02229	S11-De02230
Date Sampled			Dec 02, 2011	Dec 02, 2011	Dec 02, 2011	Dec 02, 2011
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	-	< 10	-	< 10
TRH C10-C14	50	mg/kg	-	< 50	-	< 50
TRH C15-C28	100	mg/kg	-	< 100	-	< 100
TRH C29-C36	100	mg/kg	-	< 100	-	< 100
TRH C10-36 (Total)	100	mg/kg	-	< 100	-	< 100
BTEX						
Benzene	0.5	mg/kg	-	< 0.5	-	< 0.5
Toluene	0.5	mg/kg	-	< 0.5	-	< 0.5
Ethylbenzene	0.5	mg/kg	-	< 0.5	-	< 0.5
Total m+p-Xylenes	1	mg/kg	-	< 1	-	< 1
o-Xylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Xylenes(ortho.meta and para)	1.5	mg/kg	-	< 1.5	-	< 1.5
Total BTEX	1.5	mg/kg	-	< 1.5	-	< 1.5
4-Bromofluorobenzene (surr.)	1	%	-	91	-	95
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	< 20	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	< 50	-	< 50
TRH >C16-C34	100	mg/kg	-	< 100	-	< 100
TRH >C34-C40	100	mg/kg	-	< 100	-	< 100
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	-	< 1	< 1	< 1
Benzo(g,h,i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH	1	mg/kg	-	< 1	< 1	< 1
2-Fluorobiphenyl (surr.)	1	%	-	86	87	87
p-Terphenyl-d14 (surr.)	1	%	-	91	92	98
Heavy Metals						
Arsenic	1	mg/kg	-	6.8	3.3	1.7
Cadmium	0.1	mg/kg	-	0.6	< 0.1	< 0.1
Chromium	2	mg/kg	-	22	5.7	< 2
Copper	2	mg/kg	-	21	11	11
Lead	2	mg/kg	-	69	12	6.8
Mercury	0.05	mg/kg	-	0.09	< 0.05	< 0.05
Nickel	1	mg/kg	-	7.2	< 1	1.2

Client Sample ID			TP5 2.0-2.1	TP7 0.5-0.6	TP7 1.4-1.6	TP8 0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02227	S11-De02228	S11-De02229	S11-De02230
Date Sampled			Dec 02, 2011	Dec 02, 2011	Dec 02, 2011	Dec 02, 2011
Test/Reference	LOR	Unit				
Zinc	5	mg/kg	-	300	< 5	9.4
% Moisture	0.1	%	-	16	19	13
Asbestos			-	ASET Report	ASET Report	ASET Report

Client Sample ID			DUP1	DUP2	TP1 1.6-1.8	TP3 0.0-0.1M
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02232	S11-De02233	S11-De30734	S11-De30735
Date Sampled			Dec 01, 2011	Dec 02, 2011	Dec 02, 2011	Dec 02, 2011
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	-	-	-
TRH C10-C14	50	mg/kg	< 50	-	-	-
TRH C15-C28	100	mg/kg	< 100	-	-	-
TRH C29-C36	100	mg/kg	< 100	-	-	-
TRH C10-36 (Total)	100	mg/kg	< 100	-	-	-
BTEX						
Benzene	0.5	mg/kg	< 0.5	-	-	-
Toluene	0.5	mg/kg	< 0.5	-	-	-
Ethylbenzene	0.5	mg/kg	< 0.5	-	-	-
Total m+p-Xylenes	1	mg/kg	< 1	-	-	-
o-Xylene	0.5	mg/kg	< 0.5	-	-	-
Xylenes(ortho.meta and para)	1.5	mg/kg	< 1.5	-	-	-
Total BTEX	1.5	mg/kg	< 1.5	-	-	-
4-Bromofluorobenzene (surr.)	1	%	88	-	-	-
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-	-	-
TRH C6-C10	20	mg/kg	< 20	-	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	-	-	-
TRH >C10-C16	50	mg/kg	< 50	-	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	-	-	-
TRH >C16-C34	100	mg/kg	< 100	-	-	-
TRH >C34-C40	100	mg/kg	< 100	-	-	-
Organochlorine Pesticides (OC)						
4,4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDT	0.2	mg/kg	-	< 0.2	-	-
α-BHC	0.05	mg/kg	-	< 0.05	-	-
α-Chlordane	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
β-BHC	0.05	mg/kg	-	< 0.05	-	-
δ-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
γ-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
γ-Chlordane	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.2	mg/kg	-	< 0.2	-	-
Dibutylchlorodate (surr.)	1	%	-	98	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	128	-	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	< 0.5	-	-
Coumaphos	0.5	mg/kg	-	< 0.5	-	-
Demeton (total)	1	mg/kg	-	< 1	-	-

Client Sample ID			DUP1	DUP2	TP1 1.6-1.8	TP3 0.0-0.1M
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02232	S11-De02233	S11-De30734	S11-De30735
Date Sampled			Dec 01, 2011	Dec 02, 2011	Dec 02, 2011	Dec 02, 2011
Test/Reference	LOR	Unit				
Diazinon	0.5	mg/kg	-	< 0.5	-	-
Dichlorvos	0.5	mg/kg	-	< 0.5	-	-
Dimethoate	0.5	mg/kg	-	< 0.5	-	-
Disulfoton	0.5	mg/kg	-	< 0.5	-	-
Ethoprop	0.5	mg/kg	-	< 0.5	-	-
Fenitrothion	0.5	mg/kg	-	< 0.5	-	-
Fensulfothion	0.5	mg/kg	-	< 0.5	-	-
Fenthion	0.5	mg/kg	-	< 0.5	-	-
Methyl azinphos	0.5	mg/kg	-	< 0.5	-	-
Malathion	0.5	mg/kg	-	< 0.5	-	-
Methyl parathion	0.5	mg/kg	-	< 0.5	-	-
Mevinphos	0.5	mg/kg	-	< 0.5	-	-
Monocrotophos	10	mg/kg	-	< 10	-	-
Parathion	0.5	mg/kg	-	< 0.5	-	-
Phorate	0.5	mg/kg	-	< 0.5	-	-
Profenofos	0.5	mg/kg	-	< 0.5	-	-
Prothiofos	0.5	mg/kg	-	< 0.5	-	-
Ronnel	0.5	mg/kg	-	< 0.5	-	-
Stirophos	0.5	mg/kg	-	< 0.5	-	-
Trichloronate	0.5	mg/kg	-	< 0.5	-	-
Triphenylphosphate (surr.)	1	%	-	112	-	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	< 1	< 1	-	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH	1	mg/kg	< 1	< 1	-	-
2-Fluorobiphenyl (surr.)	1	%	86	88	-	-
p-Terphenyl-d14 (surr.)	1	%	93	97	-	-
Heavy Metals						
Arsenic	1	mg/kg	4.4	2.2	-	-
Cadmium	0.1	mg/kg	< 0.1	0.2	-	-
Chromium	2	mg/kg	9.2	5.5	-	-
Copper	2	mg/kg	20	17	-	-
Lead	2	mg/kg	16	9.6	-	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	-
Nickel	1	mg/kg	8.5	< 1	-	-
Zinc	5	mg/kg	55	< 5	-	-

Client Sample ID			DUP1	DUP2	TP1 1.6-1.8	TP3 0.0-0.1M
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S11-De02232	S11-De02233	S11-De30734	S11-De30735
Date Sampled			Dec 01, 2011	Dec 02, 2011	Dec 02, 2011	Dec 02, 2011
Test/Reference	LOR	Unit				
% Moisture	0.1	%	17	13	-	-

Client Sample ID			TP8 2.2-2.4M
Sample Matrix			Soil
mgt-LabMark Sample No.			S11-De30736
Date Sampled			Dec 02, 2011
Test/Reference	LOR	Unit	

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: E004 Petroleum Hydrocarbons (TPH)	Sydney	Dec 07, 2011	14 Day
BTEX - Method: E029/E016 BTEX	Sydney	Dec 07, 2011	14 Day
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * - Method: LM-LTM-ORG2010	Sydney	Dec 07, 2011	14 Day
Organochlorine Pesticides (OC) - Method: E013 Organochlorine Pesticides (OC)	Sydney	Dec 07, 2011	14 Day
Organophosphorus Pesticides (OP) - Method: E014 Organophosphorus Pesticides (OP)	Sydney	Dec 07, 2011	14 Day
Polyaromatic Hydrocarbons (PAH) - Method: E007 Polyaromatic Hydrocarbons (PAH)	Sydney	Dec 07, 2011	14 Day
Metals M8 - Method: E022 Acid Extractable metals in Soils & E026 Mercury	Sydney	Dec 07, 2011	28 Day
% Moisture - Method: E005 Moisture Content	Sydney	Dec 07, 2011	28 Day

Company Name: Coffey Geotechnics Pty Ltd Lane Cove
Address: 8/12 Mars Road
Lane Cove West
New South Wales 2066

Order No.:
Report #: 320832
Phone: 02 9911 1099
Fax: 02 9911 1002

Received: Dec 6, 2011 11:35 AM
Due: Dec 13, 2011 4:00 PM
Priority: 5 Day
Contact name: Imogen Powell

Client Job No.: NETBALL CENTRAL GEOTLCOV24420AA

mgt-LabMark Client Manager: Onur Mehmet

Sample Detail					% Moisture	Asbestos	ASET Reporting Fee	HOLD	Metals M8	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 14	mgt-LabMark Suite 1
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site #1261												
Sydney Laboratory - NATA Site #1645					X	X	X	X	X	X	X	X
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
BH1 0.1-0.2	Dec 01, 2011		Soil	S11-De02195	X	X	X		X	X		X
BH1 3.0-3.2	Dec 01, 2011		Soil	S11-De02196	X	X			X	X		
BH2 0.1-0.2	Dec 01, 2011		Soil	S11-De02197	X	X			X	X		X
BH2 1.5-1.6	Dec 01, 2011		Soil	S11-De02198	X	X			X	X		
BH2 3.0-3.2	Dec 01, 2011		Soil	S11-De02199				X				
BH3 0.1-0.2	Dec 01, 2011		Soil	S11-De02200				X				
BH3 1.5-1.7	Dec 01, 2011		Soil	S11-De02201				X				
BH3 3.0-3.1	Dec 01, 2011		Soil	S11-De02202				X				
BH4 0.1-0.2	Dec 01, 2011		Soil	S11-De02203				X				
BH4 0.6-0.8	Dec 01, 2011		Soil	S11-De02204				X				
BH4 1.5-1.7	Dec 01, 2011		Soil	S11-De02205				X				

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Sample Detail					% Moisture	Asbestos	ASET Reporting Fee	HOLD	Metals M8	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 14	mgt-LabMark Suite 1
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site #1261												
Sydney Laboratory - NATA Site #1645					X	X	X	X	X	X	X	X
BH5 0.1-0.2	Dec 01, 2011		Soil	S11-De02206				X				
BH5 1.5-1.6	Dec 01, 2011		Soil	S11-De02207				X				
BH6 0.1-0.2	Dec 01, 2011		Soil	S11-De02208				X				
BH7 0.1-0.2	Dec 01, 2011		Soil	S11-De02209	X	X			X	X	X	X
BH7 0.4-0.6	Dec 01, 2011		Soil	S11-De02210				X				
BH7 4.5-4.7	Dec 01, 2011		Soil	S11-De02211	X	X			X	X		
BH8 0.1-0.2	Dec 01, 2011		Soil	S11-De02212				X				
BH8 1.5-1.7	Dec 01, 2011		Soil	S11-De02213	X	X			X	X		X
BH8 3.0-3.2	Dec 01, 2011		Soil	S11-De02214				X				
TP1 0.2-0.3	Dec 02, 2011		Soil	S11-De02215	X	X			X	X	X	X
TP1 2.8-3.0	Dec 02, 2011		Soil	S11-De02216	X	X			X	X	X	
TP2 0.0-0.1	Dec 02, 2011		Soil	S11-De02217	X	X			X	X	X	X

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mgt-LabMark Client Manager: Onur Mehmet

