Maryland Development Company Pty Ltd
Sampling Analysis and Quality Plan

Central Precinct, Llandilo NSW

FINAL

12 November 2015
43352-57348 (Rev 4)
JBS&G

www.jbsg.com.au

Maryland Development Company Pty Ltd
Sampling Analysis and Quality Plan

Central Precinct, Llandilo NSW

FINAL
12 November 2015
43352-57348 (Rev 4)
JBS&G

Table of Contents

Figures

Appendix

List of Abbreviations

A list of the common abbreviations used throughout this report is provided below.

ACM	Asbestos Containing Material
AHD	Australian Height Datum
As	Arsenic
Cd	Cadmium
Cr	Chromium
Cu	Copper
CSM	Conceptual site model
BTEX	Benzene, toluene, ethylbenzene and xylenes
B(a)P	Benzo(a)pyrene
DEC	NSW Department of Environment and Conservation
DECCW	NSW Department of Environment, Climate Change and Water
DQI	Data quality indicator
DQOs	Data Quality Objectives
DWE	NSW Department of Water and Energy
EPA	NSW Environment Protection Authority
ha	Hectare
Hg	Mercury
HIL	Health based investigation level
JBS&G	JBS&G Australia Pty Ltd
LOR	Limit of Reporting
Ni	Nickel
OCP	Organochlorine Pesticides
OEH	Office of Environment and Heritage
PAHs	Polycyclic aromatic hydrocarbons
Pb	Lead
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RPD	Relative Percentage Difference
SAQP	Sampling, Analysis and Quality Plan
TPH	Total Petroleum Hydrocarbons
VOC	Volatile Organic Compound
Zn	Zinc

1. Introduction and Background

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Maryland Development Company Pty Ltd (the client, MDC) to conduct Environmental Site Assessments (ESAs) across previously inaccessible areas (paved roads, building and stockpile footprints) of the Central Precinct Development and associated Regional Park, located at Ropes Crossing, NSW. The Central Precinct is the third residential development area that is located within the former ADI St Marys property ('the property') (**Figure 1**).

For the purposes of this report and ESAs, 'the site' (i.e. auditable areas) refers to the previously inaccessible areas (i.e. paved roads, building and stockpile footprints) within the Central Precinct and the surrounding Central Precinct Development is referred to as the 'development site'. The site is legally defined as Part Lot 1037 DP 1149525 (**Figure 2**).

- Stage 1 and 2 auditable area (comprising paved roads and building footprints) approximately 5.7 hectares (ha). Stage 1 will also include the Jordon Springs connector road which is approximately 1.2 ha.
- Stage 3 auditable area (comprising paved road) approximately 1000 m^2.
- Stage 4 auditable area (comprising paved road and stockpile footprints) approximately 8 ha.
- Stage 5 auditable area (comprising paved roads and building footprints) approximately 5000 m^2.

It is understood the site is to be developed together with the surrounding development site for residential land use including substantial vegetable gardens and poultry and associated Regional Open Space. It is noted some of the auditable area falls into the regional open space which surrounds the Central Precinct. All auditable areas within the Central Precinct will be assessed for suitability for a residential landuse use including substantial vegetable gardens and poultry.

The Central Precinct Development has already been the subject of a number of environmental investigations as detailed in **Section 4** and is covered by the following Site Audit Statements (**Appendix A**):

- Site Audit Statement (SAS) CHK001/1 – the surrounding development site signed off as suitable for residential including substantial vegetable gardens and poultry (**Figure 3a**);
- SAS CHK001/4 – Site 6 – located within the Regional Park (**Figure 3b**) signed off as suitable for residential including substantial vegetable gardens and poultry with some conditions in relation to metallic debris;
- SAS CHK001/5 – Site 23 – located within the Regional Park (**Figure 3b**) signed off as suitable for residential including substantial vegetable gardens and poultry with some conditions in relation to metallic debris;
- SAR CHK001/6 – existing buildings, paved areas and stockpile footprints (**Figure 3b**) signed off as suitable for continued commercial/industrial use; and
- SAR CHK001/7 – concrete stockpile (**Figure 3b**). Signed off as suitable for continued use as a concrete stockpile only.

Based on CHK001/1 the current development site (i.e. land surrounding the previously inaccessible sealed roads, building and stockpile footprints) is considered suitable for the proposed land use and therefore no further investigations are proposed.

Both Site 6 (CHK001/4) and Site 23 (CHK001/5) (**Figure 3a and 3b**) are located within the Regional Open Space which surrounds the Central Precinct. The respective SASs (**Appendix A**) have conditions

in relation to metallic debris management during and at the completion of any earthworks. Given both sites are wholly located within the Regional Open Space and no earthworks are planned, no additional metallic debris investigation will be conducted and the SASs CHK001/4 and 5 are considered suitable for the continued use as open space. However, prior to Site 6 and 23 being handed over to National Parks and Wildlife Service a new ongoing contamination management plan will need to be prepared and reviewed by the Site Auditor.

Both CHK001/6 and CHK001/7 refers to the site and both have conditions which has triggered the requirement for the ESAs and remediation/management works. These conditions are discussed in **Section 4**.

The former validation sectors completed by ADI Limited Pty Limited which currently fall within the development site boundary are as follows and displayed on **Figure 3a**:

- North Western Sector;
- Central Sector West; and
- Southern Sector West.

As MDC require a Sampling Analysis and Quality Plan for inclusion in the Development Application they have requested JBS&G prepare this document.

Furthermore, the Central Precinct is to be divided into stages as displayed on **Figure 2.** Investigation works will be completed based on development activities within the development site and will be reported under each stage. **Figure 4a – 4f** displays the auditable site within each development stage.

The proposed investigation was developed in accordance with guidelines made or approved by the NSW Environment Protection Authority (EPA) and relevant Australian Standards.

1.2 Objectives

The objective of the investigation is to characterise potential contamination at the site, and to draw conclusions regarding the suitability of the site for the proposed use, or make recommendations to enable such conclusions.

1.3 Scope of Work

The agreed scope of work comprised:

- Review of previous Environmental Investigation and Site Audit Reports;
- Review of historical aerial photographs since 1947;
- Site inspection; and
- Preparation of a Sampling, Analysis and Quality Plan in general accordance with guidelines made or approved by the NSW Environment and Protection Authority (EPA).

2. Site Condition & Surrounding Environment

2.1 Site Identification

The location of the Central Precinct is shown in **Figure 1**, and the stages and site is shown in **Figures 4a – 4f**. The stage and site details are summarised in **Table 2.1**.

Table 2.1 Summary Site Details

Lot Number	All Stages and sites - Part Lot 1037 DP 1149525 **Figure 2**.
Street Address	All Stages and sites - Central Precinct, Ropes Crossing, NSW (See **Figure 2**).
Site Area	The area of the auditable site in each stage is as follows: Stage 1 and 2 – 5.7 ha subject to audit Stage 3 – 0.1 ha subject to audit Stage 4 – 8 ha subject to audit Stage 5 – 0.5 ha subject to audit
Local Government Authority	Penrith City Council
Geographic Coordinates (MGA 56)	33.7325 E 150.750 N
Current Land-use	Open space with some commercial/industrial buildings
Proposed Land-use	Residential with substantial vegetable gardens and poultry

2.2 Site Description

2.2.1 Preliminary Site Inspection

A preliminary site inspection was completed on 11 March 2014 by JBS&G trained and experienced field scientists. At the time of the inspection, the buildings/warehouses and associated hard stands, road pavements and stockpiles were all still in place as shown on **Figure 2**.

Buildings and Warehouses and Associated Concrete Hardstand

A number of building structures, including 2 large warehouses and a number of smaller guard huts, storage sheds, weigh bridges and site offices, were located across the development site. Due to the presence of these structures and associated concrete hardstands, these areas of the development site have not been previously investigated as shown on **Figure 2**.

Paved Roadways

Roadways across the development site comprised a combination of bitumen paved and unsealed gravel as detailed on **Figure 2**.

Stockpiles

A number of stockpiles (SP30, SP31, SP32, SP33, SP34, SP35, SP36, SP37 and SP50) were located in the northern portion of the development site. The stockpiles were observed to be quite overgrown with grass and weeds. The stockpiled material was observed to comprise a combination of soil and asphalt, concrete and brick as shown on **Figure 5**.

2.2.2 Detailed Site Inspection

A detailed site inspection and an interview with the development site caretaker (Kevin Sancroft) was undertaken on 9 February 2015 by trained and experienced field scientists.

At the time of the inspection, the development site area was fenced and the majority of the site was unsealed with the exception of the paved roads and the paved areas within the W building series compound, which was still in use. All structures of the X series were demolished and the concrete slabs had been removed. The former building footprint areas comprised of unpaved surfaces with stockpiles of fill/demo waste materials. A photographic log with site observations is provided in **Appendix B.**

X Building Series

At the time of the detailed site inspection, the X series warehouses and associated buildings had already been demolished however a number of photographs taken at the time of the hazmat inspection are provided as **photographs 49-54** in **Appendix B**. A full description of the buildings is provided in the Hazardous Materials Survey Report (JBS&G 2014[1]).

Based on information provided by the site caretaker, the X1 warehouse was historically used as a bulk store for ammunition. Subsequently it was leased by ACI Glass for storage of glass bottles after which it was used as a storage warehouse for Christmas decorations. Prior to its demolition, the warehouse was used as a storage space by Lend Lease Engineering (formerly Baulderstone).

X2 warehouse was similarly constructed as a bulk store for ammunition and subsequently rented by ACI Glass for storage of glass bottles after which it was used as plywood storage for some time. Prior to its demolition it was also used as storage space by Lend Lease Engineering (formerly Baulderstone).

Prior to their demolition, the rest of the structures in the X series compound were used as the following.

- X2 (north) was used as an office attached to the larger warehouses;
- X2 (south) was a portable office building for X2 warehouse;
- X3 and X4 were used as a kitchen and a toilet block respectively;
- X9 was an empty storage shed;
- X6 was used as office space and
- X5 was a gatehouse associated with a weighbridge.

A concrete drainage structure was also recently identified to the southwest of X1 (**Photograph 4, 5 and 6, Appendix B**).

Stormwater in the area of the X series warehouses is anticipated to infiltrate at a rate reflective of the permeability of the surface soils and excess precipitation will migrate laterally across the ground surface to the east into the South Creek.

W Building Series

The W building series comprised a group of permanent and portable buildings currently used for storage and sterilisation of the on-site kangaroo population.

W01 (south) was a tall structure with steel frame and platforms on two levels with the first level housing a measuring device.

W01 (north) was a steel frame structure with a large deck on top.

One small portable storage shed was remaining from the cluster of small W01 buildings.

W02 (north) was a 3 storey structure once used as a radar room.

W02 (south) was a 2 storey structure with a deck on top that was also used as a radar room. The structure was made of concrete and galvanized steel with the room on lower level being used to store hay bales for recovering kangaroos. Steel steps and a ladder provided access to the rooftop deck. Suspected small ACM fragments were observed on the ground surface adjacent to the building (**Photograph 9, Appendix B**).

[1] *Hazardous Materials Survey Report*, Ropes Crossing Central Precinct, Ropes Crossing, Maryland Development Company Pty Ltd, JBS&G, April 2014 (JBS&G 2014).

W04 compound consisted of three portable structures which had been relocated adjacent to W01 cluster at the time of the inspection. One of these structures was being used as a recovery centre for kangaroos after sterilisation.

W05 area comprised the timber radar loop with steel cables (numbered as W04 on structure). Suspected highly weathered ACM fragments were observed on the paved area beside the radar loop (**Photograph 14, Appendix B**).

At the time of the site inspection, both structures numbered W09 had been demolished and only the slabs remained.

W10 was an empty garage space that was re-covered to replace ACM cladding.

The toilet adjacent to W10 was made of ACM cladding that was damaged and suspected ACM fragments were observed on ground surface (**Photograph 18, Appendix B**).

W11 was a large colour-bond steel warehouse which was on a slightly elevated surface with surrounding land sloping toward the east. The left portion housed Kangaroo Management Offices while the middle portion was used as a car storage/park. The right portion was being used as storage/workshop space. A 500 Litre diesel storage tank with no bund was identified and some staining on the ground surface was observed **(Photograph 21, Appendix B)**.

A caravan and portable building was located adjacent to the warehouse and another portable building was located opposite the warehouse all of which were not identified on plans provided.

Stormwater in the area of the W series buildings is anticipated to infiltrate at a rate reflective of the permeability of the surface soils and excess precipitation will migrate laterally across the ground surface to the east into the South Creek.

Paved Roadways

The Stage 1 road running along the northern boundary of Stage 1 was bitumen paved with no curbing. The road was generally level with surrounding area with some cut undertaken (**Photograph 30, Appendix B**). Stage 1 road continues onto the Jordon Springs connector road which was bitumen paved and was generally level with the surrounding area (**Photograph 31, Appendix B**). A temporary sewer pump storage station was located at the end of the Jordon Springs connector road (**Photograph 31, Appendix B**).

A large stockpile of material resulting from sewer pipe installation works along Stage 1 road was observed adjacent to X2 area (**Photograph 28, Appendix B**).

Bitumen paved road across Stage 3 gave access to the site offices that are part of X series building demolition area. The road was generally level with the surrounding area (**Photograph 33, Appendix A**).

Two paved roads existed in the western portion of Stage 4. The roads were bitumen paved with no curbing and were generally level with the surrounding area (**Photographs 34-38, Appendix A**). A small paved area was observed to the northeast of the first intersection, which contained an enclosure for holding kangaroos before sterilisation.

Stockpiles

Most of the stockpiles located in the northern portion of site were noted to be overgrown with vegetation. The following observations were made.

- Stockpile 39 consisted of large concrete sections and corroded steel reinforcement (Photograph 39, Appendix A);
- Stockpile 34 consisted of large concrete fragments and steel reinforcement (Photograph 40 and 41, Appendix A);

- Stockpile 36 consisted mostly of brick (Photograph 42, Appendix A);
- Stockpile 50 consisted of concrete and steel reinforcement(Photograph 43, Appendix A);
- Stockpile 37 consisted of road base and was overgrown with grass and minor trees (Photograph 44, Appendix A);
- Stockpile 32 and 31 consisted of road base and were overgrown with vegetation (Photograph 45 and 46, Appendix A); and
- Stockpile 30 comprised of soil and was overgrown with grass with characteristic green colour (Photograph 47 and 48, Appendix A).

2.3 Surrounding Land use

The surrounding landuse described below is summary from Kidd 1999 for the Central Precinct development site:

- North – Regional Parklands.
- East – The Ropes Crossing housing development.
- South – Regional Parklands with St Marys residential development area further south.
- West – The Jordan Springs residential development.

2.4 Topography and Hydrology

As reported in ADI (1996a[2]) the former ADI St Marys property (**Figure 1**) topographic relief is undulating to slightly hilly and ranges from RL 60m in the western and eastern sectors to RL 12m in the centre where South Creek and Ropes Creek flow northward. The creeks converge just north of Central Precinct and drain into the Hawkesbury River some 13km away. The alluvial floodplain of the combined creek system is approximately 1km in width.

Central Precinct is located on the plains to the east of the Nepean River. It has a flat to undulating surface that ranges from 20m to 30m above sea level. The highest points correspond to hills on the western side. South and Ropes Creeks are the two main waterways which flow north and have their confluence just north of the former ADI St Marys property boundary. Several open drainage channels drain the west of the property and flow into one channel which joins South Creek. Similarly two drainage channels drain the east of the property and flow into Ropes Creek. A majority of the catchment flows to South Creek. Both South Creek and Ropes Creek have sizeable catchments outside the Property area. Within the centre of the former ADI St Marys property, South Creek possesses a floodplain. The geology of the eastern and western sectors consists of the Bringelly Shale Unit, which is usually a sandstone and dark grey shale unit that is part of the Liverpool sub-group and the Wianamatta Group of the Triassic epoch.

This is overlain by weathered shale and the Luddenham soils which are a clayey loam, which in are as contains manganese bands and ironstone fragments. The central portion of the site consists of fluvial soil types which are termed South Creek and Berkshire Park.

ADI (ADI 1996b[3]) reported South Creek and Ropes Creek are the two main waterways that flow northwards through the ADI St Marys Property and have their confluence just to the north of the former St Marys Property boundary. South Creek drains a very large catchment in western Sydney, originating at Narellan, over 30 km to the south. The catchment is a long narrow strip up to 8 km wide with an approximate area of 18,000 ha. The catchment includes residential, agricultural and

[2] *ADI St Marys Property Historical Report*, ADI Limited, 1996 (ADI 1996a)
[3] *Volume 1 Validation Report for the Central Sector West of the ADI St Marys Facility*, ADI Limited, 1996 (ADI 1996b)

industrial areas. The creek flows northwards from the development site through mainly agricultural areas before meeting the Hawkesbury River at Windsor, 12 km to the north.

ADI (ADI 1996b) reported Ropes Creek drains a smaller catchment, originating at Cecil Park, 12 km to the south-west. This catchment is also a long narrow strip up to 4 km wide and with an approximate area of 2400 ha. The catchment also includes residential, agricultural and industrial areas. Part of the creek has been diverted along a concrete drainage channel for about 2 km through the former St Marys Property before flowing into South Creek at its new confluence just to the north of the former St Marys Property boundary.

The St Marys Sewage Treatment Plant (STP) is located south east of the Central Precinct boundary. ADI (1996b) reported effluent from the STP receives tertiary treatment before being discharged into the old Ropes Creek flow channel. This then flows into South Creek at its old confluence in the middle of the former St Marys Property.

ADI (1996b) reported three surface water sampling locations were located within the former central sector west, SW4, SW5 and SW6. Only one location (SW4) is located downgradient of the current development site and was located downstream of the confluences with the stormwater channels from the industrial and residential areas to the south of the former Central Sector West.

Results for SW4 as reported by ADI (1996b) indicated water was generally neutral, fresh and under oxidising conditions and no organic compounds such as phenols, explosives, BTEX, TPHs, VHCs or OCPs were detected in the Ropes Creek inflow.

2.5 Geology

Review of the regional geological map (DMR 1997) indicated the Central Precinct lies within Tertiary Londonderry Clay. The Londonderry Clay is characterised by clay, patches of ferruginized, consolidated sand.

Review of the regional soil map (DLWC 1972) indicated that Central Precinct lies within the Berkshire Park soil landscape group.

The typical Berkshire landscape is characterised by weakly pedal orange heavy clays and clayey sands, often mottled with inclusions of ironstone nodules. Large silcrete boulders (up to 20cm) occur in sand/clay matrix. Yellow podzolic soils where drainage conditions are poor, red podzolic soils and chocolate soils on flats and in small drainage lines. Kransnozems are present in unstructured plastic clays and in drainage lines or a crest.

Limitations of the Berkshire landscape group are very high wind erosion hazard if cleared. Gully, sheet and rill erosion on dissected areas. Waterlogging, impermeable subsoils, low fertility hazard.

This area is largely Quaternary age alluvium beds that consist of gravelly sand, sand, clayey sand silty clay, from 1 to 8m in depth. In the northeast, the soil type is the Berkshire Park soil, while the eastern area is the Blacktown soil type – both of these overlie the Bringelly Shale Unit. Noted in the western region were a number of paleochannels of unknown origin.

As reported in ADI (1996a) the former ADI St Marys Property is underlain by shales of Bringelly Shale Unit part of the Liverpool Sub-group and Wianamatta Group of the Triassic epoch. These are overlain by alluvium of Quaternary age. The Bringelly Shale unit consisting mainly of grey hard shales within intervening siltstone forms the bedrock. The top of the shale, up to 5m thick, is highly weathered and very friable in nature. The Quaternary Alluvium comprises predominately buff coloured silt, silty/sandy clays which is often lateritic in nature and mottled with yellow/red ochres and iron nodules. Quaternary Alluvium was deposited mainly in the central lowlands along the flood plains of South Creek and Ropes Creek. Thickness of the alluvium within the development site is likely to range in thickness from approximately 6m to 10m as these are the central lowlands.

2.6 Hydrogeology

A review of information obtained from the Natural Resource Atlas database (DECCW 2012[4]) indicated there are three registered groundwater monitoring wells located to the south east of the Central Precinct with no feature information available for any of the three wells. No registered groundwater wells fall within the development site.

As reported in ADI (1996a) groundwater was observed at the former ADI St Marys property in an upper unconfined aquifer and a lower regional semi-confined aquifer. The quaternary alluvium and highly weather shale occurring at depths ranging from 2 to 10m below ground surface forms the shallow upper aquifer. The depth to the water table ranges from 2 to 7m below ground surface depending upon the surface topography. The watertable occurs in the sandy to silty clay above the weathered shale and/or shale bed rock. The groundwater flow pattern on a regional scale follows the general topography of the area, however, variation in the flow direction can occur locally based on the ground slope. On a broad scale the groundwater flows across the eastern and western sectors in towards the central lowlands of the former ADI St Marys Property and then northwards.

ADI (1996a) reported the lower aquifer is comprised of fractured shales at the depth ranging 5 to 30m below ground level. The shale bed rock forms a valley type structure across the former ADI St Marys property and the groundwater flow pattern is governed by this structure. The hydraulic conductivity of the lower aquifer varies greatly depending upon the interception of fracture zones.

Additionally, ADI (1996a) reported the groundwater in the shallow upper aquifer is fresh to brackish as well as saline (electrical conductivity (EC) 300 to 40 000µS/cm). The groundwater from lower fractured shale aquifer is mainly saline (EC 6000 to 30 000 µS/cm). The groundwater pH ranges from 4.5 to 7 indicating slightly acidic conditions for both aquifers however at each sample point the shallow groundwater is consistently more acidic than deep groundwater. The dissolved oxygen concentrations are variable but generally less than 6mg/L indicating slightly reducing conditions in both aquifers.

Furthermore, ADI (1996a) reported the general groundwater from both aquifers has high total dissolved solids (TDS 150 to 20 000mg/L), slightly acidic pH and low dissolved oxygen concentration which makes it impractical for any domestic, agricultural or industrial use.

As detailed in the Stage 2 Decontamination Audit Report (Kidd 1999[5]), groundwater investigations were carried out from 1991, by Mackie Martin & Associates, who constructed and monitored 64 groundwater wells (later expanded to 154 by ADI) over the entire Property. The study identified two aquifers - one upper unconfined and one lower semi-confined. They proposed the lower, regional aquifer was in the fractured shale with the groundwater flow patterns reflecting the surface topography. The study surmised the upper, unconfined aquifer was composed of Quaternary alluvium and highly weathered shale at a depth of 2m to 10 m. Testing indicated the local permeability of the fractured shale aquifer is variable depending on the degree of fracturing but the average permeability was low (less than $1x10^{-6}$ m/sec). The permeability of the unconfined alluvial aquifer was also low due to the high clay and silt content of the alluvium.

The water table was typically 1.5 to 7m below the ground surface in the alluvium and from 3 to 30 in in the shale. On a regional scale, the groundwater flow pattern followed the surface water drainage patterns - the general flow was from the east and west towards the central lowlands and then northwards. The groundwater movement was slow to very slow due to the low permeability and the gentle hydraulic gradients.

[4]NSW National Resource Atlas, http://nratlas.nsw.gov.au/wmc/custom/homepage/index.html, Department of Environment and Climate Change, accessed 6 April 2014 (DECCW 2014)

[5] Stage 2 Decontamination Audit of ADI St Marys, Munitions Factory, Department of Urban Affairs and Planning, Christopher H Kidd, HLA-Envirosciences Pty Ltd, June 1999 (Kidd 1999)

During the validation works undertaken by ADI (1996b) within the Central Sector West it was reported six monitoring wells (SM30, SM76, SM77, SM78, SM79, SM109 and SM110) were installed within the portion which currently forms part of the development site.

ADI (1996b) reported wells SM30, SM76 and SM110 are all shallow wells. The depth to water table measured in March 1996 ranged from 2.13m bgl (SM76) to 3.48m bgl (SM110). The water table elevation ranged from 15.05m AHD (SM110) to 15.41m AHD (SM76). Additionally, ADI (1996b) reported the depth to piezometric surface at well SM77 in March 1996 was 2.02m bgl, corresponding to 15.63m AHD. The groundwater in the lower fractured shale aquifer thus has higher head than the shallow aquifer and there is an overall upward movement of groundwater from the deeper aquifer to the shallow aquifer. Periodic water level monitoring at these wells did not show any significant changes in the water levels except for minor seasonal fluctuations (**Appendix C**).

Furthermore, ADI (1996b) reported the hydraulic conductivity of the upper aquifer was very low, ranging from 0.008 to 0.015 m/day. The hydraulic gradient in the upper shallow aquifer was also very low. Low hydraulic conductivity and low gradient combined with low effective porosity suggest extremely slow groundwater movement in both the horizontal and vertical directions.

ADI (1996b) reported sampling and analysing samples from these wells over a number of rounds. Samples were analysed for a range of inorganics and organics and demonstrated the groundwater had not been impacted by previous site activities.

During the validation works undertaken by ADI (Kidd 1999) within the Southern Sector West a total of 33 shallow and 10 deep groundwater monitoring bores were installed within the Sector. These bores were positioned based on topography and drainage, and were generally placed downgradient of areas where past activities impacted the soil (ie. where soil remediation was undertaken) (**Appendix C**).

2.7 Acid Sulphate Soils

Review of the Natural Resource Atlas (DNR website[6]) indicated that there no known occurrence of acid sulfate soils in the vicinity of the site.

[6] Department of Natural Resources Atlas, www.nratlas.nsw.go.au accessed 7 April 2014

3. Site History

3.1 Summary Site History

The following is a summary of the former ADI St Marys property history as detailed in Kidd 1999.

Prior to WW2, the land consisted of farmland and natural bushland. The property was acquired by the Commonwealth Government in 1941, and in 1942 established an explosives factory for ordnance and ammunition filling, testing and related procedures. The entire property was known as the St Marys Munitions Filling Factory (MFF). In 1989, ownership was transferred to ADI Limited, and production officially ceased manufacturing on March 17th 1994, as part of a rationalisation process.

The ADI Munitions facility which covered an area of 1535 ha was established in 1942 and was part of a larger parcel of farmland resumed in 1941 by the Commonwealth for establishment of ammunitions factory to support the war effort (World War II). From 1955-57, a new munitions factory was constructed and a substantial part of the original factory was leased to private industry and became the present Dunheved Industrial Estate.

The St Marys Munitions factory was primarily a filling, or load and pack type, operation where explosives and propellant manufactured elsewhere, were loaded into shells, bomb and rocket casings and stored in magazines awaiting deployment. Small amounts of some initiator explosives for detonators and fuses were manufactured on the property because they were too sensitive to travel. Some test firing of detonators, fuses and smaller occurred at designated areas as part of the manufacturing quality assurance program. All larger munitions were test fired at Army ranges elsewhere.

The manufacturing, storage and handling of explosives and munitions at St Marys were carried out under strict safety and stock control procedures, and the area was a high security workplace. Off-specification or unserviceable munitions were destroyed by boiling out the explosive and propellant, recycling the scrap metal and burning the explosive and propellant in designated burning grounds. The residue ash was buried in on-site landfills along with general waste from the facility. It is understood a considerable surplus or unserviceable ordnance was brought to the site for disposal and demilitarisation after World War II (1946-1955).

The property had its own landfills for disposal of solid waste. Effluent from the various manufacturing operations was passed through settling ponds, referred to as labyrinths, to collect any residual explosives that might be present, before discharge to the sewer. Where necessary the wastewater was neutralised prior to discharge. The labyrinths were cleaned out periodically and the explosive material was taken to a burning ground for destruction.

In one location in the north eastern part of the property the wastewater was sprayed into earth lined evaporation ponds. In its review of the site history, ADI reports that several labyrinths occasionally overflowed into local watercourses, which led to complaints of "red water" (TNT residues). In 1980, an article in the media prompted an Inquiry into environmental and health issues including water quality issues in Ropes Creek. This led to various improvements in dust and effluent control. The reports detail the varying uses of the different regions of the sectors during the period of armaments production. Facilities and associated activities included hundreds of buildings for the assembly, production and storage of bombs (5001b, 10001b and 20001b), Quality Evaluation Laboratory (QEL), sampling laboratories, offices, ballistics testing tunnel, open-air pistol and rifle shooting range, workshops and boiler house, detonator and explosives testing, chemical storage, waste burning areas, waste trenches and tips, explosives trials areas, settling ponds for waste water, water evaporation ponds, underground fuel tanks, a water tower, amenities buildings, CSIRO yards for sheep dipping and storage of agricultural chemicals, borrow pits, farmlands, are as of natural bush land, and floodplains around the two creeks.

ADI conducted site contamination investigations, which incorporated metallic debris and ordnance searches and remediation, in the early 1990's and developed and conducted remediation programmes to allow future development of the site for residential and other development such as public open space. The various sectors were subject to contamination investigation, remediation and validation over the period from September 1990 to October 1996.

The former sectors which currently fall within the development site boundary are displayed on **Figure 3a**:

- North Western Sector;
- Central Sector West; and
- Southern Sector West.

3.1.1 North Western Sector

Only a small portion of the former North Western Sector falls within the Central Precinct. The portion which falls within the Central Precinct would have previously contained a small section of the former Site 5 (ADI 1995[7]) (**Figure 3a**).

As reported by ADI (1995) Site 5 was located in the southern portion of the Sector, with an area of 121 ha (**Appendix C**). Previously known as Bomb Filling. This site consisted of a production area which was commissioned in 1957 and used intermittently until early 1991. Site 5 contained 39 single or double storey buildings and connecting bitumen roads. Open grass areas and extensive bushlands surrounded these buildings. Of the 39 buildings, 10 were used as production areas and 29 for general storage. Some of the production buildings were surrounded by earth mounds to roof height. The mounds were built to dissipate any shock from accidental detonation of the contents housed within the building. Some production buildings also housed special settling tanks to collect contaminated process waste water.

The Proof Test Range (B56 and B57) were part of the Bomb Filling section constructed in 1978-1980 it comprised a storage building, control building and a 250 m long above ground tunnel to testing cannon ammunition (**Appendix C**).

Former Site 5 was reported as suitable for residential with substantial vegetable garden and poultry under site audit statement CHK001/1.

Since the completion of the ADI report (ADI 1995), the National Environment Protection (Assessment of Site Contamination) Measure has been updated (NEPC 2013). A comparison of historical data against the updated NEPC 2013 has therefore been undertaken to determine if there are any additional exceedances of the site criteria (**Appendix C**).

It is noted that the criteria for nickel, benzene, Aldrin+dieldrin, heptachlor, phenols and TPH C_6-C_9 and C_{10} –C_{40} have all been decreased (NEPC 2013). Based on a preliminary review of historical data, there were no additional exceedances of the newly adopted NEPC 2013 soil criteria identified.

For TPH C_6-C_9 and C_{10}-C_{40}, it is noted that the concentrations previously reported are only used for screening purposes as the F1 and F2 chain lengths detailed in NEPC 2013 are not directly comparable. It is noted that neither Site 5 nor the current site area are known to have contained above or below ground storage tanks (ASTs or ASTs) and therefore the potential presence of TPH contamination is considered to be low.

On review of the historical groundwater data from North Western Sector (ADI 1995), concentrations of COPC were all either within the adopted site criteria or below the laboratory limit of reporting (LOR). The LORs achieved in the 1995 report for OCPs were however higher than the current

[7] *Volume 1 Validation Report for the North Western Sector of the ADI St Marys Facility*, ADI Limited, 1995 (ADI 1995)

groundwater criteria. Based on the site history review however, it is known that OCPs were not manufactured at the Central Precinct development site. There still exists the potential that OCPs may have been sprayed under buildings prior to construction, however it is considered that this will be identified during the current site investigation works and the potential for groundwater impact from this type of activity is low.

3.1.2 Central Sector West

Approximately 50% of the former Central Sector West (western portion) falls within the Central Precinct boundary. The portion which falls within the development site would have previously contained the former Site 9, 24A, 24B and Building B45 (ADI 1996b) (**Figure 3a**).

As reported by ADI (1996b) Site 9 was approximately 1.552 ha, and was located west of South Creek. Site 9 was known as the Loud Proof Range, was used for the detonation of explosive devices such as grenades and smoke canisters. The explosive devices were detonated on the ground surface, and were usually surrounded by a square wood lined shield. This shield was used to collect information on the pattern of metal debris from the exploded devices. The detonation activities were conducted to test batches of explosive devices which were under development. Detonation activities ceased at Site 9 in 1991 (**Appendix C**).

As reported by ADI (1996b) Site 24A was located to the east of Building B45. It was a low lying area that collected rain water run-off from the former Site 5 (**Section 3.1.1**) (**Appendix C**).

As reported by ADI (1996b) Site 24B was 0.939 ha and comprised the CSIRO yards and shearing shed which were used for the storage of agricultural chemicals, and maintenance of sheep (**Appendix C**).

As reported by ADI (1996b) Building B45 was identified in the initial investigation as part of Site 5 into the North Western Sector (**Section 3.1.1**). It was subsequently excised from Site 5 for inclusion in this Sector as the treatment plant was still in operation during the other remediation activities of the property. Building B45 was a structure which housed steam generation equipment to boil out explosive compounds from obsolete high energy projectiles. Building B45 was surrounded by a roof height earth wall mound. It also had a concrete labyrinth which was in use prior to 1986. The labyrinth collected the waste water steam (**Appendix C**).

Site 24K, tipsites 23- 25 and former farmland (**Figure 3a**) (**Appendix C**) located within the Central Sector West not within the development site but adjacent the eastern boundary were used for the following:

- Site 24K – used for the disposal of sheep and kangaroo carcasses. General rubbish was also tipped.
- Tipsites 23-25 – approximate dimensions were 6 m x 6 m x 0.2 m waste comprised glass, scrap metal and plastic.
- Former farmland – used for farming and sheep grazing activities. The area was investigated prior to the stockpiling of Stockpile 30 (biosolids).

Former Site 9, Site 24A, Site 24B and Building B45 were reported as suitable for residential with substantial vegetable garden and poultry under site audit statement CHK001/1. Along with the adjacent Sites 24K, tipsites 23-25 and former farmland (**Appendix C**).

Since the completion of the ADI report (ADI 1996b), the National Environment Protection (Assessment of Site Contamination) Measure has been updated (NEPC 2013). A comparison of historical data against the updated NEPC 2013 has therefore been undertaken to determine if there are any additional exceedances of the site criteria (**Appendix C**).

As previously noted, the criteria for nickel, benzene, Aldrin+dieldrin, heptachlor, phenols and TPH C_6-C_9 and C_{10} –C_{40} have all been decreased (NEPC 2013). Based on a preliminary review of historical data, there were no additional exceedances of the newly adopted NEPC 2013 soil criteria identified.

For TPH C_6-C_9 and C_{10}-C_{40}, it is noted that the concentrations previously reported are only used for screening purposes as the F1 and F2 chain lengths detailed in NEPC 2013 are not directly comparable. It is noted that neither the Central Sector West nor the current site area are known to have contained above or below ground storage tanks (ASTs or ASTs) and therefore the potential presence of TPH contamination is considered to be low.

On review of the historical groundwater data from Central Sector West (ADI 1996b), concentrations of COPC were all either within the adopted site criteria or below the laboratory limit of reporting (LOR). The LORs achieved in the 1996 report for OCPs and PAHs were however higher than the current groundwater criteria. Based on the site history review however, it is known that OCPs were not manufactured at the Central Precinct development site. There still exists the potential that OCPs may have been sprayed under buildings prior to construction, however it is considered that this will be identified during the current site investigation works, together with and potential PAH impact not previously identified, and the potential for groundwater impact from these types of contaminants is low.

3.1.3 Southern Sector West

Approximately 50% of the central portion of the former Southern Sector West is located within the Central Precinct. At the time of reporting the ADI Validation Report was not available for review. The following information was obtained from the site audit report prepared by Kidd (1999) and ADI (1996a).

Kidd (1999) reported historically, the sector had a variety of uses including ammunition testing, landfills and covered waste trenches, CSIRO yards used for sheepdipping and storage of agricultural chemicals, buildings used for the storage of chemicals, and an area formerly containing 4 underground fuel storage tanks. ADI nominated 15 sites that were targeted for site investigation purposes. The portion of the former southern sector west which falls within or proximal to the Central Precinct would have previously contained Site 3 and 4A-D (**Figure 3a**) (**Appendix C**).

As reported by ADI (1996a) Site 3, located adjacent the current Jordon Springs Connector Road, was approximately 2 ha and contained 10 single storey igloo type Nissen huts of galvanised iron with concrete floors. It was a fenced, cleared area, with patchy grass cover, divided by a small gravel internal road. The site was surrounded by light natural bush and small trees. There was no documented or visual evidence of any buried waste or fill. The processes conducted in this area included delivery and temporary storage of chemicals in sealed containers. Chemicals were then despatched to process areas as required. A range of chemicals cleaning agents, sulphuric acids, lead acetate, sodium sulphate, nitric acid, hydrochloric acid, potassium hydroxide, potassium chlorate and accelerator.

As reported by ADI (1996a) Site 4 was approximately 28 ha and was sub-divided into four separate sub-sites - 4A, 4B, 4C and 4D. The site was divided by an access road and cleared fire track with 4A and 4B on the south east side and 4C and 4D on the north-west side. There were several documented or known disposal locations within the site. There were no underground storage tanks on the site. Discharges to land included solid waste buried in a series of trenches and air emissions from burning activities.

Site 4A was a small fenced area containing nine, filled and covered waste trenches. The dimensions varied, but they were generally 10m x 2m x 1m. The trenches were used for disposal of solid waste. The waste included empty drums, asbestos lagging, pipes, wooden pallets, building rubble, fibro cement, paint scrapings, paint thinner, tins sealed drums containing paint scrapings and ammunition boxes (ADI 1996a) (**Appendix C**).

Site 4B was originally a soil borrow area which was subsequently used for open air burning of explosives. A drainage channel was cut down the middle of the area to permit run-off. The area was used for open air trial and burning of explosives and for the shallow burial of empty ammunition

boxes after its initial use as a barren site for clean fill. The majority of the activities were conducted in the 1960's. Activities included the testing of 3.5 inch rockets and burning of shields in explosions. In the 1970's CIG performed tests on gas bottles in fires (**Appendix C**).

Site 4C was approximately 0.2 ha and consisted of two waste water settling ponds used for waste water disposal from explosive processing. Waste water which collected in labyrinths was periodically collected and placed in the ponds. This practise ceased in the late 1980's but the ponds still contained some water which was mainly rain water and run-off from the surrounding areas (**Appendix C**).

Site 4D was largely open forest with a slope of 3%. Under the tree canopy, the ground cover is scattered leaf litter and tussock grass. Site 4D was a test site for the open air detonation of grenades (**Appendix C**).

Site 11 is located to the east of the W series buildings and was formerly a soil and gravel quarry area and a tip site for rubble and general factory waste (**Appendix C**).

Former Site 3, 4A, 4B, 4C and 4D and Site 11 were reported as suitable for residential with substantial vegetable garden and poultry under site audit statement CHK001/1 and the approximate location of each is shown on **Figure 3A**.

Soil validation and groundwater results summary is pending as still attempting to locate report. This information can be provided in a letter or revised SAQP.

3.2 Aerial Photographs

Aerial photographs have been reviewed from 1947, 1955, 1965, 1975, 1982, 1991, 2002, 2005, 2006, 2007, 2009, 2011, 2012, 2013 and 2014 from the Department of Lands and the Nearmap database (NearMap 2015[8]). Copies of the aerial photographs are included in **Appendix D**.

Relevant information from the aerial photograph review is summarised below.

- 1947: The development site is mostly vacant farmland with just a road running through the centre of the site where the current Jordan Springs connector road is located. There are some trees however the majority of the site is grassed. The eastern portion of the development site contains a grid of small tracks. The adjacent site areas, currently known as Ropes Crossing to the east and Jordan Springs to the west, both contain a network of roadways with a number of buildings also visible at the Ropes Crossing area. The current location of stockpiles appears to be in the vicinity of a former farmhouse and farming activities.
- 1955: Construction of the X Series warehouses appears to be underway. Large cleared areas have appeared to the east of the development site encroaching onto the precinct, this is inferred to be the road and radar range construction (W series buildings). The remaining development site area and surrounds appears similar to the previous aerial photograph.
- 1965: The two large X series warehouses and associated smaller buildings are all visible in the southern portion of the development site. A number of additional internal roads are also visible across the development site. A number of buildings have been constructed to the west of the development site (currently Jordan springs) with a small number in the north western portion of the development site, inferred to be the Bomb Filling section (Site 5). A large cleared area is visible in the south western portion of the development site (Site 4a-d) with associated internal tracks. Clearing has occurred in the area of the current W series buildings. The large cleared area visible to the east of the site in the previous aerial photograph is no longer visible with just the current internal road traversing this area. What appears to be a drainage line traversing the development site is evident from the X series

[8] *Near Map Database,* http://www.nearmap.com/, accessed 7 January 2015 (NearMap 2015).

buildings to South Creek. Additionally Site 3 is evident south of the Jordon Springs connector road. Furthermore three runoff areas seem visible from the Site 4 area which appears to be under construction. There also appears to be some clearing and tracks evident in Site 23.

- 1975: farming activities appear evident in the northern portion of the development site. Site 5 appears complete along with the X series buildings and Site 4A-D. A number of small tracks are visible in the area of the current W series buildings. Some tracks/clearing is visible to the south and south east of the development site in the current St Marys and Dunheved estate development. The remaining areas of the development site appear similar to the previous aerial photograph.
- 1982: The majority of the development site appears similar to the previous aerial photograph with the addition of a small number of W series buildings and some excavations in the Site 4 area. The St Marys housing development is also visible to the south of the development site as a number of small building structures are now present. Additionally, it appears a grass fire may have occurred around the X series buildings which is evident from the blackened ground.
- 1991: The majority of the development site and surrounding area appears similar to the previous aerial photograph with the exception of B56/B57 present within the northern portion of the development site. Additionally, a few small buildings appear to have been removed from the vicinity of the now Stockpile 34. Quarrying appears to have been undertaken within the former Site 11 adjacent the W series buildings and the W series warehouse (W11) appears to have been built. Within the former Site 4 area remediation works appear to have commenced.
- 2002: the stockpiles (30-32, 34-37 and 50) are visible within the northern portion of the site. The W series buildings are visible within the eastern portion of the site as are the X series of buildings within the southern portion. Additionally the development site predominately contains grassed and groves of vegetated areas with a number of roadways similar to those remaining at the end of the previous site audit. A large patch of disturbed ground is evident within the south western corner of the development site (Site 4) which is similar to what remained at the end of the previous site audit (Kidd 1999). An established golf course, residential and commercial areas are visible to the southern boundary of the development site.
- 2005: the development site appears similar to the 2002 aerial photograph with few major changes. More park vehicles are evident between the X Series buildings.
- April 2006: The site appeared largely unchanged compared to the 2005 aerial photograph. However some reddish/brownish patches (potentially flowers) to the east of stockpile 30 within the cleared and grassed area was noted. Additionally development to the east of the development site within Ropes Crossing appears to have commenced.
- March 2007: The site appeared largely unchanged compared to the April 2006 aerial photograph. However the reddish/brownish patches noted to the east of stockpile 30 appear diminished. The Ropes Crossing development to the east of the development site appears to have progressed.
- June 2009: The site appeared largely unchanged from the March 2007 aerial photograph. The reddish/brownish patches noted to the east of stockpile 30 are no longer evident. Some additional vegetation appears to be visible on adjacent stockpile 36. The Ropes Crossing development to the east of the development site appears to have progressed.
- November 2011: The site appeared largely unchanged from the 2009 aerial photograph with the exception of what appears to be construction between the large X series buildings.

Additionally there appears to be some equipment to the south of building X2. The Ropes Crossing development to the east of the development site appears to have progressed.

- December 2012: The site appeared largely unchanged from the 2011 aerial photograph. With the exception of the observed construction between the large X series buildings now not visible. The Ropes Crossing development to the east of the development site appears to have progressed.
- September 2013: The site appeared largely unchanged from the 2012 aerial photograph. With the exception of a small building between the large X series buildings now visible. The Ropes Crossing development to the east of the development site appears to have progressed.
- February 2014: The site appeared largely unchanged from the 2013 aerial photograph. With the exception of some visible ground disturbance to the west of building X2 and the presence of Stockpile 50 to the north of Stockpile 37.

3.3 Recent Site History of Remaining Buildings

3.3.1 X-Series Buildings

At the completion the site audit in 1999 a number of buildings located in the southern portion of the current development site remained. Currently referred to as the X-Series buildings.

Historically these buildings comprised the bulk stores section and was constructed in 1955-57. The section was a self-contained one, and was used to store non-explosive components, such as bomb casings, which were manufactured elsewhere. The section consists of two large store buildings, X 1 and X2 and several small structures including a combined guard house and administration office at the entrance to the section. Each of the store buildings has dimensions of 155.4 m x 76.2 m and was divided into three bays, a wide central nave-like section and two lower aisle-like bays each side with a width of 16.7 m. Overhead travelling cranes and hoists were installed. The sheds were served by a railway branch spur as well as by road. The sheds were steel framed, with lattice columns supporting lightweight tubular trusses. The lower part of the external walls is clad with precast concrete panels. Above the panels, there is aluminium-framed glazed curtain walling. The low pitched roof originally was covered with bituminous felt. There are large double doors in the end and side elevations; the centre doors at the ends are double height. The guard house is of brick and timber construction. The other small buildings in the section, including a garage, are of brick and concrete panel construction (AL&A 1994[9]).

Since the completion of the site audit in 1999 these buildings have been used for commercial storage and manufacture (**Section 2.2.2**). All X-series buildings were demolished in the second part of 2014.

3.3.2 W-Series Buildings

At the completion the site audit in 1999 a number of buildings located in the south eastern portion of the current development site remained. Currently referred to as the W-Series buildings.

They were used as a test antenna range for a few years after the site audit statements were issued, and in more recent times for internal site management processes and maintenance which are discussed in **Section 2.2.2**.

Currently all structures still remain onsite.

[9] *ADI St Marys Facility Conservation Analysis*, Allom Lovell & Associates Pty Ltd, June 1994 (AL&A 1994).

3.3.3 Stockpiles

Stockpile 30

This stockpile is located in the north east of the development site (**Figure 5**) and is reported to comprise approximately 74,780 m^3 of biosolids originating from the St Marys Sewage Treatment Plant (STP) in the 1980s. A letter from the NSW EPA (ADI 1996[10] and EPA 1996[11], discussed below) indicates the material within the stockpile can be investigated as if it were contaminated soil.

Site 24F reported in ADI (1996c[12]) was a treated sewage sludge settling area. In the mid-1980s the St Marys Sewage Treatment Plant received approval from the St Marys Munitions Filling Factory to pump treated sludge from its plant onto ADI land. In the initial investigation Site 24F was identified as a disused sewage effluent dumping area boarded by 0.5-1 m high earth mounds. The estimated area was 5 hectares with five distinct ponds separated by 0.5 m high earthen mounds.

ADI (1996c) reported 148 samples were collected to characterise and delineate the dried sludge. Samples were analysed for a range of heavy metals, pH, OCPs, PCBs, TKN, NH_4, NO_3, NO_2, total P and PAH. Impacts above the then site criteria were reported for Cr, Cu, Zn, OCPs, PCBs and PAHs.

Areas of OCP, PCB and PAH impacts reported in the sludge materials were excavated and disposed to landfill with validation samples collected from these excavations ADI (1996c) (**Appendix E Table 4**).

ADI (1996c) reported the dried sludge material was excavated and stockpiled within the St Marys Property the total volume was estimated at 75 000 m^3. Historical analytical results for the sludge moved are provided in **Appendix E Table 2**.

Compared to current site criteria (NEPM 2013) the data provided for the biosolids stockpile (**Appendix E Table 2**) in general meets todays residential human health investigation levels. There were several exceedances for total PAHs above the BaP TEQ (3 mg/kg). Analytical results could not be located and reviewed to calculate the BaP TEQ, therefore PAHs and BaP remain a contaminant of concern for the biosolids.

The biosolids have been in the stockpile since the mid-late 1990s (>15 years) which would suggest the survival of any bacteria, viruses or helminth ova is unlikely.

While EPA (2000[13]) requests analysis of these parameters for biosolids of unknown processes the following is known about Stockpile 30:

- The biosolids originated from the St Marys STP and were reported to have been left to dry in 0.5 m thick beds on the former St Marys ADI Property (ADI 1996). Exposure of biosolids to sunlight (ultra-violet light) and dewatering is reported to reduce bacterica, viruses and pathogen survival time significantly (Epstein 2003[14]). ADI (1996c) reported only one sample with a detection of Faecal Coliforms and E.Coli at 4 MPN per gram.
- Bacteria and viruses are unlikely to survive any greater than 100 days and Helminth Ova have at worst been shown to survive up to 7 years in soil but in general they can only survive up to 2 years (SAFIR 2009[15]).

[10] *Sewage Sludge on ADI Property*, ADI Limited, April 1996 (ADI 1996)
[11] *Re: Sludge Stored in Southern Sector*, EPA, May 1996 (EPA 1996)
[12] *Volume 1 Validation report for the Southern Sector East of the ADI St Marys Property*, ADI limited, July 1996 (ADI 1996c).
[13] *Environmental Guidelines Use and Disposal of Biosolids Products*, NSW EPA, 1997 Reprinted 2000 (EPA 2000).
[14] *Land Application of Sewage Sludge and Biosolids*, Eliot Epstein, CRC Press LLC, 2003 (Eptein 2003). https://books.google.com.au/books?id=JKia8ntQ8zoC&pg=PA137&dq=Helminth+Ova+survival+sunlight&hl=en&sa=X&ei=S_K-VO6xNIHemAXs44GwDw&ved=0CCIQ6AEwAQ#v=onepage&q=Helminth%20Ova%20survival%20sunlight&f=false accessed 21 January 2015
[15] *Survival and transport of helminth eggs and faecal coliforms in soil and agricultural produce*, June 2009, http://www.safir4eu.org/Lib/SAFIR/Deliverable/D5_4.pdf accessed 21 January 2015 (SAFIR 2009).

Consequently, based on the above information, it is considered analysis of the biosolids for bacteria, viruses and helminth ova is no longer required. As they are all likely to be inactive and therefore non-infective.

Stockpile 31, 32 and 37

These stockpiles are located in the north of the development site (**Figure 5**) and are reported to comprise soil and asphalt and are approximately, 45,060 m^3, 8750 m^3 and 174,170m^3, respectively. Materials are reported to have originated from demolition activities in the 1990s.

Stockpile 32 was sampled in accordance with the Protection of the Environment Operations (Waste) Regulation 2005- General Exemption Under Part 6, Clause 51 and 51A, "The recovered aggregate exemption 2010", and was classified as recovered aggregate suitable for reuse as fill under roadways (Geotech 2013[16]).

Stockpile 33, 34, 35 and 50

These stockpiles are located in the north of the development site (**Figure 5**) and are reported to comprise concrete and are approximately, 1000 m^3, 136,760 m^3, 1800 m^3 and unknown, respectively. Materials are reported to have originated from demolition activities in the 1990s.

Stockpile 36

This stockpile is located in the north of the development site (**Figure 5**) and is reported to comprise brick and is approximately, 19,310 m^3. Materials are reported to have originated from demolition activities in the 1990s.

3.4 Integrity Assessment

The information obtained from the historical sources reviewed has been found to be in general agreement.

[16] Jordan Springs Development Project, Central Precinct, Jordan Springs, Assessment of Asphaltic Concrete Stockpile for Potential Re-Use, Maryland Development Company Pty Ltd, Geotech Testing Pty Ltd, June 2013 (Geotech 2013).

4. Previous Investigations

The following environmental report has been prepared for the site however was not available for review:

- Validation Report for the Southern Sector West of the ADI St Marys Property, Report No. 498810, ADI Limited 1996.

A number of Site Audit Statements and additional environmental advice were available for review and have been summarised below.

4.1 Validation Report for North Western Sector (ADI 1995)

ADI (1995) reported the North Western Sector of the ADI St Marys Facility was investigated, remediated and validated over the period of September 1990 to August 1995. The procedures used in the assessment and remediation of this land were those contained in the recommended approach in the Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites, ANZECC and NH&MRC, January 1992.

Within the 191 ha Sector ordnance and ammunition filling, testing and related procedures were intermittently conducted between 1942 and 1991 at identified sites. A detailed historical survey was conducted which identified raw materials, products, manufacturing locations, site usage, waste disposal and factory procedures which may have impacted on certain areas within the Sector (ADI 1995).

ADI (1995) reported to assess, remediate and validate the North Western Sector, Safe Environmental Acceptance Criteria were drawn from accredited sources and subsequently approved by the EPA NSW as the criteria governing the assessment and validation for the North Western Sector.

Additionally ADI (1995) reported a total of 671 soil samples, collected within the Sector boundaries from Sites 5, 6, 7 and 8, form the validation data. These samples were analysed for the full range of chemicals, and include the results of systematic grid sampling and judgemental sampling arising from specific areas which were considered to be potentially contaminated. Any identified contamination was duly remediated or removed and disposed of off-site. To confirm the complete removal of contamination, validation sampling was performed, the results of which, combined with background grid sampling, provided statistical probabilities. Results show that statistical analysis of the validation data met the statistical criteria and the probability of other random samples exceeding criteria is low.

Furthermore, ADI (1995) reported the entire North Western Sector was also subjected to intensive sub surface investigation technologies to locate metallic buried waste or debris. The application of advanced sub surface investigation technologies was based on the historical information available to ADI. The metallic items detected, including ordnance related, were duly removed and safely and responsibly disposed. The sub surface investigations also contribute to the overall validation results.

Additionally, ADI (1995) reported there was no contamination in the underlying groundwater system.

Resulting from the extensive, thorough and systematic assessment, remediation and validation undertaken, ADI was confident the validation results will allow future development within the North Western Sector which is not hindered by any past onsite, or adjacent production activities.

Additionally information is provided in **Section 3.1.1.**

4.2 Sewage Sludge on ADI Property (ADI 1996)

A letter was prepared by Mr David Aynsley in April 1996 detailing the proposed use of a sludge stockpile to the EPA. The sludge stockpile was located in the southern sector of the ADI property and

it was proposed to use the material as compost in accordance with the Guidelines for the use and Disposal of Biosolids Products EPA NSW Oct 1995.

4.3 Re: Sludge Stored in Southern Sector (EPA 1996)

Helen Davies of the EPA replied to the above mentioned letter in May 1996. The letter detailed that the EPA agreed with the ADI proposal to move the above mentioned material from the present location with the following comments:

- The material is not regarded as bio-solids but should instead be treated as soil which is possibly contaminated;
- The area under the current stockpile in the southern sector east should be validated following removal of the soil;
- A sampling programme should be developed for the material before the material is re-used for any beneficial use; and
- The EPA should be notified in writing of your revised proposal.

4.4 Historical Report ADI St Marys Property (ADI 1996a)

This report was compiled by ADI to document the general history of each of the sites the remediation and investigation works were to target during the late 1990s. The sites relevant to the current development site have been discussed in **Section 3**.

4.5 Validation Report for the Central Sector West of the ADI St Marys Property (ADI 1996b)

ADI (1996b) reported the Central Sector West of the ADI St Marys Property has been investigated, remediated and validated over the period of September 1990 to October 1996. The procedures used in the assessment and remediation of this land were those recommended in the Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites, ANZECC and NH&MRC, January 1992.

ADI (1996b) reported activities conducted within the 102.1 ha Central Sector West included tipping of non-explosive waste and burning of explosive related materials. Boil out of ammunition, ammunition testing and related procedures were also conducted intermittently. These activities were conducted between 1957 and 1996. Portions of the Sector were also used for farming activities. A detailed historical survey was conducted which identified materials, site usage, waste disposal and factory procedures which may have impacted on certain areas within the Sector.

ADI (1996b) reported to assess, remediate and validate the Central Sector West, Safe Environmental Acceptance Criteria were drawn from accredited sources and approved by the Environment Protection Authority of NSW (EPA NSW) as the criteria governing the assessment and validation for the Central Sector West.

Additionally, ADI (1996b) reported a total of 525 soil samples, collected within the Sector boundaries, form the validation data. These samples were analysed for a range of chemicals, and include the results of systematic grid sampling and judgemental sampling arising from specific areas which were considered to be potentially contaminated. Any identified contamination was duly remediated or removed and disposed of off-site.

ADI (1996b) reported to confirm the complete removal of contamination, validation sampling was performed. The results of this validation sampling, combined with background grid sampling, were evaluated statistically. Results show that the mean and 95% upper confidence limit of the data were found to be comfortably within the Safe Environmental Acceptance Criteria. Additionally there is a low probability that other random samples will exceed the Safe Environmental Acceptance Criteria.

Furthermore, (ADI 1996b) reported the entire Central Sector West was also subjected to intensive sub surface investigation technologies to locate metallic buried waste or other debris. The

application of advanced sub surface investigation technologies was based on the historical information available to ADI. The metallic items detected, including ordnance related materials, were duly removed and safely and responsibly disposed. The sub surface investigations also contribute to the overall validation of the Sector.

ADI (1996b) reported no analyte was found in the groundwater at concentrations outside the Safe Environmental Acceptance Criteria with the exception of a very low sporadic concentration of RDX at one well located within Site 23. However, this was expected to decrease naturally with time due to dispersion, adsorption and degradation, and fall within the Safe Environmental Acceptance Criteria. Additionally there was no migration of contaminants outside the Sector through the groundwater.

Surface water investigations in South Creek and Ropes Creek identified elevated concentrations of zinc, nitrate and phosphate. These were attributed to discharge from the St Marys Sewage Treatment Plant, and not onsite activities. The impacts which were outside the Safe Environmental Acceptance Criteria for surface water were due to nutrients, bacteria and temperature caused by sources outside the St Marys Property (ADI 1996b).

Resulting from the extensive, thorough and systematic assessment, remediation and validation undertaken, ADI was confident the validation results will allow future development within the Central Sector West which is not hindered by any past on-site, or adjacent production or associated activities.

Additional information is provided in **Section 3.1.2.**

4.6 Site Audit Report – Stage 2 Decontamination Audit Report for ADI Site, St Marys, CHK001/01 (Kidd 1999a[17])

A Site Audit Statement (SAS) was completed in 1999 by Christopher Kidd of HLA-Envirosciences of the ADI St. Marys Property – Excluding Eastern Sector, QEL, Site 6 and Site 23, buildings and Concrete Stockpile. As part of the Site Audit Statement the following reports were reviewed:

- Historical Reports – St Marys Property, ADI Limited, 1996;
- Validation Report for the western Sector, ADI St Marys Facility, ADI Limited November 1994;
- Validation Report for the North Western Sector of the ADI St Marys Facility, Report No. 498800, ADI Limited 1995;
- Validation Report for the Southern Sector West of the ADI St Marys Property, Report No. 498810, ADI Limited 1996;
- Validation Report for the Southern Sector East of the ADI St Marys Property, Report No. 498810, ADI Limited 1996;
- Validation Report for the Northern Sector West of the ADI St Marys Property, Report No. 498820, ADI Limited 1996;
- Validation Report for the Central Sector East of the ADI St Marys Property, Report No. 498840, ADI Limited 1997;
- Validation Report for the Central Sector West of the ADI St Marys Property, Report No. 498840, ADI Limited 1996;
- Validation Report for the North Eastern Sector of the ADI St Marys Property, Report No. 498850, ADI Limited 1996; and

[17] *Site Audit Statement, ADI St. Marys Property* – Excluding Eastern Sector, QEL, Site 6 and Site 23, buildings and Concrete Stockpile, Christopher H Kidd, HLA-Envirosciences Pty Ltd, 1999 (Kidd 1999a)

- QA/Verification Survey Results, ADI St Marys Property, Report No. PG980323da ADI Limited. 1999.

On review of the above mentioned reports, the auditor concluded the site was suitable for residential, including substantial vegetable gardens and poultry subject to the following conditions:

- Excludes Eastern Sector, QEL, Site 6 and Site 23 which are covered by separate site audit statements, namely CHK001/2, CHK001/4 and CHK001/5.
- Excludes areas not yet investigated including the footprint of original buildings, car parks and roads, mainly around former Administration Centre Buildings (CHK001/6) and the concrete stockpile in the Central Sector West. (Stockpile CHK001/7).
- An appropriate management plan, including procedures for the safe handling and disposal of any items of ordinance that may be found during earthworks, should be lodged prior to the commencement of development earthworks. This plan should be similar to the "Remnant Contamination Management Plan" submitted by ADI.
- It is noted that a CMP (URS 2008[18]) was consequently prepared for the site in 2008. This report is now in the process of being updated by JBS&G.

4.7 Site Audit Report – Stage 2 Decontamination Audit Report for ADI Site, St Marys, CHK001/06 (Kidd 1999b[19])

A Site Audit Statement (SAS) was completed in 1999 by Christopher Kidd of HLA-Envirosciences of existing buildings and paved areas scattered about the site. As part of the Site Audit Statement the following reports were reviewed:

- Historical Reports – St Marys Property, ADI Limited, 1996;
- Validation Report for the Western Sector, ADI St Marys Facility, ADI Limited November 1994;
- Validation Report for the North Western Sector of the ADI St Marys Facility, Report No. 498800, ADI Limited 1995;
- Validation Report for the Southern Sector West of the ADI St Marys Property, Report No. 498810, ADI Limited 1996;
- Validation Report for the Southern Sector East of the ADI St Marys Property, Report No. 498810, ADI Limited 1996;
- Validation Report for the Northern Sector West of the ADI St Marys Property, Report No. 498820, ADI Limited 1996;
- Validation Report for the Central Sector East of the ADI St Marys Property, Report No. 498840, ADI Limited 1997;
- Validation Report for the Central Sector West of the ADI St Marys Property, Report No. 498840, ADI Limited 1996;
- Validation Report for the North Eastern Sector of the ADI St Marys Property, Report No. 498850, ADI Limited 1996; and
- QA/Verification Survey Results, ADI St Marys Property, Report No. PG980323da ADI Limited. 1999.

[18] Contaminant Management Plan, Central Precinct, Development Phase, Maryland Development Company, URS Australia Pty Ltd, July 2008 (URS 2008).
[19] *Site Audit Statement, ADI St. Marys Property* – Existing buildings and paved areas scattered about the site, Christopher H Kidd, HLA-Envirosciences Pty Ltd, 1999 (Kidd 1999b)

The Site Audit concluded the site was suitable for commercial/industrial use and may continue to be used for existing commercial use and carparks, but underlying soils need to be tested for chemical and ordnance contamination after demolition. The following conditions were also listed:

- Soils under existing buildings, car parks, roads and the concrete stockpile shall be tested for ordnance and/or chemical contamination when these facilities are removed, site audit statements for these areas will be required.
- An appropriate management plan, including procedures for the safe handling and disposal of any items of ordinance that may be found during earthworks, should be lodged prior to the commencement of development earthworks. This plan should be similar to the "Remnant Contamination Management Plan" submitted by ADI.

4.8 Site Audit Report – Stage 2 Decontamination Audit Report for ADI Site, St Marys, CHK001/07 (Kidd 1999c[20])

A Site Audit Statement (SAS) was completed in 1999 by Christopher Kidd of HLA-Envirosciences of the Concrete Stockpile at the ADI St Marys Property. As part of the Site Audit Statement the following reports were reviewed:

- Historical Reports – St Marys Property, ADI Limited, 1996;
- Validation Report for the Central Sector East of the ADI St Marys Property, Report No. 498840, ADI Limited 1997; and
- QA/Verification Survey Results, ADI St Marys Property, Report No. PG980323da ADI Limited. 1999.

The Site Audit concluded the site was suitable for continued use as a stockpile for crushed concrete, but underlying soils need to be tested for chemical and ordnance contamination after stockpile removal. The following conditions were also listed:

- On removal of all or part of the stockpile the underlying ground should be tested for both chemical and ordnance contamination. The testing should follow similar methods and levels of quality assurance as other parts of the ADI St. Marys site. Appropriate remediation and validation should be performed (if necessary) the work reviewed by a site auditor.
- Appropriate management plan, including procedures for the safe handling and disposal of any items of explosive ordinance, shall be in place before development earthworks commences and shall remain in place to cover any excavation on the site during its ongoing use. This plan should be similar to the "Remnant Contamination Management Plan" submitted by ADI.
- The final surface of any earthworks in areas which are to be used for active recreational land uses, e.g. sports grounds, school grounds and picnic areas, or low density residential use, should, on completion of the earthworks, be surveyed with a metal detector by appropriately qualified and experienced personnel and the work reviewed by an independent site auditor.

4.9 Contamination Management Plan (CMP) (URS 2008)

This CMP was prepared to support the lodgement of the Central Precinct Plan and takes into account the then current site knowledge including EPA guidance relating to the reliance on specialist consultants for use in the development phase prior to sub-division.

[20] Site Audit Statement, Concrete Stockpile at the ADI St Marys Property, Christopher H Kidd, HLA-Envirosciences Pty Ltd, 1999 (Kidd 1999c).

Additionally, this CMP satisfies one of the SAS conditions (reiterated on all the SAS's), *Appropriate management plan, including procedures for the safe handling and disposal of any items of explosive ordinance, shall be in place before development earthworks commences and shall remain in place to cover any excavation on the site during its ongoing use. This plan should be similar to the "Remnant Contamination Management Plan" submitted by ADI.*

The objective of the CMP is to provide a framework for identifying and addressing any discovery of chemical contamination or potentially explosive ordnance to ensure a safe working environment for workers during development and to avoid unacceptable impact on the natural environment.

The CMP provides a plan site workers can be inducted into and a flow chart illustrating lines of action and responsibility should any unexpected finds occur.

The approaches in the CMP are intended for use only during the site preparation phase of development, during which structures may be demolished and disposed of, land levels may be altered and redundant infrastructure is removed and new infrastructure is installed.

4.10 Barangaroo Prototype Site, Central Precinct, Ropes Crossing (P&RC 2013[21])

A letter was prepared by Pickford and Rhyder Consulting in February 2013. The letter detailed a site visit to the Barangaroo prototype site at the Central Precinct, Ropes Crossing. Gary Rhyder was shown the locations where fibre cement fragments were found. The fragments were found on the western and eastern ends of the site. A sample of the material was taken from each location. No asbestos was found in the samples and the fragments of fibre cement did not contain asbestos and therefore did not pose a risk to health.

4.11 Assessment of Asphaltic Concrete Stockpile for Potential Re-Use (Geotech 2013)

An assessment of Stockpile 32 was conducted by Geotech in June 2013. The stockpile was generated during striping of roads at the Jordan Springs residential subdivision and was proposed for possible re-use. Stockpile 32 comprised mostly asphaltic concrete fragments and sandy gravel and was approximately 60 m by 30 m and 5 m in height. The volume of the stockpile was estimated to be approximately 9000 m^3 and 18000 tonnes based on the assumption that the density of the material was approximately 2 tonnes / m^3.

It was concluded that the material contained within stockpile 32 complied with the recovered aggregate exemption and could therefore be applied to land for road building purposes subject to geotechnical requirements for re-use.

4.12 Contamination Management Plan (CMP) (JBS&G 2015b)

This Contamination Management Plan (CMP) is a revision and update of previous CMP (URS 2008). This CMP now supersedes URS 2008.

The CMP is a condition of all site audit statements (SASs_ requiring an appropriate management plan including procedures for the safe handling and disposal of any items of explosive ordnance, shall be in place before development earthworks commences and shall remain in place to cover any excavation on within Central Precinct during its ongoing use.

The objectives of this CMP is to provide an Unexpected Finds Protocol (UFP) with an appropriate framework for identifying and addressing any discovery of chemical contamination, potentially explosive ordnance or any other form of hazard during development prior to subdivision so as to ensure a safe working environment for workers and to avoid unacceptable impact on the natural environment.

[21] Barangaroo Prototype Site, Central Precinct, Ropes Crossing, Lend Lease, Pickford & Rhyder Consulting Pty Ltd, February 2013 (P&RC 2013).

Unexpected finds may occur in areas which, although searched extensively, contain remnant materials which were obscured by the local topography, the type of surface cover (e.g. building) or at a depth preventing detection. The Site Auditor[22] considered that, while explosive ordnance may be uncovered during earthworks, it is unlikely that these will present an unacceptable risk provided appropriate procedures for the safe handling and disposal of such material are adopted.

Furthermore the CMP provides an appropriate framework for an Asbestos Management Plan (AMP) including procedures required for handling and disposing of any identified asbestos containing materials and asbestos impacted soils during the development of the Central Precinct.

The successful implementation of the CMP requires the appropriate briefing and Specific OHS Induction of site workers who may uncover potential chemical contamination (including potential asbestos containing materials) and/or explosive ordnance. It is proposed this briefing will include the review of the CMP and the associated flow chart.

This CMP describes reporting procedures and lines of responsibility, including the contact numbers for relevant experts at the commencement of the development works.

The Property has been remediated, audited and declared suitable for its intended land uses, and remnant contamination, if present, is most likely to be discovered during the development earthworks which occur prior to subdivision. The approaches included in the CMP are intended for use only during the Central Precinct preparation phase of development, during which structures are demolished and disposed of, land levels are altered and redundant infrastructure is removed and new infrastructure is installed. Post-subdivision management plans, if required, would be administered through the relevant local government authority.

4.13 Preliminary Material Classification of Stockpile 30 (JBS&G 2015c)

A Preliminary Material Classification of Stockpile 30 has been undertaken and is provided in **Appendix F** (JBS&G 2015[23]). The objective of the investigation was to provide a preliminary assessment of the potential 'end use' of the stockpile.

It was found, based on the preliminary data, that a number of carcinogenic B(a)P TPE concentrations were 250% greater than the residential HILs (defined as a hotspot). These hotspots would need to be further delineated and removed from the stockpile prior to onsite reuse of the bulk of SP30. These hotspots concentrations were below the commercial/industrial HILs and could be placed underneath a permanently sealed surface (e.g. roadway).

Overall, based on the number of exceedances of the ESL for BaP it was concluded the majority of the materials in SP30 would be unsuitable to remain at the surface of a residential or open space/recreational property pending additional assessment. However, the material would be suitable to be placed at 2 m below the final development ground surface of a residential or open space/recreational property. Additionally, if geotechically required, this material may be able to be mixed with another suitable material and then placed at 2 m below the final development ground surface.

4.14 Reliability of Previous Data

The data provided in the previous reports has been reported as reliable by the previous consultants and was reviewed as being of an acceptable quality in the issue of previous site audit advices and statements.

[22] *Stage 2 Decontamination Audit of ADI St Marys Munitions Factory* (HLA, 1999)
[23] Preliminary Material Classification – Stockpile 30 located within Central Precinct, Llandilo, NSW, 26, JBS&G, August 2015 (JBS&G 2015c).

5. Conceptual Site Model

5.1 Potential Areas and Substances of Environmental Concern

Based on the history review, previous investigations and field observations from the site, general areas of environmental concern have been categorised and are presented in (**Table 5.1**).

Table 5.1 Areas of Environmental Concern and Associated Contaminants of Potential Concern

Area of Environmental Concern (AEC)	Contaminants of Potential Concern (COPC)
Stockpiled Material (Stockpiles 30, 31 and 37)	Heavy metals*, Ba, PAHs, TPH, OCPs, PCBs, asbestos and explosives**. Additionally, Selenium and Phenols for Stockpile 30. Metallic Debris – may contain explosive ordnance waste
Stockpile Footprints (all stockpiles)	Heavy metals*, Ba, PAHs, TPH/BTEX, OCPs, OPPs, PCBs, asbestos and explosives** Metallic Debris – may contain explosive ordnance waste
Building/Warehouse Footprints and Associated Hardstand	Heavy metals*, Ba, PAHs, TPH/BTEX, OCPs, OPPs, PCBs, asbestos and explosives** Metallic Debris – may contain explosive ordnance waste
Paved Roads	Heavy metals*, Ba, PAHs, TPH/BTEX, OCPs, OPPs, PCBs, asbestos and explosives** Metallic Debris – may contain explosive ordnance waste

* Heavy metals include As (Asenic), Cu (Copper), Cr (Chromium), Cd (Cadmimum), Ni (Nickel), Pb (Lead), Zn (Zinc) and Hg (Mercury).

** Explosives will include, but not limited to, RDX (research department explosive), TNT (trinitrotoluene), 2,4-DNT (2,4-Dinitrotoluene) and 2,6-DNT (2,6-dinitrotoluene).

Stockpile 32 has been previously investigated and is considered suitable to use underneath roadways (Geotech 2013).

Concrete stockpiles 33, 34, 35 and 50 and brick stockpile 36 cannot be sampled due the volume of the stockpiles and the size of the materials. Instead they will be managed under the remedial strategy for the development site. Processing will incorporate a checking step prior to placement to ensure the materials do not contain asbestos or any other potentially hazardous material.

5.1.1 Potentially Contaminated Media

Potentially contaminated media present at the site include:

- Fill material (including stockpiles); and
- Natural soils underlying impacted fill materials; and
- Groundwater.

The source of the fill material across building and road footprints is unknown. Fill material across the site must therefore be considered a potentially contaminated medium.

Based on the known former site use for munitions testing and the unknown source of fill materials, vertical migration of contamination from the fill and surface soils into the underlying natural soils may have occurred. Consequently, natural soils underlying impacted fill materials have a moderate potential to be a contaminated media.

Groundwater has been previously investigated and signed off as part of the historical remediation and validation works conducted across the former ADI St Marys Property therefore significant groundwater impacts are not anticipated. Based on the depth to groundwater (1.5 to 7 m bgs) it is considered possible that groundwater is a contaminated media. Therefore, additional groundwater investigations are to be conducted within the auditable areas of the development site.

Given the site areas which remain to be audited have not historically been located in munitions manufacturing or filling areas and the historical validation data for the development site surrounding

the auditable areas does not indicate exceedances of volatile components it is considered unlikely that soil vapour is a contaminated media. However should any volatile contaminants be detected in soil or groundwater this will be reassessed.

5.1.2 Potential Exposure Pathways

Contaminants generally migrate from site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (solid/liquid and mobility characteristics);
- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and
- The site topography, geology, hydrology and hydrogeology.

The potential contaminants identified as part of the site history review and review of previous investigations are generally in a solid form (e.g. heavy metals, asbestos, explosives, ordnance etc). As the site is currently paved or vegetated, there is a low potential for contaminates to have migrated via either windblown dust or surface water.

The potential for contaminants to migrate via groundwater is moderate to low, given the absence of any significant sources of contamination at the site. However, given the previous historical uses and the time lapsed since the previous groundwater monitoring events, groundwater will be assessed around each of the auditable areas (X series, W series and Stockpiles), excluding the paved roadways.

Based on the contaminants of concern identified in various media as discussed above and proposed site development activities, the exposure pathways considered to be potentially complete for the site during and following development works include:

- Potential dermal and oral contact to impacted soils as present at shallow depths and/or accessible by earthworks contractors and future residential site occupiers across the extent of the site; and/or
- Potential oral and dermal contact to shallow groundwater as accessible by earthworks contractors and future residential site occupiers across the extent of the site.

At this stage, it is not anticipated that any groundwater extraction will occur over the area of the site in the future as prior to housing construction the Central Precinct will be predominately filled to raise the ground levels (i.e. no large excavations are anticipated).

5.1.3 Receptors

Potential receptors of environmental impact present within the site which will require to be addressed with the site remediation / management include:

- Future residential / recreational users of the open space areas of the site restricted to non-paved areas who may potentially be exposed to COPCs through direct contact with impacted soils and/or ingestion and/or inhalation of dusts / fibres associated with impacted soils; and/or
- Excavation / construction / maintenance workers conducting activities at or in the vicinity of the site, who may potentially be exposed to COPCs through direct contact with impacted soils present within excavations and/or inhalation of dusts / fibres associated with impacted soils.

5.1.4 Preferential Pathways

For the purpose of this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPCs as either liquids or gasses.

Man-made preferential pathways may be present at the site, generally associated with fill materials at near surface depths. Fill materials are anticipated to have a higher permeability than the underlying natural soil and/or bedrock.

6. Metallic Debris – Investigation and Management

6.1 State the Problem

Fill materials across the site is believed to potentially contain metallic debris and / or explosive ordnance waste (EOW). The metallic debris needs to be investigated and, if present, removed for the area to be considered suitable for a low-density residential land use.

6.2 Objectives (Decision)

The principal objectives based on the issues and uncertainties stated in **Section 6.1** are:

- Locate, remove and validate the metallic debris potentially present within fill materials at the site.
- Confirm/validate the removal of the metallic debris via review and reporting of clearance documentation.
- Confirm there are no items the size of a complete 20 mm projectile within 150 mm of the finished surface within the site.

6.3 Identify Inputs to the Decision

Inputs identified to determine the location of metallic debris within the site include progress records including dig sheets, images, shallow search logs and clearance certificates covering the site including former building footprints, stockpile footprints and previously paved roads.

6.4 Define the Study Boundaries

The study boundaries are limited to paved roadways, former building footprints and associated hardstands, some stockpiled materials and stockpile footprints as shown on **Figure 3b**

6.5 Methodology

Prior to any soil sampling activities being undertaken within paved roadways, stockpile footprints or building and associated hardstand footprints, the following munitions clearance and remediation works must be undertaken.

6.5.1 Shallow Search

The search area will be marked out with rope into two one metre lanes between 20 – 40 m in length.

The area will then be searched with a MineLab F3 UXO Metal Detector with a black cap to locate all metallic objects in the top 150 mm of the ground surface. A GPS will be attached to the operator to track the walked lanes.

All metallic items of the size of a 20 mm projectile or greater will be identified, recorded and removed from the site.

6.5.2 Deep Search and Imaging

An imaging survey (deep search) utilising an EM61 Deep Metal Detector (MK1 unit) on a 0.75 to 1.0 m line spacing and a Differential Global Positioning System (DGPS) for the positioning of the digital data will be undertaken.

Data will be processed and imaged using suitable UXO data processing package.

The criteria for target investigation will be based on a clearance to a depth of one (1) metre for ordnance items such as 20 pound (lb.) projectile and greater.

The threshold for interpretation is set at 3.5 mV with lower amplitude anomalies picked at the discretion of the Processing Geophysicist.

Location Pegging

Anomalies will be pegged and investigated using an EM61 Deep Digital Metal Detector in relocation mode.

Item Removal

On removal of a metallic item from a search area, the location will be searched again to ensure a deeper item is not being masked by the original find. This process will be repeated until the location gives no more responses.

The initial search is a 0.5 m radius around the peg. If nothing is found the search will be extended to 1.5 m radius around each peg. If after the extended search nothing is found the site supervisor (or senior operator if site supervisor is original searcher) will search the peg to 1.5 m radius. If nothing is found the find will be recorded as an unable to locate (UTL).

6.6 Quality Control

The site will be divided into 1 ha blocks for all quality control measures.

6.6.1 Daily calibration

F3 Minelab (Shallow Search)

The F3 MineLab is calibrated firstly by using the set procedures in the F3 Manual using the 'Test Piece' supplied by the manufacturer with the detector. This confirms that the detector is working to correct specifications to confirm the sensitivity of the unit.

Before proceeding into the field the unit is also operated over the field test site where a 20mm projectile is buried at 150 mm depth. Provided a signal is obtained over this target the unit is ready for field operations.

This information will be noted on the Daily Diary.

EM61 (Deep Search)

Prior to Geophysical data collection each day, the EM61 will be run over a test pit to confirm the successful operation of the unit as detailed below:

- A backfilled test pit will be set-up on site containing various items (equal or greater than a 20 lb) anticipated to be buried on the site.
- The items will be buried, horizontally, at varying depths of up to 1 m (from top of target) to confirm the correct operation of the EM61 Deep Metal detector and its ability to meet the specifications for the deep search.
- The EM61 will be allowed to warm up until the readings stabilises (usually 10-15 minutes).
- The EM61 will then be moved to an area determined as a 'clean' area and the instrument will be nulled.
- Once this has been completed data will be collected over the backfilled test pit.
- The ability of the equipment to detect the seeded target will be assessed by the Geophysicist in the field.
- The test data will also be stored with all other data to show evidence of the systems functionality.

This calibration method will be used to establish a cut-off for detection of the EM61 Deep Search detector.

6.6.2 Limit of Reporting

A trial of the response of the EM61 must give a 3.5 mV response over a 20 lb projectile, buried at a depth of 1 m prior to use on site.

All data anomalies are to be selected for investigation at a level of 3.5 mV and above. However, a small number of targets with slightly lower amplitude will also be picked at the discretion of the Processing Geophysicist.

At the completion of anomaly investigation, a 10% of area shallow search will be carried out with an appropriate Electromagnetic Detector. If during QC a metallic item is located of a size equivalent to or greater than a 20 mm projectile, the search grid will be subject to a 100% shallow search again followed by a QC search.

The survey is carried out using Digital Global Positioning System (DGPS) for positioning then the operator is to ensure at the end of each line that positional accuracy is better than 0.3 m.

At the end of the day, data will be downloaded to a processing computer and checked for inconsistencies.

Checks include rejecting noisy lines. Lines will be redone if problems are encountered.

Data will be processed and interpreted by a Geophysicist. At the completion of processing a Senior Processing Geophysicist will complete a QC review of each grid.

To assure procedures are effective, at the completion of the clearance operation a 10% of area QC check will be performed. During any of the QC checks, location of a fail-size item within the soil will trigger a 100% repeat search of that grid.

7. Chemical - Sampling and Analysis Plan

7.1 Data Quality Objectives

Data quality objectives (DQOs) are statements that define the confidence required in conclusions drawn for data produced for a project, and which must be set to realistically define and measure the quality of data needed.

DQOs were developed for the investigations, as discussed in the following sections.

Data quality objectives (DQOs) were developed for the investigation, as discussed in the following sections.

7.1.1 State the Problem

Due to access restrictions, areas of the development site (such as paved roads, building footprints and stockpile footprint) have previously not been investigated. Prior to development of the area, an Environmental Site Assessment and Site Audit Statement of these areas is required.

7.1.2 Identify the Decision

Based on the decision making process for assessing urban redevelopment sites detailed in DEC (2006), modified to meet the specific project objectives, the following decisions must be made:

- Are there any unacceptable risks to likely future onsite receptors from impacted soils during development?
- Are there any issues relating to local area background soil concentrations that exceed the appropriate soil criteria?
- Are there any impacts of chemical mixtures?
- Are there any aesthetic concerns in fill soils present at the site?
- Is there any evidence of, or potential for, migration of contaminants off-site?
- Is a site specific risk assessment required?
- Is a site management strategy required?

7.1.3 Identify Inputs to the Decision

Inputs to the decisions are:

- Historical site aerials showing detail to any activities occurring on site;
- Environmental data as collected by sampling and analysis and site observations made during this investigation;
- Assessment criteria to be achieved on the site as based on the intended landuse and project objectives, as defined by assessment criteria nominated in **Section 8**;
- Final site surface survey; and
- Confirmation that data generated by sampling and analysis are of an acceptable quality to allow reliable comparison to assessment criteria as undertaken by assessment of quality assurance / quality control (QA/QC) as per the data quality indicators (DQIs) established in **Section 7.1.6**.

7.1.4 Define the Study Boundaries

The study boundaries are limited to paved roadways, former building footprints and associated hardstands, some stockpiled materials and stockpile footprints as shown on **Figures 4A to 4E**.

The vertical extent of the investigation will be 0.3 m into natural soils.

A final site surface survey will be conducted upon completion of the assessment works.

Due to the project objectives, seasonality will not be assessed as part of this investigation. Data will therefore be representative of the timing and duration of the current investigation.

7.1.5 Develop a Decision Rule

Laboratory analytical data will be assessed against EPA endorsed criteria as identified in **Section 8**.

The decision rules adopted to answer the decisions identified in **Section 7.1.2** are summarised in **Table 7.1**.

Table 7.1 Summary of Decision Rules

Decision Required to be made	Decision Rule
1. Are there any unacceptable risks to likely future onsite receptors from impacted soils during development?	The nature and extent of soil impacts will be assessed, and soil analytical data will be compared against EPA endorsed criteria. Statistical analyses of the data in accordance with relevant guidance documents will be undertaken, if appropriate, to facilitate the decisions. The following statistical criteria will be adopted with respect to soils: Either: the reported concentrations are all below the site criteria; Or: the average site concentration for each analyte must be below the adopted site criterion; no single analyte concentration exceeds 250% of the adopted site criterion; and the standard deviation of the results must be less than 50% of the site criteria. And: the 95% upper confidence limit (UCL[24]) of the average concentration for each analyte must be below the adopted site criterion. If the statistical criteria stated above are satisfied, and an assessment of risk indicates no unacceptable risks, the decision is No. Otherwise, the decision is Yes.
2. Are there any issues relating to the local area background soil concentrations that exceed appropriate soil criteria?	If the 95% UCL of surface soils exceeded published background concentrations (NEPC 1999), the decision is Yes. Otherwise the decision is No.
3. Are there any chemical mixtures	Are there more than one group of contaminants present which increase the risk of harm? If there is, the decision is Yes. Otherwise, the decision is No.
4. Are there any aesthetics issues in fill soils at the site?	If there are any unacceptable odours, anthropogenic materials or staining the answer to the decision is Yes. Otherwise, the answer to the decision is No.
5. Is there any evidence of, or potential for, migration of contaminants off-site?	Are contaminants present within natural soils at concentrations exceeding EPA endorsed criteria? If yes, the answer to the decision is Yes. Otherwise, the answer to the decision is No. And If groundwater analytical results exceed the NEPC 2013 criteria and the downgradient groundwater impacted, the decision is yes. Otherwise, the decision is No.
6. Is a site specific Risk Assessment required?	A Qualitative Risk Assessment has been undertaken for the development site however, if concentrations of TPH/BTEX, PAH, OCPs and explosives are detected above the LOR, a Quantitative Site Specific Risk Assessment will be required.
7. Is a site management strategy required?	Is the answer to any of the above decisions Yes? If yes, a site management strategy will be required to be developed. If no, a site management strategy is not required.

Statistical analyses of the data will be undertaken, if required, in accordance with relevant guidance documents. The following statistical criteria shall be adopted:

- The upper 95% confidence limit on the average concentration for each analyte (calculated for samples collected from consistent soil horizons, stratigraphy or material types) must be below the adopted criterion;

[24] Sampling Design Guidelines (NSW EPA, 1995).

- No single analyte concentration shall exceed 250% of the adopted criterion; and
- The standard deviation of the results must be less than 50% of the criterion.

7.1.6 Specify Limits of Decision Error

This step is to establish the decision maker's tolerable limits on decision errors, which are used to establish performance goals for limiting uncertainty in the data. Data generated during this project must be appropriate to allow decisions to be made with confidence.

Specific limits for this project have been adopted in accordance with the appropriate guidance from the NSW EPA, NEPC (2013), appropriate indicators of data quality (DQIs used to assess QA/QC) and standard JBS&G's procedures for field sampling and handling.

To assess the usability of the data prior to making decisions, the data will be assessed against pre-determined Data Quality Indicators (DQIs) for completeness, comparability, representativeness, precision and accuracy. The acceptable limit on decision error is 95% compliance with DQIs.

The pre-determined Data Quality Indicators (DQIs) established for the project are discussed below in relation to precision, accuracy, representativeness, comparability and completeness (PARCC parameters), and are shown in **Table 7.2**.

- **Precision** - measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- **Accuracy** - measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- **Representativeness** –expresses the degree which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- **Comparability** - expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; ensuring analysing laboratories use consistent analysis techniques and reporting methods.
- **Completeness** – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.

If any of the DQIs are not met, further assessment will be necessary to determine whether the non-conformance will significantly affect the usefulness of the data. Corrective actions may include requesting further information from samplers and/or analytical laboratories, downgrading of the quality of the data or alternatively, re-collection of the data.

Table 7.2 Summary of Quality Assurance / Quality Control Program

Data Quality Objective	Frequency	Data Quality Indicator
Precision		
Blind duplicates (intra laboratory)	1 / 20 samples	<50% RPD1
Blind duplicates (inter laboratory)	1 / 20 samples	<50% RPD1
Accuracy		
Surrogate spikes	All organic samples	70-130%
Laboratory control samples	1 per lab batch	70-130%
Matrix spikes	1 per lab batch	70-130%
Representativeness		
Sampling appropriate for media and analytes		-
Samples extracted and analysed within holding times.	-	organics (14 days), inorganics (6 months)
Trip spike (for volatiles)	1 per sampling event when sampling for volatile or semi-volatile COPC	70-130% recovery
Trip blank	1 per sampling event for ambient air sampling	<LOR
Rinsate	1 per sampling event where reusable sampling equipment used	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All Samples	All samples
Standard analytical methods used for all analyses	All Samples	All samples
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples
Limits of reporting appropriate and consistent	All Samples	All samples
Completeness		
Sample description and COCs completed and appropriate	All Samples	All samples
Appropriate documentation	All Samples	All samples
Satisfactory frequency and result for QC samples	All QA/QC samples	-
Data from critical samples is considered valid	-	Critical samples valid

1. Relative per cent difference

7.1.7 Optimise the Design for Obtaining Data

Various strategies for developing a statistically based sampling plan are identified in EPA (1995[25]), including judgemental, random, systematic and stratified sampling patterns. Random sampling is not appropriate based on the areas of environmental concern identified in previous investigation and the site inspection. Based on the history of the site a systematic sampling program is considered the most appropriate for the current investigation. Testpit locations will initially be placed systematically across the site, with the option for additional sampling locations to be placed in areas of observed contamination to better delineate any impacted areas.

7.2 Soil Sampling Methodology

7.2.1 Paved Roads

Boreholes (150 mm diameter) will be undertaken by JBS&G, with the use of a drill rig, along the existing road alignment (as shown on **Figures 4a to 4f**) at 10 m intervals. Boreholes will be extended through the fill material to a maximum depth of 0.3 m into natural, whichever is the shallower.

[25] *Sampling Design Guidelines.* NSW EPA. September 1995. (EPA 1995)

Soil samples will be collected at 0-0.15 m, 0.3 m, 0.5 m and every 0.5 m interval to a maximum depth of 0.3 m into natural materials (or prior refusal). Should physical evidence of gross contamination be identified during the works, sampling locations may be extended to vertically delineate contamination. During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination will be noted. All borehole locations will be recorded with a hand held trimble GPS.

Collected samples will be immediately transferred to laboratory supplied sample jars. The sample jars will then be transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form will be completed and forwarded with the samples to the testing laboratory.

Samples will be collected as discussed above however not all samples will be analysed. Samples will be analysed in accordance with **Table 7.3** below, i.e. at a minimum sampling density of 1.25 samples per location. Where the upper sample/s are impacted (above the adopted site criteria) additional samples will be requested for analysis.

In addition, a 10 L sample will be collected from each 1 m interval for asbestos quantification as detailed in **Section 7.2.5** below.

7.2.2 Former Building Footprints and Associated Hardstand

X series, W series and Stage 3 building footprints and associated hardstand (as shown on **Figure 4**) will be sampled by JBS&G with the aid of an excavator or backhoe, on a 10 m grid or a minimum 2 samples per building footprint if smaller than 100 m^2.

Soil samples will be collected at 0-0.15 m, 0.3 m, 0.5 m and every 0.5 m interval to 0.3 m into natural materials (or prior refusal). Should physical evidence of gross contamination be identified during the works, sampling locations may be extended to vertically delineate contamination. During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination will be noted. All testpit locations will be recorded with a hand held trimble GPS.

Collected samples will be immediately transferred to laboratory supplied sample jars. The sample jars will then be transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form will be completed and forwarded with the samples to the testing laboratory.

Samples will be collected as discussed above however not all samples will be analysed. Samples will be analysed in accordance with **Table 7.3** below, i.e.at a minimum sampling density of 1.25 samples per location. Where the upper sample/s are impacted (above the adopted site criteria) additional samples will be requested for analysis.

In addition, a 10 L sample will be collected from each 1 m interval for asbestos quantification as detailed in **Section 7.2.5** below.

7.2.3 Stockpiles

Soil samples will be collected from stockpiles 30, 31, and 37 (as shown on **Figure 4e**) via test pits through the stockpile using either a backhoe or excavator to be located on top of the stockpile. Samples will be collected from a minimum of 400 mm below the surface of the stockpile. The test pit will then be extended into the stockpile until the extent of the underlying in-situ fill with representative samples collected within each 1 m depth interval.

As detailed in **Section 4**, a Preliminary Material Classification of Stockpile 30 has already been undertaken and is provided in **Appendix F**. To add to the Preliminary Material Characterisation of Stockpile 30, additional samples will be collected to achieve a sampling frequency of 1/400 m^3 overall. The remaining sampling requirements for Stockpile 30 are detailed in **Table 7.3**.

Stockpile 31 and 37 will be sampled at a frequency of 1/1000 m^3 and analysed for Heavy Metals, TPH, PAHs, OCP/PCBs.

Should physical evidence of gross contamination be identified during the works, additional samples may be collected to better characterise the stockpiled material. During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination will be noted. All testpit locations will be recorded with a hand held trimble GPS.

During a preliminary inspection of the material, ACM was observed at two locations. As such, based on WA DoH (2009)[26] guidelines, asbestos quantification sampling for asbestos will be undertaken. Due to the volume of material (45,000 m^3 and 175,000 m^3) and the consistency of the material types, a reduced sampling density of 1/260 m^3 is considered appropriate (i.e. 173 AQ and 673 AQ samples, respectively from each stockpile). Based on NEPC 2013 guidance however, which states a sampling frequency of approximately 1/70 m^3, samples will initially be collected at this higher frequency and the data assessed to determine if the reduces frequency is appropriate. The data and any reduced sampling densities will be discussed with the site Auditor prior to implementation. A 10 L sample will be collected from each 260 m^3 interval for asbestos quantification as detailed in **Section 7.2.5** below.

Material from Stockpiles 31 and 37, are proposed to be reused across the development site in areas such as underneath roadways and/or at depth up to and greater than3 m below final ground surface. Further, due to the presence of potential ACM within this material, the material will be tracked and a survey of its final placement location will be undertaken. Additionally, concrete stockpiles 33, 34, 35, 50 and brick stockpile 36 is proposed to be processed onsite for reuse across the development site. A stockpile management procedure including appropriate processing methods and health and safety requirements relating to the processing of stockpiles will be developed.

In addition, asbestos quantification will be undertaken during stockpile sampling (Stockpiles 31 and 37) as follows:

- Should any asbestos containing materials (ACM) be identified during stockpile sampling (Stockpiles 30, 31 and 37) the following asbestos quantification methodology will be applied:
- Testpitting will be conducted by a field team comprising a backhoe (and operator) and a JBS&G scientist trained and experienced in the identification of ACM (asbestos containing material);
- Testpitting in stockpiled material will be conducted at 1/70 m^3, with AQ samples (10 L) collected and raked through from each metre of material forming the height of the stockpile (as per guidance provided in NEPM 2013[27]);
- Testpitting locations will be flagged and noted on a field form/mud map;
- ACM in stockpiled fill material will be quantified by the methods advised in NEPM 2013 and WA DoH 2009 (i.e. a 10 L bucket was filled with material at each 1 m interval and the material spread onto contrasting material and raked through); and
- One 500 mL soil sample will collected from within the 10 L AQ sample and submitted for laboratory analysis to assess for the presence of free asbestos fibres and friable asbestos.

[26] Guidelines for the Assessment , Remediation and Management of Asbestos-Contaminated Sites in Western Australia, Western Australia (WA) Department of Health (DoH), May 2009.
[28] Contaminated Sites: Sampling Design Guidelines, NSW EPA, 1995 (EPA 1995

7.2.4 Stockpile Footprints

The footprints of stockpiles 30, 31, 32, 33, 34, 35, 36, 37 and 50 (comprising of 8 ha) will be sampled by JBS&G with the aid of an excavator or backhoe, with 88 systematic testpits to be completed in accordance with EPA (1995)[28].

Subsequent to removal of stockpile material, a metallic debris clearance will be undertaken in the footprint extent as outlined in **Section 6**, following which a detailed site inspection will be conducted by JBS&G personnel giving consideration to concern regarding historical burial pits (metallic and/or ordnance waste) in the area. Testpit locations will either be moved or added to target any anomalies identified during the metallic debris clearance and site inspection.

Soil samples will be collected at 0-0.15 m, 0.3 m, 0.5 m and every 0.5 m interval to a maximum depth of 0.3 m into natural materials (or prior refusal). Should physical evidence of gross contamination be identified during the works, sampling locations may be extended to vertically delineate contamination. During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination will be noted. All testpit locations will be recorded with a hand held trimble GPS.

Collected samples will be immediately transferred to laboratory supplied sample jars. The sample jars will then be transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form will be completed and forwarded with the samples to the testing laboratory.

In addition, a 10 L sample will be collected from each 1 m interval for asbestos quantification as detailed in **Section 7.2.5** below.

Samples will be collected as discussed above however not all samples will be analysed. Samples will be analysed in accordance with **Table 7.3** below, i.e.at a minimum sampling density of 1.25 samples per location. Where the upper sample/s are impacted (above the adopted site criteria) additional samples will be requested for analysis.

7.2.5 Asbestos Quantification

Asbestos quantification of all fill material across roads and building footprints will be undertaken as detailed below:

- Testpitting conducted by field teams comprising a backhoe (and operator), a JBS&G scientist trained and experienced in the identification of ACM;
- If ACM is identified within stockpiled material, the AQ sample will be collected at a rate of 1/70 m^3 (as per guidance provided in NEPM 2013[29]) or 1 /260 m^3 within SP31 and SP37 if applicable as discussed in **Section 7.2.3** above;
- If ACM is identified within in-situ fill material (e.g. roadways or building footprints), the AQ samples will be collected on a 10 m grid across the area;
- Testpit locations will be flagged and surveyed by a Trimble GPS with an accuracy of sub-1 m. GPS data will be used to plot the testpit locations on a site plan, as well as being presented in a tabular format to enable investigations locations to be located (if required) for subsequent remedial works;
- ACM in stockpiled fill material will be quantified by the methods advised in NEPM 2013 and WA DoH 2009. At each sample location, recovered fill material (10 L) will be spread and

[28] Contaminated Sites: Sampling Design Guidelines, NSW EPA, 1995 (EPA 1995

[29] National Environment Projection (Assessment of Site Contamination) Amendment Measure 2013 (No 1) (NEPM 2013)

raked. All ACM will be recovered and bagged. The volume of fill material within the testpit will be calculated and logged;

- Soil samples will be collected in the proximity of selected ACM fragments and submitted for laboratory analysis (**Table 7.3**) to assess for the presence of free asbestos fibres/ friable asbestos;
- ACM collected and bagged from each testpit will be weighed in-house using an externally calibrated scale with an accuracy of 1 g; and
- Should any fibrous or friable asbestos be observed during field works, these stockpiles will be noted for later excavation for off-site disposal and validation. No allowance is made for management of such material during the assessment works.

7.2.6 Photo Ionisation Detector

All soil samples will be screened on site during works using a photo-ionisation detector (PID) to assess the presence of volatile organic compounds (VOCs) including petroleum hydrocarbons. Based upon field observations and the PID screening results, samples will be analysed in accordance with the laboratory schedule as detailed in **Table 7.3** below.