Sample Detail					% Moisture	Asbestos	ASET Reporting Fee	HOLD	Metals M8	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 14	mgt-LabMark Suite 1
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site #1261												
Sydney Laboratory - NATA Site #1645					X	X	X	X	X	X	X	X
TP2 0.4-0.5	Dec 02, 2011		Soil	S11-De02218	X	X			X	X	X	
TP2 2.6-2.8	Dec 02, 2011		Soil	S11-De02219				X				
TP3 0.5-0.6	Dec 02, 2011		Soil	S11-De02220	X	X			X	X		X
TP3 1.5-1.6	Dec 02, 2011		Soil	S11-De02221	X	X			X	X		
TP3 3.5-3.7	Dec 02, 2011		Soil	S11-De02222				X				
TP4 0.0-0.1	Dec 02, 2011		Soil	S11-De02223	X	X			X	X		X
TP4 0.4-0.6	Dec 02, 2011		Soil	S11-De02224	X	X			X	X		
TP4 2.8-3.0	Dec 02, 2011		Soil	S11-De02225				X				
TP5 0.0-0.1	Dec 02, 2011		Soil	S11-De02226				X				
TP5 2.0-2.1	Dec 02, 2011		Soil	S11-De02227				X				
TP7 0.5-0.6	Dec 02, 2011		Soil	S11-De02228	X	X			X	X		X
TP7 1.4-1.6	Dec 02, 2011		Soil	S11-De02229	X	X			X	X		

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mgt-LabMark Client Manager: Onur Mehmet

Sample Detail					% Moisture	Asbestos	ASET Reporting Fee	HOLD	Metals M8	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 14	mgt-LabMark Suite 1
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site #1261												
Sydney Laboratory - NATA Site #1645					X	X	X	X	X	X	X	X
TP8 0.1-0.2	Dec 02, 2011		Soil	S11-De02230	X	X			X	X		X
WB1	Dec 01, 2011		Water	S11-De02231					X	X	X	X
DUP1	Dec 01, 2011		Soil	S11-De02232	X				X	X		X
DUP2	Dec 02, 2011		Soil	S11-De02233	X				X	X	X	
TP1 1.6-1.8	Dec 02, 2011		Soil	S11-De30734				X				
TP3 0.0-0.1M	Dec 02, 2011		Soil	S11-De30735				X				
TP8 2.2-2.4M	Dec 02, 2011		Soil	S11-De30736				X				

mgt-LabMark Internal Quality Control Review

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis.
7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001)

For samples received on the last day of holding time, notification of testing requirements should have been received at least

6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as an RPD

UNITS

mg/kg: milligrams per Kilogram

mg/L: milligrams per litre

µg/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

TERMS

Dry:	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR:	Limit Of Reporting.
SPIKE:	Addition of the analyte to the sample and reported as percentage recovery.
RPD:	Relative Percent Difference between two Duplicate pieces of analysis.
LCS:	Laboratory Control Sample - reported as percent recovery.
CRM:	Certified Reference Material - reported as percent recovery.
Method Blank:	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate:	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate:	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate:	A second piece of analysis from a sample outside of the client's batch of samples but run within the laboratory batch of analysis.
Batch SPIKE:	Spike recovery reported on a sample from outside of the client's batch of samples but run within the laboratory batch of analysis.
USEPA:	U.S Environmental Protection Agency
APHA:	American Public Health Association
ASLP:	Australian Standard Leaching Procedure (AS4439.3)
TCLP:	Toxicity Characteristic Leaching Procedure
COC:	Chain Of Custody
SRA:	Sample Receipt Advice
CP:	Client Parent - QC was performed on samples pertaining to this report
NCP:	Non-Client Parent - QC was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample>
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data below the LOR with a positive RPD - eg: LOR 0.1, Result A = <0.1 (raw data is 0.02) & Result B = <0.1 (raw data is 0.03) resulting in a RPD of 40% calculated from the raw data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	mg/kg	< 10			10	Pass	
TRH C10-C14	mg/kg	< 50			50	Pass	
TRH C15-C28	mg/kg	< 100			100	Pass	
TRH C29-C36	mg/kg	< 100			100	Pass	
Method Blank							
BTEX E029/E016 BTEX							
Benzene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.5			0.5	Pass	
Total m+p-Xylenes	mg/kg	< 1			1	Pass	
o-Xylene	mg/kg	< 0.5			0.5	Pass	
Xylenes(ortho.meta and para)	mg/kg	< 1.5			1.5	Pass	
Total BTEX	mg/kg	< 1.5			1.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Organochlorine Pesticides (OC) E013 Organochlorine Pesticides (OC)							
4,4'-DDD	mg/kg	0			0.05	Pass	
4,4'-DDE	mg/kg	0			0.05	Pass	
4,4'-DDT	mg/kg	0			0.2	Pass	
a-BHC	mg/kg	0			0.05	Pass	
a-Chlordane	mg/kg	0			0.05	Pass	
Aldrin	mg/kg	0			0.05	Pass	
b-BHC	mg/kg	0			0.05	Pass	
d-BHC	mg/kg	0			0.05	Pass	
Dieldrin	mg/kg	0			0.05	Pass	
Endosulfan I	mg/kg	0			0.05	Pass	
Endosulfan II	mg/kg	0			0.05	Pass	
Endosulfan sulphate	mg/kg	0			0.05	Pass	
Endrin	mg/kg	0			0.05	Pass	
Endrin aldehyde	mg/kg	0			0.05	Pass	
Endrin ketone	mg/kg	0			0.05	Pass	
g-BHC (Lindane)	mg/kg	0			0.05	Pass	
g-Chlordane	mg/kg	0			0.05	Pass	
Heptachlor	mg/kg	0			0.05	Pass	
Heptachlor epoxide	mg/kg	0			0.05	Pass	
Hexachlorobenzene	mg/kg	0			0.05	Pass	
Methoxychlor	mg/kg	0			0.2	Pass	
Method Blank							
Organophosphorus Pesticides (OP) E014 Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/kg	< 0.5			0.5	Pass	
Coumaphos	mg/kg	< 0.5			0.5	Pass	
Demeton (total)	mg/kg	< 1			1	Pass	
Diazinon	mg/kg	< 0.5			0.5	Pass	
Dichlorvos	mg/kg	< 0.5			0.5	Pass	
Dimethoate	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Disulfoton	mg/kg	< 0.5			0.5	Pass	
Ethoprop	mg/kg	< 0.5			0.5	Pass	
Fenitrothion	mg/kg	< 0.5			0.5	Pass	
Fensulfothion	mg/kg	< 0.5			0.5	Pass	
Fenthion	mg/kg	< 0.5			0.5	Pass	
Methyl azinphos	mg/kg	< 0.5			0.5	Pass	
Malathion	mg/kg	< 0.5			0.5	Pass	
Methyl parathion	mg/kg	< 0.5			0.5	Pass	
Mevinphos	mg/kg	< 0.5			0.5	Pass	
Monocrotophos	mg/kg	< 10			10	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.5			0.5	Pass	
Profenofos	mg/kg	< 0.5			0.5	Pass	
Prothiofos	mg/kg	< 0.5			0.5	Pass	
Ronnel	mg/kg	< 0.5			0.5	Pass	
Stiropfos	mg/kg	< 0.5			0.5	Pass	
Trichloronate	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	mg/kg	< 1			1	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Metals M8 E022 Acid Extractable metals in Soils & E026 Mercury							
Arsenic	mg/kg	< 1			1	Pass	
Cadmium	mg/kg	< 0.1			0.1	Pass	
Chromium	mg/kg	< 2			2	Pass	
Copper	mg/kg	< 2			2	Pass	
Lead	mg/kg	< 2			2	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 1			1	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	%	107			70-130	Pass	
TRH C10-C14	%	89			70-130	Pass	
LCS - % Recovery							
BTEX E029/E016 BTEX							
Benzene	%	101			70-130	Pass	
Toluene	%	102			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
Total m+p-Xylenes	%	100			70-130	Pass	
o-Xylene	%	102			70-130	Pass	
Xylenes(ortho.meta and para)	%	100			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010							
Naphthalene	%	118			70-130	Pass	
TRH C6-C10	%	105			70-130	Pass	
TRH >C10-C16	%	89			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides (OC) E013 Organochlorine Pesticides (OC)							
4,4'-DDD	%	96			70-130	Pass	
4,4'-DDE	%	76			70-130	Pass	
4,4'-DDT	%	95			70-130	Pass	
a-BHC	%	96			70-130	Pass	
a-Chlordane	%	95			70-130	Pass	
Aldrin	%	94			70-130	Pass	
b-BHC	%	91			70-130	Pass	
d-BHC	%	105			70-130	Pass	
Dieldrin	%	96			70-130	Pass	
Endosulfan I	%	94			70-130	Pass	
Endosulfan II	%	96			70-130	Pass	
Endosulfan sulphate	%	77			70-130	Pass	
Endrin	%	98			70-130	Pass	
Endrin aldehyde	%	88			70-130	Pass	
Endrin ketone	%	91			70-130	Pass	
g-BHC (Lindane)	%	88			70-130	Pass	
g-Chlordane	%	94			70-130	Pass	
Heptachlor	%	97			70-130	Pass	
Heptachlor epoxide	%	93			70-130	Pass	
Hexachlorobenzene	%	115			70-130	Pass	
Methoxychlor	%	95			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP) E014 Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	111			70-130	Pass	
Coumaphos	%	98			70-130	Pass	
Diazinon	%	104			70-130	Pass	
Dichlorvos	%	109			70-130	Pass	
Dimethoate	%	106			70-130	Pass	
Disulfoton	%	111			70-130	Pass	
Ethoprop	%	106			70-130	Pass	
Fenitrothion	%	117			70-130	Pass	
Fensulfothion	%	92			70-130	Pass	
Fenthion	%	109			70-130	Pass	
Methyl azinphos	%	98			70-130	Pass	
Malathion	%	113			70-130	Pass	
Methyl parathion	%	109			70-130	Pass	
Mevinphos	%	101			70-130	Pass	
Monocrotophos	%	95			70-130	Pass	
Parathion	%	109			70-130	Pass	
Phorate	%	107			70-130	Pass	
Profenofos	%	109			70-130	Pass	
Prothiofos	%	109			70-130	Pass	
Ronnel	%	113			70-130	Pass	
Stirophos	%	115			70-130	Pass	
Trichloronate	%	129			70-130	Pass	
LCS - % Recovery							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	%	79			70-130	Pass	
Acenaphthylene	%	84			70-130	Pass	
Anthracene	%	80			70-130	Pass	
Benz(a)anthracene	%	72			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	%	90			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	%	90			70-130	Pass	
Benzo(g,h,i)perylene	%	81			70-130	Pass	
Chrysene	%	88			70-130	Pass	
Dibenz(a,h)anthracene	%	79			70-130	Pass	
Fluoranthene	%	77			70-130	Pass	
Fluorene	%	80			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	78			70-130	Pass	
Naphthalene	%	84			70-130	Pass	
Phenanthrene	%	76			70-130	Pass	
Pyrene	%	78			70-130	Pass	

LCS - % Recovery

Metals M8 E022 Acid Extractable metals in Soils & E026 Mercury

Arsenic	%	99			70-130	Pass	
Cadmium	%	100			70-130	Pass	
Chromium	%	100			70-130	Pass	
Copper	%	102			70-130	Pass	
Lead	%	97			70-130	Pass	
Mercury	%	95			70-130	Pass	
Nickel	%	103			70-130	Pass	
Zinc	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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Spike - % Recovery

Total Recoverable Hydrocarbons - 1999 NEPM Fractions

TRH C6-C9	S11-De02195	CP	%	94			70-130	Pass	
TRH C10-C14	S11-De02195	CP	%	86			70-130	Pass	

Spike - % Recovery

BTEX

Benzene	S11-De02195	CP	%	82			70-130	Pass	
Toluene	S11-De02195	CP	%	81			70-130	Pass	
Ethylbenzene	S11-De02195	CP	%	85			70-130	Pass	
Total m+p-Xylenes	S11-De02195	CP	%	85			70-130	Pass	
o-Xylene	S11-De02195	CP	%	82			70-130	Pass	
Xylenes(ortho.meta and para)	S11-De02195	CP	%	84			70-130	Pass	

Spike - % Recovery

Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *

Naphthalene	S11-De02195	CP	%	72			70-130	Pass	
TRH C6-C10	S11-De02195	CP	%	91			70-130	Pass	
TRH >C10-C16	S11-De02195	CP	%	86			70-130	Pass	

Spike - % Recovery

Polyaromatic Hydrocarbons (PAH)