7.2.7 Field Descriptions and Photographic Record

During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indications of contamination (e.g. ACM, staining, odours) will be noted. Photographs of site layout and features will be taken.

7.2.8 Decontamination

Prior to the commencement of sampling activities, any non-disposable sampling equipment, including sampling trowel/knife will be cleaned with a water/detergent spray, rinsed with water and then air dried. The equipment will then be inspected to ensure that no soil, oil, debris or other contaminants were apparent on the equipment prior to the commencement of works. Sampling equipment will be subsequently decontaminated using the above process between each sampling location.

7.2.9 Duplicate and Triplicate Sample Preparation

Field soil duplicate and triplicate samples will be obtained during the field works. The collected samples will be divided laterally into three samples with minimal disturbance to reduce the potential for loss of volatiles and placed in three clean glass jars and sample bags as appropriate. Each sample will then labelled with a primary, duplicate or triplicate sample identification before being placed in the same chilled esky for laboratory transport.

7.2.10 Groundwater Monitoring Well Installation

Twelve Groundwater monitoring wells will be installed across the sites to a maximum depth of 12 mbgs at locations shown on **Figures 4A**, **4E and 4F**. Five monitoring wells will be installed within the X series footprint site, three monitoring wells will be installed within the W series footprint site and four monitoring wells will be installed within stockpiles footprint area.

Wells will be installed by a drill rig using a solid flight augers and air hammer, if required. Soil samples during well installation will be conducted using push tubes (where appropriate). Boreholes will be advanced to 2 m below groundwater as encountered during drilling, to a maximum depth of 12 m bgs, or prior drilling refusal whichever is shallower. In the case where groundwater is not encountered within 12 m or before refusal, the requirement for groundwater assessment will be revisited given the additional site specific geological and hydrogeological information available.

Monitoring wells will be constructed out of Class 18 UPVC (50mm) screen and casing, with appropriate gravel packs, bentonite seals, well caps, stick ups and lockable galvanised monuments.

At a minimum, a 3 m screen will be installed from 1 m above the identified saturated material based on discussions of soil/groundwater details with the project manager and/or director.

Wells will be developed after construction using a stainless steel bailer to remove turbidity created by the drilling and construction process. A minimum of 3 well volumes will be removed from the well during development. A decontaminated submersible pump will be available if additional volumes of water are required to be removed. The monitoring wells will be allowed to stabilise for a minimum of 5 days after development prior to sampling.

If evidence of contamination is observed during drilling works (i.e. odours or staining) drilling will stop and a diamond core rig will be employed to complete the monitoring well.

7.2.11 Groundwater Sampling

After stabilisation, each new monitoring well will be gauged using an electric interface probe. Gauging shall include assessment for presence of light non aqueous phase liquids, as well as DNAPLs by extending to the depth of the sump. Prior to sampling, the wells will be purged to remove standing water. Field parameters of pH, conductivity, redox and temperature will be taken and samples obtained once the parameters stabilise to within approximately 10%. Groundwater samples will be obtained through the use of a low flow peristaltic pump and flow cell. Groundwater samples will be transferred directly to laboratory supplied sample bottles. Sample bottles will be clearly marked with sample identification details, sealed and then transferred to a chilled esky with ice. Samples will be analysed in accordance with the analytical schedule (**Table 7.3**).

7.2.12 Duplicate and Triplicate Sample Preparation

Field soil duplicate and triplicate samples will be obtained using the above sampling methods. The collected samples will be placed into three sets of clean water bottles as appropriate. Each sample set will then be labelled with a primary, duplicate or triplicate sample identification before being placed in the same chilled esky for laboratory transport.

7.2.13 Survey of New Wells

All new monitoring wells shall be gauged and surveyed. Corrected depth to waters to m AHD shall be determined for each well. A groundwater contour plot shall be prepared on the basis of the surveyed levels to estimate groundwater direction.

7.3 Laboratory Analysis

JBS&G will contract Eurofins | MGT (Eurofins) as the primary laboratory for all the required analyses. The secondary laboratory for these analytes will be Envirolab. All laboratories are NATA registered for the required analyses.

In addition, the laboratories will be required to meet JBS&G's internal QA/QC requirements. Laboratory analysis of samples will be conducted as summarised in **Table 7.3**.

Laboratory analysis will be undertaken at a rate of 1.25/location in the paved roads, former building footprints and associated hardstands and stockpile footprints. Surface samples are will initially be analysed and where any exceedances to the adopted site criteria are reported, further analysis will be undertaken on samples at depth.

Table 7.3 Proposed Sampling and Analytical Program

Investigation Area and Sample Type	Approximate Area/ Volume	No. of Sampling Locations	Analytes (exc. QA/QC)
Paved Roads			
Stage 1 and 2 (Soil)	730 m long	73 testpits	Heavy Metals[1] - 92 TPH/BTEX - 92 PAHs - 92 OCP/PCBs - 92 Explosives[2] - 92 Asbestos[3] – 92 (500 ML Soil Samples)

Investigation Area and Sample Type	Approximate Area/ Volume	No. of Sampling Locations	Analytes (exc. QA/QC)
Stage 3 Road and Building (Soil)	230 m long, and 1 building (<100 m^2)	25 testpits	Heavy Metals[1] – 32 TPH/BTEX - 32 PAHs - 32 OCP/PCBs - 32 Explosives[2] - 32 Asbestos[3] - 32 (500 ML Soil Samples)
Stage 4 (Soil)	780 m long	78 testpits	Heavy Metals[1] – 98 TPH/BTEX – 98 PAHs – 98 OCP/PCBs – 98 Explosives[2] – 98 Asbestos[3] – 98 (500 ML Soil Samples)
Stage 5 (Soil)	140 m long	14 testpits	Heavy Metals[1] – 18 TPH/BTEX – 18 PAHs – 18 OCP/PCBs – 18 Explosives[2] – 18 Asbestos[3] – 18 (500 ML Soil Samples)
Jordon Springs Connector Rd (Soil)	1000 m long	100 testpits	Heavy Metals[1] – 125 TPH/BTEX – 125 PAHs – 125 OCP/PCBs - 125 Explosives[2] - 125 Asbestos[3] – 125 (500 ML Soil Samples)
Former Building Footprints and Associated Hardstand			
X Series Buildings (Soil)	51230 m^2	512	Heavy Metals[1] - 1024 TPH/BTEX - 1024 PAHs - 1024 OCP/PCBs - 1024 Explosives[3] - 1024 Asbestos - 1024
X Series Buildings (Groundwater)		5 Groundwater Monitoring Wells	Heavy Metals[1] – 5 TPH/BTEX – 5 PAHs – 5 OCP/PCBs - 5 VOCs - 5 Explosives[3] - 5
W Series Buildings (Soil)	4000 m^2	40 testpits	Heavy Metals[1] – 50 TPH/BTEX – 50 PAHs – 50 OCP/PCBs - 50 Explosives[2] - 50 Asbestos[3] – 50 (500 ML Soil Samples)
W Series Buildings (Groundwater)		3 Monitoring Wells	Heavy Metals[1] – 3 TPH/BTEX – 3 PAHs – 3 OCP/PCBs - 3 VOCs - 3 Explosives[3] - 3
Stockpiles			
Stockpile 30 (Biosolids)	75 000 m^3	188	Heavy Metals[1] – 164 (24 already undertaken) TPH – 180 (8 already undertaken) PAHs – 164 (24 already undertaken) OCP/PCBs – 180 (8 already undertaken) Selenium – 164 (24 already undertaken) Phenols – 180 (8 already undertaken)
Stockpiles 31 and 37 (Soil / asphalt)	SP31 - 45 000 m^3 SP37 – 175 000 m^3	SP31 – 45 SP37 - 175	Heavy Metals[1] – 220 PAHs – 220 TPH – 220 VOCs – 220 OCP/PCBs – 220 ASLP Heavy Metals – 55 (1 in 4) ASLP PAHs – 55 (1 in 4) Asbestos (500 ML soil samples) – frequency pending (SP31 and SP37) initially 1/70 m^3 however may be decreased to 1/260m^3 pending Auditor approval
Stockpile 32 (Soil / asphalt)	8750 m^3	NA	NA- already tested in 2013 under the Recovered Aggregate Exemption

Investigation Area and Sample Type	Approximate Area/ Volume	No. of Sampling Locations	Analytes (exc. QA/QC)
Stockpile 33 (Concrete)	1000 m^3	NA	NA - To be discussed under Stockpile Management Procedure
Stockpile 34 (Concrete)	136 760 m^3	NA	NA - To be discussed under Stockpile Management Procedure
Stockpile 35 (Concrete)	1800 m^3	NA	NA - To be discussed under Stockpile Management Procedure
Stockpile 36 (Brick)	19 310 m^3	NA	NA - To be discussed under Stockpile Management Procedure
Stockpile 50 Concrete + 50 mm)	unknown	NA	NA - To be discussed under Stockpile Management Procedure
Stockpile Footprints			
Stockpiles 30, 31, 32, 33, 34, 35, 36, 37 and 50 (Soil)	8 ha	88 testpits	Heavy Metals[1] – 110 TPH/BTEX – 110 PAHs – 110 OCP/PCBs - 110 Explosives[2] - 110 Asbestos[3] – 110 (500 ML Soil Samples) Stockpile 30 additional analyses Selenium – 14 Phenols - 14
Stockpiles 30, 31, 32, 33, 34, 35, 36, 37 and 50 (Groundwater)	8 ha	4 Groundwater Monitoring Wells	Heavy Metals[1] – 4 TPH/BTEX – 4 PAHs – 4 OCP/PCBs - 4 VOCs - 4 Explosives[3] - 4

[1] Heavy metals analysis includes As, Ba, Cd, Cr, Cu, Pb, Ni, Hg, Zn.

[2] Explosives analysis will include but not limited to RDX, TNT, 2,4-DNT and 2,6-DNT.

[3] If asbestos is observed, additional asbestos analysis may be required and this will constitute a variation.

In addition to the above analyses, for QA/QC purposes field duplicates and triplicates will be analysed at a rate of 1/20 primary samples. Rinsate samples will be obtained from all reusable sampling equipment per sampling event, and trip spike and trip blank samples will accompany the soil samples for each batch of samples submitted to the laboratory.

It is noted that auditor concurrence with this method is required prior to implementation across the current site area.

8. Assessment Criteria

8.1 Regulatory Technical Guidelines

The investigation will be undertaken with consideration to aspects of the following guidelines and technical documents, as relevant:

- Contaminated Sites: Guidelines for Assessing Service Station Sites, NSW EPA, 1994 (EPA 1994);
- Contaminated Sites: Sampling Design Guidelines, NSW EPA, 1995 (EPA 1995)
- Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites, NSW OEH, 2011 (OEH 2011);
- Contaminated Sites: Guidelines for the NSW Site Auditor Scheme, 2nd Edition, NSW Department of Environment and Conservation, 2006 (DEC 2006);
- National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1), National Environment Protection Council, 2013 (NEPC 2013);
- Environmental Guidelines use and Disposal of Biosolid Products, NSW EPA, 2000 (EPA 2000); and
- Waste Classification Guidelines, NSW EPA, November 2014 (EPA 2014).

8.2 Soil Criteria

Based on the proposed mixed land use of the site as Standard Residential and Recreational, concentrations of contaminants in the soil will be compared against published levels as presented in **Tables 8.1 and 8.2**, sourced from the following:

- Health based Investigation Levels (HILs) for Residential– NEPC 2013, HIL-A;
- Generic ecological investigation levels (EILs) based on NEPC (2013); and
- Ecological Screening Levels (ESLs) for TPH fractions, BTEX and benzo(a)pyrene in fine grained soil for either urban residential and public open space land use or areas of ecological significance within the Regional Open Space areas (NEPC 2013).

Additionally, a site specific Human Health and Ecological Risk Assessment (HHERA) will be completed for the Central Precinct on receipt of site analytical data. This will be updated during the staged development works as additional analytical data is collected. Should the HHERA specify site specific criteria these will be incorporated into the SRAPs.

Works have been completed in accordance with the decision process for assessment of urban redevelopment sites (DEC 2006).

Additionally, data from Stockpile 30 will be compared to the contaminant acceptance concentration thresholds for biosolids in EPA 2000.

Where required, results will be statistically assessed in accordance with the method summarised in **Table 7.1**.

The results of asbestos observations and analysis will be assessed in general accordance with NEPC (2013) and WA DOH (2009) guidance.

No HILs are available for various explosives compounds. In assessing the concentrations of explosives, the “US Army Medical Bioengineering Research and Development Laboratory for the Corn Husker Army Ammunition Plan, Rosenblah, 1986” acceptable levels for urban development

were adopted, as these levels have been adopted in previous environmental assessments on the former ADI property as detailed in **Table 8.1** below.

Table 8.1 Health Based Soil Investigation Criteria (all units in mg/kg)

	Limit of Reporting	Laboratory Method	Health Investigation/ Screening Levels Residential A
METALS			
Arsenic	2.0	ICP-AES (USEPA 200.7)	100
Boron	10.0	ICP-AES (USEPA 200.7)	4500
Cadmium	0.4	ICP-AES (USEPA 200.7)	20
Chromium	5.0	ICP-AES (USEPA 200.7)	100[1]
Chromium (VI)	1.0	Alkali leach colorimetric (APHA3500-Cr/USEAP3060A)	100
Copper	5	ICP-AES (USEPA 200.7)	6,000
Nickel	5.0	ICP-AES (USEPA 200.7)	400
Lead	5.0	ICP-AES (USEPA 200.7)	300
Zinc	5.0	ICP-AES (USEPA 200.7)	7,400
Mercury (inorganic)	0.05	Cold Vapour ASS (USEPA 7471A)	40[2]
POLYCYCLIC AROMATIC HYDROCARBONS			
Carcinogenic PAHs (as B(a)P TPE)[3]	0.028	GCMS (USEPA8270)	3
Naphthalene	0.1	GCMS (USEPA8270)	56
Total PAHs[4]	0.4	GCMS (USEPA8270)	300
BTEX			
Benzene	1.0	Purge Trap-GCMS (USEPA8260)	0.7[6]
Toluene	1.0	Purge Trap-GCMS (USEPA8260)	480[6]
Ethylbenzene	1.0	Purge Trap-GCMS (USEPA8260)	NL[6]
Total Xylenes	3.0	Purge Trap-GCMS (USEPA8260)	110[6]
TOTAL RECOVERABLE HYDROCARBONS			
F1 C_6-C_{10}	10	TPH Purge Trap-GCMS (USEPA8260)	50[6,]
F2 >C_{10}-C_{16}	50	TPH Purge Trap-GCMS (USEPA8260)	280[6]
F3 >C_{16}-C_{34}	100	Purge Trap-GCFID (USEPA8000)	-
F4 >C_{34}-C_{40}	100	Purge Trap-GCFID (USEPA8000)	-
ORGANOCHLORINE PESTICIDES			
DDT + DDD + DDE	0.3	GCECD (USEPA8140,8080)	240
Aldrin + Dieldrin	0.2	GCECD (USEPA8140,8080)	6
Chlordane	0.1	GCECD (USEPA8140,8080)	50
Endosulfan	0.3	GCECD (USEPA8140,8080)	270
Endrin	0.1	GCECD (USEPA8140,8080)	10
Heptachlor	0.1	GCECD (USEPA8140,8080)	6
HCB	0.1	GCECD (USEPA8140,8080)	10
Methoxychlor	0.1	GCECD (USEPA8140,8080)	300
PHENOLS			
Phenol	5	Distillation-Colorimetric (APHA 5530)	3000
PCBs			
Total PCBs	0.7	GCECD (USEPA8140,8080)	1
Asbestos			
Asbestos (<0.1 m bgs)	0.1 g/kg	PLM / Dispersion Staining	No asbestos capable of being detected via the investigation, which comprises both visual identification and sample analysis by a NATA accredited laboratory

	Limit of Reporting	Laboratory Method	Health Investigation/ Screening Levels Residential A
Asbestos FA/AF (>0.1 m bgs)	0.1 g/kg	PLM / Dispersion Staining	0.001%
Bonded ACM (>0.1 m)	0.1 g/kg	PLM / Dispersion Staining	0.01%
Asbestos Fibres	0.1 g/kg	PLM / Dispersion Staining	No respirable asbestos fibres of being detected via sample analysis by a NATA accredited laboratory
Explosives			
RDX	0.5	HPLC (USEPA 8332)	10[7]
TNT	0.5	HPLC (USEPA 8332)	15[7]
2,4 – DNT and 2,6 - DNT	0.5	HPLC (USEPA 8332)	1.5[7]

Notes:
1. Guideline values presented are for Chromium (VI) in absence of total Chromium values. Where total Chromium results are elevated, samples will be analysed for Chromium (VI).
2. Guideline values are for inorganic mercury. Where elevated mercury concentrations are encountered and/or site information suggests the potential presence of elemental mercury and/or methyl mercury, consideration of applicability would be needed.
3. Carcinogenic PAHs calculated as per Benzo(a)pyrene Toxicity Equivalent Factor requirements presented in NEPC 2013
4. Total PAHs calculated as per requirements presented in NEPC 2013.
6. Soil Health Screening Levels for Vapour Intrusion: Clay Soils. Values presented are those for 0 to <1 m bgs for residential landuse. Reference should be made to results tables for further detail of levels at greater depths.
7. US Army Medical Bioengineering Research and Development Laboratory for the Corn Husker Army Ammunition Plan, Rosenblah, 1986.
NL: Non-limiting.

Table 8.2 Ecological Screening Levels and Soil Quality Guideline Values (all units in mg/kg)

	Limit of Reporting	Laboratory Method	ESLs Urban Residential and public open space	ESLs Areas of Ecological Significance	SQGs (Aged)[3] Urban Residential and public open space	SQGs (Aged)[3] Areas of Ecological Significance
METALS						
Arsenic	4.0	ICP-AES (USEPA 200.7)	-	-	100	40
Cadmium	0.4	ICP-AES (USEPA 200.7)	-	-	-	-
Chromium	1.0	ICP-AES (USEPA 200.7)	-	-	410	140
Chromium (VI)	1.0	Alkali leach colorimetric (APHA3500-Cr/USEAP3060A)	-	-	-	-
Copper	1.0	ICP-AES (USEPA 200.7)	-	-	230	85
Nickel	1.0	ICP-AES (USEPA 200.7)	-	-	270	50
Lead	1.0	ICP-AES (USEPA 200.7)	-	-	1100	470
Zinc	1.0	ICP-AES (USEPA 200.7)	-	-	770	230
Mercury (inorganic)	0.1	Cold Vapour ASS (USEPA 7471A)	-	-	-	-
POLYCYCLIC AROMATIC HYDROCARBONS						
Benzo(a)pyrene	0.5	GCMS (USEPA8270)	0.7	0.7	-	-
Naphthalene	0.1	GCMS (USEPA8270)	-		170	10
BTEX						
Benzene	1.0	Purge Trap-GCMS (USEPA8260)	50	10	-	-
Toluene	1.0	Purge Trap-GCMS (USEPA8260)	85	10	-	-
Ethylbenzene	1.0	Purge Trap-GCMS (USEPA8260)	70	1.5	-	-
Total Xylenes	3.0	Purge Trap-GCMS (USEPA8260)	105	10	-	-
TOTAL RECOVERABLE HYDROCARBONS						
F1 C_6-C_{10}	10	TPH Purge Trap-GCMS (USEPA8260)	180[1]	125[1]	-	-
F2 >C_{10}-C_{16}	50	TPH Purge Trap-GCMS (USEPA8260)	120[2]	25[2]	-	-
F3 >C_{16}-C_{34}	100	Purge Trap-GCFID (USEPA8000)	300	Insufficient data to derive value	-	-
F4 >C_{34}-C_{40}	100	Purge Trap-GCFID (USEPA8000)	2800	Insufficient data to derive value	-	-
ORGANOCHLORINE PESTICIDES						
DDT	0.1	GCECD (USEPA8140,8080)	-	-	180	3

Notes:

1. Values for F1 C_6-C_9 are obtained by subtracting BTEX (Sum) from laboratory result for C_6-C_9 TRH.
2. Values for F2 >C_{10}-C_{16} are obtained by subtracting naphthalene from laboratory result for >C_{10}-C_{16} TRH.
3. SQG derived using assumed data using NEPC 2013 methodology, using the EIL calculator. Estimated CEC at 20 cmol/kg, pH at 7 and percentage clay content >10%.

8.3 Groundwater Criteria

The groundwater criteria presented in **Table 8.3** shall be considered when assessing groundwater data collected during assessment activities. Fresh water ecosystem values have been adopted based on the proximity of the site to the Nepean River.

Table 8.3 Groundwater Assessment Criteria (units in µg/L unless noted)

	Fresh Water Ecosystems[1]	Recreation[3]	Visual Amenity[4]	Drinking Water[9]	Irrigation	LOR[7]
TOTAL PETROLEUM HYDROCARBONS						
TPH (C_6 – C_{36})	7[2]	-	No sheen or odour	90[10]	-	250[7]
MONOCYCLIC AROMATIC HYDROCARBONS						
Benzene	950	10	-	1	-	0.2
Toluene	180[2]	-	-	800	-	0.2
Ethylbenzene	80[2]	-	-	300	-	0.2
Xylene (m+o+p)	75[2]	-	-	600	-	0.2
HEAVY METALS						
Aluminium	55	2000	-	200[8]	5,000	-
Arsenic (III/V)	24 / 13[5]	70	-	7	100	-
Barium	-	7000	-	700	-	-
Boron	370	40 000	-	4000	500	-
Cadmium	0.2[1]	20	-	2	10	-
Chromium (III)	-	500	-	-	-	-
Chromium (VI)	1.0		-	50	100	-
Copper	1.4	4000	-	2000	200	-
Lead	3.4	100	-	10	2000	-
Manganese	1900	5000	-	500	200	-
Mercury	0.06[1]	10	-	1	2	-
Nickel	11	200	-	20	200	-
Zinc	8	30 000	-	3000[8]	2000	-
POLYCYCLIC AROMATIC HYDROCARBONS						
Naphthalene	16	62	-	6.2[6]	-	
2-methylnaphthalene	-	-	-	-	-	10
Acenaphthylene	-	-	-	-	-	0.1
Acenapthene	-	3700	-	370[6]	-	-
Fluorene	-	2400	-	240[6]	-	-
Phenanthrene	0.6[2]	-	-	-	-	0.1
Anthracene	0.01[2]	18 000	-	1800[6]	-	-
Fluoranthene	1[2]	15 000	-	1500[6]	-	-
Pyrene	-	1800	-	180[6]	-	-
Benzo(a)anthracene	-	0.92	-	0.092[6]	-	-
Chrysene	-	92	-	9.2[6]	-	-
Benzo(b&k)fluoranthene	-	0.92	-	0.092[6]	-	-
Indeno(1,2,3-cd)perylene	-	0.92	-	0.092[6]	-	-
Benzo(g,h,i)perylene	-	-	-	-	-	0.1
Dibenz(a,h)anthracene	-	-	-	-	-	0.1
Benzo(a)pyrene	0.1[2]	0.1	-	0.01	-	0.1
EXPLOSIVES						
TNT 2, 4, 6	0.14[1]	-	-	-	-	0.05
DNT 2, 4	0.016[1*]	-	-	-	-	0.001
DNT 2, 6	0.0003[1*]	-	-	-	-	0.001

	Fresh Water Ecosystems[1]	Recreation[3]	Visual Amenity[4]	Drinking Water[9]	Irrigation	LOR[7]
CHLORINATED ALKENES						
Dichloromethane	-	-	-	0.004	-	-
Trichloromethane	-	-	-	0.003	-	-
Trihalomethane	-	-	-	0.25	-	-
Tetrachloromethane	-	-	-	0.003	-	-
1,2-Dichloroethane	-	-	-	0.003	-	-
1,1,2-Trichloroethane	6500	-	-	-	-	-
Phenols						
Phenol	320	2	-	11,000[6]	-	0.5
2-Chlorophenol	320	-	-	-	-	0.5
4-Chlorophenol	-	-	-	-	-	0.5
2,4-Dichlorophenol	-	-	-	-	-	0.5
2,4,6-Trichlorophenol	-	-	-	-	-	0.5
2,3,4,6-Tetrachlorophenol	-	-	-	-	-	0.5
Pentachlorophenol	-	-	-	-	-	1.0
ORGANOCHLORINE PESTICIDES						
DDT	0.006	-	-	0.009	-	-
Aldrin + Dieldrin	-	-	-	0.0003	-	-
Chlordane	0.3	-	-	0.002	-	-
Endosulfan	0.03	-	-	0.02	-	-
Endrin	0.01	-	-	-	-	-
Heptachlor	0.01	-	-	-	-	-

Notes

1. 95% protection levels (fresh water ecosystems) have been used. When these levels fail to protect key test species, the 99% protection levels were used - ANZECC/ARMCANZ (2000).
2. Insufficient data to derive a reliable trigger value. In these instances, reference has been made to low reliability trigger levels contained in ANZECC/ARMCANZ (2000). The lowest TV for m-xylene has been adopted as a screening value.
3. Recreational purposes – NHMRC (2008) – 10 times Drinking Water
4. Recreational water quality and aesthetics – s.5.2.3.3 ANZECC/ARMCANZ (2000)
5. Criteria for As (V) selected
6. US EPA (2010) Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, tap water criteria Laboratory limit of reading provided for substances with insufficient published ecological / health investigation guidelines, or where published guidelines fall below laboratory limit of detection.
7. Based on aesthetic considerations. No Health based guideline published.
8. NHMRC (2011) 'Australian Drinking Water Guidelines 6'

*Please note that the limit of detection is higher than the ANZECC 200 trigger level for these contaminants. If a detection above the LOR is reported, additional investigation will be undertaken.

9. Reporting

The ESA report will be prepared in general accordance with OEH (2011), documenting the works as completed.

10. Limitations

This report has been prepared for use by the client who commissioned the works in accordance with the project brief only and has been based in part on information obtained from other parties. The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

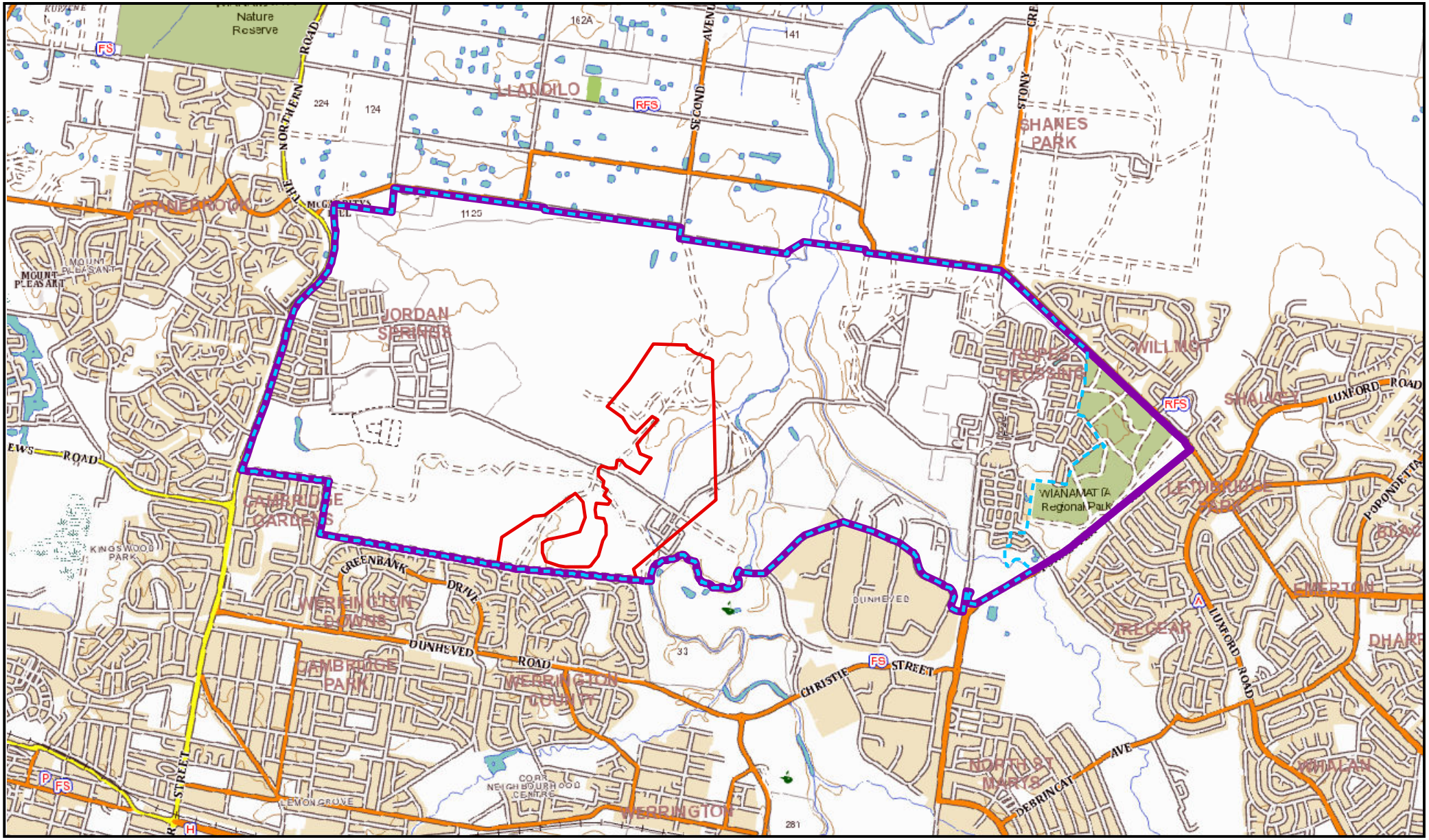
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements and site history, not on sampling and analysis of all media at all locations for all potential contaminants.

Limited sampling and laboratory analyses were undertaken as part of the investigations, as described herein. Ground conditions between sampling locations may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the sites, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures



Source: Base Image - © SIX Maps www.maps.six.nsw.gov.au, accessed 26-03-2014

0 400 800 1,600 m

Scale: 1:40,000

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
D	Original Issue - R01	SE	04-02-2015
Rev	Description	Drn.	Date:

Legend:

- Central Precinct (133.2ha)
- CHK001/1 Audit Statement Boundary
- Former ADI St Marys Property

JBS&G

Figure 1: Central Precinct Location

Client: Maryland Development Company

Project: Central Precinct

Job No: 43352 File Name: 43352_01

Source: Base Image - © Near Map www.nearmap.com, imagery date 19-09-2013, accessed 24-03-2014

0 75 150 300 m

Scale:1:8,000

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
D	Original Issue - R01	SE	18-02-2015

Legend:

- Central Precinct (133.2ha)
- Development Stages Boundary
- Jondan Springs Connector Road (Stage 1) - Approximate Location Only
- CHK001/1 Audit Statement Boundary

Reference: Site delineation and features based on Cardno 17-11-2014: Drawing Number 89914020-SK1006 Rev 1

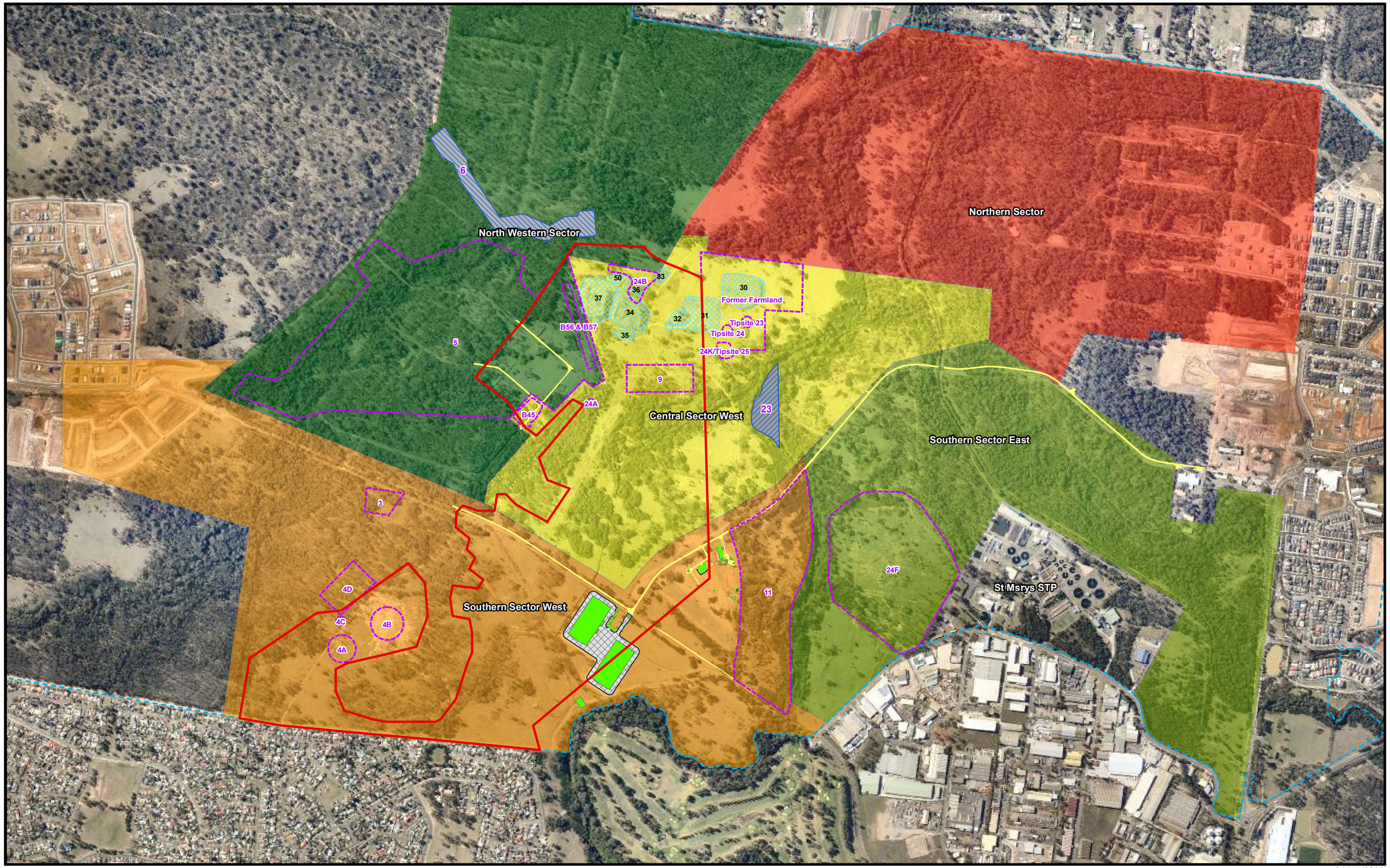
JBS&G

Figure 2: Central Precinct Site Layout and Development Stages

Client: Maryland Development Company

Project: Central Precinct

Job No: 43352 File Name: 43352_02



Source: Base Image - © Near Map www.nearmap.com, imagery date 19-09-2013, accessed 24-03-2014

0 120 240 480 m

Scale:1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
D	Original Issue - R01	SE	18-02-2015

Legend:

- Central Precinct Residential Boundary
- CHK001/1 Audit Statement Boundary
- Former Areas of Environmental Concern (Approximate Locations)

Former Validation Sectors

- CHK001/6 Building Extent
- CHK001/6 Concrete Building Footprint
- CHK001/6 Bitumen Roads
- CHK001/7 Stockpile Footprints
- Central Sector West
- North Western Sector
- Northern Sector
- Southern Sector East
- Southern Sector West

Reference: Site delineation and features based on Cardno 17-11-2014: Drawing Number 89914020-SK1006 Rev 1

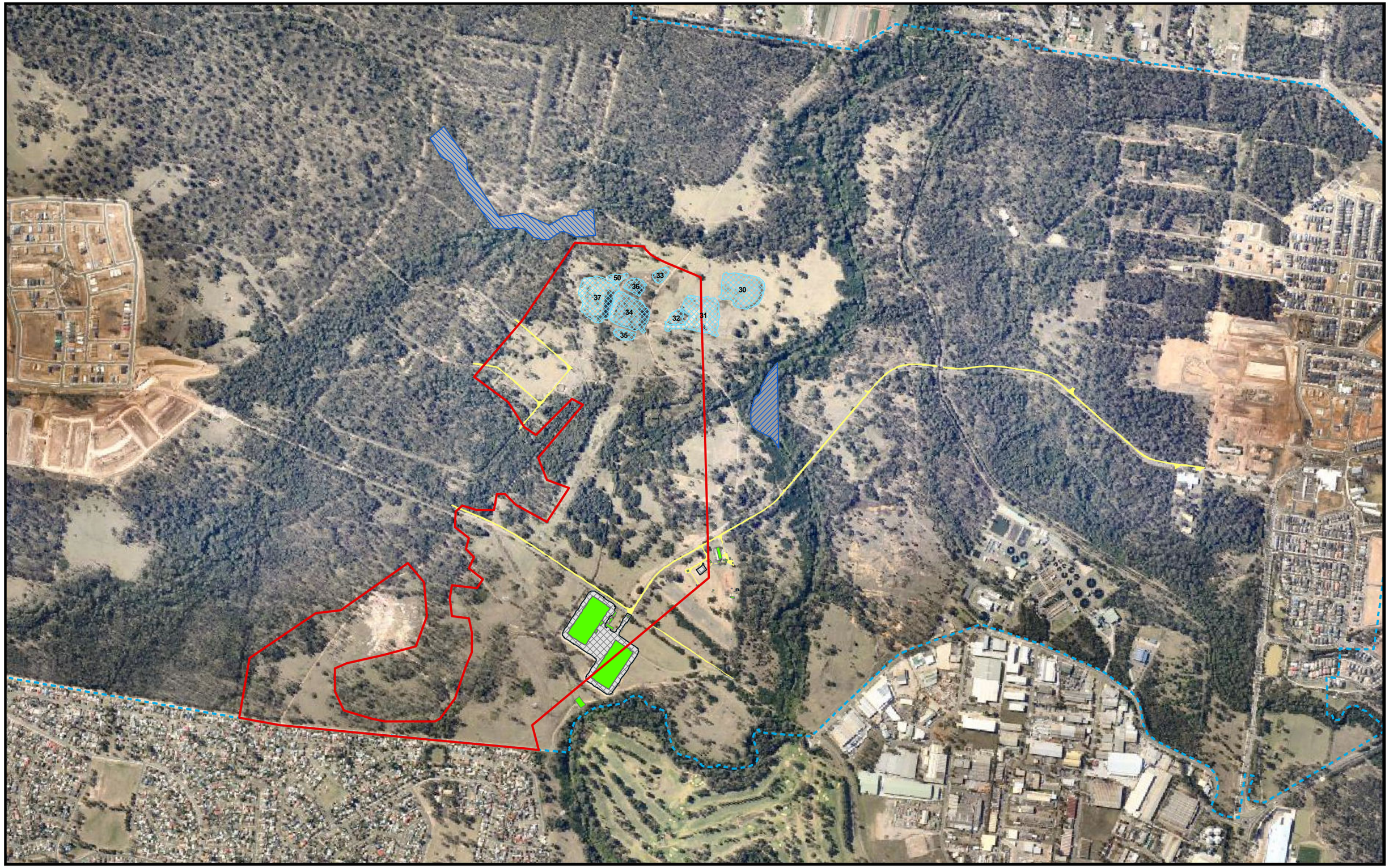
JBS&G

Figure 3A: Central Precinct Site Layout with CHK001/1 Site Audit Boundary and Former Validation Sectors

Client: Maryland Development Company

Project: Central Precinct

Job No: 43352 File Name: 43352_03A



Source: Base Image - © Near Map www.nearmap.com, imagery date 19-09-2013, accessed 24-03-2014

0 120 240 480 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
D	Original Issue - R01	SE	04-02-2015

Legend:

- Central Precinct Residential Boundary
- CHK001/1 Audit Statement Boundary
- CHK001/4 Site 6
- CHK001/5 Site 23
- CHK001/6 Building Extent
- CHK001/6 Concrete Building Footprint
- CHK001/6 Bitumen Roads
- CHK001/7 Stockpile Footprints

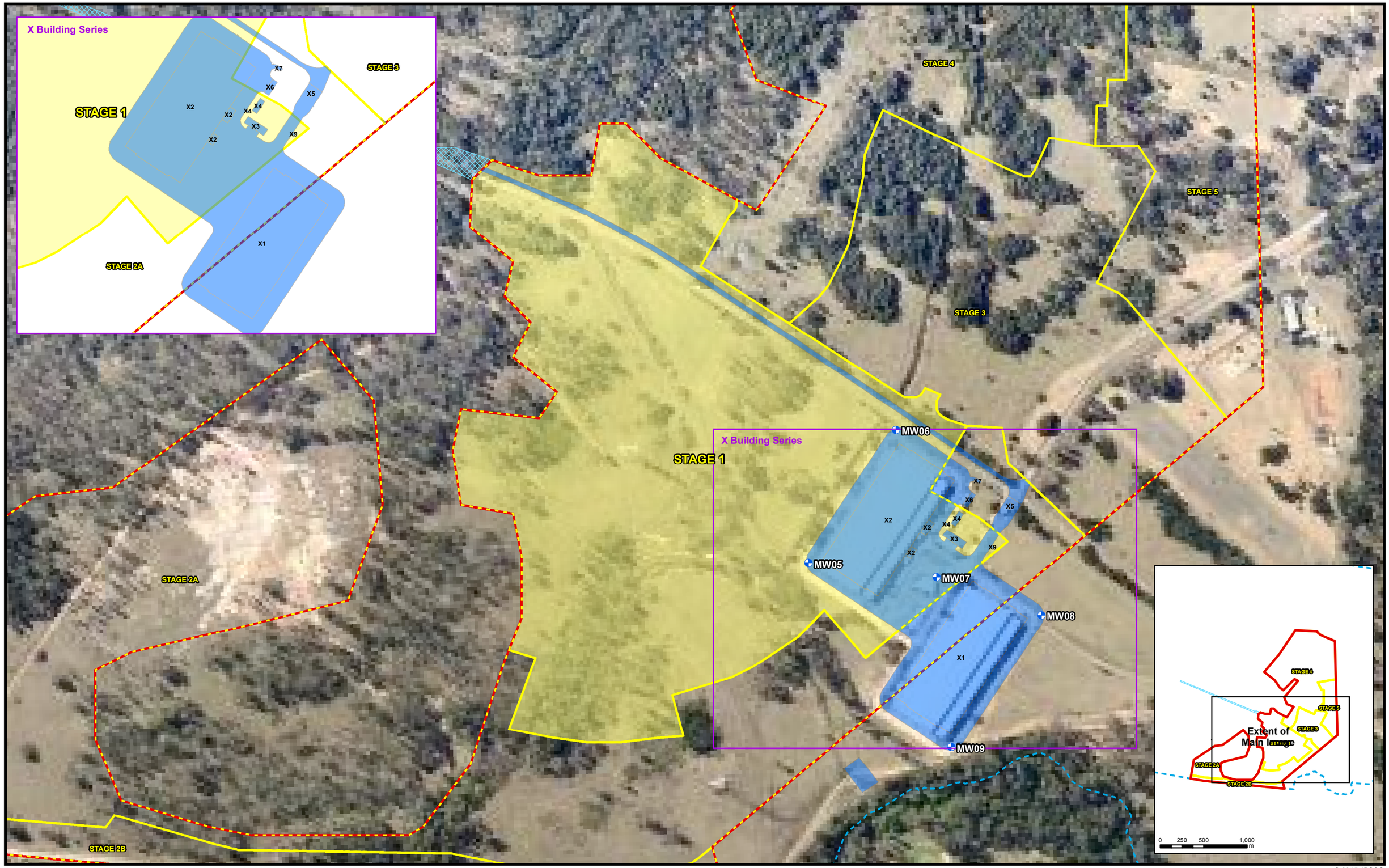
JBS&G

Figure 3B: Central Precinct Site Layout with Site Audit Boundaries

Client: Maryland Development Company

Project: Central Precinct

Job No: 43352 File Name: 43352_03B



Source: Base Image - © Near Map www.nearmap.com, imagery date 19-09-2013, accessed 24-03-2014

0 40 80 160 m

Scale:1:4,000

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
D	Original Issue - R01	SE	18-02-2015

Legend:

- STAGE 1 (25.3ha)
- Central Precinct Residential Boundary
- Stages 1 and 2 - Area Subject to Audit (5.7ha)
- Development Stages Boundary
- Jondan Springs Connector Road - Approximate Location Only
- CHK001/1 Audit Statement Boundary

Reference: Site delineation and features based on Cardno 17-11-2014: Drawing Number 89914020-SK1006 Rev 1

JBS&G

Figure 4A: Stage 1 - Site Layout and Site Subject to Audit

Client: Maryland Development Company

Project: Central Precinct

Job No: 43352 File Name: 43352_04A

Source: Base Image - © Near Map www.nearmap.com, imagery date 19-09-2013, accessed 24-03-2014

0 30 60 120 m

Scale:1:3,000

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
D	Original Issue - R01	SE	18-02-2015

Legend:

- Central Precinct Residential Boundary
- Jordan Springs Road (Stage 1) - Approximate Location Only - Area Subject to Audit (1.2ha)
- Develpment Stages Boundary
- Jondan Springs Connector Road - Approximate Location Only (1.2ha)
- CHK001/1 Audit Statement Boundary

Reference: Site delineation and features based on Cardno 17-11-2014: Drawing Number 89914020-SK1006 Rev 1

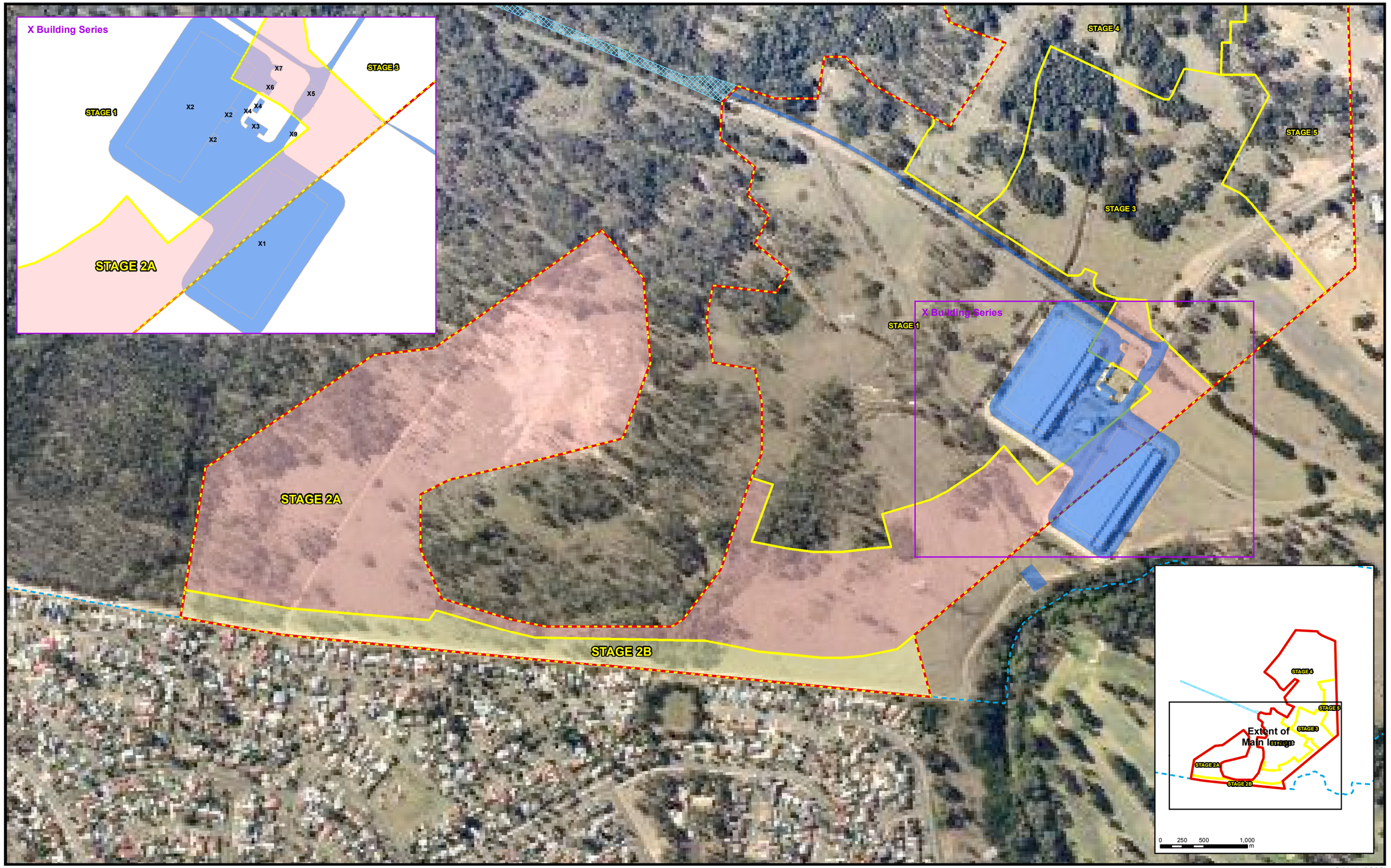
JBS&G

Figure 4B: Jordan Springs Connector Road (Stage 1) Site Layout and Site Subject to Audit

Client: Maryland Development Company

Project: Central Precinct

Job No: 43352 File Name: 43352_04B



Source: Base Image - © Near Map www.nearmap.com, imagery date 19-09-2013, accessed 24-03-2014

0 50 100 200 m

Scale:1:5,000

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
D	Original Issue - R01	SE	18-02-2015

Legend:

- STAGE 2A (28.8ha)
- STAGE 2B (4.6ha)
- Central Precinct Residential Boundary
- Stages 1 and 2 - Area Subject to Audit (5.7ha)
- Development Stages Boundary
- Jondan Springs Connector Road - Approximate Location Only
- CHK001/1 Audit Statement Boundary

Reference: Site delineation and features based on Cardno 17-11-2014: Drawing Number 89914020-SK1006 Rev 1

JBS&G

Figure 4C: Stage 2 - Site Layout and Site Subject to Audit

Client: Maryland Development Company

Project: Central Precinct

Job No: 43352 File Name: 43352_04C

Source: Base Image - © Near Map www.nearmap.com, imagery date 19-09-2013, accessed 24-03-2014

0 25 50 100 m

Scale:1:2,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
D	Original Issue - R01	SE	18-02-2015

Legend:

- STAGE 3 (12.7ha)
- Central Precinct Residential Boundary
- Stage 3 - Area Subject to Audit (0.1ha)
- Development Stages Boundary
- CHK001/1 Audit Statement Boundary

Reference: Site delineation and features based on Cardno 17-11-2014: Drawing Number 89914020-SK1006 Rev 1

JBS&G

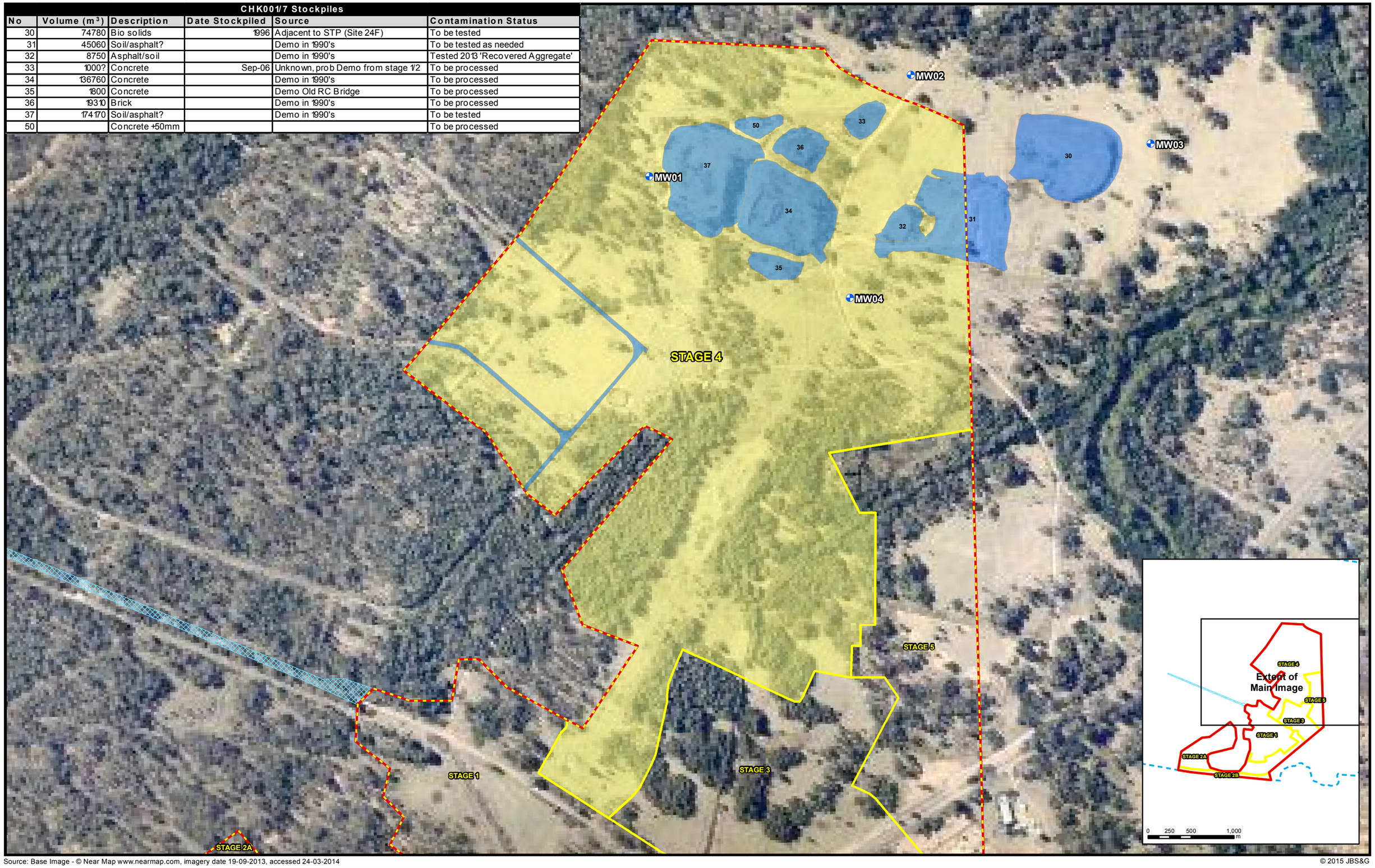
Figure 4D: Stage 3 - Site Layout and Site Subject to Audit

Client: Maryland Development Company

Project: Central Precinct

Job No: 43352 File Name: 43352_04D

CHK001/7 Stockpiles					
No	Volume (m^3)	Description	Date Stockpiled	Source	Contamination Status
30	74780	Bio solids	1996	Adjacent to STP (Site 24F)	To be tested
31	45060	Soil/asphalt?		Demo in 1990's	To be tested as needed
32	8750	Asphalt/soil		Demo in 1990's	Tested 2013 'Recovered Aggregate'
33	1000?	Concrete	Sep-06	Unknown, prob Demo from stage 1/2	To be processed
34	136760	Concrete		Demo in 1990's	To be processed
35	1800	Concrete		Demo Old RC Bridge	To be processed
36	19310	Brick		Demo in 1990's	To be processed
37	174170	Soil/asphalt?		Demo in 1990's	To be tested
50		Concrete +50mm			To be processed



Source: Base Image - © Near Map www.nearmap.com, imagery date 19-09-2013, accessed 24-03-2014

0 50 100 200 m

Scale:1:5,000

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
D	Original Issue - R01	SE	18-02-2015

Legend:
- STAGE 4 (52.1ha)
- Central Precinct Residential Boundary
- Stage 4 - Area Subject to Audit (8.0ha)
- Development Stages Boundary
- Jondan Springs Connector Road - Approximate Location Only
- CHK001/1 Audit Statement Boundary
- Proposed Groundwater Monitorng Well Locations

Reference: Site delineation and features based on Cardno 17-11-2014: Drawing Number 89914020-SK1006 Rev 1

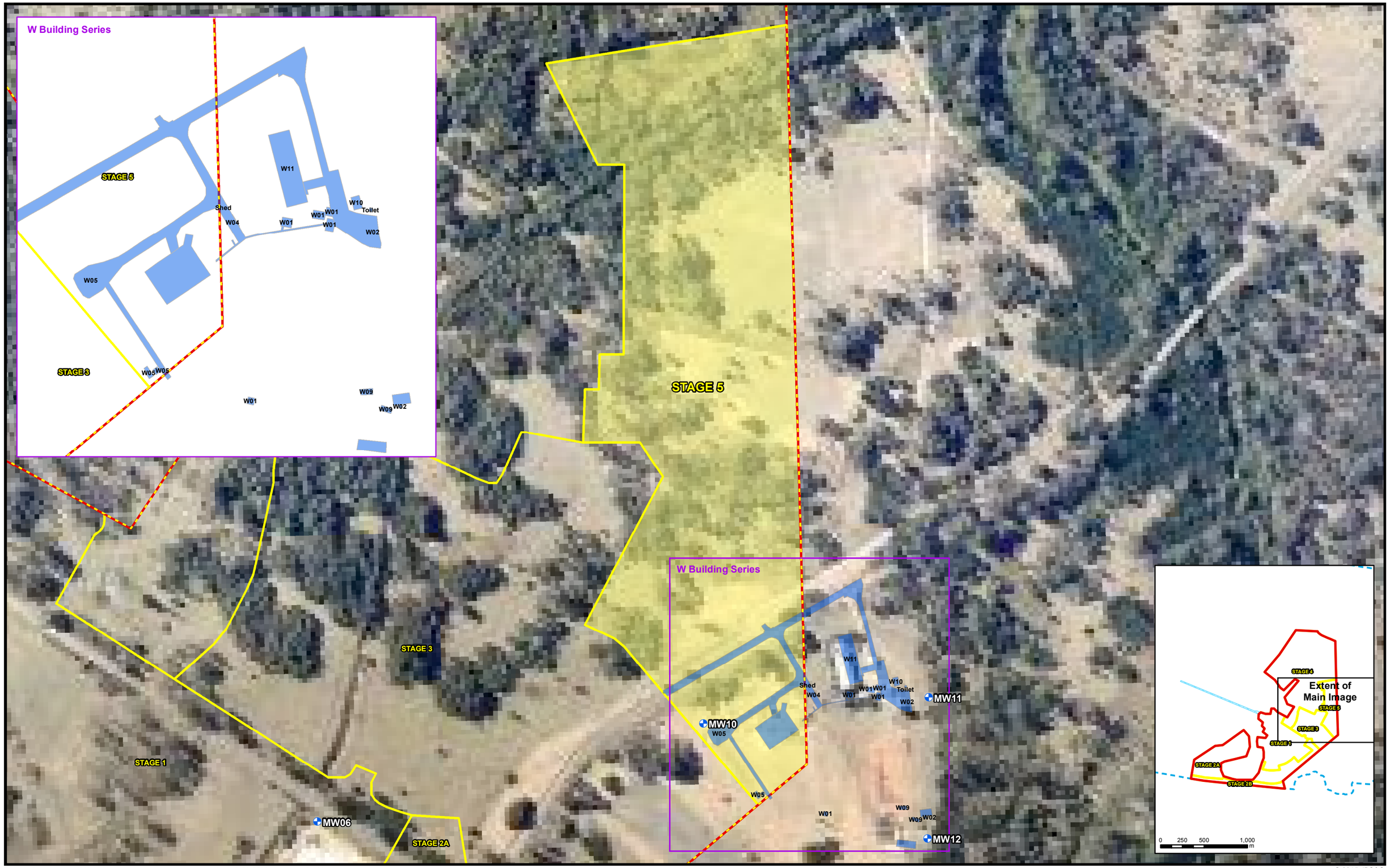
JBS&G

Figure 4E: Stage 4 - Site Layout and Site Subject to Audit

Client: Maryland Development Company

Project: Central Precinct

Job No: 43352 File Name: 43352_04E



Source: Base Image - © Near Map www.nearmap.com, imagery date 19-09-2013, accessed 24-03-2014

0 30 60 120 m

Scale:1:3,000

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
D	Original Issue - R01	SE	19-02-2015

Legend:

- STAGE 5 (9.6ha)
- Central Precinct Residential Boundary
- Stage 5 - Area Subject to Audit (0.5ha)
- Development Stages Boundary
- CHK001/1 Audit Statement Boundary
- Proposed Groundwater Monitorng Well Locations

Reference: Site delineation and features based on Cardno 17-11-2014: Drawing Number 89914020-SK1006 Rev 1

JBS&G

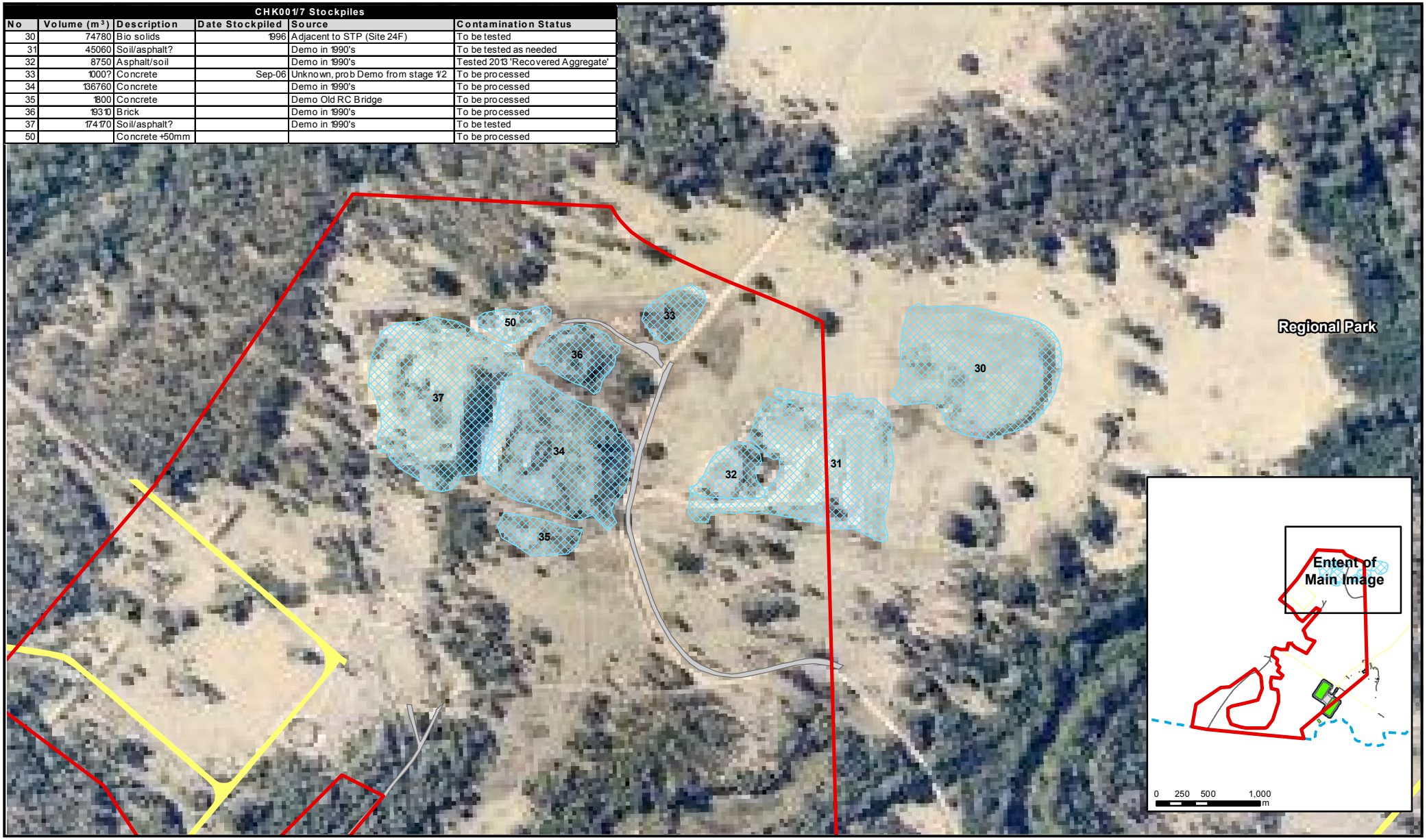
Figure 4F: Stage 5 - Site Layout and Site Subject to Audit

Client: Maryland Development Company

Project: Central Precinct

Job No: 43352 File Name: 43352_04F

CHK001/7 Stockpiles					
No	Volume (m^3)	Description	Date Stockpiled	Source	Contamination Status
30	74780	Bio solids	1996	Adjacent to STP (Site 24F)	To be tested
31	45060	Soil/asphalt?		Demo in 1990's	To be tested as needed
32	8750	Asphalt/soil		Demo in 1990's	Tested 2013 'Recovered Aggregate'
33	1000?	Concrete	Sep-06	Unknown, prob Demo from stage 1/2	To be processed
34	136760	Concrete		Demo in 1990's	To be processed
35	1800	Concrete		Demo Old RC Bridge	To be processed
36	19310	Brick		Demo in 1990's	To be processed
37	174170	Soil/asphalt?		Demo in 1990's	To be tested
50		Concrete +50mm			To be processed



Source: Base Image - © SIX Maps www.maps.six.nsw.gov.au, accessed 26-03-2014

0 50 100 200 m

Scale:1:5,000

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
D	Original Issue - R01	SE	18-02-2015
Rev	Description	Drn.	Date:

Legend:

- Central Precinct Boundary
- CHK001/1 Audit Statement Boundary
- CHK001/1 Dirt Roads
- CHK001/6 Bitumen Roads
- CHK001/7 Stockpile Footprints

Reference: Site delineation and features based on Cardno 17-11-2014: Drawing Number 89914020-SK1006 Rev 1

JBS&G **Figure 5: Stockpile Extents**

Client: Maryland Development

Project: Ropes Crossing - Central Precinct SAQP

Job No: 43352 File Name: 43352_05

Appendix A – Site Audit Statements

NSW Environment Protection Authority
SITE AUDIT STATEMENT (SAS)

Site Audit Statement No.: CHK001/1

Site Auditor (accredited under NSW Contaminated Land Management Act 1997):

Name: Christopher H Kidd Company: HLA-Envirosciences Pty Limited
Address: 55-65 Grandview Street, Pymble, NSW Postcode: 2076
Phone: (02) 9988 4422 Fax: (02) 9988 4441

Site Details

ADI St. Marys Property – excluding Eastern Sector, QEL, Site 6 and Site 23, buildings and concrete stockpile.

Address: Forrester Road, St. Marys	Postcode: 2760
Lot and DP Number:	Lot 2 in DP803832 Lot 2 and 3 in DP223888 (part of) Lot 3 in DP789196 Lot 3 in DP598653 (see attached map for excluded areas)
Local Government Area:	Penrith and Blacktown

Site Audit requested by:

Name: Mr P Newton	Company: Department of Urban Affairs and Planning
Address:	Sydney Region West Level 8, Signature Tower 2-10 Wentworth Street Parramatta NSW 2150 Phone: (02) 9895 7142 - Fax: (02) 9895 6270

Name of contact person (if different from above:

Consultancy(ies) who conducted the site investigation(s) and/or remediation:

• ADI Limited	Chemical and Explosives Ordnance Investigations, Remediation and Validation 1990 - 1999
• Mackie Martin & Associates	Groundwater Investigations, 1991

Title(s) of Report(s) reviewed:

1. Historical Report – St Marys Property, ADI Limited, 1996;
2. Validation Report for the Western Sector, ADI St Marys Facility, ADI Limited November 1994;
3. Validation Report for the North Western Sector of the ADI St Marys Facility, Report No. 498800, ADI Limited 1995;
4. Validation Report for the Southern Sector West of the ADI St Marys Property, Report No. 498810, ADI Limited 1996;

5. Validation Report for the Southern Sector East of the St Marys Property, Report No. 498810, ADI Limited 1996;
6. Validation Report for the Northern Sector of the ADI St Marys Property, Report No. 498820, ADI Limited 1996;
7. Validation Report for the Cental Sector East of the ADI St Marys Property, Report No. 498840, ADI Limited 1997;
8. Validation Report for the Central Sector West of the ADI St Marys Property, Report No. 498840, ADI Limited 1996;
9. Validation Report for the North Eastern Sector of the ADI St Marys Property, Report No. 498850, ADI Limited 1996;
10. QA/Verification Survey Results, ADI St Marys Property, Report No. PG980323da ADI Limited, 1999.

Other Information reviewed:

1. Site Investigation Report of St Marys Facility Ammunition and Missiles Division, Volume 4 – Discussions and Conclusions, ADI, June 1991.
2. Remediation Action Plan for the Northern Sector, ADI St Marys Facility, Report No. 498820, ADI Limited 1996;
3. Remediation Action Plan for Central Eastern Sector, ADI St Marys Facility, Report No. 498840, ADI Limited 1996;
4. Remediation Action Plan for the Eastern Sector of the ADI St Marys Property, Report No. 498830, ADI Limited 1996;
5. Stage I Decontamination Audit, ADI St Marys CMPS&F, 1997.

Summary Site Audit Report Title:

Stage 2 Decontamination Audit Report for ADI Site, St Marys.

I have completed a site audit (as defined in the Contaminated Land Management Act 1997) and reviewed the reports and information referred to above with due regard to relevant laws and guidelines. I certify that the site (tick **all** appropriate boxes)

(a) is suitable for the following use(s):

- ✓ residential, including substantial vegetable garden and poultry;
- ~~☐ residential, including substantial vegetable garden, excluding poultry;~~
- ~~☐ residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry;~~
- ✓ residential with minimal opportunity for soil access including units;
- ✓ daycare centre, preschool, primary school;
- ✓ secondary school;
- ✓ park, recreational open space, playing field;
- ✓ commercial/industrial use;
- ~~☐ Other~~

subject to

✓ Conditions

1. Excludes Eastern Sector, QEL, Site 6 and Site 23 which are covered by separate site audit statements, namely CHK001/2, CHK001/3, CHK001/4 and CHK001/5.
2. Excludes areas not yet investigated including the footprint of original buildings, car parks and roads, mainly around former Administration Centre Buildings CHK001/6) and the concrete stockpile in Central Sector West. (Stockpile CHK001/7)
3. An appropriate management plan, including procedures for the safe handling and disposal of any items of ordnance that may be found during earthworks, should be lodged prior to the commencement of development earthworks. This plan should be similar to the "Remnant Contamination Management Plan" submitted by ADI (see Appendix E of the Site Audit Report).

~~(b) is not suitable for any beneficial use due to risk of harm from contamination~~

~~☐ (comments):~~ .....

I am accredited by the NSW Environment Protection Authority under the Contaminated Land Management Act, 1997 as a site auditor (Accreditation No. 9813).

I **Certify** that:

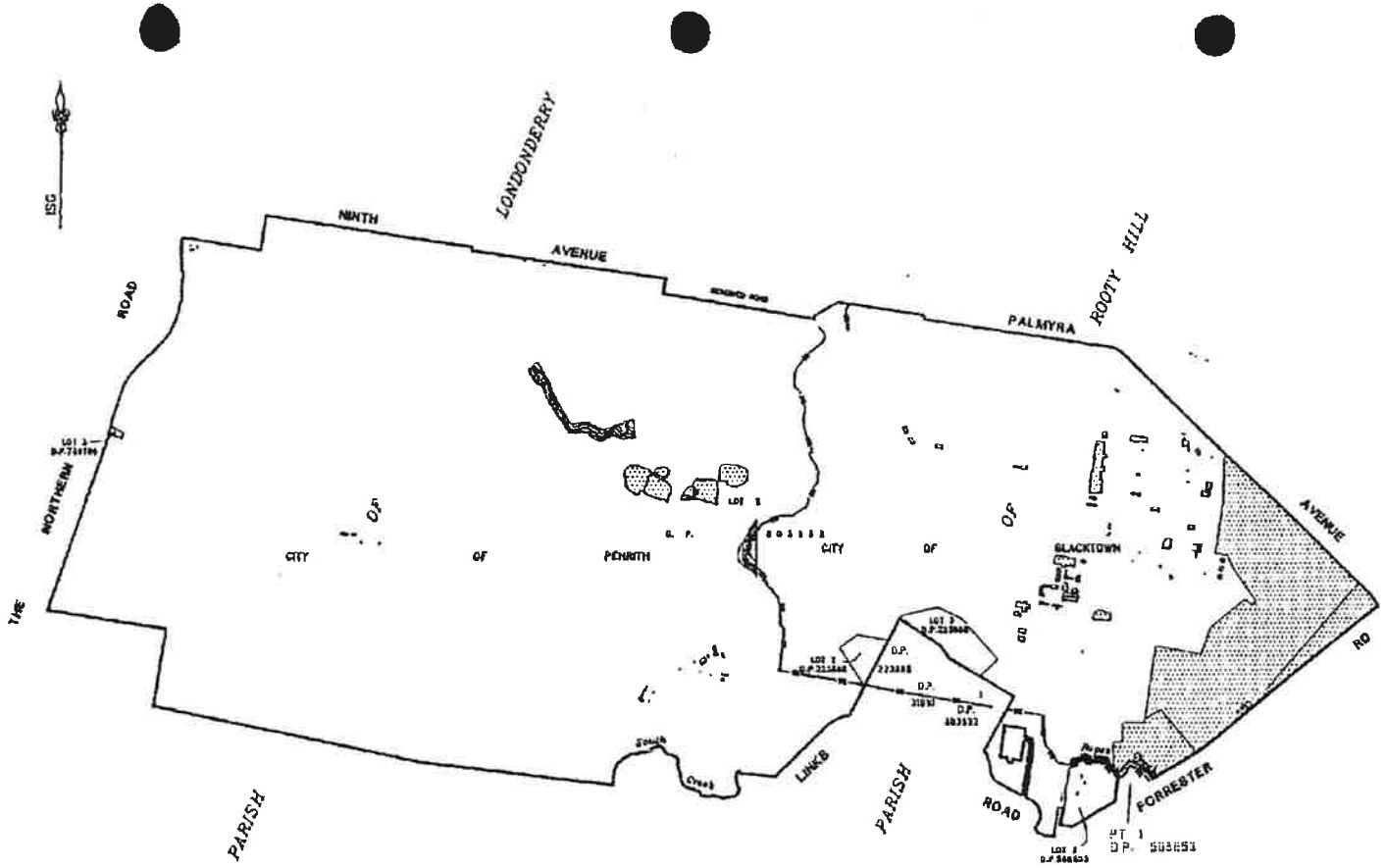
(a) I have personally examined and am familiar with the information contained in this statement, including the reports and information referred to in this statement, and

(b) this statement is to the best of my knowledge, true, accurate and complete, and

(c) on the basis of my inquiries made to those individuals immediately responsible for making the reports, and obtaining the information, referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties for wilfully submitting false, inaccurate or incomplete information.

Signed: _____ Date: 7/6/99



SHADED AREAS ARE EXCLUDED FROM AUDIT STATEMENT CHK001/1

NOTE :

GEOMETRY SHOWN AS SUPPLIED BY ADI LIMITED TO OHN OFFICE 10.5.1999

FOR SITE DETAILS ON EXCLUDED AREAS PLEASE REFER TO DRAWINGS :

5467-123
5467-125
5467-126
5467-127
5467-128
5467-129
5467-130
5467-131
5467-132
5467-133
5467-134
5467-135

NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Cosmetic Engineers

Whelans Australia Pty Ltd

Head Office:

Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
Telephone 02) 9283 2400
Facsimile 02) 9261 5012

Parramatta Office:

Level 1, Suite 2
12 Victoria Road, Parramatta.
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI Property

ADI ST MARYS PROPERTY PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/1

ORIGINAL SIZE: A3	
SCALE HOR: 1 : 25,000	VERT: -
CO-ORDS: ISG	DATUM: -
DATE OF SURVEY	DATE OF PLAN: 11 May 1999
SURVEY -	DRAWN Aust/MTB
CHECKED: MTB	DATE 24.5.1999
APPROVED: PW	DATE 24.5.1999
JOB REF: 8662	
CAD REF: 5467-122.DWG	SHEET 1 OF 13 SHEETS

NSW Environment Protection Authority

SITE AUDIT STATEMENT (SAS)

Site Audit Statement No.: CHK001/4

Site auditor (accredited under NSW Contaminated Land Management Act 1997):

Name: Christopher H Kidd Company: HLA-Enviroscience Pty Limited
Address: 55-65 Grandview Street, Pymble, NSW Postcode: 2076
Phone: (02) 9988 4422 Fax: (02) 9988 4441

Site Details

ADI St. Marys Property –Site 6
Address: Forrester Road, St. Marys Postcode: 2760
Lot and DP Number: Lot 2 in DP803832 (part of)
(see attached map)
Local Government Area: Penrith and Blacktown

Site Audit requested by:

Name: Mr P Newton Company: Department of Urban Affairs and Planning
Address: Sydney Region West
Level 8, Signature Tower
2-10 Wentworth Street
Parramatta NSW 2150
Phone: (02) 9895 7142 - Fax: (02) 9895 6270

Name of contact person (if different from above:

Consultancy(ies) who conducted the site investigation(s) and/or remediation:

- ADI Limited — Chemical and Explosives Ordnance Investigations, Remediation and Validation 1990-1999
- Mackie Martin & Associates — Groundwater Investigations, 1991

Title(s) of Report(s) reviewed:

1. Historical Report – St Marys Property, ADI Limited, 1996;
2. Validation Report for the North Western Sector of the ADI St Marys Facility, Report No. 498800, ADI Limited 1995;
3. QA/Verification Survey Results, ADI St Marys Property, Report No. PG980323da ADI Limited, 1999.

Other Information reviewed:

1. Site Investigation Report of St Marys Facility Ammunition and Missiles Division, Volume 4 – Discussions and Conclusions, ADI, June 1991.
2. Stage I Decontamination Audit, ADI St Marys CMPS&F, 1997.

Summary Site Audit Report Title:

Stage 2 Decontamination Audit Report for ADI Site, St Marys.

I have completed a site audit (as defined in the Contaminated Land Management Act 1997) and reviewed the reports and information referred to above with due regard to relevant laws and guidelines. I certify that the site (tick **all** appropriate boxes)

(a) **is suitable for the following use(s):**

- ✓ residential, including substantial vegetable garden and poultry;
- ~~❑ residential, including substantial vegetable garden, excluding poultry;~~
- ~~❑ residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry;~~
- ✓ residential with minimal opportunity for soil access including units;
- ✓ daycare centre, preschool, primary school;
- ✓ secondary school;
- ✓ park, recreational open space, playing field;
- ✓ commercial/industrial use;
- ~~❑ Other~~

subject to

- ✓ Conditions

1. Appropriate management plan including procedures for the safe handling and disposal of any items of explosive ordnance, shall be in place before development earthworks commences and shall remain in place to cover any excavation on the site during its ongoing use. This plan should be similar to the "Remnant Contamination Management Plan" submitted by ADI (see Appendix E of the Site Audit Report).
2. The final surface of any earthworks in areas which are to be used for active recreational land uses, e.g. sports grounds, school grounds and picnic areas, or low density residential use, should, on completion of the earthworks, be surveyed with a metal detector by appropriately qualified and experienced personnel, and the work reviewed by an independent site auditor.

~~(b) is not suitable for any beneficial use due to risk of harm from contamination~~
~~❑ (comments):~~ .....

I am accredited by the NSW Environment Protection Authority under the Contaminated Land Management Act, 1997 as a Site Auditor (Accreditation No. 9813).

I Certify that:

(a) I have personally examined and am familiar with the information contained in this statement,

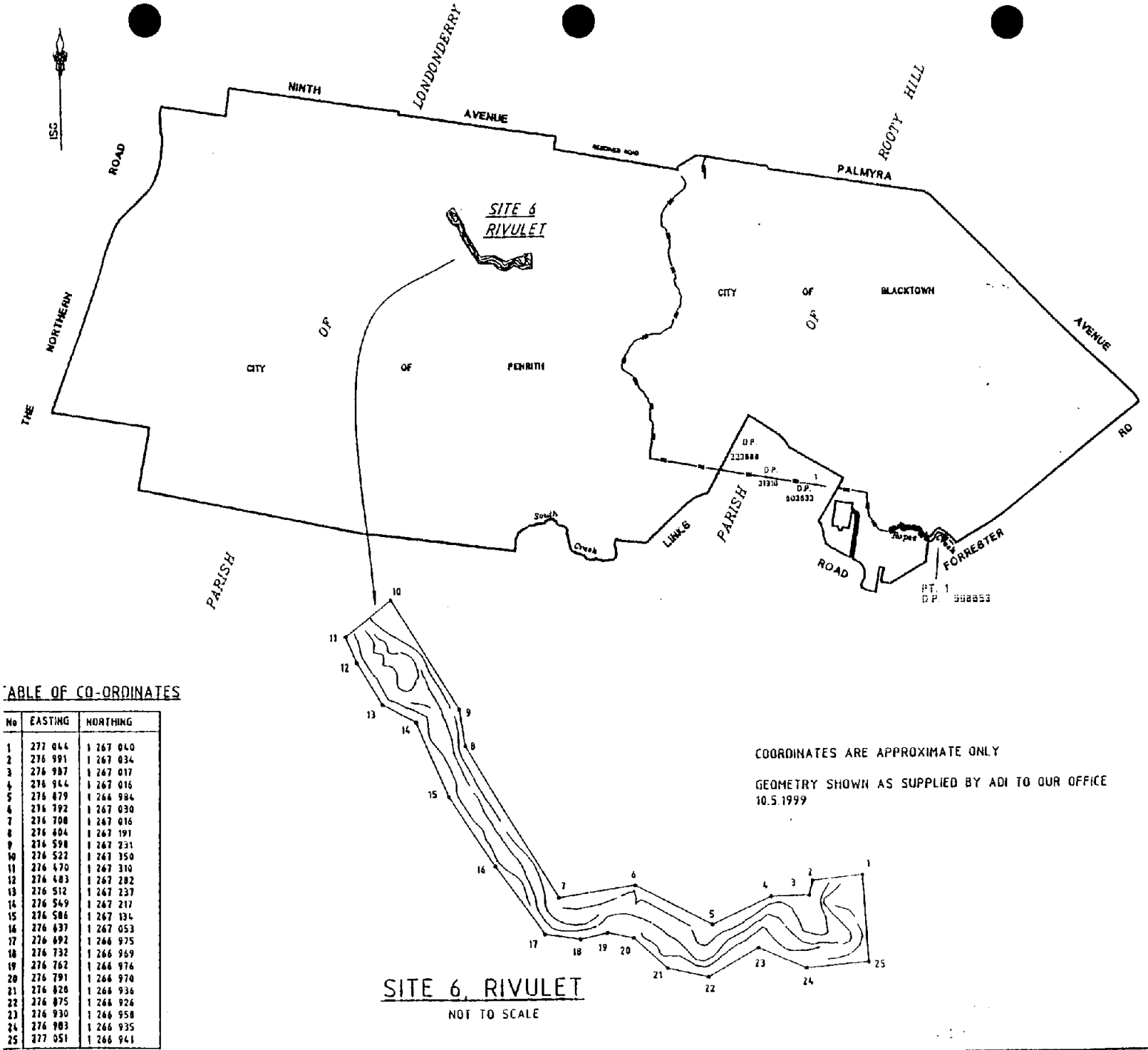
(b) including the reports and information referred to in this statement, and

(c) this statement is to the best of my knowledge, true, accurate and complete, and

(d) on the basis of my inquiries made to those individuals immediately responsible for making the reports, and obtaining the information, referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties for wilfully submitting false, inaccurate or incomplete information.

Signed: _____ Date: 7/6/99



SITE 6, RIVULET

NOT TO SCALE

COORDINATES ARE APPROXIMATE ONLY

GEOMETRY SHOWN AS SUPPLIED BY ADI TO OUR OFFICE 10.5.1999

TABLE OF CO-ORDINATES

No	EASTING	NORTHING
1	277 044	1 267 040
2	276 991	1 267 034
3	276 987	1 267 017
4	276 944	1 267 016
5	276 879	1 266 984
6	276 792	1 267 030
7	276 708	1 267 016
8	276 604	1 267 191
9	276 598	1 267 231
10	276 522	1 267 350
11	276 470	1 267 310
12	276 483	1 267 282
13	276 512	1 267 237
14	276 549	1 267 217
15	276 586	1 267 134
16	276 637	1 267 053
17	276 692	1 266 975
18	276 732	1 266 969
19	276 762	1 266 976
20	276 791	1 266 970
21	276 828	1 266 936
22	276 875	1 266 926
23	276 930	1 266 958
24	276 983	1 266 935
25	277 051	1 266 941

NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Spatial Engineers

Whelans Australia Pty Ltd

Head Office:

Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
Telephone 02) 9283 2400
Facsimile 02) 9261 5012

Parramatta Office:

Level 1, Suite 2
12 Victoria Road, Parramatta.
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI Property

ADI ST MARYS PROPERTY
SITE 6 RIVULET WITHIN REGIONAL PARK
PLAN TO ACCOMPANNY SITE AUDIT STATEMENT CHK001/4

ORIGINAL SIZE:		A3	
SCALE HOR:	1 : 25,000	VERT:	–
CO-ORDS:	ISG	DATUM:	–
DATE OF SURVEY		DATE OF PLAN:	11 May 1999
SURVEY	–	DRAWN	Acad/DDW
CHECKED:	DDW	DATE	24.5.1999
APPROVED:	PW	DATE	24.5.1999
JOB REF:	8662		
CAD REF:	5467-131.DWG	SHEET 4	OF 13 SHEETS

NSW Environment Protection Authority

SITE AUDIT STATEMENT (SAS)

Site Audit Statement No.: CHK001/5

Site auditor (accredited under NSW Contaminated Land Management Act 1997):

Name: Christopher H Kidd Company: HLA-Envirosciences Pty Limited
Address: 55-65 Grandview Street, Pymble, NSW Postcode: 2076
Phone: (02) 9988 4422 Fax: (02) 9988 4441

Site Details

ADI St. Marys Property –Site 23
Address: Forrester Road, St. Marys Postcode: 2760
Lot and DP Number: Lot 2 in DP803832 (part of)
(see attached map)
Local Government Area: Penrith and Blacktown

Site Audit requested by:

Name: Mr P Newton Company: Department of Urban Affairs and Planning
Address: Sydney Region West
Level 8, Signature Tower
2-10 Wentworth Street
Parramatta NSW 2150
Phone: (02) 9895 7142 - Fax: (02) 9895 6270

Name of contact person (if different from above:

Consultancy(ies) who conducted the site investigation(s) and/or remediation:

- ADI Limited — Chemical and Explosives Ordnance Investigations, Remediation and Validation 1990-1999
- Mackie Martin & Associates — Groundwater Investigations, 1991

Title(s) of Report(s) reviewed:

1. Historical Report – St Marys Property, ADI Limited, 1996;
2. Validation Report for the Central Sector West of the ADI St Marys Property, Report No. 498840, ADI Limited 1996;
3. QA/Verification Survey Results, ADI St Marys Property, Report No. PG980323da ADI Limited, 1999.

Other Information reviewed:

1 Site Investigation Report of St Marys Facility Ammunition and Missiles Division, Volume 4 – Discussions and Conclusions, ADI, June 1991.
2 Stage I Decontamination Audit, ADI St Marys CMPS&F, 1997.

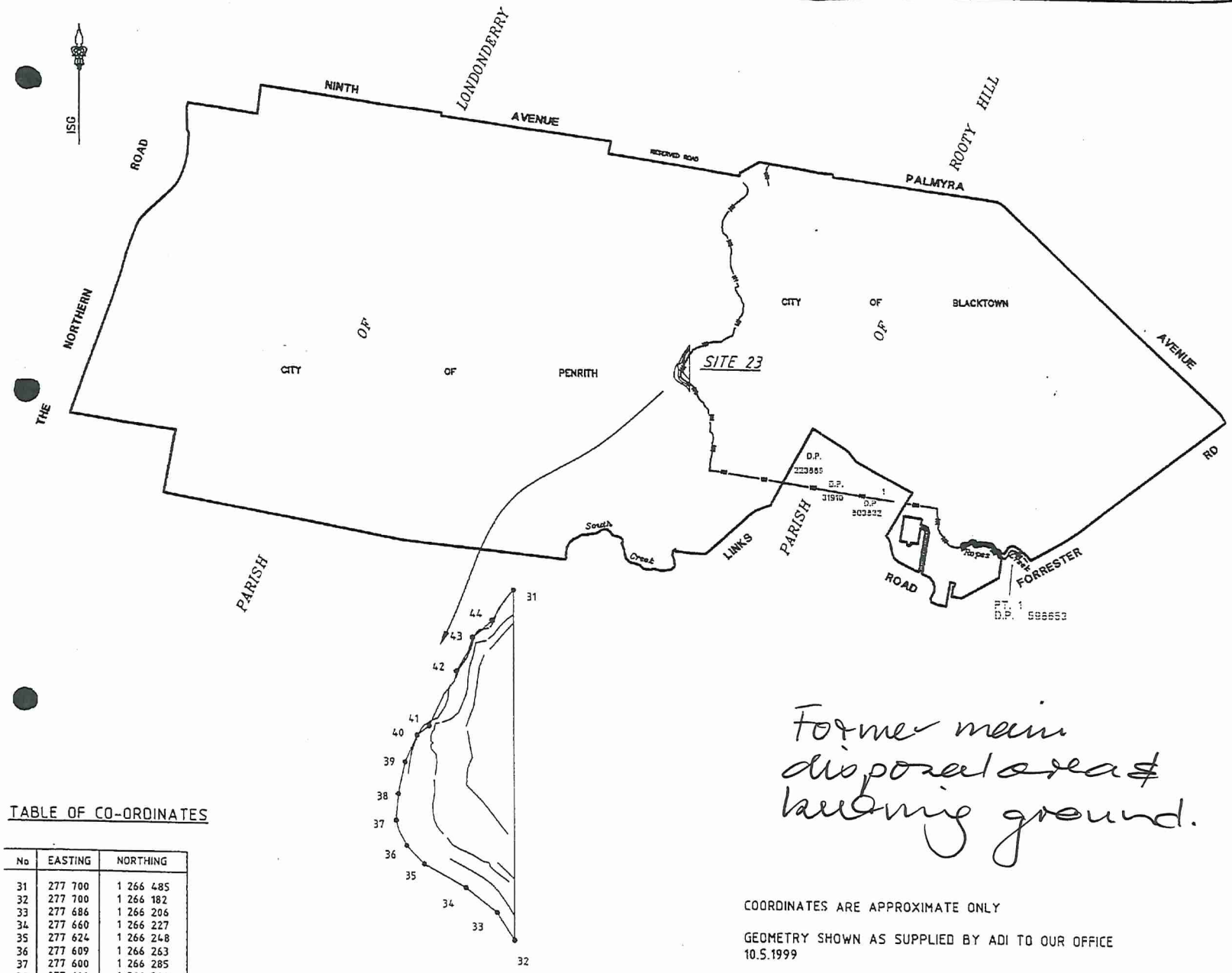


TABLE OF CO-ORDINATES

No	EASTING	NORTHING
31	277 700	1 266 485
32	277 700	1 266 182
33	277 686	1 266 206
34	277 660	1 266 227
35	277 624	1 266 248
36	277 609	1 266 263
37	277 600	1 266 285
38	277 602	1 266 308
39	277 608	1 266 336
40	277 618	1 266 359
41	277 629	1 266 367
42	277 652	1 266 414
43	277 666	1 266 444
44	277 682	1 266 458

SITE 23

NOT TO SCALE

Former main disposal area & batching ground.

COORDINATES ARE APPROXIMATE ONLY

GEOMETRY SHOWN AS SUPPLIED BY ADI TO OUR OFFICE 10.5.1999

NOTES:

PREPARED BY:

Whelans Surveyors Planners Geomatic Engineers

Whelans Australia Pty Ltd

Head Office:

Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
Telephone 02) 9283 2400
Facsimile 02) 9261 5012

Parramatta Office:

Level 1, Suite 2
12 Victoria Road, Parramatta.
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI Property

ADI ST MARYS PROPERTY
SITE 23 WITHIN REGIONAL PARK.

PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/5

ORIGINAL SIZE:	A3		
SCALE HOR:	1 : 25,000	VERT:	–
CO-ORDS:	ISG	DATUM:	–
DATE OF SURVEY		DATE OF PLAN:	11 May 1999
SURVEY	–	DRAWN	Acad/DDW
CHECKED:	DDW	DATE	24.5.1999
APPROVED:	PW	DATE	24.5.1999
JOB REF:	8662		
CAD REF:	5467-132.DWG	SHEET 3	OF 13 SHEETS

NSW Environment Protection Authority
SITE AUDIT STATEMENT (SAS)

Site Audit Statement No.: CHK001/6

Site Auditor (accredited under NSW Contaminated Land Management Act 1997):

Name: Christopher H Kidd Company: HLA-Envirosciences Pty Limited
Address: 55-65 Grandview Street, Pymble, NSW Postcode: 2076
Phone: (02) 9988 4422 Fax: (02) 9988 4441

Site Details

ADI St. Marys Property – existing buildings and paved areas scattered about the site.
Address: Forrester Road, St. Marys Postcode: 2760
Lot and DP Number: Lot 2 in DP803832
Lot 2 and 3 in DP223888 (part of)
Lot 3 in DP789196
Lot 3 in DP598653
(see attached 7 maps)
Local Government Area: Penrith and Blacktown

Site Audit requested by:

Name: Mr P Newton Company: Department of Urban Affairs and Planning
Address: Sydney Region West
Level 8, Signature Tower
2-10 Wentworth Street
Parramatta NSW 2150
Phone: (02) 9895 7142 - Fax: (02) 9895 6270

Name of contact person (if different from above:

Consultancy(ies) who conducted the site investigation(s) and/or remediation:

- ADI Limited — Chemical and Explosives Ordnance Investigations, Remediation and Validation 1990 - 1999
- Mackie Martin & Associates — Groundwater Investigations, 1991

Title(s) of Report(s) reviewed:

11. Historical Report – St Marys Property, ADI Limited, 1996;
12. Validation Report for the Western Sector, ADI St Marys Facility, ADI Limited November 1994;
13. Validation Report for the North Western Sector of the ADI St Marys Facility, Report No. 498800, ADI Limited 1995;
14. Validation Report for the Southern Sector West of the ADI St Marys Property, Report No. 498810, ADI Limited 1996;

15. Validation Report for the Southern Sector East of the St Marys Property, Report No. 498810, ADI Limited 1996;
16. Validation Report for the Northern Sector of the ADI St Marys Property, Report No. 498820, ADI Limited 1996;
17. Validation Report for the Cental Sector East of the ADI St Marys Property, Report No. 498840, ADI Limited 1997;
18. Validation Report for the Central Sector West of the ADI St Marys Property, Report No. 498840, ADI Limited 1996;
19. Validation Report for the North Eastern Sector of the ADI St Marys Property, Report No. 498850, ADI Limited 1996;
20. QA/Verification Survey Results, ADI St Marys Property, Report No. PG980323da ADI Limited, 1999.

Other Information reviewed:

6. Site Investigation Report of St Marys Facility Ammunition and Missiles Division, Volume 4 – Discussions and Conclusions, ADI, June 1991.
7. Remediation Action Plan for the Northern Sector, ADI St Marys Facility, Report No. 498820, ADI Limited 1996;
8. Remediation Action Plan for Central Eastern Sector, ADI St Marys Facility, Report No. 498840, ADI Limited 1996;
9. Remediation Action Plan for the Eastern Sector of the ADI St Marys Property, Report No. 498830, ADI Limited 1996;
10. Stage I Decontamination Audit, ADI St Marys CMPS&F, 1997.

Summary Site Audit Report Title:

Stage 2 Decontamination Audit Report for ADI Site, St Marys.

I have completed a site audit (as defined in the Contaminated Land Management Act 1997) and reviewed the reports and information referred to above with due regard to relevant laws and guidelines. I certify that the site (tick **all** appropriate boxes)

(a) is suitable for the following use(s):

- ~~☐ residential, including substantial vegetable garden and poultry;~~
- ~~☐ residential, including substantial vegetable garden, excluding poultry;~~
- ~~☐ residential with accessible soil, including garden (minimal home grown produce contributing less than 10% fruit and vegetable intake), excluding poultry;~~
- ~~☐ residential with minimal opportunity for soil access including units;~~
- ~~☐ daycare centre, preschool, primary school;~~
- ~~☐ secondary school;~~
- ~~☐ park, recreational open space, playing field;~~
- ✓ commercial/industrial use;
- ✓ Other – May continue to be used for existing commercial use and carparks, but underlying soils need to be tested for chemical and ordnance contamination after demolition.

subject to

✓ Conditions

1. Soils under existing buildings, car parks, roads and the concrete stockpile shall be tested for ordnance and/or chemical contamination when these facilities are removed; site audits statements for these areas will also be required.
2. An appropriate management plan, including procedures for the safe handling and disposal of any items of ordnance that may be found during earthworks, should be lodged prior to the commencement of development earthworks. This plan should be similar to the "Remnant Contamination Management Plan" submitted by ADI (see Appendix E of the Site Audit Report).

~~(b) is not suitable for any beneficial use due to risk of harm from contamination~~ per

☐ ~~(comments):~~ per .....

I am accredited by the NSW Environment Protection Authority under the Contaminated Land Management Act, 1997 as a Site Auditor (Accreditation No. 9813).