Acenaphthene	S11-De02195	CP	%	79			70-130	Pass	
Acenaphthylene	S11-De02195	CP	%	86			70-130	Pass	
Anthracene	S11-De02195	CP	%	80			70-130	Pass	
Benz(a)anthracene	S11-De02195	CP	%	77			70-130	Pass	
Benzo(a)pyrene	S11-De02195	CP	%	95			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S11-De02195	CP	%	93			70-130	Pass	
Benzo(g,h,i)perylene	S11-De02195	CP	%	83			70-130	Pass	
Chrysene	S11-De02195	CP	%	88			70-130	Pass	
Dibenz(a,h)anthracene	S11-De02195	CP	%	82			70-130	Pass	
Fluoranthene	S11-De02195	CP	%	77			70-130	Pass	
Fluorene	S11-De02195	CP	%	82			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S11-De02195	CP	%	80			70-130	Pass	
Naphthalene	S11-De02195	CP	%	85			70-130	Pass	
Phenanthrene	S11-De02195	CP	%	77			70-130	Pass	
Pyrene	S11-De02195	CP	%	79			70-130	Pass	

Spike - % Recovery

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Metals M8				Result 1					
Arsenic	S11-De02195	CP	%	101			70-130	Pass	
Cadmium	S11-De02195	CP	%	100			70-130	Pass	
Chromium	S11-De02195	CP	%	100			70-130	Pass	
Copper	S11-De02195	CP	%	114			70-130	Pass	
Lead	S11-De02195	CP	%	97			70-130	Pass	
Zinc	S11-De02195	CP	%	116			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S11-De02209	CP	%	127			70-130	Pass	
Coumaphos	S11-De02209	CP	%	127			70-130	Pass	
Demeton (total)	S11-De02209	CP	%	124			70-130	Pass	
Diazinon	S11-De02209	CP	%	126			70-130	Pass	
Dichlorvos	S11-De02209	CP	%	129			70-130	Pass	
Dimethoate	S11-De02209	CP	%	126			70-130	Pass	
Disulfoton	S11-De02209	CP	%	128			70-130	Pass	
Ethoprop	S11-De02209	CP	%	127			70-130	Pass	
Fenitrothion	S11-De02209	CP	%	122			70-130	Pass	
Fensulfotthion	S11-De02209	CP	%	127			70-130	Pass	
Fenthion	S11-De02209	CP	%	123			70-130	Pass	
Methyl azinphos	S11-De02209	CP	%	120			70-130	Pass	
Malathion	S11-De02209	CP	%	126			70-130	Pass	
Methyl parathion	S11-De02209	CP	%	117			70-130	Pass	
Mevinphos	S11-De02209	CP	%	126			70-130	Pass	
Monocrotophos	S11-De02209	CP	%	101			70-130	Pass	
Parathion	S11-De02209	CP	%	123			70-130	Pass	
Phorate	S11-De02209	CP	%	125			70-130	Pass	
Profenofos	S11-De02209	CP	%	129			70-130	Pass	
Prothiofos	S11-De02209	CP	%	123			70-130	Pass	
Ronnel	S11-De02209	CP	%	129			70-130	Pass	
Stirophos	S11-De02209	CP	%	128			70-130	Pass	
Trichloronate	S11-De02209	CP	%	105			70-130	Pass	
Spike - % Recovery									
Polyaromatic Hydrocarbons (PAH)				Result 1					
Acenaphthene	S11-De02218	CP	%	82			70-130	Pass	
Acenaphthylene	S11-De02218	CP	%	86			70-130	Pass	
Anthracene	S11-De02218	CP	%	83			70-130	Pass	
Benz(a)anthracene	S11-De02218	CP	%	83			70-130	Pass	
Benzo(a)pyrene	S11-De02218	CP	%	95			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S11-De02218	CP	%	95			70-130	Pass	
Benzo(g,h,i)perylene	S11-De02218	CP	%	81			70-130	Pass	
Chrysene	S11-De02218	CP	%	86			70-130	Pass	
Dibenz(a,h)anthracene	S11-De02218	CP	%	79			70-130	Pass	
Fluoranthene	S11-De02218	CP	%	76			70-130	Pass	
Fluorene	S11-De02218	CP	%	82			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S11-De02218	CP	%	81			70-130	Pass	
Naphthalene	S11-De02218	CP	%	85			70-130	Pass	
Phenanthrene	S11-De02218	CP	%	79			70-130	Pass	
Pyrene	S11-De02218	CP	%	75			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S11-De02228	CP	%	88			70-130	Pass	
Chromium	S11-De02228	CP	%	101			70-130	Pass	
Mercury	S11-De02228	CP	%	81			70-130	Pass	
Nickel	S11-De02228	CP	%	113			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S11-De02230	CP	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium	S11-De02230	CP	%	90			70-130	Pass	
Chromium	S11-De02230	CP	%	107			70-130	Pass	
Copper	S11-De02230	CP	%	103			70-130	Pass	
Lead	S11-De02230	CP	%	96			70-130	Pass	
Nickel	S11-De02230	CP	%	114			70-130	Pass	
Zinc	S11-De02230	CP	%	110			70-130	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S11-De02195	CP	mg/kg	< 10	< 10	<1	30%	Pass	
TRH C10-C14	S11-De02195	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C15-C28	S11-De02195	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH C29-C36	S11-De02195	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Total m+p-Xylenes	S11-De02195	CP	mg/kg	< 1	< 1	<1	30%	Pass	
o-Xylene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes(ortho.meta and para)	S11-De02195	CP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	
Total BTEX	S11-De02195	CP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1	Result 2	RPD			
Naphthalene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S11-De02195	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S11-De02195	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S11-De02195	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S11-De02195	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S11-De02195	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polyaromatic Hydrocarbons (PAH)				Result 1	Result 2	RPD			
Acenaphthene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S11-De02195	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Benzo(g,h,i)perylene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S11-De02195	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides (OC)				Result 1	Result 2	RPD			
4,4'-DDD	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	S11-De02218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
a-BHC	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-Chlordane	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-Chlordane	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S11-De02218	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S11-De02218	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diazinon	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfotthion	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S11-De02218	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polyaromatic Hydrocarbons (PAH)				Result 1	Result 2	RPD			
Acenaphthene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S11-De02218	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Benzo(g,h,i)perylene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	70	30%	Fail	Q15
Fluorene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S11-De02218	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Mercury	S11-De02224	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S11-De02229	CP	mg/kg	3.3	2.6	22	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium	S11-De02229	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Chromium	S11-De02229	CP	mg/kg	5.7	9.6	<1	30%	Pass	
Copper	S11-De02229	CP	mg/kg	11	15	<1	30%	Pass	
Lead	S11-De02229	CP	mg/kg	12	12	<1	30%	Pass	
Mercury	S11-De02229	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S11-De02229	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Zinc	S11-De02229	CP	mg/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q15	The RPD reported passes mgt-LabMark's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Onur Mehmet	Client Services
NATA Signatories:	
James Norford	Senior Analyst-Metal (NSW)
Laura Schofield	Senior Analyst-Volatile (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)



Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

mgt-LabMark shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall mgt-LabMark be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref: ASET28268/ 31448 / 1 - 18

Your ref: 320832

NATA Accreditation No: 14484

9 December 2011

MGT Labmark Environmental Laboratories

Unit F3, 16 Mars Road

Lane Cove West NSW 2066

Attn: Dr Bob Symons

Laboratory & Technical Manager NSW

Dear Bob

Asbestos Identification

This report presents the results of eighteen samples, forwarded by MGT Labmark Environmental Laboratories on 7 December 2011, for analysis for asbestos.

1.Introduction:Eighteen samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining Method (**Safer Environment Method 1.**)

3. Results : **Sample No. 1. ASET28268 / 31448 / 1. BH1 - 0.1-0.2 - De02195**

Approx dimensions 6.0 cm x 6.0 cm x 3.0 cm

The sample consisted of a mixture of clayish soil, stones, sandstones, fragments of plaster and bitumen like material.

No asbestos detected.

Sample No. 2. ASET28268 / 31448 / 2. BH1 - 3.0-3.2 - De02196

Approx dimensions 6.0 cm x 5.8 cm x 3.1 cm

The sample consisted of a mixture of clayish soil, stones and fragments of plaster.

No asbestos detected.

Sample No. 3. ASET28268 / 31448 / 3. BH2 - 0.1-0.2 - De02197

Approx dimensions 7.0 cm x 7.0 cm x 3.2 cm

The sample consisted of a mixture of clayish soil, stones, sandstones and fragments of plaster.

No asbestos detected.

Sample No. 4. ASET28268 / 31448 / 4. BH2 - 1.5-1.6 - De02198

Approx dimensions 7.0 cm x 7.0 cm x 4.0 cm

The sample consisted of a mixture of clayish soil, stones and fragments of plaster.

No asbestos detected.

Sample No. 5. ASET28268 / 31448 / 5. BH7 - 0.1-0.2 - De02209

Approx dimensions 6.0 cm x 6.0 cm x 3.5 cm

The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.

No asbestos detected.

SUITE 710 / 90 GEORGE STREET, HORNSBY NSW 2077 – P.O. BOX 1644 HORNSBY WESTFIELD NSW 1635

PHONE: (02) 99872183 FAX: (02) 99872151 EMAIL: aset@bigpond.net.au WEBSITE: www.Ausset.com.au

OCCUPATIONAL HEALTH & SAFETY STUDIES • INDOOR AIR QUALITY SURVEYS • HAZARDOUS MATERIAL SURVEYS • RADIATION SURVEYS • ASBESTOS SURVEYS
ASBESTOS DETECTION & IDENTIFICATION • REPAIR & CALIBRATION OF SCIENTIFIC EQUIPMENT • AIRBORNE FIBRE & SILICA MONITORING



Sample No. 6. ASET28268 / 31448 / 6. BH7 - 4.5-5.7 - De02211

Approx dimensions 7.0 cm x 7.0 cm x 4.0 cm

The sample consisted of a mixture of clayish soil, stones and fragments of plaster.

No asbestos detected.

Sample No. 7. ASET28268 / 31448 / 7. BH8 - 1.5-1.7 - De02213

Approx dimensions 7.0 cm x 7.0 cm x 3.8 cm

The sample consisted of a mixture of clayish soil, stones and fragments of plaster.

No asbestos detected.

Sample No. 8. ASET28268 / 31448 / 8. TP1 - 0.2-0.3 - De02215

Approx dimensions 6.5 cm x 6.5 cm x 3.7 cm

The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster, bitumen and glass.

No asbestos detected.

Sample No. 9. ASET28268 / 31448 / 9. TP1 - 2.8-3.0 - De02216

Approx dimensions 7.0 cm x 7.0 cm x 4.0 cm

The sample consisted of a mixture of clayish soil, stones, fibres[^], fragments of plaster and bitumen.

Chrysotile[^] asbestos and Amosite[^] asbestos detected.

Sample No. 10. ASET28268 / 31448 / 10. TP2 - 0.0-0.1 - De02217

Approx dimensions 6.0 cm x 6.0 cm x 3.5 cm

The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.

No asbestos detected.

Sample No. 11. ASET28268 / 31448 / 11. TP2 - 0.4-0.5 - De02218

Approx dimensions 7.0 cm x 6.8 cm x 3.5 cm

The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.

No asbestos detected.

Sample No. 12. ASET28268 / 31448 / 12. TP3 - 0.5-0.6 - De02220

Approx dimensions 6.1 cm x 6.1 cm x 3.6 cm

The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster and shale like material.

No asbestos detected.

Sample No. 13. ASET28268 / 31448 / 13. TP3 - 1.5-1.6 - De02221

Approx dimensions 7.0 cm x 7.0 cm x 3.8 cm

The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.

No asbestos detected.

Sample No. 14. ASET28268 / 31448 / 14. TP4 - 0.0-0.1 - De02223

Approx dimensions 6.0 cm x 6.0 cm x 3.2 cm

The sample consisted of a mixture of clayish sandy soil, stones, plant matter, insect matter and fragments of plaster.

No asbestos detected.



Sample No. 15. ASET28268 / 31448 / 15. TP4 - 0.4-0.6 - De02224

Approx dimensions 6.3 cm x 6.1 cm x 3.5 cm

The sample consisted of a mixture of clayish soil, stones, fragments of plaster and shale like material.

No asbestos detected.

Sample No. 16. ASET28268 / 31448 / 16. TP7 - 0.5-0.6 - De02228

Approx dimensions 6.0 cm x 6.0 cm x 3.0 cm

The sample consisted of a mixture of clayish soil, stones, synthetic mineral fibres, other fibres[^], fragments of plaster, corroded metal and glass.

Chrysotile[^] asbestos detected.

Sample No. 17. ASET28268 / 31448 / 17. TP7 - 1.4-1.6 - De02229

Approx dimensions 6.5 cm x 6.5 cm x 4.0 cm

The sample consisted of a mixture of clayish soil, stones and fragments of plaster.

No asbestos detected.

Sample No. 18. ASET28268 / 31448 / 18. TP8 - 0.1-0.2 - De02230

Approx dimensions 6.5 cm x 6.5 cm x 4.0 cm

The sample consisted of a mixture of clayish soil, stones and fragments of plaster.

No asbestos detected.

Analysed and reported by,

A handwritten signature in black ink, appearing to read "Mahen De Silva". The signature is written in a cursive, flowing style with a long horizontal stroke at the end.

**Mahen De Silva . BSc. MSc. Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Signatory.
Approved Identifier**



**This document is issued in accordance with
NATA's Accreditation requirements. Accredited
for compliance with ISO/IEC 17025.**

[^] denotes the corresponding asbestos types detected as loose fibres in dust/soil sample.

*** denotes the corresponding ACM which contains asbestos in bonded form.**

Coffey Geotechnics Pty Ltd NSW - Lane Cove
8/12 Mars Road
Lane Cove West
New South Wales 2066

Attention: Imogen Powell

Report
Client Reference
Received Date

320832-W
NETBALL CENTRAL GEOTLCOV24420AA
Dec 06, 2011

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Client Sample ID			WB1
Sample Matrix			Water
mgt-LabMark Sample No.			S11-De02231
Date Sampled			Dec 01, 2011
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
Total m+p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes(ortho.meta and para)	0.003	mg/L	< 0.003
Total BTEX	0.01	mg/L	< 0.01
4-Bromofluorobenzene (surr.)	1	%	93
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *			
Naphthalene ^{N02}	0.005	mg/L	< 0.005
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
Organochlorine Pesticides (OC)			
4,4'-DDD	0.0005	mg/L	< 0.0005
4,4'-DDE	0.0005	mg/L	< 0.0005
4,4'-DDT	0.002	mg/L	< 0.002
a-BHC	0.0005	mg/L	< 0.0005
a-Chlordane	0.0005	mg/L	< 0.0005
Aldrin	0.0005	mg/L	< 0.0005
b-BHC	0.0005	mg/L	< 0.0005
d-BHC	0.0005	mg/L	< 0.0005
Dieldrin	0.0005	mg/L	< 0.0005
Endosulfan I	0.0005	mg/L	< 0.0005
Endosulfan II	0.0005	mg/L	< 0.0005
Endosulfan sulphate	0.0005	mg/L	< 0.0005
Endrin	0.0005	mg/L	< 0.0005
Endrin aldehyde	0.0005	mg/L	< 0.0005
Endrin ketone	0.0005	mg/L	< 0.0005

Client Sample ID Sample Matrix mgt-LabMark Sample No. Date Sampled			WB1 Water S11-De02231 Dec 01, 2011
Test/Reference	LOR	Unit	
g-BHC (Lindane)	0.0005	mg/L	< 0.0005
g-Chlordane	0.0005	mg/L	< 0.0005
Heptachlor	0.0005	mg/L	< 0.0005
Heptachlor epoxide	0.0005	mg/L	< 0.0005
Hexachlorobenzene	0.0005	mg/L	< 0.0005
Methoxychlor	0.002	mg/L	< 0.002
Dibutylchlorodate (surr.)	1	%	94
Tetrachloro-m-xylene (surr.)	1	%	100
Organophosphorus Pesticides (OP)			
Chlorpyrifos	0.002	mg/L	< 0.002
Coumaphos	0.002	mg/L	< 0.002
Demeton (total)	0.004	mg/L	< 0.004
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Methyl azinphos	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.02	mg/L	< 0.02
Parathion	0.002	mg/L	< 0.002
Phorate	0.002	mg/L	< 0.002
Profenofos	0.002	mg/L	< 0.002
Prothiofos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Stirophos	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	101
Polyaromatic Hydrocarbons (PAH)			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b)fluoranthene & Benzo(k)fluoranthene	0.002	mg/L	< 0.002
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001

Client Sample ID			WB1
Sample Matrix			Water
mgt-LabMark Sample No.			S11-De02231
Date Sampled			Dec 01, 2011
Test/Reference	LOR	Unit	
Total PAH	0.002	mg/L	< 0.002
2-Fluorobiphenyl (surr.)	1	%	70
p-Terphenyl-d14 (surr.)	1	%	76
Heavy Metals			
Arsenic	0.005	mg/L	< 0.005
Cadmium	0.0005	mg/L	0.0034
Chromium	0.005	mg/L	< 0.005
Copper	0.005	mg/L	< 0.005
Lead	0.005	mg/L	< 0.005
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.005	mg/L	< 0.005
Zinc	0.005	mg/L	0.010

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: E004 Petroleum Hydrocarbons (TPH)	Sydney	Dec 07, 2011	7 Day
BTEX - Method: E029/E016 BTEX	Sydney	Dec 06, 2011	14 Day
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * - Method: LM-LTM-ORG2010	Sydney	Dec 07, 2011	7 Day
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: E004 Petroleum Hydrocarbons (TPH)	Sydney	Dec 07, 2011	7 Day
Organochlorine Pesticides (OC) - Method: E013 Organochlorine Pesticides (OC)	Sydney	Dec 07, 2011	7 Day
Organophosphorus Pesticides (OP) - Method: E014 Organophosphorus Pesticides (OP)	Sydney	Dec 07, 2011	7 Day
Polyaromatic Hydrocarbons (PAH) - Method: E007 Polyaromatic Hydrocarbons (PAH)	Sydney	Dec 07, 2011	7 Day
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * - Method: LM-LTM-ORG2010	Sydney	Dec 07, 2011	7 Day
Metals M8 - Method: E022 Acid Extractable metals in Soils & E026 Mercury	Sydney	Dec 08, 2011	28 Day

Company Name: Coffey Geotechnics Pty Ltd Lane Cove
Address: 8/12 Mars Road
Lane Cove West
New South Wales 2066

Order No.:
Report #: 320832
Phone: 02 9911 1099
Fax: 02 9911 1002

Received: Dec 6, 2011 11:35 AM
Due: Dec 13, 2011 4:00 PM
Priority: 5 Day
Contact name: Imogen Powell

Client Job No.: NETBALL CENTRAL GEOTLCOV24420AA

mgt-LabMark Client Manager: Onur Mehmet

Sample Detail					% Moisture	Asbestos	ASET Reporting Fee	HOLD	Metals M8	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 14	mgt-LabMark Suite 1
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site #1261												
Sydney Laboratory - NATA Site #1645					X	X	X	X	X	X	X	X
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
BH1 0.1-0.2	Dec 01, 2011		Soil	S11-De02195	X	X	X		X	X		X
BH1 3.0-3.2	Dec 01, 2011		Soil	S11-De02196	X	X			X	X		
BH2 0.1-0.2	Dec 01, 2011		Soil	S11-De02197	X	X			X	X		X
BH2 1.5-1.6	Dec 01, 2011		Soil	S11-De02198	X	X			X	X		
BH2 3.0-3.2	Dec 01, 2011		Soil	S11-De02199				X				
BH3 0.1-0.2	Dec 01, 2011		Soil	S11-De02200				X				
BH3 1.5-1.7	Dec 01, 2011		Soil	S11-De02201				X				
BH3 3.0-3.1	Dec 01, 2011		Soil	S11-De02202				X				
BH4 0.1-0.2	Dec 01, 2011		Soil	S11-De02203				X				
BH4 0.6-0.8	Dec 01, 2011		Soil	S11-De02204				X				
BH4 1.5-1.7	Dec 01, 2011		Soil	S11-De02205				X				

Company Name: Coffey Geotechnics Pty Ltd Lane Cove
Address: 8/12 Mars Road
Lane Cove West
New South Wales 2066

Order No.:
Report #: 320832
Phone: 02 9911 1099
Fax: 02 9911 1002

Received: Dec 6, 2011 11:35 AM
Due: Dec 13, 2011 4:00 PM
Priority: 5 Day
Contact name: Imogen Powell

Client Job No.: NETBALL CENTRAL GEOTLCOV24420AA

mgt-LabMark Client Manager: Onur Mehmet

Sample Detail					% Moisture	Asbestos	ASET Reporting Fee	HOLD	Metals M8	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 14	mgt-LabMark Suite 1
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site #1261												
Sydney Laboratory - NATA Site #1645					X	X	X	X	X	X	X	X
BH5 0.1-0.2	Dec 01, 2011		Soil	S11-De02206				X				
BH5 1.5-1.6	Dec 01, 2011		Soil	S11-De02207				X				
BH6 0.1-0.2	Dec 01, 2011		Soil	S11-De02208				X				
BH7 0.1-0.2	Dec 01, 2011		Soil	S11-De02209	X	X			X	X	X	X
BH7 0.4-0.6	Dec 01, 2011		Soil	S11-De02210				X				
BH7 4.5-4.7	Dec 01, 2011		Soil	S11-De02211	X	X			X	X		
BH8 0.1-0.2	Dec 01, 2011		Soil	S11-De02212				X				
BH8 1.5-1.7	Dec 01, 2011		Soil	S11-De02213	X	X			X	X		X
BH8 3.0-3.2	Dec 01, 2011		Soil	S11-De02214				X				
TP1 0.2-0.3	Dec 02, 2011		Soil	S11-De02215	X	X			X	X	X	X
TP1 2.8-3.0	Dec 02, 2011		Soil	S11-De02216	X	X			X	X	X	
TP2 0.0-0.1	Dec 02, 2011		Soil	S11-De02217	X	X			X	X	X	X

Company Name: Coffey Geotechnics Pty Ltd Lane Cove
Address: 8/12 Mars Road
Lane Cove West
New South Wales 2066

Order No.:
Report #: 320832
Phone: 02 9911 1099
Fax: 02 9911 1002

Received: Dec 6, 2011 11:35 AM
Due: Dec 13, 2011 4:00 PM
Priority: 5 Day
Contact name: Imogen Powell

Client Job No.: NETBALL CENTRAL GEOTLCOV24420AA

mgt-LabMark Client Manager: Onur Mehmet

Sample Detail					% Moisture	Asbestos	ASET Reporting Fee	HOLD	Metals M8	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 14	mgt-LabMark Suite 1
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site #1261												
Sydney Laboratory - NATA Site #1645					X	X	X	X	X	X	X	X
TP2 0.4-0.5	Dec 02, 2011		Soil	S11-De02218	X	X			X	X	X	
TP2 2.6-2.8	Dec 02, 2011		Soil	S11-De02219				X				
TP3 0.5-0.6	Dec 02, 2011		Soil	S11-De02220	X	X			X	X		X
TP3 1.5-1.6	Dec 02, 2011		Soil	S11-De02221	X	X			X	X		
TP3 3.5-3.7	Dec 02, 2011		Soil	S11-De02222				X				
TP4 0.0-0.1	Dec 02, 2011		Soil	S11-De02223	X	X			X	X		X
TP4 0.4-0.6	Dec 02, 2011		Soil	S11-De02224	X	X			X	X		
TP4 2.8-3.0	Dec 02, 2011		Soil	S11-De02225				X				
TP5 0.0-0.1	Dec 02, 2011		Soil	S11-De02226				X				
TP5 2.0-2.1	Dec 02, 2011		Soil	S11-De02227				X				
TP7 0.5-0.6	Dec 02, 2011		Soil	S11-De02228	X	X			X	X		X
TP7 1.4-1.6	Dec 02, 2011		Soil	S11-De02229	X	X			X	X		

Company Name: Coffey Geotechnics Pty Ltd Lane Cove
Address: 8/12 Mars Road
Lane Cove West
New South Wales 2066

Order No.:
Report #: 320832
Phone: 02 9911 1099
Fax: 02 9911 1002

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Sample Detail					% Moisture	Asbestos	ASET Reporting Fee	HOLD	Metals M8	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 14	mgt-LabMark Suite 1
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site #1261												
Sydney Laboratory - NATA Site #1645					X	X	X	X	X	X	X	X
TP8 0.1-0.2	Dec 02, 2011		Soil	S11-De02230	X	X			X	X		X
WB1	Dec 01, 2011		Water	S11-De02231					X	X	X	X
DUP1	Dec 01, 2011		Soil	S11-De02232	X				X	X		X
DUP2	Dec 02, 2011		Soil	S11-De02233	X				X	X	X	
TP1 1.6-1.8	Dec 02, 2011		Soil	S11-De30734				X				
TP3 0.0-0.1M	Dec 02, 2011		Soil	S11-De30735				X				
TP8 2.2-2.4M	Dec 02, 2011		Soil	S11-De30736				X				

mgt-LabMark Internal Quality Control Review

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis.
7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001)