I Certify that:

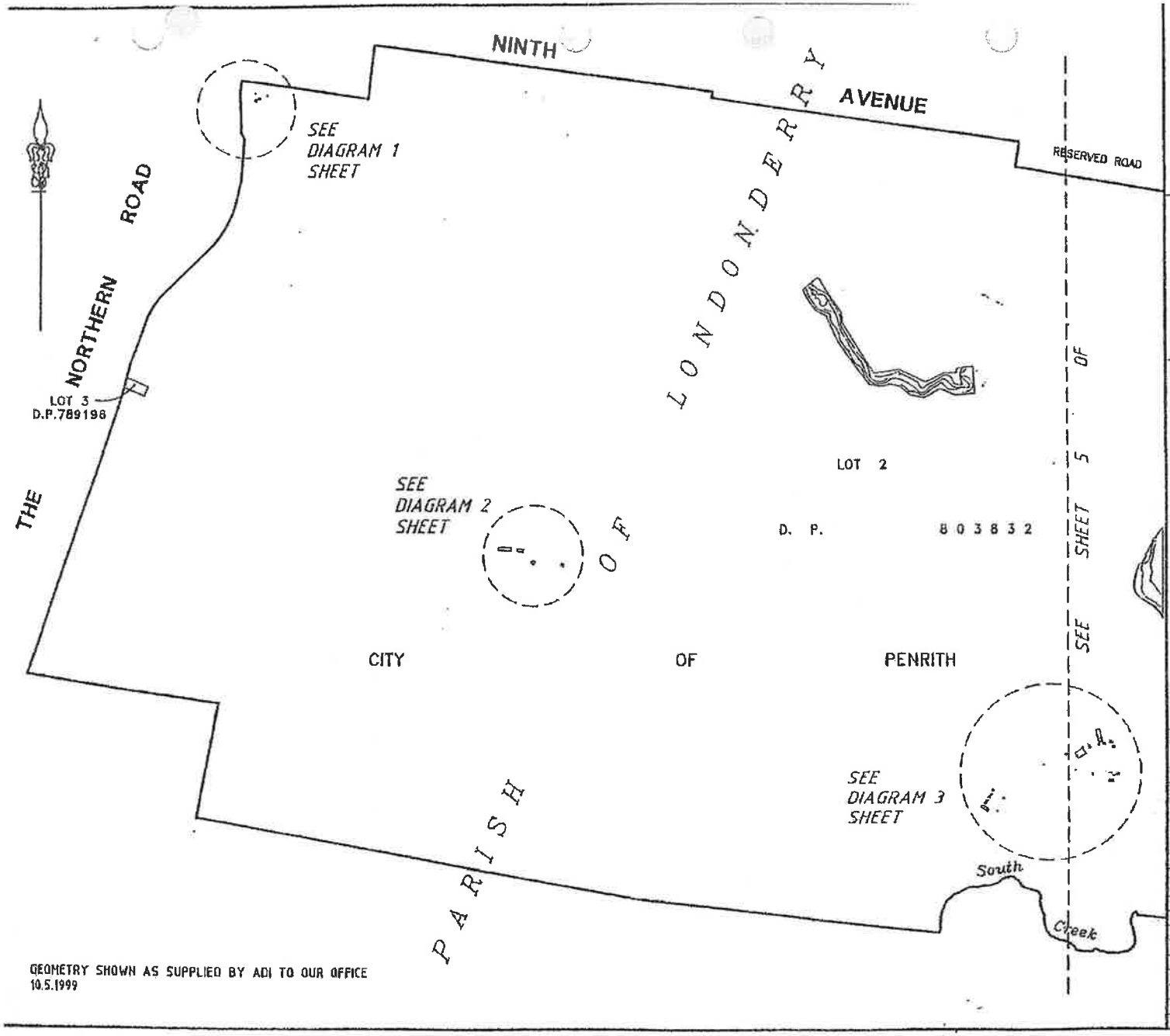
(a) I have personally examined and am familiar with the information contained in this statement, including the reports and information referred to in this statement, and

(b) this statement is to the best of my knowledge, true, accurate and complete, and

(c) on the basis of my inquiries made to those individuals immediately responsible for making the reports, and obtaining the information, referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties for wilfully submitting false, inaccurate or incomplete information.

Signed: _____ Date: 7/6/99



GEOMETRY SHOWN AS SUPPLIED BY ADI TO OUR OFFICE 10.5.1999

NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Geomatic Engineers

Whelans Australia Pty Ltd

Head Office:

Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
Telephone 02) 9283 2400
Facsimile 02) 9261 5012

Parramatta Office:

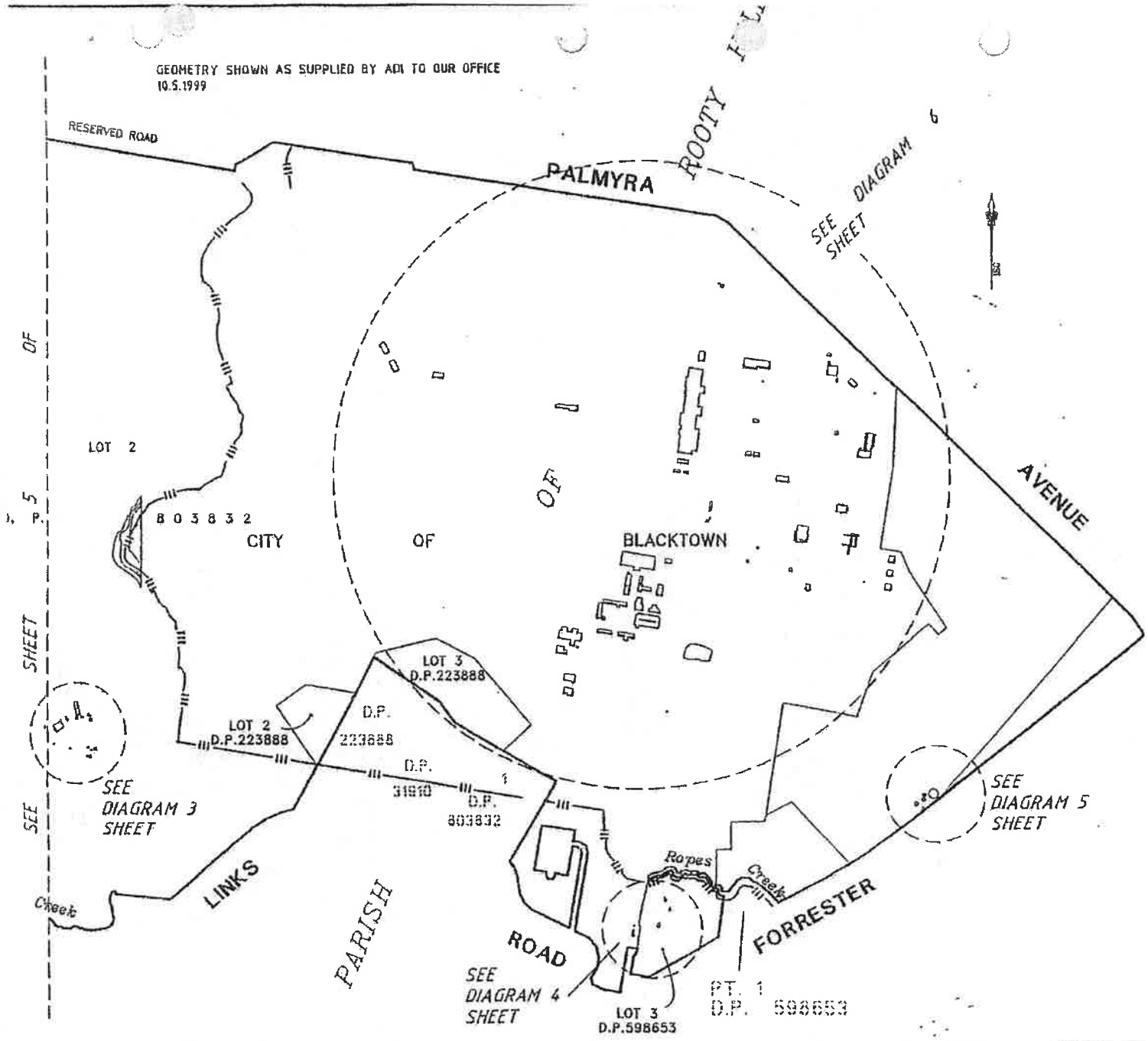
Level 1, Suite 2
12 Victoria Road, Parramatta.
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI PROPERTY

ADI ST MARYS PROPERTY RETAINED BUILDINGS/PAVED AREA PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/6

ORIGINAL SIZE: A3	
SCALE HOR: 1:2500	VERT:
CO-ORDS:	DATUM:
DATE OF SURVEY	DATE OF PLAN: 19 MAY 1999
SURVEY	DRAWN DDW
CHECKED: DDW	DATE 24.5.1999
APPROVED: PW	DATE 24.5.1999
JOB REF: 8662	
CAD REF: 5467-126	SHEET 7 OF 13 SHEETS



NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Geomatic Engineers

Whelans Australia Pty Ltd

Head Office:

Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
Telephone 02) 9283 2400
Facsimile 02) 9261 5012

Parramatta Office:

Level 1, Suite 2
12 Victoria Road, Parramatta.
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI PROPERTY

ADI ST MARYS PROPERTY RETAINED BUILDINGS/PAVED AREA PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/6

ORIGINAL SIZE:		A3	
SCALE HOR:	12500	VERT:	
CO-ORDS:		DATUM:	
DATE OF SURVEY		DATE OF PLAN:	19 MAY 1999
SURVEY		DRAWN	DDW
CHECKED:	DDW	DATE	24.5.1999
APPROVED:	PW	DATE	24.5.1999
JOB REF:	8662		
CAD REF:	5467-125	SHEET 6	OF 13 SHEETS

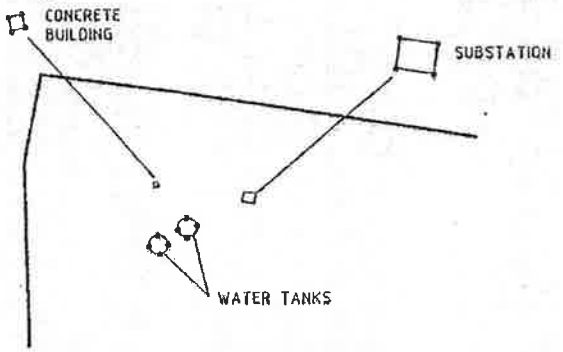


DIAGRAM 1

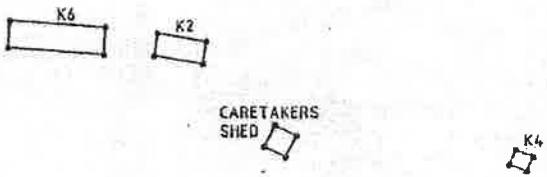


DIAGRAM 2

CONCRETE BUILDING	274588 1267987 274590 1267987 274590 1267985 274588 1267985
SUBSTATION	274625 1267979 274626 1267983 274631 1267982 274630 1267978
WATERTANK	274606 1267968 274603 1267964 274598 1267968 274602 1267972
WATERTANK	274589 1267965 274586 1267960 274591 1267957 274594 1267960
K6	275465 1266407 275425 1266410 275426 1266422 275466 1266419
K2	275507 1266403 275487 1266407 275488 1266416 275508 1266413
CARETAKERS SHED	275532 1266368 275537 1266377 275546 1266373 275541 1266364
K4	275642 1266357 275635 1266360 275637 1266367 275645 1266364

COORDINATES ARE APPROXIMATE ONLY

GEOMETRY SHOWN AS SUPPLIED BY ADI TO OUR OFFICE 10.5.1999

NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Geomatic Engineers

Whelans Australia Pty Ltd

Head Office:

Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
Telephone 02) 9283 2400
Facsimile 02) 9261 5012

Parramatta Office:

Level 1, Suite 2
12 Victoria Road, Parramatta.
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI PROPERTY

ADI ST MARYS PROPERTY RETAINED BUILDINGS/PAVED AREA PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/6

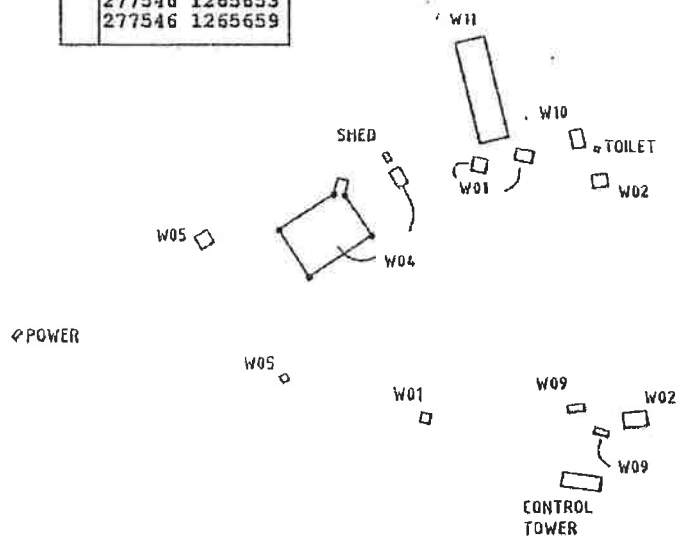
ORIGINAL SIZE:	A3		
SCALE HOR:	2000	VERT:	
CO-ORDS:		DATUM:	
DATE OF SURVEY		DATE OF PLAN:	MAY 1999
SURVEY		DRAWN	ODW
CHECKED:	ODW	DATE	24.5.1999
APPROVED:	PW	DATE	24.5.1999
JOB REF:	8862		
CAD REF:	5467-127	SHEET 8	OF 13 SHEETS

BDG No	EASTING	NORTHING
X7	277113	1265596
	277111	1265594
	277105	1265598
	277107	1265601
X6	277106	1265581
	277101	1265585
	277091	1265570
	277096	1265566
X4	277076	1265549
	277082	1265545
	277091	1265559
	277086	1265563
X3	277067	1265535
	277072	1265542
	277094	1265527
	277089	1265520
X9	277127	1265521
	277125	1265518
	277122	1265520
	277124	1265523
X5	277142	1265565
	277145	1265563
	277150	1265568
	277145	1265571

BDG No	EASTING	NORTHING
W01	277452	1265655
	277456	1265654
	277457	1265658
	277453	1265658
	277475	1265762
	277481	1265760
	277479	1265755
	277474	1265756
	277493	1265765
	277500	1265764
	277499	1265759
	277492	1265760
W04	277433	1265729
	277407	1265712
	277395	1265731
	277418	1265746
	277444	1265749
	277440	1265755
	277444	1265758
	277448	1265751
W05	277399	1265671
	277397	1265674
	277395	1265672
	277396	1265670
	277360	1265728
	277365	1265731
	277368	1265726
	277363	1265723

BDG No	EASTING	NORTHING
TOILET	277519	1265773
	277521	1265766
	277516	1265765
	277514	1265772
POWER	277283	1265688
	277285	1265686
	277287	1265689
	277286	1265691
W11	277477	1265767
	277468	1265809
	277480	1265811
	277489	1265770
SHED	277439	1265759
	277437	1265763
	277439	1265764
	277441	1265761
CONTROL TOWER	277453	1265658
	277511	1265634
	277527	1265632
	277526	1265626

BDG No	EASTING	NORTHING
W09	277529	1265648
	277530	1265651
	277524	1265652
	277524	1265650
	277513	1265658
	277513	1265661
	277520	1265662
	277520	1265659
W02	277453	1265658
	277511	1265634
	277527	1265632
	277526	1265626
	277536	1265658
	277536	1265652
	277546	1265653
	277546	1265659



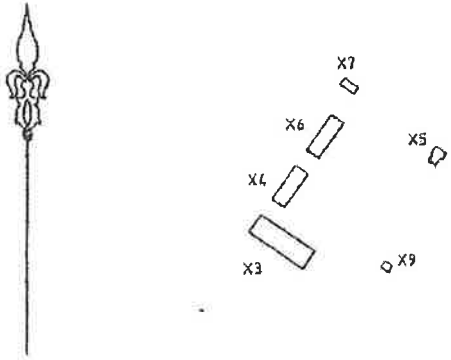


DIAGRAM 3

NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Geomatic Engineers

Whelans Australia Pty Ltd

Head Office:

Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
Telephone 02) 9283 2400
Facsimile 02) 9261 5012

Parramatta Office:

Level 1, Suite 2
12 Victoria Road, Parramatta.
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI PROPERTY

ADI ST MARYS PROPPERTY
RETAINED BUILDINGS & PAVED AREA
PLAN TO ACCOMPANY SITE
AUDIT STATEMENT CHK001/6 [illegible]

ORIGINAL SIZE:	A3
SCALE HOR: 2000	VERT:
CO-ORDS:	DATUM:
DATE OF SURVEY	DATE OF PLAN: MAY 1999
SURVEY	DRAWN DDW
CHECKED: DDW	DATE 24.5.1999
APPROVED: PW	DATE 24.5.1999
JOB REF: 8692	
CAD REF: 5467-128	SHEET 10 OF 13 SHEETS

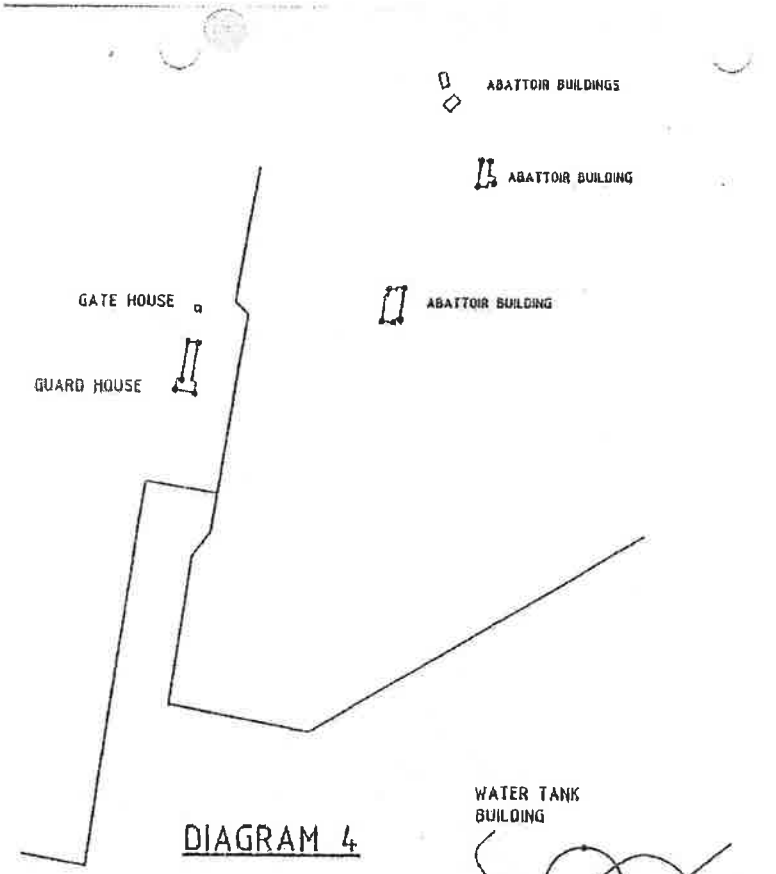


DIAGRAM 4

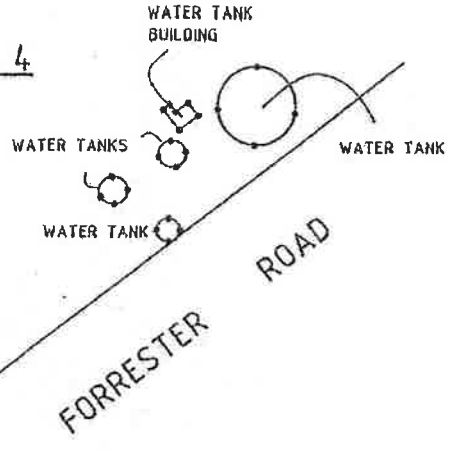


DIAGRAM 5

COORDINATES ARE APPROXIMATE ONLY

GEOMETRY SHOWN AS SUPPLIED BY ADI TO OUR OFFICE 10.5.1999

BDG No	EASTING	NORTHING
WATER TANK BUILDING	2[illegible]5	1265484
	280349	1265492
	280351	1265494
	280354	1265491
	280359	1265495
WATER TANKS	280389	1265510
	280403	1265494
	280385	1265477
	280371	1265496
	280357	1265477
	280358	1265474
	280350	1265468
	280347	1265475
	280326	1265452
	280322	1265458
	280334	1265459
	280330	1265464
	280354	1265445
	280356	1265441
	280347	1265444
	280349	1265436
GATE HOUSE	279372	1265033
	279375	1265032
	279372	1265030
	279374	1265030
GUARD HOUSE	279369	1265017
	279374	1265016
	279372	1264995
	279364	1264997
	279366	1265001
ABATTOIR BUILDINGS	279459	1265041
	279453	1265040
	279450	1265027
	279454	1265026
	279457	1265027
	279491	1265094
	279495	1265093
	279489	1265083
	279496	1265084
	279473	1265130
	279476	1265131
	279478	1265125
	279475	1265124
	279475	1265117
	279480	1265121
	279482	1265118
	279478	1265114

NOTES:

PREPARED BY:

Whelans
Surveyors
Planners
Geomatic Engineers

Whelans Australia Pty Ltd

Head Office:

Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
Telephone 02) 9283 2400
Facsimile 02) 9261 5012

Parramatta Office:

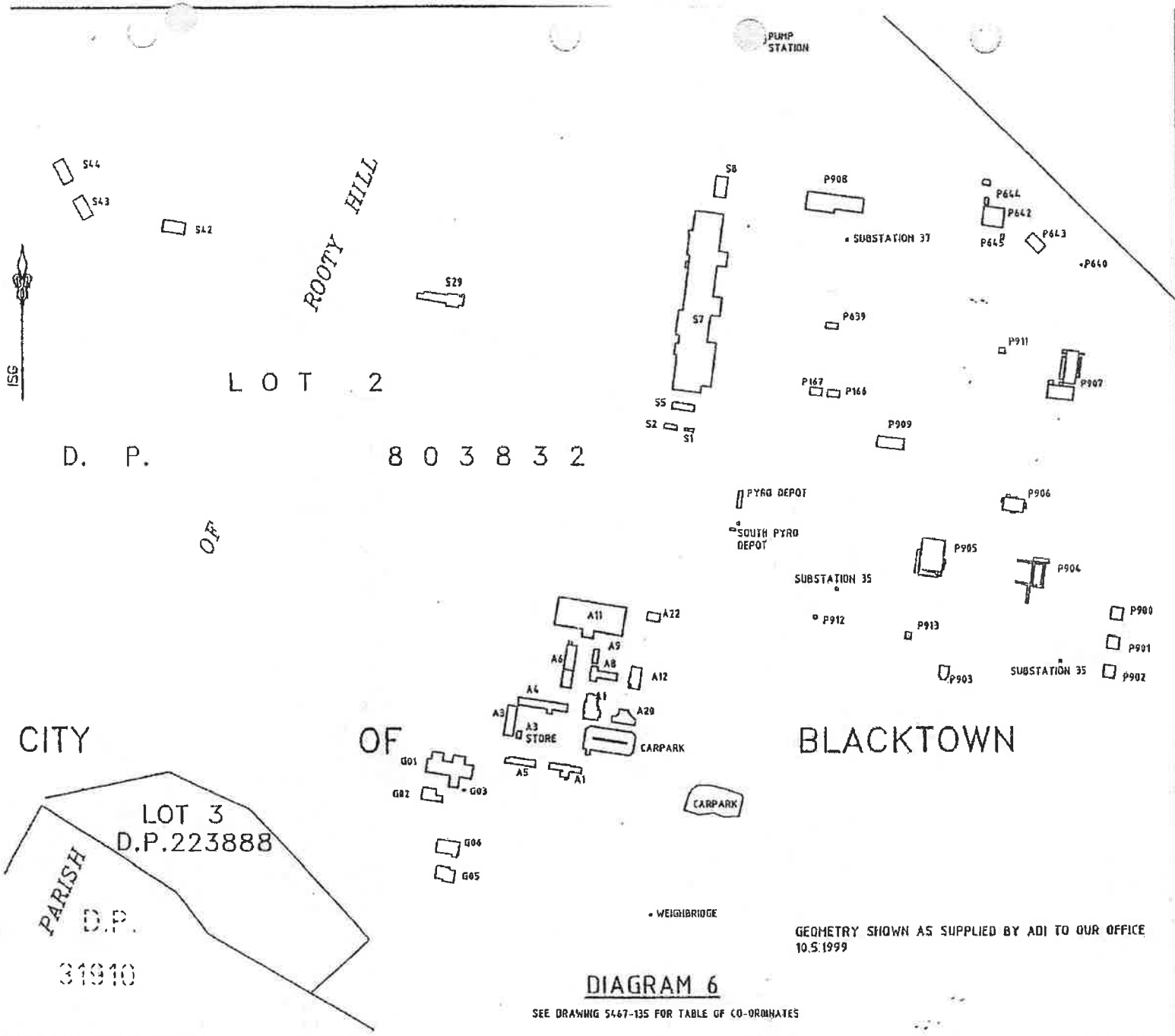
Level 1, Suite 2
12 Victoria Road, Parramatta
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI PROPERTY

ADI ST MARYS PROPERTY RETAINED BUILDINGS/PAVED AREA PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/6

ORIGINAL SIZE:	A3		
SCALE HOR:	2000	VERT:	
CO-ORDS:		DATUM:	
DATE OF SURVEY		DATE OF PLAN:	MAY 1999
SURVEY		DRAWN	ACAD/DDW
CHECKED:	DDW	DATE	24.5.1999
APPROVED:	PW	DATE	24.5.1999
JOB REF:	8662		
CAD REF:	S467-129	SHEET 11 OF 13 SHEETS	



GEOMETRY SHOWN AS SUPPLIED BY ADI TO OUR OFFICE 10.5.1999

DIAGRAM 6

SEE DRAWING 5467-135 FOR TABLE OF CO-ORDINATES

NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Geomatic Engineers

Whelans Australia Pty Ltd

Head Office:

Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
Telephone 02) 9283 2400
Facsimile 02) 9261 5012

Parramatta Office:

Level 1, Suite 2
12 Victoria Road, Parramatta.
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI PROPERTY

ADI ST MARYS PROPERTY RETAINED BUILDINGS/PAVED AREA PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/6

ORIGINAL SIZE: A3	
SCALE HOR: 6000	VERT:
CO-ORDS:	DATUM:
DATE OF SURVEY	DATE OF PLAN: MAY 1999
SURVEY	DRAWN ACAD/DDW
CHECKED: DDW	DATE 24.5.1999
APPROVED: PW	DATE 24.5.1999
JOB REF: 8662	
CAD REF: 5467-134	SHEET 12 OF 13 SHEETS

BDG NO	EASTING NORTHING
A11	279334 1266254 279340 1266297 279449 1266279 279442 1266237
A22	279484 1266274 279505 1266270 279503 1266258 279482 1266261
A9	279398 1266217 279406 1266215 279403 1266194 279394 1266195
A8	279394 1266191 279435 1266178 279402 1266172 279390 1266168
A6	279344 1266158 279359 1266155 279370 1266222 279354 1266224
A4	279276 1266141 279274 1266129 279353 1266117 279355 1266128
A3	279260 1266128 279274 1266126 279266 1266077 279252 1266079
A3 STORE	279273 1266086 279271 1266074 279281 1266085 279279 1266073
A5	279302 1266026 279304 1266037 279262 1266043 279254 1266033
A1	279324 1266023 279326 1266033 279377 1266025 279357 1266017 279342 1266010
A7	279360 1266107 279404 1266108 279405 1266143 279307 1266146
A22	279454 1266162 279455 1266155 279470 1266153 279475 1266187
A12	279425 1266100 279462 1266094 279453 1266119 279437 1266113

BDG NO	EASTING NORTHING
CAR/ PARK	279567 1265996 279556 1265990 279542 1265953 279567 1265945 279606 1265940 279631 1265942 279640 1265975 279609 1265990
CAR/ PARK	279391 1266093 279384 1266089 279379 1266056 279383 1266046 279453 1266044 279464 1266076
G01	279203 1266029 279200 1266006 279178 1265991 279126 1266018 279138 1266052
G02	279144 1265979 279145 1265989 279122 1265993 279119 1265972 279153 1265966
G06	279142 1265881 279146 1265903 279182 1265897 279177 1265871
G05	279174 1265850 279171 1265829 279141 1265838 279144 1265854
S42	278527 1267007 278511 1266998 278529 1266966 278545 1266974
S43	278578 1266916 278560 1266949 278544 1266939 278562 1266907
S44	278729 1266884 278732 1266903 278696 1266909 278693 1266890
S29	279324 1266023 279326 1266033 279377 1266025 279376 1266015
S8	279618 1266973 279614 1266941 279595 1266944 279600 1266976
S7	279564 1266923 279611 1266916 279524 1266631 279588 1266635

BDG NO	EASTING NORTHING
S5	279525 1266609 279523 1266598 279560 1266592 279561 1266604
S2	279533 1266570 279511 1266573 279510 1266565 279531 1266562
S1	279192 1266788 279189 1266769 279114 1266781 279115 1266791
RAIL/ WAY	279599 1266565 279580 1266465 279575 1266465 279605 1266652
P908	279750 1266952 279746 1266923 279837 1266917 279840 1266939
SUB/ ST 37	279810 1266872 279814 1266872 279814 1266876 279814 1266876
P639	279593 1266784 279608 1266782 279604 1266751 279589 1266753
P167	279772 1266631 279770 1266618 279752 1266621 279753 1266634
P166	279799 1266627 279798 1266615 279779 1266617 279781 1266630
P909	279860 1266552 279858 1266533 279900 1266528 279902 1266546
P900	280258 1266276 280239 1266278 280236 1266259 280255 1266257
P901	280251 1266231 280232 1266234 280229 1266215 280248 1266212
P902	280245 1266186 280242 1266167 280223 1266170 280226 1266189
P903	279973 1266187 279959 1266189 279971 1266170 279957 1266172

BDG NO	EASTING NORTHING
SUBSTATION 35	280151 1266194 280155 1266193 280156 1266197 280152 1266198 279792 1266307 279792 1266311 279796 1266310 279796 1266306
P913	279910 1266231 279902 1266231 279903 1266241 279913 1266240
P912	279763 1266268 279763 1266262 279757 1266263 279758 1266268
P904	280136 1266352 280111 1266355 280105 1266311 280125 1266309
P905	279931 1266385 279967 1266380 279924 1266329 279960 1266327
P906	280063 1266452 280096 1266448 280093 1266427 280060 1266431
P907	280186 1266690 280135 1266636 280178 1266637 280178 1266637 280135 1266636 280177 1266631 280174 1266609 280165 1266681
P911	280056 1266698 280066 1266697 280065 1266687 280055 1266689
P640	280192 1266831 280190 1266832 280189 1266831 280190 1266829
P642	280063 1266923 280032 1266927 280028 1266896 280058 1266892
P643	280111 1266883 280133 1266862 280120 1266850 280099 1266870
P644	280039 1266929 280032 1266930 280034 1266940 280040 1266939 280041 1266958 280029 1266960 280030 1266966 280031 1266966

NO	EASTING NORTHING
P645	280059 1266871 280060 1266881 280065 1266880 279799 1266627
PYRO DEPOT	279634 1266465 279630 1266436 279637 1266435 279641 1266464
SOUTH PYRO DEPOT	279634 1266408 279631 1266408 279631 1266413 279635 1266412 279619 1266399 279628 1266398 279629 1266402 279619 1266404
WEIGH/ BRIDGE	279487 1265773 279484 1265774 279485 1265777 279488 1265776

TABLE OF CO-ORDINATES OF RETAINED BUILDINGS AND PAVED AREA

COORDINATES ARE APPROXIMATE ONLY

NOTES:

PREPARED BY:

Whelans Surveyors Planners Geomatics Engineers

Whelans Australia Pty Ltd

Head Office:
Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
Telephone 02) 9283 2400
Facsimile 02) 9261 5012

Parramatta Office:
Level 1, Suite 2
12 Victoria Road, Parramatta.
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI PROPERTY

ADI ST MARYS PROPERTY
RETAINED BUILDINGS/PAVED AREA
PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/6

ORIGINAL SIZE:	A3
SCALE HOR:	VERT:
CO-ORDS:	DATUM:
DATE OF SURVEY	DATE OF PLAN: MAY 1999
SURVEY	DRAWN ACAD/DDW
CHECKED: DDW	DATE 24.5.1999
APPROVED: PW	DATE 24.5.1999
JOB REF: 8662	
CAD REF: 5467-135	SHEET 13 OF 13 SHEETS

NSW Environment Protection Authority

SITE AUDIT STATEMENT (SAS)

Site Audit Statement No.: CHK001/7

Site auditor (accredited under NSW Contaminated Land Management Act 1997):

Name: Christopher H Kidd Company: HLA-Envirosciences Pty Limited
Address: 55-65 Grandview Street, Pymble, NSW Postcode: 2076
Phone: (02) 9988 4422 Fax: (02) 9988 4441

Site Details

ADI St. Marys Property –Concrete Stockpile
Address: Forrester Road, St. Marys Postcode: 2760
Lot and DP Number: Lot 2 in DP803832 (part of)
(see attached map)
Local Government Area: Penrith and Blacktown

Site Audit requested by:

Name: Mr P Newton Company: Department of Urban Affairs and Planning
Address: Sydney Region West
Level 8, Signature Tower
2-10 Wentworth Street
Parramatta NSW 2150
Phone: (02) 9895 7142 - Fax: (02) 9895 6270

Name of contact person (if different from above:

Consultancy(ies) who conducted the site investigation(s) and/or remediation:

- ADI Limited — Chemical and Explosives Ordnance Investigations, Remediation and Validation 1990-1999
- Mackie Martin & Associates — Groundwater Investigations, 1991

Title(s) of Report(s) reviewed:

4. Historical Report – St Marys Property, ADI Limited, 1996;
5. Validation Report for the Central Sector West of the ADI St Marys Property, Report No. 498840, ADI Limited 1996;
6. QA/Verification Survey Results, ADI St Marys Property, Report No. PG980323da ADI Limited, 1999.

Other Information reviewed:

3 Site Investigation Report of St Marys Facility Ammunition and Missiles Division, Volume 4 – Discussions and Conclusions, ADI, June 1991.
4 Stage I Decontamination Audit, ADI St Marys CMPS&F, 1997.

Summary Site Audit Report Title:

Stage 2 Decontamination Audit Report for ADI Site, St Marys.

I have completed a site audit (as defined in the Contaminated Land Management Act 1997) and reviewed the reports and information referred to above with due regard to relevant laws and guidelines. I certify that the site (tick **all** appropriate boxes)

(a) **is suitable for the following use(s):**

- ~~❑ residential, including substantial vegetable garden and poultry;~~
- ~~❑ residential, including substantial vegetable garden, excluding poultry;~~
- ~~❑ residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry;~~
- ~~❑ residential with minimal opportunity for soil access including units;~~
- ~~❑ daycare centre, preschool, primary school;~~
- ~~❑ secondary school;~~
- ~~❑ park, recreational open space, playing field;~~
- ~~❑ commercial/industrial use;~~
- ✓ Other – May continue to be used as stockpile for crushed concrete, but underlying soils need to be tested for chemical and ordnance contamination after stockpile removed.

subject to

- ✓ Conditions

1. On removal of all or part of the stockpile the underlying ground should be tested for both chemical and ordnance contamination. The testing should follow similar methods and levels of quality assurance as other parts of the ADI St Marys site. Appropriate remediation and validation should be performed (if necessary) the work reviewed by a site auitor.
3. Appropriate management plan including procedures for the safe handling and disposal of any items of explosive ordnance, shall be in place before development earthworks commences and shall remain in place to cover any excavation on the site during its ongoing use. This plan should be similar to the "Remnant Contamination Management Plan" submitted by ADI (see Appendix E of the Site Audit Report).
4. The final surface of any earthworks in areas which are to be used for active recreational land uses, e.g. sports grounds, school grounds and picnic areas, or low density residential use, should, on completion of the earthworks, be surveyed with a metal detector by appropriately qualified and experienced personnel and the work reviewed by an independent site auditor.

~~(c) is not suitable for any beneficial use due to risk of harm from contamination~~

~~❑ (comments): ...~~

I am accredited by the NSW Environment Protection Authority under the Contaminated Land Management Act, 1997 as a Site Auditor (Accreditation No. 9813).

I Certify that:

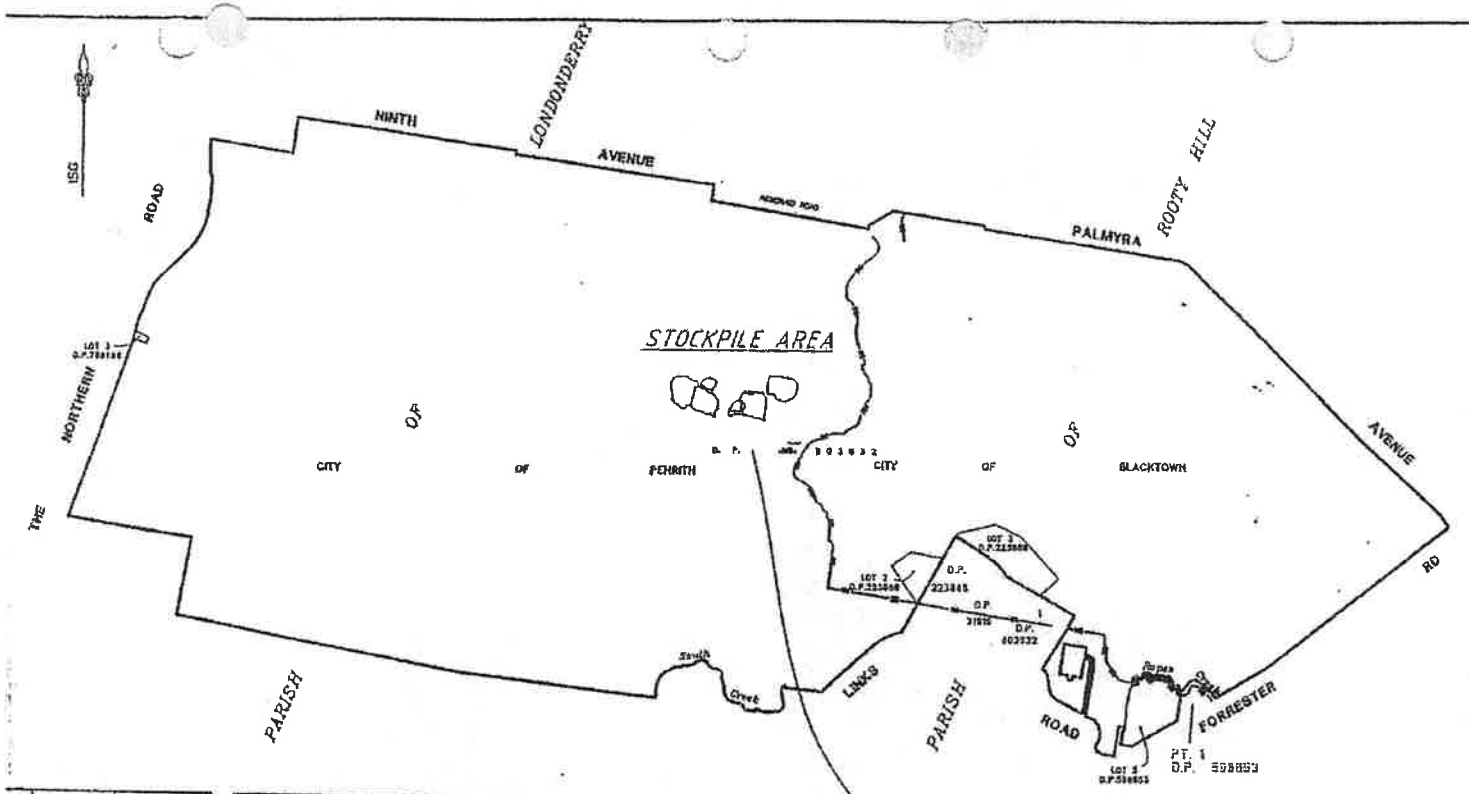
(g) I have personally examined and am familiar with the information contained in this statement, including the reports and information referred to in this statement, and

(h) this statement is to the best of my knowledge, true, accurate and complete, and

(i) on the basis of my inquiries made to those individuals immediately responsible for making the reports, and obtaining the information, referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties for wilfully submitting false, inaccurate or incomplete information.

Signed: _____ Date: 7/6/99



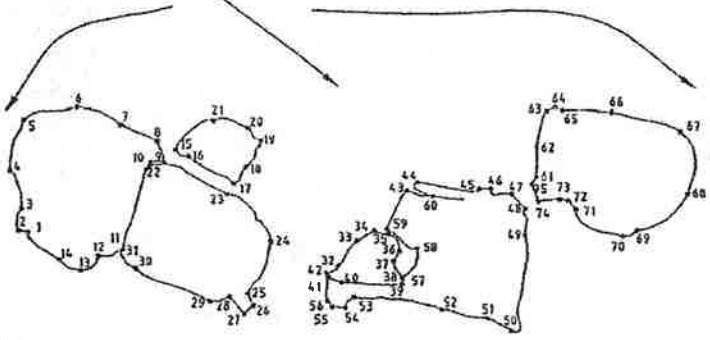
No	EASTING	NORTHING
	277 000	1 266 663
	277 000	1 266 664
	277 003	1 266 687
	276 991	1 266 727
	277 005	1 266 779
	277 056	1 266 793
	277 098	1 266 775
	277 123	1 266 759
	277 140	1 266 738
	277 127	1 266 730
	277 101	1 266 639
	277 078	1 266 630
	277 060	1 266 624
	277 039	1 266 635
	277 151	1 266 751
	277 164	1 266 744
	277 208	1 266 715
	277 220	1 266 733
	277 235	1 266 761
	277 222	1 266 744
	277 188	1 266 780
	277 123	1 266 730
	277 201	1 266 704
	277 245	1 266 656
	277 254	1 266 602
	277 254	1 266 602
	277 219	1 266 583
	277 204	1 266 599
	277 186	1 266 595
	277 113	1 266 627

No	EASTING	NORTHING
31	277 099	1 266 642
32	277 109	1 266 632
33	277 326	1 266 657
34	277 364	1 266 668
35	277 358	1 266 664
36	277 358	1 266 647
37	277 362	1 266 636
38	277 371	1 266 661
39	277 371	1 266 613
40	277 312	1 266 614
41	277 299	1 266 620
42	277 298	1 266 624
43	277 325	1 266 709
44	277 345	1 266 709
45	277 447	1 266 711
46	277 456	1 266 711
47	277 439	1 266 706
48	277 493	1 266 691
49	277 492	1 266 644
50	277 484	1 266 567
51	277 456	1 266 581
52	277 410	1 266 588
53	277 324	1 266 600
54	277 315	1 266 590
55	277 303	1 266 591
56	277 297	1 266 599
57	277 371	1 266 613
58	277 385	1 266 650
59	277 356	1 266 670
60	277 400	1 266 703

No	EASTING	NORTHING
61	277 584	1 266 725
62	277 504	1 266 757
63	277 514	1 266 793
64	277 523	1 266 797
65	277 530	1 266 793
66	277 578	1 266 791
67	277 652	1 266 766
68	277 655	1 266 717
69	277 603	1 266 670
70	277 580	1 266 664
71	277 544	1 266 691
72	277 536	1 266 700
73	277 528	1 266 701
74	277 506	1 266 699
75	277 499	1 266 716

COORDINATES ARE APPROXIMATE ONLY

GEOMETRY SHOWN AS SUPPLIED BY ADI TO OUR OFFICE 10.5.1999



STOCKPILE AREA
NOT TO SCALE

NOTES:

PREPARED BY:

Whelans
Surveyors
Planners
Geomatic Engineers

Whelans Australia Pty Ltd

Head Office:
Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
Telephone 02) 9283 2400
Facsimile 02) 9261 5012

Parramatta Office:
Level 1, Suite 2
12 Victoria Road, Parramatta
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI Property

ADI ST MARYS PROPERTY STOCKPILE AREA PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/7

ORIGINAL SIZE:	A3
SCALE HOR: 1 : 25,000	VERT: –
CO-ORDS: ISG	DATUM: –
DATE OF SURVEY	DATE OF PLAN: 11 May 1999
SURVEY –	DRAWN Acad/DW
CHECKED: DDW	DATE 24.5.1999
APPROVED: PN	DATE 24.5.1999
JOB REF: 8662	
CAD REF: 5467-133.DWG	SHEET 8 OF 13 SHEETS

Appendix B - Site Photographs

Photograph 1: Stockpile area on Building X1 footprint facing southwest

Photograph 2: Stockpile area on Building X2 footprint facing northeast

Photograph 3: Building X2 footprint facing west

Photograph 4: Concrete drainage structure to the southwest of Building X1 footprint

Photograph 5: Concrete drainage structure leading to creek

Photograph 6: Concrete culvert on drainage structure

Source:
Site inspection completed 09.02.2015

Rev	Description	Drn.	Date
D	Original Issue -	R01	

JBS&G

Appendix: Photograph Log

Client: Maryland Development Company Pty Ltd

Project: Ropes Crossing Site Investigation

Job No: 43352 File Name: Photographic Log

Photograph 7: W02 Radar room (3 storey building)

Photograph 8: W02 Radar room (2 storey building with deck on top)

Photograph 9: Suspected ACM fragments observed next to 2 storey W02 structure

Photograph 10: Concrete slab (footprint of former W09 structure)

Photograph 11: Concrete slab (footprint of former W09 structure)

Photograph 12: W01 (south) steel frame structure

Source: Site inspection completed 09.02.2015			
D	Original Issue -	R01	
Rev	Description	Drn.	Date

JBS&G

Appendix: Photograph Log

Client: Maryland Development Company Pty Ltd

Project: Ropes Crossing Site Investigation

Job No: 43352 File Name: Photographic Log

Photograph 13: Radar loop

Photograph 14: Suspected weathered ACM fragments observed near radar loop

Photograph 15: W01 (north)

Photograph 16: W10 Empty garage space

Photograph 17: Toilet adjacent to W10

Photograph 18: Suspected ACM fragments observed near toilet

Source:
Site inspection completed 09.02.2015

Rev	Description	Drn.	Date
D	Original Issue -	R01	

JBS&G

Appendix: Photograph Log

Client: Maryland Development Company Pty Ltd

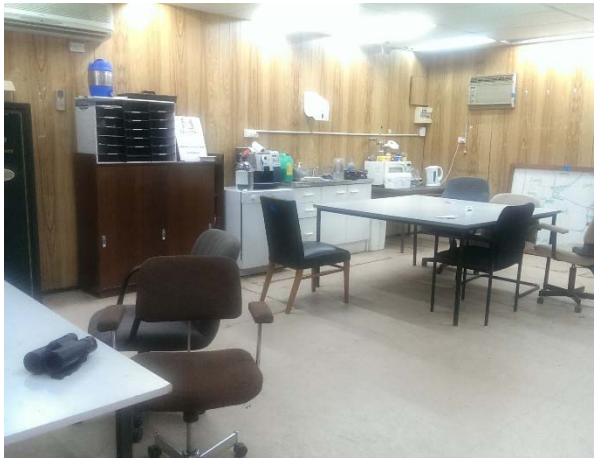
Project: Ropes Crossing Site Investigation

Job No: 43352 File Name: Photographic Log

Photograph 19: W11 Colourbond steel warehouse

Photograph 20: Workshop inside W11

Photograph 21: 500 L diesel tank with some staining observed on the floor



Photograph 22: Portion of W11 used as Kangaroo Management Office

Photograph 23: Caravan and portable building adjacent W11

Photograph 24: Portable building opposite W11

Source:
Site inspection completed 09.02.2015

Rev	Description	Drn.	Date
D	Original Issue -	R01	

JBS&G **Appendix: Photograph Log**

Client: Maryland Development Company Pty Ltd

Project: Ropes Crossing Site Investigation

Job No: 43352 File Name: Photographic Log

Photograph 25: W04 compound

Photograph 26: Recovery room for Kangaroos inside W04

Photograph 27: W01 Portable storage shed

Photograph 28: Large stockpile adjacent X2 as seen from Stage 1 road

Photograph 29: Flood gate near stockpile

Photograph 30: Stage 1 Road facing southeast

Source:
Site inspection completed 09.02.2015

D	Original Issue -	R01	
Rev	Description	Drn.	Date

JBS&G

Appendix: Photograph Log

Client: Maryland Development Company Pty Ltd

Project: Ropes Crossing Site Investigation

Job No: 43352 File Name: Photographic Log

Photograph 31: Jordon Springs connector road facing southeast

Photograph 32: Temporary sewer pump storage station on Jordon Springs connector road

Photograph 33: Bitumen paved road on Stage 3 facing northeast

Photograph 34: Intersection 1 on Stage 4 facing southwest (bitumen paved road)

Photograph 35: Kangaroo enclosure to northeast of Intersection 1 on Stage 4

Photograph 36: Intersection 2 on Stage 4 facing southwest (bitumen paved road)

Source:
Site inspection completed 09.02.2015

D	Original Issue -	R01	
Rev	Description	Drn.	Date

Appendix: Photograph Log

Client: Maryland Development Company Pty Ltd

Project: Ropes Crossing Site Investigation

Job No: 43352 File Name: Photographic Log

Photograph 37: Intersection 2 on Stage 4 facing northeast (bitumen paved road)

Photograph 38: Intersection 2 on Stage 4 facing southwest (bitumen paved road)

Photograph 39: Stockpile 35 comprising concrete and steel reinforcement

Photograph 40: Stockpile 34 comprising concrete

Photograph 41: Stockpile 34

Photograph 42: Stockpile 36 comprising brick

Source:
Site inspection completed 09.02.2015

D	Original Issue -	R01	
Rev	Description	Drn.	Date

JBS&G

Appendix: Photograph Log

Client: Maryland Development Company Pty Ltd

Project: Ropes Crossing Site Investigation

Job No: 43352 File Name: Photographic Log

Photograph 43: Stockpile 50 containing concrete and steel reinforcement

Photograph 44: Stockpile 37 overgrown with grass and scrub

Photograph 45: Stockpile 32 containing road base overgrown with vegetation

Photograph 46: Stockpile 31 containing road base overgrown with grass

Photograph 47: Stockpile 30 containing soil overgrown with thick vegetation

Photograph 48: Characteristic green colour of grass on stockpile 30

Source:
Site inspection completed 09.02.2015

Rev	Description	Drn.	Date
D	Original Issue -	R01	

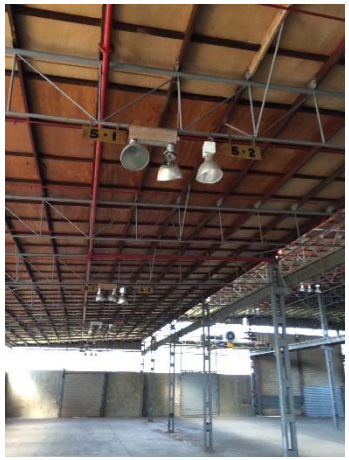
JBS&G

Appendix: Photograph Log

Client: Maryland Development Company Pty Ltd

Project: Ropes Crossing Site Investigation

Job No: 43352 File Name: Photographic Log



Photograph 49: Interior of Warehouse X2

Photograph 50: Interior of Building X7

Photograph 51: Storage Shed

Photograph 52: Building X3

Photograph 53: Interior of Warehouse X1

Photograph 54: Building X6

Source:
Site inspection completed 09.02.2015

Rev	Description	Drn.	Date
D	Original Issue -	R01	

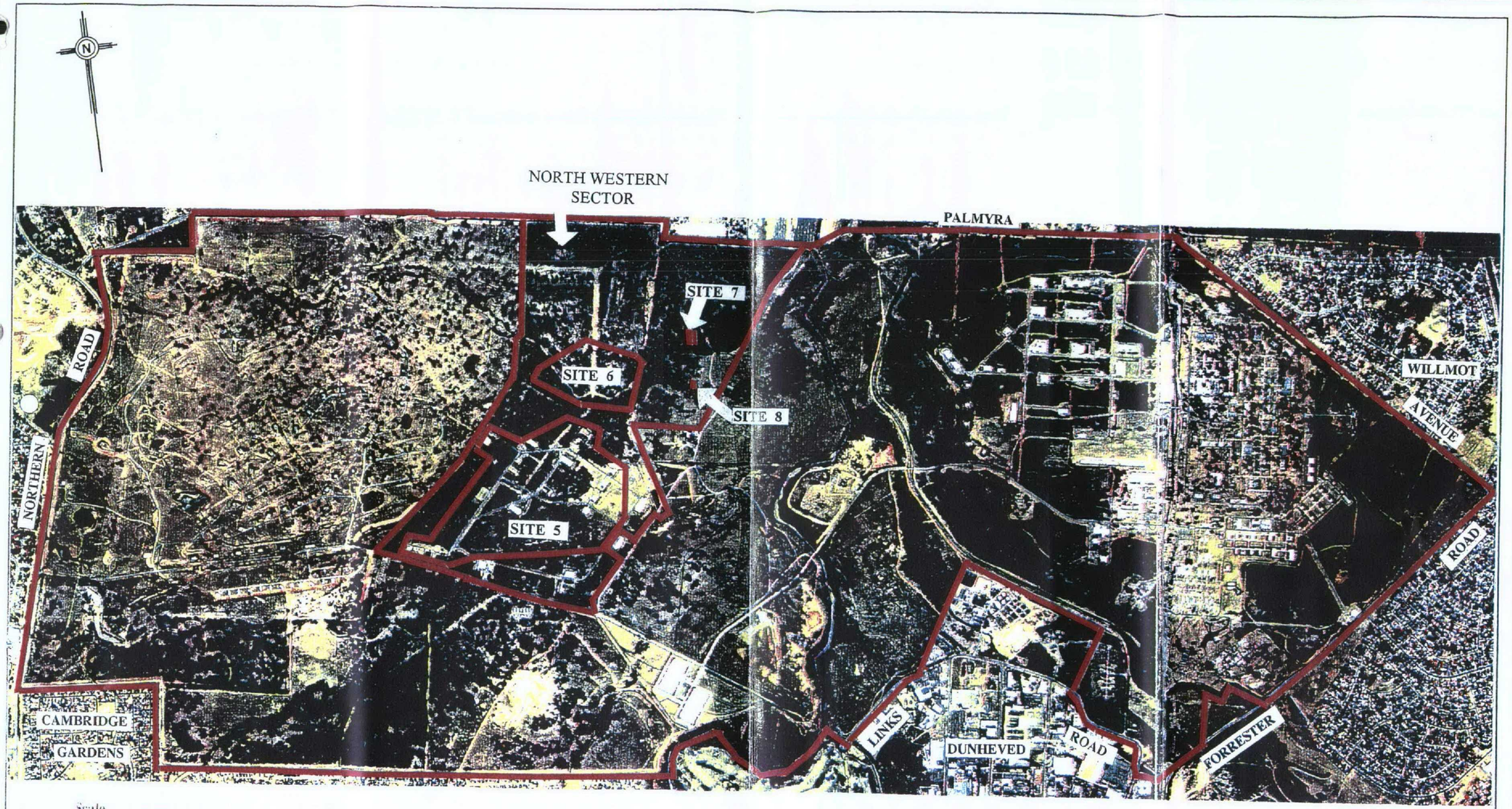
JBS&G **Appendix: Photograph Log**

Client: Maryland Development Company Pty Ltd

Project: Ropes Crossing Site Investigation

Job No: 43352 File Name: Photographic Log

Appendix C – Historical Figures and Results for former ADI Validation Sectors

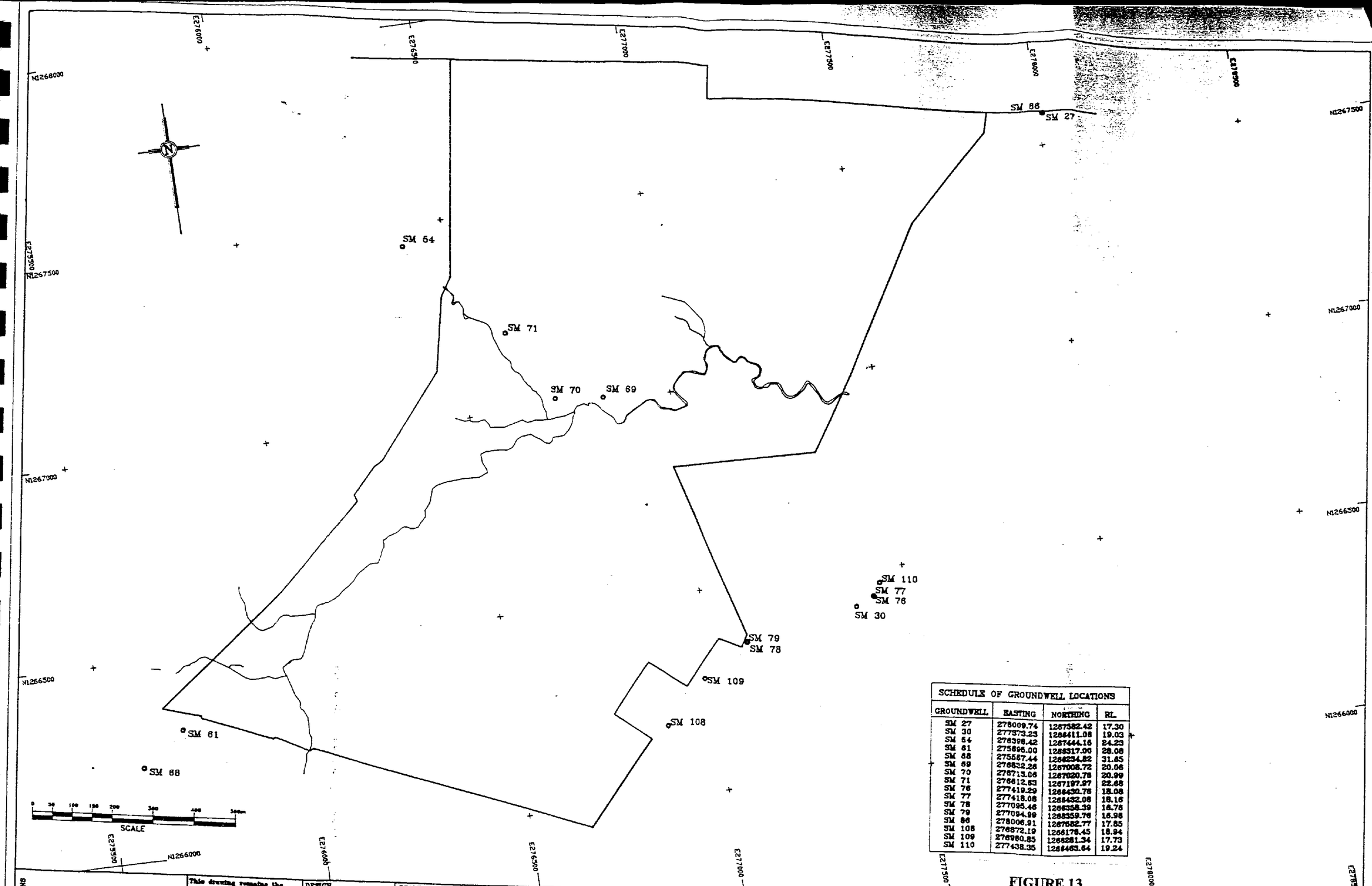


Scale

1000m 0 1km.

FIGURE 12

REVISIONS	DESIGN	SCALE AS SHOWN	AUSTRALIAN DEFENCE INDUSTIES LTD. SERVICES - ENVIRONMENTAL GROUND FLOOR 77 PARRAMATTA ROAD SILVERWATER NSW 2141 PH(02)350 9200 FAX(02)350 9274	CLIENT	TITLE ADI ST MARYS FACILITY AERIAL PHOTO OF THE ST MARYS FACILITY AND THE NORTH WESTERN SECTOR AND SITE 5, 6, 7 AND 8	DRAWING No. 1.NW.a
	ENGINEER L.C.	DRAWN				JOB No. 498800
	APPROVED	DATE 03/09/1995				REVISION



SCHEDULE OF GROUNDWELL LOCATIONS			
GROUNDWELL	EASTING	NORTHING	RL
SM 27	278009.74	1267582.42	17.30
SM 30	277373.23	1266411.08	19.03
SM 54	276398.42	1267444.15	24.23
SM 61	275696.00	1268317.00	28.08
SM 68	275587.44	1266234.82	31.85
SM 69	276832.26	1267008.72	20.06
SM 70	276713.06	1267020.78	20.99
SM 71	276612.53	1267197.97	22.68
SM 76	277419.29	1266430.76	18.08
SM 77	277418.08	1266452.08	18.16
SM 78	277095.46	1266358.39	16.78
SM 79	277094.99	1266359.76	16.98
SM 86	278006.91	1267582.77	17.85
SM 108	276872.19	1266176.45	18.94
SM 109	276980.85	1266281.34	17.73
SM 110	277438.35	1266463.64	19.24

FIGURE 13

REVISIONS

DESIGN
ENGINEER I.C.
CIV.CAD 820 & 821
SCALE 1 : 5 000
DRAWN B.D.
DATE 03/09/96

AUSTRALIAN DEFENCE INDUSTRIES LTD.
ADI SERVICES - ENVIRONMENTAL
GROUND FLOOR
77 PARRAMATTA ROAD
SILVERWATER NSW 2141
PH(02)350 9200 FAX(02)350 9274

CLIENT

TITLE

ADI ST MARYS FACILITY

NORTH WEST SECTOR

LOCATION OF GROUNDWELLS

DRAWING No. 1.NW.8
JOB No. 498800
REVISION

E276000 E276500 E277000 E277500 E278000 E278500

N1268000 N1267500 N1267000 N1266500 N1266000

NINTH AVENUE

SECOND AVENUE

RESERVED ROAD

BUILDING 23

BUILDING B56

FORMER BUILDING B9

FORMER BUILDING B41

FORMER BUILDING B42

FORMER BUILDING B38

FORMER BUILDING B44

FORMER BUILDING B36

FORMER BUILDING B35

FORMER BUILDING B50

SUB STN.25

SCHEDULE OF SAMPLE POINTS
JANUARY 1994

Pt.No.	Easting	Northing	R.L.
1718	278250.137	1288533.382	21.144
1719	278248.133	1288534.488	21.202
1720	278243.850	1288538.729	21.188
1721	278243.999	1288544.088	21.271
1722	278238.874	1288545.148	21.394
1723	278243.448	1288551.417	20.583
1724	278242.871	1288555.357	20.901
1725	278243.073	1288558.377	20.778
1726	278241.374	1288563.079	20.848
1727	278241.557	1288565.343	20.848
1728	278244.220	1288567.800	21.381
1729	278247.882	1288570.901	21.884
1730	278248.781	1288575.350	20.588
1731	278282.755	1288578.158	20.813
1732	278255.080	1288581.488	20.829
1733	278258.287	1288584.885	20.884
1734	278281.782	1288587.859	20.414
1735	278238.193	1288588.112	21.897
1736	278280.473	1288654.892	22.548
1737	278240.378	1288590.708	21.791
1738	278240.892	1288590.152	21.353
1739	278239.249	1288590.107	21.448
1740	278241.030	1288857.570	21.885
1741	278238.520	1288857.100	21.908

SCHEDULE OF SAMPLE POINTS
WITHIN EXCAVATION AUGUST 1994

Pt.No.	Easting	Northing	R.L.
2742	278240.434	1288882.919	20.300
2743	278244.206	1288848.414	20.723
2744	278250.131	1288834.308	20.884

SCHEDULE OF SAMPLE POINTS
WITHIN BUILDING 23 JULY 1995

Pt.No.	Easting	Northing	R.L.
4103	278170.848	1288575.113	24.900
4104	278184.041	1288580.199	24.900
4105	278178.345	1288589.042	24.900
4106	278183.387	1288609.287	24.700
4107	278200.278	1288597.285	24.400

SCHEDULE OF SAMPLE POINTS
ON MOUNDS JUNE 1995

Pt.No.	Easting	Northing	R.L.
3746	278183.53335	1288558.90463	28.03329
3747	278153.14131	1288527.67894	30.87853
3748	278144.77217	1288581.72551	29.64440
3749	278202.27248	1288928.48530	28.70528
3750	278216.32129	1288921.37700	31.16396
3751	278226.44691	1288914.95371	30.00325

SCHEDULE OF SAMPLE POINTS
WITHIN EXCAVATIONS JUNE/AUGUST 1994

Pt.No.	Easting	Northing	R.L.
2734	278638.987	1288425.177	21.380
2735	278626.813	1288409.717	22.180

SCHEDULE OF SAMPLE POINTS
BENEATH SUB STATION SLAB JULY 1995

Pt.No.	Easting	Northing	R.L.
4124	278983.592	1288386.885	22.800

SCHEDULE OF SAMPLE POINTS
WITHIN EXCAVATIONS JUNE 1994

Pt.No.	Easting	Northing	R.L.
2420	278844.713	1288928.086	20.518
2421	278843.353	1288921.334	21.834
2422	278844.133	1288918.482	20.757
2423	278837.800	1288918.423	21.868
2424	278828.109	1288922.307	21.541
2425	278827.897	1288910.728	20.785
2426	278838.463	1288911.106	20.833
2427	278832.437	1288906.333	21.708
2428	278792.825	1288568.837	21.182

SCHEDULE OF SAMPLE POINTS
ON MOUNDS JUNE 1995

Pt.No.	Easting	Northing	R.L.
3775	278667.842	1288811.712	24.884
3776	278851.818	1288389.998	25.049
3777	278948.088	1288587.780	24.411

SCHEDULE OF SAMPLE POINTS
WITHIN BUILDING B56 & FORMER BUILDING B57

Pt.No.	Easting	Northing	R.L.
4118	278963.815	1288783.632	20.300
4119	278977.848	1288740.172	20.800
4120	278985.742	1288711.282	20.800
4121	277018.329	1288580.851	20.800
4122	277024.879	1288548.781	20.900
4123	277004.785	1288504.430	20.400

SCHEDULE OF SAMPLE POINTS
WITHIN BUILDING B56 & FORMER BUILDING B57

Pt.No.	Easting	Northing	R.L.
4238	277009.892	1288505.821	20.253
4240	277005.899	1288504.742	20.250
4241	277004.830	1288501.068	20.280

SCHEDULE OF SAMPLE POINTS
WITHIN EXCAVATIONS JUNE/AUGUST 1994

Pt.No.	Easting	Northing	R.L.
2451	278800.189	1288415.518	20.368
2453	278812.478	1288417.869	21.770
2454	278841.471	1288407.194	21.801
2455	278844.642	1288402.888	20.867
2456	278846.898	1288398.102	21.310
2457	278863.375	1288385.132	21.828
2458	278912.414	1288387.317	21.858
2459	278835.187	1288401.018	20.448
2460	278830.887	1288396.148	21.533
2461	278828.248	1288397.878	21.801
2462	278827.218	1288374.811	21.318
2463	278838.182	1288372.922	21.298

SCHEDULE OF SAMPLE POINTS
WITHIN EXCAVATIONS JUNE 1994

Pt.No.	Easting	Northing	R.L.
2434	278734.488	1288508.104	22.549
2437	278734.637	1288502.303	21.898
2438	278727.590	1288486.563	21.551
2439	278739.714	1288491.700	22.582
2440	278722.721	1288485.842	22.803
2441	278728.112	1288487.000	22.843
2442	278732.089	1288488.139	21.952
2443	278741.409	1288500.072	21.880

SCHEDULE OF SAMPLE POINTS
ON MOUNDS JUNE 1995

Pt.No.	Easting	Northing	R.L.
3781	278787.818	1288493.483	24.802
3782	278743.847	1288471.258	25.305
3783	278723.058	1288481.728	23.706

SCHEDULE OF SAMPLE POINTS
WITHIN EXCAVATIONS JUNE 1994

Pt.No.	Easting	Northing	R.L.
2444	278888.028	1288437.856	22.217
2445	278883.178	1288444.172	22.748
2446	278877.748	1288444.341	23.334
2447	278877.847	1288438.815	23.585
2449	278880.752	1288434.038	23.332
2450	278871.770	1288423.252	23.565
2452	278873.779	1288428.643	23.548
2481	278878.268	1288425.078	22.109

SCHEDULE OF SAMPLE POINTS
ON MOUNDS JUNE 1995

Pt.No.	Easting	Northing	R.L.
3784	278705.903	1288433.891	25.243
3785	278889.962	1288410.293	24.858
3786	278888.374	1288421.723	25.750

SCHEDULE OF SAMPLE POINTS
WITHIN EXCAVATION JUNE 1995

Pt.No.	Easting	Northing	R.L.
3975	278771.883	1288288.578	25.110
3976	278788.329	1288268.598	25.107

50 0 50 100 150 200 250
SCALE (metres)

B2

CHECKED BY:
DATE:

Whelans WBCM group
Engineers Surveyors Planners

Whelans - WBCM Pty Ltd
Level 5, 141 Elizabeth Street, Sydney
New South Wales 2000 Australia
Facsimile 02) 261 5012 Telephone 02) 283 2400
Melbourne Sydney Brisbane

ADI ST MARYS FACILITY
NORTH WEST SECTOR
PLAN SHOWING
EXCAVATION LIMITS & SOIL VALIDATION POINTS IN SITE 5

SCALE	1 : 5000
DATUM	AHD/MSL
SURVEY	JAMS.
DRAWN	ADG/DA
DATE	JULY 1995
SYS REF.	3064/3000/13
SHEET	1 OF 2 SHEETS

E276000 E276500 E277000 E277500 E278000 E278500

N1268000 N1267500 N1267000 N1266500 N1266000

NINTH AVENUE

SECOND AVENUE

RESERVED ROAD

FORMER BUILDING B5

FORMER BUILDING B4

FORMER BUILDING B6

FORMER BUILDING B2

FORMER BUILDING B3

SUB STN.20

SCHEDULE OF SAMPLE PITS—JUNE 1994

Point No	Easting	Northing	RL
1	275869.776	1268278.329	28.35
2	275874.470	1268287.898	28.06
3	275842.963	1268303.017	28.44
4	275813.046	1268315.308	28.82
5	275778.639	1268328.539	26.79
6	275784.628	1268344.270	27.38
7	275790.040	1268374.523	27.09
8	275800.114	1268358.421	26.84
9	275813.344	1268340.831	27.15
10	275867.434	1268328.890	26.73
11	275886.504	1268320.163	26.12
12	275912.309	1268301.774	26.57
13	275911.294	1268341.842	26.48
14	275878.884	1268361.081	26.72
15	275864.009	1268370.188	26.48
16	275823.588	1268377.661	26.73
17	275799.081	1268391.512	26.85

SCHEDULE OF SOIL SAMPLE POINTS—JANUARY 1994

Point No	Easting	Northing	RL
1826	275881.345	1268168.724	26.044
1825	275858.329	1268184.702	25.874
1824	275881.905	1268199.868	25.978
1827	275909.582	1268303.281	28.003
1828	275883.500	1268309.183	25.923
1829	275868.050	1268314.381	26.102
1830	275857.004	1268318.540	25.865
1831	275872.419	1268322.909	26.787
1832	275892.529	1268322.668	28.584
1833	275878.294	1268318.036	26.175
1834	275896.188	1268333.852	28.486
1835	275873.457	1268341.087	26.636
1836	275845.198	1268328.041	26.218
1837	275838.348	1268315.122	26.257
1838	275833.040	1268328.143	26.126
1839	275818.580	1268317.990	26.088
1840	275819.858	1268323.802	26.063
1841	275821.134	1268331.143	26.401

SCHEDULE OF SOIL SAMPLE POINTS WITHIN EXCAVATIONS JUNE 1994

Point No	Easting	Northing	RL
655	275883.300	1268313.800	24.9
656	275900.100	1268317.000	25.15
657	275889.400	1268308.700	25.25
658	275884.800	1268307.900	25.0
659	275884.000	1268311.500	25.7

SOIL SAMPLE POINT BENEATH CONCRETE SLAB SUB STN.20 – JULY 1995

Point No	Easting	Northing	RL
4128	276437.229	1268381.870	28.900

SOIL SAMPLE POINT—APRIL 1991

Point No	Easting	Northing	RL
463	275822.800	1268347.800	27.0

SCHEDULE OF SOIL SAMPLE POINTS—NOVEMBER 1993

Point No	Easting	Northing	RL
1687	275797.800	1268372.817	28.731
1688	275786.304	1268367.713	28.805
1689	275793.758	1268363.277	28.790
1690	275801.237	1268361.558	28.817
1691	275797.984	1268353.274	28.832
1692	275790.708	1268352.375	28.894
1693	275784.422	1268358.330	28.870
1694	275792.008	1268342.908	28.833
1695	275782.833	1268342.818	28.875
1696	275779.865	1268348.212	28.810
1697	275811.587	1268336.877	28.780
1698	275818.523	1268333.531	28.893
1699	275815.552	1268329.753	28.744
1700	275807.852	1268329.484	28.799
1701	275822.662	1268329.813	28.595
1702	275820.172	1268323.758	28.832
1703	275825.822	1268324.578	28.820
1704	275821.333	1268321.274	28.884
1705	275815.748	1268317.224	28.818
1706	275819.273	1268315.674	28.833
1707	275817.296	1268312.388	28.507
1708	275821.523	1268310.583	28.339

FORMER BUILDING B49

FORMER BUILDING B48

CONCRETE SLAB OF FORMER BUILDING B1

SCHEDULE OF SAMPLE POINTS WITHIN EXCAVATIONS JUNE 1994

PLNo.	Easting	Northing	R.L.
2505	276188.746	1268217.232	28.581
2506	276178.290	1268208.882	27.558
2507	276147.831	1268241.999	27.880
2508	276156.117	1268234.812	27.787

SOIL SAMPLE POINT BENEATH CONCRETE SLAB BUILDING B1—JULY 1995

Point No	Easting	Northing	RL
4129	276155.248	1268177.217	29.000

SCHEDULE OF SAMPLE POINTS WITHIN EXCAVATIONS JUNE 1994

PLNo.	Easting	Northing	R.L.
2429	276799.132	1268563.228	21.637
2430	276787.541	1268582.111	21.461
2431	276782.429	1268556.784	21.174
2432	276783.733	1268539.033	21.300
2433	276780.744	1268553.496	21.100
2434	276782.196	1268551.196	21.184
2435	276787.165	1268548.861	21.400

FORMER BUILDING B37

SCHEDULE OF SAMPLE POINTS ON MOUNDS JUNE 1995

PLNo.	Easting	Northing	R.L.
3778	276811.433	1268554.518	24.258
3779	276797.880	1268533.717	25.083
3769	276774.908	1268544.490	24.702

FORMER BUILDING B46

SCHEDULE OF SAMPLE POINTS WITHIN EXCAVATION AUGUST 1994

PLNo.	Easting	Northing	R.L.
2738	276663.662	1268130.780	28.980
2739	276675.898	1268124.734	29.210
2740	276663.996	1268142.313	29.330
2741	276648.214	1268127.083	29.080

SCHEDULE OF SAMPLE POINTS ON MOUNDS MAY 1995

PLNo.	Easting	Northing	R.L.
3787	276587.020	1268120.909	34.516
3788	276594.398	1268148.403	34.998
3789	276548.208	1268161.280	34.788
3790	276536.880	1268132.841	32.475
3791	276548.598	1268088.868	31.045
3792	276510.671	1268069.368	34.840
3793	276586.328	1268085.082	33.055
3794	276677.280	1268034.807	31.845
3795	276503.228	1268048.800	32.800
3796	276547.998	1268058.442	31.870

SCHEDULE OF SAMPLE POINTS ON MOUNDS JUNE 1995

PLNo.	Easting	Northing	R.L.
3671	276550.824	1268091.038	31.700
3672	276547.023	1268089.408	30.100
3673	276569.178	1268087.830	30.150
3677	276548.821	1268081.883	31.800
3678	276553.268	1268088.883	31.800
3679	276548.341	1268089.409	30.150
3680	276553.417	1268087.085	29.850
3681	276553.100	1268080.127	30.949
3682	276548.330	1268080.398	30.709

NOTE : DETAILS NOT TO SCALE

50 0 50 100 150 200 250

SCALE (metres)

B2	Whelans – WBCM Pty Ltd Level 5, 141 Elizabeth Street, Sydney New South Wales 2000 Australia Facsimile 02) 261 5012 Telephone 02) 283 2400 Melbourne Sydney Brisbane	ADI ST MARYS FACILITY NORTH WEST SECTOR PLAN SHOWING EXCAVATION LIMITS & SOIL VALIDATION POINTS IN SITE 5	SCALE 1 : 5000 DATUM AHD/SSI SURVEY J.Smith DRAWN AGMO/GA DATE JULY 1995 DWG REF. 3064/3000/19 SHEET 3 OF 3 SHEETS

E276000 E276500 E277000 E277500 E278000 E278500

N1268000 N1267500 N1267000 N1266500 N1266000

NINTH AVENUE

SECOND AVENUE

RESERVED ROAD

FORMER BUILDING B21

FORMER BUILDING B8

SUB STN.22

SCHEDULE OF SAMPLE POINTS BENEATH SUB STATION SLAB JULY 1995

Pt.No.	Easting	Northing	R.L.
4126	276387.833	1298793.078	22.200

SCHEDULE OF SAMPLE POINTS WITHIN EXCAVATION JUNE 1994

Pt.No.	Easting	Northing	R.L.
2460	276473.958	1298788.998	21.182
2461	276480.778	1298790.116	21.999
2462	276483.011	1298798.990	20.838
2463	276468.049	1298785.825	18.280
2464	276459.098	1298807.610	20.972
2465	276472.678	1298808.987	21.401
2466	276478.264	1298814.741	21.435
2467	276466.838	1298807.482	20.089
2468	276465.715	1298800.351	21.009
2469	276481.211	1298808.118	21.786
2470	276471.217	1298798.816	20.479
2481	276451.285	1298808.468	20.372
2482	276481.778	1298823.554	19.403
2483	276467.434	1298825.578	19.753
2484	276481.717	1298827.484	21.028
2485	276481.487	1298818.891	20.876
2486	276445.806	1298818.804	21.001
2487	276484.798	1298811.985	20.574
2500	276422.474	1298787.182	21.710

SCHEDULE OF SAMPLE POINTS ON MOUNDS JUNE 1995

Pt.No.	Easting	Northing	R.L.
3764	276443.382	1298758.941	28.396
3765	276448.818	1298782.509	25.209
3766	276458.973	1298783.478	25.753

SUB STN.23

FORMER BUILDING B32

SCHEDULE OF SAMPLE POINTS WITHIN EXCAVATIONS JUNE 1994

Pt.No.	Easting	Northing	R.L.
2819	276816.308	1298721.398	21.015
2820	276816.053	1298722.927	12.223
2821	276812.218	1298718.702	12.233
2822	276796.618	1298692.497	20.928
2823	276800.328	1298694.392	21.923
2824	276784.045	1298686.084	22.419
2465	276827.308	1298694.834	21.824
2468	276818.380	1298698.478	23.018
2467	276817.134	1298698.477	21.882
2468	276811.986	1298707.807	21.776
2469	276808.195	1298706.041	20.306
2470	276806.478	1298692.188	22.963

SCHEDULE OF SAMPLE POINTS ON MOUNDS JUNE 1995

Pt.No.	Easting	Northing	R.L.
2674	276758.294	1298744.129	27.845
2675	276773.234	1298725.969	30.408
2676	276760.081	1298712.418	27.834
2677	276681.381	1298705.888	30.237
2678	276746.073	1298698.529	27.399

SCHEDULE OF SAMPLE POINTS BENEATH SUB STATION SLABS JULY 1995

Pt.No.	Easting	Northing	R.L.
4125	276677.342	1298774.272	22.550

FORMER BUILDING B26

FORMER BUILDING B24

FORMER BUILDING B25

SCHEDULE OF SAMPLE POINTS WITHIN EXCAVATION JUNE 1994

Pt.No.	Easting	Northing	R.L.
2477	276367.187	1298731.991	22.171
2478	276378.359	1298725.803	21.848
2479	276373.824	1298731.827	12.516
2480	276394.715	1298742.807	22.632
2488	276407.514	1298755.884	22.635

FORMER BUILDING B30

SCHEDULE OF SAMPLE POINTS WITHIN EXCAVATIONS JUNE 1994

Pt.No.	Easting	Northing	R.L.
2484	276670.726	1298767.228	21.854

BUILDING 31

SCHEDULE OF SAMPLE POINTS WITHIN BUILDING 31

Pt.No.	Easting	Northing	R.L.
4113	276716.754	1298833.929	20.700
4114	276728.983	1298848.844	20.800
4115	276727.254	1298820.048	20.800
4116	276739.865	1298827.228	20.900
4117	276751.224	1298810.083	20.800

SCHEDULE OF SAMPLE POINTS ON MOUNDS JUNE 1995

Pt.No.	Easting	Northing	R.L.
3767	276682.21832	1298830.20849	28.35187
3768	276694.69428	1298843.83638	26.24923
3769	276713.35400	1298857.21819	23.85155
3770	276707.29627	1298812.22806	24.06284
3771	276701.35435	1298781.36583	25.18911
3772	276716.34748	1298800.02136	27.38150
3773	276764.32198	1298791.19170	25.24974
3774	276753.77654	1298777.37847	27.03223

BUILDING 22

SCHEDULE OF SAMPLE POINTS ON MOUNDS JUNE 1995

Pt.No.	Easting	Northing	R.L.
3760	276343.988	1298983.382	27.676
3761	276336.847	1298973.071	27.328
3762	276368.847	1298703.080	28.761
3763	276380.538	1298698.952	29.868

SCHEDULE OF SAMPLE POINTS WITHIN BUILDING 22

Pt.No.	Easting	Northing	R.L.
4130	276367.990	1298700.465	23.810
4131	276344.429	1298983.578	23.500
4132	276358.833	1298982.933	23.690
4133	276368.080	1298981.830	23.630
4134	276349.228	1298970.887	23.540

FORMER BUILDING B28

SCHEDULE OF SAMPLE POINTS WITHIN EXCAVATION JUNE 1994

Pt.No.	Easting	Northing	R.L.
1940	276368.000	1298970.000	34.500
2817	276383.500	1298919.000	34.900

ANOMALY AT SITE 5

SCHEDULE OF SAMPLE POINTS JULY 1995

Pt.No.	Easting	Northing	R.L.
4234	276598.727	1298380.217	29.540
4235	276570.866	1298368.893	29.737
4236	276576.845	1298388.838	29.537
4237	276575.121	1298364.489	29.806
4238	276578.231	1298383.428	29.541

SCHEDULE OF SAMPLE POINTS WITHIN EXCAVATION JUNE 1994

Pt.No.	Easting	Northing	R.L.
2471	276508.855	1298568.258	24.004
2472	276507.848	1298565.857	28.341
2473	276507.308	1298575.029	25.353
2474	276492.810	1298578.506	22.807
2475	276517.575	1298563.924	25.189
2476	276516.368	1298555.373	25.050

SCHEDULE OF SAMPLE POINTS ON MOUNDS JUNE 1995

Pt.No.	Easting	Northing	R.L.
3686	276436.782	1298571.482	29.835
3687	276481.888	1298580.577	30.143
3688	276478.898	1298611.967	32.472
3689	276487.484	1298633.347	30.319
3990	276507.145	1298638.138	28.093

FORMER BUILDING B33

SCHEDULE OF SAMPLE POINTS WITHIN BUILDING 34

Pt.No.	Easting	Northing	R.L.
4108	276322.881	1298502.287	27.450
4109	276338.581	1298500.783	27.750
4110	276335.974	1298481.335	27.700
4111	276342.442	1298474.042	27.700
4112	276358.279	1298478.271	27.700

SCHEDULE OF SAMPLE POINTS ON MOUNDS JUNE 1995

Pt.No.	Easting	Northing	R.L.
3756	276328.189	1298471.042	33.253
3758	276358.233	1298448.581	35.138
3757	276402.585	1298493.189	30.335

BUILDING 834

SCHEDULE OF SAMPLE POINTS WITHIN EXCAVATION JUNE 1994

Pt.No.	Easting	Northing	R.L.
2501	276387.270	1298550.517	28.961
2502	276394.888	1298548.292	27.004
2503	276400.280	1298554.185	28.304
2504	276408.077	1298560.377	28.309

SCHEDULE OF SAMPLE POINTS ON MOUNDS JUNE 1995

Pt.No.	Easting	Northing	R.L.
3752	276301.372	1298534.852	33.718
3753	276319.065	1298538.865	35.028
3754	276334.545	1298536.188	33.853

SCHEDULE OF SAMPLE POINTS BENEATH SUB STATION SLAB JULY 1995

Pt.No.	Easting	Northing	R.L.
4127	276360.999	1298547.219	27.100

FORMER BUILDING B27

SUB STN.21

NOTE : DETAILS NOT TO SCALE

50 0 50 100 150 200 250

SCALE (metres)

B2

CHECKED TH

PAID

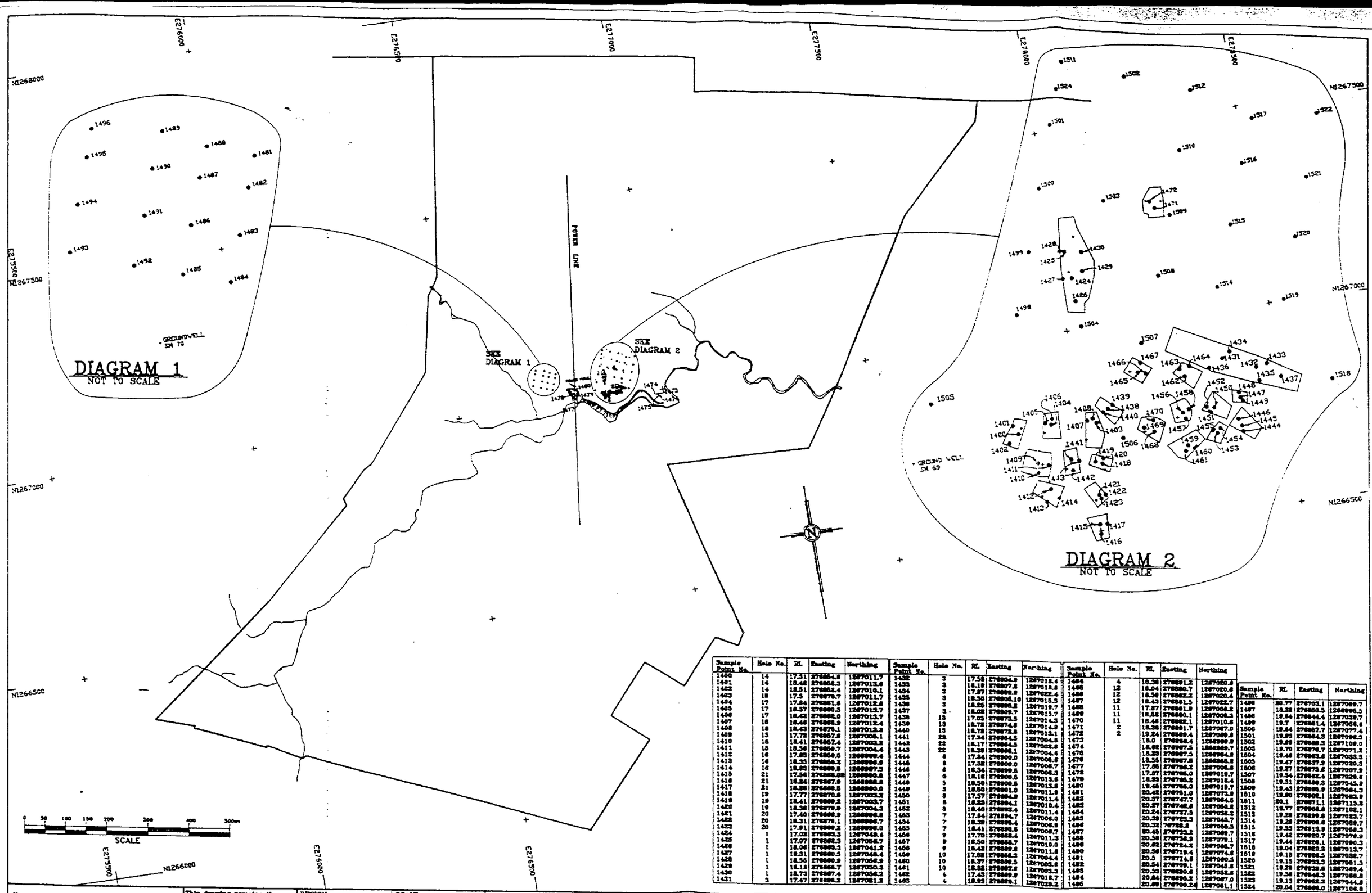
Whelans Engineers Surveyors Planners

WBCM group

Whelans - WBCM Pty Ltd
Level 5, 141 Elizabeth Street, Sydney
New South Wales 2000 Australia
Facsimile 02) 261 5012 Telephone 02) 283 2400
Melbourne Sydney Brisbane

ADI ST MARYS FACILITY
NORTH WEST SECTOR
PLAN SHOWING
EXCAVATION LIMITS & SOIL VALIDATION POINTS IN SITE 5

SCALE	1 : 5000
DATUM	AHD/ISG
SURVEY	JAMS
PLOTS	ADQ/GA
DATE	JULY 1995
JOB REF.	3064/3009/14
SHEET 2 OF 3 SHEETS	



Sample Point No.	Hole No.	RL	Easting	Northing
1400	14	17.31	276884.8	1267611.7
1401	14	18.48	276882.3	1267613.8
1402	14	18.51	276882.4	1267616.1
1403	18	17.5	276870.7	1267611.7
1404	17	17.84	276881.6	1267612.8
1405	17	18.57	276880.3	1267613.7
1406	17	18.42	276882.0	1267613.7
1407	16	18.48	276881.9	1267612.4
1408	18	18.43	276870.1	1267612.8
1409	15	17.72	276867.8	1267608.1
1410	15	18.41	276867.4	1267603.2
1411	15	18.36	276859.7	1267604.4
1412	16	17.83	276859.0	1268998.4
1413	16	18.23	276858.2	1268998.9
1414	16	18.83	276880.9	1268997.3
1415	21	17.56	276868.02	1268990.8
1416	21	18.84	276867.9	1268988.8
1417	21	18.38	276868.8	1268990.0
1418	19	17.77	276870.8	1267003.2
1419	18	18.41	276869.2	1267003.7
1420	19	18.38	276870.9	1267004.3
1421	20	17.40	276868.9	1268998.8
1422	20	18.31	276870.1	1268998.7
1423	20	17.91	276869.2	1268998.0
1424	1	17.02	276883.3	1267048.6
1425	1	17.07	276882.3	1267054.7
1426	1	18.06	276883.3	1267041.2
1427	1	19.31	276880.5	1267048.4
1428	1	18.56	276880.9	1267056.9
1429	1	18.18	276866.7	1267050.3
1430	1	18.73	276867.4	1267054.2
1431	3	17.47	276898.3	1267081.3
1432	3	17.53	276904.8	1267611.9
1433	3	18.19	276907.8	1267611.8
1434	3	17.87	276899.8	1267622.4
1435	3	18.36	276904.19	1267615.5
1436	3	18.26	276896.8	1267618.7
1437	3	18.02	276909.7	1267615.7
1438	13	17.05	276873.5	1267614.3
1439	13	16.78	276874.6	1267614.9
1440	13	16.78	276872.8	1267615.1
1441	22	17.34	276864.5	1267604.8
1442	22	18.17	276864.5	1267602.8
1443	22	18.38	276868.1	1267604.4
1444	8	17.84	276900.0	1267608.8
1445	8	17.52	276900.0	1267608.7
1446	6	18.34	276899.5	1267606.3
1447	6	18.18	276900.5	1267613.6
1448	5	18.56	276900.5	1267613.6
1449	5	18.50	276901.9	1267611.8
1450	8	17.57	276884.9	1267611.4
1451	8	18.23	276884.1	1267610.4
1452	8	18.40	276884.4	1267611.4
1453	7	17.84	276894.7	1267606.0
1454	7	18.39	276894.4	1267606.9
1455	7	18.41	276893.5	1267606.7
1456	9	17.70	276868.4	1267611.3
1457	9	18.50	276868.7	1267610.0
1458	9	18.42	276869.8	1267611.8
1459	10	17.82	276868.5	1267604.4
1460	10	18.37	276869.5	1267603.8
1461	10	18.32	276867.8	1267603.5
1462	4	17.43	276869.9	1267618.7
1463	4	18.95	276889.1	1267620.2
1464	4	18.36	276891.2	1267620.8
1465	12	18.04	276880.7	1267620.8
1466	12	18.59	276882.2	1267620.4
1467	12	18.43	276881.5	1267622.7
1468	11	17.87	276881.9	1267606.2
1469	11	18.58	276880.1	1267606.3
1470	11	18.48	276882.1	1267610.8
1471	2	18.36	276881.7	1267607.0
1472	2	19.24	276889.4	1267609.8
1473		18.0	276884.4	1268998.8
1474		18.82	276887.5	1268998.7
1475		18.25	276887.5	1268996.8
1476		18.55	276887.8	1268998.8
1477		17.86	276884.2	1267006.8
1478		17.87	276886.0	1267019.7
1479		18.83	276886.2	1267018.4
1480		19.45	276886.0	1267019.7
1481		20.42	276871.0	1267077.8
1482		20.37	276747.7	1267064.8
1483		20.37	276748.8	1267068.8
1484		20.24	276737.5	1267058.2
1485		20.39	276725.3	1267048.7
1486		20.32	276726.8	1267068.9
1487		20.45	276723.2	1267069.7
1488		20.58	276736.8	1267079.1
1489		20.82	276724.2	1267048.7
1490		20.58	276718.4	1267074.6
1491		20.5	276716.8	1267060.5
1492		20.54	276708.1	1267048.8
1493		20.33	276690.6	1267058.8
1494		20.84	276698.2	1267067.0
1495		20.89	276700.24	1267061.1
1496				
1497		20.77	276705.1	1267089.7
1498		18.22	276850.5	1268996.5
1499		19.64	276844.4	1267039.7
1500		19.7	276851.4	1267036.8
1501		19.64	276857.7	1267077.4
1502		19.93	276864.3	1267096.3
1503		19.98	276880.3	1267109.0
1504		19.78	276878.7	1267071.2
1505		19.48	276883.8	1267053.3
1506		19.47	276877.9	1267020.3
1507		19.27	276879.5	1267067.9
1508		19.34	276882.4	1267026.8
1509		19.31	276880.3	1267045.9
1510		19.43	276886.9	1267064.3
1511		19.88	276902.1	1267063.9
1512		20.1	276877.1	1267115.2
1513		19.77	276906.8	1267102.1
1514		19.28	276899.8	1267035.7
1515		19.29	276908.6	1267039.7
1516		19.33	276913.9	1267068.3
1517		19.42	276920.7	1267079.9
1518		19.44	276928.1	1267090.3
1519		19.04	276920.2	1267013.7
1520		19.18	276928.5	1267032.7
1521		19.15	276933.5	1267081.5
1522		19.28	276939.6	1267049.4
1523		19.36	276948.3	1267088.8
1524		19.13	276942.3	1267044.8
1525		19.04	276948.0	1267106.8

REVISIONS

DESIGN	SCALE 1 : 5 000
ENGINEER I.C.	DRAWN B.D.
CIV.CAD 820 & 821 ACAD NW-SIDES	DATE 03/09/1996

AUSTRALIAN DEFENCE INDUSTRIES LTD.
ADI SERVICES - ENVIRONMENTAL
GROUND FLOOR
77 PARRAMATTA ROAD
SILVERWATER NSW 2141
PH(02)350 9200 FAX(02)350 9274

CLIENT

TITLE

ADI ST MARYS FACILITY

NORTH WEST SECTOR
LOCATION OF SITE 6 EXCAVATIONS AND SOIL SAMPLE VALIDATION POINTS

DRAWING No. 1.NW.9
JOB No. 498800
REVISION

FIGURE 14

TABLE 2A POST DEMOLITION/EXCAVATION SAMPLING SITE 5 - NORTH WESTERN SECTOR

Sample No	Sample Point	Bldg No	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg As	Ba	Cd	Cr	Cu	% Fe	mg/kg Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OC	PCB	TPH	BTEX	PAH	pH
Criteria							20	400	3	50	60	-	1	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-	1	✓ 1	65-1000	1-14	20	-
427	1687	B4	0 - 0.3	275797.8	1266372.6	26.7	5.5	32	na	42	11	3.3	na	na	14	na	25	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
428	1688	B4	0 - 0.3	275786.3	1266367.7	26.8	6.5	155	na	31	17	3.2	na	na	10	na	58	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
429	1689	B4	0 - 0.3	275793.7	1266363.3	26.8	6.0	110	na	29	13	3.0	na	na	14	na	26	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
430	1690	B4	0 - 0.3	275801.2	1266361.6	26.8	7.0	110	na	35	10	3.5	na	na	14	na	19	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
431	1691	B4	0 - 0.3	275797.9	1266353.3	26.8	6.0	72	na	42	13	3.6	na	na	17	na	36	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
432	1692	B4	0 - 0.3	275790.7	1266352.4	26.9	5.0	250	na	28	16	3.8	na	na	18	na	27	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
433	1693	B4	0 - 0.3	275784.4	1266358.3	26.9	5.0	63	na	46	14	3.9	na	na	17	na	28	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
434	1694	B4	0 - 0.3	275792.0	1266342.9	26.9	7.0	170	na	29	16	2.9	na	na	11	na	27	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
435	1695	B4	0 - 0.3	275782.9	1266342.6	26.9	7.5	170	na	23	21	2.7	na	na	10	na	34	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
436	1696	B4	0 - 0.3	275779.9	1266349.2	26.8	6.5	130	na	24	15	2.7	na	na	10	na	30	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
437	1697	B2	0 - 0.3	275811.9	1266336.7	26.8	5.5	110	na	30	16	2.8	na	na	15	na	31	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na
438	1698	B2	0 - 0.3	275818.5	1266335.5	26.7	7.5	160	na	30	22	2.9	na	na	14	na	43	1.0	1.5	nd	nd	nd	nd	nd	na	na	na	na
439	1699	B2	0 - 0.3	275815.2	1266329.7	26.7	7.0	160	na	26	17	2.9	na	na	16	na	32	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
440	1700	B2	0 - 0.3	275807.6	1266329.5	26.8	7.5	80	na	30	16	2.5	na	na	16	na	59	nd	nd	nd	nd	nd	0.2	nd	na	na	na	na
441	1701	B2	0 - 0.3	275822.9	1266329.9	26.6	4.0	195	na	37	8.5	3.0	na	na	12	na	21	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na
442	1702	B2	0 - 0.3	275820.2	1266323.7	26.6	5.5	120	na	40	15	2.8	na	na	15	na	36	nd	nd	nd	nd	nd	0.07	nd	na	na	na	na
443	1703	B2	0 - 0.3	275825.5	1266324.6	26.6	5.5	130	na	30	12	2.7	na	na	11	na	25	nd	nd	nd	nd	nd	0.05	nd	na	na	na	na
444	1704	B5	0 - 0.3	275821.3	1266361.3	26.7	4.5	92	na	29	10	2.6	na	na	18	na	23	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
445	1705	B5	0 - 0.3	275823.8	1266357.2	26.6	6.0	155	na	24	11	2.8	na	na	10	na	27	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
446	1706	B5	0 - 0.3	275819.3	1266355.7	26.5	5.5	185	na	29	14	2.7	na	na	13	na	37	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
447	1707	B5	0 - 0.3	275817.3	1266352.4	26.5	6.0	110	na	28	15	2.8	na	na	15	na	42	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
448	1707	B5	1 - 1.3	275817.3	1266352.4	26.5	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na
449	1708	B5	0 - 0.3	275821.5	1266350.6	26.3	6.0	86	na	13	22	0.92	na	na	10	na	26	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
450	1708	B5	1 - 1.3	275821.5	1266350.6	26.3	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na
461	1718	B9	0 - 0.3	276250.1	1266833.4	21.1	5.5	na	nd	27	19	na	0.010	na	24	na	30	0.6	nd	nd	nd	nd	nd	nd	**	nd	na	na
462	1719	B9	0 - 0.3	276248.1	1266838.5	21.2	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
463	1720	B9	0 - 0.3	276243.8	1266838.7	21.2	6.0	na	nd	23	20	na	0.010	na	11	na	24	0.9	nd	nd	nd	nd	nd	nd	nd	nd	na	na
464	1721	B9	0 - 0.3	276243.9	1266844.1	21.3	5.5	na	nd	32	18	na	0.010	na	13	na	35	*	*	*	*	*	nd	nd	na	na	na	na
465	1722	B9	0 - 0.3	276239.9	1266845.7	21.4	5.0	na	nd	20	15	na	0.015	na	12	na	23	10	2.2	nd	nd	nd	nd	nd	na	na	na	na
466	1723	B9	0 - 0.3	276243.4	1266852.4	20.6	6.0	na	nd	24	12	na	0.010	na	10	na	17	1.2	1.0	nd	nd	nd	na	na	na	na	na	na