For samples received on the last day of holding time, notification of testing requirements should have been received at least

6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as an RPD

UNITS

mg/kg: milligrams per Kilogram

mg/L: milligrams per litre

µg/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

TERMS

Dry:	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR:	Limit Of Reporting.
SPIKE:	Addition of the analyte to the sample and reported as percentage recovery.
RPD:	Relative Percent Difference between two Duplicate pieces of analysis.
LCS:	Laboratory Control Sample - reported as percent recovery.
CRM:	Certified Reference Material - reported as percent recovery.
Method Blank:	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate:	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate:	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate:	A second piece of analysis from a sample outside of the client's batch of samples but run within the laboratory batch of analysis.
Batch SPIKE:	Spike recovery reported on a sample from outside of the client's batch of samples but run within the laboratory batch of analysis.
USEPA:	U.S Environmental Protection Agency
APHA:	American Public Health Association
ASLP:	Australian Standard Leaching Procedure (AS4439.3)
TCLP:	Toxicity Characteristic Leaching Procedure
COC:	Chain Of Custody
SRA:	Sample Receipt Advice
CP:	Client Parent - QC was performed on samples pertaining to this report
NCP:	Non-Client Parent - QC was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample>
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data below the LOR with a positive RPD - eg: LOR 0.1, Result A = <0.1 (raw data is 0.02) & Result B = <0.1 (raw data is 0.03) resulting in a RPD of 40% calculated from the raw data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
Method Blank							
BTEX E029/E016 BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Total m+p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes(ortho.meta and para)	mg/L	< 0.003			0.003	Pass	
Total BTEX	mg/L	< 0.01			0.01	Pass	
Method Blank							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010							
Naphthalene	mg/L	< 0.005			0.005	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
Organochlorine Pesticides (OC) E013 Organochlorine Pesticides (OC)							
4,4'-DDD	mg/L	< 0.0005			0.0005	Pass	
4,4'-DDE	mg/L	< 0.0005			0.0005	Pass	
4,4'-DDT	mg/L	< 0.002			0.002	Pass	
a-BHC	mg/L	< 0.0005			0.0005	Pass	
a-Chlordane	mg/L	< 0.0005			0.0005	Pass	
Aldrin	mg/L	< 0.0005			0.0005	Pass	
b-BHC	mg/L	< 0.0005			0.0005	Pass	
d-BHC	mg/L	< 0.0005			0.0005	Pass	
Dieldrin	mg/L	< 0.0005			0.0005	Pass	
Endosulfan I	mg/L	< 0.0005			0.0005	Pass	
Endosulfan II	mg/L	< 0.0005			0.0005	Pass	
Endosulfan sulphate	mg/L	< 0.0005			0.0005	Pass	
Endrin	mg/L	< 0.0005			0.0005	Pass	
Endrin aldehyde	mg/L	< 0.0005			0.0005	Pass	
Endrin ketone	mg/L	< 0.0005			0.0005	Pass	
g-BHC (Lindane)	mg/L	< 0.0005			0.0005	Pass	
g-Chlordane	mg/L	< 0.0005			0.0005	Pass	
Heptachlor	mg/L	< 0.0005			0.0005	Pass	
Heptachlor epoxide	mg/L	< 0.0005			0.0005	Pass	
Hexachlorobenzene	mg/L	< 0.0005			0.0005	Pass	
Methoxychlor	mg/L	< 0.002			0.002	Pass	
Method Blank							
Organophosphorus Pesticides (OP) E014 Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.002			0.002	Pass	
Demeton (total)	mg/L	< 0.004			0.004	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Disulfoton	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Methyl azinphos	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.02			0.02	Pass	
Parathion	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Profenofos	mg/L	< 0.002			0.002	Pass	
Prothiofos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Stirophos	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	mg/L	< 0.002			0.002	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010							
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Metals M8 E022 Acid Extractable metals in Soils & E026 Mercury							
Arsenic	mg/L	< 0.005			0.005	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Chromium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	%	108			70-130	Pass	
LCS - % Recovery							
BTEX E029/E016 BTEX							
Benzene	%	103			70-130	Pass	
Toluene	%	102			70-130	Pass	
Ethylbenzene	%	103			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total m+p-Xylenes	%	103			70-130	Pass	
o-Xylene	%	102			70-130	Pass	
Xylenes(ortho.meta and para)	%	103			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010							
Naphthalene	%	95			70-130	Pass	
TRH C6-C10	%	103			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C10-C14	%	98			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides (OC) E013 Organochlorine Pesticides (OC)							
4,4'-DDD	%	124			70-130	Pass	
4,4'-DDE	%	120			70-130	Pass	
4,4'-DDT	%	118			70-130	Pass	
a-BHC	%	103			70-130	Pass	
a-Chlordane	%	121			70-130	Pass	
Aldrin	%	119			70-130	Pass	
b-BHC	%	108			70-130	Pass	
d-BHC	%	97			70-130	Pass	
Dieldrin	%	117			70-130	Pass	
Endosulfan I	%	124			70-130	Pass	
Endosulfan II	%	120			70-130	Pass	
Endosulfan sulphate	%	104			70-130	Pass	
Endrin	%	107			70-130	Pass	
Endrin aldehyde	%	129			70-130	Pass	
Endrin ketone	%	124			70-130	Pass	
g-BHC (Lindane)	%	110			70-130	Pass	
g-Chlordane	%	119			70-130	Pass	
Heptachlor	%	109			70-130	Pass	
Heptachlor epoxide	%	122			70-130	Pass	
Hexachlorobenzene	%	100			70-130	Pass	
Methoxychlor	%	121			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP) E014 Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	111			70-130	Pass	
Coumaphos	%	100			70-130	Pass	
Demeton (total)	%	111			70-130	Pass	
Diazinon	%	105			70-130	Pass	
Dichlorvos	%	104			70-130	Pass	
Dimethoate	%	97			70-130	Pass	
Disulfoton	%	113			70-130	Pass	
Ethoprop	%	103			70-130	Pass	
Fenitrothion	%	118			70-130	Pass	
Fensulfothion	%	72			70-130	Pass	
Fenthion	%	104			70-130	Pass	
Methyl azinphos	%	103			70-130	Pass	
Malathion	%	115			70-130	Pass	
Methyl parathion	%	115			70-130	Pass	
Mevinphos	%	102			70-130	Pass	
Parathion	%	115			70-130	Pass	
Phorate	%	107			70-130	Pass	
Profenofos	%	118			70-130	Pass	
Prothiofos	%	109			70-130	Pass	
Ronnel	%	102			70-130	Pass	
Stirophos	%	119			70-130	Pass	
Trichloronate	%	129			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	%	106			70-130	Pass	
Acenaphthylene	%	109			70-130	Pass	
Anthracene	%	119			70-130	Pass	
Benz(a)anthracene	%	124			70-130	Pass	
Benzo(a)pyrene	%	116			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	%	115			70-130	Pass	
Benzo(g,h,i)perylene	%	106			70-130	Pass	
Chrysene	%	109			70-130	Pass	
Dibenz(a,h)anthracene	%	106			70-130	Pass	
Fluoranthene	%	117			70-130	Pass	
Fluorene	%	111			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	119			70-130	Pass	
Naphthalene	%	98			70-130	Pass	
Phenanthrene	%	116			70-130	Pass	
Pyrene	%	118			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010							
TRH >C10-C16	%	93			70-130	Pass	
LCS - % Recovery							
Metals M8 E022 Acid Extractable metals in Soils & E026 Mercury							
Arsenic	%	80			70-130	Pass	
Cadmium	%	81			70-130	Pass	
Chromium	%	77			70-130	Pass	
Copper	%	83			70-130	Pass	
Lead	%	77			70-130	Pass	
Mercury	%	79			70-130	Pass	
Nickel	%	80			70-130	Pass	
Zinc	%	87			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S11-De02977	NCP	%	112			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S11-De02977	NCP	%	108			70-130	Pass	
Toluene	S11-De02977	NCP	%	110			70-130	Pass	
Ethylbenzene	S11-De02977	NCP	%	108			70-130	Pass	
Total m+p-Xylenes	S11-De02977	NCP	%	108			70-130	Pass	
o-Xylene	S11-De02977	NCP	%	108			70-130	Pass	
Xylenes(ortho.meta and para)	S11-De02977	NCP	%	108			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1					
Naphthalene	S11-De02977	NCP	%	87			70-130	Pass	
TRH C6-C10	S11-De02977	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S11-De30162	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides (OC)				Result 1					
4,4'-DDD	S11-De30184	NCP	%	109			70-130	Pass	
4,4'-DDE	S11-De30184	NCP	%	111			70-130	Pass	
4,4'-DDT	S11-De30184	NCP	%	110			70-130	Pass	
a-BHC	S11-De30184	NCP	%	97			70-130	Pass	
a-Chlordane	S11-De30184	NCP	%	113			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aldrin	S11-De30184	NCP	%	112			70-130	Pass	
b-BHC	S11-De30184	NCP	%	101			70-130	Pass	
d-BHC	S11-De30184	NCP	%	98			70-130	Pass	
Dieldrin	S11-De30184	NCP	%	108			70-130	Pass	
Endosulfan I	S11-De30184	NCP	%	115			70-130	Pass	
Endosulfan II	S11-De30184	NCP	%	112			70-130	Pass	
Endosulfan sulphate	S11-De30184	NCP	%	112			70-130	Pass	
Endrin	S11-De30184	NCP	%	112			70-130	Pass	
Endrin aldehyde	S11-De30184	NCP	%	130			70-130	Pass	
Endrin ketone	S11-De30184	NCP	%	112			70-130	Pass	
g-BHC (Lindane)	S11-De30184	NCP	%	105			70-130	Pass	
g-Chlordane	S11-De30184	NCP	%	114			70-130	Pass	
Heptachlor	S11-De30184	NCP	%	108			70-130	Pass	
Heptachlor epoxide	S11-De30184	NCP	%	115			70-130	Pass	
Hexachlorobenzene	S11-De30184	NCP	%	90			70-130	Pass	
Methoxychlor	S11-De30184	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S11-De30161	NCP	%	117			70-130	Pass	
Coumaphos	S11-De30161	NCP	%	117			70-130	Pass	
Demeton (total)	S11-De30161	NCP	%	116			70-130	Pass	
Diazinon	S11-De30161	NCP	%	105			70-130	Pass	
Dichlorvos	S11-De30161	NCP	%	113			70-130	Pass	
Dimethoate	S11-De30161	NCP	%	89			70-130	Pass	
Disulfoton	S11-De30161	NCP	%	113			70-130	Pass	
Ethoprop	S11-De30161	NCP	%	103			70-130	Pass	
Fenitrothion	S11-De30161	NCP	%	119			70-130	Pass	
Fensulfothion	S11-De30161	NCP	%	83			70-130	Pass	
Fenthion	S11-De30161	NCP	%	105			70-130	Pass	
Methyl azinphos	S11-De30161	NCP	%	101			70-130	Pass	
Malathion	S11-De30161	NCP	%	121			70-130	Pass	
Methyl parathion	S11-De30161	NCP	%	116			70-130	Pass	
Mevinphos	S11-De30161	NCP	%	97			70-130	Pass	
Parathion	S11-De30161	NCP	%	119			70-130	Pass	
Phorate	S11-De30161	NCP	%	103			70-130	Pass	
Profenofos	S11-De30161	NCP	%	122			70-130	Pass	
Prothiofos	S11-De30161	NCP	%	115			70-130	Pass	
Ronnel	S11-De30161	NCP	%	101			70-130	Pass	
Stirophos	S11-De30161	NCP	%	120			70-130	Pass	
Trichloronate	S11-De30161	NCP	%	130			70-130	Pass	
Spike - % Recovery									
Polyaromatic Hydrocarbons (PAH)				Result 1					
Acenaphthene	S11-De01651	NCP	%	95			70-130	Pass	
Acenaphthylene	S11-De01651	NCP	%	95			70-130	Pass	
Anthracene	S11-De01651	NCP	%	105			70-130	Pass	
Benz(a)anthracene	S11-De01651	NCP	%	104			70-130	Pass	
Benzo(a)pyrene	S11-De01651	NCP	%	98			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S11-De01651	NCP	%	98			70-130	Pass	
Benzo(g,h,i)perylene	S11-De01651	NCP	%	91			70-130	Pass	
Chrysene	S11-De01651	NCP	%	96			70-130	Pass	
Dibenz(a,h)anthracene	S11-De01651	NCP	%	91			70-130	Pass	
Fluoranthene	S11-De01651	NCP	%	102			70-130	Pass	
Fluorene	S11-De01651	NCP	%	98			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S11-De01651	NCP	%	102			70-130	Pass	
Naphthalene	S11-De01651	NCP	%	90			70-130	Pass	
Phenanthrene	S11-De01651	NCP	%	101			70-130	Pass	
Pyrene	S11-De01651	NCP	%	103			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1					
TRH >C10-C16	S11-De30162	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	N11-De00325	NCP	%	75			70-130	Pass	
Cadmium	N11-De00325	NCP	%	84			70-130	Pass	
Chromium	N11-De00325	NCP	%	78			70-130	Pass	
Copper	N11-De00325	NCP	%	85			70-130	Pass	
Lead	N11-De00325	NCP	%	74			70-130	Pass	
Mercury	N11-De00325	NCP	%	80			70-130	Pass	
Nickel	N11-De00325	NCP	%	83			70-130	Pass	
Zinc	N11-De00325	NCP	%	86			70-130	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S11-De02976	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S11-De02976	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S11-De02976	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S11-De02976	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Total m+p-Xylenes	S11-De02976	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S11-De02976	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes(ortho.meta and para)	S11-De02976	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Total BTEX	S11-De02976	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1	Result 2	RPD			
Naphthalene	S11-De02976	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
TRH C6-C10	S11-De02976	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S11-De02976	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S11-De30160	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S11-De30160	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S11-De30160	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides (OC)				Result 1	Result 2	RPD			
4,4'-DDD	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
4,4'-DDE	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
4,4'-DDT	S11-De30183	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
a-BHC	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
a-Chlordane	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Aldrin	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
b-BHC	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
d-BHC	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Dieldrin	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Endosulfan I	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Endosulfan II	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Endosulfan sulphate	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Endrin	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Endrin aldehyde	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Endrin ketone	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
g-BHC (Lindane)	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
g-Chlordane	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Heptachlor	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Heptachlor epoxide	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Hexachlorobenzene	S11-De30183	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Methoxychlor	S11-De30183	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chlorpyrifos	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton (total)	S11-De30160	NCP	mg/L	< 0.004	< 0.004	<1	30%	Pass	
Diazinon	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl azinphos	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	S11-De30160	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Parathion	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Phorate	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Profenofos	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Prothiofos	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Stirophos	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	S11-De30160	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Polyaromatic Hydrocarbons (PAH)				Result 1	Result 2	RPD			
Acenaphthene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S11-De01650	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Benzo(g,h,i)perylene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S11-De01650	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1	Result 2	RPD			
TRH >C10-C16	S11-De30726	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S11-De30726	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S11-De30726	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S11-De30451	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	S11-De30451	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	S11-De30451	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	S11-De30451	NCP	mg/L	< 0.005	< 0.005	8	30%	Pass	
Lead	S11-De30451	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	N11-De00324	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S11-De30451	NCP	mg/L	0.024	0.0085	<1	30%	Pass	
Zinc	S11-De30451	NCP	mg/L	0.012	0.017	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised By