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c.of v. calculations

TABLE 2A POST DEMOLITION/EXCAVATION SAMPLING SITE 5 - NORTH WESTERN SECTOR

Sample No	Sample Point	Bldg No	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg As	Ba	Cd	Cr	Cu	% Fe	mg/kg Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OC	PCB	TPH	BTEX	PAH	pH
Criteria							20	400	3	50	60	-	1	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-	1	✓ 1	65-1000	1-14	20	-
467	1724	B9	0 - 0.3	276242.8	1266855.3	20.6	6.5	na	nd	15	14	na	0.010	na	13	na	18	2.3	1.3	nd	nd	nd	na	na	na	na	na	na
468	1725	B9	0 - 0.3	276242.1	1266859.4	20.8	6.0	na	nd	17	11	na	0.010	na	13	na	15	3.3	nd	nd	nd	nd	na	na	na	na	na	na
469	1726	B9	0 - 0.3	276241.4	1266863.1	20.8	6.0	na	nd	32	16	na	0.005	na	15	na	27	*	*	*	*	*	nd	nd	na	na	na	na
471	1727	B9	0 - 0.3	276241.5	1266865.3	20.6	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na
472	1728	B9	0 - 0.3	276244.2	1266867.8	21.3	7.0	na	nd	23	16	na	0.015	na	14	na	23	0.6	nd	nd	nd	nd	na	na	na	na	na	na
473	1729	B9	0 - 0.3	276247.9	1266870.9	21.6	6.5	na	nd	20	20	na	0.015	na	18	na	35	1.2	nd	nd	nd	nd	na	na	na	na	na	na
474	1730	B9	0 - 0.3	276249.8	1266875.5	20.6	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na
475	1731	B9	0 - 0.3	276252.7	1266879.2	20.8	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na
476	1732	B9	0 - 0.3	276255.1	1266881.4	20.8	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na
477	1733	B9	0 - 0.3	276258.8	1266884.7	20.7	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na
478	1734	B9	0 - 0.3	276261.8	1266887.6	20.4	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na
479	1735	B9	Drum	-	-	-	8.5	na	0.5	27	40	na	0.010	na	32	na	115	0.5	nd	nd	nd	nd	na	na	na	na	na	na
480	1736	B9	Drum	-	-	-	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na
481	1737	B9	Drum	-	-	-	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na
482	1738	B9	Drum	-	-	-	6.5	na	nd	20	13	na	0.015	na	16	na	24	*	*	*	*	*	nd	nd	na	na	na	na
483	1739	B9	Drum	-	-	-	8.0	na	1.0	15	20	na	0.015	na	32	na	84	*	*	*	*	*	nd	nd	na	na	na	na
484	1740	B9	Drum	-	-	-	8.0	na	nd	35	16	na	0.020	na	23	na	53	5.8	nd	nd	nd	nd	na	na	na	na	na	na
485	1741	B9	Drum	-	-	-	7.0	na	nd	33	17	na	0.020	na	21	na	35	*	*	*	*	*	nd	nd	na	na	na	na
2075	2742	B9	0 - 0.2	276240.4	1266862.9	20.3	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na
2076	2743	B9	0 - 0.2	276244.2	1266845.4	20.7	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na
2077	2744	B9	0 - 0.2	276250.1	1266834.3	20.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na
667	1824	B3	0 - 0.3	275881.2	1266188.7	26.0	6.5	85	nd	22	30	na	0.010	na	19	na	65	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
668	1825	B3	0 - 0.3	275858.3	1266296.7	25.9	5.5	85	nd	32	20	na	0.015	na	22	na	75	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
669	1826	B3	0 - 0.3	275881.6	1266299.7	26.0	7.0	70	nd	22	32	na	0.015	na	18	na	61	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
670	1827	B3	0 - 0.3	275869.6	1266303.3	26.0	5.0	96	nd	22	35	na	0.015	na	19	na	42	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
671	1828	B3	0 - 0.3	275882.5	1266309.3	25.9	5.0	95	nd	20	26	na	0.015	na	14	na	47	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
672	1829	B3	0 - 0.3	275866.0	1266314.4	26.1	4.5	60	nd	16	14	na	0.010	na	14	na	32	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
673	1830	B3	0 - 0.3	275887.0	1266316.6	25.9	5.0	65	nd	16	25	na	0.035	na	13	na	40	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
674	1831	B3	0 - 0.3	275872.4	1266322.5	26.1	6.0	80	nd	19	12	na	0.010	na	11	na	41	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
675	1832	B3	0 - 0.3	275892.5	1266322.9	26.3	6.0	73	nd	29	14	na	0.020	na	12	na	43	nd	nd	nd	nd	nd	nd	nd	na	na	na	na

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c.of v. calculations

TABLE 2A POST DEMOLITION/EXCAVATION SAMPLING SITE 5 - NORTH WESTERN SECTOR

Sample No	Sample Point	Bldg No	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg As	Ba	Cd	Cr	Cu	% Fe	mg/kg Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OC	PCB	TPH	6 BTEX	3 PAH	pH
Criteria							20	400	3	50	60	-	1	60	300	50	200	✔ 10	✔ 15	✔ 0.5	✔ 1	-	1	✔ 1	65-1000	1-14	20	-
676	1833	B3	0 - 0.3	275878.3	1266318.0	26.2	5.5	74	nd	27	22	na	0.010	na	18	na	41	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
677	1834	B3	0 - 0.3	275889.2	1266333.6	26.5	6.5	85	nd	27	13	na	0.010	na	17	na	47	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
678	1835	B3	0 - 0.3	275873.4	1266341.1	26.6	5.0	55	nd	25	13	na	0.015	na	14	na	54	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
679	1836	B6	0 - 0.3	27.5942.2	1266326.0	26.3	5.0	100	nd	20	15	na	0.005	na	17	na	24	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
680	1837	B6	0 -0.3	275938.3	1266315.1	26.3	6.0	105	nd	22	18	na	0.020	na	16	na	38	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
681	1838	B6	0 - 0.3	275933.0	1266328.1	26.1	5.0	50	nd	21	10	na	0.015	na	10	na	19	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
682	1839	B6	0 - 0.3	275918.6	1266317.9	26.1	5.0	100	nd	35	14	na	0.010	na	16	na	38	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
683	1840	B6	0 - 0.3	275919.8	1266323.9	26.1	6.0	130	nd	25	16	na	0.010	na	13	na	52	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
684	1841	B6	0 - 0.3	275921.1	1266331.1	26.4	6.0	120	nd	32	17	na	0.015	na	14	na	44	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
685	685	B3	0 - 0.3	275893.3	1266313.8	24.9	4.5	120	nd	25	18	na	0.010	na	19	na	21	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.3
686	686	B3	0 - 0.3	275900.1	1266317.0	25.2	5.0	60	nd	26	13	na	0.005	na	12	na	23	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
687	687	B3	0 - 0.3	275899.4	1266309.7	25.3	4.5	33	nd	29	10	na	0.015	na	17	na	21	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
688	688	B3	0 - 0.3	275894.8	1266307.8	25.0	4.5	145	nd	23	21	na	0.010	na	16	na	22	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
689	689	B3	0 - 0.3	275896.0	1266311.5	23.7	5.5	55	nd	14	15	na	0.010	na	14	na	18	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
970	1726	B9	0 - 0.2	276241.4	1266863.1	20.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
971	1737	B9	0 - 0.2	276240.4	1266860.7	21.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
972	1738	B9	0 - 0.2	276240.5	1266860.1	21.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
973	1739	B9	0 - 0.2	276239.2	1266860.1	21.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
974	1740	B9	0 - 0.2	276241.0	1266857.5	21.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
975	1741	B9	0 - 0.2	276236.5	1266857.1	21.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
1656	-	B22	Southern Labyrinth - Base				6.0	75	nd	7.5	14	na	0.010	5.0	14	nd	24	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1657	-	B22	Southern Labyrinth - Wall				6.0	110	nd	15	24	na	0.030	14	19	nd	46	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1658	-	B22	Northern Labyrinth - Base				6.5	56	nd	5.0	8.0	na	0.005	2.5	8.5	nd	15	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1659	-	B22	Northern Labyrinth - Wall				6.0	15	nd	6.0	8.0	na	0.005	1.5	8.0	nd	19	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1660	-	B23	Western Labyrinth - Base				5.5	96	nd	4.0	5.5	na	0.005	3.0	6.5	nd	24	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.9
1661	-	B23	Western Labyrinth - Wall				6.5	78	nd	18	14	na	0.005	8.0	39	1.0	29	nd	nd	nd	nd	nd	0.06	nd	na	na	na	na
1662	-	B23	Western Labyrinth - Wall				6.0	89	nd	19	19	na	0.015	8.5	17	1.0	34	nd	nd	nd	nd	nd	0.02	nd	na	na	na	na
1663	-	B23	Eastern Labyrinth - Base				5.0	64	nd	8.5	8.0	na	0.015	3.5	10	1.0	21	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1664	-	B23	Eastern Labyrinth - Wall				5.0	41	nd	13	13	na	0.010	4.0	12	1.0	19	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.2
1665	-	B21	Western Labyrinth - Base				5.5	23	nd	8.5	16	na	0.010	7.0	7.5	1.0	25	nd	nd	nd	nd	nd	nd	nd	na	na	na	na

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c.of v. calculations

TABLE 2A POST DEMOLITION/EXCAVATION SAMPLING SITE 5 - NORTH WESTERN SECTOR

Sample No	Sample Point	Bldg No	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg As	Ba	Cd	Cr	Cu	% Fe	mg/kg Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OC	PCB	TPH	BTEX	PAH	pH
							100		20	100	6000		40	400	300		2400									0.6	3	
Criteria							20	400	3	50	60	-	1	60	300	50	200	✔ 10	✔ 15	✔ 0.5	✔ 1	-	1	✔ 1	65-1000	1-14	20	-
1666	-	B21	Western Labyrinth - Wall				6.5	76	nd	11	16	na	0.010	17	13	nd	23	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1667	-	B21	Eastern Labyrinth - Wall				7.0	8	nd	10	12	na	0.005	11	10	nd	14	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1668	-	B21	Eastern Labyrinth - Base				7.0	125	nd	19	15	na	0.005	17	14	1.0	33	nd	nd	nd	nd	nd	nd	nd	na	na	na	9.2
1669	-	B21	Eastern Labyrinth - Wall				7.0	11	nd	10	11	na	0.015	4.0	11	nd	18	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
2064	2732	B44	Base of Labyrinth				6.5	55	nd	7.0	12	na	0.005	2.0	8.5	nd	10	nd	nd	nd	nd	nd	nd	nd	na	na	aa	7.1
2065	2733	B44	Wall of Labyrinth				5.5	35	nd	10	16	na	0.005	2.0	7.0	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.6
2160	2844	B32	Northern Labyrinth - Base				5.0	64	nd	7.0	12	na	0.005	3.0	7.0	nd	8.0	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.7
2161	2845	B32	Northern Labyrinth - Wall				7.0	62	nd	11	24	na	0.015	10	16	nd	40	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.9
2162	2846	B32	Northern Labyrinth - Wall				5.0	55	nd	7.5	10	na	0.005	3.0	8.5	nd	9.0	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.0
2163	2847	B32	Southern Labyrinth - Base				5.0	55	nd	14	18	na	0.005	4.0	15	nd	13	nd	0.9	nd	nd	nd	nd	nd	na	na	na	5.4
2164	2848	B32	Southern Labyrinth - Wall				5.5	40	nd	10	13	na	0.005	2.5	10	nd	9.0	nd	0.5	nd	nd	nd	nd	nd	na	na	na	5.2
2165	2849	B32	Southern Labyrinth - Wall				4.5	66	nd	9.0	14	na	0.005	3.0	8.0	nd	8.5	nd	0.3	nd	nd	nd	nd	nd	na	na	na	4.5
1701	2420	B38	0 - 0.2	276844.7	1266628.1	20.5	6.0	12	nd	21	23	na	0.005	9.0	12	nd	16	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1702	2421	B38	0 - 0.2	276843.3	1266621.2	21.6	5.5	88	nd	22	18	na	0.005	9.0	12	nd	15	na	na	na	na	na	na	na	na	na	na	na
1703	2422	B38	0 - 0.2	276844.1	1266616.5	20.8	5.0	70	nd	21	14	na	0.010	10	11	nd	15	nd	nd	nd	nd	nd	na	na	na	na	na	6.4
1704	2423	B38	0 - 0.2	276837.5	1266618.4	21.6	5.0	46	nd	21	15	na	0.005	8.5	11	nd	15	na	na	na	na	na	na	na	na	na	na	na
1705	2424	B38	0 - 0.2	276828.1	1266622.2	21.5	5.0	72	nd	33	24	na	0.005	12	15	nd	19	nd	nd	nd	nd	nd	na	na	na	na	na	5.5
1706	2425	B38	0 - 0.2	276827.9	266610.7	20.8	6.5	45	nd	19	23	na	0.010	9.0	12	1.0	16	na	na	na	na	na	na	na	na	na	na	na
1707	2426	B38	0 - 0.2	276839.5	1266611.2	20.9	6.0	33	nd	22	18	na	0.005	8.0	11	nd	15	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.6
1708	2427	B38	0 - 0.2	276832.4	1266606.3	21.7	6.0	76	nd	18	13	na	0.005	7.0	12	1.0	16	na	na	na	na	na	na	na	na	na	na	na
1710	2428	B37	0 - 0.2	276792.8	1266568.9	21.2	5.0	115	nd	17	15	na	0.010	12	10	nd	17	nd	nd	nd	nd	nd	na	na	na	na	na	na
1711	2429	B37	0 - 0.2	276799.1	1266563.3	21.4	5.0	32	nd	20	20	na	0.005	9.0	12	nd	19	na	na	na	na	na	na	na	na	na	na	5.6
1712	2430	B37	0 - 0.2	276787.5	1266562.1	21.5	4.5	55	nd	16	12	na	0.005	10	12	nd	13	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1713	2431	B37	0 - 0.2	276792.4	1266556.8	21.2	5.5	46	nd	12	10	na	0.005	12	18	1.0	28	na	na	na	na	na	na	na	na	na	na	na
1714	2432	B37	0 - 0.2	276783.7	1266559.0	21.3	9.0	92	nd	24	19	na	0.005	15	13	2.0	64	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.1
1715	2433	B37	0 - 0.2	276790.7	1266553.5	21.1	7.0	150	nd	24	23	na	0.005	19	16	1.0	61	na	na	na	na	na	na	na	na	na	na	na
1716	2434	B37	0 - 0.2	276782.2	1266551.2	21.2	7.0	115	nd	29	35	na	0.005	26	15	nd	60	nd	nd	nd	nd	nd	na	na	na	na	na	na
1717	2435	B37	0 - 0.2	276787.1	1266549.7	21.4	7.5	100	nd	22	22	na	0.010	24	16	1.0	68	na	na	na	na	na	na	na	na	na	na	7.2
1719	2436	B36	0 - 0.2	276734.5	1266508.1	22.6	6.0	42	nd	40	16	na	0.005	12	20	nd	24	nd	nd	nd	nd	nd	na	na	na	na	na	na
1720	2437	B36	0 - 0.2	276734.4	1266502.3	21.7	5.0	76	nd	33	17	na	0.005	20	13	nd	25	nd	nd	nd	nd	nd	nd	nd	na	na	na	na

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c.of v. calculations

TABLE 2A POST DEMOLITION/EXCAVATION SAMPLING SITE 5 - NORTH WESTERN SECTOR

Sample No	Sample Point	Bldg No	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg As	Ba	Cd	Cr	Cu	% Fe	mg/kg Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OC	PCB	TPH	BTEX	PAH	pH
							100		20	100	6000	40	400	300		2400										0.6	3	
Criteria							20	400	3	50	60	-	1	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-	1	✓ 1	65-1000	1-14	20	-
1721	2438	B36	0 - 0.2	276727.6	1266495.6	21.6	4.5	63	nd	31	15	na	0.010	18	10	nd	18	na	na	na	na	na	na	na	na	na	na	6.9
1722	2439	B36	0 - 0.2	276736.7	1266491.7	22.6	7.5	120	nd	31	22	na	0.005	22	25	1.0	64	na	na	na	na	na	na	na	na	na	na	na
1723	2440	B36	0 - 0.2	276722.7	1266495.9	22.6	6.0	62	nd	29	27	na	0.005	13	16	1.0	32	nd	nd	nd	nd	nd	na	na	na	na	na	4.8
1724	2441	B36	0 - 0.2	276725.1	1266487.0	22.6	5.0	61	nd	25	20	na	0.005	12	13	nd	26	na	na	na	na	na	na	na	na	na	na	na
1725	2442	B36	0 - 0.2	276732.1	1266488.1	22.0	5.0	38	nd	16	13	na	0.005	10	12	nd	14	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	4.8
1726	2443	B36	0 - 0.2	276741.4	1266500.1	21.9	5.5	15	nd	24	11	na	0.015	11	18	nd	17	na	na	na	na	na	na	na	na	na	na	na
1728	2444	B35	0 - 0.2	276688.0	1266437.9	22.2	6.0	81	nd	26	18	na	0.010	14	13	nd	16	na	na	na	na	na	na	na	na	na	na	na
1729	2445	B35	0 - 0.2	276683.2	1266444.2	22.8	4.5	77	nd	14	15	na	0.015	11	10	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.7
1730	2446	B35	0 - 0.2	276677.7	1266444.3	23.3	5.0	43	nd	31	16	na	0.020	14	15	nd	22	na	na	na	na	na	na	na	na	na	na	na
1731	2447	B35	0 - 0.2	276678.0	1266436.8	22.6	5.0	58	nd	20	18	na	0.010	12	14	1.0	13	nd	nd	nd	nd	nd	na	na	na	na	na	5.4
1732	2448	B35	0 - 0.2	276680.7	1266434.0	23.3	5.0	43	nd	29	17	na	0.010	15	15	nd	16	na	na	na	na	na	na	na	na	na	na	na
1733	2449	B35	0 - 0.2	276671.8	1266429.2	22.5	5.5	72	nd	13	17	na	0.005	9.0	12	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1734	2450	B35	0 - 0.2	276675.8	1266429.0	23.4	7.5	160	nd	***	33	na	0.010	***	17	2	69	na	na	na	na	na	na	na	na	na	na	na
1985	2659	B35	0 - 0.2	276675.8	1266429.0	23.1	na	na	na	24	na	na	na	5.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na
1735	2451	B35	0 - 0.2	276676.6	1266425.1	22.2	6.0	52	nd	11	15	na	0.015	12	13	0.5	13	nd	nd	nd	nd	nd	na	na	na	na	na	5.0
1737	2452	B44	0 - 0.2	276950.2	1266415.2	20.4	5.0	110	nd	12	15	na	0.005	7.0	9.0	nd	14	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1738	2453	B44	0 - 0.2	276942.5	1266417.9	21.8	10	86	nd	20	43	na	0.030	25	14	2.0	85	na	na	na	na	na	na	na	na	na	na	na
1739	2454	B44	0 - 0.2	276941.5	1266407.2	21.6	6.0	97	nd	27	16	na	0.005	14	13	1.0	26	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.4
1740	2455	B44	0 - 0.2	276946.4	1266402.9	20.9	8.0	160	nd	***	35	na	0.020	***	14	2.0	64	na	na	na	na	na	na	na	na	na	na	na
1986	2660	B44	0 - 0.2	276946.4	1266402.9	19.8	na	na	na	6.0	na	na	na	4.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na
1741	2456	B44	0 - 0.2	276954.9	1266395.1	21.5	5.0	110	nd	14	13	na	0.005	10	11	1.0	16	nd	nd	nd	nd	nd	na	na	na	na	na	na
1742	2457	B44	0 - 0.2	276953.4	1266386.1	21.6	5.0	88	nd	18	12	na	0.005	7.0	14	1.0	16	na	na	na	na	na	na	na	na	na	na	na
1743	2458	B44	0 - 0.2	276942.6	1266387.3	21.7	5.5	110	nd	21	13	na	0.005	14	13	2.0	20	nd	nd	nd	nd	nd	nd	nd	na	na	nd	6.9
1744	2459	B44	0 - 0.2	276935.2	1266401.0	20.5	5.0	43	nd	10	7.5	na	0.005	6.5	10	nd	13	na	na	na	na	na	na	na	na	na	na	na
1745	2460	B44	0 - 0.2	276930.9	1266390.1	21.5	5.0	55	nd	8.0	8.5	na	0.005	5.0	9.0	nd	14	nd	nd	nd	nd	nd	na	na	nd	nd	nd	7.8
1746	2461	B44	0 - 0.2	276926.2	1266397.7	21.6	9.0	170	0.5	***	32	na	0.020	***	17	3.0	83	na	na	na	na	na	na	na	na	na	na	na
1987	2661	B44	0 - 0.2	276926.2	1266397.7	21.3	na	na	na	15	na	na	na	3.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na
1747	2462	B44	0 - 0.2	276927.2	1266374.8	21.3	5.5	75	nd	14	12	na	0.005	7.5	14	nd	22	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.8
1748	2463	B44	0 - 0.2	276938.1	1266372.5	21.6	5.5	140	nd	26	17	na	0.005	20	16	2.0	30	na	na	na	na	na	na	na	na	na	na	na
1750	2464	B30	0 - 0.2	276670.7	1266767.2	21.9	6.0	67	nd	20	18	na	0.005	8.0	15	nd	20	na	na	na	na	na	nd	nd	na	na	na	4.5

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c.of v. calculations

TABLE 2A POST DEMOLITION/EXCAVATION SAMPLING SITE 5 - NORTH WESTERN SECTOR

Sample No	Sample Point	Bldg No	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg As	Ba	Cd	Cr	Cu	% Fe	mg/kg Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OC	PCB	TPH	BTEX	PAH	pH
Criteria							20	400	3	50	60	-	1	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-	1	✓ 1	65-1000	1-14	20	-
1751	2465	B32	0 - 0.2	276627.5	1266694.9	21.6	5.0	58	nd	17	16	na	0.005	8.0	18	1.0	14	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1752	2466	B32	0 - 0.2	276618.3	1266690.5	23.0	6.0	78	nd	23	16	na	0.010	12	16	2.0	24	nd	nd	nd	nd	nd	na	na	na	na	na	na
1753	2467	B32	0 - 0.2	276617.1	1266698.9	21.9	5.5	92	nd	15	15	na	0.005	11	12	nd	13	nd	nd	nd	nd	nd	na	na	na	na	na	5.7
1754	2468	B32	0 - 0.2	276611.9	1266707.8	21.8	5.0	86	nd	14	16	na	0.005	7.5	13	nd	15	nd	nd	nd	nd	nd	na	na	na	na	na	na
1755	2469	B32	0 - 0.2	276605.1	1266706.0	20.3	6.0	35	nd	10	12	na	0.005	6.0	7.0	nd	7.0	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1756	2470	B32	0 - 0.2	276606.5	1266692.2	23.0	5.5	180	nd	15	17	na	0.010	7.0	13	1.0	24	nd	nd	nd	nd	nd	na	na	na	na	na	5.6
1758	2471	B33	0 - 0.2	276509.9	1266566.2	24.0	5.5	29	nd	38	14	na	0.010	14	18	nd	24	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1759	2472	B33	0 - 0.2	276502.9	1266565.8	25.3	5.0	32	nd	39	15	na	0.010	16	17	nd	22	nd	nd	nd	nd	nd	na	na	na	na	na	6.3
1760	2473	B33	0 - 0.2	276507.3	1266575.0	25.4	5.0	49	nd	39	16	na	0.010	16	17	1.0	23	nd	nd	nd	nd	nd	na	na	na	na	na	na
1761	2474	B33	0 - 0.2	276492.8	1266578.5	22.8	4.5	15	nd	12	13	na	0.010	12	12	nd	14	nd	nd	nd	nd	nd	na	na	na	na	na	na
1762	2475	B33	0 - 0.2	276517.6	1266563.9	25.2	5.5	47	nd	36	11	na	0.010	11	14	nd	18	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.7
1763	2476	B33	0 - 0.2	276516.4	1266555.4	25.1	6.0	39	nd	41	14	na	0.010	20	22	nd	24	nd	nd	nd	nd	nd	na	na	na	na	na	na
1764	2477	B33	0 - 0.2	276387.2	1266731.9	22.2	6.0	69	nd	14	13	na	0.005	17	15	nd	52	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.1
1765	2478	B25	0 - 0.2	276379.4	1266725.6	21.9	5.0	24	nd	10	13	na	0.005	9.0	11	1.0	14	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1766	2479	B25	0 - 0.2	276378.6	1266731.9	22.5	5.0	72	nd	27	13	na	0.005	9.0	12	nd	14	nd	nd	nd	nd	nd	na	na	na	na	na	4.9
1767	2480	B25	0 - 0.2	276473.6	1266787.0	21.3	6.0	130	nd	13	16	na	0.010	12	15	nd	26	nd	nd	nd	nd	nd	na	na	na	na	na	na
1768	2481	B21	0 - 0.2	276480.8	1266790.1	21.7	6.0	190	nd	25	16	na	0.015	14	17	1.0	38	nd	nd	nd	nd	nd	na	na	na	na	na	na
1769	2482	B21	0 - 0.2	276463.0	1266796.9	20.8	5.5	110	nd	38	30	na	0.005	17	30	1.0	44	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.1
1770	2483	B21	0 - 0.2	276486.0	1266795.6	19.6	6.5	78	nd	13	19	na	0.005	11	13	nd	26	nd	nd	nd	nd	nd	na	na	na	na	na	na
1771	2484	B21	0 - 0.2	276458.0	1266807.4	21.0	6.0	51	nd	15	12	na	0.010	10	10	nd	13	nd	nd	nd	nd	nd	na	na	na	na	na	na
1772	2485	B21	0 - 0.2	276472.7	1266809.7	21.5	5.0	130	nd	22	19	na	0.005	16	16	2.0	54	nd	nd	nd	nd	nd	na	na	na	na	na	8.4
1773	2486	B21	0 - 0.2	276475.3	1266814.7	21.9	6.0	130	nd	20	16	na	0.015	17	19	nd	39	nd	nd	nd	nd	nd	nd	nd	na	na	na	na
1774	2487	B21	0 - 0.2	276466.6	1266807.5	20.1	6.0	130	nd	18	14	na	0.010	15	19	nd	26	nd	nd	nd	nd	nd	na	na	na	na	na	na
1775	2488	B21	0 - 0.2	276485.7	1266800.3	21.7	6.0	56	nd	15	14	na	0.010	12	14	nd	25	nd	nd	nd	nd	nd	na	na	na	na	na	6.9
1776	2489	B21	0 - 0.2	276481.2	1266806.1	21.8	6.5	220	nd	35	28	na	0.020	27	20	3.0	71	nd	nd	nd	nd	nd	na	na	na	na	na	na
1777	2490	B21	0 - 0.2	276471.6	1266795.8	20.5	5.5	170	nd	16	22	na	0.010	16	25	nd	35	nd	nd	nd	nd	nd	na	na	na	na	na	na
1778	2491	B21	0 - 0.2	276451.3	1266806.5	20.6	5.5	110	nd	18	12	na	0.010	11	22	1.0	37	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.3
1779	2492	B21	0 - 0.2	276461.8	1266822.5	19.4	6.0	88	nd	8	12	na	nd	13	11	nd	17	nd	nd	nd	nd	nd	na	na	na	na	na	na
1780	2493	B21	0 - 0.2	276457.4	1266825.3	19.8	6.0	47	nd	12	15	na	0.005	10	14	nd	16	nd	nd	nd	nd	nd	na	na	na	na	na	5.6
1781	2494	B21	0 - 0.2	276451.7	1266827.5	21.0	6.5	150	nd	12	20	na	0.020	13	16	1.0	43	nd	nd	nd	nd	nd	na	na	na	na	na	na

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c.of v. calculations

TABLE 2A POST DEMOLITION/EXCAVATION SAMPLING SITE 5 - NORTH WESTERN SECTOR

Sample No	Sample Point	Bldg No	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg As	Ba	Cd	Cr	Cu	% Fe	mg/kg Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OC	PCB	TPH	BTEX	PAH	pH
Criteria							20	400	3	50	60	-	1	60	300	50	200	✓10	✓15	✓0.5	✓1	-	1	✓1	65-1000	1-14	20	-
1782	2495	B21	0 - 0.2	276451.5	1266818.9	21.0	6.0	50	nd	12	15	na	0.015	12	13	nd	24	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.6
1783	2496	B21	0 - 0.2	276445.6	1266816.8	21.0	6.0	110	nd	17	16	na	0.010	12	17	nd	34	nd	nd	nd	nd	nd	na	na	na	na	na	na
1784	2497	B21	0 - 0.2	276454.8	1266811.6	20.6	5.0	63	nd	16	12	na	0.005	7.5	13	nd	19	nd	nd	nd	nd	nd	na	na	na	na	na	na
1786	2498	B24	0 - 0.2	276396.7	1266747.8	22.6	6.5	70	nd	18	15	na	0.010	17	18	nd	53	na	na	na	na	na	0.12	nd	na	na	na	7.2
1787	2499	B26	0 - 0.2	2764047.5	1266755.9	22.6	10	57	nd	16	10	na	0.035	11	19	nd	37	na	na	na	na	na	nd	nd	na	na	na	6.5
1788	2500	B8	0 - 0.2	276422.9	1266787.2	21.7	6.0	47	nd	20	10	na	0.010	9.0	13	nd	29	na	na	na	na	na	nd	nd	na	na	na	5.1
1789	2501	B27	0 - 0.2	276387.3	1266550.5	27.0	7.0	120	nd	15	21	na	0.005	12	20	2.0	63	na	na	na	na	na	nd	nd	na	na	na	5.2
1799	2502	B27	0 - 0.2	276394.9	1266545.3	27.0	6.5	100	nd	11	30	na	0.005	14	21	nd	61	na	na	na	na	na	na	na	na	na	na	na
1800	2503	B27	0 - 0.2	276400.6	1266554.2	26.8	6.0	90	nd	12	24	na	0.015	15	17	1.0	51	na	na	na	na	na	na	na	na	na	na	na
1810	2504	B27	0 - 0.2	276408.1	1266550.6	26.3	6.0	90	nd	14	26	na	0.005	15	15	1.0	57	na	na	na	na	na	nd	nd	na	na	na	5.7
1811	2505	B48	0 - 0.2	276189.7	1266217.2	28.6	5.5	66	nd	11	13	na	0.010	10	14	nd	21	na	na	na	na	na	nd	nd	na	na	na	4.5
1812	2506	B48	0 - 0.2	276178.3	1266208.8	27.6	6.0	82	nd	14	15	na	0.010	14	16	2.0	35	na	na	na	na	na	nd	nd	na	na	na	5.2
1813	2507	B49	0 - 0.2	276147.6	1266242.0	27.7	5.0	30	nd	25	15	na	0.010	11	11	nd	12	na	na	na	na	na	nd	nd	na	na	na	4.3
1814	2508	B49	0 - 0.2	276155.1	1266224.8	27.8	4.0	49	nd	28	13	na	0.010	11	15	nd	19	na	na	na	na	na	nd	nd	na	na	na	5.2
1940	2617	B28	0 - 0.2	276363.5	1266619.0	24.9	6.0	13	nd	40	16	na	0.005	11	20	nd	19	na	na	na	na	na	nd	nd	na	na	na	na
2066	2734	B42	0 - 0.2	276839.5	1266425.2	21.4	4.5	45	nd	13	7.0	na	0.005	2.5	7	nd	9.0	na	na	na	na	na	nd	nd	na	na	na	4.6
2067	2735	B41	0 - 0.2	276826.8	1266409.7	22.2	4.5	69	nd	16	7.0	na	0.010	2.0	7.5	nd	9.0	na	na	na	na	na	nd	nd	nd	nd	na	4.7
2070	2738	B46	0 - 0.2	276583.7	1266130.8	29.0	6.5	145	nd	17	28	na	0.035	19	25	1.0	82	na	na	na	na	na	nd	nd	na	na	na	na
2071	2739	B46	0 - 0.2	276570.7	1266124.7	29.2	6.0	110	nd	17	17	na	0.025	12	15	nd	58	na	na	na	na	na	nd	nd	na	na	na	9.3
2072	2740	B46	0 - 0.2	276563.9	1266142.3	29.5	7.5	160	nd	20	33	na	0.030	22	21	2.0	74	na	na	na	na	na	nd	nd	na	na	na	na
2073	2741	B46	0 - 0.2	276549.2	1266127.1	29.1	7.0	160	nd	15	19	na	0.030	19	19	1.0	71	na	na	na	na	na	nd	nd	na	na	na	9.3
3455	3975	B50	0 - 0.2	276771.7	1266266.6	25.1	4.5	80	0.5	18	67	na	0.005	42	10	nd	34	na	na	na	na	na	nd	nd	na	na	na	na
3456	3976	B50	0 - 0.2	276766.3	1266266.6	25.1	5.0	95	0.5	18	77	na	0.005	48	10	nd	36	na	na	na	na	na	nd	nd	na	na	na	na
3451	3974	457	0 - 0.2	276587.7	1266719.2	23.1	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
3452	3974	457	0.3 -0.5	276587.7	1266719.2	22.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
3453	3974	457	0.8 - 1.0	276587.7	1266719.2	22.1	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
3454	3974	457	1.7 - 2.0	276587.7	1266719.2	21.1	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
3590	4103	B23	0 - 0.2	276170.8	1266575.1	24.6	25	47	nd	28	16	na	0.005	21	22	nd	27	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.5
3591	4104	B23	0 - 0.2	276184.0	1266580.2	24.6	8.0	70	3.0	45	23	na	0.005	44	23	nd	27	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.0
3592	4105	B23	0 - 0.2	276179.4	1266589.0	24.6	6.5	110	0.5	48	17	na	0.010	58	14	nd	38	nd	nd	nd	nd	nd	nd	nd	na	na	na	8.3

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c.of v. calculations

TABLE 2A POST DEMOLITION/EXCAVATION SAMPLING SITE 5 - NORTH WESTERN SECTOR

Sample No	Sample Point	Bldg No	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg As	Ba	Cd	Cr	Cu	% Fe	mg/kg Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OC	PCB	TPH	BTEX	PAH	pH
							100		20	100	6000		40	400	300		7400									0-6	3	
Criteria							20	400	3	50	60	-	1	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-	1	✓ 1	65-1000	1-14	20	-
3593	4106	B23	0 - 0.2	276193.4	1266609.3	24.5	6.0	40	nd	14	9.5	na	0.005	15	20	nd	27	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	7.7
3594	4107	B23	0 - 0.2	276200.3	1266597.3	24.4	6.5	37	3.5	15	14	na	0.005	21	20	nd	24	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.1
3595	4108	B34	0 - 0.2	276323.0	1266502.3	27.7	6.0	69	nd	10	15	na	0.010	20	19	nd	55	nd	nd	nd	nd	nd	nd	nd	na	na	na	8.3
3596	4109	B34	0 - 0.2	276336.6	1266500.8	27.8	5.0	180	1.5	74	35	na	0.010	84	15	nd	58	nd	nd	nd	nd	nd	nd	nd	500	nd	na	8.9
3597	4110	B34	0 - 0.2	276336.0	1266491.2	27.7	7.0	190	1.0	70	27	na	0.015	80	17	nd	73	nd	nd	nd	nd	nd	nd	nd	na	na	na	9.3
3598	4111	B34	0 - 0.2	276342.4	1266474.0	27.7	6.5	42	nd	19	15	na	0.005	23	15	1.0	81	nd	nd	nd	nd	nd	nd	nd	na	na	na	8.7
3599	4112	B34	0 - 0.2	276358.3	1266479.3	27.7	6.5	85	nd	11	15	na	0.005	20	16	1.0	87	nd	nd	nd	nd	nd	nd	nd	na	na	na	8.5
3600	4113	B31	0 - 0.2	276716.8	1266833.6	20.7	5.0	155	nd	54	16	na	0.010	74	19	nd	34	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.1
3601	4114	B31	0 - 0.2	276730.0	1266840.0	20.9	6.0	180	nd	87	38	na	0.010	120	18	nd	59	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	9.7
3602	4115	B31	0 - 0.2	276727.3	1266820.0	20.8	7.0	180	0.5	100	34	na	0.010	110	17	nd	72	nd	nd	nd	nd	nd	nd	nd	na	na	na	8.6
3603	4116	B31	0 - 0.2	276739.9	1266827.2	20.9	7.5	230	2.5	100	42	na	0.015	110	13	nd	71	nd	nd	nd	nd	nd	nd	nd	na	na	na	8.4
3604	4117	B31	0 - 0.2	276751.2	1266810.0	20.8	5.0	31	1.5	18	10	na	0.005	11	14	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.1
3605	4118	B56	0 - 0.2	276963.6	1266763.6	20.3	6.5	80	0.5	17	29	na	0.005	80	13	nd	30	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	7.0
3606	4119	B56	0 - 0.2	276977.6	1266740.2	20.6	4.0	12	nd	5.5	0.5	na	0.005	0.5	6.5	nd	4.5	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.9
3607	4120	B56	0 - 0.2	276985.7	1266711.3	20.6	5.0	2.0	2.0	6.5	5.0	na	0.005	4.0	4.0	nd	5.0	na	na	na	na	na	na	na	na	na	na	5.0
3608	4121	B56	0 - 0.2	277018.3	1266590.7	20.6	3.0	5.0	nd	5.5	2.5	na	0.005	3.0	2.0	nd	3.0	na	na	na	na	na	na	na	na	na	na	7.5
3609	4122	B56	0 - 0.2	277024.7	1266566.8	20.6	4.0	9.0	nd	8.5	0.5	na	0.005	7.0	8.0	nd	7.0	na	na	na	na	na	na	na	na	na	na	5.6
3610	4123	B57	0 - 0.2	277006.8	1266504.4	20.4	6.5	140	nd	12	24	na	0.010	51	5.0	nd	18	na	na	na	na	na	****	nd	na	na	na	6.2
3739	4239	B57	0 - 0.2	277009.9	1266505.6	20.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
3740	4240	B57	0 - 0.2	277006.0	126504.7	20.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
3741	4241	B57	0 - 0.2	277004.9	126501.0	20.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
3611	4124	25	0 - 0.2	276863.6	1266386.9	22.8	7.0	49	nd	22	12	na	0.005	32	11	nd	49	na	na	na	na	na	nd	nd	na	na	na	6.2
3612	4125	23	0 - 0.2	276577.3	1266774.3	22.6	2.5	44	nd	10	6.0	na	0.010	20	10	nd	20	na	na	na	na	na	nd	nd	nd	nd	na	6.4
3613	4126	22	0 - 0.2	276387.8	1266793.1	22.2	4.0	25	2.5	10	18	na	0.005	20	8.5	nd	25	na	na	na	na	na	na	na	na	na	na	9.3
3614	4127	21	0 - 0.2	276380.7	1266547.2	27.1	6.0	100	nd	9.0	31	na	0.030	29	18	1.0	60	na	na	na	na	na	nd	nd	na	na	na	8.3
3615	4128	20	0 - 0.2	275837.2	1266351.6	26.9	5.0	52	nd	15	11	na	0.010	32	14	nd	25	na	na	na	na	na	nd	nd	na	na	na	6.2
3616	4129	B1	0 - 0.2	276155.2	1266177.2	29.0	6.0	170	1.5	110	31	na	0.015	160	19	nd	67	na	na	na	na	na	nd	nd	na	na	na	8.4
3617	4130	B22	0 - 0.2	276348.0	1266700.5	23.6	5.5	90	0.5	16	13	na	0.005	40	15	nd	30	nd	nd	nd	nd	nd	nd	nd	na	na	na	8.5
3618	4131	B22	0 - 0.2	276344.4	1266685.6	23.5	5.0	135	2.0	50	19	na	0.005	45	17	nd	32	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.8
3619	4132	B22	0 - 0.2	276356.9	1266682.9	23.7	6.0	190	2.5	72	34	na	0.020	130	18	nd	77	nd	nd	nd	nd	nd	nd	nd	na	na	na	8.8

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c.of v. calculations

TABLE 2A POST DEMOLITION/EXCAVATION SAMPLING SITE 5 - NORTH WESTERN SECTOR

Sample No	Sample Point	Bldg No	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg As	Ba	Cd	Cr	Cu	% Fe	mg/kg Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OC	PCB	TPH	BTEX	PAH	pH
Criteria							20	400	3	50	60	-	1	60	300	50	200	✓10	✓15	✓0.5	✓1	-	1	✓1	65-1000	1-14	20	-
3620	4133	B22	0 - 0.2	276366.1	1266681.6	23.6	5.5	135	nd	69	21	na	0.010	67	17	nd	43	nd	nd	nd	nd	nd	nd	nd	na	na	na	8.5
3621	4134	B22	0 - 0.2	276369.2	1266670.7	23.5	5.0	48	nd	22	18	na	0.005	5.0	13	nd	16	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	8.3
3625	4135	Anomaly	0 - 0.2	276566.2	1266389.0	30.2	6.0	20	nd	*****	6.5	na	0.015	17	24	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.2
3626	4136	Anomaly	0 - 0.2	276571.0	1266386.0	30.0	8.0	20	1.0	*****	7.0	na	0.020	10	26	2.0	*****	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.6
3627	4137	Anomaly	0 - 0.2	276574.4	1266386.8	30.4	9.0	34	0.5	*****	8.0	na	0.020	8	40	2.0	*****	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.5
3628	4138	Anomaly	0 - 0.2	276578.3	1266383.6	30.0	5.5	16	nd	*****	4.5	na	0.015	8	33	nd	42	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.8
3734	4234	Anomaly	0 - 0.2	276569.7	1266390.2	29.5	na	na	na	76	na	na	na	na	na	na	50	na	na	na	na	na	na	na	na	na	na	na
3735	4235	Anomaly	0 - 0.2	276571.0	1266387.0	29.7	na	na	na	59	na	na	na	na	na	na	100	na	na	na	na	na	na	na	na	na	na	na
3736	4236	Anomaly	0 - 0.2	276574.9	1266386.9	29.6	na	na	na	63	na	na	na	na	na	na	30	na	na	na	na	na	na	na	na	na	na	na
3737	4237	Anomaly	0 - 0.2	276575.1	1266384.5	29.6	na	na	na	66	na	na	na	na	na	na	18	na	na	na	na	na	na	na	na	na	na	na
3738	4238	Anomaly	0 - 0.2	276578.2	1266383.4	29.5	na	na	na	74	na	na	na	na	na	na	18	na	na	na	na	na	na	na	na	na	na	na
Mean							6.1	85.7		24.4	17.6	2.9	0.0	19.8	15.1	1.3	33.0	2.6	1.1				0.1					6.6
Standard deviation							2.1	49.3		17.1	9.0	0.6	0.0	25.0	5.2	0.6	20.4	3.1	0.6				0.1					1.5
Co-efficient of Variation							0.3	0.6		0.7	0.5	0.2	0.7	1.3	0.3	0.4	0.6	1.2	0.6				0.7					0.2

Explanation of symbols

* - Contamination remediated. Validated by points 2742 and 2743.

** - Contamination remediated. Validated by point 2744

*** - Contamination remediated. Validated by point in following row.

**** - Contamination remediated. Validated by points 4239, 4240 and 4241.

***** - Contamination remediated. Validated by points 4234, 4235, 4236, 4237 and 4238.

"-" - Sample Point Number not allocated

Samples from labyrinths were not surveyed, therefore have no co-ordinates.

nd = not detected

na = not analysed

Note: nd results excluded from mean, sd and c.of v. calculations

TABLE 3 REMAINING MOUNDS SITE 5 - NORTH WESTERN SECTOR

Sample No	Point	Bldg	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OC	PCB	TPH	BTEX	PAH	pH
Criteria							20	400	3	50	60	1,000	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-	1	✓ 1	65-1000	1-14	20	-
2000	2674	B32	0.1 - 0.5	276578.3	1266744.1	28.0	6.0	85	nd	14	12	0.015	11	26	1.0	33	na	na	na	na	na	nd	nd	na	na	na	6.4
2001	2675	B32	0.3 - 0.5	276573.2	1266725.6	30.4	5.0	85	nd	11	22	0.035	12	25	1.0	46	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.5
2002	2676	B32	0.2 - 0.4	276560.1	1266712.4	27.8	6.0	62	nd	13	14	0.015	11	16	2.0	35	na	na	na	na	na	nd	nd	na	na	na	6.4
2003	2677	B32	0.1 - 0.4	276561.6	1266705.9	30.2	6.5	71	nd	13	13	0.015	11	23	nd	43	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.4
2004	2678	B32	0.2 - 0.5	276548.1	1266698.5	27.4	6.5	82	nd	12	16	0.020	11	19	1.0	41	na	na	na	na	na	nd	nd	na	na	na	6.8
3205	3746	B23	0.2 - 0.5	276163.5	1266556.9	28.0	7.0	260	nd	16	31	0.005	20	27	nd	62	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.2
3206	3747	B23	0.2 - 0.5	276153.1	1266557.7	30.9	6.0	250	nd	12	25	0.005	14	30	nd	50	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.3
3207	3748	B23	0.2 - 0.5	276144.8	1266561.8	29.8	6.0	310	nd	8.0	31	0.005	16	31	nd	50	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	7.0
3208	3749	B23	0.2 - 0.5	276202.3	1266626.5	28.7	5.0	90	nd	14	15	nd	14	28	nd	31	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.7
3209	3750	B23	0.2 - 0.5	276215.3	1266621.4	31.2	6.5	110	nd	10	34	0.005	20	25	nd	63	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.0
3210	3751	B23	0.2 - 0.5	276226.4	1266615.0	30.0	6.5	95	nd	10	33	nd	26	27	nd	84	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.1
3211	3752	B34	0.2 - 0.5	276301.4	1266534.8	33.7	5.0	110	nd	13	16	0.010	18	18	nd	48	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.9
3212	3753	B34	0.2 - 0.5	276319.1	1266536.6	35.0	6.0	33	nd	7.5	9.5	nd	8.0	9	nd	15	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.7
3213	3754	B34	0.2 - 0.5	276336.8	1266538.2	33.7	5.0	61	nd	15	13	0.010	10	19	nd	30	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.1
3214	3755	B34	0.2 - 0.5	276328.2	1266471.1	32.3	5.0	30	nd	8.5	7.0	0.005	6.5	19	nd	13	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.5
3215	3756	B34	0.2 - 0.5	276358.2	1266446.6	35.1	5.0	68	nd	10	6.5	nd	5.0	17	nd	15	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.1
3216	3757	B34	0.2 - 0.5	276402.1	1266493.2	30.3	7.0	33	nd	7.5	9	nd	10	16	nd	19	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	4.7
3217	3758	B34	0.2 - 0.5	276359.4	1266506.1	31.9	7.0	90	nd	20	23	0.005	17	16	nd	47	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.3
3218	3759	B34	0.2 - 0.5	276378.8	1266512.9	33.3	7.5	115	nd	18	17	nd	18	20	nd	49	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.3
3220	3760	B22	0.2 - 0.5	276343.9	1266663.4	27.9	5.0	53	nd	10	10	0.020	9.0	18	nd	22	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.7
3221	3761	B22	0.2 - 0.5	276338.9	1266673.1	27.5	6.0	80	nd	10	10	0.020	12	17	nd	25	nd	nd	nd	nd	nd	0.01	nd	na	na	na	5.9
3222	3762	B22	0.2 - 0.5	276366.8	1266703.1	28.7	6.0	39	nd	9.0	9.5	0.020	6.0	20	nd	22	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.7
3223	3763	B22	0.2 - 0.5	276380.5	1266696.9	30.0	4.5	40	nd	7.0	9.0	0.015	6.0	16	nd	20	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.6
3224	3764	B21	0.2 - 0.5	276443.4	1266795.9	26.4	4.5	30	nd	4.5	5.0	0.015	9.0	10	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.2
3225	3765	B21	0.2 - 0.5	276448.6	1266785.5	25.2	5.5	49	nd	9.0	8.0	0.015	10	19	nd	24	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	4.9
3226	3766	B21	0.2 - 0.5	276458.9	1266783.5	25.8	6.0	50	nd	10	10	0.020	11	20	nd	28	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.2
3227	3767	B31	0.2 - 0.5	276682.2	1266830.2	26.3	6.5	120	nd	14	19	0.015	16	24	nd	46	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.6
3228	3768	B31	0.2 - 0.5	276696.7	1266854.8	26.3	7.0	125	nd	15	23	0.015	17	30	1.0	58	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.5
3229	3769	B31	0.2 - 0.5	276713.4	1266857.2	23.7	5.5	110	nd	15	19	0.010	14	20	1.0	30	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.08	4.5
3230	3770	B31	0.2 - 0.5	276707.6	1266812.2	24.1	7.5	150	nd	16	29	0.020	30	25	nd	63	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.2
3231	3771	B31	0.2 - 0.5	276701.4	1266782.0	25.4	6.5	110	nd	15	18	0.020	20	21	nd	36	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.0
3232	3772	B31	0.2 - 0.5	276716.3	1266800.0	27.4	4.0	66	nd	4.5	10	0.015	11	15	nd	14	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	4.9
3233	3773	B31	0.2 - 0.5	276756.3	1266791.2	25.3	4.5	48	nd	4.5	7.5	0.015	10	13	nd	10	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	5.0
3234	3774	B31	0.2 - 0.5	276753.8	1266777.4	27.0	4.0	47	nd	3.0	8.0	0.015	8.0	17	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.2
3235	3775	B38	0.2 - 0.5	276867.6	1266611.7	24.9	6.0	100	nd	12	10	0.020	15	20	nd	32	nd	nd	nd	nd	nd	nd	nd	na	na	nd	5.9
3236	3776	B38	0.2 - 0.5	276851.8	1266598.9	25.1	6.5	110	nd	14	18	0.020	19	30	1.0	36	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.3
3237	3777	B38	0.2 - 0.5	276848.1	1266587.8	24.4	5.0	62	nd	20	7.5	0.020	11	30	nd	17	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.7

nd = not detected

na = not analysed

TABLE 3 REMAINING MOUNDS SITE 5 - NORTH WESTERN SECTOR

Sample No	Sample Point	Bldg	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OC	PCB	TPH	BTEX	PAH	pH
Criteria							20	400	3	50	60	1,000	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-	1	✓ 1	65-1000	1-14	20	-
3238	3778	B37	0.2 - 0.5	276811.4	1266554.5	24.3	5.5	155	nd	14	21	0.010	24	29	nd	51	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.7
3239	3779	B37	0.2 - 0.5	276797.9	1266533.7	25.1	5.0	52	nd	35	8.0	0.020	11	29	nd	19	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.7
3240	3780	B37	0.2 - 0.5	276774.6	1266544.5	24.2	5.5	80	nd	15	10	0.010	11	17	nd	23	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.3
3241	3781	B36	0.2 - 0.5	276757.8	1266493.5	24.6	5.5	83	nd	20	10	0.020	10	24	nd	20	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.5
3242	3782	B36	0.2 - 0.5	276743.9	1266471.2	25.3	7.0	120	nd	26	21	0.010	14	15	nd	30	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	4.4
3243	3783	B36	0.2 - 0.5	276723.0	1266481.7	23.7	7.0	120	nd	23	16	0.020	19	20	nd	31	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.5
3244	3784	B35	0.2 - 0.5	276705.9	1266433.7	25.2	7.5	145	nd	29	15	0.020	15	20	nd	25	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	6.6
3245	3785	B35	0.2 - 0.5	276689.9	1266410.3	24.9	5.5	100	nd	20	12	0.015	16	16	nd	27	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.2
3246	3786	B35	0.2 - 0.5	276668.4	1266421.7	25.8	5.0	47	nd	33	5.0	0.015	10	18	nd	16	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.8
3247	3787	B46	0.2 - 0.5	276597.0	1266120.8	34.5	6.0	86	nd	10	23	0.030	17	26	nd	44	nd	nd	nd	nd	nd	nd	nd	nd	na	na	6.5
3248	3788	B46	0.2 - 0.5	276596.4	1266146.4	34.7	5.0	66	nd	7.0	21	0.035	12	22	nd	30	nd	nd	nd	nd	nd	nd	nd	nd	na	na	6.2
3249	3789	B46	0.2 - 0.5	276545.5	1266161.3	34.8	5.5	22	nd	15	5.0	0.020	5.5	27	nd	13	nd	nd	nd	nd	nd	nd	nd	nd	na	na	4.9
3250	3790	B46	0.2 - 0.5	276530.9	1266132.0	32.5	6.0	99	nd	17	24	0.020	13	24	nd	39	nd	nd	nd	nd	nd	nd	nd	nd	na	na	5.8
3251	3791	B46	0.2 - 0.5	276549.6	1266089.7	31.1	7.0	44	nd	14	50	0.020	10	85	nd	*	nd	nd	nd	nd	nd	nd	nd	nd	na	na	6.0
3448	3971	B46	0.2 - 0.5	276550.6	1266091.0	31.7	na	na	na	na	na	na	na	na	na	79	na	na	na	na	na	na	na	na	na	na	na
3457	3977	B46	0.2 - 0.5	276546.8	1266091.9	31.6	na	na	na	na	na	na	na	na	na	69	na	na	na	na	na	na	na	na	na	na	na
3458	3978	B46	0.2 - 0.5	276553.9	1266089.9	31.5	na	na	na	na	na	na	na	na	na	32	na	na	na	na	na	na	na	na	na	na	na
3459	3979	B46	0.2 - 0.5	276545.3	1266089.4	30.2	na	na	na	na	na	na	na	na	na	71	na	na	na	na	na	na	na	na	na	na	na
3460	3980	B46	0.2 - 0.5	276553.4	1266087.1	29.9	na	na	na	na	na	na	na	na	na	60	na	na	na	na	na	na	na	na	na	na	na
3461	3981	B46	0.2 - 0.5	267553.1	1266089.2	30.7	na	na	na	na	na	na	na	na	na	78	na	na	na	na	na	na	na	na	na	na	na
3462	3982	B46	0.2 - 0.5	276548.3	1266090.4	30.7	na	na	na	na	na	na	na	na	na	62	na	na	na	na	na	na	na	na	na	na	na
3252	3792	B46	0.2 - 0.5	276510.5	1266099.4	34.8	6.0	105	nd	14	19	0.015	16	21	nd	52	nd	nd	nd	nd	nd	nd	nd	nd	na	na	6.4
3253	3793	B46	0.2 - 0.5	276586.3	1266065.1	32.1	7.0	66	nd	19	12	0.035	10	33	nd	55	nd	nd	nd	nd	nd	nd	nd	nd	na	na	5.6
3254	3794	B46	0.2 - 0.5	276577.4	1266034.0	32.0	7.0	59	nd	10	13	0.025	10	22	nd	37	nd	nd	nd	nd	nd	nd	nd	nd	na	na	5.6
3255	3795	B46	0.2 - 0.5	276505.2	1266046.9	32.6	7.0	78	nd	10	17	0.020	11	62	nd	28	nd	nd	nd	nd	nd	nd	nd	nd	na	na	5.9
3256	3796	B46	0.2 - 0.5	276547.9	1266058.5	31.7	6.0	44	nd	12	10	0.020	7.5	26	nd	31	nd	nd	nd	nd	nd	nd	nd	nd	na	na	5.2
3466	3986	B33	0.2 - 0.5	276436.8	1266571.5	29.6	6.5	74	nd	25	22	0.015	9.0	15	nd	30	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.0
3467	3987	B33	0.2 - 0.5	276462.9	1266590.6	30.1	5.5	65	nd	19	12	0.015	5.0	13	nd	14	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.9
3468	3988	B33	0.2 - 0.5	276477.0	1266614.0	32.5	6.0	67	nd	15	18	0.015	6.0	12	nd	21	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.8
3469	3989	B33	0.2 - 0.5	276487.5	1266632.2	30.3	6.0	56	nd	19	15	0.020	10	17	nd	25	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.7
3470	3990	B33	0.2 - 0.5	276507.2	1266638.1	28.1	5.5	63	nd	18	10	0.015	11	19	nd	21	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.9
Mean							5.9	88.2		14.4	16.1	0.0	13.2	22.8	1.0	35.7											5.5
Standard Deviation							0.9	55.3		6.8	8.8	0.0	5.3	11.6	0.0	19.2											0.8
Co-efficient of Variation							0.2	0.6		0.5	0.5	0.438	0.4	0.5	0.0	0.5											0.1

* - Contamination remediated and validated by points 3971, 3977, 3978, 3979 and 3980.

nd = not detected
na = not analysed

TABLE 5 POST EXCAVATION SAMPLING SITE 6 - NORTH WESTERN SECTOR

Sample No	Sample Point	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT
Criteria						400	20 3	100 50	6000 60	40 1	400 60	300 300	50	7400 200	✓ 10	✓ 15	✓ 0.5	✓ 1	-
137	1400	1.8 - 2	276854.6	1267011.7	17.3	52	nd	13	28	0.020	7.5	11	2.0	30	nd	nd	nd	nd	nd
138	1401	1	276852.3	1267013.6	18.4	50	nd	12	24	0.030	10	12	2.0	33	nd	nd	nd	nd	nd
139	1402	1	276852.4	1267010.1	18.5	50	nd	12	19	0.020	7.5	10	nd	27	nd	nd	nd	nd	nd
140	1403	0.8 - 2	276870.7	1267011.7	17.5	35	nd	14	23	0.020	8.0	11	nd	29	nd	nd	nd	nd	nd
141	1404	1.8 - 2	276861.6	1267012.6	17.6	61	nd	19	29	0.015	7.0	17	3.0	38	nd	nd	nd	nd	nd
142	1405	1	276860.5	1267013.7	18.6	74	nd	13	21	0.025	9.0	12	2.0	27	nd	nd	nd	nd	nd
143	1406	0 - 1	276862.0	1267013.7	18.4	30	nd	12	20	0.015	8.5	14	2.0	33	nd	nd	nd	nd	nd
144	1407	1	276868.9	1267012.4	18.5	70	nd	12	21	0.010	8.5	12	nd	31	nd	nd	nd	nd	nd
145	1408	1	276870.1	1267012.8	18.4	40	nd	14	18	0.010	7.0	15	nd	32	nd	nd	nd	nd	nd
146	1409	1.8 - 2	276857.6	1267005.1	17.7	50	nd	15	20	0.015	6.5	16	nd	30	nd	nd	nd	nd	nd
147	1410	0 - 1	276857.4	1267003.2	18.4	92	nd	12	16	0.015	5.0	10	2.0	22	nd	nd	nd	nd	nd
148	1411	1	276859.7	1267004.4	18.6	55	nd	14	21	0.005	10	19	2.0	35	nd	nd	nd	nd	nd
149	1412	2 - 2.2	276859.5	1266999.4	17.6	34	nd	15	18	0.020	7.0	16	2.0	28	nd	nd	nd	nd	nd
150	1413	1	276858.2	1266996.9	18.4	70	nd	18	23	0.010	11	21	1.0	38	nd	nd	nd	nd	nd
151	1414	1	276860.8	1266997.3	18.6	92	nd	14	20	0.010	6.5	11	nd	26	nd	nd	nd	nd	nd
152	1415	2 - 2.2	276868.0	1266990.8	17.6	74	nd	16	22	0.010	8.0	15	3.0	27	nd	nd	nd	nd	nd
153	1416	1	276867.9	1266988.8	18.2	61	nd	17	22	0.015	8.0	20	3.0	30	nd	nd	nd	nd	nd
154	1417	1	276869.5	1266990.0	18.3	125	nd	16	29	0.010	11	17	2.0	31	nd	nd	nd	nd	nd
155	1418	2 - 2.2	276870.6	1267003.2	17.8	31	nd	13	16	0.020	5.5	12	3.0	25	nd	nd	nd	nd	nd
156	1419	0.7	276869.2	1267003.7	18.4	54	nd	15	20	0.015	8.0	12	2.0	35	nd	nd	nd	nd	nd
157	1420	0.5	276870.9	1267004.3	18.4	90	nd	17	22	0.020	7.5	15	3.0	36	nd	nd	nd	nd	nd
158	1421	1.8 - 2	276868.9	1266996.8	17.4	83	nd	16	21	0.015	8.0	12	2.0	30	nd	nd	nd	nd	nd
159	1422	1	276870.1	1266996.7	18.3	96	nd	18	24	0.010	9.0	21	7.0	31	nd	nd	nd	nd	nd
160	1423	1	276869.2	1266996.0	17.9	95	nd	19	24	0.010	8.0	22	2.0	40	nd	nd	nd	nd	nd
161	1424	2.2 - 2.4	276863.3	1267048.4	17.0	130	nd	19	25	0.015	7.5	20	nd	34	nd	nd	nd	nd	nd
162	1425	2.2 - 2.5	276862.3	1267056.7	1707.0	55	nd	13	22	0.015	5.0	13	1.0	24	nd	nd	nd	nd	nd
163	1426	1	276863.3	1267041.2	18.1	38	nd	16	18	0.010	7.5	18	3.0	27	nd	nd	nd	nd	nd
164	1427	1	276860.5	1267048.4	19.3	77	nd	15	18	0.010	8.5	15	1.0	23	nd	nd	nd	nd	nd

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c.of v. calculations

TABLE 5 POST EXCAVATION SAMPLING SITE 6 - NORTH WESTERN SECTOR

Sample No	Sample Point	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT
Criteria						400	20 3	100 50	6000 60	40 1	400 60	300 300	50	7400 200	✓ 10	✓ 15	✓ 0.5	✓ 1	-
165	1428	1	276860.9	1267056.9	18.6	82	nd	18	17	0.015	9.5	15	2.0	22	nd	nd	nd	nd	nd
166	1429	1	276866.7	1267050.3	18.2	115	nd	21	18	0.005	6.0	15	3.0	23	nd	nd	nd	nd	nd
167	1430	1	276867.4	1267056.2	18.7	61	nd	19	14	0.015	5.5	13	2.0	17	nd	nd	nd	nd	nd
168	1431	1.2 - 1.4	276898.2	1267021.2	17.5	40	nd	20	24	0.015	5.0	24	1.0	29	nd	nd	nd	nd	nd
169	1432	1.2 - 1.4	276904.9	1267018.4	17.5	87	nd	20	22	0.010	13	22	2.0	33	nd	nd	nd	nd	nd
170	1433	0.5	276907.2	1267018.8	18.2	38	nd	17	22	0.005	8.0	17	1.0	29	nd	nd	nd	nd	nd
171	1434	0.5	276899.9	1267022.4	17.9	50	nd	16	20	0.015	12	15	nd	30	nd	nd	nd	nd	nd
172	1435	0.5	276905.1	1267015.5	18.3	100	nd	15	18	0.010	9.0	13	nd	30	nd	nd	nd	nd	nd
173	1436	0.5	276895.2	1267019.7	18.3	77	nd	16	19	0.020	9.5	13	nd	33	nd	nd	nd	nd	nd
174	1437	0.5	276909.7	1267015.7	18.0	66	nd	19	29	0.015	11	21	1.0	40	nd	nd	nd	nd	nd
175	1438	2.3 - 2.5	276873.5	1267014.3	17.1	85	nd	18	27	0.015	9.5	22	2.0	39	nd	nd	nd	nd	nd
176	1439	1	276874.6	1267014.9	18.7	140	nd	18	20	0.020	11	16	2.0	35	nd	nd	nd	nd	nd
177	1440	1	276872.8	1267013.1	18.8	75	nd	13	15	0.015	7.0	14	nd	26	nd	nd	nd	nd	nd
178	1441	2 - 2.3	276864.5	1267004.8	17.3	73	nd	18	23	0.020	6.5	15	2.0	27	nd	nd	nd	nd	nd
179	1442	1.1	276864.5	1267002.6	18.2	37	nd	16	22	0.015	10	21	nd	35	nd	nd	nd	nd	nd
180	1443	1	276866.1	1267004.4	18.4	89	nd	15	21	0.010	8.5	15	nd	32	nd	nd	nd	nd	nd
181	1444	1.5 - 1.7	276900.0	1267005.6	17.8	105	nd	19	26	0.015	9.0	15	1.0	36	nd	nd	nd	nd	nd
182	1445	0.5	276900.0	1267006.7	17.5	135	nd	18	24	0.015	12	20	3.0	34	nd	nd	nd	nd	nd
183	1446	0.5	276899.5	1267008.3	18.3	60	nd	13	14	0.010	7.5	14	nd	19	nd	nd	nd	nd	nd
184	1447	0.7 - 0.9	276900.5	1267013.6	18.2	42	nd	14	59	0.025	5.5	20	2.0	24	nd	nd	nd	nd	nd
185	1448	0.5	276900.5	1267013.6	18.5	55	nd	16	19	0.010	6.0	11	2.0	26	nd	nd	nd	nd	nd
186	1449	0.5	276901.0	1267011.9	18.5	35	nd	16	20	0.015	6.0	10	3.0	27	nd	nd	nd	nd	nd
187	1450	1.8 - 2	276894.9	1267011.4	17.6	77	nd	16	20	0.010	10	17	3.0	25	nd	nd	nd	nd	nd
188	1451	0.5	276894.1	1267010.4	18.2	135	nd	16	22	0.020	13	17	1.0	28	nd	nd	nd	nd	nd
189	1452	0.5	276893.4	1267011.4	18.4	130	nd	11	18	0.010	8.0	12	nd	23	nd	nd	nd	nd	nd
190	1453	1.5 - 1.7	276894.7	1267006.0	17.6	110	nd	14	27	0.010	7.5	16	nd	35	nd	nd	nd	nd	nd
191	1454	0.5	276895.4	1267006.9	18.4	130	nd	13	19	0.005	8.0	16	2.0	22	nd	nd	nd	nd	nd
192	1455	0.5	276893.8	1267006.7	18.4	145	nd	14	19	0.005	8.0	14	nd	22	nd	nd	nd	nd	nd

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c of v calculations

TABLE 5 POST EXCAVATION SAMPLING SITE 6 - NORTH WESTERN SECTOR

Sample No	Sample Point	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT
Criteria						400	3	50	60	1	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-
193	1456	1.8 - 2	276888.4	1267011.3	17.7	42	nd	12	13	0.010	8.5	15	nd	18	nd	nd	nd	nd	nd
194	1457	1	276888.7	1267010.0	18.5	56	nd	13	15	0.015	7.5	14	nd	20	nd	nd	nd	nd	nd
195	1458	1	276889.6	1267011.8	18.4	81	nd	12	20	0.005	6.0	11	nd	18	nd	nd	nd	nd	nd
196	1459	1.2 - 1.4	276888.3	1267004.4	17.8	63	nd	13	15	0.015	7.5	12	nd	20	nd	nd	nd	nd	nd
197	1460	1	276889.5	1267003.6	18.4	44	nd	11	19	0.015	7.0	10	2.0	16	nd	nd	nd	nd	nd
198	1461	1	276887.6	1267003.3	18.3	140	nd	14	23	0.020	13	17	2.0	27	nd	nd	nd	nd	nd
199	1462	1.5 - 1.7	276889.9	1267018.7	17.4	29	nd	13	21	0.010	7.0	9.0	1.0	21	nd	nd	nd	nd	nd
200	1463	1 - 1.2	276889.1	1267020.2	18.9	53	nd	13	24	0.005	8.5	9.0	nd	26	nd	nd	nd	nd	nd
201	1464	0.5	276891.2	1267020.6	18.4	94	nd	13	20	0.010	12	7.5	nd	27	nd	nd	nd	nd	nd
202	1465	0.5	276880.7	1267020.6	18.0	27	nd	13	18	0.010	9.0	11	2.0	24	nd	nd	nd	nd	nd
203	1466	1.2 - 1.5	276882.2	1267020.4	18.6	90	nd	10	20	0.005	8.0	9.0	2.0	20	nd	nd	nd	nd	nd
204	1467	0.5	276881.5	1267022.7	18.4	66	nd	11	22	0.005	8.0	10	3.0	28	nd	nd	nd	nd	nd
205	1468	1.8 - 2	276881.9	1267008.2	17.9	38	nd	11	18	0.015	7.5	8.5	1.0	21	nd	nd	nd	nd	nd
206	1469	1	276880.1	1267009.3	18.5	80	nd	12	19	0.010	9.0	10	2.0	20	nd	nd	nd	nd	nd
207	1470	1	276882.1	1267010.6	18.5	89	nd	11	18	0.010	8.0	11	3.0	20	nd	nd	nd	nd	nd
208	1471	1.5 - 1.7	276891.7	1267067.0	18.4	26	nd	12	15	0.020	8.0	11	1.0	19	nd	nd	nd	nd	nd
209	1472	0.3	276889.4	1267069.6	19.2	100	nd	12	18	0.005	8.0	8.0	1.0	21	nd	nd	nd	nd	nd
210	1473	1.2 - 1.5	276988.4	1266989.9	18.0	165	nd	14	19	0.010	6.5	7.5	nd	15	nd	nd	nd	nd	nd
211	1474	0.3	276987.5	1266989.7	18.6	25	nd	12	12	0.015	4.5	6.5	nd	9.0	nd	nd	nd	nd	nd
212	1475	1 - 1.2	276987.5	1266984.9	18.2	21	nd	13	22	0.005	5.0	14	2.0	19	nd	nd	nd	nd	nd
213	1476	0.2	276987.8	1266985.2	18.6	14	nd	10	11	0.005	4.0	6.0	2.0	8.5	nd	nd	nd	nd	nd
214	1477	0 - 0.2	276786.2	1267008.8	17.7	110	nd	16	28	0.020	8.0	23	1.0	34	nd	nd	nd	nd	nd
215	1478	0 - 0.2	276785.0	1267019.7	17.9	145	nd	25	28	0.010	8.5	25	2.0	38	nd	nd	nd	nd	nd
216	1479	0 - 0.2	276785.2	1267018.4	18.3	110	nd	12	17	0.010	12	18	3.0	42	nd	nd	nd	nd	nd
217	1480	0.3	276785.0	1267019.7	19.5	180	nd	13	18	0.005	9.0	22	1.0	29	nd	nd	nd	nd	nd
218	1481	0 - 0.2	276751.0	1267073.9	20.4	37	nd	11	18	0.025	7.0	16	1.0	26	nd	nd	nd	nd	nd
219	1482	0 - 0.2	276747.7	1267064.5	20.4	40	nd	12	16	0.030	7.5	14	nd	27	nd	nd	nd	nd	nd
220	1483	0 - 0.2	276742.6	1267050.2	20.3	27	nd	11	14	0.020	6.0	12	1.0	17	nd	nd	nd	nd	nd

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c of v calculations

TABLE 5 POST EXCAVATION SAMPLING SITE 6 - NORTH WESTERN SECTOR

Sample No	Sample Point	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT
Criteria						400	3	50	60	1	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-
221	1484	0 - 0.2	276737.5	1267036.2	20.2	23	nd	10	10	0.030	7.0	10	2.0	20	nd	nd	nd	nd	nd
222	1485	0 - 0.2	276723.3	1267040.7	20.4	12	nd	10	10	0.025	5.0	9.0	2.0	11	nd	nd	nd	nd	nd
223	1486	0 - 0.2	276728.2	1267055.5	20.3	11	nd	13	7.0	0.020	5.0	8.5	3.0	10	nd	nd	nd	nd	nd
224	1487	0 - 0.1	276733.2	1267069.7	20.5	17	nd	12	12	0.030	5.0	11	1.0	16	nd	nd	nd	nd	nd
225	1488	0 - 0.2	276736.9	1267079.1	20.6	37	nd	14	14	0.045	8.5	13	2.0	22	nd	nd	nd	nd	nd
226	1489	0 - 0.2	276724.2	1267085.7	20.6	31	nd	14	14	0.030	7.5	12	2.0	22	nd	nd	nd	nd	nd
227	1490	0 - 0.2	276719.4	1267074.6	20.6	36	nd	12	34	0.055	6.0	20	5.0	65	nd	nd	nd	0.7	nd
228	1491	0 - 0.2	276714.6	1267060.5	20.5	10	nd	10	8.5	0.020	4.0	5.0	4.0	8.0	nd	nd	nd	nd	nd
229	1492	0 - 0.2	276709.1	1267045.6	20.5	11	nd	8.5	8.0	0.020	4.5	5.0	1.0	8.0	nd	nd	nd	nd	nd
230	1493	0 - 0.2	276690.6	1267052.6	20.5	32	nd	12	10	0.025	5.5	11	1.0	15	nd	nd	nd	nd	nd
231	1494	0 - 0.2	276695.2	1267067.0	20.6	25	nd	10	14	0.010	6.0	9.0	3.0	17	nd	nd	nd	nd	nd
232	1495	0 - 0.2	276700.2	1267081.1	20.7	19	nd	11	10	0.015	4.5	7.5	1.0	14	nd	nd	nd	nd	nd
233	1496	0 - 0.2	276703.1	1267089.7	20.8	27	nd	10	10	0.075	5.5	10	nd	21	nd	nd	nd	nd	nd
234	1497	0 - 0.1	276850.5	1266995.5	18.3	24	nd	12	12	0.030	5.0	8.5	nd	17	nd	nd	nd	nd	nd
235	1498	0 - 0.1	276844.4	1267039.7	19.6	32	nd	12	13	0.030	6.0	15	nd	24	nd	nd	nd	nd	nd
236	1499	0 - 0.1	276851.4	1267058.6	19.7	15	nd	10	20	0.025	6.0	9.5	nd	37	nd	nd	nd	nd	nd
237	1500	0 - 0.1	276857.7	1267077.4	19.8	23	nd	10	12	0.020	6.5	10	1.0	15	nd	nd	nd	nd	nd
238	1501	0 - 0.1	276864.3	1267096.3	19.9	38	nd	9.5	12	0.025	8.0	10	nd	20	nd	nd	nd	nd	nd
239	1502	0 - 0.1	276889.3	1267109.0	20.0	35	nd	11	11	0.025	6.5	10	2.0	15	nd	nd	nd	nd	nd
240	1503	0 - 0.1	276876.7	1267071.2	19.7	59	nd	13	15	0.030	10	15	2.0	37	nd	nd	nd	nd	nd
241	1504	0 - 0.1	276863.6	1267033.3	19.5	52	nd	13	18	0.025	8.0	14	1.0	28	nd	nd	nd	nd	nd
242	1505	0 - 0.1	276837.9	1267020.3	19.5	52	nd	13	15	0.020	8.5	12	1.0	20	nd	nd	nd	nd	nd
243	1506	0 - 0.1	276875.6	1267007.9	19.3	70	nd	13	18	0.035	8.0	20	nd	31	nd	nd	nd	nd	nd
244	1507	0 - 0.1	276882.4	1267026.8	19.3	51	nd	13	17	0.020	8.0	15	2.0	22	nd	nd	nd	nd	nd
245	1508	0 - 0.2	276889.3	1267045.9	19.3	30	nd	11	16	0.010	6.5	11	3.0	16	nd	nd	nd	nd	nd
246	1509	0 - 0.1	276895.9	1267064.3	19.4	17	nd	11	20	0.020	6.0	12	1.0	23	nd	nd	nd	0.4	nd
247	1510	0 - 0.1	276902.1	1267083.9	19.6	40	nd	11	12	0.010	7.0	13	nd	17	nd	nd	nd	nd	nd
249	1511	0 - 0.1	276871.1	1267115.2	20.1	19	nd	13	7.0	0.010	5.5	11	1.0	13	nd	nd	nd	nd	nd

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c.of v. calculations

TABLE 5 POST EXCAVATION SAMPLING SITE 6 - NORTH WESTERN SECTOR

Sample No	Sample Point	DEPTH (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	mg/kg Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT
Criteria						400	3	50	60	1	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-
250	1512	0 - 0.2	276908.6	1267102.1	19.8	41	nd	16	7.5	0.015	7.0	22	2.0	17	nd	nd	nd	nd	nd
251	1513	0 - 0.1	276899.8	1267023.7	19.3	77	nd	15	22	0.025	8.5	21	1.0	30	nd	nd	nd	nd	nd
252	1514	0 - 0.2	276906.6	1267039.7	19.3	27	nd	12	11	0.015	6.0	18	1.0	19	nd	nd	nd	nd	nd
253	1515	0 - 0.2	276913.9	1267058.3	19.3	28	nd	11	10	0.010	6.5	15	1.0	16	nd	nd	nd	nd	nd
254	1516	0 - 0.2	276920.7	1267076.9	19.4	37	nd	15	15	0.020	8.0	20	1.0	24	nd	nd	nd	nd	nd
255	1517	0 - 0.1	276926.1	1267090.3	19.4	49	nd	14	11	0.020	8.0	20	nd	22	nd	nd	nd	nd	nd
256	1518	0 - 0.2	276920.2	1267013.7	19.0	53	nd	12	20	0.030	7.0	19	1.0	27	nd	nd	nd	nd	nd
257	1519	0 - 0.2	276926.5	1267032.7	19.2	37	nd	15	12	0.025	7.5	18	2.0	19	nd	nd	nd	nd	nd
258	1520	0 - 0.2	276933.3	1267051.5	19.2	27	nd	12	10	0.010	8.0	14	nd	15	nd	nd	nd	nd	nd
259	1521	0 - 0.2	276939.8	1267069.4	19.3	39	nd	13	11	0.015	7.0	18	1.0	21	nd	nd	nd	nd	nd
260	1522	0 - 0.2	276946.3	1267088.8	19.4	43	nd	30	11	0.030	14	16	3.0	28	nd	nd	nd	nd	nd
261	1523	0 - 0.2	276952.3	1267044.8	19.1	27	nd	15	11	0.030	7.0	20	nd	24	nd	nd	nd	nd	nd
262	1524	0 - 0.2	276868.0	1267106.8	20.0	38	nd	21	12	0.030	10	19	nd	24	nd	nd	nd	nd	nd
Mean						60.8		14.0	18.3	0.0	7.7	14.7	2.0	25.6					
Standard Deviation						37.0		3.3	6.6	0.0	2.0	4.2	1.0	8.1					
Co-efficient of Variation						0.6		0.2	0.4	0.6	0.3	0.3	0.5	0.3					

nd = not detected
na = not analysed
Note: nd results excluded from mean, sd and c.of v. calculations

Table 10 - Summary of Chemical Analysis - Field Measurements

Well Number	Sample Date	pH	Electrical Conductivity uS/cm	TDS mg/L	Dissolved Oxygen mg/L	Temperature °C
SM54	01-Oct-91	7.1	29100	19200	na	na
	18-May-93	6.7	na	na	na	na
	07-Sep-93	na	41400	19700	na	na
	19-Apr-94	6.85	na	na	na	21.2
SM69	14-Aug-92	5.99	na	na	na	na
	18-May-93	5.9	na	na	na	na
	22-Jul-93	na	18480	na	na	na
	10-Mar-94	5.89	19300	12800	4.9	21.2
	06-Sep-94	5.68	>20000	>10000	3.5	18
SM70	18-May-93	6.3	na	na	na	na
	10-Mar-94	5.99	>20000	>10000	na	21.9
SM71	15-Aug-92	5.67	na	na	na	na
	18-May-93	5.5	na	na	na	na
	22-Jul-93	na	21640	na	na	na
	10-Mar-94	5.49	>20000	>10000	4.5	22.2
	15-Apr-94	5.5	>20000	>20000	na	19.0
SM68	02-Feb-94	7.24	18600	5060	na	21.4
	17-Oct-94	6.2	37200	18200	0.8	23.1
SM78	17-Jan-94	6.75	23600	na	na	19.2
SM79	17-Jan-94	5.51	31000	na	na	18.9
SM108	01-Jun-94	5.77	na	na	6.1	18.6
SM109	01-Jun-94	5.75	na	na	3.3	18.8
SM27	17-Jan-94	6.33	24600	na	na	24.7
SM86	17-Jan-94	6.43	26400	na	na	18.9
	01-Sep-94	6.42	>20000	>10000	4.9	20.9
SM30	17-Jan-94	5.65	11600	na	na	24
	03-Feb-94	6.86	15260	9700	1.5	22.5
	11-Oct-94	6.31	20000	9720	2.7	20
SM76	17-Jan-94	4.73	31400	na	na	26
	10-Mar-94	4.88	>20000	>10000	1	22.9
	11-Oct-94	5.84	39600	18200	4.4	20.6
SM77	17-Jan-94	6.5	27500	na	na	21.3
	10-Mar-94	6.73	>20000	>10000	6.2	21.0
	18-Oct-94	6.07	31000	15000	2.5	19.0
SM110	01-Jun-94	4.74	na	14700	na	26
	11-Oct-94	4.7	28000	13800	3.9	20
	28-Feb-95	6.05	>20000	>10000	5	-

na - Not Analysed

Table 10A - Summary of Baseline Chemical Analysis

Well No.	Sample Date	mg/L											
		Na	K	Ca	Fe	Mg	Cl	HCO3	SO4	PO4	NO3	CO2	TOC
SM54	1.Oct.91	5540	96	170	na	1090	11000	510	1100	na	na	na	0.6
	18.May.93	5620	8.3	175	na	890	10700	460	1300	0.15	7.4	na	na
	7.Sep.93	5730	20	310	na	960	11000	740	1340	nd	0.92	na	na
	19.Apr.94	5290	23	335	1.1	970	10500	780	1340	nd	0.93	na	na
SM69	18.May.93	5600	14	320	na	990	11900	210	820	nd	1.1	na	na
	17.Jun.93	5400	17	330	na	1130	11400	280	730	nd	0.85	na	na
	22.Jul.93	5100	18	400	na	1060	10900	310	850	nd	nd	na	na
	10.Mar.94	5260	20	390	1.1	1100	11600	330	770	na	na	na	60
	6.Sep.94	4920	21	400	na	1120	11300	330	730	nd	nd	nd	na
SM70	18.May.93	3910	19	410	na	670	8500	520	200	nd	23	na	na
	17.Jun.93	3920	17	350	na	720	8300	550	180	nd	6.5	na	na
	22.Jul.93	3790	16	395	na	690	7600	500	240	nd	nd	na	na
SM71	18.May.93	6890	11	170	na	1050	13100	180	1400	0.38	0.67	na	na
	17.Jun.93	6830	11	155	na	1150	13200	340	1200	0.15	0.94	na	na
	22.Jul.93	6410	10	160	na	1130	12300	150	1550	nd	0.13	na	na
	15.Apr.94	6330	1.9	165	10	1050	12200	170	1500	nd	nd	na	na
SM68	1.Feb.94	5200	63	460	0.2	950	9960	1050	1420	nd	53	na	6.4
	1.Oct.94	5220	62	490	0.62	980	9900	1220	1430	na	na	na	44
SM78	17.Jan.94	4040	36.8	402	2.32	554	8330	91.5	2.1	nd	0.23	12.1	4
SM79	17.Jan.94	5650	22.1	175	0.11	1020	11050	7.3	1094	nd	0.25	120	5
SM108	1.Jun.94	5180	23	250	0.5	740	9400	970	610	nd	nd	na	82
SM109	1.Jun.94	4500	13	290	0.41	680	8920	470	500	nd	nd	na	43
SM27	1.Oct.91	na	na	na	na	na	na	na	na	na	na	na	1.1
	17.Jan.94	4710	18.2	124	0.1	756	8390	449	899	nd	2.48	116.6	4
	1.Sep.94	4020	18	86	0.18	600	7230	340	760	nd	10	na	na
SM86	17.Jan.94	5090	26.5	217	0.31	836	9070	656	935	nd	0.33	86.9	3
	1.Sep.94	4600	19	220	0.27	710	8560	630	890	nd	0.56	na	na
SM30	1.Oct.91	na	na	na	na	na	na	na	na	na	na	na	0.2
	17.Jan.94	2250	4.8	20.2	5.65	247	4049	56.1	266	nd	0.33	75.9	6
	3.Feb.94	3200	2.8	38	1.4	365	5610	40	440	nd	nd	na	na
	1.Oct.94	3740	2.7	44	5	380	6750	47	500	na	na	na	na
SM76	17.Jan.94	6270	13.1	73.3	0.19	908	11410	17.1	686	nd	0.27	93.9	5
	1.Oct.94	6000	4.8	92	0.08	690	11100	21	690	na	na	na	na
SM77	17.Jan.94	5810	22.4	143	0.4	794	9740	331.9	572	nd	0.41	72.6	4
	10.Mar.94	5330	13	120	0.85	550	9510	290	510	na	na	na	2
	1.Oct.94	4360	16	125	0.34	480	7870	440	410	na	na	na	na
SM110	1.Jun.94	4830	6.2	42	4	580	8440	0.5	770	nd	1	na	9
	1.Oct.94	5120	6.6	46	0.26	550	9120	9	670	na	na	na	na

TOC - Total Organic Carbon
nd - not detected
na - not analysed

Table 10B - Summary of Heavy Metal and Explosive Analysis

Well No.	Sample Date	1.4 Cu	3.4 Pb	8 Zn	0.2 Cd	1 Cr	13 As	300/3000 mg/L Ba	0.06 Hg	RDX	0.140 TNT 2,4,6	MNT	0.016 DNT 2,4	0.0003 DNT 2,6
Criteria		1	0.05	5	0.005	0.05	0.05	1	0.001	0.1	0.05		0.035	0.035
PQL		0.01	0.01	0.1	0.005	0.01	0.1	0.1	0.0001	0.02	0.02	0.02	0.02	0.02
SM54	1.Oct.91	nd	nd	0.05	nd	0.01	nd	na	nd	nd	nd	na	na	na
	18.May.93	0.06	nd	0.26	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	15.Apr.94	nd	nd	nd	0.003	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM69	30.Oct.92	nd	0.05	nd	nd	nd	0.001	0.02	0.002	nd	0.05	nd	nd	nd
	18.May.93	0.06	nd	0.03	nd	nd	nd	0.1	nd	nd	nd	nd	nd	nd
	17.Jun.93	na	na	na	na	na	na	0.1	nd	nd	0.09	nd	nd	nd
	22.Jul.93	na	nd	na	na	na	na	0.1	nd	nd	nd	nd	nd	nd
	10.Mar.94	0.02	nd	0.21	0.003	nd	nd	nd	nd	na	na	na	na	na
SM70	30.Oct.92	nd	0.05	nd	nd	nd	0.001	0.15	nd	nd	0.05	nd	nd	nd
	18.May.93	0.03	nd	0.07	nd	nd	nd	0.2	nd	nd	nd	nd	nd	nd
	17.Jun.93	na	na	na	na	na	na	nd	nd	nd	0.25	nd	nd	nd
	22.Jul.93	na	nd	na	na	na	na	0.1	nd	nd	nd	nd	nd	nd
	10.Mar.94	0.02	nd	0.06	0.003	nd	nd	nd	nd	na	na	na	na	na
SM71	30.Oct.92	nd	0.05	nd	nd	nd	0.001	0.02	nd	nd	0.1	nd	nd	nd
	18.May.93	0.07	nd	0.09	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	17.Jun.93	na	na	na	na	na	na	nd	nd	nd	0.34	nd	nd	nd
	22.Jul.93	na	nd	na	na	na	na	nd	nd	0.13	nd	nd	nd	nd
	10.Mar.94	0.03	nd	0.14	0.003	nd	nd	nd	nd	nd	nd	nd	nd	nd
	15.Apr.94	nd	nd	0.16	0.003	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM68	29.Oct.92	nd	0.05	nd	nd	nd	0.001	0.03	nd	nd	nd	nd	nd	nd
	1.Feb.94	0.03	nd	0.07	0.003	0.01	nd	nd	nd	0.2	nd	nd	nd	nd
	1.Oct.94	0.01	nd	0.02	nd	nd	nd	0.1	nd	nd	nd	nd	nd	nd
SM78	17.Jan.94	nd	0.025	0.01	0.003	na	na	50.7	nd	nd	nd	na	nd	nd
SM79	17.Jan.94	nd	0.025	0.03	0.003	na	na	0.06	nd	nd	nd	na	nd	nd
SM108	1.Jun.94	nd	nd	0.01	0.003	nd	nd	0.1	nd	nd	nd	nd	nd	nd
SM109	1.Jun.94	nd	nd	nd	0.003	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM27	1.Oct.91	nd	0.02	0.04	nd	nd	nd	na	nd	nd	nd	na	na	na
	17.Jan.94	nd	0.025	0.09	0.003	na	na	0.04	nd	nd	nd	na	nd	nd
	1.Sep.94	0.02	0.02	0.24	nd	nd	nd	0.2	nd	nd	nd	nd	nd	nd
SM86	17.Jan.94	nd	0.025	0.04	0.003	na	na	0.07	nd	nd	nd	na	nd	nd
	1.Sep.94	nd	nd	0.03	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM30	1.Oct.91	0.07	0.19	0.28	nd	nd	nd	na	nd	nd	nd	na	na	na
	17.Jan.94	nd	0.025	0.28	0.003	na	na	0.29	nd	nd	nd	na	nd	nd
	3.Feb.94	0.02	nd	0.23	0.003	nd	nd	nd	nd	nd	nd	nd	nd	nd
	1.Oct.94	nd	0.01	0.11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM76	17.Jan.94	nd	0.07	0.39	0.003	na	na	0.07	nd	nd	nd	na	nd	nd
	10.Mar.94	0.05	nd	0.39	0.003	nd	nd	nd	nd	na	na	na	na	na
	1.Oct.94	nd	0.04	0.26	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM77	17.Jan.94	nd	0.05	0.18	0.003	na	na	0.32	nd	nd	nd	na	nd	nd
	10.Mar.94	0.03	0.001	0.17	0.003	nd	nd	0.7	nd	na	na	na	na	na
	1.Oct.94	nd	nd	0.04	nd	nd	nd	0.3	nd	nd	nd	nd	nd	nd
SM110	1.Jun.94	0.02	0.02	0.15	0.003	nd	nd	nd	nd	nd	nd	nd	nd	nd
	1.Oct.94	nd	0.04	0.17	nd	nd	nd	nd	0.17	nd	nd	nd	nd	nd
	1.Feb.95	na	0.02	na	na	na	na	na	na	na	na	na	na	na
	1.Mar.95	0.04	0.02	0.22	nd	nd	nd	0.1	nd	na	na	na	na	na
	19.May.95	0.03	0.03	0.15	nd	nd	0.3	nd	nd	na	na	na	na	na

na - not analyed
nd - not detected
PQL-Practical QuantitativeLevel
- Criteria Not Available

Table 10C - Summary of Volatile Halogenated Hydrocarbon Analysis

Well No.	Sample Date	mg/L												
		0.0003 Vinylchloride	Chloroethane	Trichlorofluoromethane	0.7 Dichloroethylene	Methylenechloride	0.06 1,2nd Trans-dichloroethylene	0.09 1,1 Dichloroethane	0.06 Cis 1,2-Dichloroethylene	0.37 Chloroform	0.270 1,1,1 Trichloroethane	0.24 Carbontetrachloride	1.9 1,2 Dichloroethylene	0.33 Trichloroethylene
Criteria		0.53	-	-	0.002	-	-	-	-	0.016	-	0.007	0.24	0.08
PQL		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
SM54	1.Oct.91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	15.Apr.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM69	30.Oct.92	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
	15.Apr.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM70	30.Oct.92	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
	15.Apr.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM71	30.Oct.92	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
	15.Apr.94	nd	nd	nd	nd	nd	nd	nd	nd	0.007	nd	nd	nd	nd
SM68	29.Oct.92	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
SM108	1.Jun.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM109	1.Jun.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM27	1.Oct.91	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	0.003
	1.Sep.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM86	1.Sep.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM30	1.Oct.91	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd
SM110	1.Jun.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

PQL : Practical Quantitation Limit
nd - Not Detected
na - Not Analysed
- Criteria Not Available

Table 10D - Summary of Halogenated Hydrocarbon Analysis

Well No.	Sample Date	mg/L												
		Dichloropropane	Bromodichloromethane	Trans 1,3dichloropropene	Cis1,3-dichloropropene	0.5 1,1,2-Trichloroethane	0.07 Tetrachloroethylene	Dibromochloromethane	0.055 Chlorobenzene	Bromoform	0.1 1,1,2,2-Tetrachloroethane	0.26 1,3-Dichloro-benzene(m)	0.06 1,4-Dichloro-benzene(p)	0.16 1,2-Dichloro-benzene(o)
Criteria		-	-	-	-	0.04	0.009	-	-	-	0.011	0.0025	0.004	0.0025
PQL		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
SM54	1.Oct.91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	15.Apr.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM69	30.Oct.92	na	nd	na	na	nd	na	nd	nd	nd	nd	nd	nd	nd
	15.Apr.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM70	30.Oct.92	na	nd	na	na	nd	na	nd	nd	nd	nd	nd	nd	nd
	15.Apr.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM71	30.Oct.92	na	nd	na	na	nd	na	nd	nd	nd	nd	nd	nd	nd
	15.Apr.94	nd	0.002	nd	nd	nd	nd	0.001	nd	nd	nd	nd	nd	nd
SM68	29.Oct.92	na	nd	na	na	nd	na	nd	nd	nd	nd	nd	nd	nd
SM108	1.Jun.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM109	1.Jun.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM27	1.Oct.91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	1.Sep.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM86	1.Sep.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM30	1.Oct.91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM110	1.Jun.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

nd - Not Detected
na - Not Analysed
- Criteria Not Available

Table 10E - Summary of TPH/BTEX Analysis

Well No	Sample Date	mg/L								
		C6-C9	C10-C14	C15-C28	C29-C36	0.95 Benzene	0.18 Toluene	Ethylbenzen	0.075 Xylene	0.32 Phenols
Criteria		0.1	0.1	0.3	0.3	0.01	0.3	0.3	0.14	-
PQL		0.04	0.02	0.2	0.2	0.001	0.001	0.001	0.001	0.01
SM54	1.Oct.91	0.1	0.1	2.5	2.5	nd	nd	nd	nd	na
	18.May.93	na	na	na	na	nd	nd	nd	nd	na
	7.Sep.93	nd	nd	nd	nd	na	na	na	na	na
	15.Apr.94	0.02	0.1	0.1	nd	nd	nd	nd	nd	na
SM69	30.Oct.92	nd	nd	nd	nd	nd	nd	nd	nd	na
	18.May.93	na	na	na	na	nd	nd	nd	nd	na
	17.Jun.93	nd	nd	nd	nd	na	na	na	na	na
SM70	30.Oct.92	nd	nd	nd	nd	nd	nd	nd	nd	na
	18.May.93	nd	nd	0.15	0.15	nd	nd	nd	nd	na
	17.Jun.93	nd	nd	nd	nd	na	na	na	na	na
SM71	30.Oct.92	nd	nd	nd	nd	nd	nd	nd	nd	na
	18.May.93	na	na	na	na	nd	nd	nd	nd	na
	17.Jun.93	nd	nd	nd	nd	na	na	na	na	na
	15.Apr.94	nd	nd	nd	nd	nd	nd	nd	nd	na
SM68	29.Oct.92	nd	nd	nd	nd	nd	nd	nd	nd	na
	1.Feb.94	nd	0.2	nd	nd	nd	nd	nd	nd	na
	1.Oct.94	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM78	17.Jan.94	na	na	na	na	na	na	na	na	nd
SM79	17.Jan.94	na	na	na	na	na	na	na	na	nd
SM108	1.Jun.94	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM109	1.Jun.94	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM27	1.Oct.91	0.1	0.1	2.5	2.5	nd	nd	nd	nd	na
	17.Jan.94	na	na	na	na	na	na	na	na	nd
	1.Sep.94	nd	nd	nd	nd	nd	nd	nd	nd	na
SM86	17.Jan.94	na	na	na	na	na	na	na	na	nd
	1.Sep.94	nd	nd	nd	nd	nd	nd	nd	nd	na
SM30	1.Oct.91	0.1	0.1	2.5	2.5	nd	nd	nd	nd	na
	17.Jan.94	na	na	na	na	na	na	na	na	nd
	3.Feb.94	nd	nd	nd	nd	nd	nd	nd	nd	na
	1.Oct.94	nd	nd	nd	nd	nd	nd	nd	nd	na
SM76	17.Jan.94	na	na	na	na	na	na	na	na	nd
	10.Mar.94	na	na	na	na	na	na	na	na	na
	1.Oct.94	nd	nd	nd	nd	nd	nd	nd	nd	na
SM77	17.Jan.94	na	na	na	na	na	na	na	na	nd
	10.Mar.94	na	na	na	na	na	na	na	na	na
	1.Oct.94	nd	nd	nd	nd	nd	nd	nd	nd	na
SM110	1.Jun.94	nd	nd	nd	nd	nd	nd	nd	nd	nd
	1.Oct.94	nd	nd	nd	nd	nd	nd	nd	nd	na

PQL : practical Quantitation Limit
nd - Not Detected
na - Not Analysed
- Criteria not available

Table 10F - Summary of Organochlorine and PCB Analysis

Well No.	Sample Date	mg/L																	
		HCB	a_bhc	Lindane	Heptachlor	b_bhc	Aldrin	Oxychlordane	Heptachlorepoxide	Total endosulfans	Chlordane	DDE	Dieldrin	Endrin	DDD	DDT	Methoxychlor	PAH	PCB
				0.0002	0.00001		0.000001			0.00003	0.00003	0.00003	0.00001	0.00001		0.00006	0.00005		0.000001
Criteria		-	-	0.01	0.003	-	0.001	-	0.003	0.04	0.006	-	0.001	0.001	-	0.003	-	-	-
PQL		0.0001			0.0001		0.0001		0.0001	0.0001	0.0001		0.0001	0.0001		0.0001			
SM54	1.Oct.91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd
	18.May.93	nd	nd	nd	nd	nd	nd	nd	nd	na	na	nd	nd	nd	nd	nd	nd	na	nd
	15.Apr.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd
SM69	30.Oct.92	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	na	na
	18.May.93	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SM70	30.Oct.92	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	na	na
	18.May.93	nd	na	nd	nd	na	nd	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na
SM71	30.Oct.92	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	na	na
	18.May.93	nd	nd	nd	nd	nd	nd	nd	nd	na	na	nd	nd	nd	nd	nd	nd	na	nd
	15.Apr.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd
SM68	29.Oct.92	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	na	na
SM108	1.Jun.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd
SM109	1.Jun.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd
SM27	1.Oct.91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd
	1.Sep.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd
SM86	1.Sep.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd
SM30	1.Oct.91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd
SM110	1.Jun.94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd

PQL : Practical Quantitation Limit
nd - Not Detected
na - Not Analysed
- Criteria not Available

Table 2 - Summary of Groundwater Levels from 1991 to 1995

Well No	Aquifer Type	Water Level																				WL Fluctuation	
		Late 91		Late 92		Late 93		Jan.94		Feb.94		Mar.94		May.94		Jul.94		Sept.94		Apr.95		Jul.94-Apr.95	Avg. Annual
		Depth	RL	Depth	RL	Depth	RL	Depth	RL	Depth	RL	Depth	RL	Depth	RL	Depth	RL	Depth	RL	Depth	RL	m	m
		m bgl	m AHD	m bgl	m AHD	m bgl	m AHD	m bgl	m AHD	m bgl	m AHD	m bgl	m AHD	m bgl	m AHD	m bgl	m AHD	m bgl	m AHD	m bgl	m AHD		
SM54	Fractured Shale	5.14	18.85	-	-	5.70	18.29	-	-	5.84	18.15	-	-	-	-	5.54	18.45	5.98	18.01	6.09	17.90	-0.55	-0.66
SM69	Fractured Shale	-	-	4.34	15.03	4.60	14.77	-	-	4.72	14.65	4.72	14.65	-	-	4.52	14.85	5.11	14.26	5.45	13.92	-0.93	-1.12
SM70	Fractured Shale	-	-	5.69	14.64	5.66	14.67	-	-	5.85	14.48	5.65	14.68	-	-	5.81	14.52	6.73	13.60	6.58	13.75	-0.77	-0.92
SM71	Fractured Shale	-	-	7.27	14.68	7.32	14.63	-	-	7.27	14.68	7.27	14.68	-	-	7.31	14.64	8.11	13.84	8.12	13.83	-0.81	-0.97
SM68	Fractured Shale	1.99	25.73	-	-	-	-	3.31	24.41	2.65	25.07	-	-	-	-	2.62	25.10	3.28	24.44	2.7	25.02	-0.08	-0.10
SM78	Fractured Shale	-	-	-	-	-	-	1.43	14.80	1.42	14.81	-	-	-	-	1.51	14.72	2.14	14.09	2.48	13.75	-0.97	-1.16
SM79	Fractured Shale	-	-	-	-	-	-	1.73	14.52	1.66	14.59	-	-	-	-	1.85	14.40	2.74	13.51	3.02	13.23	-1.17	-1.40
SM108	Shallow (local)	-	-	-	-	-	-	-	-	-	-	-	-	3.11	15.29	3.23	15.17	4.09	14.31	4.41	13.99	-1.18	-1.42
SM109	Shallow (local)	-	-	-	-	-	-	-	-	-	-	-	-	1.95	15.10	2.04	15.01	2.87	14.18	3.25	13.80	-1.21	-1.45
SM27	Shallow (local)	6.03	11.27	-	-	6.32	10.98	-	-	6.68	10.62	-	-	-	-	5.72	11.58	7.17	10.13	7.07	10.23	-1.35	-1.62
SM86	Fractured Shale	-	-	-	-	-	-	6.88	10.45	6.76	10.57	-	-	-	-	6.65	10.68	7.40	9.93	7.27	10.06	-0.62	-0.74
SM30	Shallow (local)	3.14	15.55	-	-	3.22	15.47	-	-	3.33	15.36	-	-	-	-	3.58	15.11	4.09	14.60	3.97	14.72	-0.39	-0.47
SM76	Shallow (local)	-	-	-	-	-	-	2.29	15.25	2.38	15.16	2.36	15.18	-	-	2.50	15.04	3.19	14.35	3.11	14.43	-0.61	-0.73
SM77	Fractured Shale	-	-	-	-	-	-	2.01	15.64	2.04	15.61	2.01	15.64	-	-	2.07	15.58	2.61	15.04	2.68	14.97	-0.61	-0.73
SM110	Shallow (local)	-	-	-	-	-	-	-	-	-	-	-	-	3.57	14.96	3.66	14.87	4.43	14.10	4.37	14.16	-0.71	-0.85

- not measured
m bgl: meters below ground level
RL : Reduced Level
AHD : meters Australian Height Datum
- ve : Falling Water Level

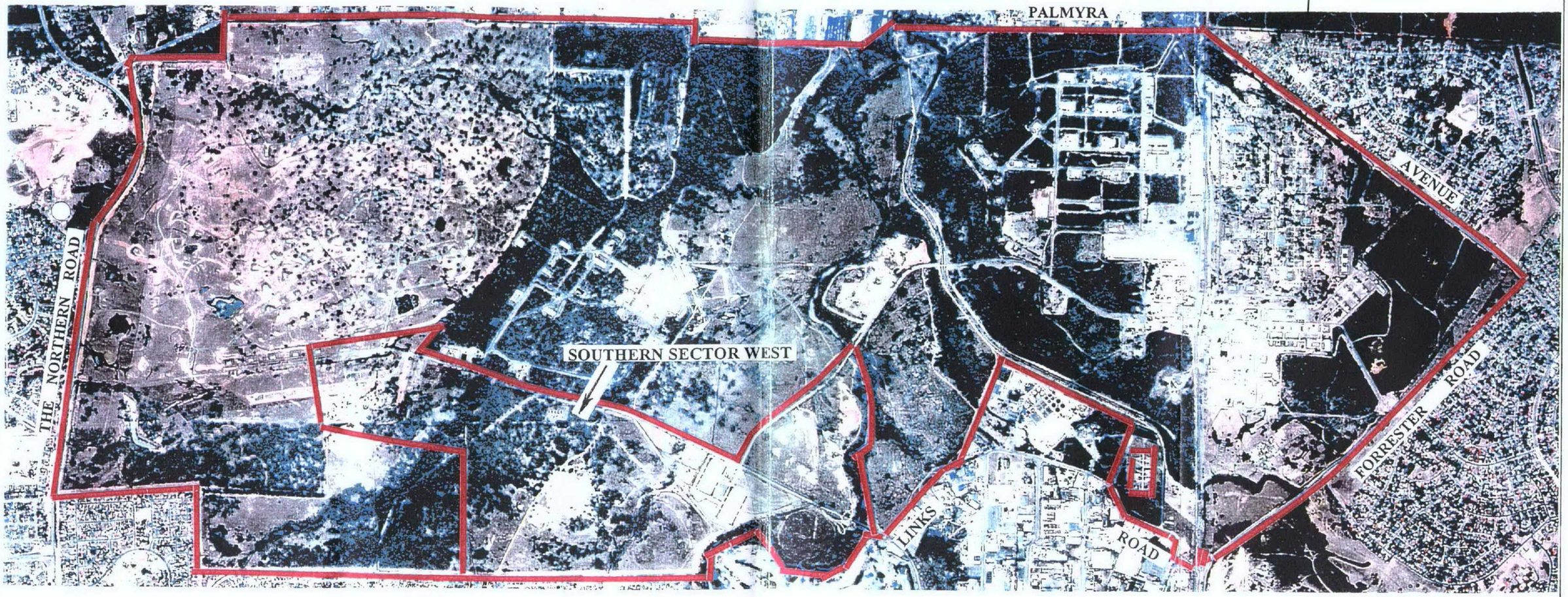


FIGURE 15

REVISIONS	This drawing remains the property of ADI Limited It is subject to ADI's recall and must not be reproduced in part or whole or its contents divulged to third parties without prior written approval from ADI Limited	DESIGN ENGINEER I.C. APPROVED	SCALE NTS DRAWN B.D. DATE 18/01/1996	ADI ADI LIMITED TECHNOLOGY GROUP GROUND FLOOR 77 PARRAMATTA ROAD SILVERWATER NSW 2141 PH(02)350 9200 FAX(02)350 9274	CLIENT	TITLE ADI ST MARYS PROPERTY PLAN SHOWING THE LOCATION OF THE SOUTHERN SECTOR WEST WITHIN THE PROPERTY	DRAWING No. 1.SW.1P JOB No. 498810 REVISION

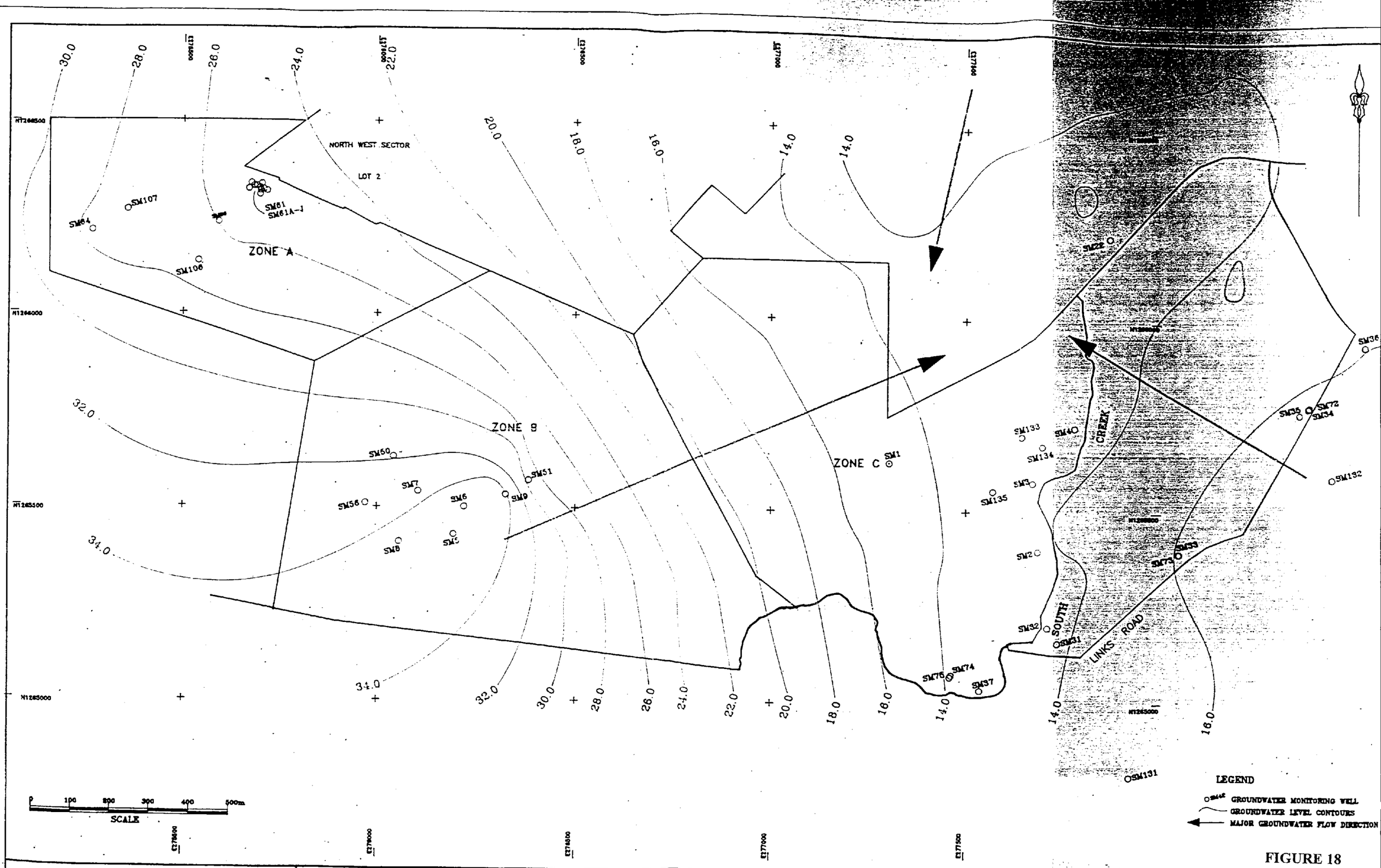


FIGURE 18

REVISIONS	DATUM/GRID	SCALE	ADI LIMITED TECHNOLOGY GROUP GROUND FLOOR 77 PARRAMATTA ROAD SILVERWATER NSW 2141 PH(02)350 9200 FAX(02)350 9274	CLIENT	TITLE	DRAWING No.
		1 : 5000			ADI ST MARYS FACILITY SOUTHERN SECTOR WEST PLAN SHOWING GROUNDWATER LEVEL CONTOUR MAP AUGUST 1995 (SHALLOW UPPER AQUIFER)	1.SW.1h
	SURVEYED	DRAWN				JOB No.
		B.D.				498810
	CAD FILES ACAD SE1-WATE	DATE 16/02/1996				1st ISSUE

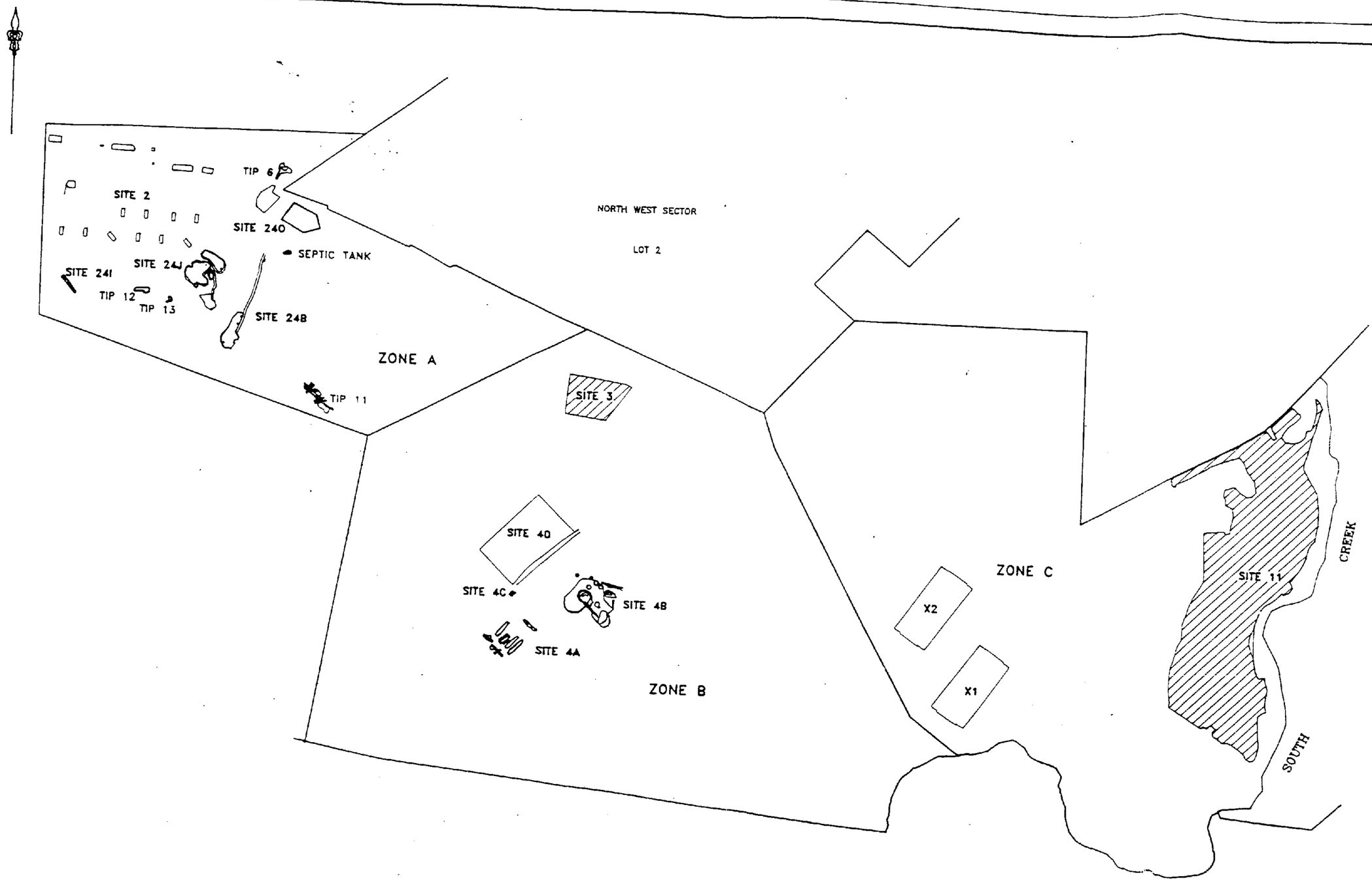
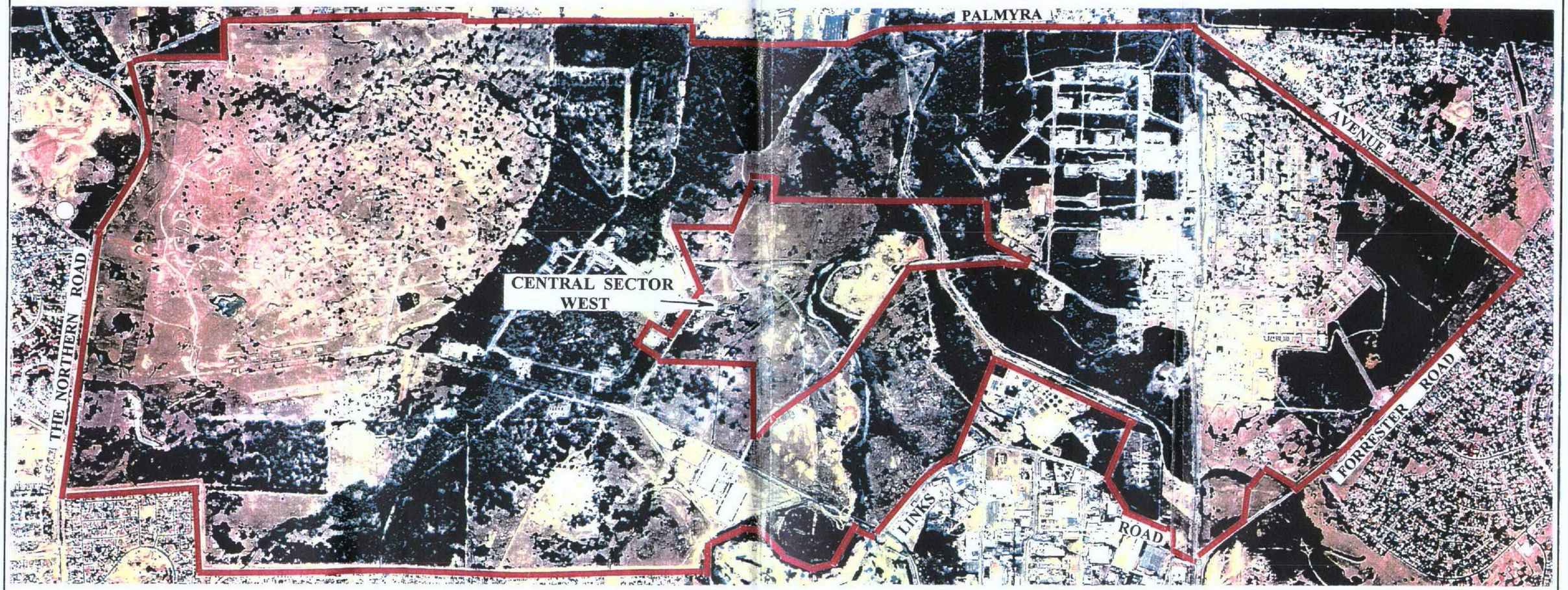


FIGURE 17

REVISIONS	DESIGN	SCALE AS SHOWN	ADI LIMITED TECHNOLOGY GROUP GROUND FLOOR 77 PARRAMATTA ROAD SILVERWATER NSW 2141 PH(02)350 9200 FAX(02)350 9274	CLIENT	TITLE ADI ST MARYS FACILITY SOUTHERN SECTOR WEST PLAN SHOWING ZONE A TO C AND SITES
	ENGINEER I.C.	DRAWN B.D. ACAD S-ZONES			DRAWING No. 1.SW.1
	APPROVED	DATE 16/02/1996			JOB No. 498810
					REVISION



500m 0 1 km

Scale

FIGURE 19

REVISIONS	This drawing remains the property of ADI Limited. It is subject to ADI's recall and must not be reproduced in part or whole or its contents divulged to third parties without prior written approval from ADI Limited	DESIGN	SCALE	ADI LIMITED TECHNOLOGY GROUP GROUND FLOOR 77 PARRAMATTA ROAD SILVERWATER NSW 2141 PH(02)350 9200 FAX(02)350 9274	CLIENT	TITLE: ADI ST MARYS PROPERTY PLAN SHOWING THE LOCATION OF THE CENTRAL SECTOR WEST WITHIN THE FACILITY	DRAWING No. 1.CW-1P
		ENGINEER I.C.	DRAWN R.J.B				JOB No. 498840
		APPROVED	DATE 18/9/1996				REVISION

E276500 E277000 E277500 E278000 E278500 E279000

N1287000 N1286500 N1286000

NORTHERN SECTOR

NORTH WESTERN SECTOR

SOUTHERN SECTOR WEST

SOUTHERN SECTOR EAST

CENTRAL SECTOR EAST

ZONE A

ZONE B

SM77 SM110 SM30 SM76 SM78 SM79 SM109 SM108 SM16 SM10 SM17 SM81 SM80 SM12 SM21 SM11 SM18 SM20 SM25 SM19 SM23 SM24 SM22

88.36 WIDE TRANSMISSION LINE EASEMENT

TRANSMISSION

FENCED

CONCRETE

DRAIN WIRE FENCE

BANK OF CREEK

WEST BANK OF CK.

SOUTH

CHANNEL

SYDNEY WATER

50 0 50 100 150 200 250

SCALE (metres)

FIGURE 21

REVISIONS	This drawing remains the property of ADI Limited. It is subject to ADI's recall and must not be reproduced in part or whole or its contents divulged to third parties without prior written approval from ADI Limited	DATUM/GRID	SCALE 1:6000	ADI LIMITED TECHNOLOGY GROUP GROUND FLOOR 77 PARRAMATTA ROAD SILVERWATER NSW 2141 PH(02)350 9200 FAX(02)350 9274	CLIENT	TITLE ADI ST MARYS PROPERTY CENTRAL SECTOR WEST PLAN SHOWING LOCATION OF GROUNDWATER MONITORING WELLS	DRAWING No. CW-1g
		SURVEYED	DRAWN L.P.				JOB No. 498840
		CAD FILES CW-GW.DWG	DATE 19/09/1996				REVISION

E376500 E377000 E377500 E378000 E378500

N1267000 N1266500 N1266000

NORTHERN SECTOR

NORTH WESTERN SECTOR

SITE 24B

STOCKPILES

STOCKPILES

(X350/3345, DP 520729)

BALSAM WIDE

FARMLAND

HOT

FARMLAND

FENCE

CONCRETE

DRAIN

DRAIN WIRE FENCE

SITE 24C

OF CREEK

ZONE B

SITE 23B

TIP SITE 24

TIP SITE 23

SITE 24K

TIP SITE 25

WEST

BANK

TIP SITE 41B

TIP SITE 41C

SITE 24N

SITE 23A

TIP SITE 35

SITE 23C

SITE 9

ZONE A

SITE 24A

BUILDING 845

EASEMENT

LINE

TRANSMISSION

SITE 10

TIP SITE 38

SOUTHERN SECTOR

ZONE

South

CENTRAL SECTOR EAST

EAST

CHANNEL

SYDNEY WATER

SOUTHERN SECTOR WEST

50 0 50 100 150 200 250

SCALE (metres)

FIGURE 20

REVISIONS

DATUM/GRID	SCALE 1:6000
SURVEYED	DRAWN L.P.
CAD FILES CW-SITES.DWG	DATE 19/09/1996

ADI LIMITED
TECHNOLOGY GROUP
GROUND FLOOR
77 PARRAMATTA ROAD
SILVERWATER NSW 2141
PH(02)350 9200 FAX(02)350 9274

CLIENT

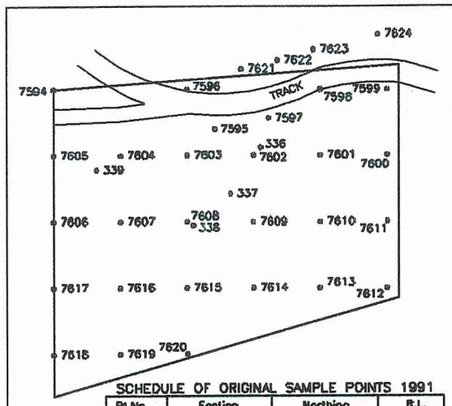
TITLE

ADI ST MARYS PROPERTY
CENTRAL SECTOR WEST
PLAN SHOWING
LOCATION OF SITES

DRAWING No. CW-1st

JOB No. 498840

REVISION



SCHEDULE OF ORIGINAL SAMPLE POINTS 1991

Pt.No.	Easting	Northing	R.L.
336	277364.000	1266421.200	18.500
337	277351.600	1266402.400	18.200
338	277336.500	1266389.600	18.100
339	277297.400	1266412.100	18.300

SCHEDULE OF SAMPLE POINTS – SITE 9

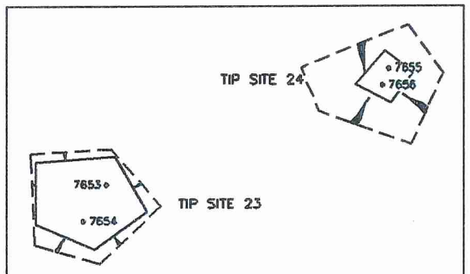
Pt.No.	Easting	Northing	R.L.
7594	277280.000	1266445.000	18.805
7595	277306.937	1266444.991	18.942
7596	277333.980	1266445.012	18.926
7597	277361.008	1266445.049	18.924
7598	277388.065	1266444.920	18.852
7599	277414.983	1266445.003	18.458
7600	277415.020	1266418.181	17.366
7601	277388.157	1266417.983	18.490
7602	277361.079	1266418.036	18.860
7603	277334.076	1266418.051	18.742
7604	277307.083	1266417.924	18.857
7605	277280.027	1266417.985	18.775
7606	277279.974	1266390.995	18.382
7607	277307.057	1266390.980	18.785
7608	277334.021	1266391.030	18.433
7609	277361.027	1266390.850	18.569
7610	277388.086	1266390.893	17.899
7611	277415.106	1266391.144	16.452
7612	277414.945	1266364.020	16.443
7613	277387.956	1266364.028	17.179
7614	277361.127	1266364.074	18.028
7615	277333.970	1266364.079	18.011
7616	277306.963	1266364.103	17.867
7617	277279.990	1266364.093	17.022
7618	277279.963	1266337.040	16.975
7619	277306.935	1266337.122	16.776
7620	277334.124	1266337.205	16.201
7621	277356.015	1266453.238	18.853
7622	277370.881	1266456.767	18.916
7623	277385.316	1266481.225	18.972
7624	277411.202	1266487.441	18.862

SCHEDULE OF INITIAL INVESTIGATION SAMPLE POINTS 1991

Pt.	Easting	Northing	R.L.
620A	277538.700	1266503.300	18.000
620B	277549.700	1266501.400	16.900
620C	277567.600	1266497.100	16.400

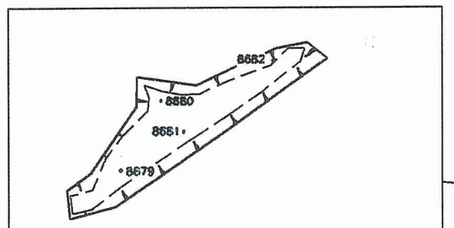
SCHEDULE OF SAMPLE POINTS – SITE 24K

Pt.	Easting	Northing	R.L.
3827	277545.985	1266502.504	16.499
3828	277560.290	1266498.615	16.154
3829	277549.519	1266504.183	17.084
3830	277563.667	1266501.766	17.000
3832	277570.556	1266496.543	16.011
3983	277556.072	1266496.950	17.055
3984	277557.830	1266498.094	16.320
3985	277555.889	1266499.000	16.332
4452	277556.080	1266496.531	16.930
4453	277556.323	1266497.830	16.297
4454	277557.818	1266499.015	16.314



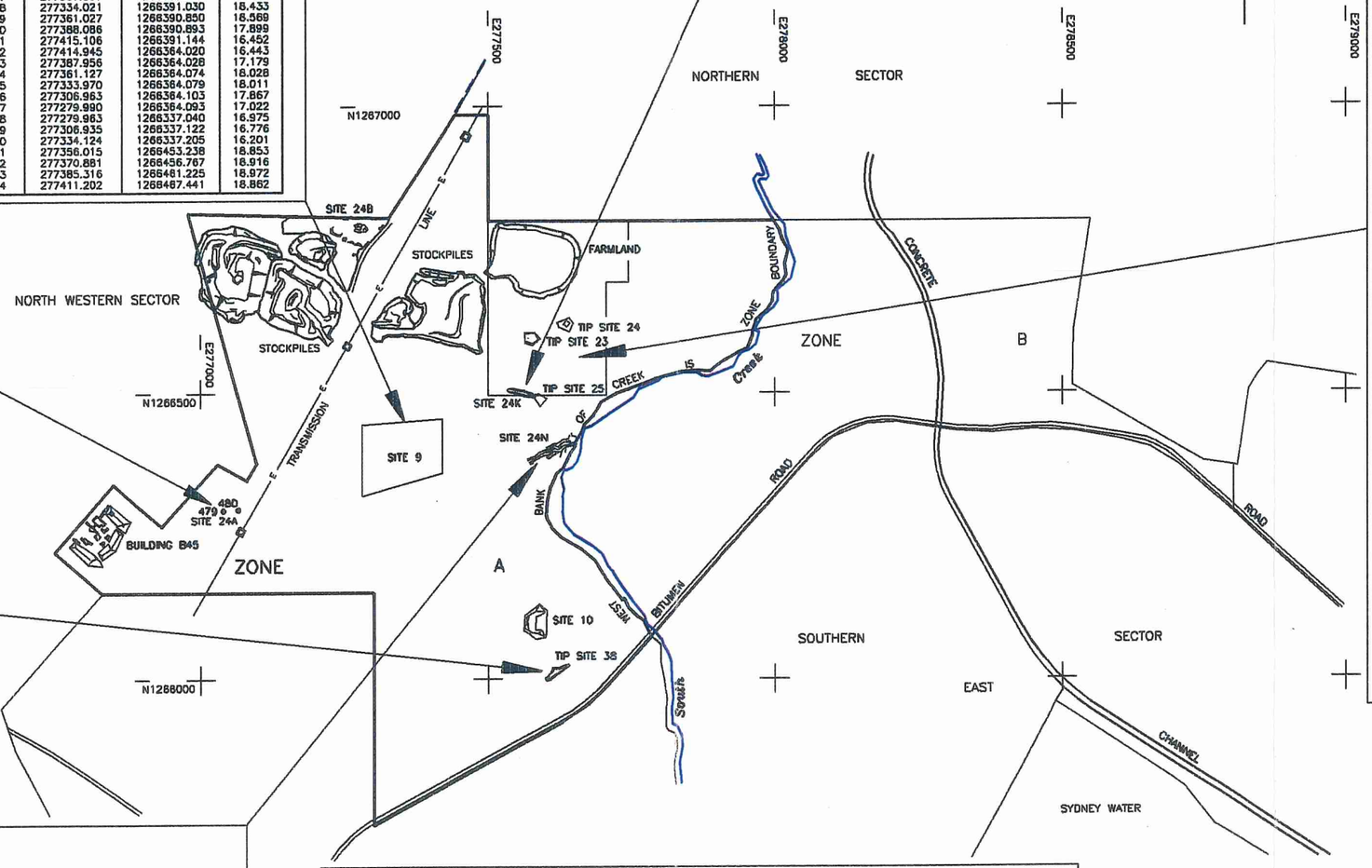
SCHEDULE OF SOIL SAMPLE POINTS – SITE 24A

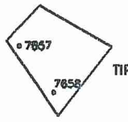
Pt.	Easting	Northing	R.L.
479	277039.400	1266295.200	16.300
480	277065.400	1266296.900	16.300



SCHEDULE OF SAMPLE POINTS

Pt.No.	Easting	Northing	R.L.
8679	277607.700	1266004.729	15.503
8680	277614.124	1266016.025	15.499
8681	277617.858	1266010.991	15.480
8682	277632.530	1266022.481	15.785



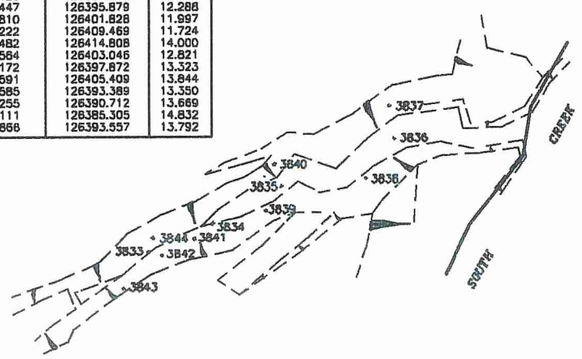


SCHEDULE OF SAMPLE POINTS
– TIP SITES 23, 24 & 25

Pt.No.	Easting	Northing	R.L.
7653	277579.036	1266598.573	18.121
7654	277574.244	1266591.184	17.971
7655	277636.587	1266622.250	15.954
7656	277635.342	1266618.807	15.740
7657	277582.211	1266490.122	16.042
7658	277589.288	1266480.640	15.727

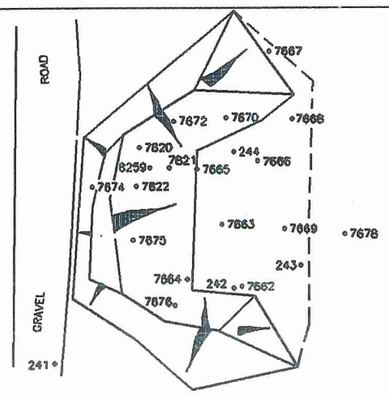
SCHEDULE OF SOIL SAMPLE POINTS – SITE 24N

Pt.	Easting	Northing	R.L.
3833	277590.123	1266391.302	12.985
3834	277600.447	1266395.879	12.288
3835	277611.810	1266401.828	11.997
3836	277630.222	1266409.469	11.724
3837	277629.482	1266414.808	14.000
3838	277625.564	1266403.046	12.821
3839	277609.172	1266397.872	13.323
3840	277610.591	1266405.409	13.844
3841	277597.585	1266393.389	13.350
3842	277592.255	1266390.712	13.669
3843	277586.111	1266385.305	14.832
3844	277590.866	1266393.557	13.792



SCHEDULE OF SAMPLE POINTS–SITE 10

Pt.No.	Easting	Northing	R.L.
241	277559.100	1266073.800	18.200
242	277588.100	1266086.000	15.900
243	277589.000	1266089.700	15.700
244	277588.100	1266108.100	16.100
7662	277589.417	1266086.293	16.247
7663	277586.182	1266096.333	16.431
7664	277580.554	1266087.441	16.649
7665	277582.097	1266105.280	16.486
7666	277592.033	1266106.841	16.327
7667	277593.965	1266124.339	16.372
7668	277597.619	1266113.387	15.951
7669	277598.342	1266095.599	16.228
7670	277586.848	1266113.614	16.836
7672	277578.449	1266113.049	18.454
7674	277565.143	1266102.428	21.000
7675	277571.842	1266093.852	19.588
7676	277578.620	1266083.202	18.031
7678	277606.355	1266094.735	15.749
7820	277572.864	1266108.825	19.384
7821	277577.741	1266105.532	17.021
7822	277572.381	1266102.546	19.368
8259	277574.569	1266105.521	18.157



DETAILS NOT TO SCALE

50 0 50 100 150 200 250
SCALE (metres)

NOTES:
1. AZIMUTH PM 44721 – PM 25515
84° 41' 32"
2. ORIGIN OF CO-ORDINATES – PM 44721
E 274115.424
N 1266909.246
3. CO-ORDINATES BASED ON TRUE ISG

REGISTERED SURVEYOR

ATTACHMENT E5

B2

CHECKED: APPROVED:
DATE: DATE:

Whelans Surveyors Planners Consulting Engineers
Whelans Australia Pty Ltd
Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street, Sydney
New South Wales 2000 Australia
Facsimile 02) 261 5012 Telephone 02) 283 2400

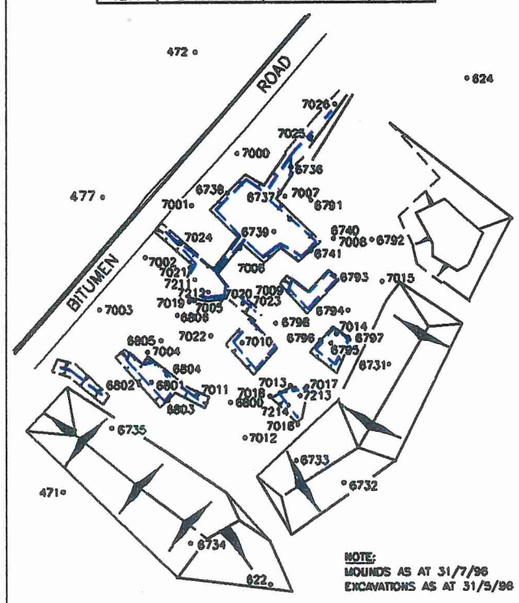
ADI ST MARYS PROPERTY
CENTRAL SECTOR WEST ZONE A
PLAN SHOWING EXCAVATIONS & VALIDATION SAMPLE POINTS

SCALE	1 : 8000
DATUM	AHD/ISG
SURVEY	J.McW.
DRAWN	ACAD/CA
DATE	28 AUGUST 1996
OUR REF.	3064/8000/B
SHEET	OF SHEETS

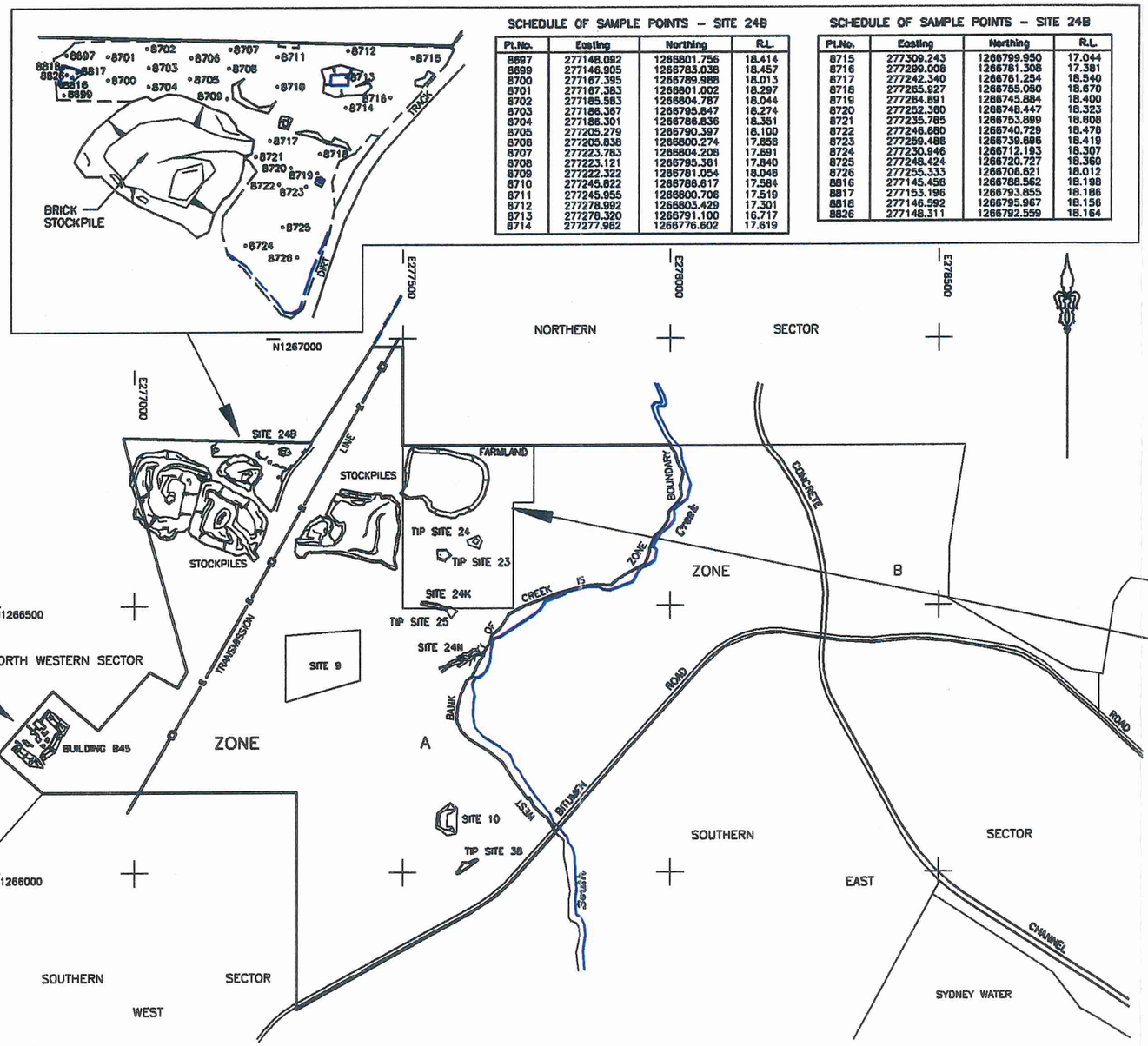
SCHEDULE OF SAMPLE POINTS – FORMER BUILDING B45

Pt.No.	Easting	Northing	R.L.
471	276778.600	1266220.400	23.500
472	276804.000	1266317.300	23.100
477	276782.600	1266283.700	23.700
622	276823.600	1266200.300	22.000
624	276866.200	1266308.700	20.800
6731	276849.231	1266247.796	27.480
6732	276839.479	1266222.212	27.354
6733	276829.224	1266227.013	26.555
6734	276805.144	1266209.233	28.829
6735	276789.209	1266234.151	28.116
6736	276828.042	1266290.530	22.091
6737	276825.573	1266284.953	22.398
6738	276814.191	1266284.955	22.921
6739	276824.390	1266276.588	22.807
6740	276827.825	1266279.276	22.479
6741	276832.414	1266272.451	23.156
6791	276832.396	1266283.361	23.530
6792	276845.477	1266274.787	24.202
6793	276837.400	1266266.940	23.910
6794	276840.391	1266259.481	24.073
6795	276836.717	1266252.406	22.440
6796	276834.498	1266253.019	23.002
6797	276840.354	1266253.828	23.056
6798	276824.755	1266256.755	24.252
6800	276814.861	1266239.624	24.207
6801	276797.713	1266244.051	22.972
6802	276795.113	1266243.804	23.516
6803	276801.326	1266240.177	23.286
6804	276801.014	1266245.712	23.461
6805	276799.795	1266253.048	23.711
6806	276803.303	1266258.495	23.292
7000	276816.295	1266293.516	24.502
7001	276806.389	1266282.277	24.384
7002	276796.462	1266271.030	24.599
7003	276786.533	1266259.788	24.929
7004	276796.868	1266250.536	23.721
7005	276806.955	1266261.686	23.345
7006	276816.885	1266272.944	23.268
7007	276826.795	1266284.256	23.926
7008	276837.283	1266275.037	23.742
7009	276827.403	1266263.765	23.324
7010	276817.402	1266252.517	24.051
7011	276807.569	1266241.278	23.560
7012	276818.031	1266231.981	24.338
7013	276827.984	1266243.200	24.286
7014	276837.892	1266254.418	22.338
7015	276847.759	1266265.720	24.208
7016	276829.602	1266234.815	24.352
7017	276831.527	1266243.033	24.267
7018	276823.490	1266240.877	24.121
7019	276805.856	1266261.460	23.129
7020	276812.780	1266261.848	23.959
7021	276806.063	1266268.850	23.771
7022	276810.484	1266254.054	24.278
7023	276817.540	1266261.023	23.511
7024	276803.803	1266274.402	23.007
7025	276832.498	1266297.122	23.424
7026	276837.574	1266304.154	22.667
7211	276807.064	1266266.228	23.030
7212	276810.007	1266263.536	22.910
7213	276830.052	1266241.072	23.485
7214	276827.559	1266238.998	23.585

1991



NOTE:
MOUNDS AS AT 31/7/96
EXCAVATIONS AS AT 31/5/98



SCHEDULE OF SAMPLE POINTS – SITE 24B

Pt.No.	Easting	Northing	R.L.
8697	277148.092	1266801.756	18.414
8699	277146.905	1266783.036	18.457
8700	277167.395	1266789.888	18.013
8701	277167.383	1266801.002	18.297
8702	277185.583	1266804.787	18.044
8703	277186.367	1266795.847	18.274
8704	277186.301	1266786.836	18.351
8705	277205.279	1266790.397	18.100
8706	277205.838	1266800.274	17.858
8707	277223.783	1266804.206	17.691
8708	277223.121	1266795.361	17.840
8709	277222.322	1266781.054	18.048
8710	277245.822	1266788.617	17.584
8711	277245.955	1266800.706	17.519
8712	277278.992	1266803.429	17.301
8713	277278.320	1266791.100	16.717
8714	277277.962	1266776.802	17.619

SCHEDULE OF SAMPLE POINTS – SITE 24B

Pt.No.	Easting	Northing	R.L.
8715	277309.243	1266799.950	17.044
8716	277299.008	1266781.308	17.381
8717	277242.340	1266761.254	18.540
8718	277265.927	1266755.050	18.670
8719	277264.891	1266745.884	18.400
8720	277252.360	1266748.447	18.323
8721	277235.785	1266753.899	18.608
8722	277246.880	1266740.729	18.478
8723	277259.488	1266739.686	18.419
8724	277230.946	1266712.193	18.307
8725	277248.424	1266720.727	18.360
8726	277255.333	1266706.621	18.012
8816	277145.456	1266788.562	18.198
8817	277153.196	1266793.855	18.186
8818	277146.592	1266795.967	18.156
8826	277148.311	1266792.599	18.164

6899	6918	6919	6938	6939	6958	7040
6900	6917	6920	6937	6940	6957	7041
6901	6916	6921	6936	6941	6956	7042
6902	6915	6922	6935	6942	6955	7043
6903	6914	6923	6934	6943	6954	
6904	6913	6924	6933	6944	6953	
6905	6912	6925	6932	6945	6952	
6906	6911	6926	6931	6946	6951	
6907	6910	6927	6930	6947	6950	
6908	6909	6928	6929	6948	6949	

SCHEDULE OF GRID POINTS – FARMLAND

Pt.No.	Easting	Northing	R.L.
6899	277500.093	1266800.023	17.514
6900	277500.061	1266766.704	17.630
6901	277500.079	1266733.397	18.021
6902	277500.029	1266699.990	18.367
6903	277500.043	1266666.727	18.355
6904	277500.021	1266633.354	18.461
6905	277500.017	1266599.974	18.931
6906	277500.072	1266566.655	18.610
6907	277500.080	1266533.465	18.622
6908	277500.286	1266500.089	18.495
6909	277540.095	1266499.999	17.705
6910	277540.075	1266533.439	18.453
6911	277540.076	1266566.831	18.483
6912	277540.034	1266599.959	18.350
6913	277539.994	1266633.427	18.224
6914	277540.058	1266666.692	18.380
6915	277540.083	1266700.020	18.273
6916	277540.081	1266733.381	18.235
6917	277539.996	1266766.693	18.143
6918	277540.056	1266800.076	18.004
6919	277580.084	1266800.049	17.631
6920	277580.067	1266766.652	17.635
6921	277580.070	1266733.386	17.806
6922	277580.091	1266699.996	17.855
6923	277580.083	1266666.643	18.003
6924	277580.126	1266633.379	18.241
6925	277580.081	1266599.970	18.468
6926	277580.007	1266566.650	18.245
6927	277580.053	1266533.385	18.244
6928	277580.199	1266499.936	16.691
6929	277620.162	1266499.905	16.109
6930	277620.089	1266533.474	16.356
6931	277620.125	1266566.648	16.949
6932	277620.072	1266600.018	17.354
6933	277620.010	1266633.381	17.286
6934	277620.050	1266666.644	17.204
6935	277620.034	1266700.041	17.214
6936	277619.987	1266733.398	17.230
6937	277619.995	1266766.691	17.272
6938	277619.998	1266800.034	17.110
6939	277659.998	1266800.047	17.285
6940	277659.950	1266766.690	17.311
6941	277659.977	1266733.331	17.274
6942	277659.994	1266700.025	17.864
6943	277660.005	1266666.692	17.825
6944	277660.063	1266633.359	17.440
6945	277660.016	1266600.028	16.147
6946	277660.002	1266566.592	16.016
6947	277660.112	1266533.359	16.759
6948	277660.112	1266499.858	17.084
6949	277700.089	1266499.971	16.144
6950	277700.060	1266533.196	16.891
6951	277700.089	1266566.646	16.568
6952	277700.063	1266599.966	16.386
6953	277699.981	1266633.303	15.609
6954	277699.938	1266666.632	16.064
6955	277700.051	1266699.943	17.086
6956	277700.089	1266733.257	17.314
6957	277700.032	1266766.708	17.479
6958	277700.045	1266799.950	17.534
7040	277740.035	1266799.994	17.612
7041	277739.984	1266766.646	16.456
7042	277739.971	1266733.251	15.498
7043	277740.009	1266700.081	15.545

AMENDMENT: 25.9.96
SITE 24B SAMPLE POINT 8698 DELETED
& SAMPLE POINTS 8816, 8817, 8818
8826 ADDED
BUILDING B45 SAMPLE POINTS 472 & 477 ADDED

NOTES:
1. AZIMUTH PM 44721 – PM 25515
84° 41' 32"
2. ORIGIN OF CO-ORDINATES – PM 44721
E 274115.424
N 1266909.246
3. CO-ORDINATES BASED ON TRUE ISG

DETAILS NOT TO SCALE

0 50 100 150 200 250
SCALE (metres)

REGISTERED SURVEYOR

ATTACHMENT E6

B2

CHECKED: APPROVED:
DATE: DATE:

Whelans Surveyors Planners Consulting Engineers
Whelans Australia Pty Ltd
Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street, Sydney
New South Wales 2000 Australia
Facsimile 02) 261 5012 Telephone 02) 283 2400

ADI ST MARYS PROPERTY
CENTRAL SECTOR WEST ZONE A
PLAN SHOWING EXCAVATIONS & VALIDATION SAMPLE POINTS

SCALE	1 : 2000
DATUM	AHD/ISG
SURVEY	J.Mc/K.
DRAWN	ACAD/CA
DATE	28 AUGUST 1996
JOB REF.	3094/8000/6
SHEET	OF SHEETS

TABLE 2 VALIDATION DATA FOR BUILDING B45

multiple laut if <0.2 would meet today's stds. highlight detections.

Sample No	Point	Depth (m)	PET LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	NO3	OCPs	PCBs	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	TPH	BTEX	PAH	% Fe	uS/cm CONDUCTIVITY	pH
Criteria						20	400	3	50	60	1	60	300	50	200	-	0.2	1	10	15	0.5	1	-	1000	1-14	20	-	-	-
1302	471	0 - 0.1	276779.0	1266220.40	23.5	na	64	na	na	22	na	na	22	na	49	6	na	na	nd	nd	na	na	na	nd	na	na	2.1	80	6.9
1303	471	0.1 - 0.5	276779.0	1266220.40		na	53	na	na	14	na	na	21	na	23	16	na	na	nd	nd	na	na	na	nd	na	na	2.2	110	6.5
1304	471	0.5 - 1.0	276779.0	1266220.40		na	61	na	na	15	na	na	13	na	12	66	na	na	nd	nd	na	na	na	nd	na	na	1.6	340	5
1305	472	0 - 0.1	276804.0	1266317.30	23.1	na	52	na	na	15	na	na	21	na	41	2	na	na	nd	nd	na	na	na	nd	na	na	2.5	60	6.5
1306	472	0.1 - 0.5	276804.0	1266317.30		na	53	na	na	13	na	na	19	na	38	nd	na	na	nd	nd	na	na	na	nd	na	na	2.5	110	7.6
1307	472	0.5 - 1.0	276804.0	1266317.30		na	14	na	na	10	na	na	16	na	16	22	na	na	nd	nd	na	na	na	nd	na	na	2.3	140	5.8
1353	477	0 - 0.1	276783.0	1266283.70	23.7	na	82	na	na	52	na	na	21	na	73	nd	na	na	nd	nd	na	na	na	nd	na	na	2.7	145	7.2
1354	477	0.1 - 0.5	276783.0	1266283.70		na	150	na	na	23	na	na	21	na	92	nd	na	na	nd	nd	na	na	na	nd	na	na	3	245	8.1
1355	477	0.5 - 1.0	276783.0	1266283.70		na	73	na	na	21	na	na	17	na	75	nd	na	na	nd	nd	na	na	na	nd	na	na	2.3	140	7.9
1737	622	0 - 0.1	276824.0	1266200.30	22.0	na	75	na	na	15	na	na	16	na	35	nd	na	na	nd	nd	na	na	na	nd	na	na	2	40	6.3
1738	622	0.1 - 0.5	276824.0	1266200.30		na	210	na	na	27	na	na	20	na	90	nd	na	na	nd	nd	na	na	na	nd	na	na	3.1	120	8.3
1739	622	0.5 - 1.0	276824.0	1266200.30		na	100	na	na	11	na	na	22	na	25	nd	na	na	nd	nd	na	na	na	nd	na	na	4.2	130	8.7
1740	624	0 - 0.1	276866.0	1266309.70	20.8	na	35	na	na	8	na	na	19	na	22	3	na	na	nd	nd	na	na	na	nd	na	na	2.1	35	6.1
1741	624	0.1 - 0.5	276866.0	1266309.70		na	42	na	na	14	na	na	11	na	18	7	na	na	nd	nd	na	na	na	nd	na	na	2.6	93	5.6
1742	624	0.5 - 1.0	276866.0	1266309.70		na	50	na	na	14	na	na	12	na	18	16	na	na	nd	nd	na	na	na	nd	na	na	2.3	175	5.5
6769	6736	0 - 0.2	276828.0	1266290.53	22.1	6.5	280	nd	9	26	0.03	17	22	2	62	na	na	na	nd	nd	nd	nd	nd	nd	na	na	na	na	8.4
6770	6737	0 - 0.2	276825.6	1266284.95	22.4	5	18	nd	15	14	0.03	4.5	16	nd	11	na	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	5
6771	6738	0 - 0.2	276814.2	1266284.96	22.9	5	50	nd	19	14	0.025	5	22	nd	12	na	na	na	nd	nd	nd	nd	nd	nd	na	na	na	na	5.9
6772	6739	0 - 0.2	276824.4	1266276.59	22.8	6	300	0.5	14	32	0.025	16	24	nd	63	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	8.1
6773	6740	0 - 0.2	276827.8	1266279.27	22.5	7	180	0.5	11	33	0.05	17	23	2	76	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	9.1
6774	6741	0 - 0.2	276832.4	1266272.45	23.2	6	410	nd	12	31	0.045	19	25	3	65	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	9.2
6846	6791	0 - 0.2	276832.4	1266283.36	23.9	5.5	43	nd	9	38	0.05	13	20	nd	60	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	7.6
6847	6792	0 - 0.2	276845.5	1266274.79	24.2	5.5	510	nd	10	31	0.05	19	27	nd	64	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	8.8
6848	6793	0 - 0.2	276837.4	1266266.94	23.9	5	110	nd	10	29	0.03	14	20	nd	50	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.5
6849	6794	0 - 0.2	276840.4	1266259.48	24.1	6	130	nd	8.5	30	0.04	13	23	nd	57	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	9.1
6850	6795	0 - 0.2	276836.7	1266252.41	22.4	6	180	nd	14	47	0.025	16	27	nd	72	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	8.4
6851	6796	0 - 0.2	276834.5	1266253.02	23.0	7	190	nd	13	28	0.045	25	25	nd	94	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	8.4
6852	6797	0 - 0.2	276840.4	1266253.63	23.1	4.5	180	nd	12	28	0.025	13	26	nd	56	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	7.2
6853	6798	0 - 0.2	276824.8	1266256.76	24.3	5	340	nd	9	31	0.04	13	27	nd	62	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	9.1
6855	6800	0 - 0.2	276814.8	1266239.62	24.2	5	140	nd	7.5	22	0.035	10	37	nd	28	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	8.5
6856	6801	0 - 0.2	276797.7	1266244.05	22.9	5	250	nd	9	24	0.03	12	25	nd	44	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	8.6
6857	6802	0 - 0.2	276795.1	1266243.60	23.5	5.5	210	nd	8.5	28	0.05	14	26	nd	49	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	9.1
6858	6803	0 - 0.2	276801.3	1266240.18	23.3	5.5	190	0.5	14	44	0.055	23	32	nd	85	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	8.1
6859	6804	0 - 0.2	276801.0	1266245.71	23.5	6	165	nd	6.5	36	0.045	17	31	nd	60	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	8.1
6861	6805	0 - 0.2	276799.8	1266253.05	23.7	4.5	110	nd	9	21	0.02	12	52	nd	38	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.7
6862	6806	0 - 0.2	276803.3	1266258.49	23.3	5.5	200	0.5	11	28	0.03	17	180	nd	69	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	8.2
7093	7000	0 - 0.2	276816.3	1266293.52	24.5	4	6	nd	12	2	0.01	2	5	nd	6	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	6.1
7094	7001	0 - 0.2	276806.4	1266282.28	24.4	4	39	nd	12	18	0.02	7.5	16	nd	22	na	nd	nd	nd	nd	nd	nd	nd	na	na	0.13	na	na	6.1
7095	7002	0 - 0.2	276796.5	1266271.03	24.6	5	54	nd	12	15	0.02	10	20	nd	34	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	6.2
7096	7003	0 - 0.2	276786.5	1266259.79	24.9	6.5	170	nd	15	27	0.025	20	23	nd	61	na	nd	nd	nd	nd	nd	nd	nd	na	na	0.17	na	na	7.1
7097	7004	0 - 0.2	276796.9	1266250.54	23.7	5.5	125	nd	13	21	0.05	17	22	nd	51	na	nd	nd	9	1.8	nd	nd	nd	na	na	na	na	na	8.5
7098	7005	0 - 0.2	276806.9	1266261.69	23.3	7	240	nd	10	23	0.025	15	19	nd	59	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	7.6

nd Not Detected
na Not Analysed

TABLE 2 VALIDATION DATA FOR BUILDING B45

Sample			PIT LOC. CO-ORDS			(mg/kg)																				%	uS/cm	
No	Point	Depth (m)	X EASTING	Y NORTHING	Z HEIGHT	100 As	Ba	20 Cd	100 Cr	6000 Cu	40 Hg	400 Ni	300 Pb	Sn	7400 Zn	NO3	OCPs	PCBs	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	TPH	6 BTEX	3 PAH	Fe	CONDUCTIVITY	pH
Criteria						20	400	3	50	60	1	60	300	50	200	-	0.2	✓ 1	✓ 10	✓ 15	✓ 0.5	✓ 1	-	1000	1-14	20	-	-	
7099	7006	0 - 0.2	276816.8	1266272.94	23.3	6	165	nd	12	28	0.035	17	20	nd	66	na	nd	nd	1.4	1.7	nd	nd	nd	na	na	nd	na	na	8
7100	7007	0 - 0.2	276826.8	1266284.26	23.9	5	77	nd	10	32	0.04	11	17	nd	48	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	7.6
7101	7008	0 - 0.2	276837.3	1266275.04	23.7	5	120	nd	10	23	0.04	9	16	nd	40	na	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	na	7.2
7102	7009	0 - 0.2	276827.4	1266263.77	23.3	6.5	180	nd	12	30	0.04	15	19	nd	60	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	8.7
7103	7010	0 - 0.2	276817.4	1266252.52	24.1	5.5	320	nd	14	27	0.075	20	21	nd	66	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	8.3
7104	7011	0 - 0.2	276807.6	1266241.28	23.6	7	165	nd	12	32	0.04	19	22	nd	70	na	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	na	8.2
7105	7012	0 - 0.2	276818.0	1266231.98	24.3	5.5	67	nd	9	18	0.01	6	11	nd	16	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	7.5
7106	7013	0 - 0.2	276827.9	1266243.20	24.3	6	145	nd	10	35	0.02	11	20	nd	63	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	8.6
7107	7014	0 - 0.2	276837.9	1266254.40	22.3	6	240	nd	11	28	0.03	12	20	nd	53	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	8.1
7108	7015	0 - 0.2	276847.8	1266265.72	24.2	6.5	240	0.5	14	32	0.03	20	19	1	70	na	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	na	7.6
7109	7016	0 - 0.2	276829.6	1266234.82	24.4	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na	na	na	na	na	na	na	na
7110	7017	0 - 0.2	276831.5	1266243.03	24.3	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na	na	na	na	na	na	na	na
7111	7018	0 - 0.2	276823.5	1266240.98	24.1	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na	na	na	na	na	na	na	na
7112	7019	0 - 0.2	276805.9	1266261.46	23.1	na	na	na	na	na	na	19	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
7113	7020	0 - 0.2	276812.8	1266261.85	23.9	na	na	na	na	na	na	16	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
7114	7021	0 - 0.2	276806.1	1266268.85	23.8	na	na	na	na	na	na	16	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
7115	7022	0 - 0.2	276810.5	1266254.05	24.3	7	60	nd	9	23	0.04	11	18	nd	95	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	5.6
7116	7023	0 - 0.2	276817.5	1266261.02	23.5	6	210	0.5	15	26	0.04	22	19	nd	67	na	nd	nd	1.9	2.4	nd	nd	nd	na	na	na	na	na	8
7117	7024	0 - 0.2	276803.8	1266274.40	23.0	5	60	nd	19	21	0.02	14	18	nd	50	na	nd	nd	0.4	0.6	nd	nd	nd	na	na	na	na	na	6.6
7118	7025	0 - 0.2	276832.5	1266297.12	23.4	5.5	110	nd	14	28	0.035	15	20	nd	65	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	8
7119	7026	0 - 0.2	276837.6	1266304.15	22.7	6	140	nd	16	29	0.035	22	19	nd	67	na	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	7.7
7323	7211	0 - 0.2	276807.1	1266266.23	23.0	na	na	na	na	na	na	na	19	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
7324	7212	0 - 0.2	276810.0	1266263.54	22.9	na	na	na	na	na	na	na	17	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
7325	7213	0 - 0.2	276830.1	1266241.07	23.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
7326	7214	0 - 0.2	276827.6	1266238.99	23.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Mean						5.7	144.4		11.7	24.7	0.035	14.6	23.7		51.5											0.2	2.5	130.9	7.5
Standard Deviation						0.8	102.4		2.8	9.5	0.013	5.0	21.7		23.1											0.0	0.6	78.6	1.1
Co-efficient of Variation						0.1	0.7		0.2	0.4	0.4	0.3	0.9		0.4											0.2	0.2	0.6	0.2
Maximum						7.0	510.0	0.5	19.0	52.0	0.075	25.0	180.0	3.0	95.0	66.0	nd	nd	9.0	2.4	nd	nd	nd	nd	nd	0.2	4.2	340.0	9.2
Minimum						4.0	6.0	nd	6.5	2.0	0.010	2.0	5.0	nd	6.0	2.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.6	35.0	5.0

nd Not Detected
na Not Analysed

TABLE 3 VALIDATION DATA FOR MOUND AT BUILDING B45

Sample No	Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	OCPs	PCBs	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	TPH	BTEX	pH
Criteria						20	400	3	50	60	1	60	300	50	200	0.2	✔ 1	✔ 10	✔ 15	✔ 0.5	✔ 1	-	1000	1-14	-
6764	6731	0.3 - 0.6	276849.2	1266247.79	27.5	4.5	41	nd	8	13	0.015	7	13	nd	22	nd	nd	nd	nd	nd	nd	nd	nd	nd	6
6765	6732	0.5 -0.7	276839.4	1266222.21	27.4	5	21	nd	7.5	11	0.02	5.5	14	nd	17	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.1
6766	6733	0.5 - 0.8	276829.2	1266227.01	26.6	6	72	nd	10	18	0.025	10	17	nd	28	nd	nd	1.1	nd	nd	nd	nd	nd	nd	6.2
6767	6734	0.4 - 0.7	276806.1	1266209.23	28.6	6	79	nd	8	16	0.02	12	18	nd	30	nd	nd	0.7	nd	nd	nd	nd	nd	nd	5.7
6768	6735	0.3 - 0.7	276789.2	1266234.15	26.1	5.5	38	nd	8.5	14	0.015	6.5	12	nd	15	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.5
Mean						5.4	50.2		8.4	14.4	0.019	8.2	14.8		22.4										5.7
Standard Deviation						0.7	24.4		1.0	2.7	0.004	2.7	2.6		6.6										0.4
Co-efficient of Variation						0.1	0.5		0.1	0.2	0.220	0.3	0.2		0.3										0.1
Maximum						6.0	79.0	nd	10.0	18.0	0.025	12.0	18.0	nd	30.0	nd	nd	1.1	nd	nd	nd	nd	nd	nd	6.2
Minimum						4.5	21.0	nd	7.5	11.0	0.015	5.5	12.0	nd	15.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.1

nd Not Detected
na Not Analysed

TABLE 4 VALIDATION DATA FOR SITE 24A

Sample No	Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) Pb	RDX	2,4,6-TNT	uS/cm CONDUCTIVITY	pH
Criteria						✓ 300	✓ 10	✓ 15	-	-
1341	479	0 - 0.1	277039	1266295.2	16.3	15	nd	nd	780	5.2
1342	479	0.1 - 0.5	277039	1266295.2		13	nd	nd	500	5.5
1343	479	0.5 -1.0	277039	1266295.2		10	nd	nd	580	6.3
1344	480	0 - 0.1	277065	1266296.9	16.3	15	nd	nd	615	6.5
1345	480	0.1 - 0.5	277065	1266296.9		14	nd	nd	415	5.9
1346	480	0.5 -1.0	277065	1266296.9		12	nd	nd	350	5.7
Mean						**13.2**			**540.0**	**5.9**
Standard Deviation						**1.9**			**153.7**	**0.5**
Co-efficient of Variation						**0.1**			**0.3**	**0.1**
Maximum						**15.0**	**nd**	**nd**	**780.0**	**6.5**
Minimum						**10.0**	**nd**	**nd**	**350.0**	**5.2**

nd Not Detected
na Not Analysed

TABLE 5 VALIDATION DATA FOR SITE 24B

Sample No.	Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	OCPs	PCBs	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	TPH	BTEX	PAH	Conductivit	pH
						100		20	100	6000	40	400	300		7400									0.6	3		
Criteria						20	400	3	50	60	1	60	300	50	200	0.2	✔ 1	✔ 10	✔ 15	✔ 0.5	✔ 1	-	1000	1-14	20		-
0906	320	0 - 0.1	277282	1266751.5	17.7	9	na	na	na	na	na	na	nd	na	na	na	na	nd	nd	na	na	na	115	na	na	105	5.9
0907	320	0.1 - 0.5	277282	1266751.5		12	na	na	na	na	na	na	nd	na	na	na	na	nd	nd	na	na	na	nd	na	na	135	6.1
0908	320	0.5 - 1.0	277282	1266751.5		9	na	na	na	na	na	na	nd	na	na	na	na	nd	nd	na	na	na	nd	na	na	235	5.9
0909	321	0 - 0.1	277349	1266825.5	16.6	4.5	na	na	na	na	na	na	nd	na	na	na	na	nd	nd	na	na	na	nd	na	na	30	5.9
0910	321	0.1 - 0.5	277349	1266825.5		4	na	na	na	na	na	na	nd	na	na	na	na	nd	nd	na	na	na	nd	na	na	30	6.4
0911	321	0.5 - 1.0	277349	1266825.5		4	na	na	na	na	na	na	nd	na	na	na	na	nd	nd	na	na	na	nd	na	na	210	6
0912	322	0 - 0.1	277413	1266934.2	15.6	6.5	na	na	na	na	na	na	nd	na	na	na	na	nd	nd	na	na	na	nd	na	na	50	5.7
0913	322	0.1 - 0.5	277413	1266934.2		6	na	na	na	na	na	na	nd	na	na	na	na	nd	nd	na	na	na	nd	na	na	65	6.3
0914	322	0.5 - 1.0	277413	1266934.2		10	na	na	na	na	na	na	nd	na	na	na	na	nd	nd	na	na	na	nd	na	na	190	6.1
8965	8697	0 - 0.2	277148.1	1266801.76	18.4	4.5	27	nd	21	27	0.02	10	27	nd	32	nd	nd	2	nd	nd	nd	nd	nd	nd	nd	na	6.9
8967	8699	0 - 0.2	277146.9	1266783.04	18.5	6	37	nd	29	11	0.02	11	41	nd	52	nd	nd	6.3	nd	nd	nd	nd	nd	nd	nd	na	7.4
8968	8700	0 - 0.2	277167.4	1266789.99	18.0	5	22	nd	14	12	0.01	8	22	nd	17	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	5.4
8969	8701	0 - 0.2	277167.4	1266801.00	18.3	7	61	nd	20	20	0.015	14	48	nd	70	nd	nd	2	nd	nd	nd	nd	nd	nd	nd	na	8.3
8970	8702	0 - 0.2	277185.6	1266804.79	18.0	7.5	68	nd	21	24	0.025	11	69	nd	83	nd	nd	1	nd	nd	nd	nd	nd	nd	nd	na	8.4
8971	8703	0 - 0.2	277186.4	1266795.85	18.3	5	60	nd	18	10	0.01	8.5	25	nd	13	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	6.4
8972	8704	0 - 0.2	277186.3	1266786.84	18.4	7	100	nd	28	29	0.04	19	89	nd	110	nd	nd	2.2	nd	nd	nd	nd	nd	nd	nd	na	9.3
8973	8705	0 - 0.2	277205.3	1266790.40	18.1	7.5	44	nd	20	9.5	0.01	8	29	1	160	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	6.9
8974	8706	0 - 0.2	277205.8	1266800.27	17.9	3.5	24	nd	15	10	0.01	6	16	nd	8.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	6.7
8975	8707	0 - 0.2	277223.8	1266804.21	17.9	3	14	nd	16	6	0.01	4.5	16	nd	6.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	4.7
8976	8708	0 - 0.2	277223.1	1266795.36	17.8	4	27	nd	13	8.5	0.015	5	10	nd	7	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	4.9
8977	8709	0 - 0.2	277222.3	1266781.05	18.0	5	20	nd	14	10	0.005	6.5	12	nd	12	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	5
8978	8710	0 - 0.2	277245.8	1266786.62	17.6	4	54	nd	14	13	0.005	8	18	nd	11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	6.2
8979	8711	0 - 0.2	277246.0	1266800.71	17.5	5.5	45	nd	22	9	0.02	7.5	39	nd	31	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	7.9
8980	8712	0 - 0.2	277279.0	1266803.43	17.3	3.5	23	nd	19	5	0.015	4.5	15	nd	6.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	6.8
8981	8713	0 - 0.2	277278.3	1266791.10	16.7	4.5	22	nd	10	12	0.005	5.5	23	nd	10	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	5.2
8982	8714	0 - 0.2	277278.0	1266776.60	17.6	5	59	nd	20	9	0.02	6.5	32	nd	15	nd	nd	0.8	nd	nd	nd	nd	nd	nd	nd	na	7.2
8983	8715	0 - 0.2	277309.2	1266799.95	17.0	5	40	nd	13	8	0.015	7	19	nd	14	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	8
8984	8716	0 - 0.2	277299.0	1266781.31	17.4	4	23	nd	20	8	0.02	5	16	nd	9.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	6.6
8985	8717	0 - 0.2	277242.3	1266761.25	18.5	6.5	39	nd	20	9.5	0.02	10	23	nd	50	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	5.5
8986	8718	0 - 0.2	277265.9	1266755.05	18.7	3.5	20	nd	16	6	0.01	4.5	14	nd	5.5	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	5.7
8987	8719	0 - 0.2	277264.9	1266745.88	18.4	4	21	nd	14	7	0.015	5	16	nd	5	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	6.2
8988	8720	0 - 0.2	277252.4	1266748.45	18.3	5	33	nd	13	5.5	0.01	4	16	nd	15	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	5.6
8989	8721	0 - 0.2	277235.8	1266753.90	18.6	5	41	nd	20	6	0.01	5.5	25	nd	16	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	6.3
8990	8722	0 - 0.2	277245.6	1266740.73	18.5	7.5	35	nd	19	7	0.02	5.5	20	3	170	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	5.5
8991	8723	0 - 0.2	277259.5	1266739.70	18.4	7	26	nd	18	7	0.01	5	18	nd	82	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	6.6
8992	8724	0 - 0.2	277230.9	1266712.19	18.3	5	54	nd	14	10	0.02	6.5	23	nd	29	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	6.7
8993	8725	0 - 0.2	277248.4	1266720.73	18.4	6	32	nd	14	6.5	0.01	5	20	nd	36	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	4.7
8994	8726	0 - 0.2	277255.3	1266706.62	18.0	5	29	nd	13	6.5	0.01	5	12	nd	23	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	4.9
9095	8816	0 - 0.2	277145.5	1266788.56	18.2	na	na	na	na	na	na	na	na	na	na	na	na	5.8	nd	nd	nd	nd	na	na	na	na	na
9096	8817	0 - 0.2	277153.2	1266793.86	18.2	na	na	na	na	na	na	na	na	na	na	na	na	6.9	0.3	nd	nd	nd	na	na	na	na	na
9097	8818	0 - 0.2	277146.6	1266795.97	18.2	na	na	na	na	na	na	na	na	na	na	na	na	2.2	nd	nd	nd	nd	na	na	na	na	na
9138	8826	0 - 0.2	277148.3	1266792.56	18.2	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na
Mean						5.7	37.9		17.5	10.8	0.015	7.3	26.0		37.9			3.2								116.7	6.3
Standard Deviation						2.0	18.9		4.4	6.3	0.007	3.3	17.4		44.5			2.4								79.6	1.1
Co-efficient of Variation						0.3	0.5		0.3	0.6	0.5	0.5	0.7		1.2			0.7								0.7	0.2
Maximum						12.0	100.0	nd	29.0	29.0	0.040	19.0	89.0	3.0	170.0	nd	nd	6.9	nd	nd	nd	nd	115.0	nd	nd	235.0	9.3
Minimum						3.0	14.0	nd	10.0	5.0	0.005	4.0	10.0	nd	5.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	30.0	4.7

nd Not Detected
na Not Analysed

TABLE 7 VALIDATION DATA FOR SITE 9

Sample No	Point	Depth (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	P(total)	Cl	NO3	PO4	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OCPs	PCBs	Phenols	VHCs	HCE	uS/cm CONDUCTIVITY	pH
Criteria		-	-	-	-	20	400	3	50	60	1	60	300	50	200	10	-	-	-	✓ 10	✓ 15	✓0.5	✓ 1	-	0.2	✓ 1	1	-	-	-	-
8528	336	0 - 0.1	277364	1266421.2	18.5	na	na	na	na	89	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
8529	336	0.1 - 0.5	277364	1266421.2		na	na	na	na	45	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
8530	336	0.5 -1.0	277364	1266421.2		na	na	na	na	8.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
8531	337	0 - 0.1	277351.6	1266402.4	18.2	na	na	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
8532	337	0.1 - 0.5	277351.6	1266402.4		na	na	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
8533	337	0.5 -1.0	277351.6	1266402.4		na	na	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
0990	338	0 - 0.1	277337	1266389.6	18.1	6.0	21	nd	13	11	0.019	na	14	na	24	na	10	8	nd	nd	nd	na	na	na	na	na	na	na	30	6.9
0991	338	0.1 - 0.5	277337	1266389.6		7.0	25	nd	13	12	0.016	na	16	na	21	na	70	3	2	nd	nd	na	na	na	na	na	na	na	na	60	6.1
0992	338	0.5 -1.0	277337	1266389.6		10.0	50	nd	14	14	0.037	na	20	na	30	na	110	5	nd	nd	nd	na	na	na	na	na	na	na	na	80	6.0
1011	339	0 - 0.1	277297	1266412.1	18.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	0.5	na	na	na	na	na	na	na	na	15	6.1
1012	339	0.1 - 0.5	277297	1266412.1		na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.5	nd	na	na	na	na	na	na	na	na	40	6.5
1013	339	0.5 -1.0	277297	1266412.1		na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na	na	na	na	na	155	5.9
7748	7594	0 - 0.2	277280.0	1266445.0	18.8	6	20	nd	7	7.5	0.015	4.5	14	nd	24	300	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	5.6
7749	7595	0 - 0.2	277345.3	1266428.8	18.8	6.5	51	nd	19	14	0.01	13	18	nd	42	290	na	na	na	nd	nd	nd	nd	nd	na	na	nd	na	na	6.3
7750	7596	0 - 0.2	277334.0	1266445.0	18.9	7.5	125	nd	20	24	0.015	32	22	nd	95	540	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	7.5
7751	7597	0 - 0.2	277367.3	1266433.2	18.9	7	37	nd	14	36	0.01	7	16	nd	95	210	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.6
7752	7598	0 - 0.2	277388.1	1266444.9	18.9	5.5	43	nd	22	9.5	0.01	8	24	nd	22	300	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	4.6
7753	7599	0 - 0.2	277415.0	1266445.0	18.5	8	100	nd	23	28	0.01	19	32	1	150	560	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	nd	na	6.5
7754	7600	0 - 0.2	277415.0	1266418.2	17.4	5	60	nd	16	9	0.015	5.5	14	nd	17	380	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.7
7755	7601	0 - 0.2	277388.2	1266418.0	18.5	7.5	56	nd	19	32	0.01	6	23	3	140	265	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.7
7756	7602	0 - 0.2	277361.1	1266418.0	18.9	7	41	nd	18	95	0.015	7	20	1	72	330	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	5.8
7757	7603	0 - 0.2	277334.1	1266418.1	18.7	5.5	46	nd	12	20	0.01	6	19	nd	38	220	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.9
7758	7604	0 - 0.2	277307.1	1266417.9	18.9	5	22	nd	10	5	0.015	5	8	nd	14	190	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.2
7759	7605	0 - 0.2	277280.0	1266418.0	18.8	5	17	nd	10	5.5	0.02	4.5	10	nd	13	190	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	5.6
7760	7606	0 - 0.2	277280.0	1266391.0	18.4	5.5	25	nd	12	5	0.01	4	10	nd	14	195	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.4
7761	7607	0 - 0.2	277307.1	1266391.0	18.9	4	13	nd	8	4.5	0.01	4	7	nd	9	160	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	4.9
7762	7608	0 - 0.2	277334.0	1266391.0	18.4	5	15	nd	10	5.5	0.01	3.5	9.5	nd	14	130	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	5.6
7763	7609	0 - 0.2	277361.0	1266390.9	18.6	6	24	nd	10	13	0.005	6	8.5	nd	25	230	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.5
7764	7610	0 - 0.2	277388.1	1266390.9	17.9	6.5	25	nd	14	11	0.015	5	16	nd	33	230	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.1
7765	7611	0 - 0.2	277415.1	1266391.1	16.5	7	98	nd	15	16	0.025	9.5	22	nd	40	390	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.6
7766	7612	0 - 0.2	277414.9	1266364.0	16.4	6	60	nd	11	14	0.015	6	14	nd	26	230	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	4.4
7767	7613	0 - 0.2	277388.0	1266364.0	17.1	5.5	34	nd	9	9	0.015	5.5	11	nd	19	280	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.7
7768	7614	0 - 0.2	277361.1	1266364.1	18.0	6	22	nd	12	8.5	0.01	5	10	nd	17	180	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	5.3
7769	7615	0 - 0.2	277334.0	1266364.1	18.0	6	30	nd	13	10	0.01	5	10	nd	18	190	na	na	na	nd	nd	nd	nd	nd	na	na	nd	na	na	na	5.4
7770	7616	0 - 0.2	277307.0	1266364.1	17.9	7	22	nd	10	7	0.01	5.5	9.5	nd	24	165	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.4
7771	7617	0 - 0.2	277280.0	1266364.1	17.0	5.5	32	nd	7.5	6.5	0.01	4	9	nd	12	190	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	4.8
7772	7618	0 - 0.2	277280.0	1266337.0	17.0	6	32	nd	9	11	0.01	6	10	nd	20	310	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.6
7773	7619	0 - 0.2	277306.9	1266337.1	16.8	5	16	nd	5.5	8	0.015	3.5	11	nd	13	150	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	4.5
7774	7620	0 - 0.2	277334.1	1266337.2	16.2	6	20	nd	6	10	0.015	3.5	10	nd	21	200	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	4.4
7775	7621	0 - 0.2	277356.0	1266453.2	18.9	6	52	nd	22	11	0.015	6	17	nd	23	315	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.4
7776	7622	0 - 0.2	277370.8	1266456.8	18.9	7	105	nd	25	13	0.02	9	27	nd	35	440	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na	na	5.4
7777	7623	0 - 0.2	277385.3	1266461.2	19.0	7	72	nd	25	11	0.02	10	22	nd	38	555	na	na	na	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	5.9
7778	7624	0 - 0.2	277411.2	1266467.4	18.9	5.5	56	nd	22	8.5	0.015	7	17	nd	23	330	na	na	na	nd	nd	nd	nd	nd	na	na	nd	nd	na	na	5.5
Mean						6.2	43.1		14.0	17.5	0.014	7.3	15.3		35.9	278.9	63.3	5.3											63.3	5.6
Standard Deviation						1.1	28.4		5.6	20.2	0.006	5.6	6.1		34.5	117.8	50.3	2.5											50.4	0.7
Co-efficient of Variation						0.2	0.7		0.4	1.2	0.4	0.8	0.4		1.0	0.4	0.8	0.5											0.8	0.1
Maximum						10.0	125.0	nd	25.0	95.0	0.037	32.0	32.0	3.0	150.0	560.0	110.0	8.0	2.0	0.5	0.5	nd	nd	nd	nd	nd	nd	nd	155.0	7.5
Minimum						4.0	13.0	nd	5.5	4.5	0.005	3.5	7.0	nd	9.0	130.0	10.0	3.0	2.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	15.0	4.4

nd Not Detected

TABLE 10 VALIDATION DATA FOR SITE 24K

Sample No	Point	Depth (m)	PIT LOC CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OCPs	PCBs	TPH	3 PAH	Conductivity	pH
Criteria						20	400	3	50	60	1	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-	0.2	✓ 1	1000	20	-	-
1792	620a	0 - 0.2	277539.0	1266503.30	18.0	na	na	na	na	na	na	na	23	na	na	1.9	1.8	na	na	na	na	na	na	na	180	7
1793	620b	0 - 0.3	277550.0	1266501.40	16.9	na	na	na	na	na	na	na	20	na	na	0.6	0.4	na	na	na	na	na	na	na	40	7.1
1794	620c	0 - 0.5	277568.0	1266497.10	16.4	na	na	na	na	na	na	na	19	na	na	0.8	0.6	na	na	na	na	na	na	na	110	6.7
3294	3827	0 - 0.2	277546.0	1266502.50	16.5	5	54	nd	10	16	0.010	7.5	20	nd	21	nd	nd	nd	nd	nd	0.08	nd	nd	nd	na	6.8
3295	3828	0 - 0.2	277560.3	1266498.61	16.2	5.5	39	nd	9	11	0.005	7.5	10	nd	21	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	7.1
3296	3829	0 - 0.2	277549.5	1266504.18	17.1	6	94	nd	12	15	0.020	13	23	1	25	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	6.3
3297	3830	0 - 0.2	277563.7	1266501.77	17.0	5	34	nd	10	10	0.010	8.5	15	nd	20	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	5.9
3299	3832	0 - 0.2	277556.4	1266496.54	16.4	5	60	nd	10	16	0.010	10	21	nd	23	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	6.5
3463	3983	0 - 0.2	277556.1	1266496.95	17.1	na	na	na	na	na	na	na	na	na	15	na	na	na	na	na	na	na	na	na	na	na
3464	3984	0 - 0.2	277557.8	1266498.09	16.3	na	na	na	na	na	na	na	na	na	32	na	na	na	na	na	na	na	na	na	na	na
3465	3985	0 - 0.2	277555.9	1266499.00	16.3	na	na	na	na	na	na	na	na	na	35	na	na	na	na	na	na	na	na	na	na	na
3975	4452	0 - 0.2	277556.1	1266496.53	16.9	4	43	nd	11	12	0.010	6	15	nd	22	na	na	na	na	na	na	na	na	na	na	6.4
3976	4453	0 - 0.2	277556.3	1266497.83	16.3	5	120	nd	15	15	0.020	11	22	nd	38	na	na	na	na	na	na	na	na	na	na	6.1
3977	4454	0 - 0.2	277557.8	1266499.02	16.3	5	62	nd	12	14	0.020	8	20	nd	32	na	na	na	na	na	na	na	na	na	na	6.3
Mean						5.1	63.3		11.1	13.6	0.013	8.9	18.9		25.8	1.1	0.9									6.6
Standard Deviation						0.6	29.6		1.9	2.3	0.006	2.3	4.0		7.3	0.7	0.8									0.4
Co-efficient of Variation						0.1	0.5		0.2	0.2	0.5	0.3	0.2		0.3	0.6	0.8									0.1
Maximum						6.0	120.0	nd	15.0	16.0	0.020	13.0	23.0	1.0	38.0	1.9	1.8	nd	nd	nd	0.1	nd	nd	nd	180.0	7.1
Minimum						4.0	34.0	nd	9.0	10.0	0.005	6.0	10.0	nd	15.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	40.0	5.9

nd Not Detected
na Not Analysed

TABLE 11 VALIDATION DATA FOR THE FARMED AREA

Sample No	Sample Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OCPs	PCBs	TPH	BTEX	PAH	pH
Criteria						20	400	3	50	60	1	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-	0.2	✓ 1	1000	1-14	20	-
6962	6899	0 - 0.2	277500.1	1266800.0	17.5	4.5	36	nd	17	7	0.020	9	19	nd	15	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.2
6963	6900	0 - 0.2	277500.1	1266766.7	17.6	4.5	16	nd	24	2.5	0.020	8	18	nd	12	na	na	na	na	na	nd	nd	na	na	na	5.6
6964	6901	0 - 0.2	277500.1	1266733.4	18.0	4	25	nd	22	2	0.025	7.5	21	nd	16	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.5
6965	6902	0 - 0.2	277500.0	1266700.0	18.4	6.5	17	nd	15	4.5	0.020	9	17	nd	94	na	na	na	na	na	nd	nd	na	na	na	5.6
6966	6903	0 - 0.2	277500.0	1266700.0	18.4	5	22	nd	17	3.5	0.030	8	17	nd	17	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.9
6967	6904	0 - 0.2	277500.0	1266633.4	18.5	5	49	nd	11	11	0.020	10	12	nd	20	na	na	na	na	na	nd	nd	na	na	na	6.9
6968	6905	0 - 0.2	277500.0	1266600.0	18.9	6.5	47	nd	17	17	0.015	11	14	nd	22	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.5
6969	6906	0 - 0.2	277500.1	1266566.7	18.6	5	32	nd	11	7.5	0.025	8	14	nd	14	na	na	na	na	na	nd	nd	na	na	na	6
6970	6907	0 - 0.2	277500.1	1266533.5	18.6	4.5	10	nd	17	7	0.025	6.5	13	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.5
6971	6908	0 - 0.2	277500.3	1266500.1	18.5	3.5	16	nd	17	6.5	0.025	5	9.5	nd	7.5	na	na	na	na	na	nd	nd	na	na	na	5.4
6972	6909	0 - 0.2	277540.1	1266500.0	17.7	5	19	nd	16	10	0.025	7.5	19	nd	18	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.7
6973	6910	0 - 0.2	277540.1	1266533.4	18.5	3.5	10	nd	15	4	0.025	6.5	11	nd	6.5	na	na	na	na	na	nd	nd	na	na	na	5.7
6974	6911	0 - 0.2	277540.1	1266566.6	18.5	6.5	20	nd	15	13	0.050	7	52	nd	37	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.2
6975	6912	0 - 0.2	277540.0	1266600.0	18.4	5	19	nd	13	12	0.050	6.5	47	nd	18	na	na	na	na	na	nd	nd	na	na	na	5.3
6976	6913	0 - 0.2	277540.0	1266633.4	18.2	5	21	nd	10	7.5	0.045	7.5	18	nd	19	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	6.1
6977	6914	0 - 0.2	277540.1	1266666.7	18.4	5	16	nd	9	8	0.060	7	17	nd	17	na	na	na	na	na	nd	nd	na	na	na	5.6
6978	6915	0 - 0.2	277540.1	1266700.0	18.3	5.5	12	nd	7	8.5	0.030	7	21	nd	15	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.5
6979	6916	0 - 0.2	277540.1	1266733.4	18.2	6	18	nd	16	7.5	0.020	6.5	19	nd	16	na	na	na	na	na	nd	nd	na	na	na	5.4
6980	6917	0 - 0.2	277540.0	1266766.7	18.1	6	20	nd	16	7	0.020	10	20	nd	15	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.2
6981	6918	0 - 0.2	277540.1	1266800.1	18.0	3.5	17	nd	12	10	0.010	7.5	12	nd	8.5	na	na	na	na	na	nd	nd	na	na	na	5.3
6982	6919	0 - 0.2	277580.1	1266800.0	17.6	4.0	12	nd	11	7.5	0.035	4.5	11	nd	9	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.2
6983	6920	0 - 0.2	277580.1	1266766.7	17.6	5.5	15	nd	13	7	0.055	6	15	nd	10	na	na	na	na	na	nd	nd	na	na	na	5.2
6984	6921	0 - 0.2	277580.1	1266733.4	17.8	5.0	18	nd	13	6.5	0.020	8	18	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.7
6985	6922	0 - 0.2	277580.1	1266700.0	17.9	5.5	16	nd	17	8	0.025	8	15	nd	16	na	na	na	na	na	nd	nd	na	na	na	5.2
6986	6923	0 - 0.2	277580.1	1266666.6	18.0	5	13	nd	13	9	0.030	8	16	nd	15	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.3
6987	6924	0 - 0.2	277580.1	1266633.4	18.2	7	13	nd	20	10	0.070	5.5	19	nd	17	na	na	na	na	na	nd	nd	na	na	na	5.2
6988	6925	0 - 0.2	277580.1	1266600.0	18.5	7.5	40	nd	19	25	0.140	6	100	4	180	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.17	4.9
6989	6926	0 - 0.2	277580.0	1266566.7	18.2	7.5	31	nd	20	19	0.120	6.5	92	3	185	na	na	na	na	na	nd	nd	na	na	na	5.8
6990	6927	0 - 0.2	277580.1	1266533.4	18.2	5	20	nd	12	9	0.025	8	14	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.5
6991	6928	0 - 0.2	277580.2	1266499.9	16.7	3	24	nd	11	7	0.015	4	9	nd	4.5	na	na	na	na	na	nd	nd	na	na	na	5.5
6992	6929	0 - 0.2	277620.2	1266499.9	16.1	5	22	nd	11	12	0.065	10	13	nd	21	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.4
6993	6930	0 - 0.2	277620.1	1266533.5	16.4	5	29	nd	10	12	0.060	6.5	19	nd	30	na	na	na	na	na	nd	nd	na	na	na	5.6
6994	6931	0 - 0.2	277620.1	1266566.6	16.9	5.5	24	nd	11	13	0.030	7	25	nd	22	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.4
6995	6932	0 - 0.2	277620.1	1266600.0	17.6	5	27	nd	13	13	0.070	5.5	42	nd	27	na	na	na	na	na	nd	nd	na	na	na	5.5
6996	6933	0 - 0.2	277620.0	1266633.4	17.3	5.5	13	nd	12	9	0.020	8	24	nd	24	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.2
6997	6934	0 - 0.2	277620.1	1266666.6	17.2	4	19	nd	10	7	0.020	7.5	15	nd	14	na	na	na	na	na	nd	nd	na	na	na	5.5

nd Not Detected
na Not Analysed

TABLE 11 VALIDATION DATA FOR THE FARMED AREA

Sample			PIT LOC. CO-ORDS			(mg/kg)																			
			X	Y	Z	100		20	100	6000	40	400	300		7400		2,4,6-	2,6-	2,4-					0·6	3	
No	Point	Depth (m)	EASTING	NORTHING	HEIGHT	As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	TNT	DNT	DNT	MNT	OCPs	PCBs	TPH	BTEX	PAH	pH
Criteria						20	400	3	50	60	1	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-	0.2	✓ 1	1000	1-14	20	-
6998	6935	0 - 0.2	277620.0	1266700.0	17.2	4.5	17	nd	11	10	0.020	8	17	nd	14	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.4
6999	6936	0 - 0.2	277620.0	1266733.4	17.2	5	25	nd	12	8.5	0.015	6	19	nd	13	na	na	na	na	na	nd	nd	na	na	na	5.4
7000	6937	0 - 0.2	277620.0	1266766.7	17.3	5	30	nd	10	11	0.015	6	21	nd	15	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.1
7001	6938	0 - 0.2	277620.0	1266800.0	17.1	4.5	20	nd	11	9.5	0.015	5.5	14	nd	13	na	na	na	na	na	nd	nd	na	na	na	5.7
7002	6939	0 - 0.2	277660.0	1266800.0	17.3	5	27	nd	14	11	0.040	6.5	12	nd	16	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.9
7003	6940	0 - 0.2	277660.0	1266766.7	17.3	6	25	nd	11	11	0.020	5.5	12	nd	14	na	na	na	na	na	nd	nd	na	na	na	6
7004	6941	0 - 0.2	277660.0	1266733.3	17.3	5	22	nd	11	8	0.010	4	13	nd	15	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.6
7005	6942	0 - 0.2	277660.0	1266700.0	17.7	5	20	nd	12	9	0.015	6	15	nd	14	na	na	na	na	na	nd	nd	na	na	na	5.7
7006	6943	0 - 0.2	277660.0	1266666.7	17.8	5.5	15	nd	10	8	0.015	5.5	15	nd	17	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.5
7007	6944	0 - 0.2	277660.1	1266633.4	17.4	5	14	nd	11	8	0.010	5	19	nd	14	na	na	na	na	na	nd	nd	na	na	na	5.4
7008	6945	0 - 0.2	277660.0	1266600.0	16.1	6	20	nd	11	9	0.035	7	13	nd	16	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.3
7009	6946	0 - 0.2	277660.0	1266566.6	16.0	5	38	nd	11	12	0.015	10	14	nd	22	na	na	na	na	na	nd	nd	na	na	na	4.8
7010	6947	0 - 0.2	277660.1	1266533.4	16.8	5	38	nd	10	12	0.010	10	14	nd	19	nd	nd	nd	nd	nd	nd	nd	na	na	na	6
7011	6948	0 - 0.2	277660.1	1266499.9	17.1	5.5	50	nd	10	13	0.020	8	12	nd	23	na	na	na	na	na	nd	nd	na	na	na	6.2
7012	6949	0 - 0.2	277700.1	1266500.0	16.1	5.5	56	nd	10	14	0.015	9	12	nd	23	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.6
7013	6950	0 - 0.2	277700.1	1266533.2	16.9	5	39	nd	12	15	0.015	8	20	nd	27	na	na	na	na	na	nd	nd	na	na	na	5.5
7014	6951	0 - 0.2	277700.1	1266566.6	16.6	4.5	34	nd	10	12	0.015	6.5	11	nd	15	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.3
7015	6952	0 - 0.2	277700.1	1266600.0	16.4	5	40	nd	12	12	0.010	7.5	14	nd	22	na	na	na	na	na	nd	nd	na	na	na	5.8
7016	6953	0 - 0.2	277700.0	1266633.3	15.6	5	55	nd	17	14	0.020	8.5	19	nd	23	nd	nd	nd	nd	nd	nd	nd	na	na	na	5
7017	6954	0 - 0.2	277700.0	1266666.6	16.1	5	31	nd	16	13	0.030	8	13	nd	23	na	na	na	na	na	nd	nd	na	na	na	5.4
7018	6955	0 - 0.2	277700.1	1266699.9	17.1	6	18	nd	11	9	0.010	8	12	nd	30	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.9
7019	6956	0 - 0.2	277700.1	1266733.3	17.3	5.5	35	nd	13	9	0.025	6.5	12	nd	27	na	na	na	na	na	nd	nd	na	na	na	6.3
7020	6957	0 - 0.2	277700.0	1266766.7	17.5	4.5	26	nd	12	9	0.010	7	11	nd	16	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.9
7021	6958	0 - 0.2	277700.0	1266800.0	17.6	5	35	nd	11	10	0.015	7	17	nd	27	na	na	na	na	na	nd	nd	na	na	na	6.2
7136	7040	0 - 0.2	277740.0	1266800.0	17.6	5	27	nd	10	7.5	0.015	6	11	nd	15	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.9
7137	7041	0 - 0.2	277740.0	1266766.6	16.5	5	27	nd	12	10	0.015	5.5	13	nd	17	na	na	na	na	na	nd	nd	na	na	na	5.9
7138	7042	0 - 0.2	277740.0	1266733.3	15.5	6.5	68	nd	19	12	0.015	7.5	14	nd	21	na	na	na	na	na	nd	nd	na	na	na	6.1
7139	7043	0 - 0.2	277740.0	1266700.1	15.5	7	35	nd	11	13	0.020	7	18	1	24	na	na	na	na	na	nd	nd	na	na	na	5.5
8353	8127	0 - 0.2	278088.1	1266795.2	17.9	6	15	nd	5	7.5	0.015	3.5	15	nd	18	na	na	na	na	na	nd	nd	na	na	na	5.6
Mean						5.2	26.0		13.2	9.8	0.029	7.2	19.4		24.0											5.6
Standard Deviation						0.9	12.3		3.4	3.7	0.024	1.5	15.8		30.8											0.4
Co-efficient of Variation						0.2	0.5		0.3	0.4	0.8	0.2	0.8		1.3											0.1
Maximum						7.5	68.0	nd	24.0	25.0	0.140	11.0	100.0	4.0	185.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.2	6.3
Minimum						3.0	10.0	nd	7.0	2.0	0.010	4.0	9.0	nd	4.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.0

nd Not Detected
na Not Analysed

TABLE 12 VALIDATION DATA FOR TIP SITES 23, 24 and 25

Sample No	Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OCPs	PCBs	pH
Criteria						20	400	3	50	60	1	60	300	50	200	✓ 10	✓ 15	✓ 0.5	✓ 1	-	0.2	✓ 1	-
7813	7653	Tip 23	277579.0	1266598.6	18.1	7	36	nd	10	9	0.050	3.5	19	nd	110	nd	nd	nd	nd	nd	nd	nd	6
7814	7654	Tip 23	277574.2	1266591.2	18.0	4.5	37	nd	16	9	0.010	5.5	9	nd	13	nd	nd	nd	nd	nd	nd	nd	7.1
7815	7655	Tip 24	277636.6	1266622.3	16.0	4	50	nd	12	16	0.005	7.5	10	nd	25	nd	nd	nd	nd	nd	nd	nd	6.4
7816	7656	Tip 24	277635.3	1266618.8	15.7	5	48	nd	8.5	11	0.005	6	9	nd	17	nd	nd	nd	nd	nd	nd	nd	6.7
7817	7657	Tip 25	277582.2	1266490.1	16.0	5.5	90	nd	13	19	0.010	11	14	nd	29	nd	nd	nd	nd	nd	nd	nd	6.5
7818	7658	Tip 25	277589.3	1266480.6	15.7	5	175	nd	14	14	0.010	11	10	nd	24	nd	nd	nd	nd	nd	nd	nd	6.9
Mean						5.2	72.7		12.3	13.0	0.015	7.4	11.8		36.3								6.6
Standard Deviation						1.0	53.9		2.7	4.0	0.017	3.1	4.0		36.5								0.4
Co-efficient of Variation						0.2	0.7		0.2	0.3	1.2	0.4	0.3		1.0								0.1
Maximum						7.0	175.0	nd	16.0	19.0	0.050	11.0	19.0	nd	110.0	nd	nd	nd	nd	nd	nd	nd	7.1
Minimum						4.0	36.0	nd	8.5	9.0	0.005	3.5	9.0	nd	13.0	nd	nd	nd	nd	nd	nd	nd	6.0

nd Not Detected
na Not Analysed

TABLE 14 VALIDATION DATA FOR SITE 23A

Sample No	Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	OCPs	PCBs	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	TPH	BTEX	PAH	P (total)	pH
Criteria						20	400	3	50	60	1	60	300	50	200	0.2	✓ 1	✓ 10	✓ 15	✓ 0.5	✓ 1	-	1000	1-14	20		-
6424	6443	Base of Trench 1	277889.1	1266391.8	15.8	4	110	nd	11	13	0.0150	8.5	16	nd	29	na	na	nd	nd	nd	nd	nd	na	na	nd	na	7.2
6425	6444	Base of Trench 1	277908.0	1266393.8	16.9	5	170	nd	12	17	0.0200	10	17	nd	36	na	na	nd	nd	nd	nd	nd	na	na	nd	na	8
6426	6445	Wall of Trench 1	277898.6	1266388.8	17.1	6.5	82	2	12	21	0.0150	8	34	nd	100	na	na	nd	nd	nd	nd	nd	na	na	nd	na	7.2
6427	6446	Wall of Trench 1	277911.2	1266400.2	17.2	5	125	nd	11	15	0.0200	10	16	nd	30	na	na	3	nd	nd	nd	nd	na	na	nd	na	6.7
6428	6447	Base of Trench 2	277889.0	1266415.0	15.2	5	100	nd	12	15	0.0150	11	20	nd	35	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	6.4
6429	6448	Base of Trench 2	277906.1	1266413.6	16.5	5.5	155	nd	11	16	0.0200	11	16	nd	36	na	na	nd	nd	nd	nd	nd	na	na	nd	na	5.3
6430	6449	Wall of Trench 2	277900.3	1266411.0	17.1	5	120	nd	11	16	0.0300	11	18	nd	31	na	na	0.2	nd	nd	nd	nd	na	na	nd	na	6.3
6431	6450	Wall of Trench 2	277914.4	1266419.7	17.1	4.5	110	nd	11	16	0.0150	12	17	nd	27	na	na	nd	nd	nd	nd	nd	na	na	0.54	na	5.9
6432	6451	Base of Trench 3	277891.2	1266425.1	14.6	6	99	nd	11	17	0.0150	11	16	nd	34	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	6.8
6433	6452	Base of Trench 3	277931.1	1266428.6	16.6	5	130	nd	9.5	15	0.0150	9	15	nd	29	na	na	nd	nd	nd	nd	nd	na	na	nd	na	6
6434	6453	Wall of Trench 3	277910.3	1266430.2	16.1	5.5	130	nd	10	16	0.0350	12	16	nd	30	na	na	nd	nd	nd	nd	nd	na	na	nd	na	5.9
6435	6454	Wall of Trench 3	277923.7	1266425.0	16.7	5.5	140	nd	11	18	0.0300	10	15	nd	31	na	na	nd	nd	nd	nd	nd	na	na	nd	na	7
6436	6455	Base of Trench 4	277900.4	1266439.1	14.7	6	120	nd	8	14	0.0150	10	13	nd	30	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	7.2
6437	6456	Base of Trench 4	277932.6	1266437.9	15.4	6.5	110	nd	10	14	0.0250	9	14	nd	29	na	na	nd	nd	nd	nd	nd	na	na	nd	na	7.5
6438	6457	Wall of Trench 4	277920.7	1266441.7	16.1	5.5	135	nd	10	17	0.0150	10	15	nd	33	na	na	nd	nd	nd	nd	nd	na	na	nd	na	6.8
6439	6458	Wall of Trench 4	277937.0	1266434.3	16.6	5	140	nd	11	17	0.0100	9	16	nd	31	na	na	nd	nd	nd	nd	nd	na	na	nd	na	6.2
6440	6459	Base of Trench 5	277899.2	1266450.9	14.6	4	63	nd	8	10	0.0100	7	12	nd	22	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	8.8
6441	6460	Base of Trench 5	277914.7	1266447.6	15.1	6.5	135	nd	10	17	0.0300	11	20	nd	87	na	na	nd	nd	nd	nd	nd	na	na	nd	na	4.7
6442	6461	Base of Trench 5	277931.0	1266446.5	15.4	5	105	nd	9	14	0.0300	10	17	nd	35	na	na	nd	nd	nd	nd	nd	na	na	nd	na	7
6443	6462	Wall of Trench 5	277903.2	1266443.0	15.4	6	87	nd	9	13	0.0350	9	13	nd	30	na	na	0.7	nd	nd	nd	nd	na	na	nd	na	6.4
6444	6463	Wall of Trench 5	277925.1	1266451.4	14.6	7.5	200	0.5	45	26	0.0250	27	30	nd	87	na	na	nd	nd	nd	nd	nd	na	na	nd	na	6.6
6445	6464	Wall of Trench 5	277944.5	1266442.1	17.0	5	145	nd	9	18	0.0200	10	16	nd	30	na	na	nd	nd	nd	nd	nd	na	na	0.32	na	5.7
6446	6465	Base of Trench 6	277917.1	1266466.1	13.9	4	32	nd	6.5	11	0.0100	6.5	12	nd	28	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	7.2
6447	6466	Wall of Trench 6	277907.6	1266462.6	15.4	5	80	nd	9.5	12	0.0150	8	13	nd	24	na	na	nd	nd	nd	nd	nd	na	na	nd	na	6.6
6448	6467	Base of Trench 6	277951.5	1266461.6	15.5	5.5	96	nd	8	15	0.0150	8	18	nd	32	na	na	nd	nd	nd	nd	nd	na	na	0.94	na	7.5
6449	6468	Wall of Trench 6	277928.1	1266465.8	15.4	5.5	100	nd	10	19	0.0100	10	21	nd	45	na	na	nd	nd	nd	nd	nd	na	na	0.43	na	5.5
6450	6469	Wall of Trench 6	277943.0	1266458.1	16.1	4.5	190	nd	9	21	0.0300	11	20	nd	40	na	na	nd	nd	nd	nd	nd	na	na	nd	na	5.5
6665	6654	Under Road	277940.0	1266383.7	18.2	5	56	nd	13	6	0.0250	4	10	nd	11	na	na	nd	nd	nd	nd	nd	na	na	na	na	7.3
6666	6655	Under Road	277985.0	1266373.6	18.0	4.5	53	nd	11	6	0.0200	4	8.5	nd	7.5	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	7.5
6667	6656	Under Road	278017.5	1266414.2	17.8	3.5	26	nd	10	6	0.0300	2.5	8	nd	6	na	na	nd	nd	nd	nd	nd	na	na	na	na	6.5
6668	6657	Under Road	277987.3	1266443.0	18.1	6	120	nd	10	17	0.0300	8	14	nd	29	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	7
6669	6658	Between Trenches	277904.3	1266371.6	18.0	6.5	72	nd	10	23	0.0200	5.5	19	nd	60	na	na	nd	nd	nd	nd	nd	na	na		na	7.2
6670	6659	Between Trenches	277911.2	1266407.2	18.1	5	60	nd	10	10	0.0150	4.5	15	nd	24	na	na	nd	nd	nd	nd	nd	na	na	nd	na	6.1
6671	6660	Between Trenches	277902.4	1266420.1	17.4	5.5	105	nd	14	17	0.0200	8	16	nd	24	na	na	nd	nd	nd	nd	nd	na	na	nd	na	5.7
6672	6661	Between Trenches	277916.9	1266432.5	17.8	5	22	nd	11	7.5	0.0200	4	9	nd	10	na	na	nd	nd	nd	nd	nd	na	na	2.7	na	5.6
6673	6662	Between Trenches	277929.6	1266442.4	17.7	6	29	nd	10	9	0.0400	3.5	10	nd	12	na	na	nd	nd	nd	nd	nd	na	na	na	na	6
6674	6663	Between Trenches	277911.2	1266459.2	18.0	7	67	nd	12	14	0.0250	4	22	nd	55	na	na	nd	nd	nd	nd	nd	nd	nd	nd	na	5.8
6675	6664	Between Trenches	277932..4	1266473.7	17.9	7	56	nd	21	19	0.0250	4	23	nd	48	na	na	nd	nd	nd	nd	nd	na	na	na	na	6.9

nd Not Detected
na Not Analysed

TABLE 14 VALIDATION DATA FOR SITE 23A

Sample No.	Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	OCPs	PCBs	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	TPH	BTEX	PAH	P (total)	pH
Criteria						20	400	3	50	60	1	60	300	50	200	0.2	✓ 1	✓ 10	✓ 15	✓ 0.5	✓ 1	-	1000	1-14	20		-
6676	6665	Along Fence Line	277928.2	1266370.1	18.1	5	46	nd	12	6.5	0.0150	3.5	12	nd	12	na	na	0.4	nd	nd	nd	nd	na	na	nd	na	6.9
6677	6666	Along Fence Line	277965.4	1266362.2	18.0	6.5	135	nd	23	23	0.0100	19	22	1	83	na	na	0.3	nd	nd	nd	nd	nd	nd	1.62	na	6.8
6678	6667	Along Fence Line	277994.8	1266359.9	18.5	5.5	50	nd	10	10	0.0150	4.5	12	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	nd	na	6.5
6679	6668	Along Fence Line	278010.4	1266377.1	18.3	6	62	nd	10	8	0.0100	4	11	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	6.4
6680	6669	Along Fence Line	278029.1	1266389.8	18.5	6	42	nd	11	7.5	0.0200	4	11	nd	10	na	na	nd	nd	nd	nd	nd	na	na	na	na	6.4
6681	6670	Along Fence Line	278032.7	1266416.4	18.0	3.5	40	nd	9	6	0.0200	3	10	nd	7.5	na	na	nd	nd	nd	nd	nd	na	na	na	na	5.8
6682	6671	Along Fence Line	278007.6	1266440.4	17.9	7	125	nd	17	19	0.0150	8.5	60	4	88	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	6.4
6683	6672	Along Fence Line	277984.1	1266456.1	18.2	5.5	90	nd	12	16	0.0200	6	25	2	30	na	na	nd	nd	nd	nd	nd	na	na	nd	na	6.5
6684	6673	Main Burning Area	277940.0	1266409.2	18.4	6.5	105	nd	14	17	0.0200	9	19	3	49	na	na	nd	nd	nd	nd	nd	nd	nd	nd	240	6.8
6685	6674	Main Burning Area	277954.3	1266431.9	18.4	7.5	105	nd	16	18	0.0100	7.5	25	2	65	na	na	nd	nd	nd	nd	nd	na	na	nd	na	6.9
6686	6675	Main Burning Area	277959.9	1266416.9	18.3	7.5	160	nd	16	58	0.0050	90	16	nd	45	na	na	nd	nd	nd	nd	nd	nd	nd	nd	1950	7.1
6687	6676	Main Burning Area	277969.9	1266437.3	18.3	10	135	0.5	17	44	0.0600	12	160	4	190	na	na	nd	nd	nd	nd	nd	na	na	nd	na	7
6688	6677	Main Burning Area	277953.5	1266396.1	18.2	8	130	nd	16	20	0.0200	6.5	58	2	79	na	na	nd	nd	nd	nd	nd	na	na	nd	310	6.5
6689	6678	Main Burning Area	277969.1	1266407.6	18.3	6	160	nd	14	56	0.0100	92	14	nd	38	na	na	nd	nd	nd	nd	nd	nd	nd	nd	na	6.7
6690	6679	Main Burning Area	277979.7	1266429.1	18.3	6	115	nd	12	22	0.0100	12	30	nd	46	na	na	nd	nd	nd	nd	nd	na	na	nd	600	7.1
6691	6680	Main Burning Area	277984.0	1266405.5	18.1	6.5	85	nd	19	10	0.0150	5.5	25	nd	43	na	na	nd	nd	nd	nd	nd	nd	nd	nd	na	7
6692	6681	Main Burning Area	277990.2	1266387.4	18.2	7.5	160	nd	27	14	0.0300	21	20	2	72	na	na	nd	nd	nd	nd	nd	na	na	0.45	880	6.9
6693	6682	Main Burning Area	277996.5	1266415.2	17.9	6.5	76	nd	16	21	0.0150	4.5	25	nd	40	na	na	nd	nd	nd	nd	nd	na	na	nd	na	6.7
6917	6857	Main Burning Area	277915.2	1266355.2	17.2	5	32	nd	7.5	5	0.0100	7	8	nd	12	na	na	nd	nd	nd	nd	nd	na	na	na	na	6.7
6918	6858	Main Burning Area	277944.7	1266352.4	17.4	5	45	nd	8	5	0.0100	7	10	nd	12	na	na	nd	nd	nd	nd	nd	na	na	nd	190	6.4
6919	6859	Main Burning Area	277985.9	1266354.6	18.1	4	28	nd	13	2.5	0.0100	6.5	9	nd	8	na	na	nd	nd	nd	nd	nd	na	na	na	na	6.6
6920	6860	Main Burning Area	278009.0	1266364.0	17.6	5.5	64	nd	14	12	0.0200	10	14	nd	26	na	na	nd	nd	nd	nd	nd	nd	nd	nd	270	5.4
6921	6861	Main Burning Area	277915.5	1266385.0	18.3	4	34	nd	6	3	0.0100	5.5	7	nd	8	na	na	nd	nd	nd	nd	nd	na	na	na	na	7.1
6922	6862	Main Burning Area	277928.7	1266400.5	18.2	5.5	37	nd	10	3.5	0.0100	6	8.5	nd	10	na	na	nd	nd	nd	nd	nd	na	na	nd	180	5.1
6923	6863	Main Burning Area	277955.6	1266371.5	16.4	6	92	nd	10	12	0.0150	10	14	nd	27	na	na	nd	nd	nd	nd	nd	na	na	na	na	6.4
6924	6864	Main Burning Area	277971.5	1266391.2	18.0	3.5	24	nd	13	3	0.0250	5.5	7	nd	7.5	na	na	nd	nd	nd	nd	nd	nd	nd	nd	140	7
6925	6865	Main Burning Area	278005.4	1266397.6	17.2	5	32	nd	10	12	0.0050	9	13	nd	25	na	na	0.2	nd	nd	nd	nd	na	na	na	na	5.8
6926	6866	Main Burning Area	277929.4	1266422.3	18.3	5	30	nd	7.5	4	0.0150	6.5	10	nd	11	na	na	nd	nd	nd	nd	nd	na	na	nd	180	5.6
6927	6867	Main Burning Area	277991.4	1266427.0	18.0	4.5	20	nd	10	3.5	0.0200	6	8	nd	9	na	na	nd	nd	nd	nd	nd	na	na	na	na	6.3
6928	6868	Main Burning Area	277999.7	1266411.7	17.8	3	12	nd	11	3	0.0150	4.5	8	nd	7.5	na	na	nd	nd	nd	nd	nd	nd	nd	nd	100	6.5
6929	6869	Main Burning Area	278023.2	1266429.6	17.9	3	17	nd	12	3	0.0200	4	7.5	nd	6.5	na	na	nd	nd	nd	nd	nd	na	na	na	na	6.7
6930	6870	Main Burning Area	277968.6	1266451.9	18.0	5	29	nd	9	5	0.0150	5	9	nd	15	na	na	nd	nd	nd	nd	nd	na	na	nd	190	5.2
Mean						5.5	88.5		12.1	14.6	0.019	10.5	18.7		34.6											435.8	6.5
Standard Deviation						1.2	47.4		5.4	10.1	0.009	14.5	19.5		29.4											526.6	0.7
Co-efficient of Variation						0.2	0.5		0.4	0.7	0.5	1.4	1.0		0.8											1.2	0.1
Maximum						10.0	200.0	2.0	45.0	58.0	0.060	92.0	160.0	4.0	190.0	nd	nd	3.0	nd	nd	nd	nd	nd	nd	2.7	1950.0	8.8
Minimum						3.0	12.0	nd	6.0	2.5	0.005	2.5	7.0	nd	6.0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	100.0	4.7

nd Not Detected
na Not Analysed

TABLE 15 VALIDATION DATA FOR SITE 23B

Sample No	Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	OCPs	PCBs	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	TPH	BTEX	pH
Criteria						20	400	3	50	60	1	60	300	50	200	0.2	✓ 1	✓ 10	✓ 15	✓ 0.5	✓ 1	-	1000	1-14	-
2078	2745	Base of Pit 1	278145.9	1266496.1	15.7	5	85	nd	11	18	0.025	9	15	nd	31	nd	nd	nd	nd	nd	nd	nd	na	na	7.7
2079	2746	Base of Pit 1	278148.3	1266508.8	16.3	5	90	nd	15	15	0.015	8	16	nd	27	nd	nd	nd	nd	nd	nd	nd	na	na	6.6
2080	2747	Base of Pit 1	278123.0	1266529.6	13.8	6.5	180	nd	45	27	0.02	24	38	nd	76	nd	nd	nd	nd	nd	nd	nd	na	na	6.2
2081	2748	Base of Pit 1	278150.1	1266522.2	14.8	7	190	nd	26	22	0.015	15	22	nd	55	nd	nd	nd	nd	nd	nd	nd	na	na	6.7
2082	2749	Wall of Pit 1	278147.7	1266502.3	16.7	5	130	nd	15	18	0.025	11	11	nd	30	nd	nd	nd	nd	nd	nd	nd	na	na	7.1
2083	2750	Wall of Pit 1	278131.0	1266510.8	16.5	5.5	135	nd	19	18	0.025	10	16	nd	44	nd	nd	nd	nd	nd	nd	nd	na	na	6.1
2084	2751	Wall of Pit 1	278132.6	1266528.4	15.8	6.5	150	nd	33	23	0.020	18	18	nd	62	nd	nd	nd	nd	nd	nd	nd	na	na	6.4
2085	2752	Base of Pit 2	278142.5	1266574.3	15.3	6	74	nd	8	16	0.010	10	14	nd	32	nd	nd	nd	nd	nd	nd	nd	na	na	8.4
2086	2753	Wall of Pit 2	278151.9	1266568.3	16.6	6	110	nd	11	18	0.020	10	16	nd	25	nd	nd	nd	nd	nd	nd	nd	na	na	6.8
2087	2754	Base of Pit 3	278118.3	1266588.9	13.1	7	200	nd	25	26	0.015	29	17	nd	73	nd	nd	nd	nd	nd	nd	nd	nd	nd	8.1
2088	2755	Wall of Pit 3	278124.1	1266599.2	15.7	5.5	94	nd	14	16	0.015	10	11	nd	28	nd	nd	nd	nd	nd	nd	nd	nd	nd	7.4
2089	2756	Wall of Pit 3	278112.3	1266577.3	15.8	4	28	nd	10	13	0.010	6	8	nd	19	nd	nd	nd	nd	nd	nd	nd	nd	nd	4.6
2090	2757	Base of Pit 4	278101.9	1266570.0	13.6	5	54	nd	11	14	0.015	9	12	nd	27	nd	nd	nd	nd	nd	nd	nd	na	na	8.4
2091	2758	Base of Pit 4	278104.6	1266585.4	13.1	6	180	nd	22	19	0.020	15	25	nd	46	nd	nd	nd	nd	nd	nd	nd	na	na	8.2
2092	2759	Base of Pit 4	278109.5	1266611.4	13.7	5.5	200	nd	11	13	0.020	8	11	nd	30	nd	nd	nd	nd	nd	nd	nd	na	na	8.3
2093	2760	Wall of Pit 4	278105.5	1266561.3	16.0	5.5	83	nd	11	15	0.025	10	12	nd	24	nd	nd	nd	nd	nd	nd	nd	na	na	8
2094	2761	Wall of Pit 4	278099.7	1266602.2	15.2	5.5	60	nd	10	12	0.025	6.5	10	nd	19	nd	nd	nd	nd	nd	nd	nd	na	na	7.9
2095	2762	Base of Pit 5	278080.4	1266579.9	13.4	7	230	nd	32	25	0.035	19	38	1	65	nd	nd	nd	nd	nd	nd	nd	na	na	7.6
9281	2763	Base of Pit 5	278084.8	1266617.6	13.4	na	na	na	na	6	na	na	na	na	10	na	na	na	na	na	na	na	na	na	na
2097	2764	Wall of Pit 5	278087.5	1266600.6	14.4	6	120	nd	12	20	0.015	8	15	nd	43	nd	nd	nd	nd	nd	nd	nd	na	na	7.8
2098	2765	Wall of Pit 5	278073.6	1266568.1	14.0	5.5	110	nd	11	12	0.020	6.5	11	nd	21	nd	nd	nd	nd	nd	nd	nd	na	na	7.6
2099	2766	Base of Pit 6	278064.8	1266578.6	13.9	6	180	nd	18	17	0.015	10	21	nd	38	nd	nd	nd	nd	nd	nd	nd	na	na	7.2
2100	2767	Wall of Pit 6	278066.2	1267567.9	15.4	5.5	81	nd	13	16	0.015	6	12	nd	25	nd	nd	0.7	nd	nd	nd	nd	na	na	6.5
2101	2768	Wall of Pit 6	278064.6	1266590.9	14.4	6	160	nd	11	16	0.025	8.5	13	1	42	nd	nd	nd	nd	nd	nd	nd	na	na	6.7
2102	2769	Base of Pit 7	278043.1	1266573.5	14.4	6	80	nd	10	13	0.015	8.5	10	nd	22	nd	nd	nd	nd	nd	nd	nd	na	na	7.7
2103	2770	Base of Pit 7	278046.5	1266535.4	14.8	6.5	74	nd	12	18	0.010	9	18	nd	49	nd	nd	nd	nd	nd	nd	nd	na	na	7.3
2104	2771	Wall of Pit 7	278052.1	1266584.6	15.3	5	190	nd	11	18	0.020	10	11	nd	34	nd	nd	nd	nd	nd	nd	nd	na	na	7
2105	2772	Wall of Pit 7	278038.2	1266539.7	15.8	6.5	100	nd	14	15	0.015	7	13	nd	35	nd	nd	nd	nd	nd	nd	nd	na	na	6
2106	2773	Wall of Pit 7	278061.6	1266525.7	15.6	5	62	nd	14	15	0.005	7	11	nd	37	nd	nd	nd	nd	nd	nd	nd	na	na	7.3
2107	2774	Base of Pit 8	278022.2	1266597.0	13.2	6	20	nd	14	16	0.020	10	20	1	35	nd	nd	nd	nd	nd	nd	nd	na	na	7.8
2108	2775	Base of Pit 8	278006.7	1266613.1	12.7	6.5	110	nd	17	22	0.015	15	21	1	55	nd	nd	nd	nd	nd	nd	nd	na	na	7.8
2109	2776	Wall of Pit 8	278017.1	1266608.8	14.7	5	56	nd	10	11	0.010	6.5	10	nd	22	nd	nd	nd	nd	nd	nd	nd	na	na	7.6
2110	2777	Wall of Pit 8	278007.1	1266605.4	14.0	5.5	180	nd	13	15	0.020	8	15	nd	30	nd	nd	nd	nd	nd	nd	nd	na	na	6.3
2111	2778	Base of Pit 9	277990.9	1266579.1	13.1	6.5	50	nd	10	13	0.010	7.5	11	1	58	nd	nd	nd	nd	nd	nd	nd	na	na	6.8
2112	2779	Wall of Pit 9	278001.9	1266573.6	14.8	5	96	nd	8	15	0.015	7	10	nd	26	nd	nd	nd	nd	nd	nd	nd	na	na	7.2
2113	2780	Base of Pit 10	277997.3	1266561.2	13.8	4.5	33	nd	8.5	10	0.010	5	10	nd	16	nd	nd	nd	nd	nd	nd	nd	na	na	7.5

nd Not Detected
na Not Analysed

TABLE 15 VALIDATION DATA FOR SITE 23B

Sample No	Sample Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	OCPs	PCBs	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	TPH	BTEX	pH
Criteria						100 20		20 3	100 50	6000 60	40 1	400 60	300 300		7400 200	0.2	✔ 1	✔ 10	✔ 15	✔ 0.5	✔ 1	-	1000	0.6 1-14	
2114	2781	Wall of Pit 10	277988.1	1266569.2	14.8	4.5	120	nd	10	14	0.015	5.5	11	nd	24	nd	nd	nd	nd	nd	nd	nd	na	na	7.5
2115	2782	Base of Pit 11	277989.2	1266543.1	13.5	6	950	nd	21	20	0.010	16	26	2	60	nd	nd	nd	nd	nd	nd	nd	nd	nd	6.7
2116	2783	Wall of Pit 11	277979.5	1266541.4	15.0	5	69	nd	10	13	0.015	6	11	nd	20	nd	nd	nd	nd	nd	nd	nd	na	na	6.5
2117	2784	Base of Pit 12	277970.0	1266534.7	13.9	5.5	51	nd	8.5	12	0.010	8	9	nd	32	nd	nd	nd	nd	nd	nd	nd	na	na	6.5
2118	2785	Base of Pit 12	277997.8	1266527.0	15.9	5.5	100	nd	11	14	0.005	8	12	nd	27	nd	nd	nd	nd	nd	nd	nd	na	na	6.7
2119	2786	Wall of Pit 12	277993.9	1266532.2	16.2	6	130	nd	13	16	0.020	8.5	13	nd	27	nd	nd	nd	nd	nd	nd	nd	na	na	6.3
2120	2787	Wall of Pit 12	277980.0	1266528.8	15.1	6.5	95	nd	8	15	0.020	10	11	nd	43	nd	nd	nd	nd	nd	nd	nd	na	na	6.3
2121	2788	Base of Pit 13	277956.8	1266521.3	13.9	5	81	nd	10	14	0.010	7	14	nd	23	nd	nd	nd	nd	nd	nd	nd	na	na	7
2122	2789	Base of Pit 13	277972.8	1266515.5	14.7	4.5	90	nd	11	15	0.005	7	15	nd	27	nd	nd	nd	nd	nd	nd	nd	na	na	6.5
2123	2790	Base of Pit 13	277989.7	1266516.9	15.6	5.5	170	nd	12	18	0.015	8	17	1	30	nd	nd	nd	nd	nd	nd	nd	na	na	6.5
2124	2791	Wall of Pit 13	277965.6	1266513.0	15.4	6	105	nd	10	17	0.020	5.5	12	nd	29	nd	nd	nd	nd	nd	nd	nd	na	na	6.5
2125	2792	Wall of Pit 13	277981.8	1266508.7	15.9	5.5	65	nd	12	14	0.005	6	13	nd	23	nd	nd	nd	nd	nd	nd	nd	na	na	5.5
2126	2793	Base of Pit 14	277909.7	1266509.7	12.6	6.5	90	nd	15	18	0.010	11	21	1	36	nd	nd	nd	nd	nd	nd	nd	na	na	6.3
2127	2794	Base of Pit 14	277934.1	1266508.9	13.4	5	75	nd	12	15	0.010	8	15	nd	28	nd	nd	nd	nd	nd	nd	nd	na	na	7.1
2128	2795	Base of Pit 14	277949.6	1266499.5	13.8	7	100	nd	7	12	0.005	6	12	nd	20	nd	nd	nd	nd	nd	nd	nd	na	na	6.4
2129	2796	Base of Pit 14	277969.0	1266503.4	15.4	6	130	nd	10	16	0.015	7.5	14	nd	30	nd	nd	nd	nd	nd	nd	nd	na	na	6.9
2130	2797	Wall of Pit 14	277921.3	1266500.4	14.9	4	46	nd	8.5	10	0.010	7	11	nd	17	nd	nd	nd	nd	nd	nd	nd	na	na	6.7
2131	2798	Wall of Pit 14	277957.1	1266510.3	15.6	6	82	nd	10	18	0.015	8	16	1	53	nd	nd	nd	nd	nd	nd	nd	na	na	7.1
2132	2799	Wall of Pit 14	277966.5	1266491.4	16.3	6	70	nd	10	15	0.005	8.5	12	nd	30	nd	nd	nd	nd	nd	nd	nd	na	na	6.9
2133	2800	Base of Pit 15	277906.7	1266489.0	14.8	5	40	nd	9	10	0.010	6	10	nd	16	nd	nd	0.8	nd	nd	nd	nd	na	na	6.7
2134	2801	Wall of Pit 15	277910.1	1266484.9	16.2	5.5	74	nd	11	11	0.010	8.5	12	nd	21	nd	nd	nd	nd	nd	nd	nd	na	na	7.3
2135	2802	Base of Pit 16	277931.3	1266483.2	16.3	6	120	nd	10	15	0.010	9	13	1	26	nd	nd	nd	nd	nd	nd	nd	na	na	7.6
2136	2803	Wall of Pit 16	277937.4	1266484.9	17.1	6.5	140	nd	22	20	0.005	11	15	nd	26	nd	nd	nd	nd	nd	nd	nd	na	na	7.2
2137	2804	Base of Pit 17	277995.7	1266464.3	16.2	5.5	89	nd	10	17	0.020	11	15	nd	28	nd	nd	nd	nd	nd	nd	nd	na	na	7.1
2138	2805	Wall of Pit 17	278002.7	1266461.6	16.2	5	190	nd	11	18	0.015	12	14	nd	34	nd	nd	nd	nd	nd	nd	nd	na	na	8.2
2139	2806	Base of Pit 18	278030.7	1266461.1	15.3	5	58	nd	14	21	0.015	10	15	nd	33	nd	nd	nd	nd	nd	nd	nd	na	na	7.1
2140	2807	Wall of Pit 18	278029.0	1266465.1	15.6	4.5	70	nd	9	16	0.020	8	10	1	25	nd	nd	nd	nd	nd	nd	nd	na	na	8.2
2141	2808	Base of Pit 19	278023.6	1266512.0	15.2	5.5	46	nd	9	17	0.020	11	14	nd	36	nd	nd	nd	nd	nd	nd	nd	na	na	7.1
2142	2809	Base of Pit 19	278042.7	1266491.4	15.1	6	175	nd	10	18	0.010	13	14	nd	40	nd	nd	nd	nd	nd	nd	nd	na	na	7.9
2144	2811	Wall of Pit 19	278027.9	1266500.3	16.4	5	61	nd	10	17	0.020	9	10	1	29	nd	nd	nd	nd	nd	nd	nd	na	na	7.2
2145	2812	Wall of Pit 19	278046.8	1266502.7	15.9	5	115	nd	11	18	0.020	16	13	nd	41	nd	nd	nd	nd	nd	nd	nd	na	na	7.9
2146	2813	Base of Pit 20	278036.9	1266525.6	16.3	6	105	nd	10	16	0.020	11	14	nd	40	nd	nd	nd	nd	nd	nd	nd	na	na	7
2147	2814	Wall of Pit 20	278039.6	1266520.0	16.5	5	73	nd	10	17	0.005	9	15	nd	25	nd	nd	nd	nd	nd	nd	nd	na	na	7.2
2148	2815	Wall of Pit 20	278059.2	1266508.3	16.5	5	66	nd	15	14	0.005	7.5	22	nd	34	nd	nd	nd	nd	nd	nd	nd	na	na	7.4
2168	2816	Grid	277984.2	1266604.9	13.3	6	50	nd	11	15	0.025	8	16	1	45	nd	nd	nd	nd	nd	nd	nd	na	na	7.2
2169	2817	Grid	278029.8	1266619.8	13.3	5.5	82	nd	8.5	23	0.025	12	11	nd	32	nd	nd	nd	nd	nd	nd	nd	na	na	6.4
																							na	na	6.2

nd Not Detected
na Not Analysed

TABLE 15 VALIDATION DATA FOR SITE 23B

Sample No	Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	OCPs	PCBs	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	TPH	BTEX	pH
Criteria						20	400	3	50	60	1	60	300	50	200	0.2	✓ 1	✓ 10	✓ 15	✓ 0.5	✓ 1	-	1000	1-14	-
2170	2818	Grid	278076.2	1266604.9	14.5	4	51	nd	12	13	0.005	8.5	10	nd	18	nd	nd	nd	nd	nd	nd	nd	na	na	6.4
2171	2819	Grid	278179.7	1266650.9	15.4	5	50	nd	10	11	0.020	10	10	nd	20	nd	nd	nd	nd	nd	nd	nd	na	na	6.3
2172	2820	Grid	278168.2	1266604.9	17.3	5	36	nd	11	8.5	0.010	8	11	nd	14	nd	nd	nd	nd	nd	nd	nd	na	na	5.7
2173	2821	Grid	278135.4	1266594.6	17.3	5.5	20	nd	9	7	0.010	5	7	nd	10	nd	nd	nd	nd	nd	nd	nd	na	na	5.4
2175	2823	Grid	278087.7	1266558.9	16.8	5	27	nd	11	10	0.010	5	8	nd	10	nd	nd	nd	nd	nd	nd	nd	na	na	6.7
2176	2824	Grid	278041.7	1266547.4	17.2	4.5	24	nd	8	8	0.010	6.5	8	nd	9	nd	nd	nd	nd	nd	nd	nd	na	na	6
2177	2825	Grid	278013.3	1266557.6	16.7	5	80	nd	10	15	0.005	11	12	nd	18	nd	nd	nd	nd	nd	nd	nd	na	na	6.5
2178	2826	Grid	277949.7	1266547.4	13.7	5	66	nd	9	14	0.005	10	12	nd	22	nd	nd	nd	nd	nd	nd	nd	na	na	6.5
2179	2827	Grid	278132.4	1266547.3	17.5	5	32	nd	11	8.5	0.005	5	10	nd	10	nd	nd	nd	nd	nd	nd	nd	na	na	5.9
2180	2828	Grid	278179.7	1266558.9	17.1	3	26	nd	8	7	0.005	6	9	nd	7	nd	nd	nd	nd	nd	nd	nd	na	na	6.1
2181	2829	Grid	278225.7	1266547.4	16.3	5.5	51	nd	11	15	0.015	9	24	1	43	0.02	nd	nd	nd	nd	nd	nd	na	na	6.3
2182	2830	Grid	278214.2	1266501.4	16.8	5	44	nd	13	15	0.005	9	14	nd	23	nd	nd	nd	nd	nd	nd	nd	na	na	6.6
2183	2831	Grid	278168.2	1266512.9	17.1	4	25	nd	10	10	nd	6	10	nd	11	nd	nd	nd	nd	nd	nd	nd	na	na	6.9
2184	2832	Grid	278122.2	1266501.4	17.5	5	74	nd	11	16	0.015	13	1	nd	22	nd	nd	nd	nd	nd	nd	nd	na	na	5.4
2185	2833	Grid	278076.2	1266512.9	17.3	4	30	nd	10	7.5	0.005	5	11	nd	12	nd	nd	nd	nd	nd	nd	nd	na	na	6.8
2186	2834	Grid	278087.7	1266466.9	17.4	5	57	nd	10	15	0.015	8	12	nd	21	nd	nd	nd	nd	nd	nd	nd	na	na	5.9
2187	2835	Grid	278041.7	1266455.4	17.2	5.5	120	nd	12	20	0.005	14	15	nd	31	nd	nd	nd	nd	nd	nd	nd	na	na	6.9
2188	2836	Grid	278026.6	1266496.9	17.4	6	29	nd	13	15	0.010	5	16	nd	45	nd	nd	nd	nd	nd	nd	nd	na	na	6.6
2189	2837	Grid	277997.6	1266469.2	17.7	4	15	nd	12	6	0.010	2	5.5	1	5.5	nd	nd	nd	nd	nd	nd	nd	na	na	6.6
2190	2838	Grid	277998.6	1266508.0	17.4	5.5	46	nd	12	15	0.010	8	11	nd	20	nd	nd	nd	nd	nd	nd	nd	na	na	6.5
2191	2839	Grid	277936.4	1266493.8	17.5	4	24	nd	10	14	0.005	3.5	12	nd	14	nd	nd	nd	nd	nd	nd	nd	na	na	4.9
2192	2840	Grid	277892.2	1266512.9	12.7	5	44	nd	7.5	13	0.020	7	10	nd	23	nd	nd	nd	nd	nd	nd	nd	na	na	6
2487	3114	0 - 0.2	278036.8	1266506.5	14.3	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na	na	na	na	na
2488	3115	0 - 0.2	278033.1	1266507.9	14.3	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na	na	na	na	na
2489	3116	0 - 0.2	278030.8	1266507.2	14.9	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na	na	na	na	na
2490	3117	0 - 0.2	278214.2	1266593.4	13.8	na	na	na	na	na	na	na	na	na	na	nd	0.1	na	na	na	na	na	na	na	na
2491	3118	0 - 0.2	278210.3	1266592.3	14.7	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na	na	na	na	na
2492	3119	0 - 0.2	278211.3	1266583.9	16.0	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na	na	na	na	na
2493	3120	0 - 0.2	278207.6	1266594.4	15.4	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na	na	na	na	na
Mean						5.4	98.1		12.5	15.2	0.014	9.2	13.7		30.1										6.9
Standard Deviation						0.8	102.6		5.8	4.2	0.007	4.0	5.5		14.3										0.8
Co-efficient of Variation						0.1	1.0		0.5	0.3	0.5	0.4	0.4		0.5										0.1
Maximum						7.0	950.0	0.0	45.0	27.0	0.035	29.0	38.0	2.0	76.0	nd	0.1	0.8	nd	nd	nd	nd	nd	nd	8.4
Minimum						3.0	15.0	nd	7.0	6.0	0.005	2.0	1.0	nd	5.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	4.6

nd Not Detected
na Not Analysed

TABLE 16 VALIDATION DATA FOR SITE 23C

Sample No	Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	Total P	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OCPs	PCBs	VHCs	Conductivity	pH
Criteria						20	400	3	50	60	1	60	300	50	200	-	✓ 10	✓ 15	✓ 0.5	✓ 1	-	0.2	✓ 1	-		
0972	335	0 - 0.1	277879.3	1266263.8	18.4	6	42	nd	6	10	0.030	na	13	na	20	na	nd	nd	na	na	na	na	na	na	35	6.1
0973	335	0.1 - 0.5	277879.3	1266263.8		4	38	nd	6	7	0.020	na	9	na	11	na	nd	nd	na	na	na	na	na	na	15	6.0
0974	335	0.5 - 1.0	277879.3	1266263.8		4	92	nd	11	17	0.030	na	15	na	25	na	nd	nd	na	na	na	na	na	na	15	6.3
0996	340	0 - 0.1	277842.3	1266404.5	17.2	7	41	nd	8	12	0.020	na	16	na	68	na	0.5	nd	na	na	na	na	na	na	25	7.3
0997	340	0.1 - 0.5	277842.3	1266404.5		5	32	nd	10	12	0.020	na	15	na	35	na	1.1	0.9	na	na	na	na	na	na	15	7.3
0998	340	0.5 - 1.0	277842.3	1266404.5		5	23	nd	9	14	0.030	na	15	na	27	na	0.5	nd	na	na	na	na	na	na	15	7.4
8680	8430	0 - 0.2	277876.6	1266223.1	18.5	3	26	nd	7	8	0.01	6	9	nd	9	220	nd	nd	nd	nd	nd	nd	nd	nd	na	5.8
8681	8431	0 - 0.2	277848.8	1266239.0	18.6	5.5	26	nd	6	7	0.01	5.5	15	nd	32	230	nd	nd	nd	nd	nd	na	na	na	na	6
8682	8432	0 - 0.2	277822.2	1266254.2	18.1	5	19	nd	7.5	4.5	0.01	6.5	8	nd	13	140	nd	nd	nd	nd	nd	na	na	na	na	6
8683	8433	0 - 0.2	277791.2	1266272.0	17.2	4.5	25	nd	7	6	0.01	6.5	12	nd	18	220	0.3	nd	nd	nd	nd	na	na	na	na	5.5
8684	8434	0 - 0.2	277764.0	1266287.7	16.8	4.5	36	nd	8	10	0.015	10	15	nd	25	300	nd	nd	nd	nd	nd	na	na	na	na	5.6
8685	8435	0 - 0.2	277733.2	1266305.2	16.8	4.5	34	nd	10	9	0.015	9.5	13	nd	20	250	nd	nd	nd	nd	nd	na	na	na	na	6.1
8686	8436	0 - 0.2	277749.4	1266331.7	16.6	5.5	30	nd	11	12	0.01	10	15	nd	31	320	nd	nd	nd	nd	nd	na	na	na	na	5.2
8687	8437	0 - 0.2	277778.2	1266314.8	16.7	5	43	nd	11	12	0.01	12	13	nd	19	210	nd	nd	nd	nd	nd	na	na	na	na	6.2
8688	8438	0 - 0.2	277804.2	1266297.1	17.2	4.5	27	nd	8.5	7.5	0.01	8	12	nd	15	210	nd	nd	nd	nd	nd	na	na	na	na	5.7
8689	8439	0 - 0.2	277835.0	1266277.6	17.8	6	26	nd	8	6	nd	5	10	nd	37	95	nd	nd	nd	nd	nd	na	na	na	na	5.5
8690	8440	0 - 0.2	277864.6	1266259.4	18.1	2	14	nd	6	5	0.01	2.5	5	nd	6	90	nd	nd	nd	nd	nd	nd	nd	nd	na	5
8691	8441	0 - 0.2	277894.1	1266241.5	18.4	5	30	nd	11	7	0.015	6.5	12	nd	14	160	nd	nd	nd	nd	nd	na	na	na	na	6
8692	8442	0 - 0.2	277909.3	1266258.7	18.3	2.5	19	nd	10	5.5	0.01	5	8	nd	7	120	nd	nd	nd	nd	nd	na	na	na	na	5.9
8693	8443	0 - 0.2	277881.3	1266283.0	18.0	5	24	nd	8.5	5	0.01	4.5	10	nd	15	200	nd	nd	nd	nd	nd	na	na	na	na	5.9
8694	8444	0 - 0.2	277849.9	1266299.9	17.3	4.5	24	nd	5	6	0.01	4	8	nd	10	170	nd	nd	nd	nd	nd	na	na	na	na	5.7
8695	8445	0 - 0.2	277817.0	1266324.6	17.1	5.5	23	nd	5	8	0.015	4	10	nd	23	160	nd	nd	nd	nd	nd	na	na	na	na	5.6
8696	8446	0 - 0.2	277792.0	1266340.6	16.8	5	36	nd	7.5	10	0.005	10	11	nd	20	220	nd	nd	nd	nd	nd	na	na	na	na	5.4
8697	8447	0 - 0.2	277808.2	1266372.1	17.1	5	31	nd	7	9	0.01	8	11	nd	21	240	nd	nd	nd	nd	nd	na	na	na	na	6.1
8698	8448	0 - 0.2	277833.1	1266352.2	16.9	4	24	nd	9	10	0.01	5.5	10	nd	18	180	nd	nd	nd	nd	nd	na	na	na	na	5
8699	8449	0 - 0.2	277864.1	1266321.6	16.7	6	59	nd	7	7.5	0.01	6.5	9	nd	11	120	nd	nd	nd	nd	nd	na	na	na	na	5.9
8700	8450	0 - 0.2	277896.3	1266302.7	17.7	5	13	nd	9	6.5	0.01	5.5	7.5	nd	26	85	nd	nd	nd	nd	nd	nd	nd	1.9	na	5.7
8701	8451	0 - 0.2	277924.8	1266277.1	18.3	4	26	nd	9	6.5	0.005	7.5	10	nd	12	150	nd	nd	nd	nd	nd	na	na	na	na	5.2
8702	8452	0 - 0.2	277936.0	1266301.4	17.8	4	30	nd	11	6	0.005	6	11	nd	10	120	nd	nd	nd	nd	nd	na	na	na	na	6.1
8703	8453	0 - 0.2	277911.4	1266322.3	17.1	5.5	28	nd	9	8	0.01	7.5	12	nd	19	290	nd	nd	nd	nd	nd	na	na	na	na	6.4
8704	8454	0 - 0.2	277878.2	1266343.3	16.4	5	18	nd	5	6	0.01	4.5	7.5	nd	12	190	nd	nd	nd	nd	nd	na	na	na	na	5.6
8705	8455	0 - 0.2	277840.8	1266370.8	17.1	4	25	nd	8	8.5	0.005	8	10	nd	18	170	nd	nd	nd	nd	nd	na	na	na	na	5.8
Mean						4.7	30.8		8.2	8.4	0.013	6.7	11.2		20.2	186.9										5.9
Standard Deviation						1.0	14.5		1.9	2.9	0.007	2.3	2.8		11.8	63.8										0.6
Co-efficient of Variation						0.2	0.5		0.2	0.3	0.5	0.3	0.3		0.6	0.3										0.1
Maximum						6.5	92.0	nd	11.0	17.0	0.030	12.0	16.0	nd	68.0	320.0	1.1	0.9	nd	nd	nd	nd	nd	1.9	35.0	7.4
Minimum						2.0	13.0	nd	5.0	4.5	0.005	2.5	5.0	nd	6.0	85.0	nd	nd	nd	nd	nd	nd	nd	nd	15.0	5.0

nd Not Detected
na Not Analysed

Table 20 Summary of Monitoring Well Construction Details and Permeability Test Results

Serial no.	Zone	Site	Well No.	Date Installed	Easting (m)	Northing (m	Collar RL (mAHD	Well Depth (mBGL)	Screen Interval (mBGL)	Water Level		Transmissivity (T) (m2/day)	Permeability (K) (m/day)	Aquifer Material	Aquifer Type
										mBTOC	mAHD				
1	Zone A	Site 9	SM 30	4/09/91	277373.23	1266411.06	19.03	10.0	1.5-10.0	3.71	15.32	0.680	0.080	Alluvium and Weathered shales	UU
2			SM 76	10/12/93	277419.29	1266430.76	18.09	8.0	3.5-8.0	2.59	15.50	0.036	0.008	Alluvium and Weathered shales	UU
3			SM 77	10/12/93	277418.08	1266432.08	18.16	20.0	14.0-20.0	2.48	15.68	na	na	Fractured Shales	LC
4			SM 110	6/05/94	277438.35	1266463.64	19.24	7.0	2.5-7.0	4.09	15.15	0.068	0.015	Alluvium and Weathered shales	UU
5		Site 5	SM 78	14/12/93	277095.46	1266358.39	16.76	17.0	13.0-17.0	2.45	14.31	2.320	0.580	Fractured Shales	LC
6		(B45)	SM 79	14/12/93	277094.99	1266359.76	16.78	8.0	3.5-8.0	2.89	13.89	V High	V High	Alluvium and Weathered shales	UU
7			SM 108	5/05/94	276872.19	1266178.45	18.94	7.0	2.5-7.0	4.17	14.77	0.297	0.066	Alluvium and Weathered shales	UU
8			SM 109	5/05/94	276980.85	1266281.34	17.73	7.0	2.5-7.0	3.06	14.67	0.783	0.174	Alluvium and Weathered shales	UU
9	Zone B	Site 23	SM 10	29/08/91	277871.42	1266486.54	14.91	5.5	0.5-5.5	2.86	12.05	1.950	0.390	Alluvium and Weathered shales	UU
10			SM 11	29/08/91	278201.92	1266585.90	17.53	8.4	1.0-8.4	4.22	13.31	2.294	0.310	Alluvium and Weathered shales	UU
11			SM 12	29/08/91	278030.14	1266600.38	17.60	8.4	1.0-8.4	3.14	14.46	1.184	0.160	Alluvium and Weathered shales	UU
12			SM 16	30/08/91	277772.49	1266478.63	14.84	8.4	1.5-8.4	3.30	11.54	7.728	1.120	Alluvium and Weathered shales	UU
13			SM 17	2/10/91	277912.22	1266506.99	16.98	8.4	1.5-8.4	2.42	14.56	4.485	0.650	Alluvium and Weathered shales	UU
14			SM 18	2/09/91	278080.20	1266528.69	18.02	8.4	1.5-8.4	5.69	12.33	13.110	1.900	Alluvium and Weathered shales	UU
15			SM 19	2/09/91	278223.41	1266480.14	17.04	8.4	1.2-7.8	3.31	13.73	1.716	0.260	Alluvium and Weathered shales	UU
16			SM 20	2/09/91	278210.75	1266532.70	18.08	8.4	1.0-8.4	4.40	13.68	0.740	0.100	Alluvium and Weathered shales	UU
17			SM 21	2/09/91	278120.03	1266615.92	17.26	8.4	1.0-8.4	2.19	15.07	1.554	0.210	Alluvium and Weathered shales	UU
18			SM 22	29/08/91	277870.51	1266223.80	18.95	11.4	2.0-11.0	6.25	12.70	35.550	3.950	Alluvium and Weathered shales	UU
19			SM 23	3/09/91	277789.77	1266359.84	17.43	8.4	1.5-8.4	5.60	11.83	8.142	1.180	Alluvium and Weathered shales	UU
20			SM 24	3/09/91	277865.74	1266352.00	16.50	8.4	1.5-8.4	3.26	13.24	2.967	0.430	Alluvium and Weathered shales	UU
21			SM25	4/09/91	277888.49	1266451.68	15.46	7.0	1.5-7.0	1.66	13.80	1.210	0.220	Alluvium and Weathered shales	UU
22			SM 38	6/09/91	278104.03	1266400.71	19.09	8.4	1.0-8.4	5.44	13.65	1.998	0.270	Alluvium	UU
23			SM 80	13/12/93	277901.56	1266486.05	17.77	8.0	3.5-8.0	4.83	12.94	0.675	0.150	Alluvium and Weathered shales	UU
24			SM 81	14/12/93	277902.30	1266484.65	17.90	17.5	11.5-17.5	6.54	11.36	0.006	0.001	Fractured Shales	LC

mAHD Metres Below Australian Height Datum
mBGL Metres Below Ground Level
UU Upper Unconfined Aquifer
LC Lower Confined Aquifer
na Not Analysed
* Apr-95 Water Level

Table 21 Groundwater Levels and Trends in the Central Sector West

Zone	Site	Well No.	Ground Level (mAHD)	Sampling Date	Water Level (mBGL)	Water Level (mAHD)	Water Level Trend m/year
Zone A	Site 9	SM30	18.69	Oct-91	3.14	15.55	-0.12
				Nov-93	3.22	15.47	
				Feb-94	3.33	15.36	
				Aug-94	3.58	15.11	
				Sep-94	3.75	14.94	
				Apr-95	3.63	15.06	
				Aug-95	3.73	14.96	
				Oct-95	3.64	15.05	
				Mar-96	3.46	15.23	
		SM76	17.54	Feb-94	2.38	15.16	0.08
				Aug-94	2.50	15.04	
				Sep-94	2.65	14.89	
				Apr-95	2.57	14.97	
				Aug-95	2.56	14.98	
				Oct-95	2.54	15.01	
				Mar-96	2.13	15.41	
		SM77	17.65	Feb-94	2.04	15.61	0.05
				Aug-94	2.07	15.58	
				Sep-94	2.1	15.55	
				Apr-95	2.17	15.48	
				Aug-95	2.00	15.65	
				Oct-95	1.91	15.74	
				Mar-96	2.02	15.63	
		SM110	18.53	Aug-94	3.66	14.87	0.04
				Sep-94	3.76	14.77	
				Apr-95	3.70	14.83	
				Aug-95	3.88	14.65	
				Oct-95	3.85	14.68	
				Mar-96	3.48	15.05	
	Site 5 (B45)	SM78	16.23	Feb-94	1.42	14.81	-0.31
				Aug-94	1.51	14.72	
				Sep-94	1.61	14.62	
				Apr-95	1.95	14.28	
				Aug-95	1.94	14.29	
				Oct-95	1.97	14.26	
				Mar-96	1.96	14.27	
		SM79	16.25	Feb-94	1.66	14.59	-0.40
				Aug-94	1.85	14.40	
				Sep-94	2.01	14.24	
				Apr-95	2.29	13.96	
				Aug-95	2.62	13.63	
				Oct-95	2.57	13.68	
				Mar-96	2.22	14.03	
		SM108	18.40	Aug-94	3.23	15.17	-0.34
				Sep-94	3.47	14.93	
				Apr-95	3.79	14.61	
				Aug-95	3.96	14.44	
				Oct-95	3.96	14.44	
				Mar-96	3.69	14.71	
		SM109	17.05	Aug-94	2.04	15.01	-0.33
				Sep-94	2.22	14.83	
				Apr-95	2.60	14.45	
				Aug-95	2.85	14.20	
				Oct-95	2.65	14.40	
				Mar-96	2.47	14.59	
Zone B	Site 23	SM10	14.56	Oct-91	1.55	13.01	-0.18
				Nov-93	2.23	12.33	
				Feb-94	0.76	13.80	
				Aug-94	2.59	11.97	
				Sep-94	2.72	11.84	
				Apr-95	2.84	11.72	
				Aug-95	3.01	11.55	
				Oct-95	0.68	13.88	
				Mar-96	2.51	12.05	
		SM11	17.14	Oct-91	2.86	14.28	-0.23
				Nov-93	3.67	13.47	
				Sep-94	3.69	13.45	
				Apr-95	3.69	13.45	
				Aug-95	3.83	13.31	
				Oct-95	3.77	13.37	
				Mar-95	3.83	13.31	
		SM12	17.25	Oct-91	3.71	13.54	0.22
				Sep-94	4.69	12.56	
				Apr-95	2.81	14.44	
				Aug-95	2.76	14.49	
				Oct-95	2.73	14.52	
				Mar-96	3.10	14.15	
		SM16	14.49	Oct-91	2.95	11.54	n/a
		SM17	16.59	Oct-91	1.84	14.75	0.10
				Nov-93	2.84	13.75	
				Feb-94	3.46	13.13	
				Apr-95	2.15	14.44	
				Aug-95	2.08	14.51	
				Oct-95	1.31	15.28	

Table 21 Groundwater Levels and Trends in the Central Sector West

Zone	Site	Well No.	Ground Level (mAHD)	Sampling Date	Water Level (mBGL)	Water Level (mAHD)	Water Level Trend m/year
				Mar-96	2.10	14.49	
		SM18	17.60	Oct-91	3.55	14.05	-0.46
				Nov-93	3.82	13.78	
				Sep-94	4.64	12.96	
				Apr-95	4.97	12.63	
				Aug-95	5.21	12.39	
				Oct-95	5.21	12.39	
				Mar-96	5.40	12.21	
		SM19	16.64	Oct-91	2.22	14.42	-0.17
				Nov-93	2.70	13.94	
				Sep-94	2.8	13.84	
				Apr-95	2.70	13.94	
				Aug-95	3.08	13.56	
				Oct-95	2.87	13.77	
				Mar-96	2.96	13.68	
		SM20	17.93	Oct-91	4.10	13.83	-0.04
				Nov-93	4.36	13.57	
				Sep-94	4.39	13.54	
				Apr-95	4.19	13.74	
				Aug-95	4.32	13.61	
				Oct-95	4.21	13.72	
				Mar-96	4.37	17.78	
		SM21	16.86	Oct-91	2.81	14.05	0.26
				Apr-95	1.77	15.09	
				Aug-95	1.91	14.95	
				Oct-95	1.49	15.38	
				Mar-96	1.84	15.02	
		SM22	18.55	Oct-91	4.52	14.03	-0.32
				Nov-93	6.17	12.38	
				Feb-94	5.51	13.04	
				Aug-94	5.64	12.91	
				Sep-94	5.73	12.82	
				Apr-95	5.93	12.62	
				Aug-95	6.08	12.47	
				Oct-95	6.10	12.46	
				Mar-96	5.95	12.60	
		SM23	17.05	Oct-91	4.47	12.58	-0.24
				Nov-93	5.15	11.90	
				Feb-94	5.21	11.84	
				Aug-94	5.36	11.69	
				Sep-94	5.44	11.61	
				Apr-95	5.53	11.52	
				Aug-95	5.66	11.39	
				Oct-95	5.51	11.55	
				Mar-96	5.36	11.69	
		SM24	16.10	Oct-91	2.38	13.72	-0.08
				Aug-94	2.74	13.36	
				Sep-94	2.95	13.15	
				Aug-95	3.32	12.78	
				Oct-95	2.00	14.11	
				Mar-96	2.86	13.24	
		SM25	15.06	Oct-91	1.66	13.40	-0.18
				Aug-94	2.43	12.63	
				Sep-94	2.17	12.89	
				Apr-95	2.31	12.75	
				Aug-95	2.46	12.60	
				Oct-95	2.25	12.81	
		SM38	18.63	Oct-91	3.82	14.81	-0.33
				Nov-93	4.42	14.21	
				Sep-94	4.76	13.87	
				Apr-95	5.01	13.62	
				Aug-95	5.21	13.42	
				Mar-96	5.14	13.49	
		SM80	17.24	Feb-94	4.01	13.23	-0.19
				Aug-94	4.12	13.12	
				Sep-94	4.28	12.96	
				Apr-95	4.45	12.79	
				Aug-95	4.56	12.68	
				Oct-95	4.35	12.90	
				Mar-96	4.35	12.89	
		SM81	17.39	Feb-94	5.69	11.70	-0.29
				Aug-94	5.07	12.32	
				Sep-94	6.29	11.10	
				Apr-95	6.16	11.23	
				Aug-95	6.07	11.32	
				Oct-95	6.16	11.23	
				Mar-96	6.09	11.30	

Table 22 Groundwater Analytical Results for Zone A, Central Sector West

Zone	Location	Well No	Sampling Date	Metals								Explosives					TPH				
				Copper	Lead	Zinc	Cadmium	Chromium	Arsenic	Barium	Mercury	RDX	TNT 2,4,6	MNT	DNT 2,4	DNT 2,6	C6-C36	C6-C9	C10-C14	C15-C28	C29-C36
UNITS				mg/L																	
PQL				0.01	0.01	0.01	0.005	0.01	0.01	0.1	0.0001	0.02	0.02	0.02	0.02	0.02		0.02	0.04	0.2	0.2
Criteria				1	0.05	5	0.005	0.05	0.05	1	0.001	0.1	0.05	-	0.035	0.035		0.1	0.1	0.3	0.3
Zone A	Site 9	SM30	Oct-91	0.07	0.19	0.28	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
			Jan-94	nd	<0.05*	0.28	nd	na	na	0.29	<0.0002*	nd	nd	nd	nd	nd	na	na	na	na	na
			Feb-94	0.02	nd	0.23	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			Oct-94	nd	0.01	0.11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM76	Jan-94	nd	0.07	0.39	nd	na	na	0.07	<0.0002*	nd	nd	na	nd	nd	na	na	na	na	na
			Mar-94	0.03	nd	0.17	nd	nd	nd	0.7	nd	na	na	na	na	na	na	na	na	na	na
			Oct-94	nd	0.04	0.26	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM77	Jan-94	nd	0.05	0.18	nd	na	na	0.32	<0.0002*	nd	nd	na	nd	nd	na	na	na	na	na
			Oct-94	nd	nd	0.04	nd	nd	nd	0.3	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM110	Jun-94	0.02	0.02	0.15	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			Oct-94	nd	0.04	0.17	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			Mar-95	0.04	0.02	0.22	nd	nd	nd	0.1	nd	na	na	na	na	na	na	na	na	na	na
			May-95	0.03	0.03	0.15	nd	nd	nd	0.26	nd	na	na	na	na	na	na	na	na	na	na
	Site 5	SM78	Jan-94	nd	<0.05*	0.01	nd	na	na	50.7	<0.0002*	nd	nd	na	nd	nd	na	na	na	na	na
	(B45)	SM79	Jan-94	nd	<0.05*	0.03	nd	na	na	0.06	<0.0002*	nd	nd	na	nd	nd	na	na	na	na	na
		SM108	Jun-94	nd	nd	0.01	nd	nd	nd	0.1	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM109	Jun-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

PQL Practical Quantitation Limit
na Not Analysed
nd Not Detected
* Higher PQL

Table 22 Groundwater Analytical Results for Zone A, Central Sector West

Zone	Location	Well No	Sampling Date	BTEX				Phenols	Volatile Halogenated Compounds													
				Benzene	Toluene	Ethyl Benzene	Xylenes		Vinyl Chloride	Chloroethane	Trichlorofluoromethane	1,1-Dichloroethylene	Methylene chloride	trans-1,2-Dichloroethylene	1,1-Dichloroethane	cis-1,2 Dichloroethylene	Chloroform	1,1,1-Trichloroethane	Carbon Tetrachloride	1,2-Dichloroethane	Trichloroethylene
UNITS				mg/L																		
PQL			mg/L	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Criteria				0.01	0.3	0.3	0.14	-	-	-	-	-	-	-	-	-	-	-	0.005	0.005	0.05
Zone A	Site 9	SM30	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	na	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd
			Jan-94	na	na	na	na	0.005	na	na	na	na	na	na	na	na	na	na	na	na	na
			Feb-94	nd	nd	nd	nd	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	<0.01*	<0.01*	<0.02*	<0.02*	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM76	Jan-94	na	na	na	na	0.005	na	na	na	na	na	na	na	na	na	na	na	na	na
			Mar-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	<0.01*	<0.01*	<0.02*	<0.02*	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM77	Jan-94	na	na	na	na	0.005	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	<0.01*	<0.01*	<0.02*	<0.02*	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM110	Jun-94	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			Oct-94	<0.01*	<0.01*	<0.02*	<0.02*	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Mar-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			May-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Site 5	SM78	Jan-94	na	na	na	na	0.005	na	na	na	na	na	na	na	na	na	na	na	na	na
	(B45)	SM79	Jan-94	na	na	na	na	0.005	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM108	Jun-94	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM109	Jun-94	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

PQL Practical Quantitation Limit
na Not Analysed
nd Not Detected
* Higher PQL

Table 22 Groundwater Analytical Results for Zone A, Central Sector West

Zone	Location	Well No	Sampling Date	Halogenated Hydrocarbons													Polynuclear Aromatic Compounds					
				1,2-Dichloropropane	Bromodichloromethane	trans-1,3-Dichloropropene	cis-1,3-Dichloropropene	1,1,2-Trichloroethane 0.5	Tetrachloroethylene 0.07	Dibromochloromethane	Chlorobenzene 0.055	Bromoform	1,1,2,2-Tetrachloroethane 0.4	1,3-Dichlorobenzene(m) 0.26	1,4-Dichlorobenzene(p) 0.06	1,2-Dichlorobenzene (o) 0.16	Napthalene 0.05	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene 0.006	Anthracene 0.00001
UNITS				mg/L																		
PQL				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Criteria				-	-	-	-	-	-		-	-	-	-	0.005	0.2	0.003 for PAH (total)					
Zone A	Site 9	SM30	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na
			Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Feb-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM76	Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Mar-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM77	Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM110	Jun-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Mar-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			May-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Site 5	SM78	Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	(B45)	SM79	Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM108	Jun-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na
		SM109	Jun-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na

PQL Practical Quantitation Limit
na Not Analysed
nd Not Detected
* Higher PQL

Table 22 Groundwater Analytical Results for Zone A, Central Sector West

Zone	Location	Well No	Sampling Date	Polynuclear Aromatic Compounds										Organochlorines							
				Fluoranthene	Pyrene	Benzo[a]Anthracene	Chrysene	Benzo[b]Fluoranthene	Benzo[k]Fluoranthene	Benzo[a]Pyrene 0.0001	Indeno[1,2,3-cd]Pyrene	Dibenz[ah]Anthracene	Benzo[ghi]Perylene	H.C.B.	a-BHC	d-BHC	Lindane 0.0002	Heptachlor 0.0001	b-BHC	Aldrin 0.0001	Oxychlordane
UNITS				mg/L																	
PQL				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0050	0.0001	0.0001	0.0001	0.0001	0.0001
Criteria				0.003 for PAH (total)										-	-		0.010	0.003	-	0.001	-
Zone A	Site 9	SM30	Oct-91	na	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
			Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Feb-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM76	Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Mar-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM77	Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM110	Jun-94	na	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd
			Oct-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Mar-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			May-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Site 5 (B45)	SM78	Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM79	Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM108	Jun-94	na	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd
		SM109	Jun-94	na	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd

PQL Practical Quantitation Limit
na Not Analysed
nd Not Detected
* Higher PQL

Table 22 Groundwater Analytical Results for Zone A, Central Sector West

Zone	Location	Well No	Sampling Date	Organochlorines									
				Heptachlor Epoxide	Total Endosulfans 0.00003	Chlordane 0.00003	DDE 0.00003	Dieldrin 0.00001	Endrin 0.00001	DDD	DDT 0.000006	Methoxychlor 0.000005	PCB's 0.000001
UNITS				mg/L									
PQL				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.001
Criteria				-	0.04	0.006	-	0.001	0.001	-	0.003		0.001^
Zone A	Site 9	SM30	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
			Jan-94	na	na	na	na	na	na	na	na	na	na
			Feb-94	na	na	na	na	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	na
		SM76	Jan-94	na	na	na	na	na	na	na	na	na	na
			Mar-94	na	na	na	na	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	na
		SM77	Jan-94	na	na	na	na	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	na
		SM110	Jun-94	nd	nd	<0.005*	nd	nd	nd	nd	nd	nd	nd
			Oct-94	na	na	na	na	na	na	na	na	na	na
			Mar-95	na	na	na	na	na	na	na	na	na	na
			May-95	na	na	na	na	na	na	na	na	na	na
	Site 5 (B45)	SM78	Jan-94	na	na	na	na	na	na	na	na	na	na
		SM79	Jan-94	na	na	na	na	na	na	na	na	na	na
		SM108	Jun-94	nd	nd	<0.005*	nd	nd	nd	nd	nd	nd	nd
		SM109	Jun-94	nd	nd	<0.005*	nd	nd	nd	nd	nd	nd	nd

PQL Practical Quantitation Limit
na Not Analysed
nd Not Detected
* Higher PQL

Table 23 Groundwater Basic Parameters and Major Ion Analysis for Central Sector West

Zone	Location	Sampling Point	Sampling Date	Basic Parameters								Major Ions									
				pH	Eh	Temperature	Electrical Conductivity	Total Dissolved Solids	Dissolved Oxygen	Total Bicarbonate (as $CaCO_3$)	Total Organic Carbon	Sodium	Potassium	Calcium	Magnesium	Iron	Chloride	Bicarbonate	Sulphate	Phosphate (Total)	Nitrate
UNIT					mV	C	uS/cm	mg/L		mg/L		mg/L									
PQL										1	0.1	0.1	0.1	0.1	0.1	0.01	1	1	2	0.1	0.1
Criteria												300					400		400		10
Zone A	Site 9	SM30	Oct-91	na	na	na	na	na	na	na	0.2	na	na	na	na	na	na	na	na	na	na
			Jan-94	na	na	na	na	na	na	na	6	2250	4.8	20.2	247	5.65	4049	56.1	88.7	<0.01	0.33
			Feb-94	6.86	na	22.5	15260	9700	15%	1600	na	3200	2.8	38	365	1.4	5610	40	440	na	na
			Oct-94	6.31	47	20.0	20000	11300	2.7	na	na	3740	2.7	44	380	5.0	6750	47	500	na	na
		SM76	Jan-94	na	na	na	na	na	na	na	5	6270	13.1	73.3	908	0.19	11410	17.1	229	<0.01	0.27
			Mar-94	4.88	na	22.9	na	na	90%	na	na	na	na	na	na	0.40	na	na	na	na	na
			Oct-94	5.84	75	20.6	39600	18600	4.4	na	na	6000	4.8	92	690	0.08	11100	21	690	na	na
		SM77	Jan-94	na	na	na	na	na	na	na	4	5810	22.4	143	794	0.40	9740	663.7	191	<0.01	0.41
			Mar-94	6.73	na	21.0	na	16200	62%	2560	na	5330	13	120	550	0.85	9510	290	510	na	na
			Oct-94					13300	na	na	na	4360	16	125	480	0.34	7870	440	410	na	na
		SM110	Jun-94	4.74	na	20.6	na	14700	3.5	2490	9	4830	6.2	42	580	4.0	8440	nd	770	nd	1.0
			Oct-94	4.7	na	20.0	28000	15400	3.9	na	na	5120	6.6	46	550	0.26	9120	9	670	na	na
			Feb-95	6.65	na	21.6	>26000	na	5.00	na	na	na	na	na	na	na	na	na	na	na	na
			Mar-95	na	na	na	na	na	na	na	na	na	na	na	na	0.37	na	na	na	na	na
			May-95	5.18	na	21.9	19300	na	5.8	na	na	na	na	na	na	0.26	na	na	na	na	na
	Site 5	SM78	Jan-94	na	na	na	na	na	na	na	4	4040	36.8	402	554	2.32	8330	91.5	0.7	<0.01	0.23
	(B45)	SM79	Jan-94	na	na	na	na	na	na	na	5	5650	22.1	175	1020	0.11	11050	7.32	365	<0.01	0.25
		SM108	Jun-94	5.77	na	18.6	na	16500	6.1	3670	82	5180	23	250	740	0.50	9400	970	610	nd	nd
		SM109	Jun-94	5.75	na	18.8	na	15200	3.3	3530	43	4500	13	290	680	0.41	8920	470	500	nd	nd
Zone B	Site 23	SM10	Oct-91	na	na	na	na	na	na	na	2.1	na	na	na	na	na	na	na	na	na	na
			Feb-94	na	na	na	na	770	na	140	4.1	250	1.6	17	24	0.12	260	320	63	nd	nd
			Oct-94	6.45	27	17.5	2610	1550	2.7	na	14	510	1.6	38	55	0.18	640	510	49	nd	0.47
			May-96	6.49	na	17.8	260	na	na	na	na	na	na	na	na	3.5	na	na	na	na	na
		SM11	Oct-91	na	na	na	na	na	na	na	0.5	na	na	na	na	na	na	na	na	na	na
			Feb-94	7.58	na	19.3	1794	660	39%	43	1.6	250	0.5	2.7	8.8	0.10	310	90	42	nd	0.16
		SM12	Oct-91	na	na	na	na	na	na	na	1.7	na	na	na	na	na	na	na	na	na	na
			Oct-94	6.51	33	18.6	1455	890	2.3	na	14	300	0.9	11	22	0.29	260	460	42	nd	nd
			May-96	6.2	na	17.6	1950	na	na	na	na	na	na	na	na	nd	na	na	na	na	na
		SM15	Oct-91	na	na	na	na	na	na	na	0.7	na	na	na	na	na	na	na	na	na	na
		SM17	Oct-91	na	na	na	na	na	na	na	1.7	na	na	na	na	na	na	na	na	na	na
			Jan-94	na	na	na	na	na	na	na	3	270	5.3	15.5	35.3	2.35	260	288	60.6	<0.01	12.6
			Feb-94	6.52	na	19.4	1911	1120	37%	135	1	360	0.7	12	26	0.26	280	310	240	nd	44
			Mar-94	6.09	na	24.4	500	1000	24%	105	na	400	0.3	9.5	20	0.03	300	340	250	nd	56
			Oct-94	6.83	17	18.4	2130	1150	1.5	na	10	380	0.4	11	23	0.52	330	350	220	nd	34
			May-96	6.58	na	17.8	1070	na	na	na	na	na	na	na	na	0.16	na	na	na	na	na
		SM18	Oct-91	na	na	na	na	na	na	na	0.4	na	na	na	na	na	na	na	na	na	na
			Feb-94	6.73	25	22.5	3910	1900	18%	285	6.1	640	0.6	32	50	0.05	910	250	140	nd	0.18
			Oct-94	6.36	44	18.1	3330	1690	1.0	na	15	580	0.8	23	39	0.05	750	320	120	nd	0.35
			May-96	6.27	na	17.4	2570	na	na	na	na	na	na	na	na	0.01	na	na	na	na	na
		SM19	Oct-91	na	na	na	na	na	na	na	0.3	na	na	na	na	na	na	na	na	na	na
		SM20	Oct-91	na	na	na	na	na	na	na	2.0	na	na	na	na	na	na	na	na	na	na
			Feb-94	7.19		19.2	7300	3370	37%	470	6.1	1150	1.6	36	92	0.06	1650	370	250	nd	nd
		SM21	Oct-91	na	na	na	na	na	na	na	5.4	na	na	na	na	na	na	na	na	na	na
			Oct-94	6.51	20	18.8	3420	1940	3.8	na	18	690	2.1	20	32	0.02	680	510	230	nd	0.61
			May-96	na	na	na	na	na	na	na	na	na	na	na	na	0.08	na	na	na	na	na
		SM22	Oct-91	na	na	na	na	na	na	na	0.1	na	na	na	na	na	na	na	na	na	na
		SM23	Oct-91	na	na	na	na	na	na	na	0.5	na	na	na	na	na	na	na	na	na	na
			Feb-94	6.55	na	23.6	4090	1000	24%	240	1.4	300	2.8	37	36	0.03	480	190	36	nd	0.71
		SM24	Oct-91	na	na	na	na	5560	na	na	0.9	1590	53	53	340	na	3000	1040	<1	na	na
			Feb-94	6.92	na	24.7	5800	3300	25%	1080	5	880	16	170	160	0.92	1690	760	15	nd	1.8
			Aug-95	6.45	na	18.1	3680	na	3.6	na	na	na	na	na	na	na	na	na	na	na	na
		SM25	Oct-91	na	na	na	na	na	na	na	2.2	na	na	na	na	na	na	na	na	na	na
			Feb-94	6.27	na	21.2	1441	780	31%	130	5.2	260	0.4	12	25	nd	290	240	67	nd	nd
			Apr-94	na	na	na	na	19600	na	4830	na	5740	32	235	1030	1.9	10000	910	2150	nd	0.13
			Oct-94	6.49	29	18.1	1481	760	2.8	na	8	250	0.6	11	21	nd	280	310	40	nd	nd
			Feb-95	6.74	18	19.3	1622	812	4.6	na	na	na	na	na	na	na	na	na	na	na	na
			May-95	6.89	na	22.1	200	na	4.5	na	na	na	na	na	na	na	na	na	na	na	na
			Aug-95	7.52	na	16.6	17440	na	7.6	na	na	na	na	na	na	na	na	na	na	na	na
			May-96	6.37	na	17.6	626	na	na	na	na	na	na	na	na	0.89	na	na	na	na	na

PQL Practical Quantitation Limit
na Not Analysed
nd Not Detected

Table 23 Groundwater Basic Parameters and Major Ion Analysis for Central Sector West

Zone	Location	Sampling Point	Sampling Date	Basic Parameters								Major Ions									
				pH	Eh	Temperature	Electrical Conductivity	Total Dissolved Solids	Dissolved Oxygen	Total Hardness (as $CaCO_3$)	Total Organic Carbon	Sodium	Potassium	Calcium	Magnesium	Iron	Chloride	Bicarbonate	Sulphate	Phosphate (Total)	Nitrate
UNIT					mV	C	uS/cm	mg/L		mg/L		(mg/L)									
PQL										1	0.1	0.1	0.1	0.1	0.1	0.01	1	1	2	0.1	0.1
Criteria												300					400		400		10
		SM38	Oct-91	na	na	na	na	na	na	na	1.8	na	na	na	na	na	na	na	na	na	na
		SM80	Jan-94	na	na	na	na	na	na	na	4	356	5.1	13.0	33.8	2.33	440	274.5	30.9	15	0.44
			Mar-94	5.57	na	27.3	1626	760	54%	59	na	250	0.2	5.6	11	0.02	250	220	95	na	na
			Oct-94	6.64	22	18.0	1454	720	2.8	na	9	260	0.3	4.5	10	0.05	230	250	65	nd	28
			Feb-95	6.67	27	20.8	1460	732	5.4	na	na	na	na	na	na	na	na	na	na	na	na
			May-95	6.04	na	22.2	1800	na	4.4	na	na	na	na	na	na	na	na	na	na	na	na
			Sep-95	7.31	na	17.8	2010	na	7.2	na	na	na	na	na	na	na	na	na	na	na	na
		SM81	Jan-94	na	na	na	na	na	na	na	3	930	26.1	167	295	<0.05*	2000	947	2.0	<0.01	0.30
			Mar-94	6.19	na	24.7	7570	4750	60%	1890	na	1140	27	220	325	0.06	2460	1120	13	na	na
			Oct-94	6.38	25	20.9	8760	3910	2.8	na	45	900	27	240	290	0.07	1750	1300	16	nd	nd
			May-96	7.12	na	17.6	7710	na	na	na	na	na	na	na	na	0.05	na	na	na	na	na

PQL Practical Quantitation Limit
na Not Analysed
nd Not Detected

Table 24 Relationship Between Barium and Sulphate Concentrations in Groundwater

Well No	Type of Well	Cl	SO4	Ba
		mg/L		
Wells with Barium Conc. Above Criteria (1 mg/L)				
SM78	deep		0.70	50.70
SM72	deep	5450	2.80	44.50
SM132	deep	5310	15.00	41.50
SM73	deep	5120	6.70	28.13
SM82	deep	6900	27.40	26.45
SM75	deep	1640	7.30	20.50
SM87	deep	3300	13.50	10.65
SM81	deep	2105	10.33	10.59
SM84	deep	1705	11.27	8.29
SM85	deep	na	na	1.10
SM133	shallow	2060	17.00	12.20
SM123	shallow	na	na	1.50
SM24	shallow	1690	15.00	1.20
Average (n=13)		3528	11.55	19.79
Wells With Barium Conc. Below Criteria (1 mg/L)				
SM131	deep	2560	65	0.6
SM43	deep	na	na	0.6
SM64	deep	na	na	0.6
SM77	deep	9510	350.5	0.51
SM68	deep	9900	1430	0.4
SM117	deep	10900	1060	0.3
SM75	deep	na	na	0.1
SM86	deep	na	312	0.07
SM53	deep	na	353	0.05
SM100	shallow	na	na	0.7
SM110	shallow	na	na	0.3
SM119	shallow	12700	1760	0.3
SM130	shallow	13500	1780	0.3
SM15	shallow	2450	92.5	0.3
SM28	shallow	1850	680	0.3
SM29	shallow	6970	430	0.3
SM30	shallow	na	88.7	0.29
SM107	shallow	12400	2250	0.25
SM116	shallow	4000	410	0.2
SM118	shallow	12000	1780	0.2
SM123	shallow	11200	910	0.2
SM127	shallow	2450	870	0.2
SM27	shallow	7230	760	0.2
SM100	shallow	6100	460	0.1
SM105	shallow	9870	1320	0.1
SM105	shallow	7710	890	0.1
SM108	shallow	9400	610	0.1
SM113	shallow	5300	640	0.1
SM114	shallow	10200	1420	0.1
SM124	shallow	na	na	0.1
SM126	shallow	9900	1140	0.1
SM17	shallow	na	60.6	0.04
Average (n=32)		8095	843	0.25

na Not Analysed

Table 25 Groundwater Analytical Results for Zone B

Zone	Location	Well No	Sampling Date	Metals								Explosives					TPH				
				1.4 Copper	3.4 Lead	9 Zinc	0.2 Cadmium	1 Chromium	13 Arsenic	700/7000 Barium	0.06 Mercury	RDX	0.14 TNT 2,4,6	MNT	0.016 DNT 2,4	0.0003 DNT 2,6	0.002 C6-C9	C6-C9	C10-C14	C15-C28	C29-C36
UNITS				mg/L																	
PQL				0.01	0.01	0.01	0.005	0.01	0.01	0.1	0.0001	0.02	0.02	0.02	0.02	0.02		0.02	0.04	0.2	0.2
Criteria				1	0.05	5	0.005	0.05	0.05	1	0.001	0.1	0.05		0.035	0.035		0.1	0.1	0.3	0.3
Zone B	Site 23	SM10	Oct-91	nd	nd	0.02	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
			Feb-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			Oct-94	nd	nd	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			May-96	0.03	nd	0.65	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM11	Oct-91	nd	nd	0.02	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
			Feb-94	0.01	nd	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM12	Oct-91	nd	nd	0.01	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
			Oct-94	nd	nd	0.06	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			May-96	0.02	nd	0.04	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM16	Oct-91	nd	nd	nd	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
		SM17	Oct-91	nd	nd	nd	<0.01*	nd	nd	na	nd	0.23	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
			Jan-94	nd	<0.05*	0.05	nd	na	na	0.04	<0.0002*	0.129	nd	na	nd	nd	na	na	na	na	na
			Feb-94	nd	nd	0.02	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			Mar-94	nd	nd	0.01	nd	nd	nd	nd	nd	nd	<0.05*	nd	nd	nd	na	na	na	na	na
			Oct-94	nd	nd	0.03	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			May-96	0.02	nd	nd	nd	nd	nd	nd	nd	0.11	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM18	Oct-91	nd	nd	nd	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
			Feb-94	nd	nd	0.04	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			Oct-94	nd	nd	0.04	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			May-96	0.03	nd	0.04	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM19	Oct-91	nd	nd	0.02	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
		SM20	Oct-91	nd	nd	0.01	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
			Feb-94	nd	nd	0.08	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM21	Oct-91	nd	nd	nd	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
			Oct-94	nd	nd	0.03	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			May-96	0.03	nd	0.01	nd	nd	nd	0.4	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM22	Oct-91	nd	nd	nd	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
		SM23	Oct-91	nd	nd	nd	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
			Feb-94	nd	nd	0.02	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM24	Oct-91	nd	nd	nd	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
			Feb-94	nd	nd	0.55	nd	nd	nd	1.2	nd	<0.2*	<0.2*	<0.2*	<0.2*	<0.2*	nd	nd	nd	nd	nd
			Aug-95	nd	0.01	0.06	nd	nd	nd	1.2	nd	na	na	na	na	na	na	na	na	na	na
		SM25	Oct-91	nd	nd	nd	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
			Feb-94	nd	nd	0.01	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na
			Apr-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			Oct-94	nd	nd	0.03	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			Feb-95	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd
			May-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Aug-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			May-96	nd	nd	0.02	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM38	Oct-91	nd	nd	nd	<0.01*	nd	nd	na	nd	<0.05*	<0.05*	na	na	na	nd	<0.2*	<0.2*	<5*	<5*
		SM80	Jan-94	nd	<0.05*	0.02	nd	na	na	0.08	<0.0002*	0.059	nd	na	nd	nd	na	na	na	na	na
			Mar-94	nd	nd	nd	nd	nd	nd	nd	nd	<0.05*	<0.05*	<0.05*	<0.05*	<0.05*	na	na	na	na	na
			Oct-94	nd	nd	0.04	nd	nd	nd	nd	nd	0.12	nd	nd	nd	nd	nd	nd	nd	nd	nd
			Feb-95	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na
			May-95	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na
			Aug-95	na	na	na	na	na	na	na	na	nd	nd	nd	nd	nd	na	na	na	na	na
		SM81	Jan-94	nd	0.09	0.15	nd	na	na	9.28	<0.0002*	nd	nd	na	nd	nd	na	na	na	na	na
			Mar-94	0.01	nd	0.02	nd	nd	nd	11	nd	na	na	na	na	na	na	na	na	na	na
			Oct-94	nd	nd	0.02	nd	nd	nd	11.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
			May-96	0.01	nd	0.02	nd	nd	nd	14.5	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

PQL Practical Quantitation Limit
na Not Analyzed
nd Not Detected
* Higher PQL
^ Criteria set at PQL

Table 25 Groundwater Analytical Results for Zone B

Zone	Location	Well No.	Sampling Date	BTEX				Phenols	Volatile Halogenated Compounds													
				Benzene 0.95	Toluene 0.18	Ethyl Benzene	Xylene 0.035	0.32	Vinyl Chloride 0.0003	Chloroethane	Trichlorofluoromethane	1,1-Dichloroethylene 0.3	Methylene chloride	trans-1,2-Dichloroethylene 0.06	1,1-Dichloroethane 0.09	cis-1,2-Dichloroethylene 0.06	Chloroform 0.33	1,1,1-Trichloroethane 0.270	Carbon Tetrachloride 0.24	1,2-Dichloroethane 1.9	Trichloroethylene 0.33
UNITS				mg/L																		
PQL				0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Criteria				0.01	0.3	0.3	0.14												0.005	0.005	0.05	
Zone B	Site 23	SM10	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	na	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	
			Feb-94	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			Oct-94	<0.01*	<0.01*	<0.02*	<0.02*	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			May-96	nd	nd	nd	0.003*	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
		SM11	Oct-91	<0.01*	0.01	<0.01*	<0.01*	na	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	
			Feb-94	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
		SM12	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	nd	nd	nd	0.006	nd	nd	nd	0.002	na	nd	nd	nd	nd	nd	
			Oct-94	<0.01*	<0.01*	<0.02*	<0.02*	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			May-96	nd	0.005	0.001	0.003	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
		SM16	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	na	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	
		SM17	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	na	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	
			Jan-94	na	na	na	na	<0.005	na	na	na	na	na	na	na	na	na	na	na	na	na	
			Feb-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			Mar-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
			Oct-94	<0.01*	<0.01*	<0.02*	<0.02*	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			May-96	nd	nd	nd	0.003*	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
		SM18	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	
			Feb-94	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			Oct-94	<0.01*	<0.01*	<0.02*	<0.02*	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			May-96	nd	nd	nd	0.003*	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
		SM19	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	na	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	
		SM20	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	
			Feb-94	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
		SM21	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	
			Oct-94	<0.01*	<0.01*	<0.02*	<0.02*	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			May-96	nd	0.001	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
		SM22	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	na	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	
		SM23	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	na	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	
			Feb-94	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
		SM24	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			Feb-94	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	
			Aug-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
		SM25	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	na	nd	nd	nd	nd	nd	nd	0.005	na	nd	nd	nd	nd	0.003	
			Feb-94	nd	nd	nd	nd	na	nd	nd	0.007	0.004	nd	nd	0.008	0.004	0.002	nd	nd	nd	0.007	
			Apr-94	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			Oct-94	<0.01*	<0.01*	<0.02*	<0.02*	na	nd	nd	nd	0.004	nd	nd	0.005	0.004	nd	nd	nd	nd	0.003	
			Feb-95	<0.01*	<0.01*	<0.02*	<0.02*	na	nd	nd	nd	0.003	nd	nd	0.004	0.003	nd	nd	nd	nd	0.004	
			May-95	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			Aug-95	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			May-96	nd	nd	nd	<0.003	na	nd	nd	nd	nd	nd	nd	0.001	0.001	nd	nd	nd	nd	0.001	
		SM38	Oct-91	<0.01*	<0.01*	<0.01*	<0.01*	na	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	
		SM80	Jan-94	na	na	na	na	<0.005	na	na	na	na	na	na	na	na	na	na	na	na	na	
			Mar-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
			Oct-94	<0.01*	<0.01*	<0.02*	<0.02*	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			Feb-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
			May-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
			Aug-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
		SM81	Jan-94	na	na	na	na	<0.005	na	na	na	na	na	na	na	na	na	na	na	na	na	
			Mar-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
			Oct-94	<0.01*	<0.01*	<0.02*	<0.02*	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
			May-96	nd	nd	nd	<0.003	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	

PQL Practical Quantitation Limit
na Not Analyzed
nd Not Detected
* Higher PQL
^ Criteria set at PQL

Table 25 Groundwater Analytical Results for Zone B

Zone	Location	Well No	Sampling Date	Halogenated Hydrocarbons														Polynuclear Aromatic Compounds						
				1,2-Dichloropropane	Bromodichloromethane	Trans-1,3-Dichloropropene	cis-1,3-Dichloropropene	1,1,2-Trichloroethane 4.5	Tetrachloroethene 0.03	Dibromochloromethane	Chlorobenzene 0.055	Bromoform	1,1,2,2-Tetrachloroethane 0.4	1,3-Dichlorobenzene(m) 0.96	1,4-Dichlorobenzene(p) 0.06	1,2-Dichlorobenzene (o) 0.16	Naphthalene 0.15	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene 0.0006	Anthracene 0.00001	Fluoranthene
UNITS				mg/L																				
PQL				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Criteria															0.005	0.2	0.003 for PAH (total)							
Zone B	Site 23	SM10	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Feb-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Oct-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM11	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Feb-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
		SM12	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Oct-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM16	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
		SM17	Oct-91	nd	nd	nd	nd	nd	0.001	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Feb-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Mar-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM18	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Feb-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Oct-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM19	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
		SM20	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Feb-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
		SM21	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Oct-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM22	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
		SM23	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Feb-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
		SM24	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Feb-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Aug-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM25	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Feb-94	nd	nd	nd	nd	nd	0.003	nd	0.001	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Apr-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Oct-94	nd	nd	nd	nd	nd	0.001	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Feb-95	nd	nd	nd	nd	nd	0.001	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			May-95	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Aug-95	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			May-96	nd	nd	nd	nd	0.001	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM38	Oct-91	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
		SM180	Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Mar-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			Feb-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			May-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Aug-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM181	Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Mar-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

PQL Practical Quantitation Limit
na Not Analysed
nd Not Detected
+ Higher PQL
^ Criteria set at PQL

Table 25 Groundwater Analytical Results for Zone B

Zone	Location	Well No	Sampling Date	Polynuclear Aromatic Compounds									Organochlorines								
				Pyrene	Benzo[a]Anthracene	Chrysene	Benzo[b]Fluoranthene	Benzo[k]Fluoranthene	Benzo[a]Pyrene 0.0001	Indeno[1,2,3-cd]Pyrene	Dibenz[ah]Anthracene	Benzo[ghi]Perylene	H.C.B.	a-BHC	d-BHC	Lindane 0.0002	Heptachlor 0.00001	b-BHC	Aldrin + Dieldrin 0.00001	Oxychlordane	Heptachlor Epoxide
UNITS				mg/L																	
PQL				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0050	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Criteria				0.003 for PAH (total)									-	-	-	0.010	0.003	-	0.001	-	-
Zone B	Site 23	SM10	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
			Feb-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			Oct-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na	na	na
		SM11	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
			Feb-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
		SM12	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
			Oct-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na	na	na
		SM16	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
		SM17	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
			Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Feb-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			Mar-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na	na	na
		SM18	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
			Feb-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			Oct-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na	na	na
		SM19	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
		SM20	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
			Feb-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
		SM21	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
			Oct-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na	na	na
		SM22	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
		SM23	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
			Feb-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
		SM24	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
			Feb-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			Aug-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM25	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
			Feb-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Apr-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			Oct-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			Feb-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			May-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Aug-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na	na	na
		SM38	Oct-91	na	na	na	na	na	na	na	na	na	<0.001*	<0.001*	na	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
		SM80	Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Mar-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			Feb-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			May-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Aug-95	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
		SM81	Jan-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Mar-94	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
			Oct-94	na	na	na	na	na	na	na	na	na	nd	nd	na	nd	nd	nd	nd	nd	nd
			May-96	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	na	na	na	na	na	na

PQL Practical Quantitation Limit
na Not Analysed
nd Not Detected
* Higher PQL
^ Criteria set at PQL

Table 25 Groundwater Analytical Results for Zone B

Zone	Location	Well No	Sampling Date	Organochlorines									
				Total Endosulfans 0.00003	Chlordane 0.00003	DDE 0.00003	Dieldrin 0.00001	Endrin 0.00001	DDD	DDT 0.00001	Methoxychlor 0.00005	PCB's 0.00001
UNITS				mg/L								
PQL				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.001
Criteria				0.04	0.006	-	0.001	0.001	-	0.003		0.001^
Zone B	Site 23	SM10	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
			Feb-94	nd	<0.0005*	nd	nd	nd	nd	nd	nd	nd
			Oct-94	nd	<0.005*	nd	nd	nd	nd	nd	nd	nd
			May-96	na	na	na	na	na	na	na	na	na
		SM11	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
			Feb-94	nd	<0.0005*	nd	nd	nd	nd	nd	nd	nd
		SM12	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
			Oct-94	nd	<0.005*	nd	nd	nd	nd	nd	nd	nd
			May-96	na	na	na	na	na	na	na	na	na
		SM16	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
		SM17	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
			Jan-94	na	na	na	na	na	na	na	na	na
			Feb-94	nd	nd	nd	nd	nd	nd	nd	nd	nd
			Mar-94	na	na	na	na	na	na	na	na	na
			Oct-94	nd	<0.005*	nd	nd	nd	nd	nd	nd	nd
			May-96	na	na	na	na	na	na	na	na	na
		SM18	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
			Feb-94	nd	<0.0005*	nd	nd	nd	nd	nd	nd	nd
			Oct-94	nd	<0.005*	nd	nd	nd	nd	nd	nd	nd
			May-96	na	na	na	na	na	na	na	na	na
		SM19	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
		SM20	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
			Feb-94	nd	<0.0005*	nd	nd	nd	nd	nd	nd	nd
		SM21	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
			Oct-94	nd	<0.0005*	nd	nd	nd	nd	nd	nd	nd
			May-96	na	na	na	na	na	na	na	na	na
		SM22	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
		SM23	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
			Feb-94	nd	nd	nd	nd	nd	nd	nd	nd	nd
		SM24	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
			Feb-94	nd	<0.0005*	nd	nd	nd	nd	nd	nd	nd
			Aug-95	na	na	na	na	na	na	na	na	na
		SM25	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
			Feb-94	na	na	na	na	na	na	na	na	na
			Apr-94	nd	nd	nd	nd	nd	nd	nd	nd	nd
			Oct-94	nd	<0.0005*	nd	nd	nd	nd	nd	nd	nd
			Feb-95	na	na	na	na	na	na	na	na	na
			May-95	na	na	na	na	na	na	na	na	na
			Aug-95	na	na	na	na	na	na	na	na	na
			May-96	na	na	na	na	na	na	na	na	na
		SM38	Oct-91	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.01*
		SM80	Jan-94	na	na	na	na	na	na	na	na	na
			Mar-94	na	na	na	na	na	na	na	na	na
			Oct-94	nd	<0.005*	nd	nd	nd	nd	nd	nd	nd
			Feb-95	na	na	na	na	na	na	na	na	na
			May-95	na	na	na	na	na	na	na	na	na
			Aug-95	na	na	na	na	na	na	na	na	na
		SM81	Jan-94	na	na	na	na	na	na	na	na	na
			Mar-94	na	na	na	na	na	na	na	na	na
			Oct-94	nd	<0.005*	nd	nd	nd	nd	nd	nd	nd
			May-96	na	na	na	na	na	na	na	na	na

PQL Practical Quantitation Limit
na Not Analysed
nd Not Detected
* Higher PQL
^ Criteria set at PQL

Appendix D – Aerial Photographs

Source: Base Image - © Department of Lands

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	05-02-2015

Legend:

Central Precinct Boundary

JBS&G **Figure: Central Precinct - 1947**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_1947

Source: Base Image - © Department of Lands

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	05-02-2015

Legend:

Central Precinct Boundary

JBS&G **Figure: Central Precinct - 1955**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_1955

Source: Base Image - © Department of Lands

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	05-02-2015

Legend:

Central Precinct Boundary

JBS&G **Figure: Central Precinct - 1965**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_1965

Source: Base Image - © Department of Lands

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	05-02-2015

Legend:

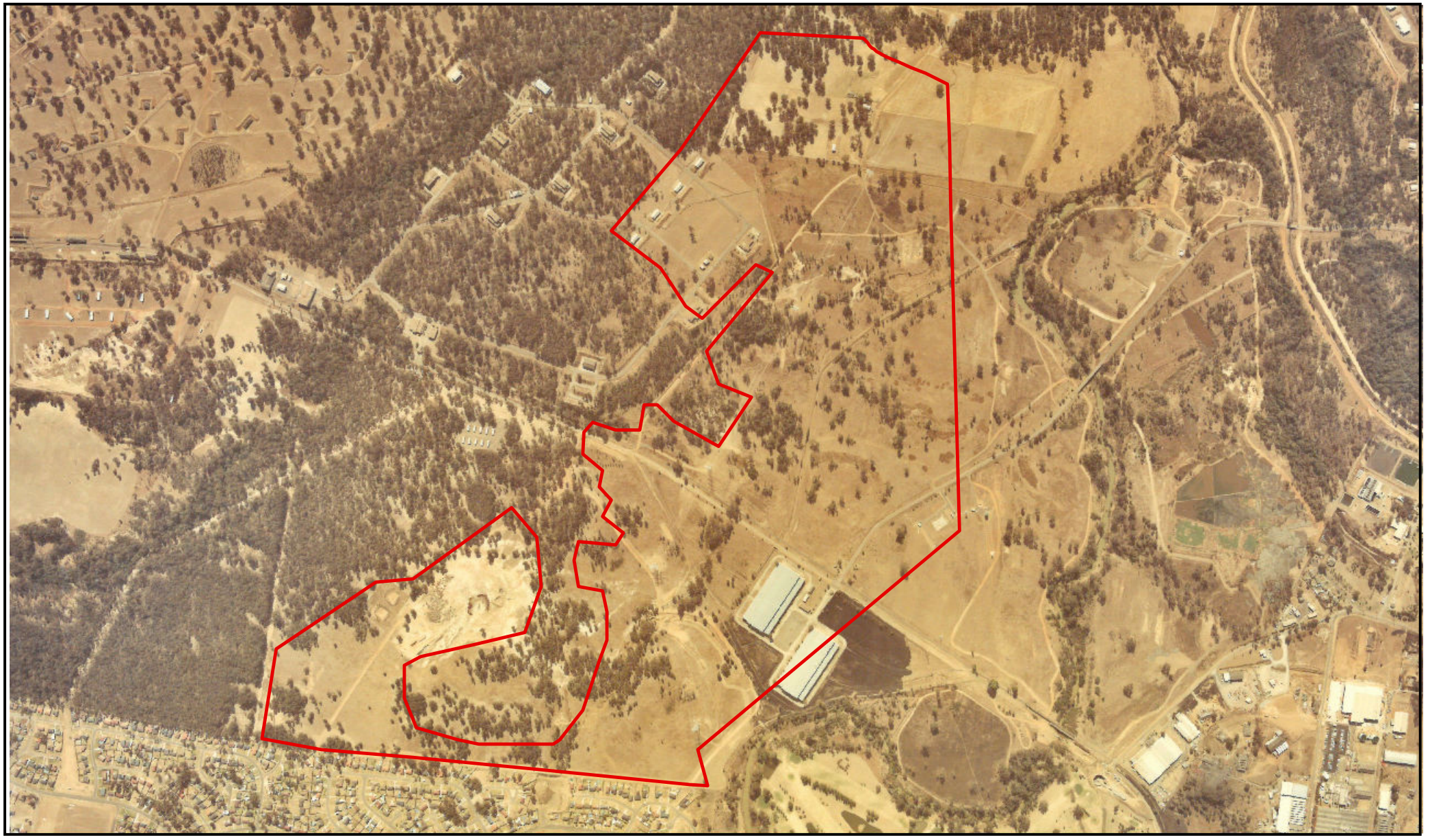
Central Precinct Boundary

JBS&G **Figure: Central Precinct - 1975**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_1975



Source: Base Image - © Department of Lands

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	05-02-2015

Legend:

Central Precinct Boundary

JBS&G **Figure: Central Precinct - 1982**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_1982

Source: Base Image - © Department of Lands

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	05-02-2015

Legend:

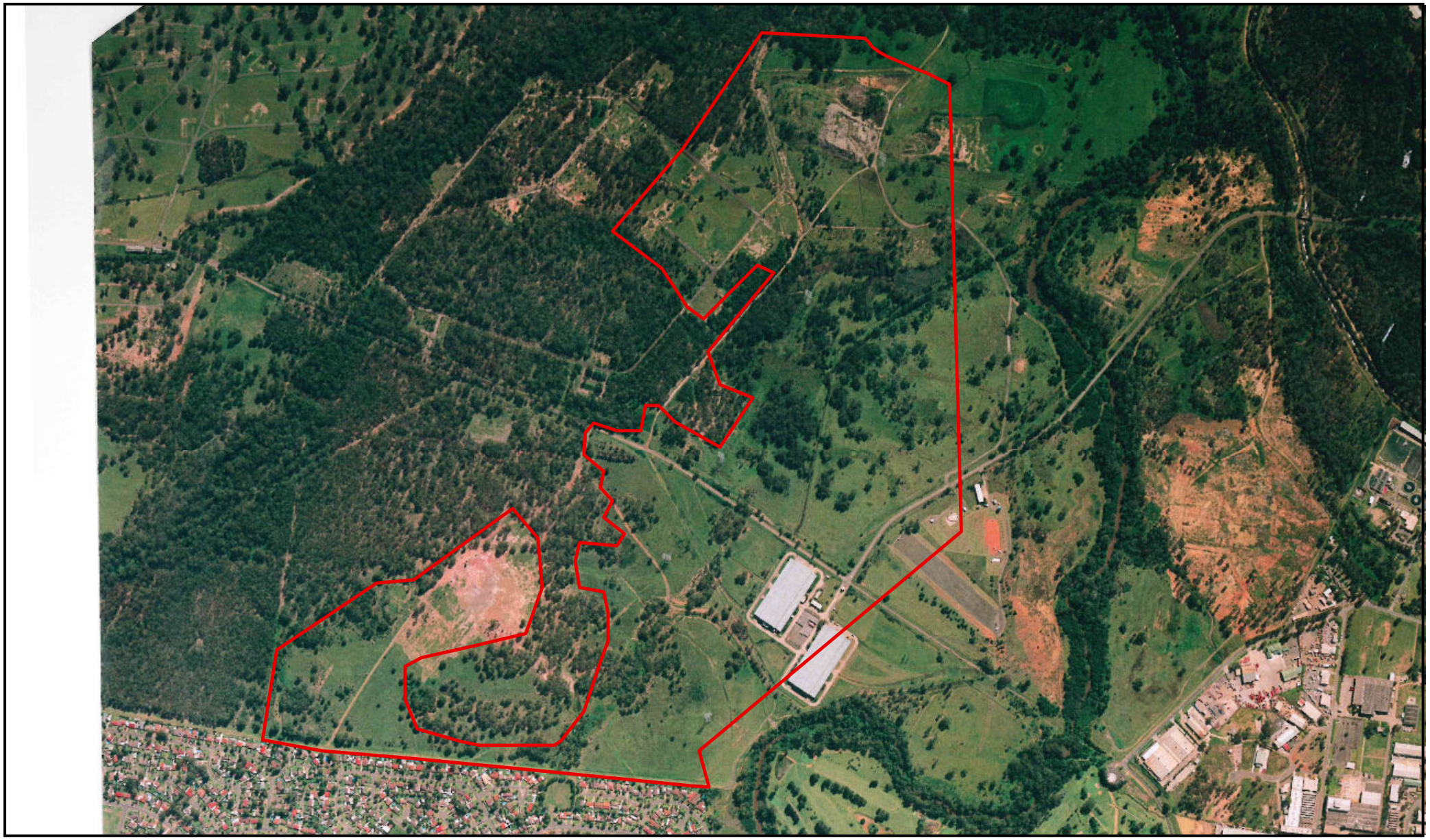
Central Precinct Boundary

JBS&G **Figure: Central Precinct - 1991**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_1991



Source: Base Image - © Department of Lands

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	07-01-2015

Legend:

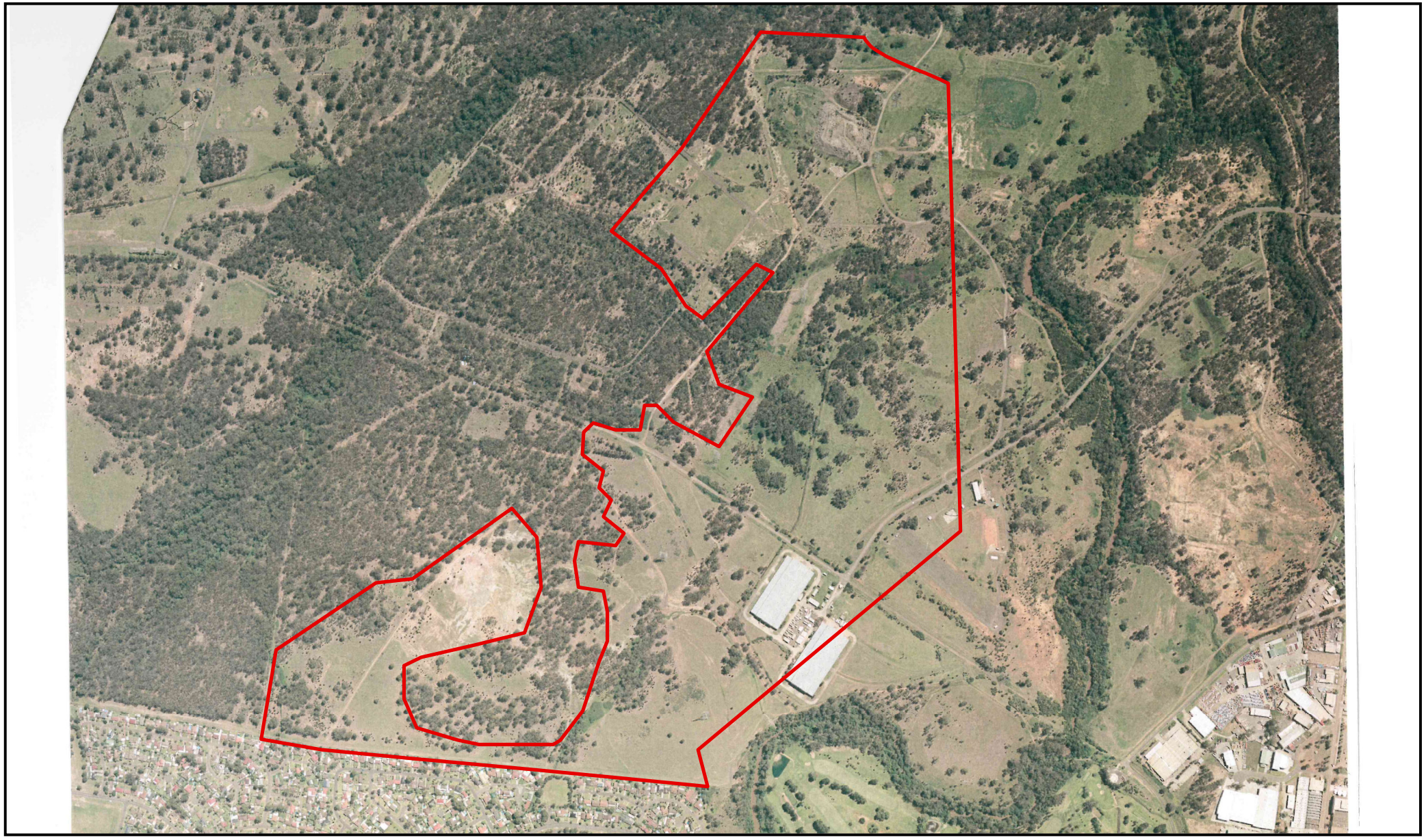
Central Precinct Boundary

JBS&G **Figure: Central Precinct - 2002**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_2002



Source: Base Image - © Department of Lands

0 137.5 275 550 m

Scale:1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	LL	09-04-2014

Legend:

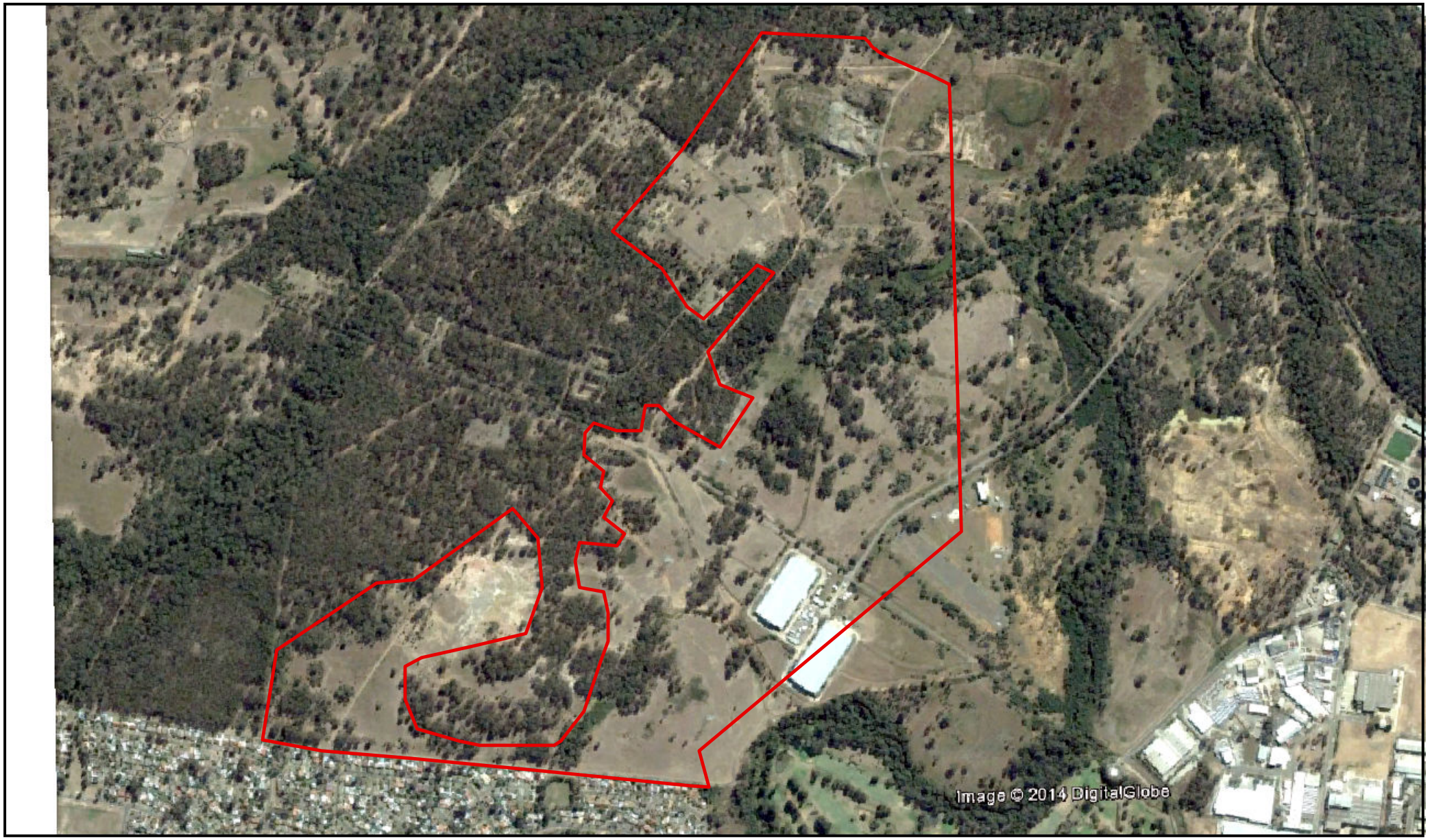
Central Precinct Boundary

JBS&G **Figure: Central Precinct - 2005**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_2005



Source: Base Image - © Google Earth

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	07-01-2015

Legend:

Central Precinct Boundary

JBS&G **Figure: Central Precinct - 2006**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_2006

Source: Base Image - © Google Earth

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	07-01-2015

Legend:

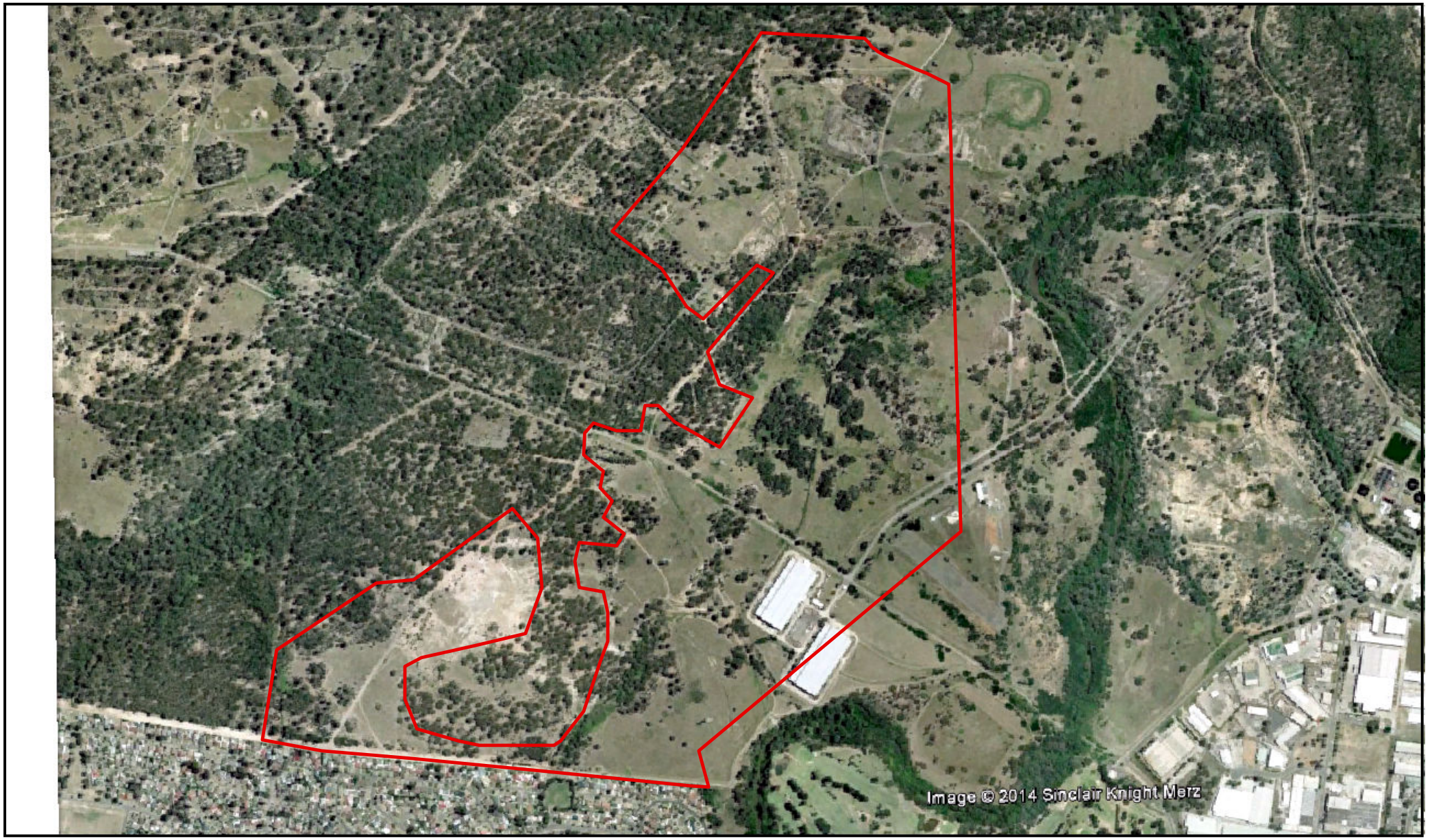
Central Precinct Boundary

JBS&G **Figure: Central Precinct - 2007**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_2007



Source: Base Image - © Google Earth

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	07-01-2015

Legend:

Central Precinct Boundary

JBS&G **Figure: Central Precinct - 2009**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_2009

Source: Base Image - © Google Earth

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	07-01-2015

Legend:

Central Precinct Boundary

JBS&G **Figure: Central Precinct - 2011**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_2011

Source: Base Image - © NearMap

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	07-01-2015

Legend:

Central Precinct Boundary

JBS&G **Figure: Central Precinct - 2012**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_2012

Source: Base Image - © NearMap

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	07-01-2015

Legend:

Central Precinct Boundary

JBS&G **Figure: Central Precinct - 2013**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_2013

Source: Base Image - © NearMap

0 100 200 400 m

Scale: 1:12,500

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
0	Original Issue - Aerials	SE	07-01-2015

Legend:

Central Precinct Boundary

JBS&G **Figure: Central Precinct - 2014**

Client: Maryland Development Company Pty Ltd

Project: Central Precinct

Job No: 43352 File Name: 43352_2014

Appendix E – Historical Analytical Samples, Results and Figures for Dried Sludge (Site 24F)

BaP TEQ-3.
300

TABLE 2 DRIED SLUDGE ANALYTICAL RESULTS

Sample			(mg/kg)																												MPN per gram			
			100		20	160	6000	10	4000		200		7400						Total	240	6	6	50	6	10			1				Faecal		
No	Point	Depth (m)	As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Se	Sn	Zn	TKN	NH4-N	NO3	TOT P	NO2	OCPs	DDT/DDD/DDE	Aldrin	Dieldrin	Chlordane	Heptachlo	HCB	Lindane	BHC	PCBs	PAHs	Coliform	E. Coli	Salmonella	pH
Criteria			20	400	3	50	60	1	60	300	5	50	200						✓1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.5	20	100	100	nd	
5400	5641	0 - 0.2	8.0	92	2.0	130	260	1.000	54	75	0.2	14	420	5670	25	nd	3040	5.2	0.7	0.1	nd	0.4	0.2	nd	nd	nd	nd	nd	0.8	na	na	na	5.2
5401	5642	0 - 0.2	5.5	46	0.5	35	56	0.240	14	35	na	5	85	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.6
5403	5644	0 - 0.2	8.5	97	2.0	110	250	0.950	38	110	na	15	380	na	na	na	na	na	0.6	0.1	nd	0.3	0.2	nd	nd	nd	nd	nd	5.5	na	na	na	4.9
5404	5645	0 - 0.2	7.5	90	1.5	67	200	0.650	32	65	nd	9	250	4520	24	165	1850	205	0.4	nd	nd	0.2	0.2	nd	nd	nd	nd	nd	4.4	na	na	na	5.0
5405	5646	0 - 0.2	5.0	105	nd	13	17	0.015	13	12	na	2	20	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.0
5406	5647	0 - 0.2	6.5	72	0.5	33	120	0.290	18	42	nd	4	140	2690	11	6.1	3870	0.6	0.1	nd	nd	0.1	nd	nd	nd	nd	nd	nd	0.1	na	na	na	6.2
5407	5648	0 - 0.2	5.5	16	nd	17	13	0.030	6.5	19	na	nd	14	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.1
5408	5649	0 - 0.2	7.5	68	0.5	52	190	0.600	22	55	0.1	5	190	3520	10	nd	3140	0.8	0.3	nd	nd	0.2	0.1	nd	nd	nd	nd	nd	nd	na	na	na	5.3
5521	5746	0 - 0.2	5.5	46	nd	30	50	0.170	12	14	na	4	85	na	na	na	na	na	0.3	nd	nd	0.2	0.1	nd	nd	nd	nd	nd	nd	na	na	na	4.6
5522	5746	0.2 - 0.5	6.5	77	1	70	200	0.550	31	47	na	7	280	na	na	na	na	na	0.5	nd	nd	0.3	0.2	nd	nd	nd	nd	nd	nd	na	na	na	4.7
5523	5747	0 - 0.2	7.0	87	0.5	38	96	0.320	20	41	nd	2	140	2540	29	79	2080	31	0.1	nd	nd	0.1	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.1
5524	5747	0.2 - 0.5	6.0	47	nd	30	51	0.230	10	30	na	nd	63	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.2
5527	5749	0 - 0.2	4.5	61	nd	12	10	0.020	8	15	na	nd	12	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.9
5528	5749	0.2 - 0.5	4.5	54	nd	7	9.5	0.025	6	20	na	nd	10	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.9
5529	5750	0 - 0.2	5.5	55	nd	28	75	0.160	13	30	na	2	92	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.8
5530	5750	0.2 - 0.5	6.0	69	nd	20	22	0.030	7.5	26	na	nd	29	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.2
5531	5751	0 - 0.2	7.0	105	1	52	170	0.500	22	52	0.2	4	220	4800	21	nd	1020	1.3	0.4	nd	nd	0.2	0.2	nd	nd	nd	nd	nd	2.74	na	na	na	5.6
5532	5751	0.2 - 0.5	5.0	26	nd	25	23	0.045	6.5	21	na	nd	39	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	6
5533	5752	0 - 0.2	8.0	72	0.5	29	65	0.150	13	43	na	nd	100	na	na	na	na	na	0.1	nd	nd	0.1	nd	nd	nd	nd	nd	nd	0.14	na	na	na	6.1
5534	5752	0.2 - 0.5	7.5	67	0.5	37	62	0.160	13	45	na	2	100	na	na	na	na	na	0.1	nd	nd	0.1	nd	nd	nd	nd	nd	nd	0.42	na	na	na	6.1
5535	5753	0 - 0.2	6.0	24	nd	13	10	0.020	6.5	16	na	nd	32	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5
5536	5753	0.2 - 0.5	5.0	37	nd	15	10	0.020	8.5	21	na	nd	22	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.2
5537	5754	0 - 0.2	5.5	36	nd	26	12	0.020	12	20	na	nd	28	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.9
5538	5754	0.2 - 0.5	5.5	42	nd	25	17	0.035	9	30	na	nd	35	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.8
5539	5755	0 - 0.2	5.5	33	nd	18	21	0.045	10	22	nd	nd	32	700	nd	6	150	2.8	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.7
5540	5755	0.2 - 0.5	5.0	45	nd	20	22	0.050	9.5	11	na	nd	26	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.8
5541	5756	0 - 0.2	6.0	51	0.5	30	70	0.210	13	33	nd	nd	110	1510	1.6	2.8	1570	2.3	0.2	nd	nd	0.2	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.1
5542	5756	0.2 - 0.5	4.0	24	nd	12	14	0.020	4	13	na	nd	11	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.9
5543	5757	0 - 0.2	4.5	60	nd	33	47	0.160	13	30	na	2	93	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.4
5544	5757	0.2 - 0.5	5.0	73	nd	30	30	0.140	10	24	na	1	74	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.2
5545	5758	0 - 0.2	6.0	94	1	54	140	0.480	18	59	na	3	140	na	na	na	na	na	0.3	nd	nd	0.2	0.1	nd	nd	nd	nd	nd	0.24	na	na	na	4.8
5546	5758	0.2 - 0.5	5.0	53	nd	28	50	0.150	17	21	na	nd	80	na	na	na	na	na	0.1	nd	nd	0.1	nd	nd	nd	nd	nd	nd	1.65	na	na	na	5.1
5547	5759	0 - 0.2	7.5	110	1	69	210	0.830	30	52	0.3	10	330	3830	30	155	2310	3.9	0.6	nd	nd	0.4	0.2	nd	nd	nd	nd	nd	0.31	na	na	na	5.1
5548	5759	0.2 - 0.5	8.0	120	1	77	180	0.740	36	50	na	9	300	na	na	na	na	na	0.2	nd	nd	0.2	nd	nd	nd	nd	nd	nd	5.24	na	na	na	5.2
5549	5760	0 - 0.2	8.0	120	1.5	83	275	0.780	31	66	na	15	320	na	na	na	na	na	0.6	nd	nd	0.4	0.2	nd	nd	nd	nd	nd	0.79	na	na	na	4.4
5550	5760	0.2 - 0.5	9.0	135	2	90	290	0.880	34	90	na	14	340	na	na	na	na	na	0.9	nd	nd	0.5	0.3	nd	nd	nd	nd	nd	0.23	na	na	na	4
5551	5761	0 - 0.2	6.0	59	0.5	46	110	0.380	16	41	nd	4	100	2170	42	355	2750	0.8	0.1	nd	nd	0.1	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.1
5552	5761	0.2 - 0.5	8.0	110	1.5	70	200	0.580	40	57	na	11	350	na	na	na	na	na	0.5	nd	nd	0.3	0.2	nd	nd	nd	nd	nd	0.07	na	na	na	5
5959	6080	0 - 0.2	5	29	0.5	26	74	0.11	26	26	na	nd	130	na	na	na	na	na	0.1	nd	nd	0.1	nd	nd	nd	nd	nd	nd	0.13	na	na	na	4.6
5960	6081	0 - 0.2	4	42	nd	13	13	0.035	9.5	17	na	nd	25	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.1
5962	6083	0 - 0.2	4.5	21	nd	27	23	0.02	15	29	na	nd	26	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.8
5963	6084	0 - 0.2	6	48	1	58	110	0.23	25	50	nd	5	150	2200	7.9	nd	2620	30	0.2	nd	nd	0.2	nd	nd	nd	nd	nd	nd	1.5	na	na	na	5.8
5964	6085	0 - 0.2	7	53	1.5	84	170	0.21	35	70	nd	12	220	2660	18	330	2350	0.7	0.4	nd	nd	0.3	0.2	nd	nd	nd	nd	nd	8.4	na	na	na	4.6
5965	6086	0 - 0.2	4	16	nd	16	9	0.025	8.5	16	na	1	18	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	6.8	na	na	na	4.6
5966	6087	0 - 0.2	5	68	0.5	89	150	0.22	50	67	na	11	240	na	na	na	na	na	0.1	nd	nd	0.1	nd	nd	nd	nd	nd	nd	0.54	na	na	na	4.7
5968	6089	0 - 0.2	5.5	35	1	80	130	0.5	36	55	na	13	260	na	na	na	na	na	0.5	nd	nd	0.3	0.2	nd	nd	nd	nd	nd	1.9	na	na	na	4.8
5971	6092	0 - 0.2	9.5	150	5	210	580	1.5	67	170	0.4	57	780	13000	110	460	6140	0.8	1.3	0.1	nd	0.6	0.5	nd	nd	nd	nd	nd	0.7	na	na	na	4.6
5972	6093	0 - 0.2	8	87	2	150	290	1.1	58	110	na	29	380	na	na	na	na	na	0.9	0.1	nd	0.4	0.3	nd	nd	nd	nd	nd	5.4	na	na	na	4.5
5974	6095	0 - 0.2	4	10	nd	25	23	0.035	10	20	na	2	42	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.1	na	na	na	4.9
5975	6096	0 - 0.2	7	75	2	110	260	0.77	43	91	0.2	25	350	7120	55	1110	1460	0.6	0.8	nd	nd	0.3	0.4	nd	nd	nd	nd	nd	1.7	na	na	na	4.6
5976	6097	0 - 0.2	5.5	39	0.5	47	91	0.16	24	47	na	8	130	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.5
5977	6098	0 - 0.2	6.5	77	1	72	140	0.27	36	59	na	11	200	na	na	na	na	na	0.3	nd	nd	0.2	0.1	nd	nd	nd	nd	nd	0.12	na	na	na	5.4
5978	6099	0 - 0.2	7	76	1	70	150	0.35	36	60	0.1	9	220	3660	25	25	1890	11	0.1	nd	nd	0.1	nd	nd	nd	nd	nd	nd	1.2	na	na	na	5.5
5979	6100	0 - 0.2	7.5	74	1.5	110	320	0.83	47	100	0.2	27	410	6830	46	98	3640	1.1	0.7	nd	nd	0.4	0.3	nd	nd	nd	nd	nd	0.42	na	na	na	4.9
5980	6101	0 - 0.2	5.5	27	nd	34	49	0.09	17	35	na	2	65	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.9

nd Not Detected
na Not Analysed

TABLE 2 DRIED SLUDGE ANALYTICAL RESULTS

Sample No	Point	Depth (m)	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Se	Sn	Zn	TKN	NH4-N	NO3	TOT P	NO2	Total OCPs	DDT/DDD/DDE	Aldrin	Dieldrin	Chlordane	Heptachlo	HCB	Lindane	BHC	PCBs	PAHs	MPN per gram Faecal Coliform	E. Coli	Salmonella	pH
Criteria			20	400	3	50	60	1	60	300	5	50	200						1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.5	20	100	100	nd	-
5981	6102	0 - 0.2	7.5	67	2	89	210	0.65	35	89	na	19	350	na	na	na	na	na	0.8	nd	nd	0.4	0.3	nd	nd	nd	nd	nd	0.64	na	na	na	4.5
5995	6080	0.2 - 0.5	4.5	31	0.5	37	95	0.1	21	33	na	nd	110	na	na	na	na	na	0.1	nd	nd	0.1	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.5
5996	6081	0.2 - 0.5	4.5	53	nd	15	7.5	0.03	10	14	na	nd	14	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.4
5998	6083	0.2 - 0.5	5	16	nd	19	19	0.02	18	20	na	nd	16	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.6
5999	6084	0.2 - 0.5	5	43	0.5	44	64	0.15	23	37	na	3	96	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	6
6000	6085	0.2 - 0.5	6	44	1.5	50	82	0.15	40	40	na	10	220	na	na	na	na	na	0.5	nd	nd	0.3	0.2	nd	nd	nd	nd	nd	0.17	na	na	na	4.9
6001	6086	0.2 - 0.5	4	16	nd	18	8.5	0.055	10	17	na	nd	13	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	7.7	na	na	na	4.5
6002	6087	0.2 - 0.5	5.5	35	nd	34	51	0.11	29	32	na	5	110	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.81	na	na	na	4.6
6004	6089	0.2 - 0.5	5.5	41	1	91	130	0.44	45	60	na	13	270	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.16	na	na	na	5.1
6007	6092	0.2 - 0.5	7.5	92	3	140	270	1	38	92	na	35	410	na	na	na	na	na	0.1	nd	nd	0.1	nd	nd	nd	nd	nd	nd	0.14	na	na	na	5.2
6008	6093	0.2 - 0.5	8	93	2	130	300	1	69	120	na	28	400	na	na	na	na	na	1.2	0.3	nd	0.5	0.3	nd	nd	nd	nd	nd	0.42	na	na	na	4.6
6010	6095	0.2 - 0.5	4.5	10	nd	18	10	0.025	11	20	na	1	13	na	na	na	na	na	0.9	0.1	nd	0.4	0.3	nd	nd	nd	nd	nd	3.5	na	na	na	5.1
6011	6096	0.2 - 0.5	7.5	68	2	89	220	0.6	44	80	0.3	28	370	6060	44	1250	1080	11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.2
6012	6097	0.2 - 0.5	5	27	nd	22	29	0.035	23	24	na	5	50	na	na	na	na	na	0.2	nd	nd	0.2	nd	nd	nd	nd	nd	nd	0.71	na	na	na	4.6
6013	6098	0.2 - 0.5	5	56	0.5	41	61	0.1	25	36	na	7	95	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.2
6014	6099	0.2 - 0.5	5	50	nd	41	55	0.1	26	37	na	5	83	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5
6015	6100	0.2 - 0.5	8	72	1	83	250	0.3	36	82	0.1	30	350	5690	29	76	1670	9.4	0.1	nd	nd	0.1	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.8
6016	6101	0.2 - 0.5	6	19	nd	21	25	0.04	14	21	na	3	32	na	na	na	na	na	0.5	nd	nd	0.3	0.2	nd	nd	nd	nd	nd	0.12	na	na	na	5.7
6017	6102	0.2 - 0.5	7	52	1.5	61	140	0.46	32	57	na	15	270	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.62	na	na	na	5.8
6285	6100	0.5-0.6	5	8	nd	7.5	14	nd	4.5	10	na	nd	22	na	na	na	na	na	0.3	nd	nd	0.2	0.1	nd	nd	nd	nd	nd	nd	na	na	na	4.9
6286	6093	0.5-0.7	7.5	62	1	67	180	0.75	32	63	na	1	290	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.07	na	na	na	5.4
6287	6088	0.7-0.8	6	28	nd	16	14	0.075	4	15	na	nd	30	na	na	na	na	na	1.0	0.3	nd	0.3	0.4	nd	nd	nd	nd	nd	nd	na	na	na	5.1
6288	5764	0.6-0.8	5	12	nd	9	6	nd	2	12	na	nd	18	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	7	na	na	na	4.9
6289	6090	0.5-0.7	4.5	24	nd	10	7.5	nd	2.5	11	na	nd	9	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.4
6290	6091	0.8-0.9	6	29	nd	5.5	23	nd	5	21	na	nd	33	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.6
6291	5761	0.7-0.8	4.5	71	nd	10	13	nd	2	20	na	nd	21	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.8
6292	6092	0.6-0.8	5	28	nd	10	12	nd	5	14	na	nd	28	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.1	na	na	na	5.1
6293	5760	0.7-0.8	6	29	nd	11	28	0.04	6	14	na	nd	44	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.7
6294	6096	0.6-0.7	5	29	nd	7	12	nd	5	18	na	nd	30	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	7.3
6295	5746	0.6-0.7	5	37	nd	7.5	12	nd	7	21	na	nd	31	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.6
6296	6082	0.6-0.8	7	26	nd	6.5	14	nd	4.5	12	na	nd	37	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.4
6297	6332	0 - 0.2	6	73	nd	29	14	0.01	5.5	33	na	nd	55	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5
6298	6333	0 - 0.2	5	36	nd	14	5.5	0.015	2.5	21	na	nd	14	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	4.3
6301	6336	0 - 0.2	6	32	nd	19	36	0.075	10	34	na	nd	56	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.34	na	na	na	4.4
6302	6337	0 - 0.2	6	36	nd	29	55	0.22	10	27	na	2	105	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.14	na	na	na	6.4
6396	6415	0 - 0.2	8	47	1	67	130	0.35	27	55	na	4	200	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.3
6397	6416	0 - 0.2	8	56	1	42	125	0.31	24	53	na	3	180	na	na	na	na	na	0.3	nd	nd	0.3	nd	nd	nd	nd	nd	nd	nd	na	na	na	6.2
6398	6417	0 - 0.2	5.5	100	nd	33	13	0.025	31	18	na	nd	51	na	na	na	na	na	0.4	nd	nd	0.1	0.3	nd	nd	nd	nd	nd	0.31	na	na	na	4.7
6399	6418	0 - 0.2	7.5	49	nd	34	27	0.02	23	64	na	nd	94	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	13	na	na	na	4.5
6400	6419	0 - 0.2	6	30	nd	19	14	0.015	9	24	na	nd	46	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	na	na	5.4
6401	6420	0 - 0.2	8	97	2.5	190	350	1.2	56	110	na	45	440	na	na	na	na	na	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.79	na	na	na	6.5
7028	composite	0 - 0.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.6	0.1	nd	0.3	0.2	nd	nd	nd	nd	nd	6.08	na	na	na	5.5
7029	composite	0 - 0.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.78	na	na	na	5.5
7030	composite	0 - 0.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	4.3
7031	composite	0 - 0.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7032	composite	0 - 0.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7033	composite	0 - 0.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7034	composite	0 - 0.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7035	composite	0 - 0.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7036	composite	0 - 0.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7037	composite	0 - 0.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7038	composite	0 - 0.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7039	composite	0 - 0.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7040	composite	0.2 - 0.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7041	composite	0.2 - 0.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na

discrete 9/6 — 24 comp.

nd Not Detected
na Not Analysed

TABLE 2 DRIED SLUDGE ANALYTICAL RESULTS

Sample No	Point	Depth (m)	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Se	Sn	Zn	TKN	NH4-N	NO3	TOT P	NO2	Total OCPs	DDT/DDD/DDE	Aldrin	Dieldrin	Chlordane	Heptachlo	HCB	Lindane	BHC	PCBs	PAHs	MPN per gram Faecal Coliform	E. Coli	Salmonella	pH
Criteria			20	400	3	50	60	1	60	300	5	50	200						1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.5	20	100	100	nd	-
7042	composite	0.2 - 0.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7043	composite	0.2 - 0.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7044	composite	0.2 - 0.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7045	composite	0.2 - 0.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7046	composite	0.2 - 0.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7047	composite	0.2 - 0.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7048	composite	0.2 - 0.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7049	composite	0.2 - 0.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7050	composite	0.2 - 0.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	nd	na
7051	composite	0.2 - 0.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	4	4	nd	na
Mean			6.0	55.2	1.2	45.5	95.4	0.3	20.8	41.9	0.2	10.5	140.9	4398.3	31.1	294.1	2368.3	17.7	0.260	0.058	0.050	0.139	0.100	0.050	0.050	0.050	0.050	1	nd	nd	nd	nd	nd	na
Standard Deviation			1.3	29.9	0.8	39.5	102.2	0.3	15.3	29.0	0.1	11.5	140.4	2832.4	25.0	402.3	1334.7	47.7	0.270	0.036	0.000	0.131	0.096	0.000	0.000	0.000	0.000	2.3					5.4
Co-efficient of Variation			0.2	0.5	0.7	0.9	1.1	1.2	0.7	0.7	0.5	1.1	1	0.6	0.8	1.4	0.6	2.7	1.1	0.6	0.0	0.9	1.0	0.0	0.0	0.0	0.0	2.1					0.8
																																	0.1

nd Not Detected

TABLE 4 VALIDATION DATA SITE 24F

Sample No	Sample Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OCPs	PCBs	PAHs	TPH	BTEX	pH
Criteria						20	400	3	50	60	1	60	300	50	200						1	1	20			-
7052	6959	0 - 0.2	278151.49	1265934.23	18.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na	na
7053	6960	0 - 0.2	278144.82	1265925.66	18.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na	na
7054	6961	0 - 0.2	278133.37	1265915.95	18.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na	na
7055	6962	0 - 0.2	278135.44	1265902.79	18.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na	na
7056	6963	0 - 0.2	278148.67	1265906.87	18.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na	na
7057	6964	0 - 0.2	278163.79	1265913.99	18.1	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na	na
7058	6965	0 - 0.2	278168.67	1265902.33	18.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na	na
7059	6966	0 - 0.2	278156.19	1265888.25	19.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na	na
7060	6967	0 - 0.2	278164.32	1265877.14	18.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na	na
7061	6968	0 - 0.2	27818.038	1265888.15	18.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na	na
7062	6969	0 - 0.2	278206.26	1265636.49	20.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	37.57	na	na	na
7063	6970	0 - 0.2	278207.16	1265632.96	20.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
7064	6971	0 - 0.2	278166.49	1265596.05	20.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
7065	6972	0 - 0.2	278162.44	1265599.58	20.1	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
7066	6973	0 - 0.2	278031.62	1265593.15	19.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
7067	6974	0 - 0.2	278041.34	1265592.37	19.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
7068	6975	0 - 0.2	277962.87	1265649.74	18.7	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
7069	6976	0 - 0.2	277960.29	1265644.01	18.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.28	na	na	na
7070	6977	0 - 0.2	278122.42	1265645.70	19.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
7071	6978	0 - 0.2	278122.42	1265647.52	19.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
7072	6979	0 - 0.2	278115.12	1265645.70	19.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	na	na	na
7293	7184	0 - 0.2	278287.15	1265764.96	20.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7294	7185	0 - 0.2	278284.89	1265741.57	20.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7295	7186	0 - 0.2	278302.93	1265735.89	20.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7296	7187	0 - 0.2	278297.53	1265721.21	20.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7297	7188	0 - 0.2	278315.74	1265715.28	19.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7298	7189	0 - 0.2	278263.74	1265623.00	20.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7299	7190	0 - 0.2	278252.65	1265642.93	21.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7300	7191	0 - 0.2	278267.90	1265640.31	21.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7301	7192	0 - 0.2	278263.95	1265654.99	20.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7302	7193	0 - 0.2	278248.39	1265658.89	21.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7303	7194	0 - 0.2	278248.95	1265666.50	20.7	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7304	7195	0 - 0.2	277937.28	1265881.64	18.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7305	7196	0 - 0.2	277954.21	1265889.77	18.7	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7306	7197	0 - 0.2	277955.53	1265915.99	18.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7307	7198	0 - 0.2	277932.22	1265921.55	18.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7308	7199	0 - 0.2	277947.26	1265901.49	18.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	nd	nd	na	na	na	na
7327	7215	0 - 0.2	278242.62	1265818.27	17.9	6	53	nd	14	19	0.005	8	12	nd	41	nd	nd	nd	nd	nd	nd	nd	nd	na	na	4.3

nd Not Detected
na Not Analysed

TABLE 4 VALIDATION DATA SITE 24F

Sample No	Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OCPs	PCBs	PAHs	TPH	BTEX	pH
Criteria						20	400	3	50	60	1	60	300	50	200						1	1	20			-
7328	7216	0 - 0.2	278209.62	1265873.27	19.3	5	63	nd	16	19	0.005	10	15	nd	32	na	na	na	na	na	nd	nd	nd	na	na	4.5
7329	7217	0 - 0.2	278198.62	1265829.27	19.1	5	12	nd	22	17	0.01	7.5	15	nd	24	na	na	na	na	na	nd	nd	nd	na	na	4.5
7330	7218	0 - 0.2	278154.62	1265906.27	18.5	4.5	6	nd	15	11	0.01	4	11	nd	14	na	na	na	na	na	nd	nd	nd	na	na	4.9
7331	7219	0 - 0.2	278077.62	1265950327	17.2	6	69	nd	17	20	0.01	13	17	nd	34	na	na	na	na	na	nd	nd	nd	na	na	7.2
7332	7220	0 - 0.2	278033.62	1265961.27	18.1	6	73	nd	17	20	0.015	13	17	nd	33	na	na	na	na	na	nd	nd	nd	na	na	7.1
7333	7221	0 - 0.2	278110.62	1265917.27	18.6	5	11	nd	12	13	0.01	6	12	nd	14	na	na	na	na	na	nd	nd	nd	na	na	5.9
7334	7222	0 - 0.2	278066.62	1265906.27	17.7	6.5	98	nd	17	19	0.015	12	16	nd	29	nd	nd	nd	nd	nd	nd	nd	nd	na	na	7.3
7335	7223	0 - 0.2	278165.62	1265862.27	18.5	4	9	nd	20	6	0.01	3	25	nd	12	na	na	na	na	na	nd	nd	nd	na	na	5.2
7336	7224	0 - 0.2	278121.62	1265873.27	18.6	5.5	15	nd	14	14	0.01	6	12	nd	15	na	na	na	na	na	nd	nd	nd	na	na	4.8
7337	7225	0 - 0.2	278154.62	1265818.27	18.5	5	19	nd	15	15	0.015	6	13	nd	19	nd	nd	nd	nd	nd	nd	nd	nd	na	na	5.9
7338	7226	0 - 0.2	278077.62	1265862.27	18.8	5	12	nd	15	11	0.005	4.5	12	nd	12	na	na	na	na	na	nd	nd	nd	na	na	5.1
7339	7227	0 - 0.2	278110.62	1265829.27	18.7	5.5	25	nd	10	11	0.005	5.5	10	nd	20	na	na	na	na	na	nd	nd	nd	na	na	6
7340	7228	0 - 0.2	278033.62	1265873.27	18.6	7	47	nd	16	15	0.015	10	15	nd	25	na	na	na	na	na	nd	nd	nd	na	na	7.2
7341	7229	0 - 0.2	278066.62	1265818.27	18.7	6	12	nd	12	12	0.005	6	11	nd	17	na	na	na	na	na	nd	nd	nd	nd	nd	4.9
7342	7230	0 - 0.2	277989.62	1265950.27	17.9	6	60	nd	17	15	0.015	10	16	nd	30	na	na	na	na	na	nd	nd	nd	na	na	7.1
7343	7231	0 - 0.2	277945.62	1265961.27	18.1	5.5	57	nd	14	17	0.005	11	15	nd	28	na	na	na	na	na	nd	nd	nd	na	na	6
7344	7232	0 - 0.2	278022.62	1265917.27	18.4	6	57	nd	15	16	0.01	11	15	nd	27	nd	nd	nd	nd	nd	nd	nd	nd	na	na	6.9
7345	7233	0 - 0.2	277978.62	1265906.27	18.6	5	76	nd	15	15	0.01	10	15	nd	26	na	na	na	na	na	nd	nd	nd	na	na	7.2
7346	7234	0 - 0.2	277901.62	1265950.27	18.3	6.5	71	nd	17	17	0.01	10	16	nd	29	na	na	na	na	na	nd	nd	nd	na	na	7.1
7347	7235	0 - 0.2	277934.62	1265917.27	18.3	7	70	nd	16	17	0.005	11	15	nd	29	nd	nd	nd	nd	nd	nd	nd	nd	na	na	7.1
7348	7236	0 - 0.2	277890.62	1265906.27	17.9	6	94	nd	17	20	0.01	12	17	nd	30	na	na	na	na	na	nd	nd	nd	na	na	7.3
7349	7237	0 - 0.2	277989.62	1265862.27	18.8	5.5	52	nd	15	17	0.01	10	16	nd	26	na	na	na	na	na	nd	nd	nd	na	na	7.1
7350	7238	0 - 0.2	278022.62	1265829.27	18.9	6	23	nd	14	17	0.015	6	12	nd	20	na	na	na	na	na	nd	nd	nd	na	na	4
7351	7239	0 - 0.2	277945.62	1265873.27	18.7	5.5	90	nd	14	17	0.005	10	15	nd	26	na	na	na	na	na	nd	nd	nd	na	na	7.4
7352	7240	0 - 0.2	277978.62	1265818.27	18.9	6.5	120	nd	17	21	0.01	12	18	nd	31	na	na	na	na	na	nd	nd	nd	na	na	7.3
7353	7241	0 - 0.2	277934.62	1265829.27	18.9	7	110	nd	18	21	0.01	12	18	nd	31	na	na	na	na	na	nd	nd	nd	na	na	7.3
7354	7242	0 - 0.2	277901.62	1265862.27	18.8	7	76	nd	17	22	0.01	12	17	nd	33	na	na	na	na	na	nd	nd	nd	na	na	7.4
7355	7243	0 - 0.2	278272.62	1265730.27	18.2	6	40	nd	17	12	0.005	6	14	nd	23	na	na	na	na	na	nd	nd	nd	na	na	4.3
7356	7244	0 - 0.2	278424.62	1265642.27	18.9	5	15	nd	18	9.5	0.005	4.5	12	nd	13	na	na	na	na	na	nd	nd	nd	na	na	4.3
7357	7245	0 - 0.2	278242.62	1265554.27	21.7	4.5	41	nd	11	10	0.005	4	10	nd	10	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.2
7358	7246	0 - 0.2	278209.62	1265785.27	19.4	6.5	26	nd	13	13	0.005	9	11	nd	38	na	na	na	na	na	nd	nd	nd	na	na	4.8
7359	7247	0 - 0.2	278198.62	1265741.27	18.9	5.5	12	nd	19	14	0.01	5.5	15	nd	24	na	na	na	na	na	nd	nd	nd	na	na	4.2
7360	7248	0 - 0.2	278165.62	1265774.27	18.9	5	9	nd	18	9	0.02	5	14	nd	13	na	na	na	na	na	nd	nd	nd	na	na	6.2
7361	7249	0 - 0.2	278121.62	1265785.27	18.9	5.5	11	nd	11	13	0.01	7	12	nd	20	na	na	na	na	na	nd	nd	nd	na	na	6.1
7362	7250	0 - 0.2	278077.62	1265774.27	18.8	5	7	nd	11	12	0.005	4.5	11	nd	15	na	na	na	na	na	nd	nd	nd	na	na	4.8
7363	7251	0 - 0.2	278033.62	1265785.27	19.1	5.5	24	nd	16	16	0.005	7	13	nd	19	na	na	na	na	na	nd	nd	nd	na	na	6.3
7364	7252	0 - 0.2	278154.62	1265730.27	18.9	5	11	nd	12	13	0.015	4.5	11	nd	17	na	na	na	na	na	nd	nd	nd	na	na	4.8
7365	7253	0 - 0.2	278110.62	1265741.27	18.9	5	10	nd	14	15	0.005	6	12	nd	14	na	na	na	na	na	nd	nd	nd	na	na	4.7

nd Not Detected
na Not Analysed

TABLE 4 VALIDATION DATA SITE 24F

Sample No	Sample Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OCPs	PCBs	PAHs	TPH	BTEX	pH
Criteria						20	400	3	50	60	1	60	300	50	200						1	1	20			-
7366	7254	0 - 0.2	278066.62	1265730.27	19.0	6	155	nd	14	17	0.01	14	15	nd	22	na	na	na	na	na	nd	nd	nd	na	na	7.4
7367	7255	0 - 0.2	278022.62	1265741.27	18.5	5.5	96	nd	22	15	0.005	12	19	nd	38	nd	nd	nd	nd	nd	nd	nd	nd	na	na	7.4
7368	7256	0 - 0.2	277989.62	1265774.27	19.1	6.5	61	nd	19	20	0.01	13	17	nd	32	na	na	na	na	na	nd	nd	nd	na	na	7.4
7369	7257	0 - 0.2	277945.62	1265785.27	19.3	6	100	nd	17	19	0.005	14	17	nd	32	na	na	na	na	na	nd	nd	nd	na	na	7.4
7370	7258	0 - 0.2	277978.62	1265730.27	18.9	5	53	nd	23	14	0.005	13	20	nd	20	na	na	na	na	na	nd	nd	nd	nd	nd	7.1
7371	7259	0 - 0.2	277934.62	1265741.27	19.3	5.5	130	nd	17	14	0.01	12	17	nd	21	na	na	na	na	na	nd	nd	nd	nd	nd	7.4
7372	7260	0 - 0.2	278209.62	1265697.27	17.9	4	37	nd	13	12	0.015	5	11	nd	15	na	na	na	na	na	nd	nd	nd	nd	nd	7.4
7373	7261	0 - 0.2	278198.62	1265653.27	20.1	6.5	14	nd	21	7.5	0.01	7	14	nd	29	na	na	na	na	na	nd	nd	nd	na	na	4.9
7374	7262	0 - 0.2	278165.62	1265686.27	18.8	5	16	nd	10	7	nd	3.5	8	nd	10	na	na	na	na	na	nd	nd	nd	na	na	5.5
7375	7263	0 - 0.2	278154.62	1265642.27	19.0	4	34	nd	10	8.5	0.005	4	12	nd	9	na	na	na	na	na	nd	nd	nd	na	na	5.4
7376	7264	0 - 0.2	278121.62	1265697.27	18.9	5	36	nd	11	12	0.005	7.5	11	nd	18	na	na	na	na	na	nd	nd	nd	na	na	6.9
7377	7265	0 - 0.2	278110.62	1265653.27	19.0	4	10	nd	12	14	0.005	5	12	nd	15	nd	nd	nd	nd	nd	nd	nd	nd	na	na	5.9
7378	7266	0 - 0.2	278077.62	1265686.27	18.0	5.5	63	nd	12	14	0.005	6.5	15	nd	19	na	na	na	na	na	nd	nd	nd	na	na	3.8
7379	7267	0 - 0.2	278066.62	1265642.27	19.6	4	21	nd	16	10	0.005	7.5	14	nd	14	na	na	na	na	na	nd	nd	nd	nd	nd	4.7
7380	7268	0 - 0.2	278033.62	1265697.27	19.3	5.5	110	nd	12	13	0.005	11	15	nd	20	na	na	na	na	na	nd	nd	nd	na	na	5.6
7381	7269	0 - 0.2	278022.62	1265653.27	19.3	6	56	nd	12	14	0.01	7	14	nd	19	na	na	na	na	na	nd	nd	nd	nd	nd	7.4
7382	7270	0 - 0.2	277989.62	1265686.27	19.4	5.5	97	nd	17	14	0.005	12	15	nd	20	na	na	na	na	na	nd	nd	nd	nd	nd	4.6
7383	7271	0 - 0.2	277978.62	1265642.27	18.9	6.5	40	nd	13	14	0.005	6.5	13	nd	22	na	na	na	na	na	nd	nd	nd	nd	nd	7.3
7384	7272	0 - 0.2	277945.62	1265697.27	19.4	7	125	nd	20	15	0.005	13	17	nd	29	na	na	na	na	na	nd	nd	nd	nd	nd	4.7
7385	7273	0 - 0.2	278121.62	1265433.27	19.6	6	11	nd	21	11	0.01	6	14	nd	16	na	na	na	na	na	nd	nd	nd	nd	nd	7.2
7386	7274	0 - 0.2	278154.62	1265466.27	20.9	6	27	nd	20	13	0.01	6.5	14	nd	22	na	na	na	na	na	nd	nd	nd	nd	nd	5.3
7387	7275	0 - 0.2	278198.62	1265477.27	21.4	5.5	30	nd	18	13	0.015	8	15	nd	25	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	4.4
7388	7276	0 - 0.2	278110.62	1265477.27	19.8	7	87	nd	12	11	0.005	5.5	10	nd	32	na	na	na	na	na	nd	nd	nd	nd	nd	4.6
7389	7277	0 - 0.2	278033.62	1265521.27	18.3	6	35	nd	12	13	0.005	5	10	nd	21	na	na	na	na	na	nd	nd	nd	nd	nd	6.8
7390	7278	0 - 0.2	278077.62	1265510.27	18.8	5.5	14	nd	16	10	0.005	5	12	nd	17	na	na	na	na	na	nd	nd	nd	nd	nd	4.7
7391	7279	0 - 0.2	278121.62	1265521.27	19.9	6	120	nd	13	12	0.005	5.5	9	nd	20	na	na	na	na	na	nd	nd	nd	nd	nd	4.6
7392	7280	0 - 0.2	278165.62	1265510.27	21.3	6	25	nd	17	10	0.01	4.5	14	nd	16	na	na	na	na	na	nd	nd	nd	nd	nd	5
7393	7281	0 - 0.2	278209.62	1265521.27	21.8	5	40	nd	17	10	nd	5.5	13	nd	16	na	na	na	na	na	nd	nd	nd	nd	nd	4.6
7394	7282	0 - 0.2	278198.62	1265565.27	21.1	5.5	84	nd	10	10	nd	4	8.5	nd	14	na	na	na	na	na	nd	nd	nd	nd	nd	4.6
7395	7283	0 - 0.2	278154.62	1265554.27	20.0	6.5	115	nd	14	11	nd	5	9	nd	15	na	na	na	na	na	nd	nd	nd	nd	nd	4.9
7396	7284	0 - 0.2	278110.62	1265565.27	19.6	5	29	nd	16	12	0.02	7	15	nd	19	na	na	na	na	na	nd	nd	nd	nd	nd	4.8
7397	7285	0 - 0.2	278066.62	1265554.27	18.9	7	40	nd	12	13	0.005	6.5	10	nd	31	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5.7
7398	7286	0 - 0.2	278022.62	1265565.27	19.2	5.5	34	nd	13	12	0.015	6	10	nd	26	na	na	na	na	na	nd	nd	nd	nd	nd	4.7
7399	7287	0 - 0.2	277989.62	1265598.27	18.7	5	43	nd	13	12	nd	5	11	nd	18	na	na	na	na	na	nd	nd	nd	nd	nd	4.6
7400	7288	0 - 0.2	278077.62	1265598.27	19.5	5	15	nd	21	11	0.01	11	14	nd	16	na	na	na	na	na	nd	nd	nd	nd	nd	4.6
7401	7289	0 - 0.2	278165.62	1265598.27	20.1	3.5	18	nd	21	7.5	0.015	5	10	nd	8.5	na	na	na	na	na	nd	nd	nd	nd	nd	5
7402	7290	0 - 0.2	278209.62	1265609.27	20.6	5	12	nd	21	9	0.005	4.5	11	nd	10	na	na	na	na	na	nd	nd	nd	nd	nd	4.7
7403	7291	0 - 0.2	278121.62	1265609.27	19.2	4	19	nd	12	6.5	0.005	5	12	nd	10	na	na	na	na	na	nd	nd	nd	nd	nd	6.1

nd Not Detected
na Not Analysed

TABLE 4 VALIDATION DATA SITE 24F

Sample No	Point	Depth (m)	PIT LOC. CO-ORDS X EASTING	Y NORTHING	Z HEIGHT	(mg/kg) As	Ba	Cd	Cr	Cu	Hg	Ni	Pb	Sn	Zn	RDX	2,4,6-TNT	2,6-DNT	2,4-DNT	MNT	OCPs	PCBs	PAHs	TPH	BTEX	pH
Criteria						20	400	3	50	60	1	60	300	50	200						1	1	20			-
7404	7292	0 - 0.2	278033.62	1265609.37	19.4	6	40	nd	14	14	0.005	6.5	12	nd	22	na	na	na	na	na	nd	nd	nd	nd	nd	4.7
7405	7293	0 - 0.2	278286.62	1265741.27	18.5	6.5	11	nd	16	6	0.01	7	13	nd	36	na	na	na	na	na	nd	nd	nd	na	na	4.8
7406	7294	0 - 0.2	278297.62	1265697.27	18.7	4.5	33	nd	19	4.5	0.01	4.5	12	nd	10	na	na	na	na	na	nd	nd	nd	na	na	5.3
7407	7295	0 - 0.2	278286.62	1265653.27	19.2	5	34	nd	17	16	0.02	6	19	nd	29	nd	nd	nd	nd	nd	nd	nd	nd	na	na	4.9
7408	7296	0 - 0.2	278297.62	1265609.27	19.8	5.5	42	nd	18	12	0.005	6	12	nd	26	na	na	na	na	na	nd	nd	nd	na	na	4.9
7409	7297	0 - 0.2	278253.62	1265774.27	18.3	6	34	nd	14	14	0.01	6	12	nd	48	na	na	na	na	na	nd	nd	nd	na	na	4.4
7410	7298	0 - 0.2	278253.62	1265686.27	18.7	5	53	nd	12	10	0.01	3.5	12	nd	16	na	na	na	na	na	nd	nd	nd	na	na	6.5
7411	7299	0 - 0.2	278253.62	1265598.27	20.8	5.5	33	nd	12	12	0.005	7	12	nd	33	na	na	na	na	na	nd	nd	nd	na	na	4.4
Mean						5.6	47.3		15.4	13.4	0.008	7.6	13.6		22.2											
Standard Deviation						0.8	35.6		3.2	3.8	0.004	3	2.9		8.3											
Co-efficient of Variation						0.1	0.7		0.2	0.3	0.5	0.4	0.2		0.4											

nd Not Detected
na Not Analysed

Appendix F – Preliminary Material Classification - Stockpile 30

JBS&G 51056-101500
L01 Central Precinct Stockpile 30 Preliminary Assessment (Rev A)

26 August 2015

Mr Glyn Richards
Lend Lease
Via email: Glyn.richards@lendlease.com

Cc: Richard.ward@lendlease.com
Cc: Jaime.clouten@cidsa.com.au

Preliminary Material Classification – Stockpile 30 located within Central Precinct, Llandilo, NSW.

Dear Glyn,

1. Introduction and Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Maryland Development Company Pty Ltd (the client) to conduct a preliminary materials characterisation of Stockpile 30 (SP30) located within Stage 4 of Central Precinct, Llandilo, NSW (the site). The Central Precinct site is legally identified as part Lot 1037 DP 1149525.

It is understood SP30 is located in the north east of the development site (**Figure 1 & Figure 2**) and is reported to comprise approximately 74,780 m^3 of biosolids originating from the St Marys Sewage Treatment Plant (STP) in the 1980s. A letter from the NSW EPA (ADI 1996[1] and EPA 1996[2]) indicates the material within the stockpile can be investigated as if it were contaminated soil.

Stockpile 30 history and known information is summarised below:

- Site 24F reported in ADI (1996c**3**) was a treated sewage sludge settling area. In the mid 1980s, the St Marys Sewage Treatment Plant received approval from the St Marys Munitions Filling Factory to pump treated sludge from its plant onto ADI land. In the initial investigation Site 24F was identified as a disused sewage effluent dumping area boarded by 0.5-1 m high earth mounds. The estimated area was 5 hectares with five distinct ponds separated by 0.5 m high earthen mounds.
- ADI (1996c) reported 148 samples were collected to characterise and delineate the dried sludge. Samples were analysed for a range of heavy metals, pH, OCPs, PCBs, TKN, NH4, NO3, NO2, total P and PAH. Impacts above the then site criteria were reported for Cr, Cu, Zn, OCPs, PCBs and PAHs.
- Areas of OCP, PCB and PAH impacts reported in the sludge materials were excavated and disposed to landfill with validation samples collected from these excavations ADI (1996c).

[1] *Sewage Sludge on ADI Property*, ADI Limited, April 1996 (ADI 1996)
[2] *Re: Sludge Stored in Southern Sector*, EPA, May 1996 (EPA 1996)
[3] *Volume 1 Validation report for the Southern Sector East of the ADI St Marys Property*, ADI limited, July 1996 (ADI 1996c).

- Compared to current site criteria (NEPM 2013) the data provided for the biosolids stockpile (JBS&G 2015a) in general meets todays residential human health investigation levels. There were several exceedances for total PAHs above the BaP TEQ (3 mg/kg). Analytical results could not be located and reviewed to calculate the BaP TEQ, therefore PAHs and BaP remain a contaminant of concern for the biosolids.

The biosolids have been in the stockpile since the mid-late 1990s (>15 years) which would suggest the survival of any bacteria, viruses or helminth ova is unlikely.

While EPA (2000[4]) requests analysis of these parameters for biosolids of unknown processes the following is known about Stockpile 30:

- The biosolids originated from the St Marys STP and were reported to have been left to dry in 0.5 m thick beds on the former St Marys ADI Property (ADI 1996). Exposure of biosolids to sunlight (ultra-violet light) and dewatering is reported to reduce bacterica, viruses and pathogen survival time significantly (Epstein 2003**5**). ADI (1996c) reported only one sample with a detection of Faecal Coliforms and E.Coli at 4 MPN per gram.
- Bacteria and viruses are unlikely to survive any greater than 100 days and Helminth Ova have at worst been shown to survive up to 7 years in soil but in general they can only survive up to 2 years (SAFIR 2009**6**).

Consequently, based on the above information, it is considered analysis of the biosolids for bacteria, viruses and helminth ova is no longer required. As they are all likely to be inactive and therefore non-infective.

2. Objectives

The objective of this investigation was to provide a preliminary materials classification of SP30 so as to enable a preliminary assessment of the potential suitable 'end uses' of the stockpile.

3. Methodology

Field works were conducted on 14 August 2015 by one of JBS&G's trained and experienced environmental scientists. Soil samples (1 x 250 mL jar) were collected from a total of eight locations (**Figure 3**) at 0-0.15 m, 0.3 m, 0.5 m and then at 0.5-1.0 m intervals to the base of the stockpile. In addition, a 10 L sample was collected from each 1 m interval for asbestos quantification works as advised in NEPM 2013 and WA DoH 2009. During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination were noted.

Collected samples were immediately transferred to laboratory supplied sample jars/ bags. The sample jars were then transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form was then completed and forwarded with the samples to the testing laboratory. Based upon field observations, samples were analysed in accordance with the laboratory schedule (**Table 4.1**).

[4] *Environmental Guidelines Use and Disposal of Biosolids Products*, NSW EPA, 1997 Reprinted 2000 (EPA 2000).
[5] *Land Application of Sewage Sludge and Biosolids*, Eliot Epstein, CRC Press LLC, 2003 (Eptein 2003). https://books.google.com.au/books?id=JKia8ntQ8zoC&pg=PA137&dq=Helminth+Ova+survival+sunlight&hl=en&sa=X&ei=S_K-VO6xNIHemAXs44GwDw&ved=0CCIQ6AEwAQ#v=onepage&q=Helminth%20Ova%20survival%20sunlight&f=false accessed 21 January 2015
[6] *Survival and transport of helminth eggs and faecal coliforms in soil and agricultural produce*, June 2009, http://www.safir4eu.org/Lib/SAFIR/Deliverable/D5_4.pdf accessed 21 January 2015 (SAFIR 2009).

Not all samples collected were analysed. All samples will remain at the primary laboratory for a period of two months for possible future analysis (subject to holding times) if required following the receipt of sample results.

4. Laboratory Analysis

JBS&G contracted Eurofins|mgt Australia (Eurofins), NATA accredited for the analysis undertaken, at Lane Cove, NSW as the primary laboratory for the required analyses. In addition, the laboratory was required to meet JBS&G internal QA/QC requirements. Laboratory analysis of samples was conducted in accordance with **Table 4.1** below.

Table 4.1: Analytical Schedule

Sample Type	No. of Sampling Locations	Analyses (exc. QA/QC)
Soil	8 Test pit locations	Heavy metals (As, Ba, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 24 samples Selenium – 24 samples PAH – 24 samples TRH – 8 samples OCP/PCBs – 8 samples Phenols – 8 samples Asbestos (500g sample only) – 8 samples

In addition to the above detailed laboratory analysis, two duplicates and triplicates, trip blank and spike and rinsate samples were analysed.

5. Assessment Criteria

To determine the suitability of the material for a number of 'end uses', concentrations of contaminants were compared against NEPC (2013) health-based investigation and screening levels (HILs and HSLs), and ecological investigation and screening levels (EILs and ESLs), for various land uses detailed below:

- HIL A – Residential with gardens/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry);
- HIL C – Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths;
- HIL D – Commercial/industrial, includes premises such as shops, offices, factories and industrial sites;
- HSL A – Low density residential;
- HSL C – Recreational/ open space;
- HSL D – Commercial/ Industrial;
- EILs – Site Specific; and
- ESLs – Urban residential and public open space.

6. Quality Assurance/Quality Control

The laboratory's Quality Assurance/Quality Control (QA/QC) for the analytical batch included analysis of laboratory duplicates, matrix spike recoveries, surrogates recoveries and method blanks.

Field intra-laboratory (duplicate) and inter-laboratory (triplicate) soil samples were analysed at a rate of 1 per 20 samples with a total of 2 per 24 samples. The results of analysis for the intra-laboratory duplicate soil samples and inter-laboratory triplicate soil samples were generally within

the acceptance criteria of 0-50% with the acceptance of a small number of PAHs, metals and TRHs/TPHs. It is considered that these elevated RPDs are due to the heterogeneous nature of the fill materials encountered within the stockpile and are not considered to effect the reliability of the data. RPD results are provided in **Table 2**, **Attachment 3**.

The results of the remaining QA/QC analyses were considered to be of acceptable quality for the purpose of the assessment.

7. Results

7.1 Observations

At the time of the inspection, the stockpile was approximately 75,000 m^3 with a maximum height of 6 m. Vegetation was observed to grow out of the stockpile which included turf and small trees. The vegetation was noted to be in good condition.

During the excavation, the outer portions of the stockpile was identified as a silty clay with medium plasticity and damp with inclusions of gravel, organic material and trace amounts of building waste such as concrete, plastic and metal fragments. However with increased depth (> 2 m into the stockpile), moisture levels increased including the additional presence of a strong organic smell. No ACM was visually observed during the investigation.

7.2 Analytical Results

Soil summary analytical results are provided in **Table 1**, **Attachment 3.** Detailed laboratory reports and chain of custody documentation is provided in **Attachment 5**.

Heavy Metals

Concentrations of Heavy metals analysed were within the assessed thresholds with the exception of the residential criteria (HIL A) for Chromium (Total). This sample was identified as TP05, 3.4-3.6 and had a value of 110 mg/kg.

PAHs

A large number of samples analysed for PAHs exceeded or equalled the thresholds for Urban Residential and Public Open Space, Fine Soil (ESL) for Benzo (a) pyrene. These samples were identified as TP01, 1.7-1.9, TP02, 1.2-1.4, TP04, 5.7-5.9, TP05, 3.4-3.6, TP05, 5.3-5.5, TP07, 1.5-1.7, TP07, 2.3-2.5, TP08, 2.2-2.4, TP08, 3.7-3.9 QC01 and QC01A with concentrations ranging from 0.7-21 mg/kg.

Samples also exceeded the same criteria for Carcinogenic PAHs as B(a)P TPE. These samples were identified as TP02, 1.2-1.4, TP04, 5.7-5.9, TP05, 3.4-3.6, TP05, 5.3-5.5 and QC01 with concentrations of 28.81 mg/kg, 8.609 mg/kg, 3.102 mg/kg, 5.58 mg/kg and 5.946 mg/kg respectively. In addition, sample TP02, 1.2-1.4 exceeded the same criteria for PAHs (Total) with a value of 400 mg/kg.

TRHs

All analysed samples had concentrations below the assessed criteria for TRHs.

OCPs/PCBs

All analysed samples had concentrations below the assessed criteria for OCPs/PCBs.

Phenols

All analysed samples had concentrations below the assessed criteria for Phenols

Asbestos

At the time of the inspection, no ACM was visually observed in the stockpile material or identified in the laboratory assessed samples.

8. Conclusions and Recommendations

Based on the results discussed above and the limitations provided in **Attachment 1**, the following was concluded:

- This preliminary assessment is only an indicative assessment of the stockpiled material and should only be used as a general guide to the nature of the material. Additional sampling as dictated by the SAQP**7** is required before a final classification can be made;
- A number of carcinogenic B(a)P TPE concentrations were 250% greater than the residential HILs (defined as a hotspot). These hotspots would need to be removed from the stockpile prior to onsite reuse of the bulk of SP30. These hotspots concentrations were below the commercial/industrial HILs and could be placed underneath a permanently sealed surface (e.g. roadway). Additionally, if geotechically required, this material may be able to be mixed with another suitable material and then placed underneath a permanently sealed surface (e.g. roadway);
- Overall, based on the number of exceedances of the ESL for BaP it appears the majority of the materials in SP30 would be unsuitable to remain at the surface of a residential or open space/recreational property. However, the material would be suitable to be placed at 2 m below the final development ground surface of a residential or open space/recreational property. Additionally, if geotechically required, this material may be able to be mixed with another suitable material and then placed at 2 m below the final development ground surface; and
- Furthermore, it is noted the future reuse of the above materials should take place outside of any auditable areas within the development site or until these areas have been signed off by the Site Auditor.

Should you require clarification, please contact Katie Linz on 02 8245 0300 or by email klinz@jbsg.com.au.

Yours sincerely:

Matthew Murray
Environmental Consultant
JBS&G Australia Pty Ltd

Reviewed/Approved by:

Kellie Guenther
Principal Contaminated Land
JBS&G Australia Pty Ltd

Attachments:

[7] *Sampling Analysis and Quality Plan Central Precinct Llandilo NSW*. JBS&G Pty Ltd. 16 April 2015 (JBS&G 2015a).

1) Limitations
2) Figures
3) Analytical Summary Table
4) Laboratory Reports and Chain of Custody Documentation

Attachment 1 – Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

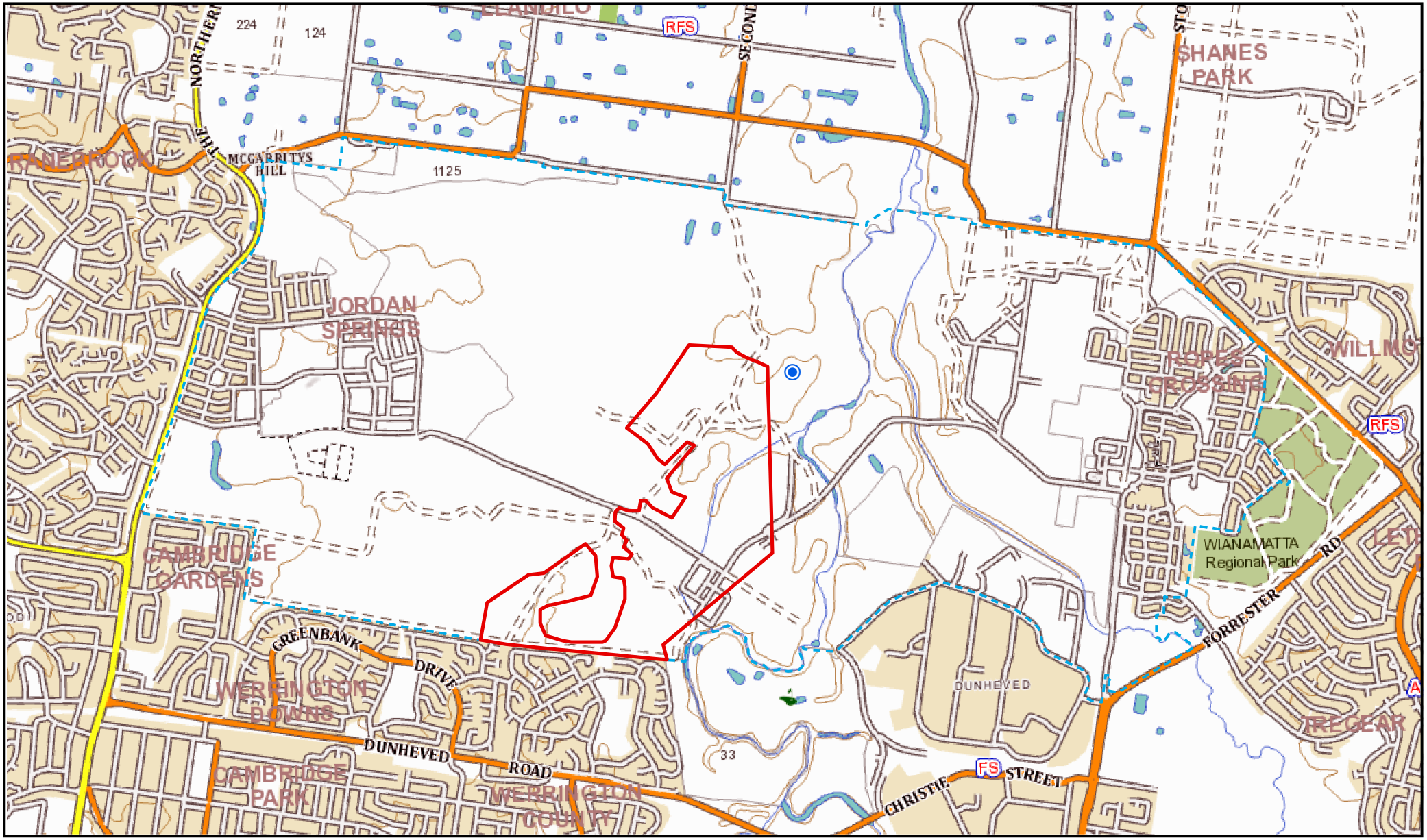
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Attachment 2 – Figures



Source: Base Image - © Near Map www.nearmap.com, imagery date 19-09-2013, accessed 24-03-2014

0 250 500 1,000 m

Scale:1:30,000

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
A	Original Issue - L001	SE	26-08-2015

Legend:

- Central Precinct Residential Boundary
- CHK001/1 Audit Statement Boundary
- Stockpile 30 Location

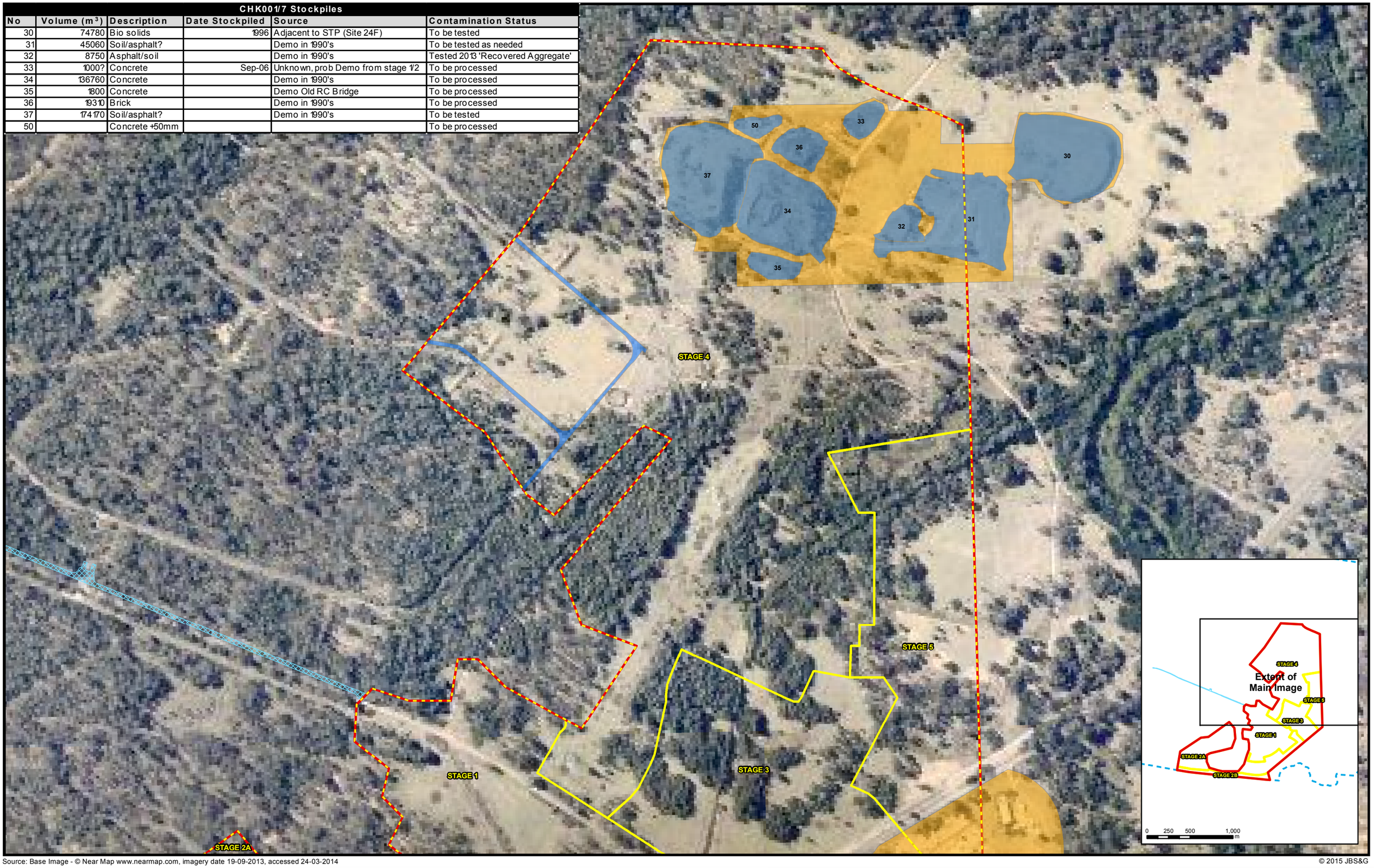
JBS&G **Figure 1: Site Location**

Client: Maryland Development Company

Project: Central Precinct

Job No: 51056 File Name: 51056_01

CHK001/7 Stockpiles					
No	Volume (m^3)	Description	Date Stockpiled	Source	Contamination Status
30	74780	Bio solids	1996	Adjacent to STP (Site 24F)	To be tested
31	45060	Soil/asphalt?		Demo in 1990's	To be tested as needed
32	8750	Asphalt/soil		Demo in 1990's	Tested 2013 'Recovered Aggregate'
33	1000?	Concrete	Sep-06	Unknown, prob Demo from stage 1/2	To be processed
34	136760	Concrete		Demo in 1990's	To be processed
35	1800	Concrete		Demo Old RC Bridge	To be processed
36	19310	Brick		Demo in 1990's	To be processed
37	174170	Soil/asphalt?		Demo in 1990's	To be tested
50		Concrete +50mm			To be processed



Source: Base Image - © Near Map www.nearmap.com, imagery date 19-09-2013, accessed 24-03-2014

0 50 100 200 m

Scale:1:5,000

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date
A3			
A	Original Issue - L001	SE	26-08-2015

Legend:
- Central Precinct Residential Boundary
- Stage 4 - Area Subject to Audit (8.0ha)
- Development Stages Boundary
- Jondan Springs Connector Road - Approximate Location Only
- CHK001/1 Audit Statement Boundary
- Unsearched Areas Or Areas of Hardstand/Buildings/Stockpiles

Reference: Site delineation and features based on Cardno 17-11-2014: Drawing Number 89914020-SK1006 Rev 1

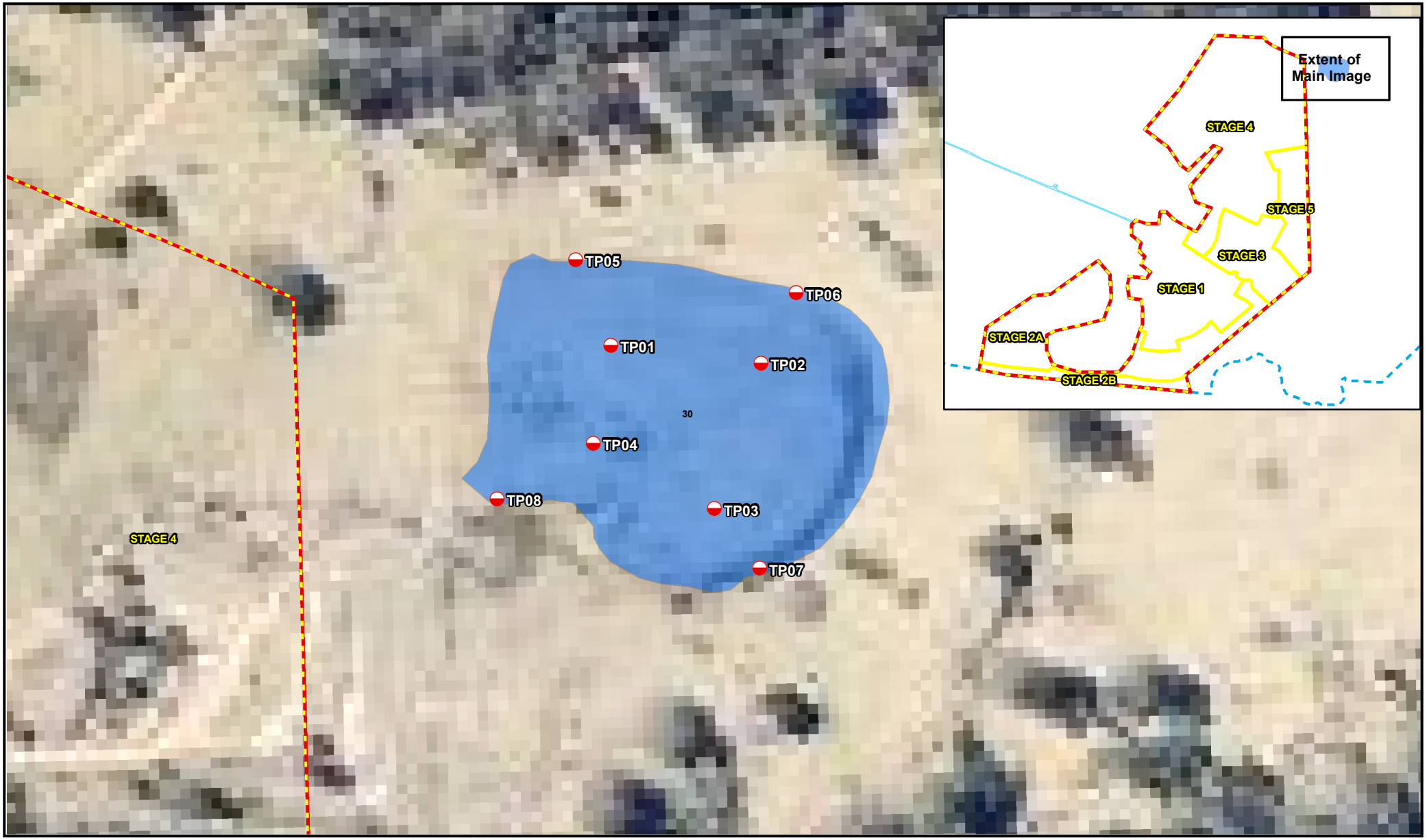
JBS&G

Figure 2: Stage 4 - Site Layout and Site Subject to Audit

Client: Maryland Development Company

Project: Central Precinct

Job No: 51056 File Name: 51056_02



Source: Base Image - © Near Map www.nearmap.com, imagery date 19-09-2013, accessed 24-03-2014

0 20 40 80 m

Scale:1:2,009

Datum: GDA 1994 MGA Zone 56 - AHD

Rev	Description	Drn.	Date:
A4			
A	Original Issue - L001	SE	27-08-2015

Legend:

- Central Precinct Residential Boundary
- CHK001/1 Audit Statement Boundary
- Development Stages Boundary
- Jondan Springs Connector Road - Approximate Location Only
- Stockpile 30
- Sample Location

JBS&G

Figure 3: Stockpile 30 and Sampling Locations

Client: Maryland Development Company

Project: Central Precinct

Job No: 51056 File Name: 51056_03

Attachment 3 – Analytical Summary Table

INSERT TABLE NAME
Project Number: 51056
Project Name: Stockpile 30 Preliminary Assessment

			Metals & Metalloids									TPHs (NEPC 1999)					TRHs (NEPC 2013)					Polycyclic Aromatic Hydrocarbons																				Chlorinated Benzenes
			Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Selenium (Total)	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	C6-C10 Fraction	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	C6 - C10 less BTEX (F1)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(b,j)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(j)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Carcinogenic PAHs as B(a)P TPE	PAHs (Total)	Total Positive PAHs	Hexachlorobenzene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			2.00	0.40	1.00	1.00	1.00	0.05	1.00	2.00	1.00	20.00	20.00	50.00	50.00	50.00	20.00	50.00	100.00	100.00	20.00	0.10	0.10	0.10	0.10	0.05	0.50	0.50	0.50	0.50		0.10	0.50	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10		0.50		0.05
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil																	180	120	1300	5600	180					0.7																			
NEPM 2013 Soil HIL A			100	20	100	6000	300	40	400	200	7400																															3	300		10
NEPM 2013 Soil HIL C			300	90	300	17000	600	80	1200	700	30000																															3	300		10
NEPM 2013 Soil HIL D			3000	900	3600	240000	1500	730	6000	10000	400000																															40	4000		80
NEPM 2013 Soil HSL A - Sensitive Setting																					45																			3					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m																					50																			5					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m																					90																			999999					
NEPM 2013 Soil HSL C - Sensitive Setting																					999999																			999999					
NEPM 2013 Soil HSL C for Vapour Intrusion - Clay 0 to <1m																					999999																			999999					
NEPM 2013 Soil HSL C for Vapour Intrusion - Clay 1 to <2m																					999999																			999999					
NEPM 2013 Soil HSL D - Sensitive Setting																					250																			999999					
NEPM 2013 Soil HSL D for Vapour Intrusion - Clay 0 to <1m																					310																			999999					
NEPM 2013 Soil HSL D for Vapour Intrusion - Clay 1 to <2m																					480																			999999					
Field_ID	**Depth**	**Date**																																										
QC01		14-Aug-15	6.5	0.4	42	56	30	0.18	13	<2	81	<20	<20	87	70	160	<20	<50	160	<100	<20	<0.5	<0.5	1.1	3.1	3.3	5.9	5.9	5.9	2.7	-	2.5	2.3	3.1	1.5	8.7	<0.5	2.8	<0.5	5	7.1	5.946	43	-	<0.05
QC01A		14-Aug-15	6	<0.4	33	33	24	0.1	10	<2	39	<25	<50	<100	<100	-	<25	<50	100	<100	-	0.1	<0.1	0.3	0.7	0.7	-	-	-	-	1	0.5	-	0.7	<0.1	2	<0.1	0.5	<0.1	0.9	1.8	-	-	9.5	<0.1
QC05		14-Aug-15	4.1	0.5	32	77	26	0.23	11	<2	86	<20	<20	<50	<50	<50	<20	<50	<100	<100	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	-	<0.05
QC05A		14-Aug-15	7	0.8	56	120	44	0.4	16	<2	110	<25	<50	<100	<100	-	<25	<50	<100	<100	-	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	-	<0.2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	0	<0.1
TP01 1.7-1.9	1.7-1.9	14-Aug-15	6.5	<0.4	37	42	26	0.22	14	<2	80	<20	<20	91	90	180	<20	<50	180	<100	<20	<0.5	<0.5	0.6	1.6	2	2.7	2.9	3.2	1.5	-	1.7	1.7	2.1	<0.5	4.7	<0.5	1.8	<0.5	3.4	3.5	2.948	25	-	<0.05
TP01 3.1-3.3	3.1-3.3	14-Aug-15	5.2	0.5	36	56	27	0.19	12	<2	84	<20	<20	54	83	140	<20	<50	130	<100	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	0.6	<1.21	1.4	-	<0.05
TP01 5.3-5.5	5.3-5.5	14-Aug-15	5.7	0.9	40	91	32	0.3	26	3.2	180	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	0.9	1.4	<1.21	3.8	-	-
TP02 0.15-0.3	0.15-0.3	14-Aug-15	6.1	1.2	61	150	55	0.58	16	3	160	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	-	-
TP02 1.2-1.4	1.2-1.4	14-Aug-15	7.4	1	73	150	60	0.54	20	3	160	-	-	-	-	-	-	-	-	-	-	12	<0.5	18	20	21	29	29	29	13	-	22	17	24	<0.5	85	6.7	21	<0.5	77	68	28.81	400	-	-
TP02 4.7-4.9	4.7-4.9	14-Aug-15	5	0.7	43	98	38	0.35	16	2	130	<20	<20	<50	61	61	<20	<50	<100	<100	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	-	<0.05
TP03 0.3-0.5	0.3-0.5	14-Aug-15	5.5	0.5	37	75	41	0.31	19	<2	95	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	1.1	1.3	<1.21	3.8	-	-
TP03 3.6-3.8	3.6-3.8	14-Aug-15	7.1	0.5	34	61	28	0.17	12	<2	100	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	-	-
TP03 5.2-5.4	5.2-5.4	14-Aug-15	14	0.7	59	63	57	0.17	14	3.4	150	<20	<20	<50	<50	<50	<20	<50	<100	<100	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	-	<0.05
TP04 0.3-0.5	0.3-0.5	14-Aug-15	6.2	0.6	57	100	49	0.37	15	2.2	89	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	-	-
TP04 2.6-2.8	2.6-2.8	14-Aug-15	6.5	0.5	41	82	37	0.26	15	2.8	96	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	-	-
TP04 5.7-5.9	5.7-5.9	14-Aug-15	4.6	0.6	39	76	31	0.26	15	<2	110	<20	<20	270	140	410	<20	<50	420	<100	<20	2.5	<0.5	4.8	6.9	5.1	8.6	8.6	8.6	5	-	3.3	3.8	6.6	1.5	26	1.7	3.4	<0.5	19	19	8.609	110	-	<0.05
TP05 3.4-3.6	3.4-3.6	14-Aug-15	7.1	1.6	110	190	71	0.84	28	2.2	220	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0.6	1.9	2.1	2.9	3.1	3.4	1.4	-	1.9	1.8	2.3	<0.5	6.5	<0.5	2	<0.5	3.3	5.4	3.102	29	-	-
TP05 5.3-5.5	5.3-5.5	14-Aug-15	9	1	66	150	54	0.49	18	2.5	140	<20	<20	150	130	280	<20	<50	280	<100	<20	1.1	<0.5	2	4	3.9	5.3	5.6	5.8	3.5	-	2.9	3.4	4.1	<0.5	14	0.6	2.7	<0.5	10	11	5.58	63	-	<0.05
TP06 0.5-0.7	0.5-0.7	14-Aug-15	6.2	<0.4	29	60	28	0.18	11	<2	66	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	-	-
TP06 3.1-3.3	3.1-3.3	14-Aug-15	4.9	<0.4	29	26	19	0.07	20	<2	42	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	-	-
TP06 4.6-4.8	4.6-4.8	14-Aug-15	5.6	<0.4	36	42	29	0.11	28	<2	92	<20	<20	<50	<50	<50	<20	<50	<100	<100	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	-	<0.05
TP07 1.5-1.7	1.5-1.7	14-Aug-15	5.8	0.8	47	110	37	0.41	20	3.1	160	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	1.3	1	1.5	1.8	2	0.8	-	1.4	1.1	1.3	<0.5	3.9	<0.5	1.6	<0.5	1.8	3.5	1.757	18	-	-
TP07 2.3-2.5	2.3-2.5	14-Aug-15	5.8	<0.4	27	50	29	0.18	13	2.2	77	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	0.8	0.8	1.2	1.4	1.7	0.8	-	1	0.7	1	<0.5	2	<0.5	1.3	<0.5	1.3	1.6	1.43	11	-	-
TP07 3.8-4	3.8-4	14-Aug-15	6.3	1.6	56	170	64	0.61	35	<2	260	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	-	-
TP08 2.2-2.4	2.2-2.4	14-Aug-15	5.6	0.5	26	46	24	0.13	12	2.9	86	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	0.7	1	1.4	1.7	1.9	1	-	1.2	0.7	1	<0.5	2.2	<0.5	1.4	<0.5	0.7	2.1	1.652	12	-	-
TP08 3.1-3.3	3.1-3.3	14-Aug-15	4.9	1.2	64	150	54	0.6	20	2.4	180	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	-	-
TP08 3.7-3.9	3.7-3.9	14-Aug-15	6.1	0.4	24	36	26	0.12	9.7	2.2	67	<20	<20	<50	<50	<50	<20	<50	<100	<100	<20	<0.5	<0.5	<0.5	0.9	0.9	1.3	1.5	1.8	0.7	-	1.1	0.8	0.8	<0.5	2.8	<0.5	1.4	<0.5	1.9	2.7	1.549	14	-	<0.05

INSERT TABLE NAME
Project Number: 51056
Project Name: Stockpile 30 Preliminary Assessment

			Polychlorinated Biphenyls								Phenols										Organochlorine Pesticides																																		Other	Organic
			Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2-chlorophenol	2-Methylphenol	2-nitrophenol	3- & 4-Methylphenol	4-Chloro-3-Methylphenol	Phenol	Phenols (Total)	Aldrin	Dieldrin	Aldrin + Dieldrin (Sum of Total)	DDD	4,4-DDE	DDT	DDT+DDE+DDD (Sum of Total)	alpha-BHC	beta-BHC	delta-BHC	Chlordane	alpha-Chlordane	gamma-Chlordane	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Pentachlorophenol	Toxaphene	% Moisture 103oC	TRH >C10-C16 less Naphthalene (F2)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	MG/KG
EQL			0.10		0.10	0.10	0.10	0.10	0.10	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	1.00	0.50	0.50		0.05	0.05		0.05	0.05	0.05				0.10			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.10	1.00	1.00	0.10	50.00
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil																																																	
NEPM 2013 Soil HIL A										1										3000				6			240			50						10			6			300	100	20		
NEPM 2013 Soil HIL C										1										40000				10			400			70						20			10			400	120	30		
NEPM 2013 Soil HIL D										7										240000				45			3600			530						100			50			2500	660	160		
NEPM 2013 Soil HSL A - Sensitive Setting																																																
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m																																																
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m																																																
NEPM 2013 Soil HSL C - Sensitive Setting																																																
NEPM 2013 Soil HSL C for Vapour Intrusion - Clay 0 to <1m																																																
NEPM 2013 Soil HSL C for Vapour Intrusion - Clay 1 to <2m																																																
NEPM 2013 Soil HSL D - Sensitive Setting																																																
NEPM 2013 Soil HSL D for Vapour Intrusion - Clay 0 to <1m																																																
NEPM 2013 Soil HSL D for Vapour Intrusion - Clay 1 to <2m																																																
Field_ID	**Depth**	**Date**																																															
QC01		14-Aug-15	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	-	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1	19	<50
QC01A		14-Aug-15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	<5	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	-	-	-
QC05		14-Aug-15	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	-	<0.05	0.06	0.085	<0.05	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1	11	<50
QC05A		14-Aug-15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	<5	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	-	-	-
TP01 1.7-1.9	1.7-1.9	14-Aug-15	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	-	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1	18	<50
TP01 3.1-3.3	3.1-3.3	14-Aug-15	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	-	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1	15	<50
TP01 5.3-5.5	5.3-5.5	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-
TP02 0.15-0.3	0.15-0.3	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-
TP02 1.2-1.4	1.2-1.4	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-
TP02 4.7-4.9	4.7-4.9	14-Aug-15	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	-	<0.05	0.1	0.125	<0.05	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1	21	<50
TP03 0.3-0.5	0.3-0.5	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-
TP03 3.6-3.8	3.6-3.8	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-
TP03 5.2-5.4	5.2-5.4	14-Aug-15	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	-	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1	25	<50
TP04 0.3-0.5	0.3-0.5	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-
TP04 2.6-2.8	2.6-2.8	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-
TP04 5.7-5.9	5.7-5.9	14-Aug-15	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	-	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1	18	<50
TP05 3.4-3.6	3.4-3.6	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-
TP05 5.3-5.5	5.3-5.5	14-Aug-15	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	-	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1	14	<50
TP06 0.5-0.7	0.5-0.7	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-
TP06 3.1-3.3	3.1-3.3	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-
TP06 4.6-4.8	4.6-4.8	14-Aug-15	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	<1	16	<50
TP07 1.5-1.7	1.5-1.7	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-
TP07 2.3-2.5	2.3-2.5	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-
TP07 3.8-4	3.8-4	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-
TP08 2.2-2.4	2.2-2.4	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-
TP08 3.1-3.3	3.1-3.3	14-Aug-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-
TP08 3.7-3.9	3.7-3.9	14-Aug-15	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	-	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.15	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1	16	<50

Attachment 4 - Laboratory Reports and Chain of Custody Documentation

eurofins | mgt

Certificate of Analysis

JBS & G Australia (NSW & WA) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 1254

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: **Katie Linz**

Report **468774-S**
Project name SP30
Project ID 51056
Received Date Aug 14, 2015

Client Sample ID			**TP01 1.7-1.9**	**TP01 3.1-3.3**	**TP01 5.3-5.5**	**TP02 0.15-0.3**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Au11569**	**S15-Au11572**	**S15-Au11576**	**S15-Au11579**
Date Sampled			**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	< 20	< 20	-	-
TRH C15-C28	50	mg/kg	91	54	-	-
TRH C29-C36	50	mg/kg	90	83	-	-
TRH C10-36 (Total)	50	mg/kg	180	140	-	-
Total Recoverable Hydrocarbons - 2013 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 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	2.7	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	2.9	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	3.2	1.2	1.2	1.2
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	0.6	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	1.6	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	2.0	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	1.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	1.7	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	1.7	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	2.1	< 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	4.7	0.8	1.5	< 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	1.8	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	3.4	< 0.5	0.9	< 0.5
Pyrene	0.5	mg/kg	3.5	0.6	1.4	< 0.5
Total PAH*	0.5	mg/kg	25	1.4	3.8	< 0.5
2-Fluorobiphenyl (surr.)	1	%	93	117	117	113
p-Terphenyl-d14 (surr.)	1	%	92	118	111	125

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP01 1.7-1.9 Soil S15-Au11569 Aug 14, 2015	TP01 3.1-3.3 Soil S15-Au11572 Aug 14, 2015	TP01 5.3-5.5 Soil S15-Au11576 Aug 14, 2015	TP02 0.15-0.3 Soil S15-Au11579 Aug 14, 2015
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	-
Toxaphene	1	mg/kg	< 1	< 1	-	-
Dibutylchlorendate (surr.)	1	%	111	106	-	-
Tetrachloro-m-xylene (surr.)	1	%	118	100	-	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	111	106	-	-
Speciated Phenols						
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	-
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	-	-
2.4.5-Trichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	-
2.4.6-Trichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenol	0.5	mg/kg	< 0.5	< 0.5	-	-
2-Methylphenol (o-Cresol)	0.5	mg/kg	< 0.5	< 0.5	-	-
3&4-Methylphenol (m&p-Cresol)	1	mg/kg	< 1	< 1	-	-
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	-
2-Nitrophenol	0.5	mg/kg	< 0.5	< 0.5	-	-
4-Chloro-3-methylphenol	0.5	mg/kg	< 0.5	< 0.5	-	-
Pentachlorophenol	1	mg/kg	< 1	< 1	-	-
Phenol-d5 (surr.)	1	%	86	97	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	180	130	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-

Client Sample ID			TP01 1.7-1.9	TP01 3.1-3.3	TP01 5.3-5.5	TP02 0.15-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Au11569**	**S15-Au11572**	**S15-Au11576**	**S15-Au11579**
Date Sampled			**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	6.5	5.2	5.7	6.1
Cadmium	0.4	mg/kg	< 0.4	0.5	0.9	1.2
Chromium	5	mg/kg	37	36	40	61
Copper	5	mg/kg	42	56	91	150
Lead	5	mg/kg	26	27	32	55
Mercury	0.05	mg/kg	0.22	0.19	0.30	0.58
Nickel	5	mg/kg	14	12	26	16
Selenium	2	mg/kg	< 2	< 2	3.2	3.0
Zinc	5	mg/kg	80	84	180	160
% Moisture	0.1	%	18	15	21	20

Client Sample ID			TP02 1.2-1.4	TP02 4.7-4.9	TP03 0.3-0.5	TP03 3.6-3.8
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Au11582**	**S15-Au11589**	**S15-Au11594**	**S15-Au11601**
Date Sampled			**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	< 50	-	-
TRH C29-C36	50	mg/kg	-	61	-	-
TRH C10-36 (Total)	50	mg/kg	-	61	-	-
Total Recoverable Hydrocarbons - 2013 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 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	29	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	29	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	29	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	12	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	18	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	20	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	21	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	13	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	22	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	17	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	24	< 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	85	< 0.5	1.4	< 0.5
Fluorene	0.5	mg/kg	6.7	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	21	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	77	< 0.5	1.1	< 0.5
Pyrene	0.5	mg/kg	68	< 0.5	1.3	< 0.5

Client Sample ID			TP02 1.2-1.4	TP02 4.7-4.9	TP03 0.3-0.5	TP03 3.6-3.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Au11582	S15-Au11589	S15-Au11594	S15-Au11601
Date Sampled			Aug 14, 2015	Aug 14, 2015	Aug 14, 2015	Aug 14, 2015
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Total PAH*	0.5	mg/kg	400	< 0.5	3.8	< 0.5
2-Fluorobiphenyl (surr.)	1	%	89	100	105	107
p-Terphenyl-d14 (surr.)	1	%	122	93	113	108
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	0.10	-	-
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	-	-
g-BHC (Lindane)	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	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Dibutylchlorendate (surr.)	1	%	-	101	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	97	-	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	-	-
Total PCB*	0.5	mg/kg	-	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	-	101	-	-
Speciated Phenols						
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2.4.5-Trichlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4.6-Trichlorophenol	0.5	mg/kg	-	< 0.5	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
2-Methylphenol (o-Cresol)	0.5	mg/kg	-	< 0.5	-	-
3&4-Methylphenol (m&p-Cresol)	1	mg/kg	-	< 1	-	-
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	-
2-Nitrophenol	0.5	mg/kg	-	< 0.5	-	-
4-Chloro-3-methylphenol	0.5	mg/kg	-	< 0.5	-	-
Pentachlorophenol	1	mg/kg	-	< 1	-	-
Phenol-d5 (surr.)	1	%	-	84	-	-

Client Sample ID			TP02 1.2-1.4	TP02 4.7-4.9	TP03 0.3-0.5	TP03 3.6-3.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Au11582	S15-Au11589	S15-Au11594	S15-Au11601
Date Sampled			Aug 14, 2015	Aug 14, 2015	Aug 14, 2015	Aug 14, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	< 100	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
Heavy Metals						
Arsenic	2	mg/kg	7.4	5.0	5.5	7.1
Cadmium	0.4	mg/kg	1.0	0.7	0.5	0.5
Chromium	5	mg/kg	73	43	37	34
Copper	5	mg/kg	150	98	75	61
Lead	5	mg/kg	60	38	41	28
Mercury	0.05	mg/kg	0.54	0.35	0.31	0.17
Nickel	5	mg/kg	20	16	19	12
Selenium	2	mg/kg	3.0	2.0	< 2	< 2
Zinc	5	mg/kg	160	130	95	100
% Moisture	0.1	%	19	21	19	20

Client Sample ID			TP03 5.2-5.4	TP04 0.3-0.5	TP04 2.6-2.8	TP04 5.7-5.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Au11604	S15-Au11608	S15-Au11614	S15-Au11620
Date Sampled			Aug 14, 2015	Aug 14, 2015	Aug 14, 2015	Aug 14, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	< 50	-	-	270
TRH C29-C36	50	mg/kg	< 50	-	-	140
TRH C10-36 (Total)	50	mg/kg	< 50	-	-	410
Total Recoverable Hydrocarbons - 2013 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 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	< 50
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	8.6
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	8.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	8.6
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	2.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	4.8
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	6.9
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	5.1
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	5.0
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	3.3
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	3.8
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	6.6
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	26
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.7

Client Sample ID			TP03 5.2-5.4	TP04 0.3-0.5	TP04 2.6-2.8	TP04 5.7-5.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Au11604	S15-Au11608	S15-Au11614	S15-Au11620
Date Sampled			Aug 14, 2015	Aug 14, 2015	Aug 14, 2015	Aug 14, 2015
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	3.4
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	19
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	19
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	110
2-Fluorobiphenyl (surr.)	1	%	102	124	95	108
p-Terphenyl-d14 (surr.)	1	%	102	98	117	100
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	-	< 0.2
Toxaphene	1	mg/kg	< 1	-	-	< 1
Dibutylchlorendate (surr.)	1	%	111	-	-	106
Tetrachloro-m-xylene (surr.)	1	%	112	-	-	102
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	111	-	-	106
Speciated Phenols						
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4.5-Trichlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4.6-Trichlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
Phenol	0.5	mg/kg	< 0.5	-	-	< 0.5
2-Methylphenol (o-Cresol)	0.5	mg/kg	< 0.5	-	-	< 0.5
3&4-Methylphenol (m&p-Cresol)	1	mg/kg	< 1	-	-	< 1
2-Chlorophenol	0.5	mg/kg	< 0.5	-	-	< 0.5

Client Sample ID			TP03 5.2-5.4	TP04 0.3-0.5	TP04 2.6-2.8	TP04 5.7-5.9
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Au11604**	**S15-Au11608**	**S15-Au11614**	**S15-Au11620**
Date Sampled			**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**
Test/Reference	LOR	Unit				
Speciated Phenols						
2-Nitrophenol	0.5	mg/kg	< 0.5	-	-	< 0.5
4-Chloro-3-methylphenol	0.5	mg/kg	< 0.5	-	-	< 0.5
Pentachlorophenol	1	mg/kg	< 1	-	-	< 1
Phenol-d5 (surr.)	1	%	90	-	-	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	< 100	-	-	420
TRH >C34-C40	100	mg/kg	< 100	-	-	< 100
Heavy Metals						
Arsenic	2	mg/kg	14	6.2	6.5	4.6
Cadmium	0.4	mg/kg	0.7	0.6	0.5	0.6
Chromium	5	mg/kg	59	57	41	39
Copper	5	mg/kg	63	100	82	76
Lead	5	mg/kg	57	49	37	31
Mercury	0.05	mg/kg	0.17	0.37	0.26	0.26
Nickel	5	mg/kg	14	15	15	15
Selenium	2	mg/kg	3.4	2.2	2.8	< 2
Zinc	5	mg/kg	150	89	96	110
% Moisture	0.1	%	25	19	22	18

Client Sample ID			TP05 3.4-3.6	TP05 5.3-5.5	TP06 0.5-0.7	TP06 3.1-3.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Au11626**	**S15-Au11628**	**S15-Au11630**	**S15-Au11633**
Date Sampled			**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	150	-	-
TRH C29-C36	50	mg/kg	-	130	-	-
TRH C10-36 (Total)	50	mg/kg	-	280	-	-
Total Recoverable Hydrocarbons - 2013 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 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	2.9	5.3	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	3.1	5.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	3.4	5.8	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	1.1	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	0.6	2.0	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	1.9	4.0	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	2.1	3.9	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	1.4	3.5	< 0.5	< 0.5

Client Sample ID			TP05 3.4-3.6	TP05 5.3-5.5	TP06 0.5-0.7	TP06 3.1-3.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Au11626**	**S15-Au11628**	**S15-Au11630**	**S15-Au11633**
Date Sampled			**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(g.h.i)perylene	0.5	mg/kg	1.9	2.9	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	1.8	3.4	< 0.5	< 0.5
Chrysene	0.5	mg/kg	2.3	4.1	< 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	6.5	14	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	2.0	2.7	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	3.3	10	< 0.5	< 0.5
Pyrene	0.5	mg/kg	5.4	11	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	29	63	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	100	102	121	109
p-Terphenyl-d14 (surr.)	1	%	128	103	107	105
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-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	-	-
g-BHC (Lindane)	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	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Dibutylchlorendate (surr.)	1	%	-	105	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	97	-	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	-	-
Total PCB*	0.5	mg/kg	-	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	-	105	-	-

Client Sample ID			TP05 3.4-3.6	TP05 5.3-5.5	TP06 0.5-0.7	TP06 3.1-3.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Au11626	S15-Au11628	S15-Au11630	S15-Au11633
Date Sampled			Aug 14, 2015	Aug 14, 2015	Aug 14, 2015	Aug 14, 2015
Test/Reference	LOR	Unit				
Speciated Phenols						
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2.4.5-Trichlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4.6-Trichlorophenol	0.5	mg/kg	-	< 0.5	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
2-Methylphenol (o-Cresol)	0.5	mg/kg	-	< 0.5	-	-
3&4-Methylphenol (m&p-Cresol)	1	mg/kg	-	< 1	-	-
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	-
2-Nitrophenol	0.5	mg/kg	-	< 0.5	-	-
4-Chloro-3-methylphenol	0.5	mg/kg	-	< 0.5	-	-
Pentachlorophenol	1	mg/kg	-	< 1	-	-
Phenol-d5 (surr.)	1	%	-	90	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	280	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
Heavy Metals						
Arsenic	2	mg/kg	7.1	9.0	6.2	4.9
Cadmium	0.4	mg/kg	1.6	1.0	< 0.4	< 0.4
Chromium	5	mg/kg	110	66	29	29
Copper	5	mg/kg	190	150	60	26
Lead	5	mg/kg	71	54	28	19
Mercury	0.05	mg/kg	0.84	0.49	0.18	0.07
Nickel	5	mg/kg	28	18	11	20
Selenium	2	mg/kg	2.2	2.5	< 2	< 2
Zinc	5	mg/kg	220	140	66	42
% Moisture	0.1	%	16	14	15	14

Client Sample ID			TP06 4.6-4.8	TP07 1.5-1.7	TP07 2.3-2.5	TP07 3.8-4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Au11635	S15-Au11638	S15-Au11639	S15-Au11641
Date Sampled			Aug 14, 2015	Aug 14, 2015	Aug 14, 2015	Aug 14, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	-
TRH C10-C14	20	mg/kg	< 20	-	-	-
TRH C15-C28	50	mg/kg	< 50	-	-	-
TRH C29-C36	50	mg/kg	< 50	-	-	-
TRH C10-36 (Total)	50	mg/kg	< 50	-	-	-
Total Recoverable Hydrocarbons - 2013 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 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	-

Client Sample ID			TP06 4.6-4.8	TP07 1.5-1.7	TP07 2.3-2.5	TP07 3.8-4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Au11635	S15-Au11638	S15-Au11639	S15-Au11641
Date Sampled			Aug 14, 2015	Aug 14, 2015	Aug 14, 2015	Aug 14, 2015
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	1.5	1.2	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	1.8	1.4	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	2.0	1.7	1.2
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	1.3	0.8	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	1.0	0.8	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	0.8	0.8	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	1.4	1.0	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	1.1	0.7	< 0.5
Chrysene	0.5	mg/kg	< 0.5	1.3	1.0	< 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	3.9	2.0	< 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	1.6	1.3	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	1.8	1.3	< 0.5
Pyrene	0.5	mg/kg	< 0.5	3.5	1.6	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	18	11	< 0.5
2-Fluorobiphenyl (surr.)	1	%	112	117	102	96
p-Terphenyl-d14 (surr.)	1	%	117	122	104	104
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-BHC	0.05	mg/kg	< 0.05	-	-	-
d-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	-	-	-
g-BHC (Lindane)	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	-	-	-
Toxaphene	1	mg/kg	< 1	-	-	-
Dibutylchlorendate (surr.)	1	%	99	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	102	-	-	-

Client Sample ID			TP06 4.6-4.8	TP07 1.5-1.7	TP07 2.3-2.5	TP07 3.8-4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Au11635	S15-Au11638	S15-Au11639	S15-Au11641
Date Sampled			Aug 14, 2015	Aug 14, 2015	Aug 14, 2015	Aug 14, 2015
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1232	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1242	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1248	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1254	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1260	0.5	mg/kg	< 0.5	-	-	-
Total PCB*	0.5	mg/kg	< 0.5	-	-	-
Dibutylchlorendate (surr.)	1	%	99	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	-	-	-
TRH >C16-C34	100	mg/kg	< 100	-	-	-
TRH >C34-C40	100	mg/kg	< 100	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	5.6	5.8	5.8	6.3
Cadmium	0.4	mg/kg	< 0.4	0.8	< 0.4	1.6
Chromium	5	mg/kg	36	47	27	56
Copper	5	mg/kg	42	110	50	170
Lead	5	mg/kg	29	37	29	64
Mercury	0.05	mg/kg	0.11	0.41	0.18	0.61
Nickel	5	mg/kg	28	20	13	35
Selenium	2	mg/kg	< 2	3.1	2.2	< 2
Zinc	5	mg/kg	92	160	77	260
% Moisture	0.1	%	16	21	16	24

Client Sample ID			TP08 2.2-2.4	TP08 3.1-3.3	TP08 3.7-3.9	QC01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Au11645	S15-Au11646	S15-Au11647	S15-Au11648
Date Sampled			Aug 14, 2015	Aug 14, 2015	Aug 14, 2015	Aug 14, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	< 20
TRH C10-C14	20	mg/kg	-	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	-	< 50	87
TRH C29-C36	50	mg/kg	-	-	< 50	70
TRH C10-36 (Total)	50	mg/kg	-	-	< 50	160
Total Recoverable Hydrocarbons - 2013 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 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	< 50
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	1.4	< 0.5	1.3	5.9
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.7	0.6	1.5	5.9
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.9	1.2	1.8	5.9
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

Client Sample ID			TP08 2.2-2.4	TP08 3.1-3.3	TP08 3.7-3.9	QC01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Au11645	S15-Au11646	S15-Au11647	S15-Au11648
Date Sampled			Aug 14, 2015	Aug 14, 2015	Aug 14, 2015	Aug 14, 2015
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.1
Benz(a)anthracene	0.5	mg/kg	0.7	< 0.5	0.9	3.1
Benzo(a)pyrene	0.5	mg/kg	1.0	< 0.5	0.9	3.3
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	1.0	< 0.5	0.7	2.7
Benzo(g.h.i)perylene	0.5	mg/kg	1.2	< 0.5	1.1	2.5
Benzo(k)fluoranthene	0.5	mg/kg	0.7	< 0.5	0.8	2.3
Chrysene	0.5	mg/kg	1.0	< 0.5	0.8	3.1
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.5
Fluoranthene	0.5	mg/kg	2.2	< 0.5	2.8	8.7
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	1.4	< 0.5	1.4	2.8
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	0.7	< 0.5	1.9	5.0
Pyrene	0.5	mg/kg	2.1	< 0.5	2.7	7.1
Total PAH*	0.5	mg/kg	12	< 0.5	14	43
2-Fluorobiphenyl (surr.)	1	%	103	111	104	107
p-Terphenyl-d14 (surr.)	1	%	107	126	104	108
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	-	106	102
Tetrachloro-m-xylene (surr.)	1	%	-	-	100	101
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	-	-	106	102

Client Sample ID			TP08 2.2-2.4	TP08 3.1-3.3	TP08 3.7-3.9	QC01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Au11645	S15-Au11646	S15-Au11647	S15-Au11648
Date Sampled			Aug 14, 2015	Aug 14, 2015	Aug 14, 2015	Aug 14, 2015
Test/Reference	LOR	Unit				
Speciated Phenols						
2.4-Dichlorophenol	0.5	mg/kg	-	-	< 0.5	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	-	-	< 0.5	< 0.5
2.4.5-Trichlorophenol	0.5	mg/kg	-	-	< 0.5	< 0.5
2.4.6-Trichlorophenol	0.5	mg/kg	-	-	< 0.5	< 0.5
Phenol	0.5	mg/kg	-	-	< 0.5	< 0.5
2-Methylphenol (o-Cresol)	0.5	mg/kg	-	-	< 0.5	< 0.5
3&4-Methylphenol (m&p-Cresol)	1	mg/kg	-	-	< 1	< 1
2-Chlorophenol	0.5	mg/kg	-	-	< 0.5	< 0.5
2-Nitrophenol	0.5	mg/kg	-	-	< 0.5	< 0.5
4-Chloro-3-methylphenol	0.5	mg/kg	-	-	< 0.5	< 0.5
Pentachlorophenol	1	mg/kg	-	-	< 1	< 1
Phenol-d5 (surr.)	1	%	-	-	76	91
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	-	< 50	< 50
TRH >C16-C34	100	mg/kg	-	-	< 100	160
TRH >C34-C40	100	mg/kg	-	-	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	5.6	4.9	6.1	6.5
Cadmium	0.4	mg/kg	0.5	1.2	0.4	0.4
Chromium	5	mg/kg	26	64	24	42
Copper	5	mg/kg	46	150	36	56
Lead	5	mg/kg	24	54	26	30
Mercury	0.05	mg/kg	0.13	0.60	0.12	0.18
Nickel	5	mg/kg	12	20	9.7	13
Selenium	2	mg/kg	2.9	2.4	2.2	< 2
Zinc	5	mg/kg	86	180	67	81
% Moisture	0.1	%	19	16	16	19

Client Sample ID			QC05
Sample Matrix			Soil
Eurofins | mgt Sample No.			S15-Au11652
Date Sampled			Aug 14, 2015
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
Total Recoverable Hydrocarbons - 2013 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 less Naphthalene (F2)[N01]	50	mg/kg	< 50

Client Sample ID			QC05
Sample Matrix			Soil
Eurofins | mgt Sample No.			S15-Au11652
Date Sampled			Aug 14, 2015
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
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&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	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*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	100
p-Terphenyl-d14 (surr.)	1	%	104
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	0.06
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
g-BHC (Lindane)	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
Toxaphene	1	mg/kg	< 1
Dibutylchlorendate (surr.)	1	%	99
Tetrachloro-m-xylene (surr.)	1	%	86

Client Sample ID			QC05
Sample Matrix			Soil
Eurofins | mgt Sample No.			S15-Au11652
Date Sampled			Aug 14, 2015
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls (PCB)			
Aroclor-1016	0.5	mg/kg	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5
Total PCB*	0.5	mg/kg	< 0.5
Dibutylchlorendate (surr.)	1	%	99
Speciated Phenols			
2.4-Dichlorophenol	0.5	mg/kg	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5
2.4.5-Trichlorophenol	0.5	mg/kg	< 0.5
2.4.6-Trichlorophenol	0.5	mg/kg	< 0.5
Phenol	0.5	mg/kg	< 0.5
2-Methylphenol (o-Cresol)	0.5	mg/kg	< 0.5
3&4-Methylphenol (m&p-Cresol)	1	mg/kg	< 1
2-Chlorophenol	0.5	mg/kg	< 0.5
2-Nitrophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	0.5	mg/kg	< 0.5
Pentachlorophenol	1	mg/kg	< 1
Phenol-d5 (surr.)	1	%	92
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C10-C16	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
Heavy Metals			
Arsenic	2	mg/kg	4.1
Cadmium	0.4	mg/kg	0.5
Chromium	5	mg/kg	32
Copper	5	mg/kg	77
Lead	5	mg/kg	26
Mercury	0.05	mg/kg	0.23
Nickel	5	mg/kg	11
Selenium	2	mg/kg	< 2
Zinc	5	mg/kg	86
% Moisture	0.1	%	11

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Aug 19, 2015	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Aug 19, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Aug 19, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Aug 19, 2015	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Organochlorine Pesticides	Sydney	Aug 19, 2015	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Aug 19, 2015	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
Speciated Phenols	Sydney	Aug 19, 2015	14 Day
- Method: E008 Speciated Phenols			
Metals M8	Sydney	Aug 19, 2015	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Heavy Metals	Sydney	Aug 19, 2015	180 Day
- Method: LTM-MET-3030 by ICP-OES (hydride ICP-OES for Mercury)			
% Moisture	Sydney	Aug 14, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
TP01 0-0.15	Aug 14, 2015		Soil	S15-Au11564		X									
TP01 0.15-0.3	Aug 14, 2015		Soil	S15-Au11565		X									
TP01 0.3-0.5	Aug 14, 2015		Soil	S15-Au11566		X									
TP01 0.7-0.9	Aug 14, 2015		Soil	S15-Au11567		X									
TP01 1.2-1.4	Aug 14, 2015		Soil	S15-Au11568		X									
TP01 1.7-1.9	Aug 14, 2015		Soil	S15-Au11569			X	X	X	X		X	X	X	X
TP01 2.3-2.5	Aug 14, 2015		Soil	S15-Au11570		X									
TP01 2.8-3.0	Aug 14, 2015		Soil	S15-Au11571		X									
TP01 3.1-3.3	Aug 14, 2015		Soil	S15-Au11572			X	X	X	X		X	X	X	X

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP01 3.5-3.7	Aug 14, 2015		Soil	S15-Au11573		X									
TP01 4.2-4.4	Aug 14, 2015		Soil	S15-Au11574		X									
TP01 4.7-4.9	Aug 14, 2015		Soil	S15-Au11575		X									
TP01 5.3-5.5	Aug 14, 2015		Soil	S15-Au11576			X	X		X				X	
TP01 5.8-6	Aug 14, 2015		Soil	S15-Au11577		X									
TP02 0-0.15	Aug 14, 2015		Soil	S15-Au11578		X									
TP02 0.15-0.3	Aug 14, 2015		Soil	S15-Au11579			X	X		X				X	
TP02 0.3-0.5	Aug 14, 2015		Soil	S15-Au11580		X									
TP02 0.8-1.0	Aug 14, 2015		Soil	S15-Au11581		X									
TP02 1.2-1.4	Aug 14, 2015		Soil	S15-Au11582			X	X		X				X	

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP02 1.7-1.9	Aug 14, 2015		Soil	S15-Au11583		X									
TP02 2.3-2.5	Aug 14, 2015		Soil	S15-Au11584		X									
TP02 2.8-3.0	Aug 14, 2015		Soil	S15-Au11585		X									
TP02 3.2-3.4	Aug 14, 2015		Soil	S15-Au11586		X									
TP02 3.6-3.8	Aug 14, 2015		Soil	S15-Au11587		X									
TP02 4.1-4.3	Aug 14, 2015		Soil	S15-Au11588		X									
TP02 4.7-4.9	Aug 14, 2015		Soil	S15-Au11589			X	X	X	X		X	X	X	X
TP02 5.1-5.3	Aug 14, 2015		Soil	S15-Au11590		X									
TP02 5.8-6	Aug 14, 2015		Soil	S15-Au11591		X									
TP03 0-0.15	Aug 14, 2015		Soil	S15-Au11592		X									

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP03 0.15-0.3	Aug 14, 2015		Soil	S15-Au11593		X									
TP03 0.3-0.5	Aug 14, 2015		Soil	S15-Au11594			X	X		X				X	
TP03 0.6-0.8	Aug 14, 2015		Soil	S15-Au11595		X									
TP03 1.2-1.4	Aug 14, 2015		Soil	S15-Au11596		X									
TP03 1.6-1.8	Aug 14, 2015		Soil	S15-Au11597		X									
TP03 2.1-2.3	Aug 14, 2015		Soil	S15-Au11598		X									
TP03 2.5-2.7	Aug 14, 2015		Soil	S15-Au11599		X									
TP03 3.2-3.4	Aug 14, 2015		Soil	S15-Au11600		X									
TP03 3.6-3.8	Aug 14, 2015		Soil	S15-Au11601			X	X		X				X	
TP03 4.1-4.3	Aug 14, 2015		Soil	S15-Au11602		X									

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP03 4.8-5	Aug 14, 2015		Soil	S15-Au11603		X									
TP03 5.2-5.4	Aug 14, 2015		Soil	S15-Au11604			X	X	X	X		X	X	X	X
TP03 5.5-5.7	Aug 14, 2015		Soil	S15-Au11605		X									
TP04 0-0.15	Aug 14, 2015		Soil	S15-Au11606		X									
TP04 0.15-0.3	Aug 14, 2015		Soil	S15-Au11607		X									
TP04 0.3-0.5	Aug 14, 2015		Soil	S15-Au11608			X	X		X				X	
TP04 0.8-1.0	Aug 14, 2015		Soil	S15-Au11609		X									
TP04 1.0-1.2	Aug 14, 2015		Soil	S15-Au11610		X									
TP04 1.5-1.7	Aug 14, 2015		Soil	S15-Au11611		X									
TP04 2.0-2.3	Aug 14, 2015		Soil	S15-Au11612	X										

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP04 2.1-2.3	Aug 14, 2015		Soil	S15-Au11613		X									
TP04 2.6-2.8	Aug 14, 2015		Soil	S15-Au11614			X	X		X				X	
TP04 3.1-3.3	Aug 14, 2015		Soil	S15-Au11615		X									
TP04 3.5-3.7	Aug 14, 2015		Soil	S15-Au11616		X									
TP04 4.2-4.4	Aug 14, 2015		Soil	S15-Au11617		X									
TP04 4.8-5	Aug 14, 2015		Soil	S15-Au11618		X									
TP04 5.3-5.5	Aug 14, 2015		Soil	S15-Au11619		X									
TP04 5.7-5.9	Aug 14, 2015		Soil	S15-Au11620			X	X	X	X		X	X	X	X
TP05 0-0.15	Aug 14, 2015		Soil	S15-Au11621		X									
TP05 0.3-0.5	Aug 14, 2015		Soil	S15-Au11622		X									

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP05 0.7-0.9	Aug 14, 2015		Soil	S15-Au11623		X									
TP05 1.5-1.7	Aug 14, 2015		Soil	S15-Au11624		X									
TP05 2.3-2.4	Aug 14, 2015		Soil	S15-Au11625		X									
TP05 3.4-3.6	Aug 14, 2015		Soil	S15-Au11626			X	X		X				X	
TP05 4.5-4.7	Aug 14, 2015		Soil	S15-Au11627		X									
TP05 5.3-5.5	Aug 14, 2015		Soil	S15-Au11628			X	X	X	X		X	X	X	X
TP06 0-0.2	Aug 14, 2015		Soil	S15-Au11629		X									
TP06 0.5-0.7	Aug 14, 2015		Soil	S15-Au11630			X	X		X				X	
TP06 1.5-1.7	Aug 14, 2015		Soil	S15-Au11631		X									
TP06 2.4-2.6	Aug 14, 2015		Soil	S15-Au11632		X									

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP06 3.1-3.3	Aug 14, 2015		Soil	S15-Au11633			X	X		X				X	
TP06 4.1-4.3	Aug 14, 2015		Soil	S15-Au11634		X									
TP06 4.6-4.8	Aug 14, 2015		Soil	S15-Au11635			X	X	X	X		X		X	X
TP07 0-0.15	Aug 14, 2015		Soil	S15-Au11636		X									
TP07 0.5-0.7	Aug 14, 2015		Soil	S15-Au11637		X									
TP07 1.5-1.7	Aug 14, 2015		Soil	S15-Au11638			X	X		X				X	
TP07 2.3-2.5	Aug 14, 2015		Soil	S15-Au11639			X	X		X				X	
TP07 3.1-3.3	Aug 14, 2015		Soil	S15-Au11640		X									
TP07 3.8-4	Aug 14, 2015		Soil	S15-Au11641			X	X		X				X	
TP08 0.2-0.4	Aug 14, 2015		Soil	S15-Au11642		X									

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP08 0.7-0.9	Aug 14, 2015		Soil	S15-Au11643		X									
TP08 1.5-1.7	Aug 14, 2015		Soil	S15-Au11644		X									
TP08 2.2-2.4	Aug 14, 2015		Soil	S15-Au11645			X	X		X				X	
TP08 3.1-3.3	Aug 14, 2015		Soil	S15-Au11646			X	X		X				X	
TP08 3.7-3.9	Aug 14, 2015		Soil	S15-Au11647			X	X	X	X		X	X	X	X
QC01	Aug 14, 2015		Soil	S15-Au11648			X	X	X	X		X	X	X	X
QC02	Aug 14, 2015		Soil	S15-Au11649		X									
QC03	Aug 14, 2015		Soil	S15-Au11650		X									
QC04	Aug 14, 2015		Soil	S15-Au11651		X									
QC05	Aug 14, 2015		Soil	S15-Au11652			X	X	X	X		X	X	X	X

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TRIP SPIKE	Aug 14, 2015		Water	S15-Au11653							X				
TRIP BLANK	Aug 14, 2015		Water	S15-Au11654							X				
RINSATE	Aug 14, 2015		Water	S15-Au11655			X	X	X	X		X	X		X

Eurofins | mgt Internal Quality Control Review and Glossary

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 LORs are matrix dependant. Quoted LORs 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 Advice.

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 RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

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 clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States 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 performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

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.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
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&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	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							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB*	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Speciated Phenols							
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.6-Trichlorophenol	mg/kg	< 0.5			0.5	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.5			0.5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 1			1	Pass	
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2-Nitrophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 0.5			0.5	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	92			70-130	Pass	
TRH C10-C14	%	112			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	104			70-130	Pass	
TRH C6-C10	%	86			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	83			70-130	Pass	
Acenaphthylene	%	77			70-130	Pass	
Anthracene	%	78			70-130	Pass	
Benz(a)anthracene	%	79			70-130	Pass	
Benzo(a)pyrene	%	77			70-130	Pass	
Benzo(b&j)fluoranthene	%	72			70-130	Pass	
Benzo(g.h.i)perylene	%	99			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene	%	84			70-130	Pass	
Chrysene	%	94			70-130	Pass	
Dibenz(a.h)anthracene	%	129			70-130	Pass	
Fluoranthene	%	79			70-130	Pass	
Fluorene	%	83			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	111			70-130	Pass	
Naphthalene	%	91			70-130	Pass	
Phenanthrene	%	88			70-130	Pass	
Pyrene	%	93			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	108			70-130	Pass	
4.4'-DDD	%	126			70-130	Pass	
4.4'-DDE	%	106			70-130	Pass	
4.4'-DDT	%	89			70-130	Pass	
a-BHC	%	109			70-130	Pass	
Aldrin	%	110			70-130	Pass	
b-BHC	%	104			70-130	Pass	
d-BHC	%	110			70-130	Pass	
Dieldrin	%	110			70-130	Pass	
Endosulfan I	%	107			70-130	Pass	
Endosulfan II	%	108			70-130	Pass	
Endosulfan sulphate	%	107			70-130	Pass	
Endrin	%	100			70-130	Pass	
Endrin aldehyde	%	103			70-130	Pass	
Endrin ketone	%	90			70-130	Pass	
g-BHC (Lindane)	%	106			70-130	Pass	
Heptachlor	%	78			70-130	Pass	
Heptachlor epoxide	%	106			70-130	Pass	
Methoxychlor	%	96			70-130	Pass	
LCS - % Recovery							
Speciated Phenols							
2.4-Dichlorophenol	%	104			30-130	Pass	
2.4-Dimethylphenol	%	83			30-130	Pass	
2.4.5-Trichlorophenol	%	95			30-130	Pass	
2.4.6-Trichlorophenol	%	80			30-130	Pass	
Phenol	%	72			30-130	Pass	
2-Methylphenol (o-Cresol)	%	87			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	77			30-130	Pass	
2-Chlorophenol	%	88			30-130	Pass	
2-Nitrophenol	%	99			30-130	Pass	
4-Chloro-3-methylphenol	%	82			30-130	Pass	
Pentachlorophenol	%	71			30-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	116			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			70-130	Pass	
Cadmium	%	109			70-130	Pass	
Chromium	%	105			70-130	Pass	
Copper	%	105			70-130	Pass	
Lead	%	109			70-130	Pass	
Mercury	%	100			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel			%	104			70-130	Pass	
Selenium			%	93			70-130	Pass	
Zinc			%	108			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	S15-Au11033	NCP	%	112			70-130	Pass	
TRH C10-C14	S15-Au11545	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S15-Au11033	NCP	%	126			70-130	Pass	
TRH C6-C10	S15-Au11033	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S15-Au11033	NCP	%	97			70-130	Pass	
4.4'-DDD	S15-Au11033	NCP	%	119			70-130	Pass	
4.4'-DDE	S15-Au11033	NCP	%	106			70-130	Pass	
4.4'-DDT	S15-Au11033	NCP	%	102			70-130	Pass	
a-BHC	S15-Au11033	NCP	%	98			70-130	Pass	
Aldrin	S15-Au11033	NCP	%	100			70-130	Pass	
b-BHC	S15-Au11033	NCP	%	97			70-130	Pass	
d-BHC	S15-Au11033	NCP	%	100			70-130	Pass	
Dieldrin	S15-Au11033	NCP	%	112			70-130	Pass	
Endosulfan I	S15-Au11033	NCP	%	95			70-130	Pass	
Endosulfan II	S15-Au11033	NCP	%	116			70-130	Pass	
Endosulfan sulphate	S15-Au11033	NCP	%	108			70-130	Pass	
Endrin	S15-Au11033	NCP	%	110			70-130	Pass	
Endrin aldehyde	S15-Au11033	NCP	%	109			70-130	Pass	
Endrin ketone	S15-Au11033	NCP	%	118			70-130	Pass	
g-BHC (Lindane)	S15-Au11033	NCP	%	100			70-130	Pass	
Heptachlor	S15-Au11033	NCP	%	112			70-130	Pass	
Heptachlor epoxide	S15-Au11033	NCP	%	97			70-130	Pass	
Methoxychlor	S15-Au11033	NCP	%	121			70-130	Pass	
Spike - % Recovery									
Speciated Phenols				Result 1					
2.4-Dichlorophenol	S15-Au11513	NCP	%	108			30-130	Pass	
2.4-Dimethylphenol	S15-Au11513	NCP	%	84			30-130	Pass	
2.4.5-Trichlorophenol	S15-Au11513	NCP	%	93			30-130	Pass	
2.4.6-Trichlorophenol	S15-Au11513	NCP	%	80			30-130	Pass	
Phenol	S15-Au11513	NCP	%	72			30-130	Pass	
2-Methylphenol (o-Cresol)	S15-Au11513	NCP	%	78			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S15-Au11513	NCP	%	70			30-130	Pass	
2-Chlorophenol	S15-Au11513	NCP	%	85			30-130	Pass	
2-Nitrophenol	S15-Au11513	NCP	%	82			30-130	Pass	
4-Chloro-3-methylphenol	S15-Au11513	NCP	%	82			30-130	Pass	
Pentachlorophenol	S15-Au16113	NCP	%	87			30-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S15-Au11545	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S15-Au11572	CP	%	98			70-130	Pass	
Cadmium	S15-Au11572	CP	%	109			70-130	Pass	
Chromium	S15-Au11572	CP	%	90			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper	S15-Au11572	CP	%	130			70-130	Pass	
Lead	S15-Au11572	CP	%	111			70-130	Pass	
Mercury	S15-Au11572	CP	%	105			70-130	Pass	
Nickel	S15-Au11572	CP	%	108			70-130	Pass	
Selenium	S15-Au11572	CP	%	88			70-130	Pass	
Zinc	S15-Au11572	CP	%	112			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S15-Au13484	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S15-Au11635	CP	%	88			70-130	Pass	
Acenaphthylene	S15-Au11635	CP	%	72			70-130	Pass	
Anthracene	S15-Au11635	CP	%	82			70-130	Pass	
Benz(a)anthracene	S15-Au11635	CP	%	91			70-130	Pass	
Benzo(a)pyrene	S15-Au11635	CP	%	88			70-130	Pass	
Benzo(b&j)fluoranthene	S15-Au11635	CP	%	92			70-130	Pass	
Benzo(g.h.i)perylene	S15-Au11635	CP	%	115			70-130	Pass	
Benzo(k)fluoranthene	S15-Au11635	CP	%	85			70-130	Pass	
Chrysene	S15-Au11635	CP	%	93			70-130	Pass	
Dibenz(a.h)anthracene	S15-Au11635	CP	%	118			70-130	Pass	
Fluoranthene	S15-Au11635	CP	%	117			70-130	Pass	
Fluorene	S15-Au11635	CP	%	72			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S15-Au11635	CP	%	112			70-130	Pass	
Naphthalene	S15-Au11635	CP	%	76			70-130	Pass	
Phenanthrene	S15-Au11635	CP	%	86			70-130	Pass	
Pyrene	S15-Au11635	CP	%	108			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S15-Au11641	CP	%	106			70-130	Pass	
Cadmium	S15-Au11641	CP	%	107			70-130	Pass	
Chromium	S15-Au11641	CP	%	106			70-130	Pass	
Lead	S15-Au11641	CP	%	71			70-130	Pass	
Mercury	S15-Au11641	CP	%	119			70-130	Pass	
Nickel	S15-Au11641	CP	%	129			70-130	Pass	
Selenium	S15-Au11641	CP	%	95			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S15-Au11032	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S15-Au11032	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S15-Au11032	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S15-Au11032	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Dieldrin	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S15-Au11032	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S15-Au11032	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S15-Au11032	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Speciated Phenols				Result 1	Result 2	RPD			
2.4-Dichlorophenol	S15-Au15306	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dimethylphenol	S15-Au15306	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	S15-Au15306	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.6-Trichlorophenol	S15-Au15306	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenol	S15-Au15306	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S15-Au15306	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S15-Au15306	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2-Chlorophenol	S15-Au15306	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Nitrophenol	S15-Au15306	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S15-Au15306	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachlorophenol	S15-Au15306	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S15-Au11569	CP	mg/kg	6.5	5.9	10	30%	Pass	
Cadmium	S15-Au11569	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S15-Au11569	CP	mg/kg	37	40	6.0	30%	Pass	
Copper	S15-Au11569	CP	mg/kg	42	53	24	30%	Pass	
Lead	S15-Au11569	CP	mg/kg	26	29	10	30%	Pass	
Mercury	S15-Au11569	CP	mg/kg	0.22	0.21	7.0	30%	Pass	
Nickel	S15-Au11569	CP	mg/kg	14	12	16	30%	Pass	
Selenium	S15-Au11569	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Zinc	S15-Au11569	CP	mg/kg	80	80	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S15-Au11545	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S15-Au11545	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S15-Au11545	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S15-Au11545	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S15-Au11545	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S15-Au11545	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S15-Au11594	CP	%	19	19	2.0	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(a)pyrene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S15-Au11633	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S15-Au11635	CP	%	16	16	5.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S15-Au11639	CP	mg/kg	5.8	5.3	10	30%	Pass	
Cadmium	S15-Au11639	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S15-Au11639	CP	mg/kg	27	23	15	30%	Pass	
Copper	S15-Au11639	CP	mg/kg	50	46	8.0	30%	Pass	
Lead	S15-Au11639	CP	mg/kg	29	24	17	30%	Pass	
Mercury	S15-Au11639	CP	mg/kg	0.18	0.15	20	30%	Pass	
Nickel	S15-Au11639	CP	mg/kg	13	12	6.0	30%	Pass	
Selenium	S15-Au11639	CP	mg/kg	2.2	< 2	12	30%	Pass	
Zinc	S15-Au11639	CP	mg/kg	77	83	7.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S15-Au11647	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S15-Au11647	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S15-Au11647	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S15-Au11647	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S15-Au11647	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S15-Au11647	CP	mg/kg	< 100	< 100	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

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.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q17	LCS Recovery outside of acceptance criteria however acceptable recoveries were obtained for other compounds in this group

Authorised By

Charl Du Preez	Analytical Services Manager
Bob Symons	Senior Analyst-Inorganic (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Ivan Taylor	Senior Analyst-Metal (NSW)

Glenn Jackson

National 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

eurofins | mgt

Certificate of Analysis

JBS & G Australia (NSW & WA) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 1254

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: **Katie Linz**

Report **468774-W**
Project name SP30
Project ID 51056
Received Date Aug 14, 2015

Client Sample ID			**TRIP SPIKE**	**TRIP BLANK**	**RINSATE**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S15-Au11653**	**S15-Au11654**	**S15-Au11655**
Date Sampled			**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**
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	112%	< 0.001	-
Toluene	0.001	mg/L	112%	< 0.001	-
Ethylbenzene	0.001	mg/L	109%	< 0.001	-
m&p-Xylenes	0.002	mg/L	109%	< 0.002	-
o-Xylene	0.001	mg/L	110%	< 0.001	-
Xylenes - Total	0.003	mg/L	110%	< 0.003	-
4-Bromofluorobenzene (surr.)	1	%	101	94	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.02	mg/L	-	-	< 0.02
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 less Naphthalene (F2)[N01]	0.05	mg/L	-	-	< 0.05
Polycyclic Aromatic Hydrocarbons					
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&j)fluoranthene[N07]	0.001	mg/L	-	-	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	-	-	< 0.001
Benzo(k)fluoranthene	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			TRIP SPIKE	TRIP BLANK	RINSATE
Sample Matrix			Water	Water	Water
Eurofins | mgt Sample No.			S15-Au11653	S15-Au11654	S15-Au11655
Date Sampled			Aug 14, 2015	Aug 14, 2015	Aug 14, 2015
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Total PAH*	0.001	mg/L	-	-	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	-	104
p-Terphenyl-d14 (surr.)	1	%	-	-	113
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	-	-	< 0.001
4.4'-DDD	0.0001	mg/L	-	-	< 0.0001
4.4'-DDE	0.0001	mg/L	-	-	< 0.0001
4.4'-DDT	0.0001	mg/L	-	-	< 0.0001
a-BHC	0.0001	mg/L	-	-	< 0.0001
Aldrin	0.0001	mg/L	-	-	< 0.0001
b-BHC	0.0001	mg/L	-	-	< 0.0001
d-BHC	0.0001	mg/L	-	-	< 0.0001
Dieldrin	0.0001	mg/L	-	-	< 0.0001
Endosulfan I	0.0001	mg/L	-	-	< 0.0001
Endosulfan II	0.0001	mg/L	-	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	-	-	< 0.0001
Endrin	0.0001	mg/L	-	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	-	-	< 0.0001
Endrin ketone	0.0001	mg/L	-	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	-	-	< 0.0001
Heptachlor	0.0001	mg/L	-	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	-	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	-	-	< 0.0001
Methoxychlor	0.0001	mg/L	-	-	< 0.0001
Toxaphene	0.01	mg/L	-	-	< 0.01
Dibutylchlorendate (surr.)	1	%	-	-	83
Tetrachloro-m-xylene (surr.)	1	%	-	-	83
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.005	mg/L	-	-	< 0.005
Aroclor-1232	0.005	mg/L	-	-	< 0.005
Aroclor-1242	0.005	mg/L	-	-	< 0.005
Aroclor-1248	0.005	mg/L	-	-	< 0.005
Aroclor-1254	0.005	mg/L	-	-	< 0.005
Aroclor-1260	0.005	mg/L	-	-	< 0.005
Total PCB*	0.001	mg/L	-	-	< 0.005
Dibutylchlorendate (surr.)	1	%	-	-	83
Speciated Phenols					
2.4-Dichlorophenol	0.002	mg/L	-	-	< 0.002
2.4-Dimethylphenol	0.002	mg/L	-	-	< 0.002
2.4.5-Trichlorophenol	0.002	mg/L	-	-	< 0.002
2.4.6-Trichlorophenol	0.002	mg/L	-	-	< 0.002
Phenol	0.002	mg/L	-	-	< 0.002
2-Methylphenol (o-Cresol)	0.002	mg/L	-	-	< 0.002
3&4-Methylphenol (m&p-Cresol)	0.004	mg/L	-	-	< 0.004
2-Chlorophenol	0.002	mg/L	-	-	< 0.002
2-Nitrophenol	0.002	mg/L	-	-	< 0.002
4-Chloro-3-methylphenol	0.002	mg/L	-	-	< 0.002
Pentachlorophenol	0.01	mg/L	-	-	< 0.01
Phenol-d5 (surr.)	1	%	-	-	111

Client Sample ID			TRIP SPIKE	TRIP BLANK	RINSATE
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S15-Au11653**	**S15-Au11654**	**S15-Au11655**
Date Sampled			**Aug 14, 2015**	**Aug 14, 2015**	**Aug 14, 2015**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	0.05	mg/L	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	-	-	< 0.1
Heavy Metals					
Arsenic	0.005	mg/L	-	-	< 0.005
Cadmium	0.0005	mg/L	-	-	< 0.0005
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
Selenium	0.005	mg/L	-	-	< 0.005
Zinc	0.005	mg/L	-	-	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Aug 14, 2015	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Aug 14, 2015	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Aug 14, 2015	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Sydney	Aug 14, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Aug 14, 2015	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Organochlorine Pesticides	Sydney	Aug 14, 2015	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Aug 14, 2015	7 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
Speciated Phenols	Sydney	Aug 14, 2015	7 Day
- Method: E008 Speciated Phenols			
Metals M8	Sydney	Aug 14, 2015	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Heavy Metals	Sydney	Aug 14, 2015	180 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
TP01 0-0.15	Aug 14, 2015		Soil	S15-Au11564		X									
TP01 0.15-0.3	Aug 14, 2015		Soil	S15-Au11565		X									
TP01 0.3-0.5	Aug 14, 2015		Soil	S15-Au11566		X									
TP01 0.7-0.9	Aug 14, 2015		Soil	S15-Au11567		X									
TP01 1.2-1.4	Aug 14, 2015		Soil	S15-Au11568		X									
TP01 1.7-1.9	Aug 14, 2015		Soil	S15-Au11569			X	X	X	X		X	X	X	X
TP01 2.3-2.5	Aug 14, 2015		Soil	S15-Au11570		X									
TP01 2.8-3.0	Aug 14, 2015		Soil	S15-Au11571		X									
TP01 3.1-3.3	Aug 14, 2015		Soil	S15-Au11572			X	X	X	X		X	X	X	X

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP01 3.5-3.7	Aug 14, 2015		Soil	S15-Au11573		X									
TP01 4.2-4.4	Aug 14, 2015		Soil	S15-Au11574		X									
TP01 4.7-4.9	Aug 14, 2015		Soil	S15-Au11575		X									
TP01 5.3-5.5	Aug 14, 2015		Soil	S15-Au11576			X	X		X				X	
TP01 5.8-6	Aug 14, 2015		Soil	S15-Au11577		X									
TP02 0-0.15	Aug 14, 2015		Soil	S15-Au11578		X									
TP02 0.15-0.3	Aug 14, 2015		Soil	S15-Au11579			X	X		X				X	
TP02 0.3-0.5	Aug 14, 2015		Soil	S15-Au11580		X									
TP02 0.8-1.0	Aug 14, 2015		Soil	S15-Au11581		X									
TP02 1.2-1.4	Aug 14, 2015		Soil	S15-Au11582			X	X		X				X	

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP02 1.7-1.9	Aug 14, 2015		Soil	S15-Au11583		X									
TP02 2.3-2.5	Aug 14, 2015		Soil	S15-Au11584		X									
TP02 2.8-3.0	Aug 14, 2015		Soil	S15-Au11585		X									
TP02 3.2-3.4	Aug 14, 2015		Soil	S15-Au11586		X									
TP02 3.6-3.8	Aug 14, 2015		Soil	S15-Au11587		X									
TP02 4.1-4.3	Aug 14, 2015		Soil	S15-Au11588		X									
TP02 4.7-4.9	Aug 14, 2015		Soil	S15-Au11589			X	X	X	X		X	X	X	X
TP02 5.1-5.3	Aug 14, 2015		Soil	S15-Au11590		X									
TP02 5.8-6	Aug 14, 2015		Soil	S15-Au11591		X									
TP03 0-0.15	Aug 14, 2015		Soil	S15-Au11592		X									

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP03 0.15-0.3	Aug 14, 2015		Soil	S15-Au11593		X									
TP03 0.3-0.5	Aug 14, 2015		Soil	S15-Au11594			X	X		X				X	
TP03 0.6-0.8	Aug 14, 2015		Soil	S15-Au11595		X									
TP03 1.2-1.4	Aug 14, 2015		Soil	S15-Au11596		X									
TP03 1.6-1.8	Aug 14, 2015		Soil	S15-Au11597		X									
TP03 2.1-2.3	Aug 14, 2015		Soil	S15-Au11598		X									
TP03 2.5-2.7	Aug 14, 2015		Soil	S15-Au11599		X									
TP03 3.2-3.4	Aug 14, 2015		Soil	S15-Au11600		X									
TP03 3.6-3.8	Aug 14, 2015		Soil	S15-Au11601			X	X		X				X	
TP03 4.1-4.3	Aug 14, 2015		Soil	S15-Au11602		X									

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP03 4.8-5	Aug 14, 2015		Soil	S15-Au11603		X									
TP03 5.2-5.4	Aug 14, 2015		Soil	S15-Au11604			X	X	X	X		X	X	X	X
TP03 5.5-5.7	Aug 14, 2015		Soil	S15-Au11605		X									
TP04 0-0.15	Aug 14, 2015		Soil	S15-Au11606		X									
TP04 0.15-0.3	Aug 14, 2015		Soil	S15-Au11607		X									
TP04 0.3-0.5	Aug 14, 2015		Soil	S15-Au11608			X	X		X				X	
TP04 0.8-1.0	Aug 14, 2015		Soil	S15-Au11609		X									
TP04 1.0-1.2	Aug 14, 2015		Soil	S15-Au11610		X									
TP04 1.5-1.7	Aug 14, 2015		Soil	S15-Au11611		X									
TP04 2.0-2.3	Aug 14, 2015		Soil	S15-Au11612	X										

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP04 2.1-2.3	Aug 14, 2015		Soil	S15-Au11613		X									
TP04 2.6-2.8	Aug 14, 2015		Soil	S15-Au11614			X	X		X				X	
TP04 3.1-3.3	Aug 14, 2015		Soil	S15-Au11615		X									
TP04 3.5-3.7	Aug 14, 2015		Soil	S15-Au11616		X									
TP04 4.2-4.4	Aug 14, 2015		Soil	S15-Au11617		X									
TP04 4.8-5	Aug 14, 2015		Soil	S15-Au11618		X									
TP04 5.3-5.5	Aug 14, 2015		Soil	S15-Au11619		X									
TP04 5.7-5.9	Aug 14, 2015		Soil	S15-Au11620			X	X	X	X		X	X	X	X
TP05 0-0.15	Aug 14, 2015		Soil	S15-Au11621		X									
TP05 0.3-0.5	Aug 14, 2015		Soil	S15-Au11622		X									

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP05 0.7-0.9	Aug 14, 2015		Soil	S15-Au11623		X									
TP05 1.5-1.7	Aug 14, 2015		Soil	S15-Au11624		X									
TP05 2.3-2.4	Aug 14, 2015		Soil	S15-Au11625		X									
TP05 3.4-3.6	Aug 14, 2015		Soil	S15-Au11626			X	X		X				X	
TP05 4.5-4.7	Aug 14, 2015		Soil	S15-Au11627		X									
TP05 5.3-5.5	Aug 14, 2015		Soil	S15-Au11628			X	X	X	X		X	X	X	X
TP06 0-0.2	Aug 14, 2015		Soil	S15-Au11629		X									
TP06 0.5-0.7	Aug 14, 2015		Soil	S15-Au11630			X	X		X				X	
TP06 1.5-1.7	Aug 14, 2015		Soil	S15-Au11631		X									
TP06 2.4-2.6	Aug 14, 2015		Soil	S15-Au11632		X									

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP06 3.1-3.3	Aug 14, 2015		Soil	S15-Au11633			X	X		X				X	
TP06 4.1-4.3	Aug 14, 2015		Soil	S15-Au11634		X									
TP06 4.6-4.8	Aug 14, 2015		Soil	S15-Au11635			X	X	X	X		X		X	X
TP07 0-0.15	Aug 14, 2015		Soil	S15-Au11636		X									
TP07 0.5-0.7	Aug 14, 2015		Soil	S15-Au11637		X									
TP07 1.5-1.7	Aug 14, 2015		Soil	S15-Au11638			X	X		X				X	
TP07 2.3-2.5	Aug 14, 2015		Soil	S15-Au11639			X	X		X				X	
TP07 3.1-3.3	Aug 14, 2015		Soil	S15-Au11640		X									
TP07 3.8-4	Aug 14, 2015		Soil	S15-Au11641			X	X		X				X	
TP08 0.2-0.4	Aug 14, 2015		Soil	S15-Au11642		X									

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TP08 0.7-0.9	Aug 14, 2015		Soil	S15-Au11643		X									
TP08 1.5-1.7	Aug 14, 2015		Soil	S15-Au11644		X									
TP08 2.2-2.4	Aug 14, 2015		Soil	S15-Au11645			X	X		X				X	
TP08 3.1-3.3	Aug 14, 2015		Soil	S15-Au11646			X	X		X				X	
TP08 3.7-3.9	Aug 14, 2015		Soil	S15-Au11647			X	X	X	X		X	X	X	X
QC01	Aug 14, 2015		Soil	S15-Au11648			X	X	X	X		X	X	X	X
QC02	Aug 14, 2015		Soil	S15-Au11649		X									
QC03	Aug 14, 2015		Soil	S15-Au11650		X									
QC04	Aug 14, 2015		Soil	S15-Au11651		X									
QC05	Aug 14, 2015		Soil	S15-Au11652			X	X	X	X		X	X	X	X

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468774
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 24, 2015
Priority: 6 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					CANCELLED	HOLD	Selenium	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Metals M8	BTEX	Polychlorinated Biphenyls (PCB)	Speciated Phenols	Moisture Set	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
TRIP SPIKE	Aug 14, 2015		Water	S15-Au11653							X				
TRIP BLANK	Aug 14, 2015		Water	S15-Au11654							X				
RINSATE	Aug 14, 2015		Water	S15-Au11655			X	X	X	X		X	X		X

Eurofins | mgt Internal Quality Control Review and Glossary

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 LORs are matrix dependant. Quoted LORs 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 Advice.

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 RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

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 clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States 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 performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

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.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
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							
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	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
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&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	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							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Method Blank							
Speciated Phenols							
2.4-Dichlorophenol	mg/L	< 0.002			0.002	Pass	
2.4-Dimethylphenol	mg/L	< 0.002			0.002	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.002			0.002	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.002			0.002	Pass	
Phenol	mg/L	< 0.002			0.002	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.002			0.002	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.004			0.004	Pass	
2-Chlorophenol	mg/L	< 0.002			0.002	Pass	
2-Nitrophenol	mg/L	< 0.002			0.002	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.002			0.002	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
Heavy Metals							
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	
Selenium	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	96			70-130	Pass	
TRH C10-C14	%	85			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	115			70-130	Pass	
Toluene	%	116			70-130	Pass	
Ethylbenzene	%	114			70-130	Pass	
m&p-Xylenes	%	114			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene	%	114			70-130	Pass	
Xylenes - Total	%	114			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	99			70-130	Pass	
TRH C6-C10	%	106			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	84			70-130	Pass	
Acenaphthylene	%	71			70-130	Pass	
Anthracene	%	94			70-130	Pass	
Benz(a)anthracene	%	72			70-130	Pass	
Benzo(a)pyrene	%	71			70-130	Pass	
Benzo(b&j)fluoranthene	%	71			70-130	Pass	
Benzo(g.h.i)perylene	%	84			70-130	Pass	
Benzo(k)fluoranthene	%	94			70-130	Pass	
Chrysene	%	85			70-130	Pass	
Dibenz(a.h)anthracene	%	78			70-130	Pass	
Fluoranthene	%	87			70-130	Pass	
Fluorene	%	88			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	79			70-130	Pass	
Naphthalene	%	84			70-130	Pass	
Phenanthrene	%	98			70-130	Pass	
Pyrene	%	90			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	80			70-130	Pass	
4.4'-DDD	%	80			70-130	Pass	
4.4'-DDE	%	80			70-130	Pass	
a-BHC	%	70			70-130	Pass	
Aldrin	%	80			70-130	Pass	
b-BHC	%	80			70-130	Pass	
Dieldrin	%	80			70-130	Pass	
Endosulfan I	%	80			70-130	Pass	
Endosulfan II	%	80			70-130	Pass	
Endosulfan sulphate	%	70			70-130	Pass	
Endrin	%	80			70-130	Pass	
Endrin aldehyde	%	70			70-130	Pass	
g-BHC (Lindane)	%	80			70-130	Pass	
Heptachlor epoxide	%	80			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	89			70-130	Pass	
LCS - % Recovery							
Speciated Phenols							
2.4-Dichlorophenol	%	112			30-130	Pass	
2.4-Dimethylphenol	%	121			30-130	Pass	
2.4.5-Trichlorophenol	%	104			30-130	Pass	
2.4.6-Trichlorophenol	%	103			30-130	Pass	
Phenol	%	111			30-130	Pass	
2-Methylphenol (o-Cresol)	%	116			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	79			30-130	Pass	
2-Chlorophenol	%	129			30-130	Pass	
2-Nitrophenol	%	96			30-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4-Chloro-3-methylphenol	%	120			30-130	Pass	
Pentachlorophenol	%	92			30-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	87			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	98			70-130	Pass	
Cadmium	%	100			70-130	Pass	
Chromium	%	92			70-130	Pass	
Copper	%	91			70-130	Pass	
Lead	%	93			70-130	Pass	
Mercury	%	85			70-130	Pass	
Nickel	%	92			70-130	Pass	
Selenium	%	87			70-130	Pass	
Zinc	%	102			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
BTEX				Result 1					
Benzene	S15-Au11250	NCP	%	109			70-130	Pass	
Toluene	S15-Au11250	NCP	%	111			70-130	Pass	
Ethylbenzene	S15-Au11250	NCP	%	110			70-130	Pass	
m&p-Xylenes	S15-Au11250	NCP	%	110			70-130	Pass	
o-Xylene	S15-Au11250	NCP	%	110			70-130	Pass	
Xylenes - Total	S15-Au11250	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S15-Au11250	NCP	%	91			70-130	Pass	
TRH C10-C14	S15-Au09632	NCP	%	76			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S15-Au11250	NCP	%	84			70-130	Pass	
TRH C6-C10	S15-Au11250	NCP	%	98			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S15-Au06514	NCP	%	111			70-130	Pass	
Acenaphthylene	S15-Au06514	NCP	%	99			70-130	Pass	
Anthracene	S15-Au06514	NCP	%	101			70-130	Pass	
Benz(a)anthracene	S15-Au06514	NCP	%	120			70-130	Pass	
Benzo(a)pyrene	S15-Au06514	NCP	%	121			70-130	Pass	
Benzo(b&j)fluoranthene	S15-Au06514	NCP	%	120			70-130	Pass	
Benzo(g.h.i)perylene	S15-Au06514	NCP	%	113			70-130	Pass	
Benzo(k)fluoranthene	S15-Au06514	NCP	%	126			70-130	Pass	
Chrysene	S15-Au06514	NCP	%	112			70-130	Pass	
Dibenz(a.h)anthracene	S15-Au06514	NCP	%	102			70-130	Pass	
Fluoranthene	S15-Au06514	NCP	%	116			70-130	Pass	
Fluorene	S15-Au06514	NCP	%	107			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S15-Au06514	NCP	%	109			70-130	Pass	
Naphthalene	S15-Au06514	NCP	%	110			70-130	Pass	
Phenanthrene	S15-Au06514	NCP	%	114			70-130	Pass	
Pyrene	S15-Au06514	NCP	%	121			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S15-Au09632	NCP	%	79			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M15-Au04161	NCP	%	100			70-130	Pass	
Cadmium	M15-Au04161	NCP	%	102			70-130	Pass	
Chromium	M15-Au04161	NCP	%	95			70-130	Pass	
Copper	M15-Au04161	NCP	%	94			70-130	Pass	
Lead	M15-Au04161	NCP	%	94			70-130	Pass	
Mercury	M15-Au04161	NCP	%	85			70-130	Pass	
Nickel	M15-Au04161	NCP	%	94			70-130	Pass	
Selenium	M15-Au04161	NCP	%	92			70-130	Pass	
Zinc	M15-Au04161	NCP	%	101			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S15-Au11249	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S15-Au11249	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S15-Au11249	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S15-Au11249	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S15-Au11249	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S15-Au11249	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S15-Au11249	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S15-Au11249	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S15-Au11249	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S15-Au13519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M15-Au04160	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	M15-Au04160	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	M15-Au04160	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	M15-Au04160	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Lead	M15-Au04160	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	M15-Au04160	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M15-Au04160	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Selenium	M15-Au04160	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	M15-Au04160	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

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.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Charl Du Preez	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Ivan Taylor	Senior Analyst-Metal (NSW)

Glenn Jackson

National 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

05809

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 51056	LABORATORY BATCH NO.:
PROJECT NAME: SP30	SAMPLERS: MM
DATE NEEDED BY: STANDARD TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ELING@jbsg.com.au; (3) MMURRAY@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	#METALS	Selenium	TRH	PAH	OCP/PCB	Phenols	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
TP01, 0-0.15	Soil	14/8		JAR										
0.15-0.3														
0.3-0.5														
0.7-0.9														
1.2-1.4														
1.7-1.9						X	X	X	X	X	X			
2.3-2.5														
2.8-3.0														
3.1-3.3						X	X	X	X	X	X			
3.5-3.7														
4.2-4.4														
4.7-4.9														
5.3-5.5						X	X		X					
5.8-6.0														
TP02, 0-0.15														
0.15-0.3						X	X		X					
0.3-0.5														
0.8-1.0														
1.2-1.4						X	X		X					

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: MM DATE: 14/8/15	CONSIGNMENT NOTE NO.	NAME: Ellen Ng. DATE: 14/8/15	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: EM Ng 17:25	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

05810

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 51056	LABORATORY BATCH NO.:
PROJECT NAME: SP30	SAMPLERS: MM
DATE NEEDED BY: STANDARD TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) KLINZ@jbsg.com.au; (3) MMURRAY@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	11 METALS	Selenium	PAH	TRH	OCP/PCBs	Phenols	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
TP02, 1.7-1.9	Soil	14/8		JAR										
2.3-2.5														
2.8-3.0														
3.2-3.4														
3.6-3.8														
4.1-4.3														
4.7-4.9						X	X	X	X	X	X			
5.1-5.3														
5.8-6.0														
TP03, 0-0.15														
0.15-0.3														
0.3-0.5						X	X	X						
0.6-0.8														
1.2-1.4														
1.6-1.8														
2.1-2.3														
2.5-2.7														
3.2-3.4														
3.6-3.8						X	X	X						

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: MM DATE: 14/8	CONSIGNMENT NOTE NO.	NAME: Ellen DATE: 14/8/15	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: 5:25pm	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

05811

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 51056	LABORATORY BATCH NO.:
PROJECT NAME: SP30	SAMPLERS: MM
DATE NEEDED BY: STANDARD TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) KLINZ@jbsg.com.au; (3) MMURRAY@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	1/ METALS	SELENIUM	PAH	TRH	OCP/PCB	PHENOLS	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
TP03, 4.1-4.3	Soil	14/8		JAR										
4.8-5.0														
5.2-5.4						x	x	x	x	x	x			
5.5-5.7														
TP04, 0-0.15														
0.15-0.3														
0.3-0.5						x	x	x						
0.8-1.0														
1.0-1.3														
1.5-1.7														
2.1-2.3														
2.6-2.8						x	x	x						
3.1-3.3														
3.5-3.7														
4.2-4.4														
4.8-5.0														
5.3-5.5														
5.7-5.9						x	x	x	x	x	x			
TP05 0-0.15														

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: MM DATE: 14/8	CONSIGNMENT NOTE NO.	NAME: Ellen 14/08/25	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: OF: 5.25pm	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

05812

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 51056	LABORATORY BATCH NO.:
PROJECT NAME: SP30	SAMPLERS: MM
DATE NEEDED BY: STANDARD TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) KLIN2@jbsg.com.au; (3) MMURRAY@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	H.METALS	Selenium	PAH	TRH	OCP/PCBs	Phenols	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
TP05, 0.3-0.5	Soil	14/8		Jar										
0.7-0.9														
1.5-1.7														
2.3-2.4						X	X	X						
3.4-3.6						X	X	X						
4.5-4.7														
5.3-5.5						X	X	X	X	X	X			
TP06, 0-0.2														
0.5-0.7						X	X	X						
1.5-1.7														
2.4-2.6														
3.1-3.3						X	X	X						
4.1-4.3														
4.6-4.8						X	X	X	X	X				
TP07, 0-0.15														
0.5-0.7														
1.5-1.7						X	X	X						
2.3-2.5						X	X	X						
3.1-3.3														

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE: 14/8	CONSIGNMENT NOTE NO.	NAME: Glen 140815 DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: 5.25pm	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

05813

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 51056	LABORATORY BATCH NO.:
PROJECT NAME: SP30	SAMPLERS: MM
DATE NEEDED BY: STANDARD TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) KLIN2@jbsg.com.au; (3) MMURRAY@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	11 METALS	Selenium	PAH	TPH	OCP/PCB	Phenol	BTEX	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
TP07, 3.6-4.0	SOIL	14/8		JAR		X	X	X							
TP08, 0.2-0.4															
0.7-0.9															
1.5-1.7															
2.2-2.4						X	X	X							
3.1-3.3						X	X	X							
3.7-3.9						X	X	X	X	X	X				
QC01						X	X	X	X	X	X				
QC02															
QC03															
QC04															
QC05						X	X	X	X	X	X				
TSPIKE/BLANK	water			4x vials								X			
RINSATE	2L			2x vials + 2x bottles		X	X	X	X	X	X				

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: Glen 140815 DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: 5:25pm	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Company name:	**JBS & G Australia (NSW & WA) P/L**
Contact name:	Katie Linz
Project name:	SP30
Project ID:	51056
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Aug 14, 2015 5:25 PM
Eurofins | mgt reference:	**468774**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 8.1 degrees Celsius.

☒ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Sample TP04 2.0-2.3 was not received thus sample cancelled | Requested QCA samples forwarded to Envirolab

Contact notes

If you have any questions with respect to these samples please contact:

Charl Du Preez on Phone : +61 (2) 9900 8400 or by e.mail: charldupreez@eurofins.com.au

Results will be delivered electronically via e.mail to Katie Linz - klinz@jbsg.com.au.

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.

JBS & G Australia (NSW & WA) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Katie Linz
Report	468775-AID
Project Name	SP30
Project ID	51056
Received Date	Aug 14, 2015
Date Reported	Aug 21, 2015

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, “Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise” therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

Project Name SP30
Project ID 51056
Date Sampled Aug 14, 2015
Report 468775-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
TP01 0-1	15-Au11656	Aug 14, 2015	Approximate Sample 734g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
TP02 1-2	15-Au11663	Aug 14, 2015	Approximate Sample 600g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
TP03 2-3	15-Au11670	Aug 14, 2015	Approximate Sample 688g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
TP04 3-4	15-Au11677	Aug 14, 2015	Approximate Sample 725g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
TP5 4-5	15-Au11684	Aug 14, 2015	Approximate Sample 817g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
TP6 1-2	15-Au11687	Aug 14, 2015	Approximate Sample 731g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
TP07 1-2	15-Au11692	Aug 14, 2015	Approximate Sample 705g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
TP08 3-3.9	15-Au11698	Aug 14, 2015	Approximate Sample 760g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Aug 20, 2015	Indefinite

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468775
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 21, 2015
Priority: 5 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos - WA guidelines	HOLD
Laboratory where analysis is conducted						
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217					X	X
Brisbane Laboratory - NATA Site # 20794						
External Laboratory						
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
TP01 0-1	Aug 14, 2015		Soil	S15-Au11656	X	
TP01 1-2	Aug 14, 2015		Soil	S15-Au11657		X
TP01 2-3	Aug 14, 2015		Soil	S15-Au11658		X
TP01 3-4	Aug 14, 2015		Soil	S15-Au11659		X
TP01 4-5	Aug 14, 2015		Soil	S15-Au11660		X
TP01 5-6	Aug 14, 2015		Soil	S15-Au11661		X
TP02 0-1	Aug 14, 2015		Soil	S15-Au11662		X
TP02 1-2	Aug 14, 2015		Soil	S15-Au11663	X	
TP02 2-3	Aug 14, 2015		Soil	S15-Au11664		X

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468775
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 21, 2015
Priority: 5 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos - WA guidelines	HOLD
Laboratory where analysis is conducted						
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217					X	X
Brisbane Laboratory - NATA Site # 20794						
External Laboratory						
TP02 3-4	Aug 14, 2015		Soil	S15-Au11665		X
TP02 4-5	Aug 14, 2015		Soil	S15-Au11666		X
TP02 5-6	Aug 14, 2015		Soil	S15-Au11667		X
TP03 0-1	Aug 14, 2015		Soil	S15-Au11668		X
TP03 1-2	Aug 14, 2015		Soil	S15-Au11669		X
TP03 2-3	Aug 14, 2015		Soil	S15-Au11670	X	
TP03 3-4	Aug 14, 2015		Soil	S15-Au11671		X
TP03 4-5	Aug 14, 2015		Soil	S15-Au11672		X
TP03 5-6	Aug 14, 2015		Soil	S15-Au11673		X
TP04 0-1	Aug 14, 2015		Soil	S15-Au11674		X

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468775
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 21, 2015
Priority: 5 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos - WA guidelines	HOLD
Laboratory where analysis is conducted						
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217					X	X
Brisbane Laboratory - NATA Site # 20794						
External Laboratory						
TP04 1-2	Aug 14, 2015		Soil	S15-Au11675		X
TP04 2-3	Aug 14, 2015		Soil	S15-Au11676		X
TP04 3-4	Aug 14, 2015		Soil	S15-Au11677	X	
TP04 4-5	Aug 14, 2015		Soil	S15-Au11678		X
TP04 5-6	Aug 14, 2015		Soil	S15-Au11679		X
TP5 0-1	Aug 14, 2015		Soil	S15-Au11680		X
TP5 1-2	Aug 14, 2015		Soil	S15-Au11681		X
TP5 2-3	Aug 14, 2015		Soil	S15-Au11682		X
TP5 3-4	Aug 14, 2015		Soil	S15-Au11683		X
TP5 4-5	Aug 14, 2015		Soil	S15-Au11684	X	

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G Australia (NSW & WA) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: SP30
Project ID: 51056

Order No.:
Report #: 468775
Phone: 02 8245 0300
Fax:

Received: Aug 14, 2015 5:25 PM
Due: Aug 21, 2015
Priority: 5 Day
Contact Name: Katie Linz

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos - WA guidelines	HOLD
Laboratory where analysis is conducted						
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217					X	X
Brisbane Laboratory - NATA Site # 20794						
External Laboratory						
TP5 5-5.5	Aug 14, 2015		Soil	S15-Au11685		X
TP6 0-1	Aug 14, 2015		Soil	S15-Au11686		X
TP6 1-2	Aug 14, 2015		Soil	S15-Au11687	X	
TP6 2-3	Aug 14, 2015		Soil	S15-Au11688		X
TP6 3-4	Aug 14, 2015		Soil	S15-Au11689		X
TP6 4-4.8	Aug 14, 2015		Soil	S15-Au11690		X
TP07 0-1	Aug 14, 2015		Soil	S15-Au11691		X
TP07 1-2	Aug 14, 2015		Soil	S15-Au11692	X	
TP07 2-3	Aug 14, 2015		Soil	S15-Au11693		X
TP07 3-4	Aug 14, 2015		Soil	S15-Au11694		X

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	JBS & G Australia (NSW & WA) P/L	**Order No.:**		**Received:**	Aug 14, 2015 5:25 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	468775	**Due:**	Aug 21, 2015
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Katie Linz
Project Name:	SP30				
Project ID:	51056				

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos - WA guidelines	HOLD
Laboratory where analysis is conducted						
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217					X	X
Brisbane Laboratory - NATA Site # 20794						
External Laboratory						
TP08 0-1	Aug 14, 2015		Soil	S15-Au11695		X
TP08 1-2	Aug 14, 2015		Soil	S15-Au11696		X
TP08 2-3	Aug 14, 2015		Soil	S15-Au11697		X
TP08 3-3.9	Aug 14, 2015		Soil	S15-Au11698	X	

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. 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 Advice.

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.

UNITS

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
COC	Chain of custody
SRA	Sample Receipt Advice
ISO	International Stardards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable
M11	NATA accreditation does not cover the performance of this service.

Authorised by:

Nibha Vaidya Senior Analyst-Asbestos (NSW)

Glenn Jackson
National 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

05814

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: S1056
PROJECT NAME: SP30
DATE NEEDED BY: STANDARD TAT
LABORATORY BATCH NO.:
SAMPLERS: MM
QC LEVEL: NEPM (2013)
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) KLINZ@jbsg.com.au; (3) MMURRAY@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Asbestos (WA)	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
TP01, 0-1	Soil	14/8		BAG		X			
1-2									
2-3									
3-4									
4-5									
5-6									
TP02, 0-1									
1-2						X			
2-3									
3-4									
4-5									
5-6									
TP03, 0-1									
1-2									
2-3						X			
3-4									
4-5									
5-6									

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: MM DATE: 14/8	CONSIGNMENT NOTE NO.	NAME: Glen	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: 14/8 OF: 5:25pm	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

05815

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 51056	LABORATORY BATCH NO.:
PROJECT NAME: SP30	SAMPLERS: M M
DATE NEEDED BY: STANDARD TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) KLIN2 @jbsg.com.au; (3) MMURRAY @jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Asbestos (14g)	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
TP4, 0-1	SOIL	14/8		BAG					
1-2									
2-3									
3-4						X			
4-5									
5-6									
TP5, 0-1									
1-3									
2-3									
3-4									
4-5						X			
5-5.5									
TP6, 0-1									
1-2						X			
2-3									
3-4									
4-4.8									

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE: 14/8	CONSIGNMENT NOTE NO.	NAME: Ellen	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: 14/8 5:25pm OF:	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO		COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

05816

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 51056	LABORATORY BATCH NO.:
PROJECT NAME: SP30	SAMPLERS: MM
DATE NEEDED BY: STANDARD TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) KLINZ@jbsg.com.au; (3) MMAUREAU@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	1 Bag (VOC)	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
TP07, 0-1	Soil	14/8		BAG					
1-2	↓	↓		↓		X			
2-3									
3-4									
TP08, 0-1									
1-2									
2-3									
3-3.9						X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: MM DATE: 14/8	CONSIGNMENT NOTE NO.	NAME: Glen	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: 14/8 5:25pm	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Company name:	**JBS & G Australia (NSW & WA) P/L**
Contact name:	Katie Linz
Project name:	SP30
Project ID:	51056
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Aug 14, 2015 5:25 PM
Eurofins | mgt reference:	**468775**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Charl Du Preez on Phone : +61 (2) 9900 8400 or by e.mail: charldupreez@eurofins.com.au

Results will be delivered electronically via e.mail to Katie Linz - klinz@jbsg.com.au.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

PRELIMINARY CERTIFICATE OF ANALYSIS

Client:
JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: K Linz, G Black

Sample log in details:

Envirolab Reference:	132484
Your Reference:	50374, Central Precinct
No. of samples:	2 Soils
Date samples received:	11/08/15
Date completed instructions received:	11/08/15

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client.
Results are reported on a dry weight basis for soils and on an as received basis for other matrices.

Report Details:

Date results requested by:	18/08/15
Date of Preliminary Report:	18/08/15

NATA accreditation number 2901. This document shall not be reproduced except in full.
Tests not covered by NATA are denoted with *.

INS:	Insufficient sample for this test	NT:	Not tested
NR:	Not requested	PQL:	Practical Quantitation limit
<:	Less than	>:	Greater than

LCS: Laboratory Control Sample

Contact Details:
Please direct any queries to Tania Notaras, Jacinta Hurst or David Springer
ph: 02 9910 6200 fax: 02 9910 6201
email: tnotaras@envirolabservices.com.au

Tania Notaras Jacinta Hurst

vTRH(C6-C10)/BTEXN in Soil			
Our Reference:	UNITS	132484-1	132484-2
Your Reference	----------	QC07A	QC08A
Date Sampled	----------	07/08/2015	07/08/2015
Type of sample		Soil	Soil
Date extracted	-	12/08/2015	12/08/2015
Date analysed	-	13/08/2015	13/08/2015
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	95	100

Tania Notaras

Jacinta Hurst

Client Reference: 50374, Central Precinct **Envirolab Reference:** 132484

svTRH (C10-C40) in Soil			
Our Reference:	UNITS	132484-1	132484-2
Your Reference	----------	QC07A	QC08A
Date Sampled	----------	07/08/2015	07/08/2015
Type of sample		Soil	Soil
Date extracted	-	12/08/2015	12/08/2015
Date analysed	-	13/08/2015	13/08/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100
Surrogate o-Terphenyl	%	89	94

Tania Notaras

Jacinta Hurst

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	132484-1 QC07A 07/08/2015 Soil	132484-2 QC08A 07/08/2015 Soil
Date extracted	-	12/08/2015	12/08/2015
Date analysed	-	13/08/2015	13/08/2015
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.1
Pyrene	mg/kg	<0.1	0.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ NEPM B1	mg/kg	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	0.46
Surrogate p-Terphenyl-d14	%	107	109

Tania Notaras

Jacinta Hurst

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	132484-1 QC07A 07/08/2015 Soil	132484-2 QC08A 07/08/2015 Soil
Date extracted	-	12/08/2015	12/08/2015
Date analysed	-	13/08/2015	13/08/2015
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Surrogate TCMX	%	94	98

Tania Notaras Jacinta Hurst

Client Reference: **50374, Central Precinct** **Envirolab Reference:** **132484**

PCBs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	132484-1 QC07A 07/08/2015 Soil	132484-2 QC08A 07/08/2015 Soil
Date extracted	-	12/08/2015	12/08/2015
Date analysed	-	14/08/2015	14/08/2015
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	94	98

Tania Notaras

Jacinta Hurst

Client Reference: **50374, Central Precinct** **Envirolab Reference:** **132484**

Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	132484-1 QC07A 07/08/2015 Soil	132484-2 QC08A 07/08/2015 Soil
Date digested	-	13/08/2015	13/08/2015
Date analysed	-	13/08/2015	13/08/2015
Arsenic	mg/kg	5	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	27	16
Copper	mg/kg	17	17
Lead	mg/kg	15	14
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	17	10
Zinc	mg/kg	41	38

Tania Notaras

Jacinta Hurst

Client Reference: **50374, Central Precinct** **Envirolab Reference:** **132484**

Moisture			
Our Reference:	UNITS	132484-1	132484-2
Your Reference	----------	QC07A	QC08A
Date Sampled	----------	07/08/2015	07/08/2015
Type of sample		Soil	Soil
Date prepared	-	12/08/2015	12/08/2015
Date analysed	-	13/08/2015	13/08/2015
Moisture	%	15	0.9

Tania Notaras

Jacinta Hurst

Client Reference: **50374, Central Precinct** **Envirolab Reference:** **132484**

Explosives in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	132484-1 QC07A 07/08/2015 Soil	132484-2 QC08A 07/08/2015 Soil
Date Extracted	-		
Date analysed	-		
HMX	mg/kg		
RDX	mg/kg		
1,3,5-Trinitrobenzene	mg/kg		
1,3-Dinitrobenzene	mg/kg		
Tetryl	mg/kg		
2,4,6-Trinitrotoluene	mg/kg		
4-Amino-2,6-dinitrotoluene	mg/kg		
2-Amino-4,6-dinitrotoluene	mg/kg		
4-&2-AM-DNT(Isomeric Mixture)	mg/kg		
2,4-Dinitrotoluene	mg/kg		
2,6-Dinitrotoluene	mg/kg		
2,4&2,6-DNT(Isomeric Mixture)	mg/kg		
Nitrobenzene	mg/kg		
2-Nitrotoluene	mg/kg		
3-Nitrotoluene	mg/kg		
4-Nitrotoluene	mg/kg		
Nitroglycerine	mg/kg		
PETN	mg/kg		
Surrogate (o-Dinitrobenzene)	%		

Tania Notaras

Jacinta Hurst

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
Ext-011	Subcontracted to ALS.

Tania Notaras Jacinta Hurst

Client Reference: 50374, Central Precinct **Envirolab Reference:** 132484

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery
Date extracted	-			12/08/2015	[NT]	[NT]	LCS-7	12/08/2015
Date analysed	-			13/08/2015	[NT]	[NT]	LCS-7	13/08/2015
TRHC$_6$ - C$_9$	mg/kg	25	Org-016		[NT]	[NT]	LCS-7	103%
TRHC$_6$ - C$_{10}$	mg/kg	25	Org-016		[NT]	[NT]	LCS-7	103%
Benzene	mg/kg	0.2	Org-016		[NT]	[NT]	LCS-7	106%
Toluene	mg/kg	0.5	Org-016		[NT]	[NT]	LCS-7	100%
Ethylbenzene	mg/kg	1	Org-016		[NT]	[NT]	LCS-7	105%
m+p-xylene	mg/kg	2	Org-016		[NT]	[NT]	LCS-7	103%
o-Xylene	mg/kg	1	Org-016		[NT]	[NT]	LCS-7	102%
naphthalene	mg/kg	1	Org-014		[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	91	[NT]	[NT]	LCS-7	99%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery
Date extracted	-			12/08/2015	[NT]	[NT]	LCS-7	12/08/2015
Date analysed	-			13/08/2015	[NT]	[NT]	LCS-7	13/08/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003		[NT]	[NT]	LCS-7	113%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003		[NT]	[NT]	LCS-7	105%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003		[NT]	[NT]	LCS-7	106%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003		[NT]	[NT]	LCS-7	113%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003		[NT]	[NT]	LCS-7	105%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003		[NT]	[NT]	LCS-7	106%
Surrogate o-Terphenyl	%		Org-003	95	[NT]	[NT]	LCS-7	124%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery
Date extracted	-			12/08/2015	[NT]	[NT]	LCS-7	12/08/2015
Date analysed	-			13/08/2015	[NT]	[NT]	LCS-7	13/08/2015
Naphthalene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	LCS-7	113%
Acenaphthylene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	LCS-7	92%
Phenanthrene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	LCS-7	99%

Tania Notaras

Jacinta Hurst

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery
Anthracene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	LCS-7	98%
Pyrene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	LCS-7	104%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	LCS-7	101%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012 subset		[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset		[NT]	[NT]	LCS-7	100%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset		[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	109	[NT]	[NT]	LCS-7	94%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery
Date extracted	-			12/08/2015	[NT]	[NT]	LCS-7	12/08/2015
Date analysed	-			13/08/2015	[NT]	[NT]	LCS-7	13/08/2015
HCB	mg/kg	0.1	Org-005		[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005		[NT]	[NT]	LCS-7	82%
gamma-BHC	mg/kg	0.1	Org-005		[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005		[NT]	[NT]	LCS-7	93%
Heptachlor	mg/kg	0.1	Org-005		[NT]	[NT]	LCS-7	91%
delta-BHC	mg/kg	0.1	Org-005		[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005		[NT]	[NT]	LCS-7	98%
Heptachlor Epoxide	mg/kg	0.1	Org-005		[NT]	[NT]	LCS-7	95%
gamma-Chlordane	mg/kg	0.1	Org-005		[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005		[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005		[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005		[NT]	[NT]	LCS-7	96%
Dieldrin	mg/kg	0.1	Org-005		[NT]	[NT]	LCS-7	101%
Endrin	mg/kg	0.1	Org-005		[NT]	[NT]	LCS-7	111%
pp-DDD	mg/kg	0.1	Org-005		[NT]	[NT]	LCS-7	105%
Endosulfan II	mg/kg	0.1	Org-005		[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005		[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005		[NT]	[NT]	[NR]	[NR]

Tania Notaras

Jacinta Hurst

Client Reference: 50374, Central Precinct **Envirolab Reference: 132484**

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery
Endosulfan Sulphate	mg/kg	0.1	Org-005		[NT]	[NT]	LCS-7	95%
Methoxychlor	mg/kg	0.1	Org-005		[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	99	[NT]	[NT]	LCS-7	91%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery
Date extracted	-			12/08/2015	[NT]	[NT]	LCS-7	12/08/2015
Date analysed	-			13/08/2015	[NT]	[NT]	LCS-7	13/08/2015
Aroclor 1016	mg/kg	0.1	Org-006		[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006		[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006		[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006		[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006		[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006		[NT]	[NT]	LCS-7	102%
Aroclor 1260	mg/kg	0.1	Org-006		[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	99	[NT]	[NT]	LCS-7	95%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery
Date digested	-			13/08/2015	[NT]	[NT]	LCS-3	13/08/2015
Date analysed	-			13/08/2015	[NT]	[NT]	LCS-3	13/08/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES		[NT]	[NT]	LCS-3	101%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES		[NT]	[NT]	LCS-3	94%
Chromium	mg/kg	1	Metals-020 ICP-AES		[NT]	[NT]	LCS-3	99%
Copper	mg/kg	1	Metals-020 ICP-AES		[NT]	[NT]	LCS-3	100%
Lead	mg/kg	1	Metals-020 ICP-AES		[NT]	[NT]	LCS-3	93%
Mercury	mg/kg	0.1	Metals-021 CV-AAS		[NT]	[NT]	LCS-3	95%
Nickel	mg/kg	1	Metals-020 ICP-AES		[NT]	[NT]	LCS-3	95%
Zinc	mg/kg	1	Metals-020 ICP-AES		[NT]	[NT]	LCS-3	96%

Tania Notaras Jacinta Hurst

QUALITY CONTROL Explosives in Soil	UNITS	PQL	METHOD	Blank
HMX	mg/kg	0.1	Ext-011	
RDX	mg/kg	0.1	Ext-011	
1,3,5-Trinitrobenzene	mg/kg	0.1	Ext-011	
1,3-Dinitrobenzene	mg/kg	0.1	Ext-011	
Tetryl	mg/kg	0.1	Ext-011	
2,4,6-Trinitrotoluene	mg/kg	0.1	Ext-011	
4-Amino-2,6-dinitrotoluene	mg/kg	0.1	Ext-011	
2-Amino-4,6-dinitrotoluene	mg/kg	0.1	Ext-011	
4-&2-AM-DNT(Isomeric Mixture)	mg/kg	0.1	Ext-011	
2,4-Dinitrotoluene	mg/kg	0.1	Ext-011	
2,6-Dinitrotoluene	mg/kg	0.1	Ext-011	
2,4&2,6-DNT(Isomeric Mixture)	mg/kg	0.1	Ext-011	
Nitrobenzene	mg/kg	0.1	Ext-011	
2-Nitrotoluene	mg/kg	0.1	Ext-011	
3-Nitrotoluene	mg/kg	0.1	Ext-011	
4-Nitrotoluene	mg/kg	0.1	Ext-011	
Nitroglycerine	mg/kg	1	Ext-011	
PETN	mg/kg	1	Ext-011	
Surrogate (o-Dinitrobenzene)	%		Ext-011	

Tania Notaras

Jacinta Hurst

05709

envirolab

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 50374
PROJECT NAME: Central Precinct
DATE NEEDED BY: Standard TAT

LABORATORY BATCH NO.:
SAMPLERS: EH
QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) KLIN2@jbsg.com.au; (3) MMURRAY@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SEND TO Envirolab

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	H.METALS	TRH/BTEX	PAH	OCP/PCB	Explosives	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
1	QC07A	SOIL	7/8/15		Jar+ice		X	X	X	X	X			send to envirolab
2	QC08A	↓	↓		↓		X	X	X	X	X			

ENVIROLAB GROUP

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 132484
Date Received: 11/8/15
Time Received: 11:15
Received by: JYH
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: EHowley DATE: 7/8/15 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Elkin ING 070815 DATE: OF: EFImgt 17:15	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP 11.1 deg C
NAME: Sean DATE: 11/8 OF: EFIMGT	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: JYH DATE: OF: ELS 11/8/15	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

07 AUG 2015 17:15

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client Details	
Client	JBS & G (NSW & WA) Pty Ltd
Attention	K Linz, G Black

Sample Login Details	
Your Reference	50374, Central Precinct
Envirolab Reference	132484
Date Sample Received	11/08/2015
Date Instructions Received	11/08/2015
Date Results Expected to be Reported	18/08/2015

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	2 Soils
Turnaround Time Requested	Standard
Temperature on receipt (°C)	11.1
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolabservices.com.au	Email: jhurst@envirolabservices.com.au

Sample and Testing Details on following page

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

Sample Id	*vTRH(C6-C10)/BTEXN in Soil*	*svTRH (C10-C40) in Soil*	*PAHs in Soil*	*Organochlorine Pesticides in soil*	*PCBs in Soil*	*Acid Extractable metals in soil*	*Explosives in Soil*
QC07A	✓	✓	✓	✓	✓	✓	✓
QC08A	✓	✓	✓	✓	✓	✓	✓

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 132875

Client:
JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: K Linz

Sample log in details:

Your Reference:	**51056, SP30**		
No. of samples:	5 soils		
Date samples received / completed instructions received	18/08/15	/	18/08/15

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	25/08/15	/	24/08/15
Date of Preliminary Report:	Not Issued		

NATA accreditation number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

TRH in Soil (C6-C9) NEPM Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	132875-1 QC01A 14/08/2015 Soil	132875-5 QC05A 14/08/2015 Soil
Date extracted	-	19/08/2015	19/08/2015
Date analysed	-	20/08/2015	20/08/2015
TRHC$_6$ - C$_9$	mg/kg	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25
Surrogate aaa-Trifluorotoluene	%	94	96

svTRH (C10-C40) in Soil			
Our Reference:	UNITS	132875-1	132875-5
Your Reference	----------	QC01A	QC05A
Date Sampled	----------	14/08/2015	14/08/2015
Type of sample		Soil	Soil
Date extracted	-	19/08/2015	19/08/2015
Date analysed	-	20/08/2015	20/08/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100
Surrogate o-Terphenyl	%	86	82

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	132875-1 QC01A 14/08/2015 Soil	132875-5 QC05A 14/08/2015 Soil
Date extracted	-	19/08/2015	19/08/2015
Date analysed	-	20/08/2015	20/08/2015
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	0.9	<0.1
Anthracene	mg/kg	0.3	<0.1
Fluoranthene	mg/kg	2.0	<0.1
Pyrene	mg/kg	1.8	<0.1
Benzo(a)anthracene	mg/kg	0.7	<0.1
Chrysene	mg/kg	0.7	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	1	<0.2
Benzo(a)pyrene	mg/kg	0.70	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.5	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.9	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.0	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.0	<0.5
Total Positive PAHs	mg/kg	9.5	NIL (+)VE
Surrogate p-Terphenyl-d14	%	104	106

Organochlorine Pesticides in soil			
Our Reference:	UNITS	132875-1	132875-5
Your Reference	----------	QC01A	QC05A
Date Sampled	----------	14/08/2015	14/08/2015
Type of sample		Soil	Soil
Date extracted	-	19/08/2015	19/08/2015
Date analysed	-	20/08/2015	20/08/2015
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Surrogate TCMX	%	92	93

PCBs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	132875-1 QC01A 14/08/2015 Soil	132875-5 QC05A 14/08/2015 Soil
Date extracted	-	19/08/2015	19/08/2015
Date analysed	-	20/08/2015	20/08/2015
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	92	93

Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	132875-1 QC01A 14/08/2015 Soil	132875-5 QC05A 14/08/2015 Soil
Date prepared	-	20/08/2015	20/08/2015
Date analysed	-	20/08/2015	20/08/2015
Arsenic	mg/kg	6	7
Cadmium	mg/kg	<0.4	0.8
Chromium	mg/kg	33	56
Copper	mg/kg	33	120
Lead	mg/kg	24	44
Mercury	mg/kg	0.1	0.4
Nickel	mg/kg	10	16
Zinc	mg/kg	39	110
Selenium	mg/kg	<2	<2

Misc Soil - Inorg			
Our Reference:	UNITS	132875-1	132875-5
Your Reference	----------	QC01A	QC05A
Date Sampled	----------	14/08/2015	14/08/2015
Type of sample		Soil	Soil
Date prepared	-	19/08/2015	19/08/2015
Date analysed	-	19/08/2015	19/08/2015
Total Phenolics (as Phenol)	mg/kg	<5	<5

Moisture			
Our Reference:	UNITS	132875-1	132875-5
Your Reference	----------	QC01A	QC05A
Date Sampled	----------	14/08/2015	14/08/2015
Type of sample		Soil	Soil
Date prepared	-	19/08/2015	19/08/2015
Date analysed	-	20/08/2015	20/08/2015
Moisture	%	18	13

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.

QUALITY CONTROL TRH in Soil (C6-C9) NEPM	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/08/2015	[NT]	[NT]	LCS-3	20/08/2015
Date analysed	-			20/08/2015	[NT]	[NT]	LCS-3	20/08/2015
TRHC$_{6}$ - C$_{9}$	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-3	97%
TRHC$_{6}$ - C$_{10}$	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-3	97%
Surrogate aaa-Trifluorotoluene	%		Org-016	97	[NT]	[NT]	LCS-3	100%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/08/2015	[NT]	[NT]	LCS-3	19/08/2015
Date analysed	-			20/08/2015	[NT]	[NT]	LCS-3	20/08/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-3	114%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-3	105%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-3	86%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-3	114%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-3	105%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-3	86%
Surrogate o-Terphenyl	%		Org-003	87	[NT]	[NT]	LCS-3	83%
QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/08/2015	[NT]	[NT]	LCS-3	19/08/2015
Date analysed	-			20/08/2015	[NT]	[NT]	LCS-3	20/08/2015
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-3	112%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-3	94%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-3	103%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-3	100%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-3	106%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-3	101%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-3	108%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	109	[NT]	[NT]	LCS-3	98%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/08/2015	[NT]	[NT]	LCS-2	19/08/2015
Date analysed	-			20/08/2015	[NT]	[NT]	LCS-2	20/08/2015
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	75%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	88%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	82%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	88%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	86%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	93%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	91%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	87%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	98%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	91%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	89	[NT]	[NT]	LCS-2	85%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/08/2015	[NT]	[NT]	LCS-2	19/08/2015
Date analysed	-			20/08/2015	[NT]	[NT]	LCS-2	20/08/2015
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	LCS-2	102%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	89	[NT]	[NT]	LCS-2	85%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			20/08/2015	[NT]	[NT]	LCS-2	20/08/2015
Date analysed	-			20/08/2015	[NT]	[NT]	LCS-2	20/08/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-2	115%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-2	110%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	110%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	112%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	106%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-2	98%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	107%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	107%
Selenium	mg/kg	2	Metals-020 ICP-AES	<2	[NT]	[NT]	LCS-2	107%

QUALITY CONTROL Misc Soil - Inorg	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			19/08/2015	[NT]	[NT]	LCS-1	19/08/2015
Date analysed	-			19/08/2015	[NT]	[NT]	LCS-1	19/08/2015
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	[NT]	[NT]	LCS-1	102%

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

05817

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 51056
PROJECT NAME: SP30
DATE NEEDED BY: STANDARD ~~TAT~~

LABORATORY BATCH NO.:
SAMPLERS: MM
QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ICLINZ@jbsg.com.au; (3) MMURRAY@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Send to envirolab

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	4 METALS	Selenium	ANIX	TEH	OCPs/PCBs	Plomb	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
1	QC01A	SOIL	14/8		JAR		x	x	x	x	x	x			
2	QC02A														
3	QC03A														
4	QC04A														
5	QC05A						x	x	x	x	x	x			

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 132875

Date Received: 18/8/15
Time Received: 13:00
Received by: KM
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: ~~Intact/Broken/None~~

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: MM DATE: 14/8	CONSIGNMENT NOTE NO.	NAME: Elaine DATE: 14/8/15	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: EF/MGT 17:25	COOLER TEMP ..... deg C
NAME: Sean DATE: 18/8	CONSIGNMENT NOTE NO.	NAME: Leeanne DATE: 18/8/15	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: EF/MGT	TRANSPORT CO	OF: ENS	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client Details	
Client	JBS & G (NSW & WA) Pty Ltd
Attention	K Linz

Sample Login Details	
Your Reference	51056, SP30
Envirolab Reference	132875
Date Sample Received	18/08/2015
Date Instructions Received	18/08/2015
Date Results Expected to be Reported	25/08/2015

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	5 soils
Turnaround Time Requested	Standard
Temperature on receipt (°C)	5.9
Cooling Method	Ice
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolabservices.com.au	Email: jhurst@envirolabservices.com.au

Sample and Testing Details on following page

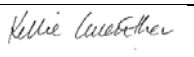
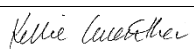
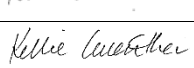
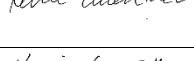
Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

Sample Id	*TRH in Soil (C6-C9) NEPM*	*svTRH (C10-C40) in Soil*	*PAHs in Soil*	*Organochlorine Pesticides in soil*	*PCBs in Soil*	*Acid Extractable metals in soil*	*Misc Soil - Inorg*	*On Hold*
QC01A	✓	✓	✓	✓	✓	✓	✓	
QC02A								✓
QC03A								✓
QC04A								✓
QC05A	✓	✓	✓	✓	✓	✓	✓	

Document Distribution

Rev No.	Copies	Recipient	Date:
A	Glyn Richards	Lend Lease	08/04/2014
B	Glyn Richards	Lend Lease	09/01/2015
B	Kylie Lloyd	Zoic Environmental	09/01/2015
C	Glyn Richards	Lend Lease	21/01/2015
C	Kylie Lloyd	Zoic Environmental	21/01/2015
D	Glyn Richards	Lend Lease	23/02/2015
D	Kylie Lloyd	Zoic Environmental	23/02/2015
0	Glyn Richards	Lend Lease	4/03/2015
0	Kylie Lloyd	Zoic Environmental	4/03/2015
1	Glyn Richards	Lend Lease	24/03/2015
1	Kylie Lloyd	Zoic Environmental	24/03/2015
2	Glyn Richards	Lend Lease	16/04/2015
2	Kylie Lloyd	Zoic Environmental	16/04/2015
3	Glyn Richards	Lend Lease	29/10/2015
3	Kylie Lloyd	Zoic Environmental	29/10/2015
4	Glyn Richards	Lend Lease	12/11/2015
4	Kylie Lloyd	Zoic Environmental	12/11/2015

Document Status

Rev No.	Author	Reviewer	Approved for Issue		
		Name	Name	Signature	Date
A	Katie Linz	Kellie Guenther	Kellie Guenther	Draft for Client review	08/04/2014
B	Katie Linz	Kellie Guenther	Kellie Guenther	Draft for Auditor review	09/01/2015
C	Katie Linz	Kellie Guenther	Kellie Guenther	Draft for Auditor review	21/01/2015
D	Katie Linz	Kellie Guenther	Kellie Guenther	Draft for Auditor review	23/02/2015
0	Katie Linz	Kellie Guenther	Kellie Guenther		4/03/2015
1	Katie Linz	Kellie Guenther	Kellie Guenther		24/03/2015
1	Katie Linz	Kellie Guenther	Kellie Guenther		16/04/2015
3	Katie Linz	Kellie Guenther	Kellie Guenther		29/10/2015
4	Katie Linz	Kellie Guenther	Kellie Guenther		12/11/2015

www.jbsg.com.au