Onur Mehmet Client Services

NATA Signatories:

James Norford Senior Analyst-Metal (NSW)
 Laura Schofield Senior Analyst-Volatile (NSW)
 Ryan Hamilton Senior Analyst-Organic (NSW)



Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

mgt-LabMark shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall mgt-LabMark be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Appendix I

QA/QC Data Validation Reports

**Phase 1 Preliminary Site Investigation
Proposed Development, Netball Centre, Olympic Park, NSW**

Coffey Environments Australia Pty Ltd

A.C.N. 140 765 902 A.B.N. 65 140 765 902



SPECIALISTS IN ENVIRONMENTAL,
SOCIAL AND SAFETY PERFORMANCE

QA/QC DATA VALIDATION REPORT

Job No: ENAURHOD04234AA-Netball Centre Olympic Park

Batch: 320832-S (Soil), ASET28268 (Asbestos), 320832-W (Water Blank)

I. SAMPLE HANDLING

1. Were the sample **holding times** met?
2. Were the samples in **proper custody** between the field and reaching the laboratory?
3. Were the samples **properly and adequately** preserved?
This includes keeping the samples chilled, where applicable.
4. Were the samples received by the laboratory in good condition?

Yes	No (Comment below)
☒	☐
☒	☐
☒	☐
☒	☐

COMMENTS:

N/A

Sample Handling was:

☒ Satisfactory

☐ Unsatisfactory

☐ Partially Satisfactory

Coffey Environments Australia Pty Ltd

A.C.N. 140 765 902 A.B.N. 65 140 765 902



SPECIALISTS IN ENVIRONMENTAL,
SOCIAL AND SAFETY PERFORMANCE

QA/QC DATA VALIDATION REPORT

Job No: ENAURHOD04234AA-Netball Centre Olympic Park

Batch: 320832-S (Soil), ASET28268 (Asbestos), 320832-W (Water Blank)

II. PRECISION/ACCURACY ASSESSMENT

1. Was a NATA registered laboratory used?
2. Did the laboratory perform the requested tests?
3. Were the laboratory methods adopted NATA endorsed?
4. Were the appropriate test procedures followed?
5. Were the reporting limits satisfactory?
6. Was the NATA Seal on the reports?
7. Were the reports signed by an authorised person?

Yes	No (Comment below)
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

COMMENTS:

N/A

Precision/Accuracy of the
Laboratory Report:

☒ Satisfactory

☐ Unsatisfactory

☐ Partially Satisfactory

Coffey Environments Australia Pty Ltd

A.C.N. 140 765 902 A.B.N. 65 140 765 902



QA/QC DATA VALIDATION REPORT

Job No: ENAURHOD04234AA-Netball Centre Olympic Park

Batch: 320832-S (Soil), ASET28268 (Asbestos), 320832-W (Water Blank)

III. FIELD QA/QC

1. Number of Primary Samples Analysed Soil: 18
Water: 0
2. Number of Days of Sampling: Soil: 2
Water: N/A

3. Number and Type of QA/QC Samples Analysed:

	SOIL	WATER
Field Duplicates (at least 1 in 10 samples)	2 intra-lab, 0 inter-lab	N/A
Trip Blanks (at least 1/day or sampling event)	0	N/A
Wash Blanks (at least 1/day/matrix/equipment)	1	N/A
Other (Field Blanks, Spiked Trip Blanks, etc.)	0	N/A

4. FIELD DUPLICATES

A. Were an Adequate Number of field duplicates analysed for each chemical (min. 10%)?

B. Were RPDs within Control Limits?

- a. Organics (< 50 % for soil; < 30% for water)
- b. Metals/Inorganics (< 50 % for soil; < 30% for water)

Yes	No (Comment below)
☒	☐
☒ ☐	☐ ☒

COMMENTS:

Soil

Sample DUP2 showed RPDs outside the acceptable range for Chromium III+IV (93%). An additional three (of eight) metals analyses could not be calculated due to non detections (<LOR) in one of the samples. DUP1 was within the acceptable range for this analysis (18%).

This may be due, in part, to sample heterogeneity, and it is considered unlikely that this would alter the recommendations of the report.

Coffey Environments Australia Pty Ltd

A.C.N. 140 765 902 A.B.N. 65 140 765 902



SPECIALISTS IN ENVIRONMENTAL,
SOCIAL AND SAFETY PERFORMANCE

QA/QC DATA VALIDATION REPORT

Job No: ENAURHOD04234AA-Netball Centre Olympic Park

Batch: 320832-S (Soil), ASET28268 (Asbestos), 320832-W (Water Blank)

5. TRIP BLANKS

A. Were an Adequate Number of trip blanks collected?

B. Were the Trip Blanks free of contaminants?

(If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)

Yes	No (Comment below)
☐	☒
N/A	N/A

6. WASH BLANKS

A. Were an adequate number of Wash Blanks collected?

B. Were the Wash Blanks free of contaminants?

(If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)

Yes	No (Comment below)
☒	☐
☒	☐

COMMENTS:

No trip blank sample was collected, however the concentrations of volatile hydrocarbons were reported as non detect in all soil samples analysed, which suggests that significant loss of volatile or cross-contamination of samples is unlikely.

Field QA/QC was :

☒ Satisfactory

☐ Unsatisfactory

☐ Partially Satisfactory

Coffey Environments Australia Pty Ltd

A.C.N. 140 765 902 A.B.N. 65 140 765 902



SPECIALISTS IN ENVIRONMENTAL,
SOCIAL AND SAFETY PERFORMANCE

QA/QC DATA VALIDATION REPORT

Job No: ENAURHOD04234AA-Netball Centre Olympic Park

Batch: 320832-S (Soil), ASET28268 (Asbestos), 320832-W (Water Blank)

IV LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

Soil

1. Type of QA/QC Samples

	TPH (C ₆ -C ₉), BTEX	TPH (C ₁₀ -C ₃₆)	Phenols	Lead
Method Blanks (at least 1 per batch)	1	1	N/A	1
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	1	1	N/A	1
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	1	1	N/A	1
Laboratory Control Sample	1	1	N/A	1
Surrogate (where appropriate)*	N/A	N/A	N/A	N/A

*Number of surrogates spikes carried out on each sample

2. Were the laboratory blanks/reagents blanks free of contamination?

3. Were the spike recoveries within control limits?

a. Organics (70% to 130%)

b. Metals/Inorganic (70% to 130%)

4. Were the RPDs of the laboratory duplicates within control limits?

5. Were the surrogate recoveries within control limits?

Yes	No (Comment below)
☒	☐
☒ ☒	☐ ☐
☒	☐
N/A	N/A

COMMENTS:

N/A

Coffey Environments Australia Pty Ltd

A.C.N. 140 765 902 A.B.N. 65 140 765 902



SPECIALISTS IN ENVIRONMENTAL,
SOCIAL AND SAFETY PERFORMANCE

QA/QC DATA VALIDATION REPORT

Job No: ENAURHOD04234AA-Netball Centre Olympic Park

Batch: 320832-S (Soil), ASET28268 (Asbestos), 320832-W (Water Blank)

Water

6. Type of QA/QC Samples

	TPH (C ₆ -C ₉), BTEX	TPH (C ₁₀ -C ₃₆)	PAH	Lead
Method Blanks (at least 1 per batch)	1	1	1	1
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	1	1	1	1
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	1	1	1	1
Laboratory Control Sample	1	1	1	1
Surrogate (where appropriate)*	0	0	0	0

*Number of surrogates spikes carried out on each sample

7. Were the laboratory blanks/reagents blanks free of contamination?

8. Were the spike recoveries within control limits?

a. Organics (70% to 130%)

b. Metals/Inorganic (70% to 130%)

9. Were the RPDs of the laboratory duplicates within control limits?

10. Were the surrogate recoveries within control limits?

Yes	No (Comment below)
☒	☐
☒ ☒	☐ ☐
☒	☐
N/A	N/A

COMMENTS:

N/A

Laboratory internal QA/QC
was:

☒ Satisfactory

☐ Unsatisfactory

☐ Partially Satisfactory

Coffey Environments Australia Pty Ltd

A.C.N. 140 765 902 A.B.N. 65 140 765 902



SPECIALISTS IN ENVIRONMENTAL,
SOCIAL AND SAFETY PERFORMANCE

QA/QC DATA VALIDATION REPORT

Job No: ENAURHOD04234AA-Netball Centre Olympic Park

Batch: 320832-S (Soil), ASET28268 (Asbestos), 320832-W (Water Blank)

V. DATA USABILITY

	Yes	No
1.Data Directly Usable	☒	☐
2. Data Usable with the following corrections/modifications (see comment below)	☐	☒
3. Data Not Usable.	☐	☒

COMMENTS:

N/A

QA/QC Report Prepared by

Josh Girvin

QA/QC Report Reviewed by:

Tot Le

(Reviewer)

Appendix J

Borehole and Test Pit Logs

**Phase 1 Preliminary Site Investigation
Proposed Development, Netball Centre, Olympic Park, NSW**

Borehole No. **BH1**

Engineering Log - Borehole

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Principal:

Project: ***Proposed Netball Central Development***

Borehole Location: **(See Figure 1)**

Sheet 1 of 1

Project No: **GEOTLCOV24420AA**

Date started: **1.12.2011**Date completed: **1.12.2011**

Logged by: **DB + AA**

Checked by: **DS**

drill model and mounting:				Mobile Drill B80 Truck				Easting:				slope: -90°				R.L. Surface: 5.2							
hole diameter:				100 mm				Northing				bearing: N/A				datum: AHD							
drilling information										material substance													
method	penetration			support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter			structure and additional observations						
	1	2	3											100 kPa	200 kPa	300 kPa		400 kPa					
ADT				N	Not Observed	E	5		CH	ASPHALT: 0.07m	D					PAVEMENT BASECOARSE							
										FILL: SAND: Fine to medium, pale brown, mottled pale grey, orange-brown, trace of clay and fine to medium, subangular sandstone gravel.	M						RESIDUAL SOIL						
										CLAY: High plasticity, dark brown, mottled red-brown, trace of fine, subround ironstone gravel.	<Wp	St											
						SPT 2,3,3 N*=6	1							X									
							4																
					SPT 1,3,5 N*=8	2			1.20m - Clay becoming high plasticity, red-brown, mottled pale grey, with a trace of fine , subround ironstone gravel.					X									
						3																	
										SHALE: Dark brown, mottled dark grey, highly weathered, low to very low strength.						BEDROCK							
					SPT 12,22,R N*=R	2																	
										Borehole BH1 terminated at 3.45m													

Borehole No. **BH2**

Engineering Log - Borehole

Sheet 1 of 1
Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **1.12.2011**

Principal:

Date completed: **1.12.2011**

Project: **Proposed Netball Central Development**

Logged by: **DB + AA**

Borehole Location: **(See Figure 1)**

Checked by: **DS**

drill model and mounting:		Mobile Drill B80 Truck		Easting:		slope: -90°		R.L. Surface: 5.1											
hole diameter:		100 mm		Northing		bearing: N/A		datum: AHD											
drilling information				material substance															
method	penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations						
ADT	1 2 3	N			5				ASPHALT: 0.1m	D			PAVEMENT						
				E					FILL: Gravelly SAND: Fine to medium, pale brown, mottled orange-brown, dark grey, fine to medium subangular sandstone and shale gravel.	>Wp	F		BASE COARSE						
				SPT 2,3,3 N*=6		1		CL	Silty CLAY: Medium plasticity, dark grey, mottled dark brown, trace fine rootlets.			x	ALLUVIUM						
					4														
				SPT 2,4,4 N*=8		2		CH	Silty CLAY: High plasticity, dark grey, mottled red-brown, pale grey, trace of fine subround ironstone gravel.	<Wp	St	x	RESIDUAL SOIL						
					3														
						3			SHALE: Dark brown to pale grey, orange-brown, highly weathered, low strength.				BEDROCK						
				SPT 14,14,10 N*=24	2														
									Borehole BH2 terminated at 3.45m										
					1	4													
					0	5													
					-1	6													
					-2	7													
						8													
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT				support M mud N nil C casing penetration 1 2 3 4 no resistance ranging to refusal water 10/1/98 water level on date shown water inflow water outflow				notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal				classification symbols and soil description based on unified classification system moisture D dry M moist W wet Wp plastic limit WL liquid limit				consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense			

Borehole No. **BH3**

Engineering Log - Borehole

Sheet 1 of 1
Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **1.12.2011**

Principal:

Date completed: **1.12.2011**

Project: **Proposed Netball Central Development**

Logged by: **DB + AA**

Borehole Location: **(See Figure 1)**

Checked by: **DS**

drill model and mounting:		Mobile Drill B80 Truck		Easting:		slope: -90°		R.L. Surface: 5.4											
hole diameter:		100 mm		Northing		bearing: N/A		datum: AHD											
drilling information				material substance															
method	penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations						
ADT	1 2 3	N		E	5	1			ASPHALT: 0.07m FILL: SAND: Medium to coarse, pale brown, mottled orange-brown, with a trace of fine subangular sandstone gravel. FILL: Silty CLAY: Low plasticity, black, dark brown, mottled red-brown, pale grey, orange-brown, trace of fine to medium, subangular to subround shale gravel.	D M <Wp			PAVEMENT BASECOARSE						
		Not Observed		SPT 3,3,9 N*=12									FILL						
				D	4			CH	Silty CLAY: High plasticity, dark brown, mottled dark grey, trace of fine subround ironstone gravel.	F-St			ALLUVIUM						
				U ₅₀		2		CH	Silty CLAY: High plasticity, pale grey, mottled red-brown, trace of fine subangular ironstone gravel.	VSt			RESIDUAL SOIL						
					3				SHALE: Pale grey to orange-brown, highly weathered, low strength.				BEDROCK						
				SPT R N*=R	2				Borehole BH3 terminated at 3.45m										
					4														
					1														
					5														
					0														
					6														
					-1														
					7														
					-2														
					8														
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT				support M mud C casing penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow				notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal				classification symbols and soil description based on unified classification system moisture D dry M moist W wet Wp plastic limit WL liquid limit				consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense			

Borehole No. **BH4**

Engineering Log - Borehole

Sheet 1 of 1
Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **1.12.2011**

Principal:

Date completed: **1.12.2011**

Project: **Proposed Netball Central Development**

Logged by: **DB**

Borehole Location: **(See Figure 1)**

Checked by: **DS**

drill model and mounting:		Mobile Drill B80 Truck		Easting:		slope: -90°		R.L. Surface: 6.8											
hole diameter:		100 mm		Northing		bearing: N/A		datum: AHD											
drilling information				material substance															
method	penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations						
ADT	1 2 3	N		E		6			ASPHALT: 0.05m FILL: Sandy GRAVEL: Fine to medium, subangular to angular, pale grey, mottled orange-brown sandstone. Fine to coarse sand. FILL: Sandy GRAVEL: Fine to coarse, subangular, pale grey, mottled orange-brown, red-brown, shale. Sand is fine to coarse.	D M-D			PAVEMENT BASECOARSE FILL						
		Not Observed		SPT 5,5,6 N*=11		1													
				SPT 3,3,3 N*=6		5		CH	CLAY: High plasticity, pale grey, mottled red-brown, with some fine to medium, round to subround ironstone gravel.	<Wp	F-VSt		RESIDUAL SOIL						
						2													
				SPT 5,8,16 N*=24		4			SHALE: Pale grey, with some orange brown iron stained bands, extremely weathered to highly weathered, low to very low strength.				BEDROCK						
						3													
						4			Borehole BH4 terminated at 3.45m										
						5													
						6													
						7													
						8													
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT				support M mud C casing penetration 1 2 3 4 no resistance ranging to refusal water 10/1/98 water level on date shown water inflow water outflow				notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal				classification symbols and soil description based on unified classification system moisture D dry M moist W wet Wp plastic limit WL liquid limit				consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense			

Borehole No. **BH5**

Engineering Log - Borehole

Sheet 1 of 1
Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **1.12.2011**

Principal:

Date completed: **1.12.2011**

Project: **Proposed Netball Central Development**

Logged by: **DB + AA**

Borehole Location: **(See Figure 1)**

Checked by: **DS**

drill model and mounting:		Mobile Drill B80 Truck		Easting:		slope: -90°		R.L. Surface: 6.7				
hole diameter:		100 mm		Northing		bearing: N/A		datum: AHD				
drilling information				material substance								
method	penetration	support	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
ADT	1 2 3	N	Not Observed	E				ASPHALT: 0.07m FILL: Gravelly SAND: Fine to coarse, pale brown, fine to medium, subangular sandstone gravel.	D D-M			PAVEMENT BASECOARSE
					6			Borehole BH5 terminated at 0.5m				Orange caution tape observed at 0.5m indicating potential service
					1							
					5							
					2							
					4							
					3							
					3							
					4							
					2							
					5							
					1							
					6							
					0							
					7							
					-1							
					8							
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT				support M mud C casing penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal		classification symbols and soil description based on unified classification system moisture D dry M moist W wet Wp plastic limit WL liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense		

Borehole No. **BH6**

Engineering Log - Borehole

Sheet 1 of 1
Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **1.12.2011**

Principal:

Date completed: **1.12.2011**

Project: **Proposed Netball Central Development**

Logged by: **DB + AA**

Borehole Location: **(See Figure 1)**

Checked by: **DS**

drill model and mounting:		Mobile Drill B80 Truck		Easting:		slope: -90°		R.L. Surface: 6.8					
hole diameter:		100 mm		Northing:		bearing: N/A		datum: AHD					
drilling information				material substance									
method	penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
ADT	1 2 3	N		E D SPT 2,2,4 N*=6	6	1		CH	ASPHALT: 0.07m FILL: Clayey SAND: Fine to medium, pale brown, mottled dark brown, orange-brown, with some fine to medium, subangular sandstone gravel. FILL: SAND: Fine to medium, dark grey, with some fine to medium, subangular sandstone gravel. Silty CLAY: High plasticity, pale grey, mottled red-brown, with a trace of fine, subangular ironstone gravel.	D-M			PAVEMENT BASECOARSE
				SPT 4,10,7 N*=17	5	2				<Wp	F-Vst	X	RESIDUAL SOIL
				SPT 15,R N*=R	4	3			SHALE: Pale grey, mottled orange-brown, extremely weathered to highly weathered, low to very low strength.				BEDROCK
Borehole BH6 terminated at 3.45m													
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT support M mud C casing penetration 1 2 3 4 no resistance ranging to refusal water 10/1/98 water level on date shown water inflow water outflow notes, samples, tests U₅₀ undisturbed sample 50mm diameter U₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal classification symbols and soil description based on unified classification system moisture D dry M moist W wet Wp plastic limit WL liquid limit consistency/density index VS very soft S soft F firm St stiff Vst very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense													

Borehole No. **BH7**

Engineering Log - Borehole

Sheet 1 of 1
Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **1.12.2011**

Principal:

Date completed: **1.12.2011**

Project: **Proposed Netball Central Development**

Logged by: **AA + DB**

Borehole Location: **(See Figure 1)**

Checked by: **DS**

drill model and mounting:		Mobile Drill B80 Truck		Easting:		slope: -90°		R.L. Surface: 11.1					
hole diameter:		100 mm		Northing		bearing: N/A		datum: AHD					
drilling information				material substance									
method	penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
ADT	1 2 3	N		E	11				Sandy SILT: Dark brown, with a trace of fine roots.	M			TOPSOIL
				D					FILL: SAND: Fine to medium, brown to pale brown, with a trace of fine to medium, subangular shale gravel.				FILL
				SPT 3,3,2 N*=5		1			FILL: Sandy Gravelly CLAY: Medium plasticity, pale grey, mottled orange-brown, red-brown, fine to medium sand and fine to coarse subangular shale gravel.				
					10				FILL: Sandy GRAVEL: Medium to coarse, subangular to angular, pale grey, mottled orange-brown shale, fine to medium sand, trace of clay.	W		x	
				SPT 2,2,2 N*=4		2							
					9				FILL: Silty CLAY: High plasticity, red-brown, mottled dark grey, pale grey and orange-brown, with some fine to medium, subangular to angular shale and ironstone gravel.	>Wp			
				SPT 2,5,5 N*=10		3						x	
					8				FILL: Silty CLAY: Medium to high plasticity, pale brown, mottled dark brown, orange-brown, with some black carbonaceous layers and flecks, trace of fine rootlets.	>Wp			
				SPT 3,6,6 N*=12		4						x	
					7								
					6								
					5								
					4			CH	Silty CLAY: High plasticity, pale grey, mottled red-brown, orange-brown, with a trace of fine to medium sub angular ironstone gravel.	<Wp	St-VSt		RESIDUAL SOIL
					3								
					2								
					1								
					0				SHALE: Pale grey to orange-brown, highly weathered, low strength.				BEDROCK
					8				Borehole BH7 terminated at 7.8m				
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT				support M mud C casing penetration 1 2 3 4 no resistance ranging to refusal water 10/1/98 water level on date shown water inflow water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal				classification symbols and soil description based on unified classification system moisture D dry M moist W wet Wp plastic limit WL liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense	

Borehole No. **BH8**

Engineering Log - Borehole

Sheet 1 of 1
Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **1.12.2011**

Principal:

Date completed: **1.12.2011**

Project: **Proposed Netball Central Development**

Logged by: **DB**

Borehole Location: **(See Figure 1)**

Checked by: **DS**

drill model and mounting:		Mobile Drill B80 Truck		Easting:		slope: -90°		R.L. Surface: 5.8					
hole diameter:		100 mm		Northing		bearing: N/A		datum: AHD					
drilling information				material substance									
method	penetration	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
ADT	1 2 3	N		E					FILL: Sandy SILT: Dark brown, mottled pale brown, with some fine rootlets.	M			TOPSOIL
				SPT 2,6,4 N*=10	5	1			FILL: Sandy CLAY: Medium plasticity, pale brown, mottled pale grey, fine to medium sand, with some fine to coarse, subangular shale and sandstone gravel.	>Wp			FILL
									1.20m - Becoming silty, with some red brown mottling.				
				SPT 2,4,4 N*=8	4	2							
					3	3			FILL: Silty CLAY: Low to medium plasticity, dark brown, mottled pale grey, red brown, with some fine to medium, angular to subangular sandstone and shale gravel.				
				SPT 6,5,5 N*=10									
					2	4			FILL: Silty CLAY: High plasticity, pale grey, mottled red brown, orange brown, trace of fine to medium, subrounded to rounded gravel.	<Wp			
				SPT 2,13,5 N*=18	1	5							
									Borehole BH8 terminated at 4.95m				
					0	6							
					-1	7							
					-2	8							
method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT				support M mud N nil C casing penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal		classification symbols and soil description based on unified classification system moisture D dry M moist W wet Wp plastic limit WL liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense			

Engineering Log - Excavation

Excavation No. **TP1**

Sheet 1 of 1

Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **2.12.2011**

Principal:

Date completed: **2.12.2011**

Project: ***Proposed Netball Central Development***

Logged by: **DB + AA**

Test pit location: **(See Figure 1)**

Checked by: **DS**

[illegible]

Engineering Log - Excavation

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **2.12.2011**

Principal:

Date completed: **2.12.2011**

Project: **Proposed Netball Central Development**

Logged by: **DB**

Test pit location: **(See Figure 1)**

Checked by: **DS**

equipment type and model: JCB 75t Backhoe Pit Orientation: Easting: m R.L. Surface: 7.9
excavation dimensions: 2.2m long 1.1m wide Northing: m datum: AHD

excavation information					material substance				
method	penetration	support	water	notes samples, tests, etc	depth RL metres	graphic log	classification symbol	material	structure and additional observations
BH	1 2 3	N							
				E	7.5			FILL: Silty SAND: Fine to medium, dark grey, mottled black, with some fine rootlets.	TOPSOIL
				D	0.5			FILL: Sandy Gravelly CLAY: Low plasticity, orange-brown, mottled pale grey, fine to coarse sand and fine to coarse, subangular shale, sandstone and bitumen gravel.	FILL
				E					
				Bs 0.2-0.8m	7.0				
					1.0				
				D	6.5			FILL: CLAY: Medium to high plasticity, pale brown, mottled pale grey, with some fine to coarse subangular shale/sandstone gravel.	
					1.5				
					2.0				
					2.5				
				E	5.0		CH	Silty CLAY: High plasticity, orange-brown, mottled pale grey, trace of fine to medium, subangular ironstone gravel.	RESIDUAL SOIL
					3.0				
					4.5			Test pit TP2 terminated at 3.1m	
					4.0				

Sketch

method	support	notes, samples, tests	classification symbols and soil description	consistency/density index
N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	based on unified classification system moisture D dry M moist W wet Wp plastic limit WL liquid limit	VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense

Engineering Log - Excavation

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **2.12.2011**

Principal:

Date completed: **2.12.2011**

Project: **Proposed Netball Central Development**

Logged by: **DB**

Test pit location: **(See Figure 1)**

Checked by: **DS**

equipment type and model: JCB 75t Backhoe Pit Orientation: Easting: m R.L. Surface: 8.1
excavation dimensions: 2.9m long 1.1m wide Northing: m datum: AHD

excavation information					material substance				
method	penetration	support	water	notes samples, tests, etc	depth RL metres	graphic log	classification symbol	material	structure and additional observations
BH	1 2 3	N			8.0			FILL: Silty Clayey SAND: Fine to medium, dark grey, mottled black.	TOPSOIL
					0.5			FILL: Sandy Gravelly CLAY: Medium plasticity, pale brown, mottled orange-brown, red-brown and pale grey, fine to coarse sand and fine to coarse, subangular shale, with some subangular shale cobbles <120mm.	FILL
					7.5				
					1.0				
					7.0				
					1.5			FILL: CLAY: Medium plasticity, pale grey, mottled red-brown, orange-brown, with some fine to medium sand, trace of fine to medium, subangular shale/ironstone gravel.	
					6.5				
					2.0				
					2.5				
					5.5			Sandy CLAY: Low plasticity, pale brown, mottled red-brown, trace of fine, subangular to subround quartz gravel.	ALLUVIUM
					3.0				
					5.0				
					3.5			Silty CLAY: High plasticity, pale grey, mottled red-brown, with a trace of fine, subangular ironstone gravel.	RESIDUAL SOIL
					4.5				
					4.0			Test pit TP3 terminated at 3.6m	

Sketch

method	support	notes, samples, tests	classification symbols and soil description	consistency/density index
N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	based on unified classification system moisture D dry M moist W wet Wp plastic limit WL liquid limit	VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense

Excavation No. **TP4**

Engineering Log - Excavation

Sheet 1 of 1

Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **2.12.2011**

Principal:

Date completed: **2.12.2011**

Project: ***Proposed Netball Central Development***

Logged by: **DB**

Test pit location: **(See Figure 1)**

Checked by: **DS**

[illegible]

Engineering Log - Excavation

Excavation No. **TP5**

Sheet 1 of 1

Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **2.12.2011**

Principal:

Date completed: **2.12.2011**

Project: ***Proposed Netball Central Development***

Logged by: **DB**

Test pit location: **(See Figure 1)**

Checked by: **DS**

equipment type and model: JCB 75t Backhoe				Pit Orientation:				Easting: m		R.L. Surface: 11.4				
excavation dimensions: 2.5m long 1m wide				Northing: m		datum: AHD								
excavation information						material substance								
method	penetration			support	water	notes samples, tests, etc	depth RL metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter 100 200 300 400 kPa	structure and additional observations
	1	2	3											
BH				N		E				FILL: Silty SAND: Fine to medium, dark grey, mottled black, with some fine rootlets.				TOPSOIL
						D	11.0	0.5		FILL: Sandy Gravelly CLAY: Medium to high plasticity, pale grey, mottled red-brown and orange-brown, fine to medium sand and fine to coarse, subangular shale gravel.				FILL
							10.5	1.0		FILL: CLAY: High plasticity, pale brown, mottled pale grey, trace of fine to coarse, subangular shale gravel and cobbles <100mm.				
						D	10.0	1.5		FILL: Silty CLAY: High plasticity, pale brown, mottled orange-brown, dark grey, trace of fine to medium, subangular ironstone and shale gravel.				
						E	9.5	2.0						
							9.0	2.5						
							8.5	3.0		FILL: Gravelly CLAY: Medium plasticity, pale grey, mottled red-brown, fine to coarse, subangular to angular shale gravel.				
							8.0	3.5		Test pit TP5 terminated at 3.2m				
							7.5	4.0						

Sketch

method		support	notes, samples, tests	classification symbols and soil description	consistency/density index
N	natural exposure	S shoring N nil	U ₅₀ undisturbed sample 50mm diameter	based on unified classification system	VS very soft
X	existing excavation		U ₆₃ undisturbed sample 63mm diameter		S soft
BH	backhoe bucket		D disturbed sample		F firm
B	bulldozer blade		V vane shear (kPa)		St stiff
R	ripper		Bs bulk sample		VSt very stiff
E	excavator		E environmental sample		H hard
			R refusal		Fb friable
					VL very loose
					L loose
					MD medium dense
					D dense
					VD very dense

Excavation No. **TP6**

Engineering Log - Excavation

Sheet 1 of 1

Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **2.12.2011**

Principal:

Date completed: **2.12.2011**

Project: **Proposed Netball Central Development**

Logged by: **DB + AA**

Test pit location: **(See Figure 1)**

Checked by: **DS**

equipment type and model: JCB 75t Backhoe Pit Orientation: Easting: m R.L. Surface: 9.5
excavation dimensions: 2.5m long 1.1m wide Northing: m datum: AHD

excavation information						material substance									
method	penetration			support	water	notes samples, tests, etc	depth		graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
	1	2	3				RL	metres							
BH				N	Not observed		9.0	0.5			FILL: Silty SAND: Fine to medium, dark grey, mottled black, with some fine rootlets. FILL: Sandy Gravelly CLAY: Low to medium plasticity, pale grey, mottled dark grey, red-brown, fine to medium sand and fine to coarse, subangular shale gravel. Test pit TP6 terminated at 0.4m	M			TOPSOIL FILL
					Not observed		9.0	0.5							Stormwater pipe observed at 0.4m
							8.5	1.0							
							8.0	1.5							
							7.5	2.0							
							7.0	2.5							
							6.5	3.0							
							6.0	3.5							
							5.5	4.0							

Sketch

method	support	notes, samples, tests	classification symbols and soil description	consistency/density index
N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	S shoring N nil penetration 1 2 3 4  no resistance ranging to refusal water  water level on date shown  water inflow  water outflow	U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense

Excavation No. **TP7**

Engineering Log - Excavation

Sheet 1 of 1

Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **2.12.2011**

Principal:

Date completed: **2.12.2011**

Project: **Proposed Netball Central Development**

Logged by: **DB + AA**

Test pit location: **(See Figure 1)**

Checked by: **DS**

equipment type and model: JCB 75t Backhoe Pit Orientation: Easting: m R.L. Surface: 12.5
excavation dimensions: 2.2m long 1.1m wide Northing: m datum: AHD

excavation information						material substance											
method	penetration			support	water	notes samples, tests, etc	depth		graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations		
	1	2	3				RL	metres									
BH				N	Not observed	E					FILL: Silty Clayey SAND: Fine to medium , dark grey, mottled black with some fine rootlets.	M			TOPSOIL		
												FILL: Sandy Clay: Medium plasticity, pale brown, mottled dark grey with some concrete fragments and boulders, house bricks, linen and metal fragments.	>Wp				FILL
						Bs	12.0	0.5									
							11.5	1.0									
						E	11.0	1.5				FILL: Silty CLAY: Medium to high plasticity, red-brown, mottled pale brown and pale grey, with some fine to medium, subangular shale gravel and metal fragments.	<Wp				
							10.5	2.0									
							10.0	2.5				FILL: CLAY: High plasticity, dark brown, mottled orange-brown, with some fine to medium, subangular to subround ironstone and shale gravel.					
						D											
							9.5	3.0									
												Test pit TP7 terminated at 3.1m					
						9.0	3.5										
						8.5	4.0										

Sketch

method	support	notes, samples, tests	classification symbols and soil description	consistency/density index
N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	based on unified classification system moisture D dry M moist W wet Wp plastic limit WL liquid limit	VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense

Excavation No. **TP8**

Engineering Log - Excavation

Sheet 1 of 1

Project No: **GEOTLCOV24420AA**

Client: **Netball NSW, C/- Crown Project Services Pty Ltd**

Date started: **2.12.2011**

Principal:

Date completed: **2.12.2011**

Project: **Proposed Netball Central Development**

Logged by: **AA + DB**

Test pit location: **(See Figure 1)**

Checked by: **DS**

equipment type and model: JCB 75t Backhoe Pit Orientation: Easting: m R.L. Surface: 11.3
excavation dimensions: 2.2m long 1.1m wide Northing: m datum: AHD

excavation information					material substance				
method	penetration	support	water	notes samples, tests, etc	depth RL metres	graphic log	classification symbol	material	structure and additional observations
BH	1 2 3	N		E	11.0			FILL: Silty SAND: Fine to medium, dark grey with some fine rootlets.	TOPSOIL
				Bs + D (0.2-0.40m)	0.5			FILL: Sandy GRAVEL: Fine to coarse, subangular to angular, pale grey, mottled orange-brown, fine to coarse sand, trace of clay.	FILL
		Not observed			1.0			1m - Some high plasticity, red-brown clay layers <100mm.	
					1.5				
					2.0				
				D E	2.5			FILL: Gravelly CLAY: High plasticity, orange-brown and pale grey, fine to medium subangular shale gravel.	
					3.0				
					3.5			Test pit TP8 terminated at 3m	
					4.0				

Sketch

method	support	notes, samples, tests	classification symbols and soil description	consistency/density index
N natural exposure X existing excavation BH backhoe bucket B bulldozer blade R ripper E excavator	S shoring N nil penetration 1 2 3 4 no resistance ranging to refusal water water level on date shown water inflow water outflow	U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense