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Report on
Detailed Site Investigation for Contamination

7 Concord Avenue
Concord West

Prepared for
F.T.D Holdings (Concord West) Pty Ltd
& Floridana Pty Ltd

Project 84964.01
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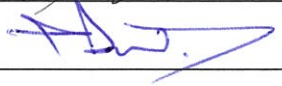
Reviewer		23 November 2015

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Executive Summary

In 2007, Douglas Partners Pty Ltd (DP) conducted a contamination assessment at 7 Concord Avenue and 202 – 210 George Street, Concord West. This Detailed Site Investigation (DSI) report presents information and data obtained in 2007 relevant to the current site at 7 Concord Avenue, Concord West (the site), and provides an assessment of the data against current guidelines for the proposed development. Observed changes to the site since 2007 are also documented. It is understood that the proposed development is for multistorey residential buildings over one level of common basement car parking covering much of the site.

A broadly rectangular, two-storey, mainly brick building occupies the southern two-thirds of the site. In 2007, the building consisted of a factory and associated offices, and was owned and used by Fred Hosking Pty Ltd for the design and printing of stationery, paper, cards and envelopes. The majority of the building is now used by Spitfire Paintball for indoor paintball skirmish and indoor karting. The northern end of the building is used by Firmstone for storage of equipment used for concreting. Spitfire Paintball and Firmstone both use office space at the southern end of the building.

A disused underground storage tank (UST) is located at the south of the site. No bowsers were present at the time of the site walkover, but the footprint of a former bowser is located approximately 40m to the east of the UST. An above-ground storage tank (AST) is currently located at the south-west corner of the building. A roofed store for dangerous goods was located inside the factory building in 2007 but is no longer present. Currently, a cabinet is located at the east of the building for the storage of fuel for the karts. Drawing 1, Appendix A shows the location of these features.

In 2007, a small number of fibre-cement fragments were observed on the soil surface at the north-eastern part of the site as shown on Drawing 1, Appendix A. The fibre-cement fragments were not observed during the recent walkover.

The site did not appear to have been developed until circa 1964, when Fred Hosking Sales Pty Limited became owners of the site. Field investigations revealed that the site has undergone filling to level the site prior to construction of the existing building. The site was probably used as a printing facility from 1964 to 2010.

A 9000 L UST was to be removed as part of factory building extensions in 1990. The bowser for this tank was not present at the site during fieldwork and is assumed to have been removed as part of building extensions (see Drawing 1, Appendix A for the estimated location of this UST and bowser). The other UST (10 000L), observed to be present at the site, was probably filled with sand in 1991. The associated bowser may have been removed at the same time. Fuel and/or chemicals were also previously stored at the neighbouring land to the south and east.

Field investigations in 2007 comprised soil sampling from 34 locations, 25 of which were located within the current site. Groundwater sampling was undertaken from five installed groundwater monitoring wells, four of which were located within the current site. Only results of testing of samples relevant to the current site were assessed herein.

Concentrations of arsenic, cadmium, chromium, mercury and zinc in soil were within the respective site assessment criteria. Concentrations of copper in soil were within the health investigation level (HIL) but concentrations were above the ecological investigation level (EIL) in some filling samples. It is noted that the adopted EIL for copper is conservative and further testing for soil parameters may

determine that these concentrations do not pose an ecological risk for a residential land use scenario. Concentrations of lead in soil were within the HIL and EIL except for the filling sample from Test Bore 221, depth 0.1-0.5 m; however, statistical analysis revealed that this elevated concentration is not significant. All concentrations of nickel in soil were within the HIL, but concentrations were above the EIL in some samples. It is noted that the adopted EIL for nickel is conservative and further testing for soil parameters may determine that these concentrations do not pose an ecological risk for a residential land use.

In soil, TRH C_6-C_9 was only recorded above the limit of reporting (LOR) in the sample from Test Bore 221, depth 1.2–1.7 m. The detected concentration was above the health screening level (HSL) for TRH C_6-C_{10}. A hydrocarbon odour and stained filling material was noted at this location and depth. 1,2,4-trimethyl benzene, n-propyl benzene and n-butyl benzene were also detected in this sample. TRH C_{10}-C_{14} was only recorded above the LOR in samples from Test Bore 221. The recorded concentrations were above the HSL and ESL for TRH $>C_{10}$-C_{16}. According to historical information, Test Bore 221 was the former location of a petrol bowser.

TRH C_{15}-C_{28} and TRH C_{29}-C_{36} were recorded above the LOR in the filling at Test Bore 229, depth 0.6-1.0 m, at a combined concentration above the ESL for TRH $>C_{16}$-C_{34}. This Test Bore appeared to have been drilled in the previous location of a UST, where filling material had been used to backfill the void following removal of the UST.

Concentrations of TRH C_{15}-C_{28} and TRH C_{29}-C_{36} were detected at combined concentrations above the ESL for TRH $>C_{16}$-C_{34} in some filling samples in a replicate natural soil sample (from Test Bore 222). The detectable TRH in the natural soil at Test Bore 222 may be as a result of leaks from the bowser that was previously at this location.

Concentrations of benzo(a)pyrene TEQ were within the HIL except for four filling samples. The EIL for benzo(a)pyrene was also exceeded in these samples. The concentration of benzo(a)pyrene TEQ in the replicate natural soil sample from Test Bore 222, depth 1.0 -1.3 m, was above the HIL but the primary sample concentration was below the HIL. The EIL for benzo(a)pyrene was also exceeded in the replicate sample. This sample location was near a previous bowser and thus the detected benzo(a)pyrene TEQ may be as a result of leaks from the bowser.

Only the concentrations of naphthalene in the sample from Test Bore 221, depth 1.2–1.7 exceeded the HSL. This sample was identified to have TRH contamination (as described above).

Concentrations of organochlorine pesticides (OCP), polychlorinated biphenyls (PCB) and total phenols in soil were within the respective site assessment criteria.

Asbestos was not recorded above the LOR in analysed soil samples, but was detected in the fibre-cement material sample from the filling at a depth of approximately 0.3 m below the ground surface at Test Bore 216.

Mercury and chromium were not recorded above the LOR in the groundwater samples collected from the site. Detected levels of arsenic, cadmium, copper, lead, nickel and zinc were noted in the groundwater samples with some concentrations above the groundwater investigation levels (GIL). The recorded levels of metals in the up-gradient well sample suggest that the concentrations are not attributable to the site and are likely to represent local diffuse sources of contamination (background).

The exception to this may be indicated by the (relatively) elevated concentrations for nickel and zinc in the groundwater sampled from the monitoring well at Test Bore 207.

TRH, BTEX, VOC, PAH, OCP and PCB were not recorded above the LOR in the analysed groundwater samples collected from the site.

Total phenols were detected in the groundwater samples from Test Bore 204 and Test Bore 207 at levels marginally above the LOR. The source of the phenols is unknown as total phenols were not detected in analysed soil samples.

According to the Canada Bay Local Environmental Plan 2013 Acid Sulfate Soils Map (Sheet ASS_002), the site is in a “Class 2” area, where an acid sulphate soils assessment is required if works are undertaken below the natural ground surface or works are likely to lower the groundwater table. Analytical results suggest that acid sulphate soils are present at the site and that natural soils near the groundwater level are the most susceptible to being acid sulphate soils.

Remediation will be required to make the site suitable for the proposed development. Given that an excavation for the proposed basement will result in the removal of much of the filling and soil from the site, some of the remediation can be tied in with this excavation process. In addition, further investigation should be undertaken to fill in data gaps to better determine remediation requirements.

The identified contamination can be remediated using common remediation technologies. A Remediation Action Plan and Acid Sulphate Soil Management Plan will be required for the proposed development. Waste classification of soils will be required for any soils designated for off- site disposal. A hazardous building materials survey of the building should be undertaken prior to its demolition.

Based on the results of the investigation it is considered that the site can be made suitable for the proposed development.

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Glossary of Terms

ABC	Ambient background concentration
ACL	Added contaminant limit
ACM	Asbestos-containing materials
AHD	Australian height datum
AF	Asbestos fines
ANZECC	Australian and New Zealand Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
AST	Aboveground storage tank
bgl	Below ground level
BTEX	Benzene, toluene, ethylbenzene, and xylenes
CEC	Cation exchange capacity
$cmol_c/kg$	Centimoles per kg
CLM	Contaminated Land Management
CSM	Conceptual site model
DP	Douglas Partners Pty Ltd
DQI	Data quality indicators
DQO	Data quality objectives
DSI	Detailed site investigation
EIL	Ecological investigation level
EPA	Environment Protection Authority
ESL	Ecological screening level
FA	Fibrous asbestos
GIL	Groundwater investigation levels
HIL	Heath investigation levels
HSL	Health screening levels
LNAPL	Light non-aqueous phase liquids
LOR	Limit of Reporting
m	Metres
mg/kg	Milligrams per kilogram
mg/L	Milligrams per litre
NATA	National Association of Testing Authorities, Australia
NSW	New South Wales
µg/L	Micrograms per litre
OCP	Organochlorine pesticides
PAH	Polycyclic aromatic hydrocarbons
PCB	Polychlorinated biphenyls
PQL	Practical quantitation limit

PID	Photo-ionisation detector
ppm	Parts per million
QA	Quality assurance
QC	Quality control
TEQ	Toxicity equivalence quotient
TOPIC	Total photoionisable compounds
TPH	Total petroleum hydrocarbons
TRH	Total recoverable hydrocarbons
UST	Underground storage tank
VOC	Volatile organic compounds

Report on Detailed Site Investigation for Contamination
7 Concord Avenue, Concord West

1. Introduction

In 2007, Douglas Partners Pty Ltd (DP) conducted a contamination assessment at 7 Concord Avenue and 202 – 210 George Street, Concord West. This Detailed Site Investigation (DSI) report presents information and data obtained in 2007 relevant to the current site at 7 Concord Avenue, Concord West (the site), and provides an assessment of the data against current guidelines for the proposed development. The DSI was commissioned by F.T.D. Holdings (Concord West) Pty Ltd & Floridana Pty Ltd to support a rezoning (planning) proposal.

It is understood that the proposed development is for multistorey residential buildings over one level of common basement car parking covering much of the site.

The aim of the DSI is to:

- Present and assess relevant information obtained in 2007;
- Determine current site uses and changes to the site since 2007;
- Assess previously obtained data on the contamination status of the subsoils and groundwater present at the site;
- Develop a conceptual site model; and
- Make recommendations for further investigations and remediation required to render the site suitable for the proposed development.

2. Scope of Works

The scope of works for this investigation was as follows:

- Review the previous contamination report and carry out a site walkover to determine if there are any noticeable changes to the site since 2007;
- Review proposed development plans for the site;
- Assess relevant previously obtained data against criteria sourced from guidelines currently endorsed by NSW EPA; and
- Prepare this DSI report which provides an overview of current and historical site information, investigation methods, a conceptual site model, and an assessment of previously obtained data for the proposed development. Recommendations are made regarding the need for further investigations and remediation to render the site suitable for the proposed development.

3. Previous Reports

3.1 Previous DP Contamination Assessment (2007)

The previous contamination assessment at the site was reported in:

- DP, *Report on Phase 1 & 2 Contamination Assessment, 7 Concord Avenue & 202-210 George Street, Concord West,* Prepared for Fred Hosking Pty Ltd, November 2007, Project 45164A (DP, 2007a).

The assessment was conducted for a larger site which included the current site (7 Concord Avenue) as well as neighbouring land to the south (202 – 210 George Street). The report was prepared for the then owners of the larger site (Fred Hosking Pty Ltd) for pre-sale and due diligence purposes associated with planning for a potential residential development.

DP (2007a) included a desktop review of site history and geological information, and field investigations including soil and groundwater sampling. It is noted that analytical results of soil sampling were compared to criteria sourced from Department of Environment and Conservation, *Guidelines for the NSW Site Auditor Scheme*, 2006 and the NSW EPA, *Guidelines for Assessing Service Station Sites*, 1994 which have now been superseded.

Relevant information from DP (2007a) has been used in preparing this report.

3.2 Previous DP Geotechnical Investigations

DP has previously conducted geotechnical investigations at the site which have been reported in:

- DP, *Investigation Report Summary, Building Extension for Fred Hosking Pty Ltd, Station Avenue, Concord West,* Prepared for J P Cordukes Pty Ltd, 23 July 1990, Project 14042 (DP, 1990); and
- DP, *Report on Preliminary Geotechnical Investigation, Investigation for Future Development, Station Avenue, Concord West*, Prepared for Fred Hosking Pty Ltd, December 2007, Project 45146 (DP, 2007b).

DP (1990) was for a two storey extension to the southern side of the single storey brick building at the site. Three test bores, Bores 1 to 3, were drilled to final depths of between 4.1 m and 5.0 m in locations indicated on Drawing 1, Appendix A. All bores encountered “bitumen and sand roadbase pavement materials underlain by clay filling which overlies a thin layer of soft clayey silt at depths 0.7 – 1.3 m and extending to a depth of 1.3 m – 1.7 m. The organic layer was then underlain by the weathered Ashfield Shale sequence comprising very stiff to hard clay grading to weak shale”. Free groundwater was encountered at depths of 2.4 m and 4.0 m in Bores 2 and 3, respectively, half an hour after completion of drilling operations. No free groundwater was observed in Bore 1.

DP (2007b) was undertaken concurrently with DP (2007a), and thus, relevant findings from DP (2007b) have been used in preparing this report.

It is noted that a separate geotechnical report (Project 84964.00) for the proposed development, based on findings presented in DP (2007b), was being prepared at the time of completing in this report.

4. Site Identification and Description

The site at 7 Concord Avenue, Concord West is located at the western end of Station Avenue, Concord West, NSW and comprises Lot 1 in Deposited Plan 219742. The land parcel covers an area of 15,014 m^2 (according to surveyors drawing, S. McN. Bland Pty Ltd, dated 19 May 2006). The local government authority is City of Canada Bay Council.

Site walkovers were conducted for DP (2007a) and on 13 August 2015. A comparison of observations from both site walkovers is described below.

A broadly rectangular, two-storey, mainly brick building occupies the southern two-thirds of the site. In 2007, the building consisted of a factory and associated offices, and was owned and used by Fred Hosking Pty Ltd for the design and printing of stationery, paper, cards and envelopes. The majority of the building is now used by Spitfire Paintball for indoor paintball skirmish and indoor karting. The northern end of the building is used by Firmstone for storage of equipment used for concreting. Spitfire Paintball and Firmstone both use office space at the southern end of the building.

Car-parking spaces (on concrete and asphalt surfaces) and strip gardens are currently located on the southern and eastern sides of the building and are accessible from Station Avenue. Truck access is on the eastern side of the building.

In 2007, much of the western part of the site was vegetated with grass and trees. Most of the trees had been cleared, now leaving a grass covered area. An area used for wash down of equipment from paintball skirmish (in August 2015) had resulted in muddy and stained surface soil (see Photograph 1, Appendix B). Small mounds of soil and general waste materials were also observed (see Photograph 2, Appendix B).

In 2007, the land to the immediate north of the building was largely unsealed, but was available for vehicle access and storage of bins. At that time, approximately ten chemical drums, most of which were empty, were stored at the eastern boundary of the site, near the north-east corner of the building. The drums were noted to have contained resins, starches and the printing industry solvent “Flexol”. Currently, these areas are used for the storage of waste items including old paint cans, timber and drums.

The northern portion of land is currently vacant and is separated from the remainder of the site by chain-link fencing. The land at the north-west corner of the site was vegetated with trees and shrubs in 2007, but most of this area has been cleared since 2007. The land at the north-east corner of the site contains concrete slabs, but is mostly unsealed with some grass and trees.

A disused underground storage tank (UST) is currently located at the south of the site (see Photograph 3, Appendix B). No bowsers were present at the time of the site walkover, but the footprint of a former bowser is located approximately 40m to the east of the UST (see Photograph 4, Appendix B). Drawing 1, Appendix A shows the location of the UST and the bowser footprint. An electrical substation is located at the south of the building.

An above-ground storage tank (AST) is currently located at the south-west corner of the building (see Photograph 5, Appendix B). It was understood (in 2007) that the AST was used for heating oil. The AST was on an asphalt surface which was cracked near the building wall. The AST did not have a

bund. Associated piping was observed to be above ground. Drawing 1, Appendix A shows the location of the AST.

A roofed store for dangerous goods was located inside the factory building in 2007 but the store is no longer present. The store was primarily constructed of brick and was used for the storage of 'Flexol PI' (500L), Kerosene (40L) and White Spirits (40L). Drawing 1, Appendix A, shows the location of the previous store. Currently, a cabinet is located at the east of the building for the storage of fuel for the karts (see Photograph 6, Appendix B). This area was used for the maintenance of the karts.

The neighbouring land to the south of the site is occupied by a warehouse which was used by Fred Hosking Pty Ltd in 2007, and is currently used by a furniture manufacturer. A bowser for a UST was observed at the entrance to this property in 2007, but is no longer present.

In 2007, a small number of fibre-cement fragments were observed on the soil surface at the north-eastern part of the site as shown on Drawing 1, Appendix A. The fibre-cement fragments were not observed during the recent walkover.

The neighbouring land to the east and north is used for residential purposes, although there is also vacant land to the north-west. Homebush Bay Drive is alongside the western site boundary.

5. Regional Topography, Geology and Hydrogeology

The site is relatively level (at approximately 4.5 m AHD), however, the land to the east slopes up from the site. Powells Creek is approximately 200 m to the west of the site. The inferred groundwater flow at the site is thus is to the west, towards Powells Creek. Rainfall, on the impermeable surfaces (asphalt and concrete) at the site, is likely to enter stormwater drains. Some of the rainfall at permeable surfaces (garden areas and at the north of the site) is expected to infiltrate soils.

Reference to the Sydney 1:100 000 Geological Sheet indicates that the site lies on the boundary of areas indicated as underlain by man-made fill over alluvial and estuarine sediment including silty to peaty quartz sand, silt, and clay (western side); and Ashfield Shale comprising black to dark-grey shale and laminite (eastern side).

According to the Canada Bay Local Environmental Plan 2013 Acid Sulfate Soils Map (Sheet ASS_002), the site is in a "Class 2" area, where an acid sulphate soils assessment is required if works are undertaken below the natural ground surface or works are likely to lower the groundwater table. According to NSW Acid Sulfate Soil Risk mapping (1994-1998), the site is in an area of "Disturbed Terrain" which may include filled areas, which often occur during reclamation of low-lying swamps for urban development. Investigations are required to assess these areas for acid sulphate soils.

According to NSW Office of Water's website, there are three registered groundwater bores within 500 m of the site, however all three groundwater bores are on the opposite side of Powells Creek to the west. The three bores were used for monitoring purposes, but no soil or groundwater data was provided. The results of the groundwater bore search are provided in Appendix C.

6. Site History

Site history information, including aerial photographs, historical title deeds, Council records and WorkCover records has primarily been sourced from DP (2007a).

6.1 Aerial Photographs

Copies of aerial photographs from 1930, 1951, 1970, 1991 and 2002 sourced from the Land Information Centre of the Department of Lands (now NSW Land & Property Information, a Division of the Department of Finance, Service & Innovation) in 2007 are provided in Appendix D. A copy of the 2014 image, obtained from the NSW Land & Property information website (SIX Maps), is also provided in Appendix D.

A review of the 1930 image (the earliest image available) shows that the site was undeveloped. George Street and Station Street appear in the photograph with properties to the east occupied by residential houses. Much of the land to the north, south and west of the site was also undeveloped.

A review of the 1951 image shows that the site remained undeveloped since 1930. Neighbouring land to the south was subject to commercial or industrial development. Neighbouring Land to the east, west and north remained relatively unchanged since 1930.

The 1970 image shows that a warehouse (with saw-tooth roof) had been constructed at the site. [The construction is likely to have occurred in circa 1964 when Fred Hosking Sales Pty Limited became owners of the site].. The land surrounding the warehouse appears to have been cleared for vehicle access and parking as well as storage. Much of the surrounding land uses appear to have been relatively unchanged since 1951, with residential houses occupying the land to the east and a warehouse occupying the land to the south.

The 1991 image shows that the warehouse with the saw-tooth roof at the site had been extended since 1970. The north-east part of the site appeared to have been used for external storage. Homebush Bay Drive had been constructed to the west of the site. Land to the north of the site appeared to have been cleared. What appears to be a warehouse had been constructed adjacent to the eastern boundary of the site. Apart from the warehouses neighbouring the south and east of the site, the surrounding land uses were primarily residential to the east and south and parkland on the opposite side of Homebush Bay Drive.

The 2002 image shows that the site remained relatively unchanged since 1991. Some of the eastern side of the site contained more vegetation than in 1991. Some of the land adjacent to the north of the site contained residential houses, which were not present in 1991. What appeared to be a warehouse style building adjacent the eastern boundary in 1991 had been replaced by residential buildings.

The 2014 image shows that the site and surrounding land remained relatively unchanged since 2002.

6.2 Historical Title Deeds

A historical land title deed search was conducted Peter S. Hopley Pty Limited, Legal Searches in 2007. Determination of the ownership or occupancy of the property, including company names, can assist in the identification of previous land uses and therefore establish potentially contaminating activities. A summary of the findings relevant to the site is provided in Table 1.

Table 1: Summary of Title Deed Search Results for Lot 1 in Deposited Plan 219742

Date	Owner	Possible Site Use
29.03.1921	Harrold Allsopp (Miller)	Vacant
22.07.1926	Harrold Allsopp Limited	Vacant
12.04.1927	Rachel Curotta (Widow) Florence Curotta (Spinster)	Vacant
24.08.1928	Philip Lussich (Company Director)	Vacant
20.12.1928	Alice Julia Clara Morris (Married Woman)	Vacant
21.03.1930	Samuel Curotta (Merchant)	Vacant
06.04.1937	Edith Russell (Married Woman)	Vacant
05.04.1938	John Dalzell Wallace (Boiler Maker) Catherine Reid Wallace (Married Woman)	Vacant
20.02.1964	Fred Hosking Sales Pty Limited	Design and print of stationery, paper, cards and envelopes
06.05.2003	Fred Hosking Pty Limited	Design and print of stationery, paper, cards and envelopes

Note: Current registered proprietor not listed

6.3 Council Section 149 Certificate

The Section 149 (2) and (5) certificate for Lot 1, DP 219742, dated 14 September 2007, was obtained for DP (2007a). The certificate indicated that the land parcel was zoned as '4 (a) Industrial General'. The certificate stated that the land:

- Was not declared to be an investigation area or remediation site under Part 3 of the Contaminated Land Management Act 1997;
- Was not subject of a declaration of the land as an investigation site, investigation order, remediation site or remediation order, within the meaning of the Contaminated Land Management Act 1997;
- Was not subject of a voluntary investigation or voluntary remediation agreement subject to the Environmental Protection Authority's agreement under section 19 or 26 of the Contaminated Land Management Act 1997;
- Was not subject of a site audit statement within the meaning of Part 4 of the Contaminated Land Management Act 1997 that has been provided to Council; and

- Was not affected by the Unhealthy Building Land Policy, adopted by the Environment Protection Authority.

6.4 Council Records

Records made available by the City of Canada Bay Council were reviewed in 2007. Information in regards to potentially contaminating activities at the site and other items of note are summarised as follows:

- A letter, dated 26 March 1965, from Council Chambers, referred to the storage of petrol at the site;
- A letter, dated 21 January 1986, from Fred Hosking to the Town Clerk, stated that the western boundary was buried under hundreds of tonnes of earth from roadworks;
- A letter, dated 18 May 1989, from Council Chambers describes that the north-eastern corner of the site that was being used as a "builder's yard" had been filled without consent from Council, and that all the fill that had been deposited upon the land without consent from Council was to be removed. A letter had been addressed to the town planner in 1966 for permission for this portion of land to be used for the storage of building materials by a Mr A Anderson;
- A Notice to Applicant of Determination of a Development Application, dated 20 March 1990, in regards to the extension of the building stated that the "existing fuel storage and dispensing facilities have to be relocated to Council's satisfaction prior to erection of the proposed addition". A letter, dated 2 May 1990, from Kenneth Reynolds Architects to the Town Clerk stated that "a new petrol tank will be provided and a tentative location will be provided and a tentative location has been shown on the plan". A plan was not attached to the letter, however, two plans (noted to be received on 22 May 1989) show that a 9000 L capacity UST was located to the south of the building, on the edge of the proposed additions. The UST was noted "to be removed". A bowser was located near the south-east corner of the building. Drawing 1, Appendix A shows the approximate location of this UST and bowser; and
- A letter, dated 19 November 2002, from the Environment Protection Authority (EPA) referred to the "dumping of 10 to 12 chemical drums in a gully" that runs along Homebush Bay Drive, Concord West with "ICI stamped on them". A Council inter-office memo, dated 19 November 2002, noted that the drums were empty and rusted to suggest that the drums had been there for an extended period (5 to 10 years). Some of the drums were noted to be inside the 7 Concord Avenue property, while others were noted to be on the land adjoining Homebush Bay Drive.

6.5 WorkCover Dangerous Goods Search

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover was conducted on 18 September 2007. The search recovered information in regards to licence 35/011268 which related to the storage of dangerous goods at the site. The occupier's name was listed as Fred Hosking Pty Ltd and the nature of site activities was noted to be paper product manufacture and the manufacture of stationery and envelopes. The search results are included in Appendix E.

Information from 1973 refers to a 2000 gallon UST located at a car port at the south of the site. The UST was noted to store mineral spirit (inflammable liquid) at that time. A sketch (see Appendix E) indicated that there may have been a fill point or dispenser point near the Station Avenue entrance to the site.

Information from 1983 makes reference to a Roofed Package Store with a storage capacity of 1000 L for the storage of methanol or white spirits. Reference is also made to a 10 000 L UST used to store petrol. There is no indication to the location of these storage facilities.

In 1991, a letter to the WorkCover Authority of NSW advised that the UST for the storage of petrol was no longer used. The tank was filled with sand.

Information from 1993 made reference to a Roofed Store with a maximum storage capacity of 1845 L. The chemicals noted to be stored in this facility include Isopropanol (400 L), Denatured Alcohol (400 L), Acrylic Thinners (200 L) and X55 solvent (petroleum spirit) (400 L). The roofed store was noted to be located inside the factory building, or underneath an awning, on the eastern side of the building.

Information from 2003 makes reference to a Roofed Store with a maximum capacity of 1845 L. The chemicals noted to be stored in this facility include Ethanol (400 L), Isopropanol (400 L), Paint (200 L) and Petroleum Products (400 L). A sketch of the location of the store is provided but is unclear as to its location at the site. It was probably located inside the factory building, or underneath an awning, on the eastern side of the building as per the 1993 information.

6.6 Regulatory Notices, Licenses and Applications

A search of sites that are listed under s. 60 of the Contaminated Lands Management Act 1997 (CLM Act) (sites reported to the EPA that may become regulated) was undertaken on 23 July 2015. The site and nearby properties are not listed.

A search of notices and orders issued by the NSW EPA under s. 58 of the CLM Act was undertaken on 23 July 2015. No sites were listed for Concord West.

On 23 July 2015, a search of the public register for licences, applications and notices under s. 308 of the Protection of the Environment Operations Act 1997, revealed Licence Number 6839 was issued to Fred Hosking Pty Ltd at Station Avenue, Concord West for the generation or storage of up to 100 tonnes of waste. The licence was first issued in 2000 and was due to be reviewed in 2010.

6.7 Site Interviews

According to interviewed employees of Fred Hosking Pty Ltd in 2007:

- The factory building at 202 - 210 George Street was used for chemical storage at some stage prior to becoming a printing factory;
- Prior to becoming residential apartments, a warehouse/factory was located adjacent to the east (up-gradient) of the site and had stored chemicals on the property; and
- There was no knowledge of chemical spills at the current site.

7. Fieldwork, Analysis and QA/QC

Field investigations for DP (2007a) comprised soil sampling from 34 locations, 25 of which were located within the current site (103 to 105, 201 to 204, 207 to 222, 228 and 229 as shown on Drawing 1, Appendix A). Groundwater sampling was undertaken from five installed groundwater monitoring wells (piezometers), four of which were located within the current site (203, 204, 207 and 213 as shown on Drawing 1, Appendix A). The following sections refer to test locations within the site boundary.

7.1 Data Quality Objectives and Project Quality Procedures

The data quality objectives (DQO) for DP (2007a) were developed to define the type and quality of the data to achieve the project objectives and were based broadly in accordance with the seven step data quality objective process, as defined in Australian Standard (AS) "Guide to the Sampling and Investigation of Potentially Contaminated Soil Part 1: Non-volatile and Semi-volatile Compounds (AS 4482.1 – 2005). The DQO process is defined by:

- Stating the Problem;
- Identifying the Decision;
- Identifying Inputs to the Decision;
- Defining the Boundary of the Assessment;
- Developing a Decision Rule;
- Specifying Acceptable Limits on Decision Errors; and
- Optimising the Design for Obtaining Data.

As part of the project quality procedures, a number of Data Quality Indicators (DQI's) were established for DP (2007a) to assess the acceptability of the quality of the investigation data. The DQIs included documentation completeness, data completeness, data comparability, data representativeness, precision and accuracy for sampling and analysis. The DQIs for sampling and analysis were evaluated in DP (2007a) and the quality of the data was considered to be satisfactory to meet the objectives at that time and, thus, it is considered that the data can be used for the objectives of this investigation.

7.2 Sampling Location Rationale

The sampling locations in DP (2007a) were designed according to the known site information and to achieve representative coverage of the site area. Test Bores 103 to 105 were positioned to meet requirements for geotechnical investigations (for DP, 2007b). Test Bores 201 to 204, 207 to 222, 228 and 229 were positioned using a combination of a targeted and systematic regime to compliment the Test Bores 103 to 105. One targeted sampling location was placed at each of the following potentially contaminating sources:

- Test Bore 204 was positioned approximately 1m down hydrogeological gradient of a UST for groundwater well installation, and soil and groundwater sampling;

- Test Bore 229 was positioned where a UST was previously located (according to filed plans from Council records);
- Test Bore 222 was placed 1 m down hydrogeological gradient of a bowser "footprint" (previous location of a bowser) for soil sampling;
- Test Bore 221 was positioned at the previous location of a bowser for soil sampling; and
- Test Bore 218 was positioned approximately 2 m down hydrogeological gradient of the AST in an accessible area for soil sampling.

The remaining 17 sample locations were positioned on a loose grid pattern to compliment the targeted sampling locations and geotechnical sampling locations. In addition, the sampling locations were designed to accommodate drill-rig accessibility, the location of underground services and site operations (traffic and staff movements). Sampling locations are shown on Drawing 1, Appendix A.

One of the groundwater monitoring wells (Test Bore 203) was located on the eastern boundary of the site to assess the (limited) chemical composition of groundwater flowing onto the site (this groundwater well was located near the previous location of a factory/warehouse that previously neighboured the site to the east). The remaining two groundwater wells (Test Bores 207 and 213) were located on the western and northern sides of the site to aid in determining the chemical composition and direction of groundwater flowing away from the site.

According to NSW EPA, *Sampling Design Guidelines*, 1995, a minimum of 25 sample locations are required for characterisation 1.5 ha (15,014 m^2) site using a systematic sampling pattern. A total of 25 sampling locations were used at the site and therefore it is considered that a sampling density suitable for a detailed investigation was adopted.

All sample points were cleared of detectable services and pipes using Dial-before-you-dig information and an electro-magnetic sweep. Ground Penetrating Radar (GPR) was used to determine the extremities of the UST at the site.

7.3 Drilling and Soil Sampling Procedures

The field investigation comprised soil sampling from test bores as follows:

- Test Bores 103 to 105 were drilled as part of concurrent geotechnical investigations, using a Multi-Access rig. The bores were drilled using a 100 mm solid flight auger until refusal on shale (and then the shale was cored using NMLC-Coring). Samples from auger returns were generally collected at nominal depths of 0.2 m, 0.5 m, and 1.5 m. Samples from Standard Penetration Tests were generally collected from depths of around 1.0 m, 2.0m and 3.0 m and 4.0 m (until refusal of solid flight auger drilling);
- Test Bores 201 to 204, 207 to 222 and 229 were drilled using a Bobcat-mounted drill rig. The bores were drilled using a 100 mm solid flight auger. Samples were generally collected from auger returns at identifiable horizons of filling/soil or upon signs of contamination until drilling refusal or a target depth was reached; and
- The location of Test Bore 228 was inaccessible for a drill rig due to dense vegetation and the surrounding man-proof fence. Samples of identifiable horizons of soil/filling were taken from hand auger returns until hand auger refusal.

Environmental sampling was performed according to standard operating procedures outlined in the DP Field Procedures Manual. All sampling data was recorded on DP chain-of-custody sheets. Each sample (including 10% replicate samples for QA/QC purposes) was placed into laboratory prepared glass jars with a minimum of disturbance and capped immediately with Teflon lined lids. Disposable gloves were used to limit the potential for cross-contamination. A replicate sample was collected in a zip-lock plastic bag for screening for VOC using a photo-ionisation detector (PID). Replicate soil/filling samples were collected in zip-lock bags (with minimal air in the bag) from Test Bores 203, 204, 207 and 213 for screening for Acid Sulphate Soils. After labelling the sample containers with individual and unique identification, including project number, sample location and sample depth, samples were placed into a cooled and insulated container for transport to the laboratory.

7.4 Groundwater Piezometer Construction Details and Sampling Procedures

The piezometers (at Test Bores 203, 204, 207 and 213) were constructed using 50 mm diameter acid washed, class 18, PVC casing and machine-slotted well screen. Joints were screw threaded, thereby avoiding the use of glues and solvents which may contaminate the well waters. As well construction was designed to accommodate shallow groundwater (of around 1m below ground level [bgl]) noted whilst augering, a gravel pack could only be extended approximately 0.1 m to 0.3 m above the well screen (instead of a standard 0.5 m) to accommodate a bentonite plug of approximately 0.5 m thickness. End caps were placed to seal each of the piezometers. Gatic covers were set in concrete at the ground surface for each well.

Each well was developed by the removal of all available water from the piezometers using disposable bailers. Groundwater was sampled using a “low-flow” pump once stable parameters were reached as indicated by a “multi-probe”. The sample containers were labelled with individual and unique identification, and placed into a cooled, insulated and sealed container for transport to the laboratory. Groundwater samples for heavy metal analysis were filtered on site using a 45 µm filter prior to analysis.

7.5 Soil Samples Analytical Scope and Rationale

The analytical scheme for soil was designed around assessing the potential for contamination which may have arisen from current and past use of the site as well as from observations made during field investigations. The analytical scheme is summarised in Table 2. Of particular note:

- Filling sample 104/0.5-0.6 was analysed for asbestos as some concrete fragments were noted to be in the filling material in Test Bore 104 at depths of 0.4 m bgl to 0.8 m bgl;
- Filling sample 105/0.1-0.2 was analysed for metals and PAH as gravel comprising slag with some ash was noted in the filling material at Test Bore 104 to a depth of 0.3 m bgl, underneath a layer of asphaltic concrete;
- Filling sample 105/0.4-0.5 was analysed for asbestos as trace brick fragments were noted in the filling at Test Bore 105 at depths of 0.3 m bgl to 1.0 m bgl;
- Filling sample 203/0.2-0.5 was analysed for asbestos as trace brick pieces were noted in the filling in Test Bore 203 at depths of 0.15 m bgl to 0.8 m bgl;

- Natural soil sample 204/1.4-1.5 was analysed for VOCs as Test Bore 204 was drilled next to a UST and free groundwater was observed at a depth of 1.4 m whilst augering;
- Filling sample 208/0.0-0.1 was analysed for asbestos as some concrete pieces and a trace of plastic was noted in the filling at the surface to a depth of 0.2 m bgl;
- Filling sample 209/0.5-1.0 was analysed for VOCs as a slight hydrocarbon odour was detected in the filling material from a depth of 0.5 m bgl to 1.0 m bgl;
- Filling sample 213/0.0-0.2 was analysed for asbestos as the filling at Test Bore 213 was noted to have some concrete fragments and a trace of wire. Test Bore 213 was drilled near an area noted to contain fibre cement fragments on the ground surface;
- Filling sample 214/0.0-0.2 was analysed for asbestos as some concrete fragments were noted in the surface filling material at Test Bore 214 to a depth of 0.2 m bgl. Test Bore 214 was drilled in an area noted to contain fibre cement fragments on the ground surface;
- Filling sample 216/0.0-0.5 was analysed for asbestos as a fibre-cement fragment (sample A216/0.3) was noted in the filling material at a depth of approximately 0.3 m bgl. The fibre-cement sample was also analysed for asbestos;
- Filling sample 218/0.4-0.7 was analysed for VOCs as this bore was drilled near the AST;
- Filling sample 221/1.2-1.7 was analysed for VOCs as a strong hydrocarbon odour was detected in the filling at Test Bore 221 from a depth of 0.8 m bgl to 1.7 m bgl;
- Natural soil sample 222/1.0-1.3 was analysed for VOCs as Test Bore 222 was drilled near a former bowser;
- Filling sample 228/0.0-0.1 was analysed for asbestos as metal pieces and tile fragments were noted in the surface layer of filling at Test Bore 228, to a depth of 0.1 m; and
- Filling sample 229/1.1-1.5 was analysed for VOCs as Test Bore 229 was drilled where the previous UST was located.

Table 2: Analytical Scheme for Soil Samples

Sample Location (Test Bore/Depth)	Sample Type Filling (F) Natural (N) Material (M)	Metals	TRH & BTEX	PAH	OCP	PCB	Phenols	Asbestos	VOC
103/0.2-0.3	F	✓	✓	✓	-	-	-	-	-
103/0.5-0.6	F	✓	✓	✓	✓	✓	✓	-	-
104/0.5-0.6	F	✓	✓	✓	✓	✓	✓	✓	-
Z-180907	F	✓	✓	✓	-	-	-	-	-
105/0.1-0.2	F	✓	✓	✓	-	-	-	-	-
105/0.4-0.5	F	✓	✓	✓	✓	✓	✓	✓	-
201/0.2-0.5	F	✓	✓	✓	✓	✓	✓	✓	-
202/0.5-1.0	F	✓	✓	✓	✓	✓	✓		-
203/0.2-0.5	F	✓	✓	✓	✓	✓	✓	✓	-
204/0.5-1.0	F	✓	✓	✓	✓	✓	✓	-	-

Sample Location (Test Bore/Depth)	Sample Type Filling (F) Natural (N) Material (M)	Metals	TRH & BTEX	PAH	OCP	PCB	Phenols	Asbestos	VOC
204/1.4-1.5	N	✓	✓	✓	-	-	-	-	✓
207/0.5-1.0	F	✓	✓	✓	-	-	-	-	-
207/1.0-1.5	F	✓	✓	✓	✓	✓	✓	-	-
208/0.0-0.1	F	✓	✓	✓	-	-	-	✓	-
208/0.5-1.0	F	✓	✓	✓	✓	✓	✓	-	-
209/0.5-1.0	F	✓	✓	✓	✓	✓	✓	-	✓
210/0.7-1.2	F	✓	✓	✓	✓	✓	✓	✓	-
211/0.5-1.0	F	✓	✓	✓	✓	✓	✓	-	-
212/0.2-0.5	F	✓	✓	✓	✓	✓	✓	-	-
213/0.0-0.2	F	✓	✓	✓	✓	✓	✓	✓	-
213/0.2-0.5	F	✓	✓	✓	-	-	-	-	-
214/0.0-0.2	F	-	-	-	-	-	-	✓	-
214/0.2-0.5	F	✓	✓	✓	✓	✓	✓	-	-
215/0.1-0.3	F	✓	✓	✓	-	-	-	✓	-
215/0.5-1.0	F	✓	✓	✓	✓	✓	✓	-	-
216/0.0-0.5	F	✓	✓	✓	✓	✓	✓	✓	-
A216/0.3	M	-	-	-	-	-	-	✓	-
216/0.5-1.0	F	✓	✓	✓	-	-	-	-	-
217/0.0-0.5	F	✓	✓	✓	-	-	-	✓	-
217/2.0-2.3	N	✓	✓	✓	-	-	-	-	-
BD3-101007	N	✓	✓	✓	-	-	-	-	-
218/0.4-0.7	F	✓	✓	✓	✓	✓	✓	-	✓
218/0.7-1.0	F	✓	✓	✓	-	-	-	-	-
BD4-101007	F	✓	✓	✓	-	-	-	-	-
219/0.2-0.4	F	✓	✓	✓	-	-	-	✓	-
219/0.5-0.9	F	✓	✓	✓	✓	✓	✓	-	-
220/0.3-0.5	F	✓	✓	✓	✓	✓	✓	-	-
221/0.1-0.5	F	✓	✓	✓	✓	✓	✓	✓	-
221/1.2-1.7	F	✓	✓	✓	-	-	-	-	✓
222/0.2-0.5	F	✓	✓	✓	✓	✓	✓	✓	-
222/1.0-1.3	N	✓	✓	✓	-	-	-	-	✓
BD2-111007	N	✓	✓	✓	-	-	-	-	-
228/0.0-0.1	F	✓	✓	✓	-	-	-	✓	-
229/0.6-1.0	F	✓	✓	✓	-	-	-	-	-
229/1.1-1.5	F	✓	✓	✓	-	-	-	-	✓

Notes:
Z-180907 blind replicate of 104/0.5-0.6
A216/0.3 fibre cement material sample from Test Bore 216, depth 0.3m
BD3-101007 blind replicate of 217/2.0-2.3
BD4-101007 blind replicate of 218/0.7-1.0
BD2-111007 blind replicate of 222/1.0-1.3
BD4-111007 blind replicate of 226/0.2-0.5

7.6 Groundwater Samples Analytical Scope and Rationale

The groundwater analytical scheme, as shown in Table 3, was designed to provide information, from each of the installed wells, in regards to potential groundwater contamination at the site.

Table 3: Analytical Scheme for Soil Samples

Sample Location (GW-Test Bore No.)	Metals	TRH & BTEX	PAH	OCP	PCB	Phenols	VOC	Hardness
GW-203	✓	✓	✓	✓	✓	✓	✓	✓
BD1-171007	✓	✓	-	-	-	-	-	✓
GW-204	✓	✓	✓	✓	✓	✓	✓	✓
GW-207	✓	✓	✓	✓	✓	✓	✓	✓
GW-213	✓	✓	✓	✓	✓	✓	✓	✓

Note: BD1-171007 is a blind replicate sample of GW-203

7.7 Acid Sulphate Soils

Samples that were screened for ASS are listed in Table 4. Filling samples, as well as natural soil samples, were screened (using peroxide) as some of the filling on the site could be dredged material from the Homebush Bay area and may potentially be ASS.

Table 4: Samples screened for ASS and selected for sPOCAS and Chromium Reducible Sulphur analysis

Samples screened for ASS (Test Bore/depth)	Sample Type Filling (F) Natural (N)	Selected for SPOCAS and Chromium Reducible Sulphur
203/0.2-0.5	F	-
203/0.8-1.0	N	-
203/1.0-1.3	N	-
203/1.5-2.0	N	-
203/2.5-3.0	N	-
204/0.1-0.3	F	-
204/0.5-1.0	F	-
204/1.0-1.2	N	-
204/1.2-1.4	N	✓
2041.4-1.5	N	-
204/1.9-2.2	N	-
207/0.0-0.5	F	-
207/0.5-1.0	F	-

Samples screened for ASS (Test Bore/depth)	Sample Type Filling (F) Natural (N)	Selected for SPOCAS and Chromium Reducible Sulphur
207/1.0-1.5	F	✓
207/1.7-2.0	N	-
213/0.2-0.5	F	-
213/0.7-1.0	N	-
213/1.1-1.5	N	✓
213/1.5-2.0	N	-

Based on the screening results, SPOCAS analysis was undertaken on samples that were more likely to be ASS and were of different soil descriptions:

- Sample 204/1.2-1.4 was noted to be grey silty clay from less than 0.5 m below the observed groundwater level.
- Sample 207/1.0-1.5 was noted to be brown clay filling from approximately 0.7 m above the observed groundwater level.
- Sample 213/1.1-1.5 was noted to be red brown and grey silty clay from marginally below (within 0.3 m of) the observed groundwater level.

7.8 Quality Assurance and Quality Control (QA/QC)

The field QC procedures for sampling as prescribed in Douglas Partners *Field Procedures Manual* were generally followed for DP (2007a). Field QC sampling comprised replicate sampling, at a rate of approximately one replicate sample for every ten samples.

Three replicate soil samples were analysed at Envirolab Services for intra-laboratory comparison and two replicate soil samples were analysed as LabMark for inter-laboratory comparison. It was considered in DP (2007a) that the findings of comparative results were unlikely to affect the assessment results and suggested that a suitable soil sampling methodology had been adopted and laboratory precision was achieved.

One replicate groundwater sample was submitted for laboratory analysis at Envirolab Services along for intra-laboratory comparison. It was considered in DP (2007a) that the findings of comparative results were unlikely to affect the assessment results and suggested that a suitable soil sampling methodology had been adopted and laboratory precision was achieved.

Both laboratories, Envirolab Services and LabMark, are NATA accredited, and are required to conduct in-house QA/QC procedures. These are normally incorporated into every analytical run and included: reagent blanks, spike recovery, surrogate recovery and duplicate samples. Upon review of the laboratory QA/QC procedures results, it was considered, in overall terms, that the data quality objectives for DP (2007a) had been attained and the quality of the data was acceptable.

8. Assessment Criteria

For the purposes of preparing this report, the analytical results from the laboratory testing have been assessed against the investigation and screening levels sourced from Schedule B1 of the National Environment Protection Council, *National Environment Protection (Assessment of Site Contamination) Measure 1999*, as amended 2013 (NEPC, 2013). This guideline has been endorsed by the NSW EPA under the *Contaminated Land Management (CLM) Act* 1997. Schedule B of NEPC (2013) provides investigation and screening levels for commonly encountered contaminants which are applicable to generic land uses and include consideration of, where relevant, the soil type and the depth of contamination. The investigation and screening levels are not intended to be used as clean up levels. They establish concentrations above which further appropriate investigation (e.g. Tier 2 or Tier 3) should be undertaken.

The following sub-sections outline the relevant investigation and screening levels adopted for soils and groundwater as documented in the NEPC (2013). Site specific and/or theoretical assumptions relevant to the selection of the investigation and screening levels have been outlined in each sub-section as required.

8.1 Soils

8.1.1 Health-based Investigation Levels (Non-Petroleum Chemical Contaminants)

Table 5 shows the health investigation levels (HIL) that have been adopted as site assessment criteria for assessing the human health risk from a contaminant via all relevant pathways of exposure. As the site is proposed to be developed into residential buildings of six to eight storeys with one level of basement car-parking that covers most of the site, HIL have been adopted from Column B (Residential within minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments).

Table 5 only includes contaminants tested in this DSI and does not include the full list provided in NEPC (2013).

Table 5: Health Investigation Levels for Soil Contaminants

Contaminant	HIL – Residential B
Metals	
Arsenic	500
Cadmium	150
Chromium (screening value based on Cr (VI))	500
Copper	30 000
Lead	1200
Mercury (inorganic)	120
Nickel	1200
Zinc	60 000
PAH	
Carcinogenic PAH (as Benzo(a)pyrene TEQ)	4
Total PAH	400
OCP	
DDT+DDE+DDD	600
Aldrin + Dieldrin	10
Chlordane	90
Endosulfan (total)	400
Endrin	20
Heptachlor	10
HCB	15
Methoxychlor	500
Phenols	
Total Phenolics (screening value based on pentachlorophenol)	130
Other Organics	
PCB	1

It is noted that NEPC (2013), does not provide a HIL for total chromium, but does provide a HIL for chromium (VI) of 500 mg/kg. Similarly, it does not provide a HIL for total phenolics, but does provide a HIL for phenol of 45,000 mg/kg, pentachlorophenol of 130 mg/kg and cresols of 4,700 mg/kg. Therefore, analytical testing undertaken for total chromium and total phenolics are considered to be screening tests. The HIL for chromium (VI) and pentachlorophenol (the lowest HIL from the listed phenols) have been adopted as the screening values. Further (speciated) analysis and assessment would need to be considered if concentrations are encountered in excess of the screening values. It is also noted that NEPC (2013) does not provide HIL for the complete list of pesticide contaminants tested in DP (2007a).

8.1.2 Health Screening Level for Vapour Intrusion – Petroleum Hydrocarbons

Table 6 shows the health screening levels (HSL) for petroleum hydrocarbon compounds adopted for the assessment and are based on the exposure to petroleum hydrocarbons through the dominant vapour inhalation exposure pathway only (i.e. not direct contact to soils). The HSL have been obtained from Column HSL A and HSL B (Low – high rise residential) of Table 1A(3) of Schedule B 1, Guideline on Investigation Levels for Soil and Groundwater, of the NEPC (2013). The HSL derivation has assumed a slab-on-ground construction for building structures, and, therefore is only considered relevant to parts of the site with building structures (yet to be constructed). It is noted that less conservative HSL may be applicable depending on the final design of the proposed site development, for example, for multistorey buildings where non-residential uses (e.g. car parking) exist in a basement or at ground level, then land use category D (commercial/industrial) should be applied. At this stage, the most conservative HSL from Table 1A(3) have been adopted. Although the soils at the site mainly comprise clays, sand and silt were also identified, thus the most conservative HSL for the three soil types have been included.

Table 6: Soil Health Screening Levels for Vapour Intrusion

Contaminant	HSL A & HSL B Low-high Rise Residential (mg/kg)
	Depth 0 m to <1 m
Toluene	160
Ethylbenzene	55
Xylenes	40
Naphthalene	3
Benzene	0.5
TPH C_6-C_{10} less BTEX	40
TPH >C_{10}-C_{16} less Napthalene	110

It is noted that direct contact HSL which were developed for exposure through dermal contact, incidental oral ingestion and dust inhalation, have not been used for this assessment as direct contact HSL are unlikely to become drivers for further investigation or site management as the values are significantly higher than the HSL shown in Table 6.

8.1.3 Ecological Investigation levels

Ecological Investigation Levels (EILs) have been developed and discussed in NEPC (2013) for selected metals and organic compounds and are applicable for assessing risk to terrestrial ecosystems. EILs depend on specific soil physiochemical properties and land use scenarios and generally apply to the top 2 m of soil, which essentially corresponds to the root zone and habitation zone of many species. The EIL is determined for a contaminant using the following formula:

EIL = ABC + ACL, where

ABC = Ambient Background Concentration
ACL = Added Contaminant Limit

The ABC of a contaminant is the soil concentration in a specific locality that is the sum of naturally occurring background levels and the contaminants levels that have been introduced from diffuse or non-point sources (e.g. motor vehicle emissions). ACLs are based on the soil characteristics of pH, CEC and clay content.

EILs shown in Table 7 have been obtained from Tables 1B(1) to 1B(5) of Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, of NEPC (2013). The following site specific data and assumptions have been used to determine the EILs:

- A protection level for urban residential sites and public open space has been adopted;
- The EILs will apply to the top 2 m of the soil profile;
- A clay content of 10 % has been used. Although various soil types were observed, this is considered to be a conservative value given that the majority of soils encountered comprised clay type soils;
- A pH of 6 has been used based on the results of acid sulphate sulphate soil screening results and results obtained in DP (2007b). This pH value is slightly below the median and average of pH results and, therefore, is considered to be somewhat conservative;
- No measured background concentrations were obtained or used for calculations. ABC have been sourced from Schedule B5c of NEPC (2013) (based on 25th percentiles from Olszowy et al. 1995). ABC values used are for an 'old suburb' in NSW with a 'high traffic volume';
- In the absence of site specific test results, a conservative CEC of 5 $cmol_c/kg$ has been used.

Table 7: Ecological Investigation Levels (EILs) in mg/kg

Contaminant	ABC	ACL	EIL
Arsenic	-	-	100
Chromium (III)	15	400	415
Copper	30	95	125
Lead	160	1100	1260
Nickel	5	30	35
Zinc	120	230	350
Naphthalene	-	-	170
DDT	-	-	180

8.1.4 Ecological Screening levels

Ecological Screening Levels (ESLs) are used to assess the risk of selected petroleum hydrocarbon compounds, BTEX and benzo(a)pyrene to terrestrial ecosystems. ESLs apply to the top 2 m of the soil profile, which essentially corresponds to the root zone and habitation zone of many species. The adopted ESLs, from the urban residential and public open space ESLs in Table 1B(6), Schedule B1 of NEPC (2013), are shown in Table 8. The most conservative ESLs are shown from both 'fine' and 'coarse' soil textures given that various soil types were encountered, although tested soils were primarily clays which are considered to be 'fine' in texture.

Table 8: Ecological Screening Levels (EILs) in mg/kg

Analyte	ESL	Comments
TRH C_6-C_{10} less BTEX	180*	All ESLs are low reliability apart from those marked with * which are moderate reliability
TRH >C_{10}-C_{16}	120*	
TRH >C_{16}-C_{34}	300	
TRH >C_{34}-C_{40}	2800	
Benzene	50	
Toluene	85	
Ethylbenzene	70	
Xylenes	45	
Benzo(a)pyrene	0.7	

8.1.5 Management Limits – Petroleum Hydrocarbons

In addition to appropriate consideration and application of the HSLs and ESLs, there are additional considerations which reflect the nature and properties of petroleum hydrocarbons, including:

- Formation of observable light non-aqueous phase liquids (LNAPL);
- Fire and explosion hazards; and
- Effects on buried infrastructure e.g. penetration of, or damage to, in-ground services.

Management Limits have been developed to avoid or minimise these potential effects. The adopted Management Limits, from residential, parkland and public open space limits in Table 1B(7), Schedule B1 of NEPC (2013) are shown on Table 9. The more conservative Management Limits are shown for from both 'fine' and 'coarse' soil textures given that various soil types were encountered, although the majority of tested soils at the site were considered to be 'fine' in texture.

Table 9: Management Limits (mg/kg)

Contaminant	Management Limit
TRH C_6 – C_{10}	700
TRH >C_{10}-C_{16}	1000
TRH >C_{16}-C_{34}	2500
TRH >C_{34}-C_{40}	10 000

8.1.6 Asbestos in Soil

Bonded asbestos containing material (ACM) is the most common form of asbestos contamination across Australia, generally arising from:

- Inadequate removal and disposal practices during demolition of buildings containing asbestos products;
- Widespread dumping of asbestos products and asbestos containing fill on vacant land and development sites; and
- Commonly occurring in historical fill containing unsorted demolition materials.

Mining, manufacturing or distribution of asbestos products may result in sites being contaminated by friable asbestos including free fibres. Severe weathering or damage to bonded ACM may also result in the formation of friable asbestos comprising fibrous asbestos (FA) and/or asbestos fines (AF).

Asbestos only poses a risk to human health when asbestos fibres are made airborne and inhaled. If asbestos is bound in a matrix such as cement or resin, it is not readily made airborne except through substantial physical damage. Bonded ACM in sound condition represents a low human health risk, whilst both FA and AF materials have the potential to generate, or be associated with, free asbestos fibres. Consequently, FA and AF must be carefully managed to prevent the release of asbestos fibres into the air.

According to Table 7 of Schedule B1 of NEPC (2013), the health screening levels for asbestos contamination in soil for a residential site with minimal garden/accessible soil (Column B) is:

- 0.04 % (w/w) bonded ACM;
- 0.001 % (w/w) friable asbestos (FA and AF); and
- No visible asbestos on surface soil.

However, as a detailed assessment for asbestos in soil was not undertaken as part of DP (2007a), the positive identification of asbestos (at the laboratory limit of reporting) has been adopted as a screening criterion.

8.2 Groundwater

8.2.1 Groundwater Investigation Levels

The adopted Groundwater Investigation Levels (GILs) are based on ANZECC & ARMCANZ (2000), *National water quality management strategy, Australian and New Zealand guidelines for fresh and marine water quality*, Australian and New Zealand Conservation Council & Agriculture, and Resource Management Council of Australia and New Zealand. Based on the likely receiving waters being Powells Creek (which flows into Homebush Bay), and that the noted hardness results (see Section 11.3) indicate that groundwater at the site is saline, the Groundwater Investigation Levels (GILs) have been based on the protection of, as a minimum of 95%, of species in marine water. Selected moderate to high reliability trigger values from the guidelines are also listed in Table 1C, Schedule B1 of NEPC (2013). Exceedance of the criteria does not necessarily mean that a substance will cause ecological harm, but prompts further investigations involving an evaluation of risk to assess whether harmful effects may occur as a result of the exceedance. Drinking water guideline values have not been adopted as GIL, given that it is considered extremely unlikely that groundwater in the vicinity of the site will be sourced for drinking purposes.

The adopted GILs for analytes and the corresponding source documents are shown in Table 10. Note that the table does not list GILs for every chemical tested in this assessment but does provide applicable GILs for all chemicals detected in laboratory analysis (where provided as trigger values in ANZECC & ARMCANZ, 2000).

ANZECC & ARMCANZ, 2000 provides trigger values for individual (speciated) phenols, but not for total phenols. The limit of reporting for total phenols has been used as a screening criterion and is listed in Table 10 as a GIL.

Table 10: Groundwater Investigation Levels (mg/kg)

Contaminant	GIL (µg/L)	Source of GIL
Volatile Organic Compounds Toluene Ethylbenzene *o*-xylene *p*-xylene *m*-xylene	 180 5 350 200 75	ANZECC & ARMCANZ (2000) low reliabilty trigger values for the protection of 95% of marine water species.
Benzene	500	ANZECC & ARMCANZ (2000) trigger value for the protection of 99% of marine water species
Polycyclic Aromatic Hydrocarbons Naphthalene	 50	ANZECC & ARMCANZ (2000) trigger value fo the protection of 99% of marine water species
Anthracene Benzo(a)pyrene Phenanthrene Fluoranthene	0.01 0.1 0.6 1	ANZECC & ARMCANZ (2000) low reliability trigger value, Australian Water Quality Guidelines for the protection of 99% of fresh water species.
Phenols Total Phenols	 50	Detection limit used as screening criterion in absence of guideline value for total phenols
Metals Chromium (III) Chromium (VI) Copper Lead Zinc	 27 4.4 1.3 4.4 15	ANZECC & ARMCANZ (2000) trigger values for the protection of 95% of marine water species.
Arsenic (III) Arsenic (V)	2.3 4.5	ANZECC & ARMCANZ (2000) low reliabilty trigger values for the protection of marine water species.
Cadmium Mercury (inorganic) Nickel	0.7 0.06 7	ANZECC & ARMCANZ (2000) trigger values for the protection of 99% of marine water species.
Organochlorine Pesticides Endosulfan Endrin	 0.005 0.004	ANZECC & ARMCANZ (2000) trigger values for the protection of 99% of marine water species.
Aldrin Chlordane DDE DDT Dieldrin Hetptachlor Methoxychlor	0.003 0.001 0.0005 0.0004 0.01 0.0004 0.004	ANZECC & ARMCANZ (2000) low reliabilty trigger values for the protection of marine water species.
Polychlorinated Biphenyls Aroclor 1067 Aroclor 1242 Aroclor 1248 Aroclor 1254	 0.009 0.3 0.03 0.01	ANZECC & ARMCANZ (2000) low relaibilty trigger for the protection of marine water species

8.2.2 Health Screening Levels – Petroleum Hydrocarbons

Table 11 shows the HSL for petroleum hydrocarbon compounds adopted for the assessment and are based on the exposure to petroleum hydrocarbons through the dominant vapour inhalation exposure pathway. The HSL have been obtained from Column HSL A and HSL B (Low – high rise residential) of Table 1A(4) of Schedule B 1, *Guideline on Investigation Levels for Soil and Groundwater* (NEPC, 2013). It is noted that less conservative HSL may be applicable depending on the final design for the proposed site development, for example, for multistorey buildings where non-residential uses (e.g. car parking) exist in a basement or at ground level, then land use category D (commercial/industrial) should be applied. At this stage, the most conservative HSL from Table 1A(4) have been adopted. Although the soils at the site mainly clays, some other soils were identified, thus the most conservative HSL for the three soil types have been included.

It is also noted that the groundwater level is likely to be less than 2 m below the proposed basement. HSL are not provided for depths of less than 2 m in Schedule B 1 of NEPC, 2013. Therefore, concentrations of contaminants in groundwater close to the HSL listed in Table 11 should trigger further assessment.

Table 11: Groundwater Health Screening Levels for Vapour Intrusion

Contaminant	HSL A & HSL B: low – high rise residential (µg/L)
	Depth 2 m to <4 m
Toluene	NL
Ethylbenzene	NL
Xylenes	NL
Naphthalene	NL
Benzene	800
TPH C_6-C_{10} less BTEX	1000
TPH >C_{10}-C_{16} less Napthalene	1000

Note: NL Not limiting

9. Fieldwork Observations

9.1 Soil Observations

Details of the sub-surface conditions encountered during the course of DP (2007a) are included in the Test Bore Logs (Appendix F) along with related notes to accompany the report. Table 12 provides a summary of the lithological sequence observed at each Test Bore.

Table 12: Summary of Lithological Sequence

Test Bore	Concrete Depth (m)	Asphaltic Concrete Depth (m)	Filling (m)	Natural (m)				Test bore completion depth (m)
				Peaty Clay	Silty Clay(s)	Gravelly Clay	Shale	
103	-	-	0-1.3	1.3-1.9	1.9-4.9	-	4.9-9.0**	9.0
104	-	-	0-0.4	-	0.4-0.8	-	3.2-7.5**	7.5
105	-	0-0.03	0.03-1.0	-	1.0-3.9	1.5-2.0##	3.9-7.58**	7.58
201	0-0.15	-	0.15-0.8	0.8-1.0	1.0-3.0	-	-	3.0
202	0-0.14	-	0.14-1.0	-	-	-	-	1.0*
203	-	0-0.07	0.07-0.8	0.8-1.0	1.0-4.3	-	-	4.3^
204	-	0-0.05	0.05-1.0	1.0-1.2	1.2-2.5	-	-	2.5^
207	-	-	0-1.6	1.6-1.7	1.7-4.3	-	-	4.3
208	-	-	0-1.1	-	1.1-1.6	-	-	1.5
209	0-0.15		0.15-1.2	1.2-1.7	1.7-2.0	-	-	2.0
210	0-0.16	-	0.16-1.2	-	-	-	-	1.2*
211	0-0.16	-	0.4-1.3	1.3-1.7	1.7-2.0	-	-	2.0
212	0-0.15	-	0.15-0.7	-	-	-	-	0.7*
213	0-0.7	-	0.7-2.7	0.7-1.1	1.1-2.7	-	2.7-2.9	2.9^
214	-	-	0-0.8	0.8-1.2	1.2-1.5	-	-	1.5
215	-	-	0-1.1	1.1-1.2	1.2-1.7	-	-	1.7
216	-	-	0-1.0	-	1.0-3.0#	-	-	3.0
217	-	-	0-1.0	-	1.0-2.3	-	-	2.3
218	-	0-0.05	0.05-1.0	1.0-1.2	1.2-2.2	-	-	2.2
219	0-0.15	-	0.15-0.9	0.9-1.1	1.1-1.7	-	-	1.7
220	0-0.17	-	0.17-0.6	0.6-0.8	0.8-1.9	-	-	1.9
221	-	-	0-1.7	-	-	-	-	1.7
222	-	0-0.05	0.05-1.0	-	1.0-1.5	-	-	1.5
228	-	-	0-0.12	-	-	-	-	0.12*
229	-	0-0.05	0.05-2.6	-	2.6-2.9	-	-	2.9^

Notes:
* Refusal in filling
# Possibly filling from 1.0m bgl - 2.4m bgl
^ Refusal on weathered shale
** NMLC-Coring
##Possibly peat layer
^^Possibly natural from 1.5m bgl

Filling materials observed underneath the building at the site consisted, mainly, of a thin layer of sand (underneath a concrete slab) underlain by clay type fills with smaller proportions of gravel and silt. Filling was observed to be at depths of up to 1.3 m bgl. However, refusal in filling materials was encountered at three locations (Test Bores 202, 210 and 212). A slight hydrocarbon odour was noted in the filling at Test Bore 209 from 0.5 m – 1.0 m bgl.

Filling materials at the north-eastern corner of the site (at Test Bores 213, 214 and 104) were observed to be a layer of sand, gravel and recycled concrete filling with trace amounts rootlets and wire; underlain by a clay or gravelly clay type filling to a depth of up to 0.8 m. Three fragments of fibre-cement were noted on the ground surface in the vicinity of Test Bores 104 and 214 at the time of

sampling. It is noted that fibre cement-fragments were not observed on the ground surface during the site walkover on 13 March 2015.

The north-western corner of the site was inaccessible for the Bobcat-mounted drill rig because of the dense vegetation and surrounding man-proof fencing. Hand tools were used to take a surface filling sample (to a depth of 0.1 m bgl) which was identified to be a silty clay material with trace amounts of gravel, rock pieces, metal pieces, tile fragments and bone. The surface material was underlain by compacted clay filling which could not be penetrated with a hand auger. Refusal was at 0.12 m bgl.

Filling materials observed along the western boundary of the site (at Test Bores 207, 216 and 217) were observed to be clay type fills with some gravel and trace amounts of sand, timber and rootlets to a depth of up to 1.6 m bgl. A fragment of fibre-cement (sample A216/0.3) was collected from Test Bore 216 from a depth of approximately 0.3 m bgl.

Filling materials adjacent to the north of the building (at Test Bores 103, 208 and 215) were identified to consist of sand, gravelly sand, gravelly clay, sandy gravel, clay and sandy clay up to a depth of 1.3 m bgl. Trace amounts of concrete fragments were noted in the filling at the surface at Test Bores 208 and 215. A trace amount of plastic was also noted in the surface filling at Test Bore 208.

Filling materials adjacent the east of the building (at Test Bores 105, and 203, 219 and 220; underneath a concrete slab or asphaltic concrete) were observed to be sand, silty clay, clay, gravelly clay, clayey gravel (roadbase) and sandy gravel materials up to a depth of 1.0 m bgl. Traces of brick pieces were noted in the filling at Test Bore 203, depth 0.2 m – 0.8 m bgl. Some slag and ash was noted in the filling at Test Bore 105 beneath the layer of asphaltic concrete to a depth of 0.3 m bgl.

Test Bore 221 was drilled on a garden surface at the south-west corner of the building at the location of a former bowser. A surface layer of silty sand filling, to a depth of 0.5 m bgl, was observed to be underlain by a gravelly sand filling, to a depth of 1.7 m bgl, identified with a strong hydrocarbon odour from 0.8 m to 1.7 m bgl and stained grey from 1.0 m bgl to 1.7 m bgl. Drilling refusal was on concrete at 1.7 m bgl.

Filling materials (underneath an asphaltic concrete layer) adjacent the south of building (at Test Bores 204, 218, 222 and 229) were observed to be gravelly sand (roadbase), clay, clayey sand, silty clay and sand. The yellow sand filling identified at Test Bore 222, at depth 0.8 m – 1.0 m bgl, appeared to be a service trench backfill material. The depth of filling (2.6 m bgl) at Test Bore 229 indicated that this sampling location was the likely previous location of a UST.

Natural materials observed to underlie filling typically included a layer of peaty clay (up to 0.9m thick) underlain by silty clays and, in turn, shale. Typically, the peaty clay layer tended to be relatively soft, as well as an underlying layer of silty clay. Silty clays, at greater depths, tended to be relatively stiffer and were usually mottled grey and brown (red or red-brown). Trace amounts of (ironstone) gravel were noted in some of the Test Bores, typically in the relatively stiffer silty clays.

Natural materials at Test Bores 217, 216 and 105 were observed to be slightly different to the typical natural soil profiles at the site, with:

- Trace amounts of gravel and sand noted in the silty clay at Test Bore 217;
- Trace amounts of gravel, sand and rootlets in the silty clay at Test Bore 216; and
- Slightly sandy silty clay with ironstone gravel and a gravely clay observed at Test Bore 105.

9.2 PID Results

All soil samples were screened for the presence of Total Photo-Ionisable Compounds (TOPIC) using a calibrated Photo-Ionisation Detector (PID). The TOPIC results give a general indication of the likely presence of volatile organic compounds prior to dispatch to the laboratory. It was noted that the TOPIC results should only be used for indicative purposes only as the accuracy of PID screening can be affected by the presence of interferences in the soil gas, including elevated moisture levels.

The replicate soil samples collected in zip-lock plastic bags were allowed to equilibrate under ambient temperatures before TOPIC screening. Results of sample screening are shown in the Test Bore Logs in Appendix F. The PID readings were generally low and typical of Australian background levels. Slightly (relatively) elevated levels were observed from the samples at Test Bores 201, at a depth of 0.6 m to 3.0 m bgl, and at Test Bore 221, at depths of 1.0 m to 1.7 m bgl.

9.3 Groundwater Observations and Flow Direction

Free groundwater was observed whilst augering at numerous test bores. Free groundwater was commonly, but not always, observed in the relatively softer layers of natural soils (typically peaty clay and silty clay).

Measured groundwater levels for the monitoring wells are presented in Table 13. The groundwater levels were measured on:

- 15 October 2007 – four days after well installation, immediately prior to well development;
- 17 October 2007 – two days after well development, prior to groundwater sampling; and
- 22 October 2007 – five days after groundwater sampling.

Table 13: Piezometric Levels

Monitoring Well	Surface Height (m AHD)	Groundwater Depth					
		15/10/07		17/10/07		22/10/07	
		(m bgl)	(m AHD)	(m bgl)	(m AHD)	(m bgl)	(m AHD)
203	4.42	1.16	3.26	1.93	2.49	1.16	3.26
204	4.39	0.75	3.64	0.82	3.57	0.76	3.63
207	4.28	2.27	2.01	2.87	1.41	2.16	2.12
213	4.22	1.06	3.16	1.13	3.09	1.08	3.14

The groundwater sampled from Test Bores 203, 204 and 207 was observed to be clear and colourless, except water from near the base of each well which contained some brown silt/clay. Groundwater sampled from Test Bore 213 was observed to be cloudy and a pale brown colour and had a mild hydrocarbon odour.

The measured groundwater depths from the four piezometers indicate that the direction of groundwater flow is influenced by what appears to be an old creek channel which may have been present prior to the importation of filling for site development. Test Bores 105 and 216 have natural soil horizons that are slightly different from the other natural soil profiles observed at the site. At Test

Bore 105, a slightly sandy silty clay with ironstone gravel and a gravelly clay were observed at depths of between 1 m and 2 m bgl. At Test Bore 216, silty clay with trace gravel and rootlets was observed at a depth of between 1.0 m and 2.4 m bgl. This may indicate that an old creek channel once flowed from the vicinity of Test Bore 105, in the approximate direction of Test Bore 216 and then to Homebush Bay.

Based on the measured groundwater levels and observations of sub-surface soil conditions, groundwater is inferred to flow in a west to south-west direction from the northern part of the site; and in an east to north-west direction from the southern part of the site. The inferred groundwater flow direction is indicated on Drawing 1, Appendix A.

9.4 Groundwater Field Parameters

Stabilised field parameters obtained from each well are summarised in Table 14.

Table 14: Stabilised Field Parameters (22 October 2007)

Monitoring Well (MW)	Dissolved Oxygen (%)	Electrical Conductivity (mS/cm)	pH	Turbidity (NTU)	Temperature (^{o}C)
203	38	41	5.5	76	19.5
204	25	23	7.0	53	21.3
207	23	80	5.3	37	20.8
213	46	82	6.3	62	19.3

Notes: ^{o}C degrees centigrade
mS/cm milli-Siemens per centimetre
NTU Nephelometric Turbidity Units

10. Laboratory Results

The results of laboratory analysis are summarised in the following tables:

- Table 15: Summary of Results of Soil Analysis;
- Table 16: Results of Field Screening for Acid Sulphate Soils
- Table 17: Results of Laboratory Analysis for Acid Sulphate Soils
- Table 18: Summary of Results of Groundwater Analysis

The full laboratory certificates together with the chain of custody and sample receipt information are presented in Appendix G.

Table 15: Summary of Results of Soil Analysis (All results in mg/kg unless otherwise stated)

Test Bore / Sample depth (m)	Soil Type	Heavy Metals								Polycyclic Aromatic Hydrocarbons				Total Recoverable Hydrocarbons										BTEX				Organochlorine Pesticides										PCBs (total)	Phenols (total)	Volatile Organic Compounds (other than BTEX and naphthalene)				Asbestos (fibres)
		Arsenic	Cadmium	Chromium (III + VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzo(a)pyrene	Benzo(a)pyrene TEQ	Naphthalene	Total PAHs	TRH C6-C9	TRH C10-C14	TRH C15-C28	TRH C29-C36	TRH C6-C10 less BTEX	TRH >C10-C16 less Naphthalene	TRH C6-C10	TRH >C10-C16	TRH >C16-C34	TRH >C34-C40	Benzene	Toluene	Ethylbenzene	Total Xylene	DDT	DDT+DDE+DDD	Aldrin + Dieldrin	Chlordane	Endosulfan (total)	Endrin	Heptachlor	HCB	Methoxychlor			n-propyl benzene	1,2,4-trimethyl benzene	n-butyl benzene	All other VOC	
103/0.2-0.3	F	<4	<1	19	65	13	<0.1	100	62	0.1	<0.5	<0.1	0.3	<25	<50	<100	<100	-	-	-	-	-	-	<1	<1	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103/0.5-0.6	F	8.2	<1	18	21	30	<0.1	7.3	33	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<1	<1	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	-
104/0.5-0.6	F	5.8	<1	26	19	37	<0.1	17	41	0.6	0.8	<0.1	5.7	<25	<50	<100	<100	-	-	-	-	-	-	<1	<1	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	ND
Z-180907	F	6.1	<1	29	20	35	<0.1	18	41	1	1.3	<0.1	13.8	<25	<50	<100	<100	-	-	-	-	-	-	<1	<1	<1	<3	-	-	-	-	-	-	-	-	-	-	<5	-	-	-	-	-
105/0.1-0.2	F	<4	<1	10	47	7.2	<0.1	54	46	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	160	170	-	-	-	-	-	-	<1	<1	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105/0.4-0.5	F	12	<1	17	180	69	<0.1	15	120	0.1	<0.5	<0.1	0.7	<25	<50	<100	<100	-	-	-	-	-	-	<1	<1	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	ND
201/0.2-0.5	F	<4	<1	26	57	72	0.12	8.4	100	5.6	7.4	0.3	85.1	<25	<50	290	160	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	ND
202/0.5-1.0	F	4.6	<1	14	22	330	0.13	6.8	160	0.7	0.9	<0.1	7.8	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	-
203/0.2-0.5	F	7.4	<1	12	44	35	0.1	24	78	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	250	170	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	ND
204/0.5-1.0	F	5.5	<1	17	15	54	<0.1	3.1	9	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	-
204/1.4-1.5	N	65	<1	19	18	24	<0.1	5.6	16	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	<PQL	-
207/0.5-1.0	F	9.8	<1	16	25	27	<0.1	4.6	26	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	-
207/1.0-1.5	F	10	<1	15	21	27	<0.1	6.4	32	<0.05	<0.5	<0.1	0.3	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
208/0.0-0.1	F	<4	<1	27	39	41	<0.1	36	74	0.7	0.9	<0.1	6.8	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND
208/0.5-1.0	F	5.7	<1	8.4	18	54	<0.1	2.3	14	0.1	<0.5	<0.1	1	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	-
209/0.5-1.0	F	5.5	<1	10	20	130	<0.1	8.2	61	0.3	<0.5	<0.1	3.5	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	<1	<1	<1	<PQL	-
210/0.7-1.2	F	5.2	<1	13	17	21	<0.1	8.8	37	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	ND
211/0.5-1.0	F	6.5	<1	15	7.4	31	<0.1	1.6	6.6	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	-
212/0.2-0.5	F	<4	<1	2.4	<1	2	<0.1	1.6	3.8	0.05	<0.5	<0.1	0.25	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	-
213/0.0-0.2	F	6.6	<1	14	42	82	<0.1	27	250	0.7	0.9	<0.1	5.7	<25	<50	140	120	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	ND
213/0.2-0.5	F	6.4	<1	11	22	62	0.13	2.2	28	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
214/0.0-0.2	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND
214/0.2-0.5	F	8.1	<1	25	7.3	27	<0.1	2.9	13	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	-
215/0.1-0.3	F	10	<1	16	21	41	<0.1	9.4	25	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND
215/0.5-1.0	F	6.8	<1	13	12	37	<0.1	2.5	11	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	-
216/0.0-0.5	F	13	<1	25	31	41	<0.1	13	67	0.3	<0.5	<0.1	3.7	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	ND
A216/0.3	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AD
216/0.5-1.0	F	13	<1	13	28	32	<0.1	19	130	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
217/0.0-0.5	F	9.4	<1	17	23	28	<0.1	14	66	<0.05	<0.5	<0.1	0.5	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND
217/2.0-2.3	N	8.7	<1	13	16	28	<0.1	1.4	3.3	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD3-101007	N	<4	<1	10	15	20	<0.1	1.5	4.7	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
218/0.4-0.7	F	18	<1	30	26	62	<0.1	4.9	39	0.06	<0.5	<0.1	0.46	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	<1	<1	<1	<PQL	-
218/0.7-1.0	F	7.2	<1	15	12	41	<0.1	2.2	9.6	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD4-101007	F	8.6	<1	24	9.3	40	<0.1	2.2	9.8	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
219/0.2-0.4	F	7.7	<1	12	49	120	<0.1	13	85	12	16	2.5	166.1	<25	<50	590	290	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND
219/0.5-0.9	F	4.3	<1	11	30	25	<0.1	7.7	49	0.2	<0.5	<0.1	2.3	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	-
220/0.3-0.5	F	10	<1	15	28	60	<0.1	12	55	0.08	<0.5	<0.1	0.68	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	-
221/0.1-0.5	F	12	<1	19	73	1800	<0.1	25	220	2	2.4	1.5	16.8	<25	170	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	ND
221/1.2-1.7	F	12	<1	12	50	190	0.11	12	160	5.1	6.8	3.2 & 5.1	60.4	83	240	240	190	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	4.8	6.5	1.7	<PQL	-
222/0.2-0.5	F	7.5	<1	12	350	66	<0.1	20	300	1.2	1.6	<0.1	13.8	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	<0.1	<0.3	<0.2	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.7	<5	-	-	-	-	ND
222/1.0-1.3	N	67	<1	18	38	36	<0.1	6.5	32	0.5	0.7	<0.1	5.8	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	<PQL	-
BD2-111007	N	29	0.2	17	59	34	0.07	6	63	4	5.6	<0.5	44	<10	<50	190	320	-	-	-	-	-	-	<0.2	<0.5	<0.5	<1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
228/0.0-0.1	F	14	<1	18	54	90	0.14	20	180	0.5	0.7	<0.1	6.7	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<0.5	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND
229/0.6-1.0	F	9.8	<1	15	200	97	0.17	14	280	32	46	<0.1	369.8	<25	<50	1400	990	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
229/1.1-1.5	F	40	<1	14	20	24	<0.1	3.7	8.8	<0.05	<0.5	<0.1	NIL (+)VE	<25	<50	<100	<100	-	-	-	-	-	-	<0.5	<0.5	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Assessment Criteria																																											
HIL Residential B		500	150	500 for Cr (VI)	30000	1200	120	1200	60000	-	4	-	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	600	10	90	400	20	10	15	500	1	130	-	-	-	-	-
HSL B for Vapour Intrusion Low - High Residential		-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	40	110	-	-	-	-	0.5	160	55	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EIL Residential		100	-	415	125	1260	-	35	350	-	-	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESL Residential		-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	180	-	-	120	300	2800	50	85	70	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Management Limit		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	700	1000	2500	10000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes

F	Filling
N	Natural
M	Material
ND	No asbestos detected at limit of reporting (0.1g/kg)
AD	Asbestos detected
	Exceedance of ecological criteria
	Exceedance of health-based criteria
	Exceedance of both health-based and ecological criteria
PQL	Practical Quantitation Limit
Z-180907	Blind replicate sample of 104/0.5-0.6
BD3-101007	Blind replicate sample of 217/2.0-2.3
BD4-101007	Blind replicate sample of 218/0.7-1.0
BD2-111007	Blind replicate sample of 222/1.0-1.3
A216/0.3	Material sample from Test Bore 213, depth 0.3m
-	Not tested / Not applicable
TEQ	Toxicity Equivalent Quotient

Table 16: Results of Field Screening for Acid Sulphate Soils

Sample Location (Test Bore / depth (m))	pH_F (in distilled water)	pH_{FOX} (oxidised in hydrogen peroxide)	Strength of Reaction	Notes
203 / 0.2-0.5	7.8	7.6	2 to 3 F	Odour
203 / 0.8-1.0	7.7	6.4	3 to 4 F	
203 / 1.0-1.3	8.0	5.9	4 F	
203 / 1.5-2.0	6.9	4.7	1	
203 / 2.5-3.0	6.1	4.6	1	
204 / 0.1-0.3	8.2	8.4	1	
204 / 0.5-1.0	4.9	3.6	1	
204 / 1.0-1.2	6.4	3.1	3 to 4 F	Odour
204 / 1.2-1.4	6.5	2.1	2 to 3 F	Strong odour and smoke
204 / 1.4-1.5	8.2	6.0	2 to 3 F	Odour and smoke
204 / 1.9-2.2	9.4	5.2	2 to 3 F	
207 / 0-0.5	4.4	2.3	1	
207 / 0.5-1.0	2.8	2.7	1	
207 / 1.0-1.5	3.7	2.7	1	
207 / 1.7-2.0	5.1	2.8	1 to 2	
213 / 0.2-0.5	5.8	5.4	1 to 2	
213 / 0.7-1.0	6.6	5.0	1 to 2 F	
213 / 1.1-1.5	6.5	2.5	1	
213 / 1.5-2.0	6.7	6.3	1	

Notes: Strength of Reaction: 1– denotes slight effervescence:
2 – denotes moderate reaction;
3 – denotes vigorous reaction;
4 – denotes very strong effervescence accompanied by escape of gas/heat
F - indicates a bubbly/frothy reaction (organics)

Table 17: Results of Laboratory Analysis for Acid Sulphate Soils

Sample ID (Test Bore/ depth (m))	Sample Description	Total Actual Acidity s-TAA % w/w	Chromium Reducible Sulfur S_{CR} % w/w
204/1.2-1.4	Grey silty clay (<0.5 m below observed groundwater level - 22/11/07)	0.028	**1.2**
207/1.0-1.5	Brown clay filling (<1 m above observed groundwater level – 22/11/07)	0.3	0.022
213/1.1-1.5	Red brown and grey silty clay (<0.5 m below observed groundwater level – 22/11/07)	0.036	**0.15**
Action Criteria (more than 1000 tonnes disturbed)			0.03

Table 18: Summary of Results of Groundwater Analysis (All results in µg/L unless otherwise stated)

Sample ID (Test Bore)	Sample date	Metals (dissolved)								Polycylic Aromatic Hydrocarbons (PAH)						Total Recoverable Hydrocarbons (TRH)										BTEX					Other Volatile Organic Compounds	PCB				Organochlorine Pesticides (OCP)												Total Phenolics
		Arsenic	Cadmium	Chromium (III + VI)	Copper	Lead	Mercury	Nickel	Zinc	Naphthalene	Benzo(a)pyrene	Anthracene	Phenanthrene	Fluoranthrene	All other PAH	TRH C6-C9	TRH C10-C14	TRH C15-C28	TRH C29-C36	TRH C6-C10 less BTEX	TRH >C10-C16 less Naphthalene	TRH C6-C10	TRH >C10-C16	TRH >C16-C34	TRH >C34-C40	Benzene	Toulene	Ethylbenzene	o-xylene	m+p-xylene		Arochlor 1067	Arochlor 1242	Arochlor 1248	Arochlor 1254	Heptachlor	Chlordane	Aldrin	DDE	DDT	Dieldrin	Endrin	Methoxychlor	Endosulfan	All other OCP	
Analytical Results																																													
GW-203	17-Oct-07	**3.2**	0.7	<1	**7.4**	**12**	<0.5	**32**	**85**	<1	<1	<1	<1	<1	<PQL	<10	<50	<100	<100	-	-	-	-	-	-	<1	<1	<1	<1	<2	<PQL	<2	<2	<2	<2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<PQL	<50
BD1-171007	17-Oct-07	**3**	0.5	<1	**4.1**	**10**	<0.5	**36**	**61**	-	-	-	-	-	-	<10	<50	<100	<100	-	-	-	-	-	-	<1	<1	<1	<1	<2	-	<2	<2	<2	<2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<PQL	-
GW-204	17-Oct-07	1.9	0.3	<1	**1.8**	1.3	<0.5	4.1	**21**	<1	<1	<1	<1	<1	<PQL	<10	<50	<100	<100	-	-	-	-	-	-	<1	<1	<1	<1	<2	<PQL	<2	<2	<2	<2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<PQL	**62**
GW-207	17-Oct-07	**14**	0.4	<1	**2.5**	**8.5**	<0.5	**140**	**150**	<1	<1	<1	<1	<1	<PQL	<10	<50	<100	<100	-	-	-	-	-	-	<1	<1	<1	<1	<2	<PQL	<2	<2	<2	<2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<PQL	**60**
GW-213	17-Oct-07	1.9	0.5	<1	**2.8**	4.2	<0.5	**10**	**21**	<1	<1	<1	<1	<1	<PQL	<10	<50	<100	<100	-	-	-	-	-	-	<1	<1	<1	<1	<2	<PQL	<2	<2	<2	<2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<PQL	<50
GIL		2.3 for As(III) 4.5 for As (V)	0.7	27 for Cr(III) 4.4 for Cr(VI)	1.3	4.4	0.06	7	15	50	0.1	0.01	0.6	1	-	-	-	-	-	-	-	-	-	-	-	500	180	5	350	75+200	-	0.009	0.3	0.03	0.01	0.004	0.001	0.003	0.0005	0.0004	0.01	0.004	0.004	0.005	-	50*
HSLs for vapour intrusion		-	-	-	-	-	-	-	-	NL	-	-	-	-	-	-	-	-	-	1000	1000	-	-	-	-	800	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

NL	Not Limiting
PQL	Pratical quantitation limit
Bold	Exceeds GIL or screening criteria
-	not defined/ not analysed/ not applicable
*	PQL used as the GIL

11. Discussion

11.1 Site History

The site did not appear to have been developed until circa 1964, when Fred Hosking Sales Pty Limited became owners of the site. Field investigations revealed that the site has undergone filling to level the site prior to construction of the existing building. The site was probably used as a printing facility from 1964 to 2010. The building is now used for paintball skirmish, indoor karting and equipment storage.

Council records make reference to the storage of petrol at the site in 1965. This may be in reference to the 9000 L UST that was to be removed as part of factory building extensions in 1990 and also the 2000 gallon UST referred to in WorkCover Dangerous Goods Licence 35/011268 (1973). The bowser for this tank was not present at the site during fieldwork and is assumed to have been removed as part of building extensions (see Drawing 1, Appendix A for the estimated location of this UST and bowser). The other UST (10 000L), still present at the site, was probably filled with sand in 1991. The associated bowser may have been removed at the same time.

According to Council records, in 1986, the western boundary of the site had been buried in “hundreds of tonnes of earth” from roadworks associated with Homebush Bay Drive. In 1989, the north-eastern corner of the site that had been used as a “builder’s yard” since 1966, was filled without consent from the Council. In 2002, 10 to 12 empty chemical drums were found at the western boundary of the site but had probably been there for an extended period (5 to 10 years) as the drums were rusted.

A roofed package store was previously present inside the factory building, and was probably used for the storage of chemicals between 1991 and 2010, and perhaps earlier. Chemicals to have been stored in this facility include Isopropanol (400 L), ‘Flexol PI’, ethanol, paint, acrylic thinners, solvents and petroleum products. Drums noted to have contained resins, starches and solvents were previously stored at the site.

The AST, located at the south-west corner of the factory building, has been used for storage of heating oil. Currently, a cabinet is located at the east of the building for the storage of fuel for the karts. Wash down of equipment from paintball skirmish occurs at the rear of the site.

Fuel and/or chemicals were also previously stored at the neighbouring land to the south and east.

11.2 Chemical Contaminants in Soil

11.2.1 Metals

Concentrations of arsenic, cadmium, chromium, mercury and zinc were within the respective site assessment criteria.

All concentrations of copper were within the HIL, but concentrations were above the EIL (125 mg/kg) in filling samples from Test Bore 105, depth 0.4-0.5 m (180 mg/kg); Test Bore 222, depth 0.2-0.5 m (350 mg/kg); and Test Bore 229, depth 0.6-1.0 (200 mg/kg). It is noted that the adopted EIL for copper is conservative and further testing for soil parameters may determine that these concentrations do not pose an ecological risk for a residential land use scenario.

Concentrations of lead were within the HIL (1200 mg/kg) and EIL (1260 mg/kg) except for the filling sample from Test Bore 221, depth 0.1-0.5 m (1800 mg/kg). Statistical analysis using Pro UCL v5.0 (computer program) using lead concentrations for primary filling samples as input values revealed that this elevated concentration is not significant [with a mean concentration of 108.5 mg/kg, a standard deviation of 296 mg/kg and a (recommended) 95 % Chebyshev UCL of 323.5 mg/kg which is less than the HIL and EIL].

All concentrations of nickel were within the HIL, but concentrations were above the EIL (35 mg/kg) in filling samples from Test Bore 103, depth 0.2-0.3 m (100 mg/kg); Test Bore 105, depth 0.1-0.5 m (54 mg/kg); and Test Bore 208, depth 0.0–0.1 m (36 mg/kg). It is noted that the adopted EIL for nickel is conservative and further testing for soil parameters may determine that these concentrations do not pose an ecological risk for a residential land use.

11.2.2 TRH, BTEX and VOC

Although the recorded concentrations of TRH were for different TRH fractions than those used in NEPC (2013), the following has been able to be noted and deduced.

TRH C_6-C_9 was only recorded above the limit of reporting (LOR) in the sample from Test Bore 221, depth 1.2–1.7 m (83 mg/kg). The detected concentration was above the HSL for TRH C_6-C_{10}. The ESL (180 mg/kg) for TRH C_6-C_{10} may have been exceeded, but this cannot be determined from the available data. A hydrocarbon odour and stained filling material was noted at this location and depth. VOC including 1,2,4-trimethyl benzene, n-propyl benzene and n-butyl benzene were also detected in this sample.

TRH C_{10}-C_{14} was only recorded above the LOR in samples from Test Bore 221. The recorded concentrations (170 mg/kg at depth 0.1-0.5 m, and 240 mg/kg at depth 1.2–1.7 m) were above the HSL (110 mg/kg) and ESL (120 mg/kg) for TRH >C_{10}-C_{16}. TRH C_{15}-C_{28} (240 mg/kg) and TRH C_{29}-C_{36} (190 mg/kg) were recorded above the LOR in the sample from Test Bore 221, depth 1.2 – 1.7 m, at a combined concentration that is above the ESL (300 mg/kg) for TRH >C_{16}-C_{34}.

According to historical information, Test Bore 221 was the former location of a petrol bowser. The contamination appeared to have been perched on top of buried concrete in the filling material. Drilling refusal occurred on this concrete, as a result the underlying filling and/or natural soils could not be investigated.

TRH C_{15}-C_{28} and TRH C_{29}-C_{36} were recorded above the LOR in the filling at Test Bore 229, depth 0.6-1.0 m, at a combined concentration above the ESL for TRH >C_{16}-C_{34}. This Test Bore appeared to have been drilled in the previous location of a UST, where filling material had been used to backfill the void following removal of the UST. Inspection of the filling sample revealed a slight oily sheen and a trace of a dark brown, unidentified material of approximately 15mm diameter that had fractured edges. The unidentified material may be a material from a furnace. Review of the chromatogram showed that the organic chemical composition was similar to petrol, but also included other contamination from an unknown source (possibly the unidentified material). High concentrations of PAHs were also detected at this location (see Section 11.2.3).

Concentrations of TRH C_{15}-C_{28} and TRH C_{29}-C_{36} were detected at combined concentrations above the ESL for TRH >C_{16}-C_{34} in filling samples from Test Bore 105, depth 0.1-0.2 m; Test Bore 201, depth 0.2-0.5 m; Test Bore 203, depth 0.2-0.5 m; and Test Bore 219, depth 0.2–0.4 m. In addition, the

concentrations of TRH C_{15}-C_{28} and TRH C_{29}-C_{36} in the replicate sample from Test Bore 222, depth 1.0-1.3 m were above the ESL but not for the primary sample. The detectable TRH in the natural soil at Test Bore 222 may be as a result of leaks from the bowser that was previously at this location.

Concentrations of BTEX were below the LOR and, therefore, within the respective site assessment criteria. Apart from the detected VOC in the sample from Test Bore 221, depth 1.2 – 1.7 m, mentioned above, VOC was not recorded above the LOR in any analysed sample.

11.2.3 PAH

Concentrations of total PAH were within the HIL.

Concentrations of benzo(a)pyrene TEQ were within the HIL (4 mg/kg) except for four filling samples at Test Bore 201, depth 0.2-0.5 m (7.4 mg/kg); Test Bore 219, depth 0.2-0.4 m (16 mg/kg); Test Bore 221, depth 1.2-1.7 m (6.8 mg/kg); and Test Bore 229, depth 0.6-1.0 m (46 mg/kg). The EIL for benzo(a)pyrene (0.7 mg/kg) was also exceeded in these samples.

The concentration of benzo(a)pyrene TEQ in the replicate natural soil sample (BD2-111007) from Test Bore 222, depth 1.0 -1.3 m (6.8 mg/kg), was above the HIL but the primary sample concentration was below the HIL. The EIL for benzo(a)pyrene was also exceeded in the replicate sample. This sample location was near a previous bowser and thus the detected benzo(a)pyrene TEQ may be as a result of leaks from the bowser.

In addition to the above-mentioned exceedances, the EIL for benzo(a)pyrene was also exceeded in filling samples from Test Bore 221, depth 0.1–0.5 m and Test Bore 222, depth 0.2–0.5 m.

Only the concentrations of naphthalene in the sample from Test Bore 221, depth 1.2–1.7 m (3.2 mg/kg and 5.1 mg/kg) exceeded the HSL (3 mg/kg). This sample was identified to have TRH contamination (as described in Section 11.2.2). All concentrations of naphthalene were within the ESL.

11.2.4 OCP, PCB and Phenols

Concentrations of OCP, PCB and total phenols were within the respective site assessment criteria.

11.2.5 Asbestos

Asbestos was not recorded above the LOR in analysed soil samples, but was detected in the fibre-cement material sample from the filling at a depth of approximately 0.3m below the ground surface at Test Bore 216.

11.3 Contaminants in Groundwater

Results for hardness (1200 mgCaCO3/L to 14000 mgCaCO3/L) indicate that groundwater at the site is saline. The receiving waters are marine (estuarine) and, therefore, the guidelines for marine water ecosystems for groundwater were adopted.

11.3.1 Metals

Detected levels of arsenic, cadmium, copper, lead, nickel and zinc were noted in the groundwater samples. The following results were above the adopted GIL:

- Arsenic in samples from Test Bore 203 (3.2 µg/L and 3 µg/L which were above the GIL for As(III) but not for As(V)) and Test Bore 207 (14 µg/L);
- Copper in samples from Test Bore 203 (7.4 µg/L and 4.1 µg/L), Test Bore 204 (1.8 µg/L), GW-207 (8.5 µg/L) and Test Bore 213 (2.8 µg/L);
- Lead in samples from Test Bore 203 (12 µg/L and 10 µg/L) and Test Bore 207 (8.5 µg/L);
- Nickel in samples from Test Bore 203 (32 µg/L and 36 µg/L), Test Bore 207 (140 µg/L), and Test Bore 213 (10 µg/L); and
- Zinc in samples from Test Bore 203 (85 µg/L and 61 µg/L), Test Bore 204 (21 µg/L), Test Bore 207 (150 µg/L) and Test Bore 213 (21 µg/L).

Mercury and chromium were not recorded above the LOR in the groundwater samples collected from the site.

The results for groundwater sampled from the monitoring well at Test Bore 203 gives an indication of the (selected) chemical composition of groundwater flowing onto the site, as it is located near the eastern boundary. The recorded levels of arsenic, copper, lead, nickel and zinc in the sample from this monitoring well suggest that these concentrations are not attributable to the site and are likely to represent local diffuse sources of contamination (background) impacts arising from local industry, urban runoff, and road runoff or from service leakage. The exception to this may be indicated by the (relatively) elevated concentrations for nickel and zinc in the groundwater sampled from the monitoring well at Test Bore 207. Review of the analytical soil results from nearby (up-gradient) test bores, however, indicates that the levels of nickel and zinc in surrounding soils/filling are generally low.

11.3.2 TRH, BTEX and VOC

TRH, BTEX and VOC were not recorded above the LOR in the analysed groundwater samples collected from the site.

11.3.3 PAH

Concentrations of PAH were not recorded above the LOR in the analysed groundwater samples collected from the site.

11.3.4 OCP, PCB and Phenols

PCB and OCP were not recorded above the LOR in the analysed groundwater samples collected from the site.

Total phenols were detected in the groundwater samples from Test Bore 204 (62 µg/L) and Test Bore 207 (60 µg/L) at levels marginally above the LOR (50 µg/L). The source of the phenols is unknown as total phenols were not detected in analysed soil samples.

11.4 Conceptual Site Model

A conceptual site model (CSM) is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM provides the framework for identifying how the site became contaminated and how potential receptors may be exposed to contamination either in the present or the future i.e. it enables an assessment of the potential source – pathway – receptor linkages (complete pathways).

Based on the contamination identified in the investigations, the source of contamination is considered to be:

- (S1) Contaminated ground from imported filling and previous fuel storage;

Based on the contamination identified in the investigations (discussed above), the main potential receptors of the contamination for the proposed development are considered to be:

- (R1) Site users (residential);
- (R2) Adjacent site users (residential and commercial);
- (R3) Construction workers (for the construction of the proposed development);
- (R4) Maintenance workers (post–construction);
- (R5) Surface water; and
- (R6) Terrestrial ecology.

As significant groundwater contamination has not been identified, groundwater has not been included as a receptor.

The potential contamination pathways are considered to be:

- (P1) Ingestion and dermal contact;
- (P2) Inhalation of dust;
- (P3) Inhalation of vapours;
- (P4) Surface water run-off; and
- (P5) Contact with terrestrial ecology;

A ‘source–pathway–receptor’ approach has been used to assess the potential risks of harm being caused to human or environmental receptors from contamination sources on or in the vicinity of the site, via exposure pathways (potential complete pathways). The possible pathways between the above source (S1) and receptors (R1 to R6) are provided in Table 19.

Table 19: Summary of Potential Complete Pathways

Potential Source	Transport Pathway	Receptor
(S1) Contaminated ground from filling and previous fuel storage	(P1) Ingestion and dermal contact (P2) Inhalation of dust (P3) Inhalation of vapours	(R1) Site users (R3) Construction workers (R4) Maintenance workers
	(P2) Inhalation of dust (P3) Inhalation of vapours	(R2) Adjacent site users
	(P4) Surface water run-off	(R5) Surface water
	(P5) Contact with terrestrial ecology	(R6) Terrestrial ecology

11.5 Acid Sulphate Soils

Results suggest that acid sulphate soils are present at the site. Analysed natural soil samples (from Test Bore 204, depth 1.2-1.4 m and Test Bore 213 depth 1.1-1.5) show chromium reducible sulphur trail (S_{CR}) values to be significantly above the action criteria. These natural soil samples were taken from less than 0.5 m below the observed groundwater levels. It thus appears, when taking into account the initial screening results, that natural soils near the groundwater level are the most susceptible to being acid sulphate soils at the site.

The results for the filling sample from Test Bore 207, depth 1.0-1.5 m, appears to be susceptible to acid conditions, although may not be acid sulphate soils. The chromium reducible sulphur trail (S_{CR}) value (0.022 % w/w) is below the action criteria which suggests that this filling material is not considered as ASS

11.6 Recommendations

Remediation will be required to make the site suitable for the proposed development. Given that an excavation for the proposed basement will result in the removal of much of the filling and soil from the site, some of the remediation can be tied in with this excavation process. In addition, further investigation should be undertaken to fill in data gaps to better determine remediation requirements.

The general steps for further investigation and remediation will include:

Investigation

- Investigate the soil conditions at the north-west part of the site which was previously inaccessible to a drilling rig;
- Excavation of test pits in the vicinity of Test Bores 104 and 214 to assess whether ACM (previously observed on the surface) is present in filling below the surface;

- Excavation of test pits in the vicinity of Test Bore 216 to assess the extent of ACM in filling at this location;
- Further investigation and assessment of soils which are likely to remain (i.e. near the perimeter of the site) including obtaining site specific soil parameters for further ecological assessment;
- Inspection of surface soils once the building is demolished and floor slabs, hard stands and the AST are removed;

Remediation

- Excavation and removal of the UST, any associated pipework and remediation of any surrounding contaminated soil;
- Excavation and removal of the contaminated soil and any observed pipework in the vicinity of Test Bore 221 (the likely previous location of a bowser);
- Excavation and removal of the contaminated filling at Test Bore 229 (filling used for the tank pit);
- Excavation and removal of any contaminated soil at the previous location of a bowser (near Test Bore 222);
- Excavation and removal of contaminated filling at Test Bore 219;
- Excavation and removal of (any) asbestos contaminated filling [WorkCover NSW, *Managing asbestos in or on soil,* March 2014 (available on the WorkCover NSW website) provides general guidance on the assessment and management of asbestos in soil];
- Excavation and removal of any other identified soil contamination near the perimeter of the site following further investigation/assessment;
- Validation of the above excavations / remediation areas; and
- Removal of (any) contaminated soils within the proposed excavation area (as part of the general excavation process).

It is noted that much of the site is proposed to be largely covered by slabs or hardstand and these areas will have little ecological value. Therefore, assessment of soil from an ecological perspective can be limited to soils designated to be used in landscaped areas (likely to be limited to the periphery of the site).

Waste classification of soils will be required for any soils designated for off- site disposal. *In situ* waste classification testing can be combined with other investigations.

A Remediation Action Plan will be required to formalise the remediation strategy.

As acid sulphate soils are likely to be disturbed and dewatering is likely to be required, an Acid Sulphate Soils Management Plan will be required.

A hazardous building materials survey of the building should be undertaken prior to its demolition.

12. Conclusion

Investigations have revealed that there is soil contamination associated with fuel storage and filling at the site. The identified contamination can be remediated using common remediation technologies and, as a basement excavation and off-site soil disposal is proposed, the soil contamination can be removed from the site through off-site disposal. Some further investigation and assessment has been recommended to assess the extent of remediation. Acid sulphate soils have also been identified. A Remediation Action Plan and Acid Sulphate Soil Management Plan will be required for the proposed development. A hazardous building materials survey of the building should be undertaken prior to its demolition.

Based on the results of the investigation it is considered that the site can be made suitable for the proposed residential development (subject to the recommendations provided in Section 11.6).

13. Limitations

Douglas Partners (DP) has prepared this report for this project in accordance with DP's proposal dated 26 June 2015 and acceptance received from F.T.D Holdings (Concord West) Pty Ltd & Floridana Pty Ltd dated 8 July 2015. This report is provided for the exclusive use of F.T.D Holdings (Concord West) Pty Ltd & Floridana Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

Building demolition materials, such as concrete and brick, were, however, located in below-ground filling, and these are considered as indicative of the possible presence of hazardous building materials (HBM), including asbestos.

Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the site that have not been sampled and analysed. This is either due to undetected variations in ground conditions, or to parts of the site being inaccessible and not available for inspection/sampling, or to vegetation preventing visual inspection and reasonable access. It is therefore considered possible that HBM, including asbestos, may be

present in unobserved or untested parts of the site, between and beyond sampling locations, and hence no warranty can be given that asbestos is not present.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

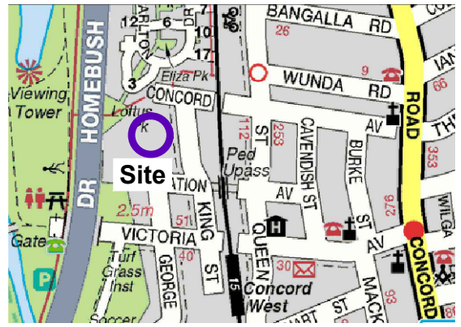
The contents of this report do not constitute formal design components such as are required, by the Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction and the controls required to mitigate risk. This design process requires risk assessment to be undertaken, with such assessment being dependent upon factors relating to likelihood of occurrence and consequences of damage to property and to life. This, in turn, requires project data and analysis presently beyond the knowledge and project role respectively of DP. DP may be able, however, to assist the client in carrying out a risk assessment of potential hazards contained in the discussions section of this report, as an extension to the current scope of works, if so requested, and provided that suitable additional information is made available to DP. Any such risk assessment would, however, be necessarily restricted to the environmental components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

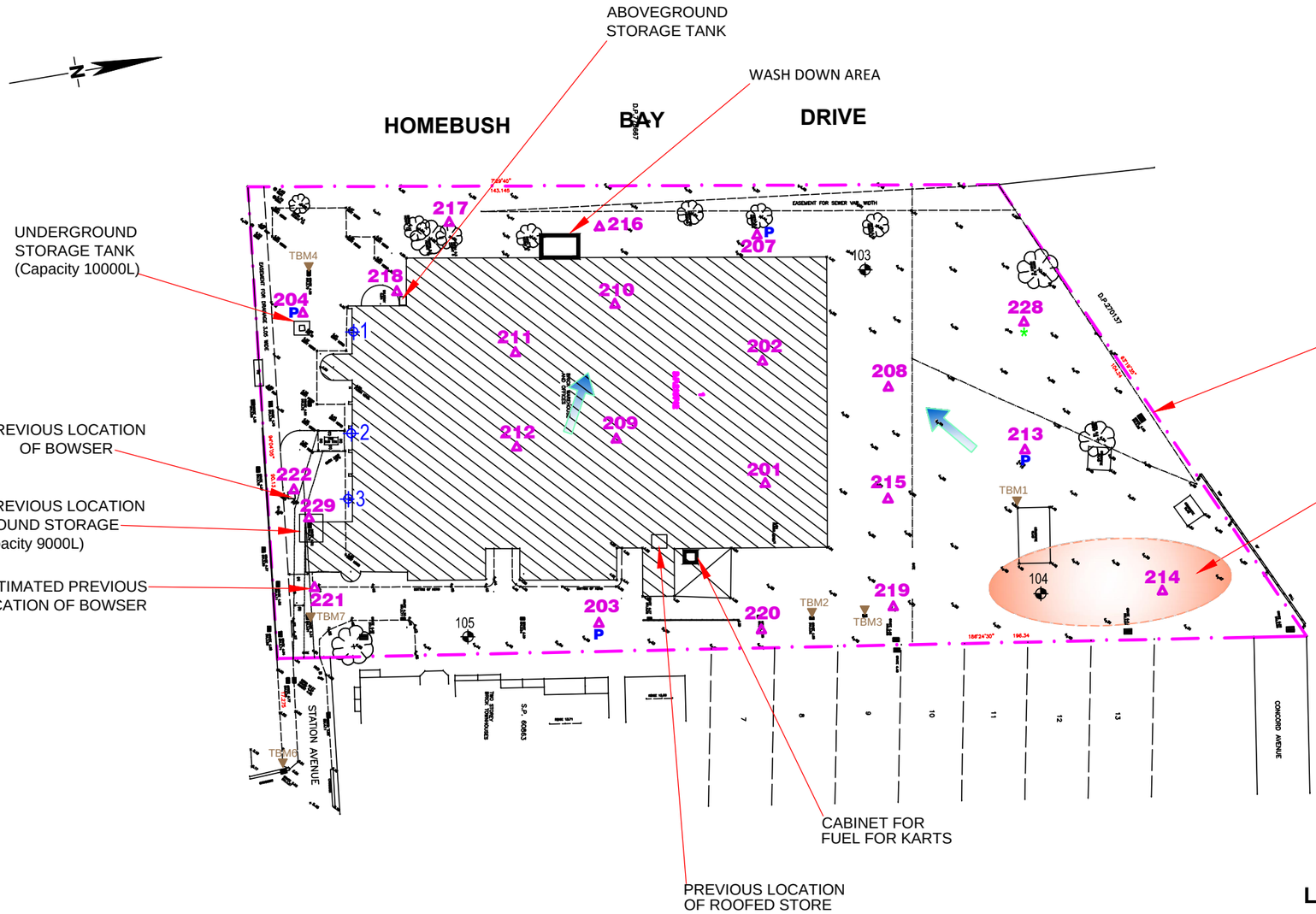
Douglas Partners Pty Ltd

Appendix A

Drawing



Locality Plan



0 10 20 30 40 50 75 100m

1:1000 @ A3

LEGEND

- PREVIOUS TEST BORE LOCATION (DP, 1990)
- TEST BORE LOCATION (DP, 2007b)
- TEST BORE LOCATION (DP, 2007a)
- * HAND AUGER ONLY AT TEST BORE 228
- INFERRED GROUNDWATER FLOW DIRECTION
- TEMPORARY BENCH MARK (TBM)
- P PIEZOMETER INSTALLED AT TEST BORE LOCATION

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT: F.T.D. Holdings (Concord West) Pty Ltd & Floridana Pty Ltd		TITLE: **Location of Test Bores and Site Features**	PROJECT No: 84964.01
OFFICE: Sydney	DRAWN BY: PSCH	**Detailed Site Investigation for Contamination**	DRAWING No: 1
SCALE: 1:1000 @ A3	DATE: 2.11.2015	**7 Concord Avenue, CONCORD WEST**	REVISION: 0

P:\84964.01 - Concord West, Contam Report Update\7.0 Drawings\7.2 Out\84964.01-1.dwg, 4/11/2015 2:09:36 PM

Appendix B

Site Photographs

Photo 1 - Wash down area

Photo 2 - Small mound of soil and general waste materials

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Detailed Site Investigation for Contamination** **7 Concord Avenue, Concord West**	PROJECT:	84964.01
		PLATE No:	B1
		REV:	A
	CLIENT: F.T.D. Holdings (Concord West) Pty Ltd & Floridana Pty Ltd	DATE:	14-Aug-15

Photo 3 - Underground Storage Tank

Photo 4 - Location of previous bowser

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Detailed Site Investigation for Contamination** **7 Concord Avenue, Concord West**	PROJECT: 84964.01 PLATE No: B2 REV: A
	CLIENT: F.T.D. Holdings (Concord West) Pty Ltd & Floridana Pty Ltd	DATE: 14-Aug-15

Photo 5 - Aboveground storage tank

Photo 6 - Cabinet for fuel storage

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Detailed Site Investigation for Contamination** **7 Concord Avenue, Concord West**	PROJECT:	84964.01
		PLATE No:	B3
		REV:	A
	CLIENT: F.T.D. Holdings (Concord West) Pty Ltd & Floridana Pty Ltd	DATE:	14-Aug-15

Appendix C

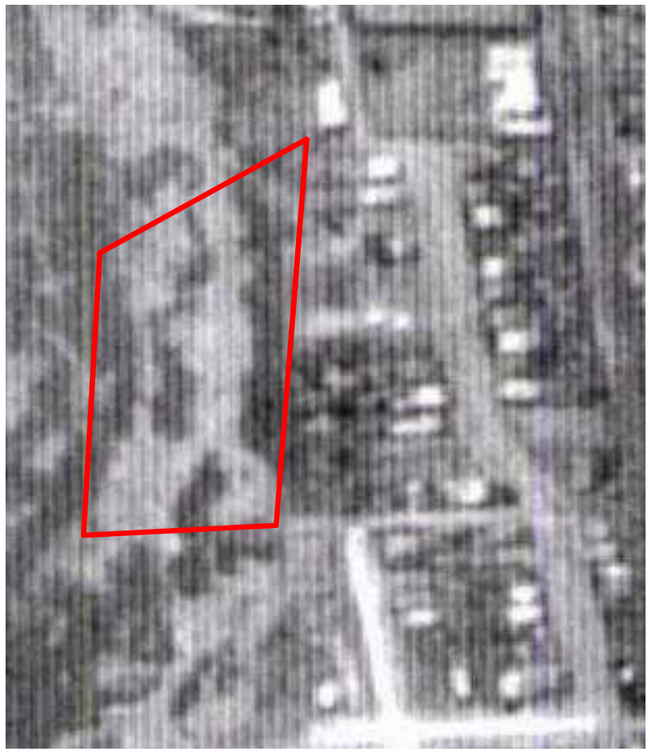
Results of Groundwater Bore Search

Results of Groundwater Bore Search

Source: http://allwaterdata.water.nsw.gov.au/water.stm

Appendix D

Aerial Photographs



1930 Aerial Photograph

1951 Aerial Photograph

Legend
Approximate Site Boundary

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT:	F.T.D. Holdings (Concord West) Pty Ltd & Floridana Pty Ltd	TITLE:	**Aerial Photographs** **Detailed Site Investigation for Contamination** **7 Concord Avenue, Concord West**	PROJECT No: 84964.01 PLATE No: D1 REVISION: A
	OFFICE: Sydney	DRAWN BY: DW			
	SCALE: NA	DATE: 23.7.15			

1970 Aerial Photograph

1991 Aerial Photograph

Legend
Approximate Site Boundary

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT:	F.T.D. Holdings (Concord West) Pty Ltd & Floridana Pty Ltd		TITLE:	**Aerial Photographs**	PROJECT No: 84964.01
	OFFICE:	Sydney	DRAWN BY: DW		**Detailed Site Investigation for Contamination**	PLATE No: D2
	SCALE:	NA	DATE: 23.7.15		**7 Concord Avenue, Concord West**	REVISION: A

2002 Aerial Photograph

2014 Aerial Photograph

Legend
Approximate Site Boundary

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT:	F.T.D. Holdings (Concord West) Pty Ltd & Floridana Pty Ltd	TITLE:	**Aerial Photographs** **Detailed Site Investigation for Contamination** **7 Concord Avenue, Concord West**	PROJECT No: 84964.01 PLATE No: D3 REVISION: A
	OFFICE: Sydney	DRAWN BY: DW			
	SCALE: NA	DATE: 23.7.15			

Appendix E

WorkCover Dangerous Goods Licenses Search Results

Licence No. 35/011268

APPLICATION FOR RENEWAL
OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: Please renew licence number 35/011268 to 2/06/2004 . I confirm that all the licence details shown below are correct (amend if necessary).

Allan G. Powell. ALLAN POWELL 23.4.03

(Signature) (Please print name) (Date signed)

for: FRED HOSKING P/L

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED TO:***

WorkCover New South Wales
Dangerous Goods Licensing Section
LOCKED BAG 2906
LISAROW NSW 2252

Enquiries:ph (02) 43215500
fax (02) 92875500

Details of licence on 17 April 2003

Licence Number 35/011268 **Expiry Date** 2/06/2003

Licensee FRED HOSKING P/L ACN 000 043 498

Postal Address: P O BOX 117 CONCORD WEST NSW 2138

Licensee Contact ALLAN POWELL Ph. 9743 3099 Fax. 9736 3061

Premises Licensed to Keep Dangerous Goods
FRED HOSKING P/L
GEORGE ST & STATION AVE CONCORD WEST 2138

Nature of Site PAPER PRODUCT MANUFACTURING N.E.C.

Major Supplier of Dangerous Goods NOT APPLICABLE

Emergency Contact for this Site ALLAN POWELL (A.H 0418333500) Ph. 9743 3099

Site staffing 16 HRS 5 DAYS

Details of Depots

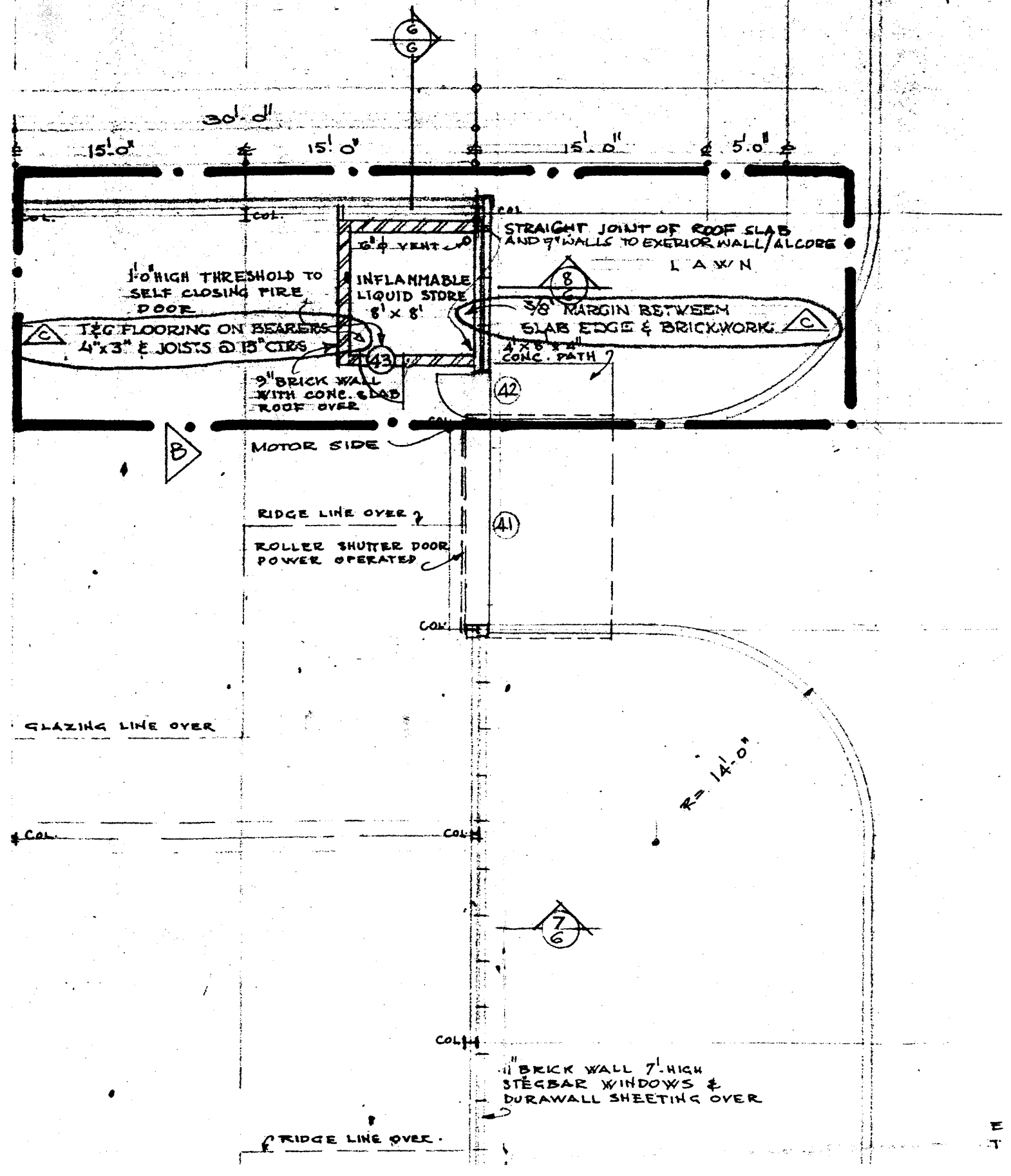
Depot No.	Depot Type	Goods Stored in Depot		Qty
1	ROOFED STORE		Class 3	1845 L
		UN 1170 ETHANOL (ETHYL ALCOHOL)		400 L
		UN 1219 ISOPROPANOL (ISOPROPYL ALCOHOL)		400 L
		UN 1263 PAINT, (ZINC RICH KIT)		200 L
		UN 1268 PETROLEUM PRODUCTS, N.O.S.		400 L

ATP

E D C B A

25/011268

NOTE. WIND COLUMNS & MAIN COLUMNS ON LINE C ARE ALL ON SAME CENTRE LINE



THE NEW SOUTH WALES GOVERNMENT
Putting people first

SCIENTIFIC SERVICES BRANCH
- 3 JUN 1993
DANGEROUS GOODS

PART A

WORKCOVER AUTHORITY

LICENCE TO KEEP DANGEROUS GOODS

(Dangerous Goods Act 1975)

Application for new licence, amendment or transfer

EXPIRY: 3/6/96

1. Name of applicant — ACN
   FRED HOSKING PTY. LTD. — 000 043 498
2. Site to be licensed
   No: | Street: STATION AVENUE
   Suburb/Town: CONCORD WEST — Postcode: 2138
3. Previous licence number (if known): 35/011268
4. Nature of site: MANUFACTURE · STATIONERY & ENVELOPES 2635
5. Emergency contact on site:
   Phone: (02) 743 3099 — Name: DENNIS PARKES
   HOME 773 0159
6. Site staffing: Hours per day: 16 — Days per week: 5
7. Major supplier of dangerous goods:
8. If new site or significant modification
   Plan stamped by: — Accredited consultant's name: — Date stamped
   DATA
   27 FEB 1995
   ENTERED
9. Number of dangerous goods depots at site: 1
10. Trading name or occupier's name
    ~~FRED HOSKING PTY. LTD.~~
11. Postal address of applicant — Suburb/Town — Postcode
    P.O. BOX 117 — CONCORD WEST — 2138
12. Contact for licence enquiries:
    Phone: (02) 743 3099 — Fax: 736 1534 — Name: DENNIS PARKES

I certify that the details contained in this application (or the accompanying computer disk) are true and correct

13. Signature of applicant: Dennis Parkes — Date: 1-6-93

Please complete attached site sketch, depot listing and check sheet (if required) and return to WorkCover Authority in envelope provided.

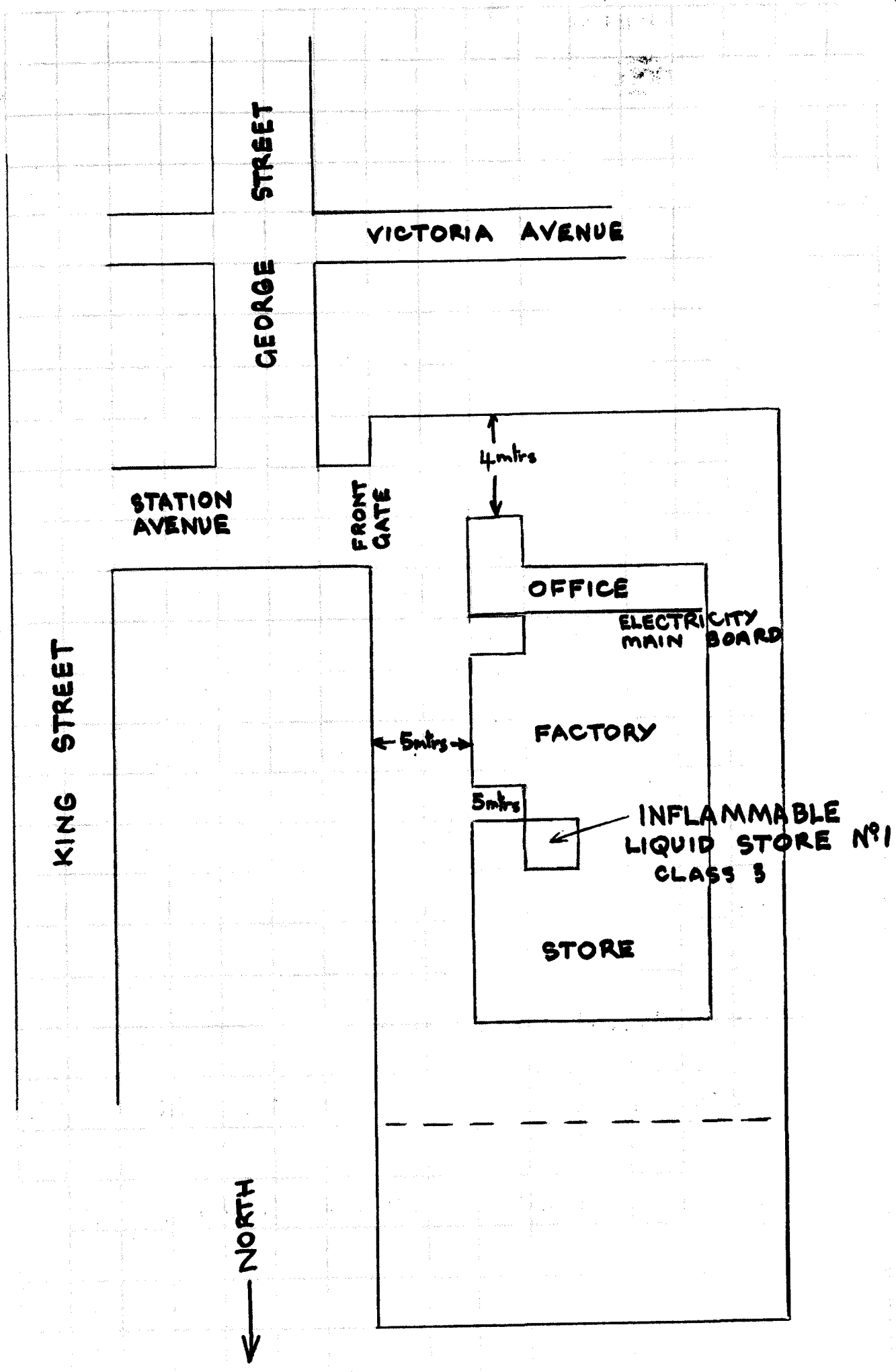
27 FEB 1995

Form 3G1

PART B

Site Sketch

Please carefully read the instructions in Part B of the guide before sketching the site.



PART C TO CHANGE **CHEMICAL STORAGE**

Complete 1 section per depot

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot number	Type of depot	Class	Licensed maximum storage capacity
1	~~Roofed store~~ INFLAMMABLE LIQUID	3	~~1,800 litres~~ 1845L

	UN number	Shipping name	Pkg. Class	Pkg. Group	Pkg. EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³
1	1219	ISO PROPANOL 3	~~2SE~~	II		~~ISO PROPANOL~~	400	L
2	1170	100SG/F3	~~3~~	II		DENATURED ALCOHOL ~~100SG/F3~~	400	L

Depot number	Type of depot	Class	Licensed maximum storage capacity
~~2~~	~~Roofed store~~	~~3~~	~~1000 L~~

	UN number	Shipping name	Pkg. Class	Pkg. Group	Pkg. EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³
3	1263	~~SUPERFLOW ACRYLIC~~ THINNERS	~~3YE~~	II		ACRYLIC THINNERS	200	L
4	1271	~~X55~~	3YE	II	3A1	X55 SOLVENT PETROLEUM SPIRIT	400	L

Depot number	Type of depot	Class	Licensed maximum storage capacity

	UN number	Shipping name	Pkg. Class	Pkg. Group	Pkg. EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³

Depot number	Type of depot	Class	Licensed maximum storage capacity

	UN number	Shipping name	Pkg. Class	Pkg. Group	Pkg. EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³

FRED HOSKING
PTY. LIMITED
SUBSIDIARY COMPANY FRED HOSKING SALES PTY. LTD.

C/R

"BAY SERIES" FANCY CARDS & STATIONERY

BAY SERIES
EST 1892

STATION AVENUE, CONCORD WEST, N.S.W. 2138
P.O. BOX 117.
TELEPHONE: 743 0291
TELEGRAMS: "BASERIES" SYDNEY
TELEX: 127873
FAX: 7361534

DB:HE

26th March 1991.

WorkCover Authority of N.S.W.
Locked Bag 2, Post Office
ROSEBERY NSW 2018

Dear Sir,

This is to advise that we are no longer using Depot No. 2 underground petrol tank and this tank may be removed from our Licence for the Keeping of Dangerous Goods under the provisions of the Dangerous Goods Act, 1975.

The tank has been filled with sand by Gamacol, as per the regulations.

Yours faithfully
FRED HOSKING PTY LIMITED

Don Boden

Don Boden
PURCHASING OFFICER

DD. 001. 020

6.020. 1X3

Dang. Goods

INFLAMMABLE LIQUID ACT, 1915 (AS AMENDED)

Application for Registration of Premises or Store Licence under Division A. or for the transfer alteration or amendment of any such Registration or Licence, for the keeping of Inflammable Liquid and/or Dangerous Goods, in accordance with the provisions of the Inflammable Liquid Act, 1915 (as amended), for the ensuing year.

SEE PAGE 4 FOR DETAILS OF FEES PAYABLE AND DISTANCES FROM PROTECTED WORKS

DIRECTIONS

H.C.S.

1. Applications must be forwarded to the Chief Inspector of Inflammable Liquid, Explosives Department, Box R.216, Royal Exchange Sydney, N.S.W. 2000 and must be accompanied by the prescribed fee.

Registration of Premises – For quantities not exceeding 300 gallons of mineral oil and 100 gallons of mineral spirit, if kept together; or 800 gallons of mineral oil and 100 gallons of mineral spirit, if kept in separate depots; or 500 gallons of mineral spirit, if kept in an underground tank depot; or 800 gallons of mineral oil and 500 gallons of mineral spirit, if mineral spirit is kept in an underground tank depot.

In addition to, or in lieu of the above, similar quantities of Dangerous Goods of Classes 1 and 2 may be kept under the like conditions; reading Dangerous Goods of Class 1 for the words Mineral Spirit and Dangerous Goods of Class 2 for the words Mineral Oil

Store Licence, Div. A – For quantities in excess of those stated above, but not exceeding 4,000 gallons mineral oil and/or mineral spirit, and/or Dangerous Goods of Classes 1, 2 and 9.

Store Licence, Div. B (Fee, See Regulation 7) – For quantities exceeding 4,000 gallons of mineral spirit, and/or Dangerous Goods of Classes 1 and 2, and/or Dangerous Goods of Class 3.

For the keeping of Dangerous Goods of Classes 3 and/or 4. new licence from 15/6/73

1. Name of occupier including full christian names. FRED HOSKING PTY. LTD.

2. Trading Name (if any)

3. Locality of the premises in which the depot or depots are situated — No. or Name ~~ROOT OF~~ cnr GEORGE st & STATION Ave; Street ~~VICTORIA AVE~~; Town CONCORD.

4. Postal address P/O BOX 117 CONCORD WEST Postcode 2138

5. Occupation Mfrs. of greeting cards & stationery

6. Nature of premises (dwelling, garage etc.) Factory

7. Particulars of construction of depots and maximum quantities of inflammable liquid and/or Dangerous Goods to be kept at any one time.

~~PLEASE~~ ATTACH PLAN OF PREMISES

Depot No.	Construction of depots*			Inflammable liquid		Dangerous goods						
	Walls	Roof	Floor	Mineral spirit gallons	Mineral oil gallons	Class 1 gallons	Class 2 gallons	Class 3 lb	Class 4 cu ft	Class 5A water gal	Class 5B water gal	Class 9 gallons
1	Underground Tank			2000								
2												
3												
4												
5												
6												
7												
8												
9												
10												

PUBLIC REVENUE N/c.
CHQ 1 $ 9.00
(Date) 11/10/73
Receipt No. 4833

*If product is kept in tanks describe depots as underground or aboveground tanks.

Signature of applicant ~~X~~ D. Bodin

Date of application ~~X~~ _____, 19___

CERTIFICATE OF INSPECTION

I, A. Leonard Barnett being an Inspector under the Inflammable

INSPECTION RECORD

Licence No. _____

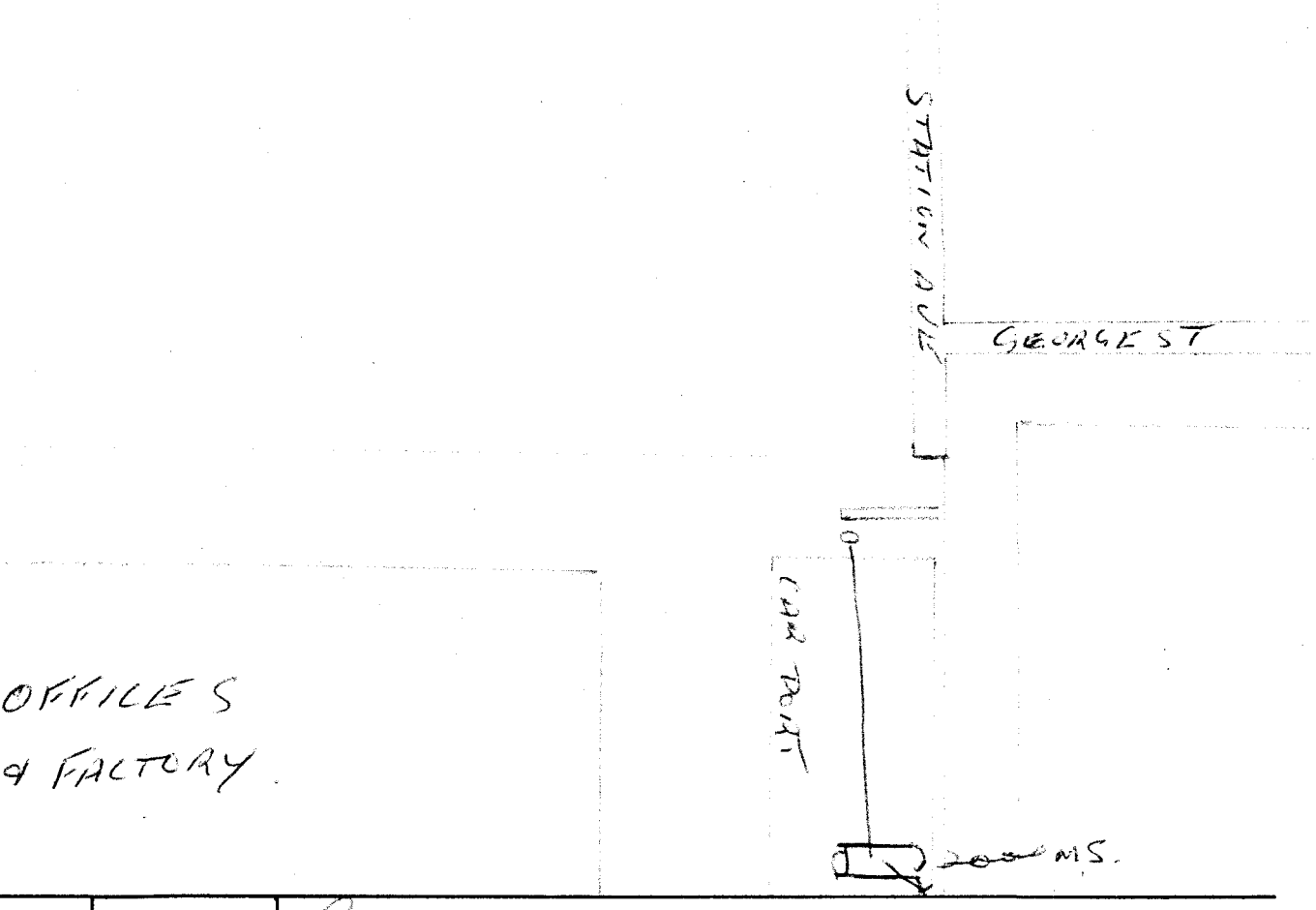
Licensee: FRED HOSKING P/L.
FANCY CARDS & STATIONERY.

Address: FOOT OF STATION AVE & GEORGE ST

Storage licensed: ~~1/2000~~ MS

H.C.S.

Sketch of Premises (Dimensions of depot and distance of same from adjoining "protected works" to be shown).



Inspected	Initials	Requisitions made or state of depot
21-9-73	A.L.B	To be applied for.

DANGEROUS GOODS ACT, 1975

LICENCE No. DG 8206

APPLICATION FOR LICENCE (or AMENDMENT or TRANSFER of LICENCE) FOR THE KEEPING OF DANGEROUS GOODS

Application is hereby made for— *a licence (or amendment of the licence) *the transfer of the licence described below.

(*delete whichever is not required)

for the keeping of dangerous goods in or on the premises

FEE: $~~10.00 per Depot for new licence~~. $10.00 for amendment ~~or transfer~~.

Name of Applicant in full (see over)	
Trading name or occupier's name (if any)	FRED HOSKING PTY LTD.
Postal address	PO BOX 117 STATION AVE. CONCORD WEST Postcode 2138
Address of the premises including street number (if any)	AS ABOVE Postcode
Nature of premises (see over)	PRINTERS STATIONERY MANUFS
Telephone number of applicant	STD Code Number

Particulars of type of depots and maximum quantities of dangerous goods to be kept at any one time.

Depot number	Type of depot (see over)	Storage capacity	Dangerous goods: Product being stored	C & C Office use only
				DG002 020 C
1	ROOFED PACKAGE STORE	1000 LITRES	CLASS 3.1 METHYLATED SPIRITS	602013
2	UNDERGROUND TANK	10000 LITRES	CLASS 3.1 PETROL	202093
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

2

INSPECTORS FEES COLLECTION RECEIPT No. 16756 DATE 16.11.82 AMOUNT $10.00

Has site plan been approved? Yes / No — If yes, no plans required. If no, please attach site plan.

Have premises previously been licensed? ~~No~~ Yes — If yes, state name of previous occupier. AS ABOVE

Name of company supplying flammable liquid (if any) CALTEX

Signature of applicant ..... Date 16-11-82

For external explosives magazine(s), please fill in side 2.

FOR OFFICE USE ONLY

PAID Ch. 18442

CERTIFICATE OF INSPECTION

I, JOHN RICHARD CRUWYS being an Inspector under the Dangerous Goods Act, 1975, do hereby certify that the premises described above do comply with the requirements of the Dangerous Goods Act, 1975, and the Dangerous Goods Regulation with regard to their situation and construction for the keeping of dangerous goods of the nature and in the quantity specified.

Signature of Inspector ..... Date 22.7.83

Appendix F

Test Bore Log Results

and Notes About this Report

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Soil Descriptions

Douglas Partners

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are based on Australian Standard AS 1726, Geotechnical Site Investigations Code. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	20 - 63
Medium gravel	6 - 20
Fine gravel	2.36 - 6
Coarse sand	0.6 - 2.36
Medium sand	0.2 - 0.6
Fine sand	0.075 - 0.2

The proportions of secondary constituents of soils are described as:

Term	Proportion	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	20 - 35%	Sandy Clay
Slightly	12 - 20%	Slightly Sandy Clay
With some	5 - 12%	Clay with some sand
With a trace of	0 - 5%	Clay with a trace of sand

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	vs	<12
Soft	s	12 - 25
Firm	f	25 - 50
Stiff	st	50 - 100
Very stiff	vst	100 - 200
Hard	h	>200

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	SPT N value	CPT qc value (MPa)
Very loose	vl	<4	<2
Loose	l	4 - 10	2 -5
Medium dense	md	10 - 30	5 - 15
Dense	d	30 - 50	15 - 25
Very dense	vd	>50	>25

Soil Descriptions

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Transported soils - formed somewhere else and transported by nature to the site; or
- Filling - moved by man.

Transported soils may be further subdivided into:

- Alluvium - river deposits
- Lacustrine - lake deposits
- Aeolian - wind deposits
- Littoral - beach deposits
- Estuarine - tidal river deposits
- Talus - scree or coarse colluvium
- Slopewash or Colluvium - transported downslope by gravity assisted by water. Often includes angular rock fragments and boulders.

Rock Strength

Rock strength is defined by the Point Load Strength Index ($Is_{(50)}$) and refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects. The test procedure is described by Australian Standard 4133.4.1 - 1993. The terms used to describe rock strength are as follows:

Term	Abbreviation	Point Load Index $Is_{(50)}$ MPa	Approx Unconfined Compressive Strength MPa*
Extremely low	EL	<0.03	<0.6
Very low	VL	0.03 - 0.1	0.6 - 2
Low	L	0.1 - 0.3	2 - 6
Medium	M	0.3 - 1.0	6 - 20
High	H	1 - 3	20 - 60
Very high	VH	3 - 10	60 - 200
Extremely high	EH	>10	>200

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Extremely weathered	EW	Rock substance has soil properties, i.e. it can be remoulded and classified as a soil but the texture of the original rock is still evident.
Highly weathered	HW	Limonite staining or bleaching affects whole of rock substance and other signs of decomposition are evident. Porosity and strength may be altered as a result of iron leaching or deposition. Colour and strength of original fresh rock is not recognisable
Moderately weathered	MW	Staining and discolouration of rock substance has taken place
Slightly weathered	SW	Rock substance is slightly discoloured but shows little or no change of strength from fresh rock
Fresh stained	Fs	Rock substance unaffected by weathering but staining visible along defects
Fresh	Fr	No signs of decomposition or staining

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with some fragments
Fractured	Core lengths of 40-200 mm with some shorter and longer sections
Slightly Fractured	Core lengths of 200-1000 mm with some shorter and loner sections
Unbroken	Core lengths mostly > 1000 mm

Rock Descriptions

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq \text{100 mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or better. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

Symbols & Abbreviations

Douglas Partners

Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core Drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

Symbols & Abbreviations

Graphic Symbols for Soil and Rock

General


Asphalt


Road base


Concrete


Filling

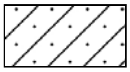
Soils


Topsoil

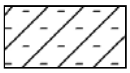

Peat


Clay

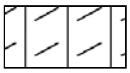

Silty clay

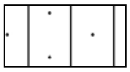

Sandy clay

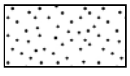

Gravelly clay

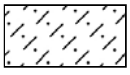

Shaly clay

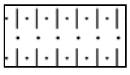

Silt


Clayey silt


Sandy silt

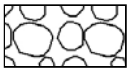

Sand

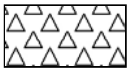

Clayey sand


Silty sand


Gravel


Sandy gravel


Cobbles, boulders

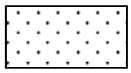

Talus

Sedimentary Rocks

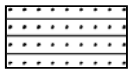

Boulder conglomerate

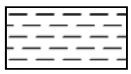

Conglomerate


Conglomeratic sandstone

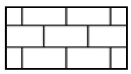

Sandstone


Siltstone


Laminite

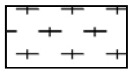

Mudstone, claystone, shale

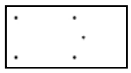

Coal


Limestone

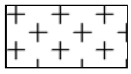
Metamorphic Rocks

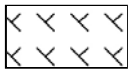

Slate, phyllite, schist

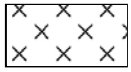

Gneiss

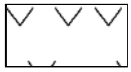

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

BOREHOLE LOG

CLIENT: Fred Hoskings Pty Ltd
PROJECT: Investigation For Future Development
LOCATION: Station Avenue, Concord West

SURFACE LEVEL: 4.4 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 103
PROJECT No: 45146
DATE: 18 Sep 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear D - Drill Break)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
	0.3	FILLING - well compacted, brown and grey gravelly sand filling with some clay, humid							A			
		FILLING - variably compacted, red, yellow brown, grey gravelly clay filling with some ironstone gravel and timber pieces at 1.0-1.3m depth, damp							A			
	1.3	PEATY CLAY - soft, black peaty clay, moist							S			12,6,3 N = 9
	1.9	SILTY CLAY - stiff to very stiff, light grey mottled orange silty clay, moist							A			
									S			2,4,7 N = 11
									S			5,8,10 N = 18
		- saturated from 4.3m				▼			S			3,8,7 N = 15
	4.9	SHALE - extremely low strength, grey mottled orange shale						Note: Unless otherwise stated, rock is fractured along rough ironstained planar bedding planes or joints dipping 0°- 10°	S			16/130mm refusal
	5.95	SHALE - extremely low to very low strength, extremely to highly weathered, grey brown shale						5.95-7.6m: extremely to highly weathered, obscuring discontinuities	C	100	0	
	7.6	SHALE - low to medium strength, moderately to slightly weathered, highly fractured to fractured, grey brown shale						7.72m: B0°- 5°, 10mm clay 7.78m: J85° smooth 8.04m: J30° smooth 8.4m: J30°	C	100	41	PL(A) = 0.3MPa PL(A) = 0.3MPa
	9.0	Bore discontinued at 9.0m						8.85-8.95m: fragmented				

RIG: Multi-Access Rig **DRILLER:** Traccess **LOGGED:** Boyd/Islam **CASING:** HQ to 6.0m

TYPE OF BORING: Solid flight auger (100mm) to 5.95m; NMLC-Coring to 9.0m

WATER OBSERVATIONS: Free groundwater observed at 4.3m whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: GRB
Date: 16/10/07

Douglas Partners
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BOREHOLE LOG

CLIENT: Fred Hoskings Pty Ltd
PROJECT: Investigation For Future Development
LOCATION: Station Avenue, Concord West

SURFACE LEVEL: 4.3 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 104
PROJECT No: 45146
DATE: 18 Sep 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding, J - Joint, S - Shear, D - Drill Break)	Type	Core Rec. %	RQD %	Test Results & Comments
4.3	0.4	FILLING - well compacted, brown and grey recycled concrete, gravel and sand filling, humid							A			
	0.8	FILLING - poorly compacted, red brown mottled grey gravelly clay filling with some concrete fragments, humid							A*			
	1	SILTY CLAY - stiff to very stiff, light grey mottled orange and red slightly sandy silty clay, humid							S			2,4,6 N = 10
	2								S			6,10,12 N = 22
	3											
1	3.2	SHALE - extremely low to very low strength, grey mottled orange shale						Note: Unless otherwise stated, rock is fractured along rough, ironstained planar bedding planes or joints dipping 0°- 10°	S			12,20,5/20mm *refusal*
0	4.3	SHALE - medium strength, fresh stained, fractured, grey brown shale with some sandstone laminae						4.3-5.19m: B0° ironstained & clay veneer 5.1m: J25° 5.35m: J25° 5.6m: J40° 5.77m: J20° 5.8m: J20° 5.9m: J45° 6.1m: J20° 6.16-6.56m: J70°- 90°	C	100	77	PL(A) = 0.8MPa PL(A) = 0.7MPa
-3	6.6	SHALE - high strength, fresh, slightly fractured, dark grey shale						6.56m: J30° smooth 6.68-6.85m: J80° 7.26m: J75°				PL(A) = 1.4MPa
-4	7.5	Bore discontinued at 7.5m										

RIG: Multi-Access Rig **DRILLER:** Traccess **LOGGED:** Boyd/Islam **CASING:** HQ to 4.3m

TYPE OF BORING: Solid flight auger (100mm) to 4.3m; NMLC-Coring to 7.5m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: *Duplicate sample Z-180907 collected

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: GRB
Date: 16/10/07

Douglas Partners
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BOREHOLE LOG

CLIENT: Fred Hoskings Pty Ltd
PROJECT: Investigation For Future Development
LOCATION: Station Avenue, Concord West

SURFACE LEVEL: 4.4 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 105
PROJECT No: 45146
DATE: 18 Sep 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding, J - Joint, S - Shear, D - Drill Break)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
	0.03	ASPHALTIC CONCRETE							A			
	0.3	FILLING - well compacted, dark grey slightly clayey, sandy gravel filling (roadbase). Gravel of slag with some ash, humid							A			
	1.0	FILLING - variably compacted, brown gravelly clay filling, with a trace of brick fragments, moist										
	1.5	SILTY CLAY - stiff, light grey slightly sandy silty clay with ironstone gravel, wet							S			2,5,7 N = 12
	2.0	GRAVELLY CLAY - soft, brown black gravelly clay, saturated (possibly peat layer)							A			
		SILTY CLAY - very stiff, light grey slightly sandy silty clay, moist										
									S			9,18,16 N = 34
								Note: Unless otherwise stated, rock is fractured along rough ironstained planar bedding planes or joints dipping 0°- 10°	S			7,9,9 N = 18
	3.9	SHALE - extremely low strength, grey mottled orange shale										
	4.15	SHALE- medium strength, moderately to slightly weathered, highly fractured to fractured, grey brown shale with some sandstone laminae						4.15-4.6m: B0° ironstained 4.67m: J25° healed 4.81m: J35° 5.34m: J40° 5.64m: J60° 6.04m: J35° 6.12-6.30m: J75°- 85° rough, irregular 6.33-6.50m: J25°- 35° with micro faults 6.76m: J45° 6.81m: J50° 6.92m: J85° 7.15m: J45° 7.43m: B0° 10mm clay	C	100	66	PL(A) = 0.5MPa PL(A) = 0.8MPa PL(A) = 1.4MPa
	6.5	SHALE - high strength, fresh, slightly fractured, grey shale with some sandstone laminae							C	100	100	
									C	100	98	PL(A) = 1.3MPa
	7.58	Bore discontinued at 7.58m										

RIG: Multi-Access Rig **DRILLER:** Traccess **LOGGED:** Boyd/Islam **CASING:** HQ to 4.4m

TYPE OF BORING: Solid flight auger (100mm) to 4.2m; NMLC-Coring to 7.58m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: GRB
Date: 16/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.52 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 201
PROJECT No: 45146A
DATE: 09 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.15	CONCRETE							
		FILLING - brown clay filling with some sand, silt and trace gravel		A	0.2		PID=2ppm		
					0.5				
	0.8	PEATY CLAY - soft, black peaty clay with trace gravel, moist							
	1.0	SILTY CLAY - soft, brown silty clay, with trace ironstone gravel, moist		A	1.0		PID<1ppm		
					1.5				
		- *saturated from 2.0m to 2.5m*						▼	
	2.5	SILTY CLAY - stiff to very stiff, mottled brown and grey silty clay, moist		A	2.5		PID=2ppm		
					2.8				
	3.0	Bore discontinued at 3.0m - target depth reached							

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: Concrete coring (150mm diameter) to 0.15m then 100mm diameter solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 2.0m whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: RV
Date: 15/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.48 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 202
PROJECT No: 45146A
DATE: 09 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		CONCRETE							
	0.14	FILLING - brown sandy clay filling, with trace silt and gravel			0.2				
				A			PID<1ppm		
					0.5				
				A			PID=2ppm		
	1.0	Bore discontinued at 1.0m - refusal on concrete			1.0				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: Concrete coring (150mm diameter) to 0.14m then 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: D.W
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.42 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 203
PROJECT No: 45146A
DATE: 09 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.07	ASPHALTIC CONCRETE							Gatic cover; Concrete
	0.15	FILLING - brown and grey clayey gravel filling with some sand (roadbase)							
		FILLING - light brown silty clay filling, with trace gravel and brick pieces		A	0.2		PID<1ppm		Bentonite
					0.5				
	0.8	PEATY CLAY - soft, black peaty clay with trace rootlets, moist		A	0.8		PID=2ppm		
	1.0	SILTY CLAY - soft, grey silty clay with trace gravel, moist to wet		A	1.0		PID=3ppm	22-10-07	
	1.3	SILTY CLAY - stiff to very stiff, mottled red and grey silty clay with trace ironstone gravel, moist			1.3				
					1.5				Backfilled with gravel
				A*			PID<1ppm		
					2.0				
					2.5				Machine slotted PVC screen
				A			PID<1ppm		
					3.0				
									End cap
	4.3	Bore discontinued at 4.3m - refusal on weathered shale							

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: Concrete coring (150mm diameter) to 0.07m then 100mm diameter solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 1.1m whilst augering. Groundwater measured at 1.16m bgl on 22/10/07

REMARKS: *BD1-091007 blind replicate 1.5-1.0m. ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date: 25/10/07

Douglas Partners
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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.39 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 204
PROJECT No: 45146A
DATE: 09 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.05	ASPHALTIC CONCRETE							Gatic cover
		FILLING - brown gravelly sand filling with trace silty clay and concrete pieces (roadbase)		A	0.1		PID<1ppm		Concrete
	0.3	FILLING - mottled brown and grey clay filling, with trace gravel			0.3				
					0.5				Bentonite
				A			PID=3ppm	▼ 22-10-07	
	1.0	PEATY CLAY - soft, black peaty clay with trace of organic matter, moist		A	1.0		PID<1ppm		Backfilled with gravel
	1.2	SILTY CLAY - soft, grey silty clay, moist		A	1.2		PID=2ppm		
	1.4	SILTY CLAY - soft, grey silty clay with some shell fragments, wet to saturated		A	1.4 1.5		PID=2ppm		
									Machine slotted PVC screen
	1.9	SILTY CLAY - stiff to very stiff, brown and grey silty clay, with trace sand and gravel, moist		A	1.9		PID<1ppm		
					2.2				
	2.5	Bore discontinued at 2.5m - refusal on weathered shale							End cap

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 1.4m whilst augering. Groundwater measured at 0.76m bgl on 22/10/07

REMARKS: ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: D.W
Date: 25/10/07

Douglas Partners
Geotechnics · Environment · Groundwater

BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.28 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 207
PROJECT No: 45146A
DATE: 09 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILLING - brown silty clay filling, with some gravel and trace sand and rootlets (grass surface)		A	0.0		PID<1ppm		Gatic cover; Concrete
				A	0.5		PID=1ppm		Bentonite
	1.0	FILLING - brown clay filling		A	1.0		PID<1ppm		Backfilled with gravel
	1.6	PEATY CLAY - soft, black peaty clay, moist			1.5				
	1.7	SILTY CLAY - stiff to very stiff, mottled red brown and grey silty clay, moist		A*	1.7		PID=1ppm	22-10-07	
					2.0				Machine slotted PVC screen
					3.0		- *insufficient soil from* auger to sample from depths of 3.0m & 4.0m		
	4.3	Bore discontinued at 4.3m - target depth reached							End cap

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed whilst augering. Groundwater measured at 2.16m bgl on 22/10/07

REMARKS: *BD3-091007 blind replicate of 207/1.7-2.0m. ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials: DW
Date: 25/10/07

Douglas Partners
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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.47 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 208
PROJECT No: 45146A
DATE: 10 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILLING - grey sandy gravel filling, with some concrete pieces, trace plastic and roots		A	0.0		PID=1ppm		
	0.2				0.1				
		FILLING - yellow brown sandy clay filling, with trace gravel		A	0.2		PID<1ppm		
					0.5				
				A			PID<1ppm		
					1.0				
	1.1	SILTY CLAY - soft, dark grey and brown silty clay, moist to wet			1.1			▼	
				A			PID=3ppm		
	1.6	Bore discontinued at 1.6m - target depth reached			1.6				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 1.1m whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date: 25/10/07

Douglas Partners
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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.53 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 209
PROJECT No: 45146A
DATE: 10 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.15	CONCRETE							
	0.2	FILLING - yellow sand filling			0.2				
		FILLING - brown grey clay filling, with trace sand and gravel		A			PID=1ppm		
		- slight hydrocarbon odour from 0.5m to 1.0m			0.5				
				A			PID=3ppm		
	1				1.0				1
	1.2	PEATY CLAY - soft, black peaty clay, moist			1.2				
		- slight odour of organic matter		A			PID=3ppm		
					1.5				
	1.7	SILTY CLAY - stiff to very stiff, mottled red and grey silty clay, moist			1.7				
				A			PID=2ppm		
	2 2.0	Bore discontinued at 2.0m			2.0				2
		- target depth reached							
	3								3
	4								4

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: Concrete coring (150mm diameter) to 0.15m then 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep
		⧗	Water level

CHECKED
Initials:
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.57 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 210
PROJECT No: 45146A
DATE: 10 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		CONCRETE							
	0.16	FILLING - grey sandy clay filling, with trace gravel			0.2				
				A			PID=2ppm		
					0.7				
				A			PID<1ppm		
	1.2	Bore discontinued at 1.2m - refusal on ironstone probably in filling			1.2				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: Concrete coring (150mm diameter) to 0.16m then 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep
		⫧	Water level

CHECKED
Initials:
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.49 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 211
PROJECT No: 45146A
DATE: 10 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.16	CONCRETE							
		FILLING - yellow sand filling		A	0.2		PID<1ppm		
	0.4				0.4				
		FILLING - brown grey clay filing, with trace sand and gravel			0.5				
				A			PID=2pm		
	1.3				1.0				
		PEATY CLAY - soft, black peaty clay, moist - slight odour of organic matter		A	1.3		PID=3ppm		
	1.7				1.5				
		SILTY CLAY - stiff to very stiff, red and grey silty clay		A	1.7		PID=2ppm		
	2.0	Bore discontinued at 2.0m - target depth reached			2.0				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: Concrete coring (150mm diameter) to 0.16m then 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: D.W
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.57 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 212
PROJECT No: 45146A
DATE: 10 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.15	CONCRETE							
		FILLING - yellow sand filling			0.2				
	0.35	FILLING - brown and grey clay filling, with some sand and gravel		A			PID=2ppm		
	0.5	FILLING - concrete rubble filling?			0.5		- no auger returns at 0.5m-0.7m		
	0.7	Bore discontinued at 0.7m - refusal on concrete rubble filling?							

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: Concrete coring (150mm diameter) to 0.15m then 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.22 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 213
PROJECT No: 45146A
DATE: 10 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.0				0.0				Gatic cover
		FILLING - grey sand filling, with some concrete fragments and trace gravel and wire		A			PID<1ppm		Concrete
	0.2	FILLING - grey and brown clay filling, with trace gravel			0.2				
				A			PID<1ppm		Bentonite
					0.5				Backfilled with gravel
	0.7	PEATY CLAY - soft, black peaty clay, moist to wet			0.7				
				A			PID=2ppm		
1					1.0				1
	1.1	SILTY CLAY - stiff to very stiff, red brown and grey silty clay, damp			1.1			22-10-07	
				A*			PID=2ppm		
					1.5				
				A			PID<1ppm		Machine slotted PVC screen
2					2.0				2
		- trace gravel from 2.6m to 2.7m							End cap
	2.7	SHALE - *extremely low to very low strength, grey brown* shale							
	2.9	Bore discontinued at 2.9m - refusal on weathered shale							
3									3
4									4

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed whilst augering. Groundwater measured at 1.08m bgl on 22/10/07

REMARKS: *BD2-101007 blind replicate of 213/1.1-1.5m. ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: A.W
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.4 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 214
PROJECT No: 45146A
DATE: 10 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.0	FILLING - grey sand filling with some clay and concrete fragments, trace gravel and rootlets		A	0.0		PID=1ppm		
	0.2	FILLING - brown clay filling with trace gravel, sand and rootlets		A	0.2		PID<1ppm		
					0.5				
	0.8	PEATY CLAY - soft, black peaty clay - very slight organic matter odour		A	0.8		PID=2ppm		
	1.2	SILTY CLAY - stiff, grey silty clay, humid		A	1.0 1.2		PID=3ppm		
	1.5	Bore discontinued at 1.5m - target depth reached			1.5				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: DW
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.51 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 215
PROJECT No: 45146A
DATE: 10 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.1	FILLING - grey sand filling with some gravel, concrete fragments and trace clay			0.1				
		FILLING - grey sand filling, with some gravel and clay		A			PID=1ppm		
	0.3	FILLING - brown and grey clay filling, with trace sand			0.3				
					0.5				
				A			PID<1ppm		
					1.0				
	1.1	PEATY CLAY - soft, black peaty clay, moist			1.1				
	1.2			A	1.2		PID=1ppm		
		SILTY CLAY - stiff, grey and red silty clay, moist							
				A			PID<1ppm		
	1.7	Bore discontinued at 1.7m - target depth reached			1.7				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials: D.C
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.38 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 216
PROJECT No: 45146A
DATE: 10 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.0	FILLING - mottled orange brown and grey clay filling with trace of sand, fibre cement fragment, timber and rootlets		A	0.0		PID<1ppm A216/0.3m fibre cement sample from 0.3m		
	0.5	FILLING - grey clay filling, with trace of gravel		A	0.3		PID=3ppm		
	1.0	SILTY CLAY - soft, grey silty clay with trace gravel, sand and rootlets, moist (possibly filling)		A	0.5		PID=2ppm		
		- wet to saturated from 1.5m to 2.4m - organic matter odour from 1.5m to 2.0m		A	1.0		PID=3ppm	▼	
	2.4	SILTY CLAY - stiff, mottled red and grey silty clay, with trace of gravel		A	1.5		PID=1ppm		
	3.0	Bore discontinued at 3.0m - target depth reached		A	2.0		PID=2ppm		
					2.5				
					3.0				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 2.0m whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.42 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 217
PROJECT No: 45146A
DATE: 10 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILLING - brown and grey clay filling, with some gravel and trace of sand		A	0.0		PID<1ppm		
				A	0.5		PID=2ppm		
	1.0	SILTY CLAY - moist, brown silty clay, with trace of gravel and sand		A	1.0		PID=3ppm		
		- wet at 1.8m			1.5			▼	
	2.0	SILTY CLAY - stiff, mottled red and grey silty clay, moist		A*	2.0		PID=4ppm		
	2.3	Bore discontinued at 2.3m - target depth reached			2.3				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 1.8m whilst augering

REMARKS: *BD3-101007 blind replicate of 217/2.0-2.3m. ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: D. V
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.44 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 218
PROJECT No: 45146A
DATE: 10 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.05	ASPHALTIC CONCRETE							
		FILLING - mottled grey, brown and red clay filling with some sand, trace gravel and roots		A	0.1		PID=3ppm		
	0.25				0.2				
		FILLING - yellow brown sand filling, with some gravel and trace of clay			0.4				
				A			PID=3ppm		
	0.7				0.7				
		FILLING - brown clay filling, with trace gravel		A*			PID<1ppm		
1	1.0				1.0				1
		PEATY CLAY - soft, black peaty clay, moist		A			PID=2ppm		
	1.2				1.2				
		SILTY CLAY - soft, dark grey silty clay, moist			1.3				
				A			PID=2ppm		
					1.5				
	1.7								
		SILTY CLAY - stiff, mottled grey and brown silty clay, damp							
2					2.0				2
				A			PID=2ppm		
	2.2				2.2				
		Bore discontinued at 2.2m - target depth reached							
3									3
4									4

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: *BD4-101007 blind replicate of 218/0.7-1.0m. ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: DW
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.42 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 219
PROJECT No: 45146A
DATE: 11 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.15	CONCRETE							
		FILLING - brown clay filling, with some gravel and trace sand		A	0.2		PID<1ppm		
	0.4	FILLING - mottled brown and grey clay filling, with trace of gravel			0.4				
				A	0.5		PID=2ppm		
	0.9	PEATY CLAY - soft, black peaty clay, moist - slight organic matter odour		A	0.9		PID=4ppm		
	1.1	SILTY CLAY - soft, grey silty clay, moist			1.1				
	1.2	SILTY CLAY - stiff, mottled grey and brown silty clay, with trace of gravel, moist			1.2				
				A			PID=2ppm	▼	
		- wet at 1.5m to 1.7m							
	1.7	Bore discontinued at 1.7m - target depth reached			1.7				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: Concrete coring (120mm diameter) to 0.15 then 100mm diameter solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 1.5m whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: D. W
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.3 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 220
PROJECT No: 45146A
DATE: 11 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.17	CONCRETE							
4	0.3	FILLING - dark grey sand filling, with some clay and trace gravel		A	0.2		PID<1ppm		
		FILLING - mottled brown and grey clay filling, with trace gravel		A	0.3		PID<1ppm		
	0.6	PEATY CLAY - soft, black clay, moist - organic matter odour		A	0.5		PID=2ppm		
	0.8	SILTY CLAY - soft, brown and grey silty clay, moist			0.6				
	1	- wet at 1.0m to 1.3m		A	0.8		PID=1ppm	▼	1
3	1.3	SILTY CLAY - stiff, mottled red brown and grey clay, with trace ironstone gravel			1.3				
				A*	1.5		PID=1ppm		
	1.9	Bore discontinued at 1.9m - target depth reached			1.9				2
2	2								
	3								3
1									
	4								4
0									

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: Concrete coring (150mm diameter) to 0.17 then100mm diameter solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 1.0m whilst augering

REMARKS: *BD1-111007 blind replicate of 220/1.5-1.9m. ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: D. V
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.45 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 221
PROJECT No: 45146A
DATE: 11 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.1	FILLING - brown silty sand filling with trace clay, gravel and rootlets (garden surface)			0.1				
		FILLING - brown gravelly sand filling with trace of silt, clay and timber		A			PID=2ppm		
					0.5				
		- strong hydrocarbon odour from 0.8m to 1.7m							
	1	- stained grey from 1.0m to 1.7m			1.0			▼	1
				A			PID=8ppm		
					1.2				
				A			PID=9ppm		
	1.7	Bore discontinued at 1.7m - refusal on unknown object			1.7				
	2								2
	3								3
	4								4

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 1.0m whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date: 25/10/07

Douglas Partners
Geotechnics · Environment · Groundwater

BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.43 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 222
PROJECT No: 45146A
DATE: 11 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.05	ASPHALTIC CONCRETE							
	0.15	FILLING - brown clayey sand, with trace of gravel							
		FILLING - brown, orange and grey clay filling, with some gravel and trace sand		A	0.2		PID=3ppm		
					0.5				
	0.8	FILLING - yellow sand filling, with trace clay		A	0.8		PID=2ppm		
	1.0	SILTY CLAY - soft, grey silty clay, moist		A*	1.0		PID=2ppm	▼	
		- wet at 1.2m to 1.3m							
	1.3	SILTY CLAY - stiff, mottled grey and brown clay, humid		A	1.3		PID=4ppm		
	1.5	Bore discontinued at 1.5m - target depth reached			1.5				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 1.2m whilst augering

REMARKS: *BD2-111007 blind replicate of 222/1.0-1.3m. ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: N.V
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.47 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 228
PROJECT No: 45146A
DATE: 15 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.1	FILLING - brown silty clay filling, with some sand and trace gravel, cobble sized rock pieces, metal pieces, tile fragments and bone		A	0.0		PID<1ppm		
	0.12	FILLING - mottled grey and yellow clay filling, with some rock fragments			0.1				
		Bore discontinued at 0.12m - refusal in filling							

RIG: Hand tools **DRILLER:** DW **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING: Hand auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: ^Benchmark obtained from survey plan provided by client

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date: 25/10/07

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BOREHOLE LOG

CLIENT: Fred Hosking Pty Ltd
PROJECT: Phase 1 and 2 Contamination Assessment
LOCATION: 7 Concord Avenue & 202-210 George Street Concord West

SURFACE LEVEL: 4.4 AHD^
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 229
PROJECT No: 45146A
DATE: 30 Oct 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.05	ASPHALTIC CONCRETE							
	0.15	FILLING - brown gravelly sand filling, with trace of clay (roadbase)							
		FILLING - mottled grey, black and brown clay filling, with trace of rootlets		A	0.2		PID<1ppm		
					0.5				
	0.6	FILLING - grey clayey sand filling		A	0.6		PID=2ppm	▼	
					1.0				
	1.1	FILLING - grey silty clay filling		A	1.1		PID<1ppm		
					1.5				
	1.7	FILLING - mottled grey and red-brown silty clay filling		A	1.7		PID=2ppm		
					2.0				
	2.6	SILTY CLAY - grey mottled brown silty clay, humid		A	2.6		PID=1ppm		
	2.9	Bore discontinued at 2.9m - refusal in shale			2.9				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** DW **CASING:** Uncased

TYPE OF BORING:

WATER OBSERVATIONS: Free groundwater observed at 0.7m whilst augering

REMARKS: ^Benchmark obtained from survey plan provided by client
Important Note: Soil strengths were determined subjectively in the field and are not to be used for geotechnical purposes

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials: D.W
Date: 7/11/07

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Appendix G

Laboratory Certificates

and Chain of Custody Documentation

Envirolab Services Pty Ltd
ABN 37 112 535 645
54 Frenchs Rd Willoughby NSW 2068
ph 02 9958 5801 fax 02 9958 5803
email: tnotaras@envirolabservices.com.au

CERTIFICATE OF ANALYSIS 13836

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: David Walker

Sample log in details:

Your Reference:	**45146A, Concord West**
No. of samples:	8 Soils
Date samples received:	19/09/07
Date completed instructions received:	19/09/07

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:	26/09/07
Date of Preliminary Report:	Not Issued
Issue Date:	25/09/07

NATA accreditation number 2901. This document shall not be reproduced except in full.
This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025.
Tests not covered by NATA are denoted with *.

Results Approved By:

Jacinta Hurst
Operations Manager

Joshua Lim
Chemist

vTPH & BTEX in Soil						
Our Reference:	UNITS	13836-1	13836-2	13836-3	13836-4	13836-5
Your Reference	----------	101/0.5-0.6	102/0.5-0.6	103/0.2-0.3	103/0.5-0.6	104/0.5-0.6
Date Sampled	----------	18/09/2007	18/09/2007	18/09/2007	18/09/2007	18/09/2007
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/09/2007	21/09/2007	21/09/2007	21/09/2007	21/09/2007
Date analysed	-	21/09/2007	21/09/2007	21/09/2007	21/09/2007	21/09/2007
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	102	128	92	103	103

vTPH & BTEX in Soil				
Our Reference:	UNITS	13836-6	13836-7	13836-8
Your Reference	----------	105/0.1-0.2	105/0.4-0.5	Z-180907
Date Sampled	----------	18/09/2007	18/09/2007	18/09/2007
Type of sample		Soil	Soil	Soil
Date extracted	-	21/09/2007	21/09/2007	21/09/2007
Date analysed	-	21/09/2007	21/09/2007	21/09/2007
vTPH C_6 - C_9	mg/kg	<25	<25	<25
Benzene	mg/kg	<1.0	<1.0	<1.0
Toluene	mg/kg	<1.0	<1.0	<1.0
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	101	80	101

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	13836-1	13836-2	13836-3	13836-4	13836-5
Your Reference	----------	101/0.5-0.6	102/0.5-0.6	103/0.2-0.3	103/0.5-0.6	104/0.5-0.6
Date Sampled	----------	18/09/2007	18/09/2007	18/09/2007	18/09/2007	18/09/2007
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/09/2007	21/09/2007	21/09/2007	21/09/2007	21/09/2007
Date analysed	-	22/09/2007	22/09/2007	22/09/2007	22/09/2007	22/09/2007
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	111	102	106	100	106

sTPH in Soil (C10-C36)				
Our Reference:	UNITS	13836-6	13836-7	13836-8
Your Reference	----------	105/0.1-0.2	105/0.4-0.5	Z-180907
Date Sampled	----------	18/09/2007	18/09/2007	18/09/2007
Type of sample		Soil	Soil	Soil
Date extracted	-	21/09/2007	21/09/2007	21/09/2007
Date analysed	-	22/09/2007	22/09/2007	22/09/2007
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	160	<100	<100
TPH C_{29} - C_{36}	mg/kg	170	<100	<100
Surrogate o-Terphenyl	%	108	103	104

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	13836-1 101/0.5-0.6 18/09/2007 Soil	13836-2 102/0.5-0.6 18/09/2007 Soil	13836-3 103/0.2-0.3 18/09/2007 Soil	13836-4 103/0.5-0.6 18/09/2007 Soil	13836-5 104/0.5-0.6 18/09/2007 Soil
Date extracted	-	21/09/2007	21/09/2007	21/09/2007	21/09/2007	21/09/2007
Date analysed	-	21/09/2007	21/09/2007	21/09/2007	21/09/2007	21/09/2007
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.1	<0.1	<0.1	0.4
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Fluoranthene	mg/kg	<0.1	0.2	0.1	<0.1	1.0
Pyrene	mg/kg	<0.1	0.3	0.1	<0.1	1.0
Benzo(a)anthracene	mg/kg	<0.1	0.2	<0.1	<0.1	0.5
Chrysene	mg/kg	<0.1	0.2	<0.1	<0.1	0.6
Benzo(b,k)fluoranthene	mg/kg	<0.2	0.4	<0.2	<0.2	0.9
Benzo(a)pyrene	mg/kg	<0.05	0.2	0.1	<0.05	0.6
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.2	<0.1	<0.1	0.3
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.1	<0.1	<0.1	0.3
Surrogate p-Terphenyl-d_{14}	%	116	118	117	117	122

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	13836-6 105/0.1-0.2 18/09/2007 Soil	13836-7 105/0.4-0.5 18/09/2007 Soil	13836-8 Z-180907 18/09/2007 Soil
Date extracted	-	21/09/2007	21/09/2007	21/09/2007
Date analysed	-	21/09/2007	21/09/2007	21/09/2007
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	0.4
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	0.3
Phenanthrene	mg/kg	<0.1	<0.1	2.3
Anthracene	mg/kg	<0.1	<0.1	0.5
Fluoranthene	mg/kg	<0.1	0.2	2.4
Pyrene	mg/kg	<0.1	0.2	2.2
Benzo(a)anthracene	mg/kg	<0.1	0.1	1.1
Chrysene	mg/kg	<0.1	0.1	1.0
Benzo(b,k)fluoranthene	mg/kg	<0.2	<0.2	1.6
Benzo(a)pyrene	mg/kg	<0.05	0.1	1.0
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.6
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.4
Surrogate p-Terphenyl-d_{14}	%	120	116	123

Organochlorine Pesticides in soil						
Our Reference:	UNITS	13836-1	13836-2	13836-4	13836-5	13836-7
Your Reference	----------	101/0.5-0.6	102/0.5-0.6	103/0.5-0.6	104/0.5-0.6	105/0.4-0.5
Date Sampled	----------	18/09/2007	18/09/2007	18/09/2007	18/09/2007	18/09/2007
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/09/2007	21/09/2007	21/09/2007	21/09/2007	21/09/2007
Date analysed	-	22/09/2007	22/09/2007	22/09/2007	22/09/2007	22/09/2007
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	133	134	130	75	111

PCBs in Soil						
Our Reference:	UNITS	13836-1	13836-2	13836-4	13836-5	13836-7
Your Reference	----------	101/0.5-0.6	102/0.5-0.6	103/0.5-0.6	104/0.5-0.6	105/0.4-0.5
Date Sampled	----------	18/09/2007	18/09/2007	18/09/2007	18/09/2007	18/09/2007
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/09/2007	21/09/2007	21/09/2007	21/09/2007	21/09/2007
Date analysed	-	22/09/2007	22/09/2007	22/09/2007	22/09/2007	22/09/2007
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	133	134	130	75	111

Total Phenolics in Soil						
Our Reference:	UNITS	13836-1	13836-2	13836-4	13836-5	13836-7
Your Reference	----------	101/0.5-0.6	102/0.5-0.6	103/0.5-0.6	104/0.5-0.6	105/0.4-0.5
Date Sampled	----------	18/09/2007	18/09/2007	18/09/2007	18/09/2007	18/09/2007
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/09/2007	24/09/2007	24/09/2007	24/09/2007	24/09/2007
Date analysed	-	25/09/2007	25/09/2007	25/09/2007	25/09/2007	25/09/2007
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Acid Extractable metals in soil						
Our Reference:	UNITS	13836-1	13836-2	13836-3	13836-4	13836-5
Your Reference	----------	101/0.5-0.6	102/0.5-0.6	103/0.2-0.3	103/0.5-0.6	104/0.5-0.6
Date Sampled	----------	18/09/2007	18/09/2007	18/09/2007	18/09/2007	18/09/2007
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	24/09/2007	24/09/2007	24/09/2007	24/09/2007	24/09/2007
Date analysed	-	24/09/2007	24/09/2007	24/09/2007	24/09/2007	24/09/2007
Arsenic	mg/kg	11	18	<4.0	8.2	5.8
Cadmium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	mg/kg	24	13	19	18	26
Copper	mg/kg	6,100	22	65	21	19
Lead	mg/kg	160	38	13	30	37
Mercury	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel	mg/kg	42	3.3	100	7.3	17
Zinc	mg/kg	580	33	62	33	41

Acid Extractable metals in soil				
Our Reference:	UNITS	13836-6	13836-7	13836-8
Your Reference	----------	105/0.1-0.2	105/0.4-0.5	Z-180907
Date Sampled	----------	18/09/2007	18/09/2007	18/09/2007
Type of sample		Soil	Soil	Soil
Date digested	-	24/09/2007	24/09/2007	24/09/2007
Date analysed	-	24/09/2007	24/09/2007	24/09/2007
Arsenic	mg/kg	<4.0	12	6.1
Cadmium	mg/kg	<1.0	<1.0	<1.0
Chromium	mg/kg	10	17	29
Copper	mg/kg	47	180	20
Lead	mg/kg	7.2	69	35
Mercury	mg/kg	<0.10	<0.10	<0.10
Nickel	mg/kg	54	15	18
Zinc	mg/kg	46	120	41

Moisture						
Our Reference:	UNITS	13836-1	13836-2	13836-3	13836-4	13836-5
Your Reference	----------	101/0.5-0.6	102/0.5-0.6	103/0.2-0.3	103/0.5-0.6	104/0.5-0.6
Date Sampled	----------	18/09/2007	18/09/2007	18/09/2007	18/09/2007	18/09/2007
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/09/2007	21/09/2007	21/09/2007	21/09/2007	21/09/2007
Date analysed	-	21/09/2007	21/09/2007	21/09/2007	21/09/2007	21/09/2007
Moisture	%	15	18	15	18	16

Moisture				
Our Reference:	UNITS	13836-6	13836-7	13836-8
Your Reference	----------	105/0.1-0.2	105/0.4-0.5	Z-180907
Date Sampled	----------	18/09/2007	18/09/2007	18/09/2007
Type of sample		Soil	Soil	Soil
Date prepared	-	21/09/2007	21/09/2007	21/09/2007
Date analysed	-	21/09/2007	21/09/2007	21/09/2007
Moisture	%	10	16	16

Asbestos ID - soils				
Our Reference:	UNITS	13836-1	13836-5	13836-7
Your Reference	----------	101/0.5-0.6	104/0.5-0.6	105/0.4-0.5
Date Sampled	----------	18/09/2007	18/09/2007	18/09/2007
Type of sample		Soil	Soil	Soil
Sample Description	-	30g sand	30g sand	30g sand
Asbestos ID in soil	-	No asbestos detected	No asbestos detected	No asbestos detected
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Method ID	Methodology Summary
GC.16	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.
GC.14	Soil samples extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
GC.3	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
GC.12	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
GC-5	Soil samples are extracted with hexane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
GC-6	Soil samples are extracted with hexane/acetone and waters with dichloromethane and analysed by GC-ECD.
LAB.30	Total Phenolics - determined colorimetrically following disitillation.
Metals.20 ICP-AES	Determination of various metals by ICP-AES.
Metals.21 CV-AAS	Determination of Mercury by Cold Vapour AAS.
LAB.8	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.
AS4964-2004	Qualitative identification of asbestos type fibres in bulk using Polarised Light Microscopy and Dispersion Staining Techniques.

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			21/9/07	13836-1	21/09/2007 || 21/09/2007	LCS-5	21/9/07%
Date analysed	-			21/9/07	13836-1	21/09/2007 || 21/09/2007	LCS-5	21/9/07%
vTPH C_6 - C_9	mg/kg	25	GC.16	<25	13836-1	<25 || <25	LCS-5	110%
Benzene	mg/kg	1	GC.14	<1.0	13836-1	<1.0 || <1.0	LCS-5	94%
Toluene	mg/kg	1	GC.14	<1.0	13836-1	<1.0 || <1.0	LCS-5	109%
Ethylbenzene	mg/kg	1	GC.14	<1.0	13836-1	<1.0 || <1.0	LCS-5	108%
m + p-Xylene	mg/kg	2	GC.14	<2.0	13836-1	<2.0 || <2.0	LCS-5	108%
o-Xylene	mg/kg	1	GC.14	<1.0	13836-1	<1.0 || <1.0	LCS-5	109%
Surrogate aaa-Trifluorotoluene	%		GC.14	119	13836-1	102 || 122 || RPD: 18	LCS-5	111%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			21/9/07	13836-1	21/09/2007 || 21/09/2007	LCS-5	21/9/07%
Date analysed	-			22/9/07	13836-1	22/09/2007 || 22/09/2007	LCS-5	22/9/07%
TPH C_{10} - C_{14}	mg/kg	50	GC.3	<50	13836-1	<50 || <50	LCS-5	88%
TPH C_{15} - C_{28}	mg/kg	100	GC.3	<100	13836-1	<100 || <100	LCS-5	81%
TPH C_{29} - C_{36}	mg/kg	100	GC.3	<100	13836-1	<100 || <100	LCS-5	84%
Surrogate o-Terphenyl	%		GC.3	99	13836-1	111 || 113 || RPD: 2	LCS-5	101%
QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			21/9/07	13836-1	21/09/2007 || 21/09/2007	LCS-5	21/9/07%
Date analysed	-			21/9/07	13836-1	21/09/2007 || 21/09/2007	LCS-5	21/9/07%
Naphthalene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	LCS-5	100%
Acenaphthylene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	LCS-5	102%
Phenanthrene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	LCS-5	97%
Anthracene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	LCS-5	95%
Pyrene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	LCS-5	96%
Benzo(a)anthracene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	LCS-5	112%
Benzo(b,k)fluoranthene	mg/kg	0.2	GC.12	<0.2	13836-1	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	GC.12	<0.05	13836-1	<0.05 || <0.05	LCS-5	101%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	GC.12	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		GC.12	117	13836-1	116 || 112 || RPD: 4	LCS-5	112%

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	-			21/9/07	13836-1	21/09/2007 || 21/09/2007	LCS-3	21/9/07%
Date analysed	-			22/9/07	13836-1	22/09/2007 || 22/09/2007	LCS-3	22/9/07%
HCB	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	LCS-3	72%
gamma-BHC	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	LCS-3	78%
Heptachlor	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	LCS-3	69%
delta-BHC	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	LCS-3	70%
Heptachlor Epoxide	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	LCS-3	70%
gamma-Chlordane	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	LCS-3	78%
Dieldrin	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	LCS-3	77%
Endrin	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	LCS-3	76%
pp-DDD	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	LCS-3	77%
Endosulfan II	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	LCS-3	85%
Methoxychlor	mg/kg	0.1	GC-5	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		GC-5	131	13836-1	133 || 138 || RPD: 4	LCS-3	129%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			21/9/07	13836-1	21/09/2007 || 21/09/2007	LCS-3	21/9/07%
Date analysed	-			22/9/07	13836-1	22/09/2007 || 22/09/2007	LCS-3	22/9/07%
Arochlor 1016	mg/kg	0.1	GC-6	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	GC-6	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	GC-6	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	GC-6	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	GC-6	<0.1	13836-1	<0.1 || <0.1	LCS-3	93%
Arochlor 1260	mg/kg	0.1	GC-6	<0.1	13836-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		GC-6	131	13836-1	133 || 138 || RPD: 4	LCS-3	139%
QUALITY CONTROL Total Phenolics in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/9/07	13836-1	24/09/2007 || 24/09/2007	LCS-1	24/9/07%
Date analysed	-			25/9/07	13836-1	25/09/2007 || 25/09/2007	LCS-1	25/9/07%
Total Phenolics (as Phenol)	mg/kg	5	LAB.30	<5.0	13836-1	<5.0 || <5.0	LCS-1	99%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date digested	-			24/9/07	13836-1	24/09/2007 || 24/09/2007	LCS-7	24/9/07%
Date analysed	-			24/9/07	13836-1	24/09/2007 || 24/09/2007	LCS-7	24/9/07%
Arsenic	mg/kg	4	Metals.20 ICP-AES	<4.0	13836-1	11 || 13 || RPD: 17	LCS-7	101%
Cadmium	mg/kg	1	Metals.20 ICP-AES	<1.0	13836-1	<1.0 || <1.0	LCS-7	101%
Chromium	mg/kg	1	Metals.20 ICP-AES	<1.0	13836-1	24 || 29 || RPD: 19	LCS-7	103%
Copper	mg/kg	1	Metals.20 ICP-AES	<1.0	13836-1	6100 || 5600 || RPD: 9	LCS-7	105%
Lead	mg/kg	1	Metals.20 ICP-AES	<1.0	13836-1	160 || 190 || RPD: 17	LCS-7	100%
Mercury	mg/kg	0.1	Metals.21 CV-AAS	<0.10	13836-1	<0.10 || <0.10	LCS-7	101%
Nickel	mg/kg	1	Metals.20 ICP-AES	<1.0	13836-1	42 || 45 || RPD: 7	LCS-7	103%
Zinc	mg/kg	1	Metals.20 ICP-AES	<1.0	13836-1	580 || 530 || RPD: 9	LCS-7	102%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD
Date prepared	-			21/9/07	13836-1	21/09/2007 || 21/09/2007
Date analysed	-			21/9/07	13836-1	21/09/2007 || 21/09/2007
Moisture	%	0.1	LAB.8	<0.10	13836-1	15 || 15 || RPD: 0

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	13836-2	21/9/07%
Date analysed	-	[NT]	[NT]	13836-2	21/9/07%
vTPH C_6 - C_9	mg/kg	[NT]	[NT]	13836-2	108%
Benzene	mg/kg	[NT]	[NT]	13836-2	107%
Toluene	mg/kg	[NT]	[NT]	13836-2	101%
Ethylbenzene	mg/kg	[NT]	[NT]	13836-2	98%
m + p-Xylene	mg/kg	[NT]	[NT]	13836-2	97%
o-Xylene	mg/kg	[NT]	[NT]	13836-2	95%
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	13836-2	109%

QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	13836-2	21/9/07%
Date analysed	-	[NT]	[NT]	13836-2	22/9/07%
TPH C_{10} - C_{14}	mg/kg	[NT]	[NT]	13836-2	89%
TPH C_{15} - C_{28}	mg/kg	[NT]	[NT]	13836-2	130%
TPH C_{29} - C_{36}	mg/kg	[NT]	[NT]	13836-2	122%
Surrogate o-Terphenyl	%	[NT]	[NT]	13836-2	111%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	13836-2	21/9/07%
Date analysed	-	[NT]	[NT]	13836-2	21/9/07%
Naphthalene	mg/kg	[NT]	[NT]	13836-2	97%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	13836-2	102%
Phenanthrene	mg/kg	[NT]	[NT]	13836-2	110%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	13836-2	#
Pyrene	mg/kg	[NT]	[NT]	13836-2	#
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	13836-2	#
Benzo(b,k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	13836-2	#

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Indeno(1,2,3-c,d)pyrene	mg/kg	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	[NT]	[NT]	13836-2	116%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	13836-2	21/9/07%
Date analysed	-	[NT]	[NT]	13836-2	22/9/07%
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	13836-2	70%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	13836-2	78%
Heptachlor	mg/kg	[NT]	[NT]	13836-2	70%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	13836-2	70%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	13836-2	72.%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	13836-2	85%
Dieldrin	mg/kg	[NT]	[NT]	13836-2	81%
Endrin	mg/kg	[NT]	[NT]	13836-2	81%
pp-DDD	mg/kg	[NT]	[NT]	13836-2	84%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	13836-2	92%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	13836-2	124.%

QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	13836-2	21/9/07%
Date analysed	-	[NT]	[NT]	13836-2	22/9/07%
Arochlor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	[NT]	[NT]	13836-2	82%
Arochlor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	13836-2	139%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	13836-2	24/9/07%
Date analysed	-	[NT]	[NT]	13836-2	24/9/07%
Arsenic	mg/kg	[NT]	[NT]	13836-2	107%
Cadmium	mg/kg	[NT]	[NT]	13836-2	101%
Chromium	mg/kg	[NT]	[NT]	13836-2	109%
Copper	mg/kg	[NT]	[NT]	13836-2	109%
Lead	mg/kg	[NT]	[NT]	13836-2	121%
Mercury	mg/kg	[NT]	[NT]	13836-2	96%
Nickel	mg/kg	[NT]	[NT]	13836-2	103%
Zinc	mg/kg	[NT]	[NT]	13836-2	122%

Report Comments:

PAH's in Soil: # Percent recovery not available due to significant background levels of analyte in the sample.
Asbestos analysed by: Joshua Lim

INS: Insufficient sample for this test	NT: Not tested	PQL: Practical Quanitation Limit
RPD: Relative Percent Difference	NA: Test not required	LCS: Laboratory Control Sample
NR: Not requested	<: Less than	>: Greater than

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:

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable. Surrogates: Generally 60-140% is acceptable.

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Concord West
Project No: 45146A Sampler: C. Boyd
Project Mgr: LR Mob. Phone: DW - 0437 396499
Email: walkerd@douglaspartners.com.au
Date Required: Standard T/A Lab Quote No.

To: Envirolab Services
54 Frenchs Rd, Willoughby NSW 2068
Attn: Tania Notaras
Phone: 02 9958 5801 Fax: 02 9958 5803
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: HM (8) As, Cd, Cr, Cu, Pb, Hg, Ni, Zn	TPH	BTEX	PAH	Phenols	PCB/ OCP	~~OCP~~ Asbestos	VOC	Notes
101/0.5-0.6		1	18/9/07	S	Jar	✓	✓	✓	✓	✓	✓	✓		
102/0.5-0.6		2				✓	✓	✓	✓	✓	✓			
103/0.2-0.3		3				✓	✓	✓	✓					
103/0.5-0.6		4				✓	✓	✓	✓	✓	✓			
104/0.5-0.6		5				✓	✓	✓	✓	✓	✓	✓		
105/0.1-0.2		6				✓	✓	✓	✓					
105/0.4-0.5		7				✓	✓	✓	✓	✓	✓	✓		
Z-180907		8				✓	✓	✓	✓					

Envirolab Services
54 Frenchs Rd
Willoughby NSW 2068
Ph: 9958 5801
Job No: 13836
Date received: 19/9/07
Received by: AM
Time: 2pm
Temp: Cool/Ambient
~~Security: Intact/Broken/None~~

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: David Walker	Signed:	Date & Time:	Received By:	Date & Time:	1919107
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:	

Envirolab Services Pty Ltd
ABN 37 112 535 645
54 Frenchs Rd Willoughby NSW 2068
ph 02 9958 5801 fax 02 9958 5803
email: tnotaras@envirolabservices.com.au

CERTIFICATE OF ANALYSIS 14347

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: David Walker

Sample log in details:

Your Reference:	**45146A, Concord West**
No. of samples:	45 Soils
Date samples received:	12/10/07
Date completed instructions received:	12/10/07

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:	19/10/07
Date of Preliminary Report:	Not Issued
Issue Date:	19/10/07

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Results Approved By:

Jacinta Hurst
Operations Manager

Joshua Lim
Chemist

VOC's in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-5 204/1.4-1.5 Soil	14347-6 205/1.0-1.5 Soil	14347-14 209/0.5-1.0 Soil	14347-29 218/0.4-0.7 Soil	14347-35 221/1.2-1.7 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Dichlorodifluoromethane	mg/kg	<10	<10	<10	<10	<10
Chloromethane	mg/kg	<10	<10	<10	<10	<10
Vinyl Chloride	mg/kg	<10	<10	<10	<10	<10
Bromomethane	mg/kg	<10	<10	<10	<10	<10
Chloroethane	mg/kg	<10	<10	<10	<10	<10
Trichlorofluoromethane	mg/kg	<10	<10	<10	<10	<10
1,1-Dichloroethene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-dichloroethene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-dichloroethane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-dichloroethene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
bromochloromethane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
chloroform	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-dichloropropane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-trichloroethane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-dichloropropene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
carbon tetrachloride	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
dibromomethane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloropropane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
trichloroethene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
bromodichloromethane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-dichloropropene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-dichloropropene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloroethane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
dibromochloromethane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dibromoethane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
tetrachloroethene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,2-tetrachloroethane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
chlorobenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
bromoform	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
styrene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-tetrachloroethane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-trichloropropane*	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0

VOC's in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-5 204/1.4-1.5 Soil	14347-6 205/1.0-1.5 Soil	14347-14 209/0.5-1.0 Soil	14347-29 218/0.4-0.7 Soil	14347-35 221/1.2-1.7 Soil
isopropylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
bromobenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
n-propyl benzene	mg/kg	<1.0	<1.0	<1.0	<1.0	4.8
2-chlorotoluene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
4-chlorotoluene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-trimethyl benzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
tert-butyl benzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-trimethyl benzene	mg/kg	<1.0	<1.0	<1.0	<1.0	6.5
1,3-dichlorobenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
sec-butyl benzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-dichlorobenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
4-isopropyl toluene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichlorobenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
n-butyl benzene	mg/kg	<1.0	<1.0	<1.0	<1.0	1.7
1,2-dibromo-3-chloropropane	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-trichlorobenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
napthalene	mg/kg	<1.0	1.9	<1.0	<1.0	5.1
hexachlorobutadiene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-trichlorobenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate Dibromofluorometha	%	87	85	82	86	84
Surrogate aaa-Trifluorotoluene	%	112	119	119	83	108
Surrogate Toluene-d_8	%	103	105	101	79	124
Surrogate 4-Bromofluorobenzene	%	72	83	81	78	100

VOC's in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-37 222/1.0-1.3 Soil	14347-40 225/0.2-0.5 Soil
Date extracted	-	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007
Dichlorodifluoromethane	mg/kg	<10	<10
Chloromethane	mg/kg	<10	<10
Vinyl Chloride	mg/kg	<10	<10
Bromomethane	mg/kg	<10	<10
Chloroethane	mg/kg	<10	<10
Trichlorofluoromethane	mg/kg	<10	<10
1,1-Dichloroethene	mg/kg	<1.0	<1.0
trans-1,2-dichloroethene	mg/kg	<1.0	<1.0
1,1-dichloroethane	mg/kg	<1.0	<1.0
cis-1,2-dichloroethene	mg/kg	<1.0	<1.0
bromochloromethane	mg/kg	<1.0	<1.0
chloroform	mg/kg	<1.0	<1.0
2,2-dichloropropane	mg/kg	<1.0	<1.0
1,2-dichloroethane	mg/kg	<1.0	<1.0
1,1,1-trichloroethane	mg/kg	<1.0	<1.0
1,1-dichloropropene	mg/kg	<1.0	<1.0
carbon tetrachloride	mg/kg	<1.0	<1.0
Benzene	mg/kg	<0.5	<0.5
dibromomethane	mg/kg	<1.0	<1.0
1,2-dichloropropane	mg/kg	<1.0	<1.0
trichloroethene	mg/kg	<1.0	<1.0
bromodichloromethane	mg/kg	<1.0	<1.0
trans-1,3-dichloropropene	mg/kg	<1.0	<1.0
cis-1,3-dichloropropene	mg/kg	<1.0	<1.0
1,1,2-trichloroethane	mg/kg	<1.0	<1.0
Toluene	mg/kg	<0.5	<0.5
1,3-dichloropropane	mg/kg	<1.0	<1.0
dibromochloromethane	mg/kg	<1.0	<1.0
1,2-dibromoethane	mg/kg	<1.0	<1.0
tetrachloroethene	mg/kg	<1.0	<1.0
1,1,1,2-tetrachloroethane	mg/kg	<1.0	<1.0
chlorobenzene	mg/kg	<1.0	<1.0
Ethylbenzene	mg/kg	<1.0	<1.0
bromoform	mg/kg	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0
styrene	mg/kg	<1.0	<1.0
1,1,2,2-tetrachloroethane	mg/kg	<1.0	<1.0
o-Xylene	mg/kg	<1.0	<1.0
1,2,3-trichloropropane*	mg/kg	<1.0	<1.0

VOC's in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-37 222/1.0-1.3 Soil	14347-40 225/0.2-0.5 Soil
isopropylbenzene	mg/kg	<1.0	<1.0
bromobenzene	mg/kg	<1.0	<1.0
n-propyl benzene	mg/kg	<1.0	<1.0
2-chlorotoluene	mg/kg	<1.0	<1.0
4-chlorotoluene	mg/kg	<1.0	<1.0
1,3,5-trimethyl benzene	mg/kg	<1.0	<1.0
tert-butyl benzene	mg/kg	<1.0	<1.0
1,2,4-trimethyl benzene	mg/kg	<1.0	<1.0
1,3-dichlorobenzene	mg/kg	<1.0	<1.0
sec-butyl benzene	mg/kg	<1.0	<1.0
1,4-dichlorobenzene	mg/kg	<1.0	<1.0
4-isopropyl toluene	mg/kg	<1.0	<1.0
1,2-dichlorobenzene	mg/kg	<1.0	<1.0
n-butyl benzene	mg/kg	<1.0	<1.0
1,2-dibromo-3-chloropropane	mg/kg	<1.0	<1.0
1,2,4-trichlorobenzene	mg/kg	<1.0	<1.0
napthalene	mg/kg	<1.0	<1.0
hexachlorobutadiene	mg/kg	<1.0	<1.0
1,2,3-trichlorobenzene	mg/kg	<1.0	<1.0
Surrogate Dibromofluorometha	%	84	85
Surrogate aaa-Trifluorotoluene	%	92	117
Surrogate Toluene-d_8	%	92	103
Surrogate 4-Bromofluorobenzene	%	72	80

vTPH & BTEX in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-1 201/0.2-0.5 Soil	14347-2 202/0.5-1.0 Soil	14347-3 203/0.2-0.5 Soil	14347-4 204/0.5-1.0 Soil	14347-5 204/1.4-1.5 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	78	88	95	91	112

vTPH & BTEX in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-6 205/1.0-1.5 Soil	14347-7 205/2.5-3.0 Soil	14347-8 206/0.5-1.0 Soil	14347-9 206/1.5-2.0 Soil	14347-10 207/0.5-1.0 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	119	88	82	94	99

vTPH & BTEX in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-11 207/1.0-1.5 Soil	14347-12 208/0.0-0.1 Soil	14347-13 208/0.5-1.0 Soil	14347-14 209/0.5-1.0 Soil	14347-15 210/0.7-1.2 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	100	90	95	119	104

vTPH & BTEX in Soil **Our Reference:** **Your Reference** **Type of sample**	**UNITS** ----------	**14347-16** **211/0.5-1.0** **Soil**	**14347-17** **212/0.2-0.5** **Soil**	**14347-18** **213/0.0-0.2** **Soil**	**14347-19** **213/0.2-0.5** **Soil**	**14347-21** **214/0.2-0.5** **Soil**
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	114	103	103	97	112

vTPH & BTEX in Soil Our Reference: Your Reference Type of sample	UNITS ----------	14347-22 215/0.1-0.3 Soil	14347-23 215/0.5-1.0 Soil	14347-24 216/0.0-0.5 Soil	14347-26 216/0.5-1.0 Soil	14347-27 217/0.0-0.5 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	98	110	84	130	89

vTPH & BTEX in Soil Our Reference: Your Reference Type of sample	UNITS ----------	14347-28 217/2.0-2.3 Soil	14347-29 218/0.4-0.7 Soil	14347-30 218/0.7-1.0 Soil	14347-31 219/0.2-0.4 Soil	14347-32 219/0.5-0.9 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	124	106	100	93	94

vTPH & BTEX in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-33 220/0.3-0.5 Soil	14347-34 221/0.1-0.5 Soil	14347-35 221/1.2-1.7 Soil	14347-36 222/0.2-0.5 Soil	14347-37 222/1.0-1.3 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
vTPH C_6 - C_9	mg/kg	<25	<25	83	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	96	89	95	112	92

vTPH & BTEX in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-38 223/0.5-1.0 Soil	14347-39 224/0.5-1.0 Soil	14347-40 225/0.2-0.5 Soil	14347-41 226/0.2-0.5 Soil	14347-42 227/0.2-0.3 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	95	81	117	104	98

vTPH & BTEX in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-43 227/1.0-1.5 Soil	14347-44 BD3-101007 Soil	14347-45 BD4-101007 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007
vTPH C_6 - C_9	mg/kg	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	96	106	96

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	14347-1	14347-2	14347-3	14347-4	14347-5
Your Reference	----------	201/0.2-0.5	202/0.5-1.0	203/0.2-0.5	204/0.5-1.0	204/1.4-1.5
Type of sample	----------	Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	290	<100	250	<100	<100
TPH C_{29} - C_{36}	mg/kg	160	<100	170	<100	<100
Surrogate o-Terphenyl	%	#	123	125	127	127

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	14347-6	14347-7	14347-8	14347-9	14347-10
Your Reference	----------	205/1.0-1.5	205/2.5-3.0	206/0.5-1.0	206/1.5-2.0	207/0.5-1.0
Type of sample	----------	Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
TPH C_{10} - C_{14}	mg/kg	750	100	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	2,400	300	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	#	#	122	127	124

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	14347-11	14347-12	14347-13	14347-14	14347-15
Your Reference	----------	207/1.0-1.5	208/0.0-0.1	208/0.5-1.0	209/0.5-1.0	210/0.7-1.2
Type of sample	----------	Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	124	128	120	124	118

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	14347-16	14347-17	14347-18	14347-19	14347-21
Your Reference	----------	211/0.5-1.0	212/0.2-0.5	213/0.0-0.2	213/0.2-0.5	214/0.2-0.5
Type of sample	----------	Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	140	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	120	<100	<100
Surrogate o-Terphenyl	%	122	126	126	119	118

sTPH in Soil (C10-C36) Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-22 215/0.1-0.3 Soil	14347-23 215/0.5-1.0 Soil	14347-24 216/0.0-0.5 Soil	14347-26 216/0.5-1.0 Soil	14347-27 217/0.0-0.5 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	120	114	112	114	115

sTPH in Soil (C10-C36) Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-28 217/2.0-2.3 Soil	14347-29 218/0.4-0.7 Soil	14347-30 218/0.7-1.0 Soil	14347-31 219/0.2-0.4 Soil	14347-32 219/0.5-0.9 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	590	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	290	<100
Surrogate o-Terphenyl	%	109	112	111	#	112

sTPH in Soil (C10-C36) Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-33 220/0.3-0.5 Soil	14347-34 221/0.1-0.5 Soil	14347-35 221/1.2-1.7 Soil	14347-36 222/0.2-0.5 Soil	14347-37 222/1.0-1.3 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
TPH C_{10} - C_{14}	mg/kg	<50	170	240	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	240	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	190	<100	<100
Surrogate o-Terphenyl	%	113	112	124	114	111

sTPH in Soil (C10-C36) Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-38 223/0.5-1.0 Soil	14347-39 224/0.5-1.0 Soil	14347-40 225/0.2-0.5 Soil	14347-41 226/0.2-0.5 Soil	14347-42 227/0.2-0.3 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
TPH C_{10} - C_{14}	mg/kg	89	<50	<50	67	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	116	119	121	117	120

sTPH in Soil (C10-C36) Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-43 227/1.0-1.5 Soil	14347-44 BD3-101007 Soil	14347-45 BD4-101007 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100
Surrogate o-Terphenyl	%	117	121	118

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-1 201/0.2-0.5 Soil	14347-2 202/0.5-1.0 Soil	14347-3 203/0.2-0.5 Soil	14347-4 204/0.5-1.0 Soil	14347-5 204/1.4-1.5 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Naphthalene	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	2.5	0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	1.9	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	17	0.9	<0.1	<0.1	<0.1
Anthracene	mg/kg	3.9	0.2	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	14	1.4	<0.1	<0.1	<0.1
Pyrene	mg/kg	14	1.4	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	6.1	0.7	<0.1	<0.1	<0.1
Chrysene	mg/kg	5.7	0.6	<0.1	<0.1	<0.1
Benzo(b,k)fluoranthene	mg/kg	7.9	1.0	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	5.6	0.7	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	3.1	0.4	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	2.8	0.4	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	102	103	105	108	105

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-6 205/1.0-1.5 Soil	14347-7 205/2.5-3.0 Soil	14347-8 206/0.5-1.0 Soil	14347-9 206/1.5-2.0 Soil	14347-10 207/0.5-1.0 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Naphthalene	mg/kg	1.5	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.8	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	1.7	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	3.3	0.3	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	7.6	0.6	<0.1	0.2	<0.1
Anthracene	mg/kg	1.3	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	6.2	<0.1	<0.1	0.6	<0.1
Pyrene	mg/kg	6.1	0.1	<0.1	0.7	<0.1
Benzo(a)anthracene	mg/kg	2.6	<0.1	<0.1	0.3	<0.1
Chrysene	mg/kg	2.6	<0.1	<0.1	0.4	<0.1
Benzo(b,k)fluoranthene	mg/kg	4.0	<0.2	<0.2	0.5	<0.2
Benzo(a)pyrene	mg/kg	2.5	<0.05	<0.05	0.3	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	1.5	<0.1	<0.1	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	1.2	<0.1	<0.1	0.2	<0.1
Surrogate p-Terphenyl-d_{14}	%	103	100	105	90	103

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-11 207/1.0-1.5 Soil	14347-12 208/0.0-0.1 Soil	14347-13 208/0.5-1.0 Soil	14347-14 209/0.5-1.0 Soil	14347-15 210/0.7-1.2 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	0.5	<0.1	0.3	<0.1
Anthracene	mg/kg	<0.1	0.1	<0.1	0.1	<0.1
Fluoranthene	mg/kg	0.1	0.9	0.2	0.7	<0.1
Pyrene	mg/kg	0.1	1.3	0.2	0.7	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.7	0.1	0.3	<0.1
Chrysene	mg/kg	<0.1	0.8	0.2	0.3	<0.1
Benzo(b,k)fluoranthene	mg/kg	<0.2	1.0	0.2	0.5	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.7	0.1	0.3	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.4	<0.1	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.4	<0.1	0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	101	103	103	104	104

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-16 211/0.5-1.0 Soil	14347-17 212/0.2-0.5 Soil	14347-18 213/0.0-0.2 Soil	14347-19 213/0.2-0.5 Soil	14347-21 214/0.2-0.5 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.1	0.7	<0.1	<0.1
Pyrene	mg/kg	<0.1	0.1	0.8	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.5	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.6	<0.1	<0.1
Benzo(b,k)fluoranthene	mg/kg	<0.2	<0.2	1.1	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.05	0.7	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.5	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.5	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	105	104	107	105	103

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-22 215/0.1-0.3 Soil	14347-23 215/0.5-1.0 Soil	14347-24 216/0.0-0.5 Soil	14347-26 216/0.5-1.0 Soil	14347-27 217/0.0-0.5 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.6	<0.1	0.2
Pyrene	mg/kg	<0.1	<0.1	0.7	<0.1	0.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.4	<0.1	0.1
Benzo(b,k)fluoranthene	mg/kg	<0.2	<0.2	0.6	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.3	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	104	105	106	107	106

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-28 217/2.0-2.3 Soil	14347-29 218/0.4-0.7 Soil	14347-30 218/0.7-1.0 Soil	14347-31 219/0.2-0.4 Soil	14347-32 219/0.5-0.9 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Naphthalene	mg/kg	<0.1	<0.1	<0.1	2.5	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	3.6	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	1.0	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	2.7	<0.1
Phenanthrene	mg/kg	<0.1	0.1	<0.1	26	0.4
Anthracene	mg/kg	<0.1	<0.1	<0.1	6.5	0.1
Fluoranthene	mg/kg	<0.1	0.1	<0.1	28	0.4
Pyrene	mg/kg	<0.1	0.2	<0.1	28	0.5
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	13	0.2
Chrysene	mg/kg	<0.1	<0.1	<0.1	12	0.2
Benzo(b,k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	18	0.3
Benzo(a)pyrene	mg/kg	<0.05	0.06	<0.05	12	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	6.9	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	5.9	<0.1
Surrogate p-Terphenyl-d_{14}	%	102	99	103	104	104

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-33 220/0.3-0.5 Soil	14347-34 221/0.1-0.5 Soil	14347-35 221/1.2-1.7 Soil	14347-36 222/0.2-0.5 Soil	14347-37 222/1.0-1.3 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Naphthalene	mg/kg	<0.1	1.5	3.2	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	0.5	0.9	0.2	0.1
Acenaphthene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Fluorene	mg/kg	<0.1	0.1	0.8	0.1	<0.1
Phenanthrene	mg/kg	0.1	0.7	5.3	1.4	0.4
Anthracene	mg/kg	<0.1	0.7	1.6	0.5	0.1
Fluoranthene	mg/kg	0.2	1.8	9.8	2.4	1.1
Pyrene	mg/kg	0.2	2.3	9.7	2.4	1.1
Benzo(a)anthracene	mg/kg	<0.1	1.2	5.1	1.2	0.5
Chrysene	mg/kg	0.1	1.3	4.7	1.1	0.5
Benzo(b,k)fluoranthene	mg/kg	<0.2	1.0	8.0	1.8	0.8
Benzo(a)pyrene	mg/kg	0.08	2.0	5.1	1.2	0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	1.9	3.2	0.8	0.4
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	1.8	2.7	0.7	0.3
Surrogate p-Terphenyl-d_{14}	%	108	109	112	115	115

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-38 223/0.5-1.0 Soil	14347-39 224/0.5-1.0 Soil	14347-40 225/0.2-0.5 Soil	14347-41 226/0.2-0.5 Soil	14347-42 227/0.2-0.3 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	111	105	115	112	112

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-43 227/1.0-1.5 Soil	14347-44 BD3-101007 Soil	14347-45 BD4-101007 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.5	<0.1	<0.1
Anthracene	mg/kg	0.2	<0.1	<0.1
Fluoranthene	mg/kg	1.2	<0.1	<0.1
Pyrene	mg/kg	1.2	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.4	<0.1	<0.1
Chrysene	mg/kg	0.5	<0.1	<0.1
Benzo(b,k)fluoranthene	mg/kg	0.6	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.3	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	98	113	113

Organochlorine Pesticides in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-1 201/0.2-0.5 Soil	14347-2 202/0.5-1.0 Soil	14347-3 203/0.2-0.5 Soil	14347-4 204/0.5-1.0 Soil	14347-6 205/1.0-1.5 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	86	95	64	67	67

Organochlorine Pesticides in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-8 206/0.5-1.0 Soil	14347-10 207/0.5-1.0 Soil	14347-13 208/0.5-1.0 Soil	14347-14 209/0.5-1.0 Soil	14347-15 210/0.7-1.2 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	61	66	65	70	63

Organochlorine Pesticides in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-16 211/0.5-1.0 Soil	14347-17 212/0.2-0.5 Soil	14347-18 213/0.0-0.2 Soil	14347-21 214/0.2-0.5 Soil	14347-23 215/0.5-1.0 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	71	63	74	65	63

Organochlorine Pesticides in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-24 216/0.0-0.5 Soil	14347-29 218/0.4-0.7 Soil	14347-32 219/0.5-0.9 Soil	14347-33 220/0.3-0.5 Soil	14347-34 221/0.1-0.5 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	62	65	67	63	63

Organochlorine Pesticides in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-36 222/0.2-0.5 Soil	14347-38 223/0.5-1.0 Soil	14347-39 224/0.5-1.0 Soil	14347-42 227/0.2-0.3 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	64	65	63	66

PCBs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-1 201/0.2-0.5 Soil	14347-2 202/0.5-1.0 Soil	14347-3 203/0.2-0.5 Soil	14347-4 204/0.5-1.0 Soil	14347-6 205/1.0-1.5 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	86	95	64	67	67

PCBs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-8 206/0.5-1.0 Soil	14347-10 207/0.5-1.0 Soil	14347-13 208/0.5-1.0 Soil	14347-14 209/0.5-1.0 Soil	14347-15 210/0.7-1.2 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	65	66	65	70	63

PCBs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-16 211/0.5-1.0 Soil	14347-17 212/0.2-0.5 Soil	14347-18 213/0.0-0.2 Soil	14347-21 214/0.2-0.5 Soil	14347-23 215/0.5-1.0 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	71	63	74	65	63

PCBs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-24 216/0.0-0.5 Soil	14347-29 218/0.4-0.7 Soil	14347-32 219/0.5-0.9 Soil	14347-33 220/0.3-0.5 Soil	14347-34 221/0.1-0.5 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	62	65	67	63	63

PCBs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-36 222/0.2-0.5 Soil	14347-38 223/0.5-1.0 Soil	14347-39 224/0.5-1.0 Soil	14347-42 227/0.2-0.3 Soil
Date extracted	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	64	65	63	66

Total Phenolics in Soil						
Our Reference:	UNITS	14347-1	14347-2	14347-3	14347-4	14347-6
Your Reference	----------	201/0.2-0.5	202/0.5-1.0	203/0.2-0.5	204/0.5-1.0	205/1.0-1.5
Type of sample	----------	Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Total Phenolics in Soil						
Our Reference:	UNITS	14347-8	14347-10	14347-13	14347-14	14347-15
Your Reference	----------	206/0.5-1.0	207/0.5-1.0	208/0.5-1.0	209/0.5-1.0	210/0.7-1.2
Type of sample	----------	Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Total Phenolics in Soil						
Our Reference:	UNITS	14347-16	14347-17	14347-18	14347-21	14347-23
Your Reference	----------	211/0.5-1.0	212/0.2-0.5	213/0.0-0.2	214/0.2-0.5	215/0.5-1.0
Type of sample	----------	Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Total Phenolics in Soil						
Our Reference:	UNITS	14347-24	14347-29	14347-32	14347-33	14347-34
Your Reference	----------	216/0.0-0.5	218/0.4-0.7	219/0.5-0.9	220/0.3-0.5	221/0.1-0.5
Type of sample	----------	Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Total Phenolics in Soil					
Our Reference:	UNITS	14347-36	14347-38	14347-39	14347-42
Your Reference	----------	222/0.2-0.5	223/0.5-1.0	224/0.5-1.0	227/0.2-0.3
Type of sample	----------	Soil	Soil	Soil	Soil
Date extracted	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-1 201/0.2-0.5 Soil	14347-2 202/0.5-1.0 Soil	14347-3 203/0.2-0.5 Soil	14347-4 204/0.5-1.0 Soil	14347-5 204/1.4-1.5 Soil
Date digested	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Arsenic	mg/kg	<4.0	4.6	7.4	5.5	65
Cadmium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	mg/kg	26	14	12	17	19
Copper	mg/kg	57	22	44	15	18
Lead	mg/kg	72	330	35	54	24
Mercury	mg/kg	0.12	0.13	0.10	<0.10	<0.10
Nickel	mg/kg	8.4	6.8	24	3.1	5.6
Zinc	mg/kg	100	160	78	9.0	16

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-6 205/1.0-1.5 Soil	14347-7 205/2.5-3.0 Soil	14347-8 206/0.5-1.0 Soil	14347-9 206/1.5-2.0 Soil	14347-10 207/0.5-1.0 Soil
Date digested	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Arsenic	mg/kg	14	<4.0	4.1	34	9.8
Cadmium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	mg/kg	22	5.0	8.0	18	16
Copper	mg/kg	27	34	15	21	25
Lead	mg/kg	84	20	12	41	27
Mercury	mg/kg	0.11	<0.10	<0.10	<0.10	<0.10
Nickel	mg/kg	8.2	3.5	6.4	6.5	4.6
Zinc	mg/kg	66	21	24	95	26

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-11 207/1.0-1.5 Soil	14347-12 208/0.0-0.1 Soil	14347-13 208/0.5-1.0 Soil	14347-14 209/0.5-1.0 Soil	14347-15 210/0.7-1.2 Soil
Date digested	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Arsenic	mg/kg	10	<4.0	5.7	5.5	5.2
Cadmium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	mg/kg	15	27	8.4	10	13
Copper	mg/kg	21	39	18	20	17
Lead	mg/kg	27	41	54	130	21
Mercury	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel	mg/kg	6.4	36	2.3	8.2	8.8
Zinc	mg/kg	32	74	14	61	37

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-16 211/0.5-1.0 Soil	14347-17 212/0.2-0.5 Soil	14347-18 213/0.0-0.2 Soil	14347-19 213/0.2-0.5 Soil	14347-21 214/0.2-0.5 Soil
Date digested	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Arsenic	mg/kg	6.5	<4.0	6.6	6.4	8.1
Cadmium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	mg/kg	15	2.4	14	11	25
Copper	mg/kg	7.4	<1.0	42	22	7.3
Lead	mg/kg	31	2.0	82	62	27
Mercury	mg/kg	<0.10	<0.10	<0.10	0.13	<0.10
Nickel	mg/kg	1.6	1.6	27	2.2	2.9
Zinc	mg/kg	6.6	3.8	250	28	13

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-22 215/0.1-0.3 Soil	14347-23 215/0.5-1.0 Soil	14347-24 216/0.0-0.5 Soil	14347-26 216/0.5-1.0 Soil	14347-27 217/0.0-0.5 Soil
Date digested	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Arsenic	mg/kg	10	6.8	13	13	9.4
Cadmium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	mg/kg	16	13	25	13	17
Copper	mg/kg	21	12	31	28	23
Lead	mg/kg	41	37	41	32	28
Mercury	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel	mg/kg	9.4	2.5	13	19	14
Zinc	mg/kg	25	11	67	130	66

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-28 217/2.0-2.3 Soil	14347-29 218/0.4-0.7 Soil	14347-30 218/0.7-1.0 Soil	14347-31 219/0.2-0.4 Soil	14347-32 219/0.5-0.9 Soil
Date digested	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Arsenic	mg/kg	8.7	18	7.2	7.7	4.3
Cadmium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	mg/kg	13	30	15	12	11
Copper	mg/kg	16	26	12	49	30
Lead	mg/kg	28	62	41	120	25
Mercury	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel	mg/kg	1.4	4.9	2.2	13	7.7
Zinc	mg/kg	3.3	39	9.6	85	49

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-33 220/0.3-0.5 Soil	14347-34 221/0.1-0.5 Soil	14347-35 221/1.2-1.7 Soil	14347-36 222/0.2-0.5 Soil	14347-37 222/1.0-1.3 Soil
Date digested	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Arsenic	mg/kg	10	12	12	7.5	67
Cadmium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	mg/kg	15	19	12	12	18
Copper	mg/kg	28	73	50	350	38
Lead	mg/kg	60	1,800	190	66	36
Mercury	mg/kg	<0.10	<0.10	0.11	<0.10	<0.10
Nickel	mg/kg	12	25	12	20	6.5
Zinc	mg/kg	55	220	160	300	32

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-38 223/0.5-1.0 Soil	14347-39 224/0.5-1.0 Soil	14347-40 225/0.2-0.5 Soil	14347-41 226/0.2-0.5 Soil	14347-42 227/0.2-0.3 Soil
Date digested	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Arsenic	mg/kg	10	11	6.8	<4.0	6.5
Cadmium	mg/kg	<1.0	1.3	<1.0	<1.0	<1.0
Chromium	mg/kg	30	20	3.6	6.2	3.1
Copper	mg/kg	1,100	3,100	12	11	1.9
Lead	mg/kg	73	130	3.5	8.5	2.2
Mercury	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel	mg/kg	23	23	2.0	3.5	2.0
Zinc	mg/kg	470	380	26	12	4.8

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-43 227/1.0-1.5 Soil	14347-44 BD3-101007 Soil	14347-45 BD4-101007 Soil
Date digested	-	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	17/10/2007	17/10/2007	17/10/2007
Arsenic	mg/kg	40	<4.0	8.6
Cadmium	mg/kg	<1.0	<1.0	<1.0
Chromium	mg/kg	10	10	24
Copper	mg/kg	27	15	9.3
Lead	mg/kg	27	20	40
Mercury	mg/kg	<0.10	<0.10	<0.10
Nickel	mg/kg	30	1.5	2.2
Zinc	mg/kg	40	4.7	9.8

Moisture Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-1 201/0.2-0.5 Soil	14347-2 202/0.5-1.0 Soil	14347-3 203/0.2-0.5 Soil	14347-4 204/0.5-1.0 Soil	14347-5 204/1.4-1.5 Soil
Date prepared	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Moisture	%	11	14	10	21	37

Moisture Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-6 205/1.0-1.5 Soil	14347-7 205/2.5-3.0 Soil	14347-8 206/0.5-1.0 Soil	14347-9 206/1.5-2.0 Soil	14347-10 207/0.5-1.0 Soil
Date prepared	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Moisture	%	23	15	15	18	17

Moisture Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-11 207/1.0-1.5 Soil	14347-12 208/0.0-0.1 Soil	14347-13 208/0.5-1.0 Soil	14347-14 209/0.5-1.0 Soil	14347-15 210/0.7-1.2 Soil
Date prepared	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Moisture	%	21	5.6	15	19	14

Moisture Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-16 211/0.5-1.0 Soil	14347-17 212/0.2-0.5 Soil	14347-18 213/0.0-0.2 Soil	14347-19 213/0.2-0.5 Soil	14347-21 214/0.2-0.5 Soil
Date prepared	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Moisture	%	20	4.4	7.6	16	22

Moisture Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-22 215/0.1-0.3 Soil	14347-23 215/0.5-1.0 Soil	14347-24 216/0.0-0.5 Soil	14347-26 216/0.5-1.0 Soil	14347-27 217/0.0-0.5 Soil
Date prepared	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Moisture	%	12	20	19	19	18

Moisture Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-28 217/2.0-2.3 Soil	14347-29 218/0.4-0.7 Soil	14347-30 218/0.7-1.0 Soil	14347-31 219/0.2-0.4 Soil	14347-32 219/0.5-0.9 Soil
Date prepared	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Moisture	%	19	21	21	15	20

Moisture **Our Reference:** **Your Reference** **Type of sample**	**UNITS** **----------** **----------**	**14347-33** **220/0.3-0.5** **Soil**	**14347-34** **221/0.1-0.5** **Soil**	**14347-35** **221/1.2-1.7** **Soil**	**14347-36** **222/0.2-0.5** **Soil**	**14347-37** **222/1.0-1.3** **Soil**
Date prepared	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Moisture	%	20	11	21	19	39

Moisture Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-38 223/0.5-1.0 Soil	14347-39 224/0.5-1.0 Soil	14347-40 225/0.2-0.5 Soil	14347-41 226/0.2-0.5 Soil	14347-42 227/0.2-0.3 Soil
Date prepared	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007	16/10/2007	16/10/2007
Moisture	%	16	16	4.0	13	3.9

Moisture Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14347-43 227/1.0-1.5 Soil	14347-44 BD3-101007 Soil	14347-45 BD4-101007 Soil
Date prepared	-	16/10/2007	16/10/2007	16/10/2007
Date analysed	-	16/10/2007	16/10/2007	16/10/2007
Moisture	%	20	20	22

Asbestos ID - soils						
Our Reference:	UNITS	14347-1	14347-3	14347-8	14347-12	14347-15
Your Reference	----------	201/0.2-0.5	203/0.2-0.5	206/0.5-1.0	208/0.0-0.1	210/0.7-1.2
Type of sample	----------	Soil	Soil	Soil	Soil	Soil
Sample Description	-	30g sand	30g sand	30g sand	30g sand	30g sand
Asbestos ID in soil	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Asbestos ID - soils						
Our Reference:	UNITS	14347-18	14347-20	14347-22	14347-24	14347-27
Your Reference	----------	213/0.0-0.2	214/0.0-0.2	215/0.1-0.3	216/0.0-0.5	217/0.0-0.5
Type of sample	----------	Soil	Soil	Soil	Soil	Soil
Sample Description	-	30g sand	30g sand	30g sand	30g sand	30g sand
Asbestos ID in soil	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Asbestos ID - soils						
Our Reference:	UNITS	14347-31	14347-34	14347-36	14347-40	14347-42
Your Reference	----------	219/0.2-0.4	221/0.1-0.5	222/0.2-0.5	225/0.2-0.5	227/0.2-0.3
Type of sample	----------	Soil	Soil	Soil	Soil	Soil
Sample Description	-	30g sand	30g sand	30g sand	30g sand	30g sand
Asbestos ID in soil	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Asbestos ID - materials		
Our Reference:	UNITS	14347-25
Your Reference	----------	A216/0.3
Type of sample	----------	Soil
Sample Description	-	30x100x6mm fibreboard
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected

Method ID	Methodology Summary
GC.14	Soil samples extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
GC.16	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.
GC.3	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
GC.12	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
GC-5	Soil samples are extracted with hexane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
GC-6	Soil samples are extracted with hexane/acetone and waters with dichloromethane and analysed by GC-ECD.
LAB.30	Total Phenolics - determined colorimetrically following disitillation.
Metals.20 ICP-AES	Determination of various metals by ICP-AES.
Metals.21 CV-AAS	Determination of Mercury by Cold Vapour AAS.
LAB.8	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.
AS4964-2004	Qualitative identification of asbestos type fibres in bulk using Polarised Light Microscopy and Dispersion Staining Techniques.

QUALITY CONTROL VOC's in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			16/10/07	14347-5	16/10/2007 || 16/10/2007	LCS-5	16/10/07%
Date analysed	-			17/10/07	14347-5	17/10/2007 || 17/10/2007	LCS-5	17/10/07%
Dichlorodifluoromethane	mg/kg	10	GC.14	<10	14347-5	<10 || <10	[NR]	[NR]
Chloromethane	mg/kg	10	GC.14	<10	14347-5	<10 || <10	[NR]	[NR]
Vinyl Chloride	mg/kg	10	GC.14	<10	14347-5	<10 || <10	[NR]	[NR]
Bromomethane	mg/kg	10	GC.14	<10	14347-5	<10 || <10	[NR]	[NR]
Chloroethane	mg/kg	10	GC.14	<10	14347-5	<10 || <10	[NR]	[NR]
Trichlorofluoromethane	mg/kg	10	GC.14	<10	14347-5	<10 || <10	[NR]	[NR]
1,1-Dichloroethene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,1-dichloroethane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	LCS-5	66%
cis-1,2-dichloroethene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
bromochloromethane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
chloroform	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	LCS-5	77%
2,2-dichloropropane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,2-dichloroethane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	LCS-5	76%
1,1,1-trichloroethane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	LCS-5	72%
1,1-dichloropropene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
carbon tetrachloride	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
Benzene	mg/kg	0.5	GC.14	<0.5	14347-5	<0.5 || <0.5	[NR]	[NR]
dibromomethane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,2-dichloropropane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
trichloroethene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	LCS-5	91%
bromodichloromethane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	LCS-5	103%
trans-1,3-dichloropropene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
Toluene	mg/kg	0.5	GC.14	<0.5	14347-5	<0.5 || <0.5	[NR]	[NR]
1,3-dichloropropane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
dibromochloromethane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	LCS-5	103%
1,2-dibromoethane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
tetrachloroethene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	LCS-5	103%
1,1,1,2-tetrachloroethane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
chlorobenzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
Ethylbenzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
bromoform	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
m + p-Xylene	mg/kg	2	GC.14	<2.0	14347-5	<2.0 || <2.0	[NR]	[NR]
styrene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]

QUALITY CONTROL VOC's in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
o-Xylene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,2,3-trichloropropane*	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
isopropylbenzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
bromobenzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
n-propyl benzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
2-chlorotoluene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
4-chlorotoluene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
tert-butyl benzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
sec-butyl benzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
4-isopropyl toluene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
n-butyl benzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
napthalene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
hexachlorobutadiene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	1	GC.14	<1.0	14347-5	<1.0 || <1.0	[NR]	[NR]
Surrogate Dibromofluorometha	%		GC.14	85	14347-5	87 || 84 || RPD: 4	LCS-5	87%
Surrogate aaa-Trifluorotoluene	%		GC.14	119	14347-5	112 || 74 || RPD: 41	LCS-5	125%
Surrogate Toluene-d8	%		GC.14	103	14347-5	103 || 102 || RPD: 1	LCS-5	103%
Surrogate 4-Bromofluorobenzene	%		GC.14	75	14347-5	72 || 71 || RPD: 1	LCS-5	76%

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			16/10/07	14347-1	16/10/2007 || 16/10/2007	LCS-3	16/10/07%
Date analysed	-			16/10/07	14347-1	16/10/2007 || 16/10/2007	LCS-3	16/10/07%
vTPH C_6 - C_9	mg/kg	25	GC.16	<25	14347-1	<25 || <25	LCS-3	105%
Benzene	mg/kg	0.5	GC.14	<0.5	14347-1	<0.5 || <0.5	LCS-3	110%
Toluene	mg/kg	0.5	GC.14	<0.5	14347-1	<0.5 || <0.5	LCS-3	113%
Ethylbenzene	mg/kg	1	GC.14	<1.0	14347-1	<1.0 || <1.0	LCS-3	116%
m + p-Xylene	mg/kg	2	GC.14	<2.0	14347-1	<2.0 || <2.0	LCS-3	118%
o-Xylene	mg/kg	1	GC.14	<1.0	14347-1	<1.0 || <1.0	LCS-3	120%
Surrogate aaa-Trifluorotoluene	%		GC.14	100	14347-1	78 || 108 || RPD: 32	LCS-3	109%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			16/10/07	14347-1	16/10/2007 || 16/10/2007	LCS-4	16/10/07%
Date analysed	-			17/10/07	14347-1	17/10/2007 || 17/10/2007	LCS-4	17/10/07%
TPH C_{10} - C_{14}	mg/kg	50	GC.3	<50	14347-1	<50 || <50	LCS-4	94%
TPH C_{15} - C_{28}	mg/kg	100	GC.3	<100	14347-1	290 || 130 || RPD: 76	LCS-4	91%
TPH C_{29} - C_{36}	mg/kg	100	GC.3	<100	14347-1	160 || <100	LCS-4	95%
Surrogate o-Terphenyl	%		GC.3	121	14347-1	# || #	LCS-4	120%
QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			16/10/07	14347-1	16/10/2007 || 16/10/2007	LCS-2	16/10/07%
Date analysed	-			16/10/07	14347-1	16/10/2007 || 16/10/2007	LCS-2	16/10/07%
Naphthalene	mg/kg	0.1	GC.12	<0.1	14347-1	0.3 || 0.1 || RPD: 100	LCS-2	86%
Acenaphthylene	mg/kg	0.1	GC.12	<0.1	14347-1	2.5 || 0.7 || RPD: 112	[NR]	[NR]
Acenaphthene	mg/kg	0.1	GC.12	<0.1	14347-1	0.3 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	GC.12	<0.1	14347-1	1.9 || 0.5 || RPD: 117	LCS-2	98%
Phenanthrene	mg/kg	0.1	GC.12	<0.1	14347-1	17 || 4.3 || RPD: 119	LCS-2	112%
Anthracene	mg/kg	0.1	GC.12	<0.1	14347-1	3.9 || 1.0 || RPD: 118	[NR]	[NR]
Fluoranthene	mg/kg	0.1	GC.12	<0.1	14347-1	14 || 3.6 || RPD: 118	LCS-2	106%
Pyrene	mg/kg	0.1	GC.12	<0.1	14347-1	14 || 3.7 || RPD: 116	LCS-2	112%
Benzo(a)anthracene	mg/kg	0.1	GC.12	<0.1	14347-1	6.1 || 1.4 || RPD: 125	[NR]	[NR]
Chrysene	mg/kg	0.1	GC.12	<0.1	14347-1	5.7 || 1.5 || RPD: 117	LCS-2	109%
Benzo(b,k)fluoranthene	mg/kg	0.2	GC.12	<0.2	14347-1	7.9 || 1.9 || RPD: 122	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	GC.12	<0.05	14347-1	5.6 || 1.4 || RPD: 120	LCS-2	104%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	GC.12	<0.1	14347-1	3.1 || 0.8 || RPD: 118	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	GC.12	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Benzo(g,h,i)perylene	mg/kg	0.1	GC.12	<0.1	14347-1	2.8 || 0.8 || RPD: 111	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		GC.12	114	14347-1	102 || 101 || RPD: 1	LCS-2	117%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			16/10/07	14347-1	16/10/2007 || 16/10/2007	LCS-3	16/10/07%
Date analysed	-			18/10/07	14347-1	18/10/2007 || 18/10/2007	LCS-3	18/10/07%
HCB	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	LCS-3	118%
gamma-BHC	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	LCS-3	131%
Heptachlor	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	LCS-3	116%
delta-BHC	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	LCS-3	115%
Heptachlor Epoxide	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	LCS-3	121%
gamma-Chlordane	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	LCS-3	137%
Dieldrin	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	LCS-3	131%
Endrin	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	LCS-3	136%
pp-DDD	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	LCS-3	133%
Endosulfan II	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	LCS-3	140%
Methoxychlor	mg/kg	0.1	GC-5	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		GC-5	64	14347-1	86 || 96 || RPD: 11	LCS-3	63%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			16/10/07	14347-1	16/10/2007 || 16/10/2007	LCS-3	16/10/07%
Date analysed	-			18/10/07	14347-1	18/10/2007 || 18/10/2007	LCS-3	18/10/07%
Arochlor 1016	mg/kg	0.1	GC-6	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	GC-6	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	GC-6	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	GC-6	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	GC-6	<0.1	14347-1	<0.1 || <0.1	LCS-3	127%
Arochlor 1260	mg/kg	0.1	GC-6	<0.1	14347-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		GC-6	64	14347-1	86 || 96 || RPD: 11	LCS-3	138%
QUALITY CONTROL Total Phenolics in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			17/10/07	14347-1	17/10/2007 || 17/10/2007	LCS-1	17/10/07%
Date analysed	-			18/10/07	14347-1	18/10/2007 || 18/10/2007	LCS-1	18/10/07%
Total Phenolics (as Phenol)	mg/kg	5	LAB.30	<5.0	14347-1	<5.0 || <5.0	LCS-1	76%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date digested	-			16/10/07	14347-1	16/10/2007 || 16/10/2007	LCS-1	16/10/07%
Date analysed	-			17/10/07	14347-1	17/10/2007 || 17/10/2007	LCS-1	17/10/07%
Arsenic	mg/kg	4	Metals.20 ICP-AES	<4.0	14347-1	<4.0 || <4.0	LCS-1	104%
Cadmium	mg/kg	1	Metals.20 ICP-AES	<1.0	14347-1	<1.0 || <1.0	LCS-1	106%
Chromium	mg/kg	1	Metals.20 ICP-AES	<1.0	14347-1	26 || 7.7 || RPD: 109	LCS-1	108%
Copper	mg/kg	1	Metals.20 ICP-AES	<1.0	14347-1	57 || 82 || RPD: 36	LCS-1	106%
Lead	mg/kg	1	Metals.20 ICP-AES	<1.0	14347-1	72 || 110 || RPD: 42	LCS-1	105%
Mercury	mg/kg	0.1	Metals.21 CV-AAS	<0.10	14347-1	0.12 || <0.10	LCS-1	96%
Nickel	mg/kg	1	Metals.20 ICP-AES	<1.0	14347-1	8.4 || 8.5 || RPD: 1	LCS-1	107%
Zinc	mg/kg	1	Metals.20 ICP-AES	<1.0	14347-1	100 || 100 || RPD: 0	LCS-1	107%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD
Date prepared	-			16/10/07	14347-1	16/10/2007 || 16/10/2007
Date analysed	-			16/10/07	14347-1	16/10/2007 || 16/10/2007
Moisture	%	0.1	LAB.8	<0.10	14347-1	11 || 11 || RPD: 0

QUALITY CONTROL VOC's in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	14347-6	16/10/07%
Date analysed	-	[NT]	[NT]	14347-6	17/10/07%
Dichlorodifluoromethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Chloromethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	mg/kg	[NT]	[NT]	[NR]	[NR]
Bromomethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Chloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	mg/kg	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	mg/kg	[NT]	[NT]	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	mg/kg	[NT]	[NT]	14347-6	61%
cis-1,2-dichloroethene	mg/kg	[NT]	[NT]	[NR]	[NR]
bromochloromethane	mg/kg	[NT]	[NT]	[NR]	[NR]
chloroform	mg/kg	[NT]	[NT]	14347-6	72%
2,2-dichloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	mg/kg	[NT]	[NT]	14347-6	73%
1,1,1-trichloroethane	mg/kg	[NT]	[NT]	14347-6	67%
1,1-dichloropropene	mg/kg	[NT]	[NT]	[NR]	[NR]
carbon tetrachloride	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
dibromomethane	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
trichloroethene	mg/kg	[NT]	[NT]	14347-6	76%
bromodichloromethane	mg/kg	[NT]	[NT]	14347-6	85%
trans-1,3-dichloropropene	mg/kg	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Toluene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
dibromochloromethane	mg/kg	[NT]	[NT]	14347-6	86%
1,2-dibromoethane	mg/kg	[NT]	[NT]	[NR]	[NR]
tetrachloroethene	mg/kg	[NT]	[NT]	14347-6	90%
1,1,1,2-tetrachloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOC's in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
chlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
bromoform	mg/kg	[NT]	[NT]	[NR]	[NR]
m + p-Xylene	mg/kg	[NT]	[NT]	[NR]	[NR]
styrene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
o-Xylene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,3-trichloropropane*	mg/kg	[NT]	[NT]	[NR]	[NR]
isopropylbenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
bromobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	mg/kg	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
tert-butyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
sec-butyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
4-isopropyl toluene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
napthalene	mg/kg	[NT]	[NT]	[NR]	[NR]
hexachlorobutadiene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluorometha	%	[NT]	[NT]	14347-6	82%
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	14347-6	113%
Surrogate Toluene-d_8	%	[NT]	[NT]	14347-6	104%
Surrogate 4-Bromofluorobenzene	%	[NT]	[NT]	14347-6	78%

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-11	16/10/2007 || 16/10/2007	14347-2	16/10/07%
Date analysed	-	14347-11	16/10/2007 || 16/10/2007	14347-2	16/10/07%
vTPH C_6 - C_9	mg/kg	14347-11	<25 || <25	14347-2	92%
Benzene	mg/kg	14347-11	<0.5 || <0.5	14347-2	99%
Toluene	mg/kg	14347-11	<0.5 || <0.5	14347-2	86%
Ethylbenzene	mg/kg	14347-11	<1.0 || <1.0	14347-2	82%
m + p-Xylene	mg/kg	14347-11	<2.0 || <2.0	14347-2	82%
o-Xylene	mg/kg	14347-11	<1.0 || <1.0	14347-2	83%
Surrogate aaa-Trifluorotoluene	%	14347-11	100 || 92 || RPD: 8	14347-2	98%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-11	16/10/2007 || 16/10/2007	14347-2	16/10/07%
Date analysed	-	14347-11	17/10/2007 || 17/10/2007	14347-2	17/10/07%
TPH C_{10} - C_{14}	mg/kg	14347-11	<50 || <50	14347-2	91%
TPH C_{15} - C_{28}	mg/kg	14347-11	<100 || <100	14347-2	126%
TPH C_{29} - C_{36}	mg/kg	14347-11	<100 || <100	14347-2	140%
Surrogate o-Terphenyl	%	14347-11	124 || 123 || RPD: 1	14347-2	126%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-11	16/10/2007 || 16/10/2007	14347-2	16/10/07%
Date analysed	-	14347-11	16/10/2007 || 16/10/2007	14347-2	16/10/07%
Naphthalene	mg/kg	14347-11	<0.1 || <0.1	14347-2	75%
Acenaphthylene	mg/kg	14347-11	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	14347-11	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	14347-11	<0.1 || <0.1	14347-2	80%
Phenanthrene	mg/kg	14347-11	0.1 || <0.1	14347-2	78%
Anthracene	mg/kg	14347-11	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	14347-11	0.1 || <0.1	14347-2	73%
Pyrene	mg/kg	14347-11	0.1 || <0.1	14347-2	77%
Benzo(a)anthracene	mg/kg	14347-11	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	14347-11	<0.1 || <0.1	14347-2	87%
Benzo(b,k)fluoranthene	mg/kg	14347-11	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	14347-11	<0.05 || <0.05	14347-2	85%
Indeno(1,2,3-c,d)pyrene	mg/kg	14347-11	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	14347-11	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	14347-11	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	14347-11	101 || 105 || RPD: 4	14347-2	101%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-16	16/10/2007 || 16/10/2007	14347-2	16/10/07%
Date analysed	-	14347-16	18/10/2007 || 18/10/2007	14347-2	18/10/07%
HCB	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	14347-16	<0.1 || <0.1	14347-2	105%
gamma-BHC	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	14347-16	<0.1 || <0.1	14347-2	117%
Heptachlor	mg/kg	14347-16	<0.1 || <0.1	14347-2	104%
delta-BHC	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	14347-16	<0.1 || <0.1	14347-2	102%
Heptachlor Epoxide	mg/kg	14347-16	<0.1 || <0.1	14347-2	107%
gamma-Chlordane	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	14347-16	<0.1 || <0.1	14347-2	118%
Dieldrin	mg/kg	14347-16	<0.1 || <0.1	14347-2	112%
Endrin	mg/kg	14347-16	<0.1 || <0.1	14347-2	123%
pp-DDD	mg/kg	14347-16	<0.1 || <0.1	14347-2	117%
Endosulfan II	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	14347-16	<0.1 || <0.1	14347-2	132%
Methoxychlor	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	14347-16	71 || 65 || RPD: 9	14347-2	78%

QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-16	16/10/2007 || 16/10/2007	14347-2	16/10/07%
Date analysed	-	14347-16	18/10/2007 || 18/10/2007	14347-2	18/10/07%
Arochlor 1016	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	14347-16	<0.1 || <0.1	14347-2	139%
Arochlor 1260	mg/kg	14347-16	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	14347-16	71 || 65 || RPD: 9	14347-2	140%
QUALITY CONTROL Total Phenolics in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-14	17/10/2007 || 17/10/2007	14347-2	17/10/07%
Date analysed	-	14347-14	18/10/2007 || 18/10/2007	14347-2	18/10/07%
Total Phenolics (as Phenol)	mg/kg	14347-14	<5.0 || <5.0	14347-2	84%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	14347-11	16/10/2007 || 16/10/2007	14347-2	16/10/07%
Date analysed	-	14347-11	17/10/2007 || 17/10/2007	14347-2	17/10/07%
Arsenic	mg/kg	14347-11	10 || 11 || RPD: 10	14347-2	106%
Cadmium	mg/kg	14347-11	<1.0 || <1.0	14347-2	102%
Chromium	mg/kg	14347-11	15 || 15 || RPD: 0	14347-2	111%
Copper	mg/kg	14347-11	21 || 22 || RPD: 5	14347-2	106%
Lead	mg/kg	14347-11	27 || 27 || RPD: 0	14347-2	94%
Mercury	mg/kg	14347-11	<0.10 || <0.10	14347-2	98%
Nickel	mg/kg	14347-11	6.4 || 6.4 || RPD: 0	14347-2	101%
Zinc	mg/kg	14347-11	32 || 30 || RPD: 6	14347-2	110%
QUALITY CONTROL Moisture	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date prepared	-	14347-5	16/10/2007 || 16/10/2007		
Date analysed	-	14347-5	16/10/2007 || 16/10/2007		
Moisture	%	14347-5	37 || 37 || RPD: 0		
QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-22	16/10/2007 || 16/10/2007	14347-23	16/10/07%
Date analysed	-	14347-22	16/10/2007 || 16/10/2007	14347-23	16/10/07%
vTPH C_6 - C_9	mg/kg	14347-22	<25 || <25	14347-23	89%
Benzene	mg/kg	14347-22	<0.5 || <0.5	14347-23	99%
Toluene	mg/kg	14347-22	<0.5 || <0.5	14347-23	87%
Ethylbenzene	mg/kg	14347-22	<1.0 || <1.0	14347-23	88%

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
m + p-Xylene	mg/kg	14347-22	<2.0 || <2.0	14347-23	88%
o-Xylene	mg/kg	14347-22	<1.0 || <1.0	14347-23	88%
Surrogate aaa-Trifluorotoluene	%	14347-22	98 || 104 || RPD: 6	14347-23	93%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-22	16/10/2007 || 16/10/2007	14347-23	16/10/07%
Date analysed	-	14347-22	17/10/2007 || 17/10/2007	14347-23	17/10/07%
TPH C_{10} - C_{14}	mg/kg	14347-22	<50 || <50	14347-23	88%
TPH C_{15} - C_{28}	mg/kg	14347-22	<100 || <100	14347-23	90%
TPH C_{29} - C_{36}	mg/kg	14347-22	<100 || <100	14347-23	90%
Surrogate o-Terphenyl	%	14347-22	120 || 119 || RPD: 1	14347-23	114%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-22	16/10/2007 || 16/10/2007	14347-23	16/10/07%
Date analysed	-	14347-22	16/10/2007 || 16/10/2007	14347-23	16/10/07%
Naphthalene	mg/kg	14347-22	<0.1 || <0.1	14347-23	80%
Acenaphthylene	mg/kg	14347-22	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	14347-22	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	14347-22	<0.1 || <0.1	14347-23	84%
Phenanthrene	mg/kg	14347-22	<0.1 || <0.1	14347-23	92%
Anthracene	mg/kg	14347-22	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	14347-22	<0.1 || <0.1	14347-23	94%
Pyrene	mg/kg	14347-22	<0.1 || <0.1	14347-23	96%
Benzo(a)anthracene	mg/kg	14347-22	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	14347-22	<0.1 || <0.1	14347-23	98%
Benzo(b,k)fluoranthene	mg/kg	14347-22	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	14347-22	<0.05 || <0.05	14347-23	93%
Indeno(1,2,3-c,d)pyrene	mg/kg	14347-22	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	14347-22	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	14347-22	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	14347-22	104 || 103 || RPD: 1	14347-23	101%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-33	16/10/2007 || 16/10/2007	LCS-4	16/10/07%
Date analysed	-	14347-33	18/10/2007 || 18/10/2007	LCS-4	18/10/07%
HCB	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	14347-33	<0.1 || <0.1	LCS-4	119%
gamma-BHC	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	14347-33	<0.1 || <0.1	LCS-4	132%
Heptachlor	mg/kg	14347-33	<0.1 || <0.1	LCS-4	117%
delta-BHC	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	14347-33	<0.1 || <0.1	LCS-4	116%
Heptachlor Epoxide	mg/kg	14347-33	<0.1 || <0.1	LCS-4	121%
gamma-Chlordane	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	14347-33	<0.1 || <0.1	LCS-4	137%
Dieldrin	mg/kg	14347-33	<0.1 || <0.1	LCS-4	131%
Endrin	mg/kg	14347-33	<0.1 || <0.1	LCS-4	137%
pp-DDD	mg/kg	14347-33	<0.1 || <0.1	LCS-4	133%
Endosulfan II	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	14347-33	<0.1 || <0.1	LCS-4	140%
Methoxychlor	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	14347-33	63 || 63 || RPD: 0	LCS-4	63%

QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-33	16/10/2007 || 16/10/2007	LCS-4	16/10/07%
Date analysed	-	14347-33	18/10/2007 || 18/10/2007	LCS-4	18/10/07%
Arochlor 1016	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	14347-33	<0.1 || <0.1	LCS-4	127%
Arochlor 1260	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	14347-33	63 || 63 || RPD: 0	LCS-4	140%
QUALITY CONTROL Total Phenolics in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-33	17/10/2007 || 17/10/2007	14347-32	17/10/07%
Date analysed	-	14347-33	18/10/2007 || 18/10/2007	14347-32	18/10/07%
Total Phenolics (as Phenol)	mg/kg	14347-33	<5.0 || <5.0	14347-32	100%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	14347-22	16/10/2007 || 16/10/2007	14347-23	16/10/07%
Date analysed	-	14347-22	17/10/2007 || 17/10/2007	14347-23	17/10/07%
Arsenic	mg/kg	14347-22	10 || 8.2 || RPD: 20	14347-23	101%
Cadmium	mg/kg	14347-22	<1.0 || <1.0	14347-23	101%
Chromium	mg/kg	14347-22	16 || 20 || RPD: 22	14347-23	108%
Copper	mg/kg	14347-22	21 || 22 || RPD: 5	14347-23	104%
Lead	mg/kg	14347-22	41 || 43 || RPD: 5	14347-23	108%
Mercury	mg/kg	14347-22	<0.10 || <0.10	14347-23	99%
Nickel	mg/kg	14347-22	9.4 || 13 || RPD: 32	14347-23	98%
Zinc	mg/kg	14347-22	25 || 32 || RPD: 25	14347-23	99%
QUALITY CONTROL Moisture	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date prepared	-	14347-11	16/10/2007 || 16/10/2007		
Date analysed	-	14347-11	16/10/2007 || 16/10/2007		
Moisture	%	14347-11	21 || 21 || RPD: 0		
QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-33	16/10/2007 || 16/10/2007	LCS-4	16/10/07%
Date analysed	-	14347-33	16/10/2007 || 16/10/2007	LCS-4	16/10/07%
vTPH C_6 - C_9	mg/kg	14347-33	<25 || <25	LCS-4	106%
Benzene	mg/kg	14347-33	<0.5 || <0.5	LCS-4	107%
Toluene	mg/kg	14347-33	<0.5 || <0.5	LCS-4	115%
Ethylbenzene	mg/kg	14347-33	<1.0 || <1.0	LCS-4	118%

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
m + p-Xylene	mg/kg	14347-33	<2.0 || <2.0	LCS-4	118%
o-Xylene	mg/kg	14347-33	<1.0 || <1.0	LCS-4	119%
Surrogate aaa-Trifluorotoluene	%	14347-33	96 || 87 || RPD: 10	LCS-4	108%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-33	16/10/2007 || 16/10/2007	LCS-3	16/10/07%
Date analysed	-	14347-33	17/10/2007 || 17/10/2007	LCS-3	17/10/07%
TPH C_{10} - C_{14}	mg/kg	14347-33	<50 || <50	LCS-3	90%
TPH C_{15} - C_{28}	mg/kg	14347-33	<100 || <100	LCS-3	85%
TPH C_{29} - C_{36}	mg/kg	14347-33	<100 || <100	LCS-3	89%
Surrogate o-Terphenyl	%	14347-33	113 || 111 || RPD: 2	LCS-3	113%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-33	16/10/2007 || 16/10/2007	LCS-3	16/10/07%
Date analysed	-	14347-33	16/10/2007 || 16/10/2007	LCS-3	16/10/07%
Naphthalene	mg/kg	14347-33	<0.1 || <0.1	LCS-3	80%
Acenaphthylene	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	14347-33	<0.1 || <0.1	LCS-3	84%
Phenanthrene	mg/kg	14347-33	0.1 || <0.1	LCS-3	94%
Anthracene	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	14347-33	0.2 || 0.1 || RPD: 67	LCS-3	92%
Pyrene	mg/kg	14347-33	0.2 || 0.1 || RPD: 67	LCS-3	96%
Benzo(a)anthracene	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	14347-33	0.1 || <0.1	LCS-3	103%
Benzo(b,k)fluoranthene	mg/kg	14347-33	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	14347-33	0.08 || <0.05	LCS-3	94%
Indeno(1,2,3-c,d)pyrene	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	14347-33	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	14347-33	108 || 103 || RPD: 5	LCS-3	102%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	14347-34	16/10/07%
Date analysed	-	[NT]	[NT]	14347-34	18/10/07%
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	14347-34	119%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	14347-34	131%
Heptachlor	mg/kg	[NT]	[NT]	14347-34	118%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	14347-34	115%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	14347-34	122%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	14347-34	139%
Dieldrin	mg/kg	[NT]	[NT]	14347-34	132%
Endrin	mg/kg	[NT]	[NT]	14347-34	141%
pp-DDD	mg/kg	[NT]	[NT]	14347-34	134%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	14347-34	140%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	14347-34	64%

QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	14347-34	16/10/07%
Date analysed	-	[NT]	[NT]	14347-34	18/10/07%
Arochlor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	[NT]	[NT]	14347-34	124%
Arochlor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	14347-34	140%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	14347-33	16/10/2007 || 16/10/2007	LCS-2	16/10/07%
Date analysed	-	14347-33	17/10/2007 || 17/10/2007	LCS-2	17/10/07%
Arsenic	mg/kg	14347-33	10 || 7.7 || RPD: 26	LCS-2	102%
Cadmium	mg/kg	14347-33	<1.0 || <1.0	LCS-2	102%
Chromium	mg/kg	14347-33	15 || 13 || RPD: 14	LCS-2	104%
Copper	mg/kg	14347-33	28 || 15 || RPD: 60	LCS-2	104%
Lead	mg/kg	14347-33	60 || 53 || RPD: 12	LCS-2	101%
Mercury	mg/kg	14347-33	<0.10 || <0.10	LCS-2	100%
Nickel	mg/kg	14347-33	12 || 6.5 || RPD: 59	LCS-2	102%
Zinc	mg/kg	14347-33	55 || 31 || RPD: 56	LCS-2	104%
QUALITY CONTROL Moisture	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date prepared	-	14347-16	16/10/2007 || 16/10/2007		
Date analysed	-	14347-16	16/10/2007 || 16/10/2007		
Moisture	%	14347-16	20 || 20 || RPD: 0		
QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-43	16/10/2007 || 16/10/2007	LCS-5	16/10/07%
Date analysed	-	14347-43	17/10/2007 || 17/10/2007	LCS-5	17/10/07%
vTPH C_6 - C_9	mg/kg	14347-43	<25 || <25	LCS-5	107%
Benzene	mg/kg	14347-43	<0.5 || <0.5	LCS-5	110%
Toluene	mg/kg	14347-43	<0.5 || <0.5	LCS-5	103%
Ethylbenzene	mg/kg	14347-43	<1.0 || <1.0	LCS-5	103%
m + p-Xylene	mg/kg	14347-43	<2.0 || <2.0	LCS-5	105%
o-Xylene	mg/kg	14347-43	<1.0 || <1.0	LCS-5	99%
Surrogate aaa-Trifluorotoluene	%	14347-43	96 || 92 || RPD: 4	LCS-5	100%

QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-43	16/10/2007 || 16/10/2007	LCS-5	16/10/07%
Date analysed	-	14347-43	17/10/2007 || 17/10/2007	LCS-5	17/10/07%
TPH C_{10} - C_{14}	mg/kg	14347-43	<50 || <50	LCS-5	92%
TPH C_{15} - C_{28}	mg/kg	14347-43	<100 || <100	LCS-5	89%
TPH C_{29} - C_{36}	mg/kg	14347-43	<100 || <100	LCS-5	93%
Surrogate o-Terphenyl	%	14347-43	117 || 117 || RPD: 0	LCS-5	120%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	14347-43	16/10/2007 || 16/10/2007	LCS-5	16/10/07%
Date analysed	-	14347-43	16/10/2007 || 16/10/2007	LCS-5	16/10/07%
Naphthalene	mg/kg	14347-43	<0.1 || <0.1	LCS-5	86%
Acenaphthylene	mg/kg	14347-43	<0.1 || 0.1	[NR]	[NR]
Acenaphthene	mg/kg	14347-43	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	14347-43	<0.1 || <0.1	LCS-5	88%
Phenanthrene	mg/kg	14347-43	0.5 || 0.8 || RPD: 46	LCS-5	92%
Anthracene	mg/kg	14347-43	0.2 || 0.2 || RPD: 0	[NR]	[NR]
Fluoranthene	mg/kg	14347-43	1.2 || 1.8 || RPD: 40	LCS-5	92%
Pyrene	mg/kg	14347-43	1.2 || 1.9 || RPD: 45	LCS-5	96%
Benzo(a)anthracene	mg/kg	14347-43	0.4 || 0.7 || RPD: 55	[NR]	[NR]
Chrysene	mg/kg	14347-43	0.5 || 0.8 || RPD: 46	LCS-5	97%
Benzo(b,k)fluoranthene	mg/kg	14347-43	0.6 || 1.1 || RPD: 59	[NR]	[NR]
Benzo(a)pyrene	mg/kg	14347-43	0.3 || 0.6 || RPD: 67	LCS-5	98%
Indeno(1,2,3-c,d)pyrene	mg/kg	14347-43	0.2 || 0.3 || RPD: 40	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	14347-43	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	14347-43	0.1 || 0.2 || RPD: 67	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	14347-43	98 || 101 || RPD: 3	LCS-5	109%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	LCS-3	16/10/07%
Date analysed	-	[NT]	[NT]	LCS-3	17/10/07%
Arsenic	mg/kg	[NT]	[NT]	LCS-3	98%
Cadmium	mg/kg	[NT]	[NT]	LCS-3	99%
Chromium	mg/kg	[NT]	[NT]	LCS-3	101%
Copper	mg/kg	[NT]	[NT]	LCS-3	101%
Lead	mg/kg	[NT]	[NT]	LCS-3	98%
Mercury	mg/kg	[NT]	[NT]	LCS-3	97%
Nickel	mg/kg	[NT]	[NT]	LCS-3	100%
Zinc	mg/kg	[NT]	[NT]	LCS-3	100%

QUALITY CONTROL Moisture	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date prepared	-	14347-22	16/10/2007 || 16/10/2007
Date analysed	-	14347-22	16/10/2007 || 16/10/2007
Moisture	%	14347-22	12 || 12 || RPD: 0

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	14347-44	16/10/07%
Date analysed	-	[NT]	[NT]	14347-44	17/10/07%
vTPH C_6 - C_9	mg/kg	[NT]	[NT]	14347-44	80%
Benzene	mg/kg	[NT]	[NT]	14347-44	93%
Toluene	mg/kg	[NT]	[NT]	14347-44	85%
Ethylbenzene	mg/kg	[NT]	[NT]	14347-44	88%
m + p-Xylene	mg/kg	[NT]	[NT]	14347-44	84%
o-Xylene	mg/kg	[NT]	[NT]	14347-44	90%
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	14347-44	83%

QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	14347-44	16/10/07%
Date analysed	-	[NT]	[NT]	14347-44	17/10/07%
TPH C_{10} - C_{14}	mg/kg	[NT]	[NT]	14347-44	87%
TPH C_{15} - C_{28}	mg/kg	[NT]	[NT]	14347-44	93%
TPH C_{29} - C_{36}	mg/kg	[NT]	[NT]	14347-44	97%
Surrogate o-Terphenyl	%	[NT]	[NT]	14347-44	117%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	14347-44	16/10/07%
Date analysed	-	[NT]	[NT]	14347-44	16/10/07%
Naphthalene	mg/kg	[NT]	[NT]	14347-44	82%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	14347-44	100%
Phenanthrene	mg/kg	[NT]	[NT]	14347-44	109%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	14347-44	110%
Pyrene	mg/kg	[NT]	[NT]	14347-44	114%
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	14347-44	111%
Benzo(b,k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	14347-44	106%
Indeno(1,2,3-c,d)pyrene	mg/kg	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	[NT]	[NT]	14347-44	109%

QUALITY CONTROL Moisture	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date prepared	-	14347-33	16/10/2007 || 16/10/2007
Date analysed	-	14347-33	16/10/2007 || 16/10/2007
Moisture	%	14347-33	20 || 20 || RPD: 0

QUALITY CONTROL Moisture	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date prepared	-	14347-43	16/10/2007 || 16/10/2007
Date analysed	-	14347-43	16/10/2007 || 16/10/2007
Moisture	%	14347-43	20 || 20 || RPD: 0

Report Comments:

Total Petroleum Hydrocarbons in soil:The RPD for duplicate results is accepted due to the non homogenous nature of the sample.

PAH's in soil: The RPD for duplicate results is accepted due to the non homogenous nature of the sample.

Trace Elements : the high %RPD for Chromium sample 1 is due to the non homogeneous nature of the sample for this particular element.

Asbestos analysed by: Joshua Lim

INS: Insufficient sample for this test	NT: Not tested	PQL: Practical Quantitation Limit
RPD: Relative Percent Difference	NA: Test not required	LCS: Laboratory Control Sample
NR: Not requested	<: Less than	>: Greater than

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:

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable. Surrogates: Generally 60-140% is acceptable.

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Concord West
Project No: 46146A Sampler: David Walker
Project Mgr: LR Mob. Phone: 0439 396 499
Email: walkerd@douglaspartners.com.au
Date Required: Standard T/A Lab Quote No.

To: Envirolab Services
54 Franchs Rd, Willoughby NSW 2068
Attn: Tania Notaras
Phone: Fax:
Email:

	Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes: HM(8) As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	TPH	BTEX	PAH	Phenols	PCB/OCP	Asbestos	VOC		Notes
1	201	0.2-0.5					✓	✓	✓	✓	✓	✓	✓			79
2	202	0.5-1.0					✓	✓	✓	✓	✓	✓				7
3	203	0.2-0.5					✓	✓	✓	✓	✓	✓	✓			79
4	204	0.5-1.0					✓	✓	✓	✓	✓	✓				7
5	204	1.4-1.5					✓	✓	✓	✓				✓		3
6	205	1.0-1.5					✓	✓	✓	✓	✓	✓		✓		7
7	205	2.5-3.0					✓	✓	✓	✓						3
8	206	0.5-1.0					✓	✓	✓	✓	✓	✓	✓			79
9	206	1.5-2.0					✓	✓	✓	✓						3
10	207	0.5-1.0					✓	✓	✓	✓	✓	✓				7

Envirolab Services
54 Franchs Rd
Willoughby NSW 2068
Ph: 9958 5801
Job No: 14347
Date received: 12/10/07
Received by: AH
Time: 4pm
Temp: Cool/Ambient
Security: Intact/Broken/None

Lab Report No.
Send Results to: Douglas Partners Address:
Phone:
Fax:

Relinquished by: David Walker	Signed:	Date & Time: 12/10/07	Received By: AH	Date & Time:	12/10/07
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:	

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Concord West
Project No: 45146A Sampler: David Walker
Project Mgr: LR Mob. Phone: 0439 396 499
Email:
Date Required: Standard T/A Lab Quote No.

To: Envirolab Services
54 Frenchs Rd, Willoughby NSW 2068
Attn: Tania Notaras
Phone: 02 9958 5801 Fax: 02 9958 5803
Email: tnotaras@envirolabservices.com.au

	Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes: HM(8)	TPH	BTEX	PAH	Phenols	PCB OCP	Asbestos	VOC	Notes
11	207 /	1.0-1.5					✓	✓	✓	✓					3
12	208 /	0.0-0.1					✓	✓	✓	✓			✓		39
13	208 /	0.5-1.0					✓	✓	✓	✓	✓	✓			7
14	209 /	0.5-1.0					✓	✓	✓	✓	✓	✓		✓	7
15	210 /	0.7-1.2					✓	✓	✓	✓	✓	✓	✓		79
16	211 /	0.5-1.0					✓	✓	✓	✓	✓	✓			7
17	212 /	0.2-0.5					✓	✓	✓	✓	✓	✓			7
18	213 /	0.0-0.2					✓	✓	✓	✓	✓	✓	✓		79
19	213 /	0.2-0.5					✓	✓	✓	✓			[redacted]		3
20	214 /	0.0-0.2											✓		

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: David Walker	Signed:	Date & Time:	Received By: AH	Date & Time: 12/10/07
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Concord West
Project No: 45146A Sampler: David Walker
Project Mgr: LR Mob. Phone:
Email:
Date Required: Standard T/A Lab Quote No.

To: Envirolab Services
54 Frenchs Rd, Willoughby NSW 2068
Attn: Tania Notaras
Phone: 02 9958 5801 Fax: 02 9958 5803
Email: tnotaras@envirolabservices.com.au

	Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes: HM(8)	TPH	BTEX	PAH	Phenols	PCB/OCP	Asbestos	VOC	Notes
21	214 /	0.2-0.5					✓	✓	✓	✓	✓	✓			7
22	215 /	0.1-0.3					✓	✓	✓	✓			✓		39
23	215 /	0.5-1.0					✓	✓	✓	✓	✓	✓			7
24	216 /	0.0-0.5					✓	✓	✓	✓	✓	✓	✓		39
25	A216 /	0.3			M								✓		
26	216 /	0.5-1.0					✓	✓	✓	✓					3
27	217 /	0.0-0.5					✓	✓	✓	✓			✓		39
28	217 /	2.0-2.3					✓	✓	✓	✓					3
29	218 /	0.4-0.7					✓	✓	✓	✓	✓	✓		✓	7

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: David Walker	Signed:	Date & Time:	Received By: AH	Date & Time:	12/10/07
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:	

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Concord West
Project No: 45146A Sampler: David Walker
Project Mgr: CR Mob. Phone:
Email:
Date Required: Standard T.A Lab Quote No.

To: Envirolab Services
54 Frenchs Rd, Willoughby NSW 2068
Attn: Tania Notaras
Phone: 02 9958 5801 Fax: 02 9958 5803
Email: tnotaras@envirolabservices.com.au

	Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes: HM (8)	TPH/ BTEX	PAH	Phenols	PCB/ OCP	Asbestos	VOC		Notes
30	218 /	0.7-1.0					✓	✓	✓						3
31	219 /	0.2-0.4					✓	✓	✓			✓			3A
32	219 /	0.5-0.9					✓	✓	✓	✓	✓				7
33	220 /	0.3-0.5					✓	✓	✓	✓	✓				7
34	221 /	0.1-0.5					✓	✓	✓	✓	✓	✓			7A
35	221 /	1.2-1.7					✓	✓	✓				✓		3
36	222 /	0.2-0.5					✓	✓	✓	✓	✓	✓			7A
37	222 /	1.0-1.3					✓	✓	✓				✓		3
38	223 /	0.5-1.0					✓	✓	✓	✓	✓				7

Lab Report No.
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Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by:	David Walker	Signed:	Date & Time:	Received By:		Date & Time: 12/10/07
Relinquished by:		Signed:	Date & Time:	Received By:		Date & Time:

Douglas Partners
Geotechnics · Environment · Groundwater

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Project Name: Concord West
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54 Frenchs Rd, Willoughby NSW 2068
Attn: Tania Notaras
Phone: 02 9958 5801 Fax: 02 9958 5803
Email: tnotaras@envirolabservices.com.au

	Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes: HM (8)	TPH	BTEX	Phenols	PCB/ OCP	Asbestos	VOC		Notes	
39	224	0.5-1.0					✓	✓	✓	✓	✓					7
40	225	0.2-0.5					✓	✓	✓			✓	✓			3a
41	226	0.2-0.5					✓	✓	✓							3
42	227	0.2-0.3					✓	✓	✓	✓	✓	✓				7a
43	227	1.0-1.5					✓	✓	✓							3
44	BD3-101007						✓	✓	✓							3
45	BD4-101007						✓	✓	✓							7

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by:	David Walker	Signed:	Date & Time:	Received By:	AK	Date & Time: 12/10/07
Relinquished by:		Signed:	Date & Time:	Received By:		Date & Time:

Envirolab Services Pty Ltd
ABN 37 112 535 645
54 Frenchs Rd Willoughby NSW 2068
ph 02 9958 5801 fax 02 9958 5803
email: tnotaras@envirolabservices.com.au

CERTIFICATE OF ANALYSIS 14384

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: David Walker

Sample log in details:

Your Reference:	**45146A, Concord West**
No. of samples:	4 Soils
Date samples received:	16/10/07
Date completed instructions received:	16/10/07

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:	23/10/07
Date of Preliminary Report:	Not Issued
Issue Date:	23/10/07

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Accredited for compliance with ISO/IEC 17025.
Tests not covered by NATA are denoted with *.

Results Approved By:

David Springer
Business Development & Quality Manager

sPOCAS Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14384-1 204/1.2-1.4 Soil	14384-2 207/1.0-1.5 Soil	14384-3 213/1.1-1.5 Soil	14384-4 224/1.2-1.4 Soil
pH $_{kcl}$	pH units	5.0	3.8	4.5	7.6
TAA pH 6.5	moles H^+/ tonne	17	188	22	<5
s-TAA pH 6.5	%w/w S	0.028	0.30	0.036	<0.01
pH $_{Ox}$	pH units	1.8	2.9	2.6	4.8
TPA pH 6.5	moles H^+/ tonne	1,353	85	128	40
s-TPA pH 6.5	%w/w S	2.2	0.14	0.20	0.064
TSA pH 6.5	moles H^+/ tonne	1,335	<5.0	105	40
s-TSA pH 6.5	%w/w S	2.1	<0.01	0.17	0.064
ANC$_E$	% $CaCO_3$	<0.05	<0.05	<0.05	<0.05
a-ANC$_E$	moles H^+/ tonne	<5	<5	<5	<5
s-ANC$_E$	%w/w S	<0.05	<0.05	<0.05	<0.05
S$_{KCl}$	%w/w	0.26	0.088	0.10	0.16
S$_P$	%w/w	2.9	0.16	0.38	1.1
S$_{POS}$	%w/w	2.6	0.072	0.27	0.96
a-S$_{POS}$	moles H^+/ tonne	1,647	45	170	599
Ca$_{KCl}$	%w/w	0.17	0.063	0.039	0.35
Ca$_P$	%w/w	0.22	0.081	0.043	0.68
Ca$_A$	%w/w	0.049	0.017	<0.005	0.33
Mg$_{KCl}$	%w/w	0.21	0.055	0.078	0.11
Mg$_P$	%w/w	0.28	0.070	0.095	0.19
Mg$_A$	%w/w	0.061	0.014	0.017	0.075
SRAS	%w/w	<0.005	<0.005	<0.005	<0.005
S$_{HCl}$	%w/w	0.32	0.11	0.10	0.17
S$_{NAS}$	%w/w	0.063	0.025	<0.005	0.018
a-S$_{NAS}$	moles H^+/ tonne	30	12	<5	8.2
a-S$_{NAS}$	%w/w S	0.047	0.019	<0.01	0.013
a-Net Acidity	moles H^+/ tonne	1,665	244	192	608
Liming rate	kg $CaCO_3$/tonne	125	18	14	46

Method ID	Methodology Summary
LAB.64	sPOCAS determined using titrimetric and ICP-AES techniques. Based on Acid Sulfate Soils Laboratory Methods Guidelines, Version 2.1 - June 2004.

QUALITY CONTROL sPOCAS	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
pH kcl	pH units		LAB.64	[NT]	[NT]	[NT]	LCS	102%
TAA pH 6.5	moles H^+/ tonne	5	LAB.64	<5	[NT]	[NT]	[NR]	[NR]
s-TAA pH 6.5	%w/w S	0.01	LAB.64	<0.01	[NT]	[NT]	[NR]	[NR]
pH Ox	pH units		LAB.64	[NT]	[NT]	[NT]	LCS	91%
TPA pH 6.5	moles H^+/ tonne	5	LAB.64	<5.0	[NT]	[NT]	LCS	90%
s-TPA pH 6.5	%w/w S	0.01	LAB.64	<0.01	[NT]	[NT]	[NR]	[NR]
TSA pH 6.5	moles H^+/ tonne	5	LAB.64	<5.0	[NT]	[NT]	[NR]	[NR]
s-TSA pH 6.5	%w/w S	0.01	LAB.64	<0.01	[NT]	[NT]	[NR]	[NR]
ANCE	% $CaCO_3$	0.05	LAB.64	<0.05	[NT]	[NT]	[NR]	[NR]
a-ANCE	moles H^+/ tonne	5	LAB.64	<5	[NT]	[NT]	[NR]	[NR]
s-ANCE	%w/w S	0.05	LAB.64	<0.05	[NT]	[NT]	[NR]	[NR]
SKCl	%w/w	0.005	LAB.64	<0.005	[NT]	[NT]	LCS	120%
SP	%w/w	0.005	LAB.64	<0.005	[NT]	[NT]	LCS	128%
SPOS	%w/w	0.005	LAB.64	<0.005	[NT]	[NT]	[NR]	[NR]
a-SPOS	moles H^+/ tonne	5	LAB.64	<5.0	[NT]	[NT]	[NR]	[NR]
CaKCl	%w/w	0.005	LAB.64	<0.005	[NT]	[NT]	LCS	86%
CaP	%w/w	0.005	LAB.64	<0.005	[NT]	[NT]	LCS	96%
CaA	%w/w	0.005	LAB.64	<0.005	[NT]	[NT]	[NR]	[NR]
MgKCl	%w/w	0.005	LAB.64	<0.005	[NT]	[NT]	LCS	100%
MgP	%w/w	0.005	LAB.64	<0.005	[NT]	[NT]	LCS	160%
MgA	%w/w	0.005	LAB.64	<0.005	[NT]	[NT]	[NR]	[NR]
SRAS	%w/w	0.005	LAB.64	<0.005	[NT]	[NT]	[NR]	[NR]
SHCl	%w/w	0.005	LAB.64	<0.005	[NT]	[NT]	LCS	128%
SNAS	%w/w	0.005	LAB.64	<0.005	[NT]	[NT]	[NR]	[NR]
a-SNAS	moles H^+/ tonne	5	LAB.64	<5	[NT]	[NT]	[NR]	[NR]
a-SNAS	%w/w S	0.01	LAB.64	<0.01	[NT]	[NT]	[NR]	[NR]
a-Net Acidity	moles H^+/ tonne	10	LAB.64	<10	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL sPOCAS	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Liming rate	kg $CaCO_3$ /tonne	0.1	LAB.64	<0.1	[NT]	[NT]	[NR]	[NR]

Report Comments:

Asbestos analysed by: Not applicable for this job

INS: Insufficient sample for this test	NT: Not tested	PQL: Practical Quantitation Limit
RPD: Relative Percent Difference	NA: Test not required	LCS: Laboratory Control Sample
NR: Not requested	<: Less than	>: Greater than

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:

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable. Surrogates: Generally 60-140% is acceptable.

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Concord West
Project No: 45146A Sampler David Walker
Project Mgr: LR Mob. Phone: 0437 396 499
Email: walker.d@douglaspartners.com.au
Date Required: Standard T/A Lab Quote No.

To: Envirolab Services
54 Frenchs Rd, Willoughby NSW 2068
Attn: Tania Notaras
Phone: 02 9958 5801 Fax: 02 9958 5803
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes								Notes
						SPOCAS								
204/1.2-1.4		1				✓								
207/1.0-1.5		2				✓								
213/1.1-1.5		3				✓								
224/1.2-1.4		4				✓								

Envirolab Services
54 Frenchs Rd
Willoughby NSW 2068
Ph: 9958 5801
Job No: 14384
Date received: 16/10
Received by: TH
Time: 12noon
Temp: ~~Cool/Ambient~~
Security: ~~Intact/Broken/None~~

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: David Walker Signed: D. Walker Date & Time: 10am 16/10/08 Received By: Date & Time: 16/10 12noon

Relinquished by: Signed: Date & Time: Received By: Date & Time:

Envirolab Services Pty Ltd
ABN 37 112 535 645
54 Frenchs Rd Willoughby NSW 2068
ph 02 9958 5801 fax 02 9958 5803
email: tnotaras@envirolabservices.com.au

CERTIFICATE OF ANALYSIS 14441

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: David Walker

Sample log in details:

Your Reference:	**45146A, Concord West**
No. of samples:	6 Waters
Date samples received:	17/10/07
Date completed instructions received:	17/10/07

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:	24/10/07
Date of Preliminary Report:	Not Issued
Issue Date:	24/10/07

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Accredited for compliance with ISO/IEC 17025.
Tests not covered by NATA are denoted with *.

Results Approved By:

Jacinta Hurst
Operations Manager

VOC's in water						
Our Reference:	UNITS	14441-1	14441-2	14441-3	14441-4	14441-5
Your Reference	----------	GW-203	GW-204	GW-205	GW-207	GW-213
Date Sampled	----------	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	21/10/2007	21/10/2007	21/10/2007	21/10/2007	21/10/2007
Date analysed	-	22/10/2007	22/10/2007	22/10/2007	22/10/2007	22/10/2007
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Trans-1,2-dichloroethene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-dichloroethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Cis-1,2-dichloroethene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Bromochloromethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-dichloropropane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloroethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-trichloroethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-dichloropropene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon tetrachloride	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichloropropane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-dichloropropene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-dichloropropene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-trichloroethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-dichloropropane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dibromoethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,2-tetrachloroethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-tetrachloroethane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
o-xylene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

VOC's in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	14441-1 GW-203 17/10/2007 Water	14441-2 GW-204 17/10/2007 Water	14441-3 GW-205 17/10/2007 Water	14441-4 GW-207 17/10/2007 Water	14441-5 GW-213 17/10/2007 Water
1,2,3-trichloropropane*	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Isopropylbenzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
n-propyl benzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2-chlorotoluene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
4-chlorotoluene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-trimethyl benzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Tert-butyl benzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-trimethyl benzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-dichlorobenzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Sec-butyl benzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-dichlorobenzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
4-isopropyl toluene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dichlorobenzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
n-butyl benzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-dibromo-3-chloropropane	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-trichlorobenzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	µg/L	<1.0	<1.0	3.7	<1.0	<1.0
Hexachlorobutadiene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-trichlorobenzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate Dibromofluoromethane	%	131	105	102	114	127
Surrogate toluene-d8	%	65	101	95	75	71
Surrogate 4-BFB	%	75	70	72	66	75

vTPH & BTEX in Water						
Our Reference:	UNITS	14441-1	14441-2	14441-3	14441-4	14441-5
Your Reference	----------	GW-203	GW-204	GW-205	GW-207	GW-213
Date Sampled	----------	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	21/10/2007	21/10/2007	21/10/2007	21/10/2007	21/10/2007
Date analysed	-	22/10/2007	22/10/2007	22/10/2007	22/10/2007	22/10/2007
TPH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate Dibromofluoromethane	%	131	105	102	114	127
Surrogate toluene-d8	%	65	101	95	75	71
Surrogate 4-BFB	%	75	71	72	66	75

vTPH & BTEX in Water		
Our Reference:	UNITS	14441-6
Your Reference	----------	BD1-171007
Date Sampled	----------	17/10/2007
Type of sample		Water
Date extracted	-	21/10/2007
Date analysed	-	22/10/2007
TPH C_6 - C_9	µg/L	<10
Benzene	µg/L	<1.0
Toluene	µg/L	<1.0
Ethylbenzene	µg/L	<1.0
m+p-xylene	µg/L	<2.0
o-xylene	µg/L	<1.0
Surrogate Dibromofluoromethane	%	79
Surrogate toluene-d8	%	89
Surrogate 4-BFB	%	60

sTPH in Water (C10-C36)						
Our Reference:	UNITS	14441-1	14441-2	14441-3	14441-4	14441-5
Your Reference	----------	GW-203	GW-204	GW-205	GW-207	GW-213
Date Sampled	----------	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
TPH C_{10} - C_{14}	µg/L	<50	<50	360	<50	<50
TPH C_{15} - C_{28}	µg/L	<100	<100	2,200	<100	<100
TPH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	103	116	#	90	100

sTPH in Water (C10-C36)		
Our Reference:	UNITS	14441-6
Your Reference	----------	BD1-171007
Date Sampled	----------	17/10/2007
Type of sample		Water
Date extracted	-	18/10/2007
Date analysed	-	18/10/2007
TPH C_{10} - C_{14}	µg/L	<50
TPH C_{15} - C_{28}	µg/L	<100
TPH C_{29} - C_{36}	µg/L	<100
Surrogate o-Terphenyl	%	105

PAHs in Water						
Our Reference:	UNITS	14441-1	14441-2	14441-3	14441-4	14441-5
Your Reference	----------	GW-203	GW-204	GW-205	GW-207	GW-213
Date Sampled	----------	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Naphthalene	µg/L	<1	<1	<1	<1	<1
Acenaphthylene	µg/L	<1	<1	<1	<1	<1
Acenaphthene	µg/L	<1	<1	<1	<1	<1
Fluorene	µg/L	<1	<1	<1	<1	<1
Phenanthrene	µg/L	<1	<1	<1	<1	<1
Anthracene	µg/L	<1	<1	<1	<1	<1
Fluoranthene	µg/L	<1	<1	<1	<1	<1
Pyrene	µg/L	<1	<1	<1	<1	<1
Benzo(a)anthracene	µg/L	<1	<1	<1	<1	<1
Chrysene	µg/L	<1	<1	<1	<1	<1
Benzo(b,k)fluoranthene	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	µg/L	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1	<1	<1	<1	<1
Dibenzo(a,h)anthracene	µg/L	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	µg/L	<1	<1	<1	<1	<1
Surrogate p-Terphenyl-d_{14}	%	77	114	72	95	116

Organochlorine Pesticides in water						
Our Reference:	UNITS	14441-1	14441-2	14441-3	14441-4	14441-5
Your Reference	----------	GW-203	GW-204	GW-205	GW-207	GW-213
Date Sampled	----------	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Date analysed	-	19/10/2007	19/10/2007	19/10/2007	19/10/2007	19/10/2007
HCB	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
alpha-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
beta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
delta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Aldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor Epoxide	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
alpha-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan I	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDE	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dieldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDD	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan II	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
DDT	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin Aldehyde	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan Sulphate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCLMX	%	136	82	113	132	81

PCBs in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	14441-1 GW-203 17/10/2007 Water	14441-2 GW-204 17/10/2007 Water	14441-3 GW-205 17/10/2007 Water	14441-4 GW-207 17/10/2007 Water	14441-5 GW-213 17/10/2007 Water
Date extracted	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Date analysed	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Arochlor 1016	µg/L	<2	<2	<2	<2	<2
Arochlor 1232	µg/L	<2	<2	<2	<2	<2
Arochlor 1242	µg/L	<2	<2	<2	<2	<2
Arochlor 1248	µg/L	<2	<2	<2	<2	<2
Arochlor 1254	µg/L	<2	<2	<2	<2	<2
Arochlor 1260	µg/L	<2	<2	<2	<2	<2
Surrogate TCLMX	%	136	82	113	132	81

Total Phenolics in Water						
Our Reference:	UNITS	14441-1	14441-2	14441-3	14441-4	14441-5
Your Reference	----------	GW-203	GW-204	GW-205	GW-207	GW-213
Date Sampled	----------	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/10/2007	18/10/2007	18/10/2007	18/10/2007	18/10/2007
Date analysed	-	23/10/2007	23/10/2007	23/10/2007	23/10/2007	23/10/2007
Total Phenolics (as Phenol)	mg/L	<0.050	0.062	0.070	0.060	<0.050

8 HM in water - dissolved						
Our Reference:	UNITS	14441-1	14441-2	14441-3	14441-4	14441-5
Your Reference	----------	GW-203	GW-204	GW-205	GW-207	GW-213
Date Sampled	----------	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	22/10/2007	22/10/2007	22/10/2007	22/10/2007	22/10/2007
Date analysed	-	23/10/2007	23/10/2007	23/10/2007	23/10/2007	23/10/2007
Arsenic-Dissolved	µg/L	3.2	1.9	2.5	14	1.9
Cadmium-Dissolved	µg/L	0.7	0.3	<0.1	0.4	0.5
Chromium-Dissolved	µg/L	<1	<1	1.2	<1	<1
Copper-Dissolved	µg/L	7.4	1.8	7.4	2.5	2.8
Lead-Dissolved	µg/L	12	1.3	2.5	8.5	4.2
Mercury-Dissolved	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel-Dissolved	µg/L	32	4.1	5.9	140	10
Zinc-Dissolved	µg/L	85	21	52	150	21

8 HM in water - dissolved		
Our Reference:	UNITS	14441-6
Your Reference	----------	BD1-171007
Date Sampled	----------	17/10/2007
Type of sample		Water
Date prepared	-	22/10/2007
Date analysed	-	23/10/2007
Arsenic-Dissolved	µg/L	3.0
Cadmium-Dissolved	µg/L	0.5
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	4.1
Lead-Dissolved	µg/L	10
Mercury-Dissolved	µg/L	<0.5
Nickel-Dissolved	µg/L	36
Zinc-Dissolved	µg/L	61

Miscellaneous Inorganics						
Our Reference:	UNITS	14441-1	14441-2	14441-3	14441-4	14441-5
Your Reference	----------	GW-203	GW-204	GW-205	GW-207	GW-213
Date Sampled	----------	17/10/2007	17/10/2007	17/10/2007	17/10/2007	17/10/2007
Type of sample		Water	Water	Water	Water	Water
Calcium - Dissolved	mg/L	280	86	4.1	740	770
Magnesium - Dissolved	mg/L	1,000	250	6.0	2,400	2,600
Hardness by calculation	mgCaCO3 /L	4,800	1,200	35	12,000	13,000

Miscellaneous Inorganics		
Our Reference:	UNITS	14441-6
Your Reference	----------	BD1-171007
Date Sampled	----------	17/10/2007
Type of sample		Water
Calcium - Dissolved	mg/L	300
Magnesium - Dissolved	mg/L	1,100
Hardness by calculation	mgCaCO3 /L	5,300

Method ID	Methodology Summary
GC.13	Water samples are analysed directly by purge and trap GC-MS.
GC.16	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.
GC.3	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
GC.12	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
GC-5	Soil samples are extracted with hexane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
GC-6	Soil samples are extracted with hexane/acetone and waters with dichloromethane and analysed by GC-ECD.
LAB.30	Total Phenolics - determined colorimetrically following disitillation.
Metals.22 ICP-MS	Determination of various metals by ICP-MS.
Metals.21 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Metals.20 ICP-AES	Determination of various metals by ICP-AES.

QUALITY CONTROL VOC's in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			21/10/07	[NT]	[NT]	LCS-W1	21/10/07%
Date analysed	-			22/10/07	[NT]	[NT]	LCS-W1	22/10/07%
Dichlorodifluoromethane	µg/L	10	GC.13	<10	[NT]	[NT]	[NR]	[NR]
Chloromethane	µg/L	10	GC.13	<10	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	µg/L	10	GC.13	<10	[NT]	[NT]	[NR]	[NR]
Bromomethane	µg/L	10	GC.13	<10	[NT]	[NT]	[NR]	[NR]
Chloroethane	µg/L	10	GC.13	<10	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	µg/L	10	GC.13	<10	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Trans-1,2-dichloroethene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	µg/L	1	GC.13	<1.0	[NT]	[NT]	LCS-W1	89%
Cis-1,2-dichloroethene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Bromochloromethane	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Chloroform	µg/L	1	GC.13	<1.0	[NT]	[NT]	LCS-W1	91%
2,2-dichloropropane	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	µg/L	1	GC.13	<1.0	[NT]	[NT]	LCS-W1	89%
1,1,1-trichloroethane	µg/L	1	GC.13	<1.0	[NT]	[NT]	LCS-W1	97%
1,1-dichloropropene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Carbon tetrachloride	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Benzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Dibromomethane	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Trichloroethene	µg/L	1	GC.13	<1.0	[NT]	[NT]	LCS-W1	102%
Bromodichloromethane	µg/L	1	GC.13	<1.0	[NT]	[NT]	LCS-W1	92%
trans-1,3-dichloropropene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Toluene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Dibromochloromethane	µg/L	1	GC.13	<1.0	[NT]	[NT]	LCS-W1	93%
1,2-dibromoethane	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Tetrachloroethene	µg/L	1	GC.13	<1.0	[NT]	[NT]	LCS-W1	85%
1,1,1,2-tetrachloroethane	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Chlorobenzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Bromoform	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
m+p-xylene	µg/L	2	GC.13	<2.0	[NT]	[NT]	[NR]	[NR]
Styrene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOC's in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
o-xylene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,2,3-trichloropropane*	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Isopropylbenzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Bromobenzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Tert-butyl benzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Sec-butyl benzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
4-isopropyl toluene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Naphthalene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Hexachlorobutadiene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		GC.13	71	[NT]	[NT]	LCS-W1	113%
Surrogate toluene-d8	%		GC.13	95	[NT]	[NT]	LCS-W1	100%
Surrogate 4-BFB	%		GC.13	77	[NT]	[NT]	LCS-W1	112%

QUALITY CONTROL vTPH & BTEX in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			21/10/07	[NT]	[NT]	LCS-W1	21/10/07%
Date analysed	-			22/10/07	[NT]	[NT]	LCS-W1	22/10/07%
TPH C_6 - C_9	µg/L	10	GC.16	<10	[NT]	[NT]	LCS-W1	91%
Benzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	LCS-W1	108%
Toluene	µg/L	1	GC.13	<1.0	[NT]	[NT]	LCS-W1	93%
Ethylbenzene	µg/L	1	GC.13	<1.0	[NT]	[NT]	LCS-W1	86%
m+p-xylene	µg/L	2	GC.13	<2.0	[NT]	[NT]	LCS-W1	93%
o-xylene	µg/L	1	GC.13	<1.0	[NT]	[NT]	LCS-W1	85%
Surrogate Dibromofluoromethane	%		GC.13	71	[NT]	[NT]	LCS-W1	84%
Surrogate toluene-d8	%		GC.13	95	[NT]	[NT]	LCS-W1	101%
Surrogate 4-BFB	%		GC.13	77	[NT]	[NT]	LCS-W1	101%
QUALITY CONTROL sTPH in Water (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/10/07	[NT]	[NT]	LCS-W1	18/10/07%
Date analysed	-			18/10/07	[NT]	[NT]	LCS-W1	18/10/07%
TPH C_{10} - C_{14}	µg/L	50	GC.3	<50	[NT]	[NT]	LCS-W1	77%
TPH C_{15} - C_{28}	µg/L	100	GC.3	<100	[NT]	[NT]	LCS-W1	96%
TPH C_{29} - C_{36}	µg/L	100	GC.3	<100	[NT]	[NT]	LCS-W1	98%
Surrogate o-Terphenyl	%		GC.3	109	[NT]	[NT]	LCS-W1	110%
QUALITY CONTROL PAHs in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/10/07	[NT]	[NT]	LCS-W1	18/10/07%
Date analysed	-			18/10/07	[NT]	[NT]	LCS-W1	18/10/07%
Naphthalene	µg/L	1	GC.12	<1	[NT]	[NT]	LCS-W1	91%
Acenaphthylene	µg/L	1	GC.12	<1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	1	GC.12	<1	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	1	GC.12	<1	[NT]	[NT]	LCS-W1	107%
Phenanthrene	µg/L	1	GC.12	<1	[NT]	[NT]	LCS-W1	105%
Anthracene	µg/L	1	GC.12	<1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	1	GC.12	<1	[NT]	[NT]	LCS-W1	100%
Pyrene	µg/L	1	GC.12	<1	[NT]	[NT]	LCS-W1	105%
Benzo(a)anthracene	µg/L	1	GC.12	<1	[NT]	[NT]	[NR]	[NR]
Chrysene	µg/L	1	GC.12	<1	[NT]	[NT]	LCS-W1	109%
Benzo(b,k)fluoranthene	µg/L	2	GC.12	<2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	1	GC.12	<1	[NT]	[NT]	LCS-W1	78%

QUALITY CONTROL PAHs in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Indeno(1,2,3-c,d)pyrene	µg/L	1	GC.12	<1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	µg/L	1	GC.12	<1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	1	GC.12	<1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		GC.12	115	[NT]	[NT]	LCS-W1	111%
QUALITY CONTROL Organochlorine Pesticides in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/10/07	[NT]	[NT]	LCS-W1	18/10/07%
Date analysed	-			19/0/07	[NT]	[NT]	LCS-W1	19/10/07%
HCB	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-BHC	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	LCS-W1	119%
gamma-BHC	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	[NR]	[NR]
beta-BHC	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	LCS-W1	118%
Heptachlor	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	LCS-W1	132%
delta-BHC	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	[NR]	[NR]
Aldrin	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	LCS-W1	140%
Heptachlor Epoxide	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	LCS-W1	123%
gamma-Chlordane	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-Chlordane	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	[NR]	[NR]
Endosulfan I	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	[NR]	[NR]
pp-DDE	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	LCS-W1	140%
Dieldrin	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	LCS-W1	136%
Endrin	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	LCS-W1	140%
pp-DDD	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	LCS-W1	105%
Endosulfan II	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	[NR]	[NR]
DDT	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	LCS-W1	128%
Methoxychlor	µg/L	0.2	GC-5	<0.2	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		GC-5	88	[NT]	[NT]	LCS-W1	82%

QUALITY CONTROL PCBs in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/10/07	[NT]	[NT]	LCS-W1	18/10/07%
Date analysed	-			19/10/07	[NT]	[NT]	LCS-W1	19/10/07%
Arochlor 1016	µg/L	2	GC-6	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	µg/L	2	GC-6	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	µg/L	2	GC-6	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	µg/L	2	GC-6	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	µg/L	2	GC-6	<2	[NT]	[NT]	LCS-W1	125%
Arochlor 1260	µg/L	2	GC-6	<2	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		GC-6	88	[NT]	[NT]	LCS-W1	123%
QUALITY CONTROL Total Phenolics in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/10/07	14441-1	18/10/2007 || 18/10/2007	LCS-W1	18/10/07%
Date analysed	-			23/10/07	14441-1	23/10/2007 || 23/10/2007	LCS-W1	23/10/07%
Total Phenolics (as Phenol)	mg/L	0.05	LAB.30	<0.050	14441-1	<0.050 || <0.050	LCS-W1	73%
QUALITY CONTROL 8 HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			22/10/07	[NT]	[NT]	LCS-W1	22/10/07%
Date analysed	-			23/10/07	[NT]	[NT]	LCS-W1	23/10/07%
Arsenic-Dissolved	µg/L	1	Metals.22 ICP-MS	<1	[NT]	[NT]	LCS-W1	104%
Cadmium-Dissolved	µg/L	0.1	Metals.22 ICP-MS	<0.1	[NT]	[NT]	LCS-W1	106%
Chromium-Dissolved	µg/L	1	Metals.22 ICP-MS	<1	[NT]	[NT]	LCS-W1	98%
Copper-Dissolved	µg/L	1	Metals.22 ICP-MS	<1	[NT]	[NT]	LCS-W1	92%
Lead-Dissolved	µg/L	1	Metals.22 ICP-MS	<1	[NT]	[NT]	LCS-W1	100%
Mercury-Dissolved	µg/L	0.5	Metals.21 CV-AAS	<0.5	[NT]	[NT]	LCS-W1	87%
Nickel-Dissolved	µg/L	1	Metals.22 ICP-MS	<1	[NT]	[NT]	LCS-W1	96%
Zinc-Dissolved	µg/L	1	Metals.22 ICP-MS	<1	[NT]	[NT]	LCS-W1	110%

QUALITY CONTROL Miscellaneous Inorganics	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Calcium - Dissolved	mg/L	0.03	Metals.20 ICP-AES	<0.030	[NT]	[NT]	LCS-W2	97%
Magnesium - Dissolved	mg/L	0.03	Metals.20 ICP-AES	<0.030	[NT]	[NT]	LCS-W2	85%
Hardness by calculation	mgCaCO3/L	1	Metals.20 ICP-AES	<1	[NT]	[NT]	[NR]	[NR]

Report Comments:

Total Petroleum Hydrocarbons in soil:# Percent recovery not available due to significant background levels of analyte in the sample.

Asbestos analysed by: Not applicable for this job

INS: Insufficient sample for this test	NT: Not tested	PQL: Practical Quantitation Limit
RPD: Relative Percent Difference	NA: Test not required	LCS: Laboratory Control Sample
NR: Not requested	<: Less than	>: Greater than

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:

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable. Surrogates: Generally 60-140% is acceptable.

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CHAIN OF CUSTODY

Project Name: Concord West
Project No: 45146A Sampler: David Walker
Project Mgr: LR Mob. Phone:
Email: Walkerd@douglaspartners.com.au
Date Required: Standard Lab Quote No.

To: Envirolab Services
54 Frenchs Rd, Willoughby NSW 2068
Attn: Tania Notaras
Phone: 02 9958 5801 Fax: 02 9958 5803
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes: H.Metal (8)	TPH / BTEX	PAH	Phenols	VOCs	PCB	OCP		Notes
GW-203		1	17/10/07	W		F								
GW-204		2		W		F.								
GW-205		3		W		unf.								* GW-205 needs to be filtered (centrifuge) for HM.
GW-207		4		W		F.								
GW-213		5		W		F.								
BD1-[illegible]07		6	V	W		F.								

Envirolab Services
54 Frenchs Rd
Willoughby NSW 2068
Ph: 9958 5801
Job No: 14441
Date received: 17/10
Received by: JH
Time: 4Pm
Temp Cool/Ambient
Security: Intact/Broken/None

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: David Walker	Signed:	Date & Time: 17/10/07 13:45	Received By: JH	Date & Time: 4Pm
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:

Envirolab Services Pty Ltd
ABN 37 112 535 645
54 Frenchs Rd Willoughby NSW 2068
ph 02 9958 5801 fax 02 9958 5803
email: tnotaras@envirolabservices.com.au

CERTIFICATE OF ANALYSIS 14384-A

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: David Walker

Sample log in details:

Your Reference:	**45146A, Concord West**
No. of samples:	Additional Testing on 4 Soils
Date samples received:	16/10/07
Date completed instructions received:	24/10/07

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:	31/10/07
Date of Preliminary Report:	Not Issued
Issue Date:	26/10/07

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Accredited for compliance with ISO/IEC 17025.
Tests not covered by NATA are denoted with *.

Results Approved By:

Tania Notaras
Manager

Chromium Suite - Acid Base Accounting Our Reference: Your Reference Type of sample	UNITS ---------- ----------	14384-A-1 204/1.2-1.4 Soil	14384-A-2 207/1.0-1.5 Soil	14384-A-3 213/1.1-1.5 Soil	14384-A-4 224/1.2-1.4 Soil
Chromium Reducible Sulfur (S_{CR})	%w/w	1.2	0.022	0.15	0.54

Method ID	Methodology Summary
Ext-002	Analysis subcontracted to SGS Environmental Cairns. NATA Accreditation No: 2562

QUALITY CONTROL Chromium Suite - Acid Base Accounting	UNITS	PQL	METHOD	Blank
Chromium Reducible Sulfur (S_{CR})	%w/w	0.005	Ext-002	<0.005 0

Report Comments:

Chromium analysed by SGS: Report Number - 57450.

Asbestos analysed by: Not applicable for this job

INS: Insufficient sample for this test	NT: Not tested	PQL: Practical Quantitation Limit
RPD: Relative Percent Difference	NA: Test not required	LCS: Laboratory Control Sample
NR: Not requested	<: Less than	>: Greater than

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:

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable. Surrogates: Generally 60-140% is acceptable.

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Concord West
Project No: 45146A Sampler David Walker
Project Mgr: LR Mob. Phone: 0437 396 499
Email: walker.d@douglaspartners.com.au
Date Required: Standard T/A Lab Quote No.

To: Envirolab Services
54 Frenchs Rd, Willoughby NSW 2068
Attn: Tania Notaras
Phone: 02 9958 5801 Fax: 02 9958 5803
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes								Notes
						SPOCAS								
204/1.2-1.4		1				✓								
207/1.0-1.5		2				✓								
213/1.1-1.5		3				✓								
224/1.2-1.4		4				✓								

Envirolab Services
54 Frenchs Rd
Willoughby NSW 2068
Ph: 9958 5801
Job No: 14384
Date received: 16/10
Received by: TH
Time: 12noon
Temp: ~~Cool/Ambient~~
Security: ~~Intact/Broken/None~~

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: David Walker Signed: D. Walker Date & Time: 10am 16/10/08 Received By: Date & Time: 16/10 12noon

Relinquished by: Signed: Date & Time: Received By: Date & Time:

Envirolab Services Pty Ltd
ABN 37 112 535 645
54 Frenchs Rd Willoughby NSW 2068
ph 02 9958 5801 fax 02 9958 5803
email: tnotaras@envirolabservices.com.au

CERTIFICATE OF ANALYSIS 14385

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: David Walker

Sample log in details:

Your Reference:	**45146A, Concord West**
No. of samples:	1 Soil
Date samples received:	16/10/07
Date completed instructions received:	16/10/07

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:	23/10/07
Date of Preliminary Report:	Not Issued
Issue Date:	23/10/07

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Tests not covered by NATA are denoted with *.

Results Approved By:

Jacinta Hurst
Operations Manager

Joshua Lim
Chemist

vTPH & BTEX in Soil		
Our Reference:	UNITS	14385-1
Your Reference	----------	228/0.0-0.1
Date Sampled	----------	15/10/2007
Type of sample		Soil
Date extracted	-	18/10/2007
Date analysed	-	19/10/2007
vTPH C_6 - C_9	mg/kg	<25
Benzene	mg/kg	<0.5
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1.0
m + p-Xylene	mg/kg	<2.0
o-Xylene	mg/kg	<1.0
Surrogate aaa-Trifluorotoluene	%	94

sTPH in Soil (C10-C36)		
Our Reference:	UNITS	14385-1
Your Reference	----------	228/0.0-0.1
Date Sampled	----------	15/10/2007
Type of sample		Soil
Date extracted	-	18/10/2007
Date analysed	-	19/10/2007
TPH C_{10} - C_{14}	mg/kg	<50
TPH C_{15} - C_{28}	mg/kg	<100
TPH C_{29} - C_{36}	mg/kg	<100
Surrogate o-Terphenyl	%	100

PAHs in Soil		
Our Reference:	UNITS	14385-1
Your Reference	----------	228/0.0-0.1
Date Sampled	----------	15/10/2007
Type of sample		Soil
Date extracted	-	18/10/2007
Date analysed	-	18/10/2007
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.4
Anthracene	mg/kg	0.1
Fluoranthene	mg/kg	1.0
Pyrene	mg/kg	1.1
Benzo(a)anthracene	mg/kg	0.6
Chrysene	mg/kg	0.7
Benzo(b,k)fluoranthene	mg/kg	1.2
Benzo(a)pyrene	mg/kg	0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	0.5
Surrogate p-Terphenyl-d_{14}	%	107

Acid Extractable metals in soil		
Our Reference:	UNITS	14385-1
Your Reference	----------	228/0.0-0.1
Date Sampled	----------	15/10/2007
Type of sample		Soil
Date digested	-	19/10/2007
Date analysed	-	19/10/2007
Arsenic	mg/kg	14
Cadmium	mg/kg	<1.0
Chromium	mg/kg	18
Copper	mg/kg	54
Lead	mg/kg	90
Mercury	mg/kg	0.14
Nickel	mg/kg	20
Zinc	mg/kg	180

Moisture		
Our Reference:	UNITS	14385-1
Your Reference	----------	228/0.0-0.1
Date Sampled	----------	15/10/2007
Type of sample		Soil
Date prepared	-	18/10/2007
Date analysed	-	18/10/2007
Moisture	%	4.3

Asbestos ID - soils		
Our Reference:	UNITS	14385-1
Your Reference	----------	228/0.0-0.1
Date Sampled	----------	15/10/2007
Type of sample		Soil
Sample Description	-	30g soil
Asbestos ID in soil	-	No asbestos detected
Trace Analysis	-	Respirable fibres not detected

Method ID	Methodology Summary
GC.16	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.
GC.14	Soil samples extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
GC.3	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
GC.12	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Metals.20 ICP-AES	Determination of various metals by ICP-AES.
Metals.21 CV-AAS	Determination of Mercury by Cold Vapour AAS.
LAB.8	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.
AS4964-2004	Qualitative identification of asbestos type fibres in bulk using Polarised Light Microscopy and Dispersion Staining Techniques.

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/10/07	[NT]	[NT]	LCS-4	18/10/07%
Date analysed	-			19/10/07	[NT]	[NT]	LCS-4	19/10/07%
vTPH C_6 - C_9	mg/kg	25	GC.16	<25	[NT]	[NT]	LCS-4	108%
Benzene	mg/kg	0.5	GC.14	<0.5	[NT]	[NT]	LCS-4	100%
Toluene	mg/kg	0.5	GC.14	<0.5	[NT]	[NT]	LCS-4	108%
Ethylbenzene	mg/kg	1	GC.14	<1.0	[NT]	[NT]	LCS-4	132%
m + p-Xylene	mg/kg	2	GC.14	<2.0	[NT]	[NT]	LCS-4	142%
o-Xylene	mg/kg	1	GC.14	<1.0	[NT]	[NT]	LCS-4	140%
Surrogate aaa-Trifluorotoluene	%		GC.14	99	[NT]	[NT]	LCS-4	143%

QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/10/07	[NT]	[NT]	LCS-4	18/10/07%
Date analysed	-			19/10/07	[NT]	[NT]	LCS-4	19/10/07%
TPH C_{10} - C_{14}	mg/kg	50	GC.3	<50	[NT]	[NT]	LCS-4	96%
TPH C_{15} - C_{28}	mg/kg	100	GC.3	<100	[NT]	[NT]	LCS-4	94%
TPH C_{29} - C_{36}	mg/kg	100	GC.3	<100	[NT]	[NT]	LCS-4	100%
Surrogate o-Terphenyl	%		GC.3	101	[NT]	[NT]	LCS-4	104%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/10/07	[NT]	[NT]	LCS-4	18/10/07%
Date analysed	-			18/10/07	[NT]	[NT]	LCS-4	18/10/07%
Naphthalene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	LCS-4	90%
Acenaphthylene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	LCS-4	104%
Phenanthrene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	LCS-4	102%
Anthracene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	LCS-4	96%
Pyrene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	LCS-4	99%
Benzo(a)anthracene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	LCS-4	107%
Benzo(b,k)fluoranthene	mg/kg	0.2	GC.12	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	GC.12	<0.05	[NT]	[NT]	LCS-4	78%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Benzo(g,h,i)perylene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		GC.12	108	[NT]	[NT]	LCS-4	105%
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 digested	-			19/10/07	[NT]	[NT]	LCS-6	19/10/07%
Date analysed	-			19/10/07	[NT]	[NT]	LCS-6	19/10/07%
Arsenic	mg/kg	4	Metals.20 ICP-AES	<4.0	[NT]	[NT]	LCS-6	103%
Cadmium	mg/kg	1	Metals.20 ICP-AES	<1.0	[NT]	[NT]	LCS-6	103%
Chromium	mg/kg	1	Metals.20 ICP-AES	<1.0	[NT]	[NT]	LCS-6	102%
Copper	mg/kg	1	Metals.20 ICP-AES	<1.0	[NT]	[NT]	LCS-6	104%
Lead	mg/kg	1	Metals.20 ICP-AES	<1.0	[NT]	[NT]	LCS-6	102%
Mercury	mg/kg	0.1	Metals.21 CV-AAS	<0.10	[NT]	[NT]	LCS-6	96%
Nickel	mg/kg	1	Metals.20 ICP-AES	<1.0	[NT]	[NT]	LCS-6	103%
Zinc	mg/kg	1	Metals.20 ICP-AES	<1.0	[NT]	[NT]	LCS-6	103%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			18/10/07
Date analysed	-			18/10/07
Moisture	%	0.1	LAB.8	<0.10

Report Comments:

Asbestos analysed by: Joshua Lim

INS: Insufficient sample for this test	NT: Not tested	PQL: Practical Quantitation Limit
RPD: Relative Percent Difference	NA: Test not required	LCS: Laboratory Control Sample
NR: Not requested	<: Less than	>: Greater than

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:

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable. Surrogates: Generally 60-140% is acceptable.

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Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Concord West
Project No: 45146A Sampler: David Walker
Project Mgr: LR Mob. Phone: 0437396499
Email: walked@douglaspartners.com.au
Date Required: standard T/A Lab Quote No. .....

To: Envirolab Services
54 Frenchs Rd, Willoughby NSW 2068
Attn: Tania Notaras
Phone: 02 9958 5801 Fax: 02 9958 5803
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes: TPH/BTEX	PAH	HM(8)	Asbestos					Notes
228/0-0-0	1	1	15/10/07	S	Jar	✓	✓	✓	✓					

Envirolab Services
54 Frenchs Rd
Willoughby NSW 2068
Ph: 9958 5801
Job No: 14385
Date received: 16/10
Received by: IH
Time: 12 noon
Temp: Cool/Ambient
Security: Intact/Broken/None

Lab Report No. .....
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by:	David Walker	Signed:	D. Walk	Date & Time:	10am 16/10/07	Received By:	Date & Time: 16/10 12pm noon
Relinquished by:		Signed:		Date & Time:		Received By:	Date & Time:

FINAL CERTIFICATE OF ANALYSIS - ENVIRONMENTAL DIVISION

Laboratory Report No:	E034489
Client Name:	Douglas Partners
Client Reference:	Concord West
Contact Name:	Lindsay Rockett
Chain of Custody No:	na
Sample Matrix:	SOIL

Cover Page 1 of 4
plus Sample Results

Date Received: 15/10/2007
Date Reported: 19/10/2007

This Final Certificate of Analysis consists of sample results, DQI's, method descriptions, laboratory definitions, and internationally recognised NATA accreditation and endorsement. The DQO compliance relates specifically to QA/QC results as performed as part of the sample analysis, and may provide an indication of sample result quality. Transfer of report ownership from Labmark to the client shall only occur once full & final payment has been settled and verified. All report copies may be retracted where full payment has not occured within the agreed settlement period.

QUALITY ASSURANCE CRITERIA

Accuracy:	matrix spike:	1 in first 5-20, then 1 every 20 samples
	lcs, crm, method:	1 per analytical batch
	surrogate spike:	addition per target organic method
Precision:	laboratory duplicate:	1 in first 5-10, then 1 every 10 samples
	laboratory triplicate:	re-extracted & reported when duplicate RPD values exceed acceptance criteria
Holding Times:	soils, waters:	Refer to LabMark Preservation & THT table VOC's 14 days water / soil VAC's 7 days water or 14 days acidified VAC's 14 days soil SVOC's 7 days water, 14 days soil Pesticides 7 days water, 14 days soil Metals 6 months general elements Mercury 28 days
Confirmation:	target organic analysis:	GC/MS, or confirmatory column
Sensitivity:	EQL:	Typically 2-5 x Method Detection Limit (MDL)

QUALITY CONTROL GLOBAL ACCEPTANCE CRITERIA (GAC)

Accuracy:	spike, lcs, crm surrogate:	general analytes 70% - 130% recovery phenol analytes 50% - 130% recovery organophosphorous pesticide analytes 60% - 130% recovery phenoxy acid herbicides, organotins 50% - 130% recovery
	anion/cation bal:	+/- 10% (0-3 meq/l), +/- 5% (>3 meq/l)
Precision:	method blank:	not detected >95% of the reported EQL
	duplicate lab RPD (metals):	0-30% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)
	duplicate lab RPD:	0-50% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)

QUALITY CONTROL ANALYTE SPECIFIC ACCEPTANCE CRITERIA (ASAC)

Accuracy:	spike, lcs, crm surrogate:	analyte specific recovery data <3xsd of historical mean
Uncertainty:	spike, lcs:	measurement calculated from historical analyte specific control charts

RESULT ANNOTATION

DQO:	Data Quality Objective	s:	matrix spike recovery	p:	pending
DQI:	Data Quality Indicator	d:	laboratory duplicate	lcs:	laboratory control sample
EQL:	Estimated Quantitation Limit	t:	laboratory triplicate	crm:	certified reference material
- - :	not applicable	r:	RPD relative % difference	mb:	method blank

David Burns
Quality Control (Report signatory)
david.burns@labmark.com.au

Geoff Weir
Authorising Chemist (NATA signatory)
geoff.weir@labmark.com.au

Jeremy Truong
Authorising Chemist (NATA signatory)
jeremy.truong@labmark.com.au

NEPC GUIDELINE COMPLIANCE - DQO

1. GENERAL

A. Results relate specifically to samples as received. Sample results are not corrected for matrix spike, lcs, or surrogate recovery data.

B. EQL's are matrix dependant and may be increased due to sample dilution or matrix interference.

C. Laboratory QA/QC samples are specific to this project.

D. Inter-laboratory proficiency results are available upon request. NATA accreditation details available at www.nata.asn.au.

E. VOC spikes & surrogates added to samples during extraction, SVOC spikes & surrogates added prior to extraction.

F. Recovery data outside GAC limits shall be investigated and compared to ASAC (historical mean +/- 3sd). If recovery data <20%, then the relevant results for that compound are considered not reliable.

G. Recovery data (ms, surrogate, crm, lcs) outside ASAC limits shall initiate an investigative action. Anomolous QC data is examined in conjunction with other QC samples and a final decision whether to accept or reject results is provided by the professional judgement of the senior analyst. The USEPA-CLP National Functional Guidelines are referred to for specific recommendations.

H. Extraction (preparation) date refers to the date that sample preparation was initiated. Note that certain methods not requiring sample preparation (eg. VOCs in water, etc) may report a common extraction and analysis date.

I. LabMark shall maintain an official copy of this Certificate of Analysis for all tracable reference purposes.

2. CHAIN OF CUSTODY (COC) & SAMPLE RECEIPT NOTICE (SRN) REQUIREMENTS

A. SRN issued to client upon sample receipt & login verification.

B. Preservation & sampling date details specified on COC and SRN, unless noted.

C. Sample Integrity & Validated Time of Sample Receipt (VTSR) Holding Times verified (preservation may extend holding time, refer to preservation chart).

3. NATA ACCREDITED METHODS

A. NATA accreditation held for each method and sample matrix type reported, unless noted below.

B. NATA accredited in-house laboratory methods are referenced from NEPC, ASTM, modified USEPA / APHA documents. Corporate Accreditation No. 13542.

C. Subcontracted analyses: Refer to Sample Receipt Notice and additional DQO comments.

LabMark PTY LTD ABN 27 079 798 397
* SYDNEY: Unit 1, 8 Leighton Place Asquith NSW 2077 * Telephone: (02) 9476 6533 * Fax: (02) 9476 8219
* MELBOURNE: 116 Moray Street, South Melbourne VIC 3205 * Telephone: (03) 9686 8344 * Fax: (03) 9686 7344

4. QA/QC FREQUENCY COMPLIANCE TABLE SPECIFIC TO THIS REPORT

Matrix: **SOIL**

Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
1	BTEX by P&T	2	0	0%	0	0	0%
1	Volatile TPH by P&T (vTPH)	2	0	0%	0	0	0%
2	Petroleum Hydrocarbons (TPH)	2	0	0%	0	0	0%
3	Polyaromatic Hydrocarbons (PAH)	2	0	0%	0	0	0%
4	Acid extractable metals (M7)	2	0	0%	0	0	0%
5	Acid extractable mercury	2	0	0%	0	0	0%
6	Moisture	2	--	--	--	--	--

GLOSSARY:

#d	number of discrete duplicate extractions/analyses performed.
%d-ratio	NEPC guideline for laboratory duplicates is 1 in 10 samples (min 10%).
#t	number of triplicate extractions/analyses performed.
#s	number of spiked samples analysed.
%s-ratio	USEPA guideline for laboratory matrix spikes is 1 in 20 samples (min 5%).

5. THERE ARE NO ADDITIONAL COMMENTS SPECIFIC TO THIS REPORT

A. All tests were conducted by LabMark Environmental Sydney, NATA accreditation No. 13542, Corporate Site No. 13535., unless indicated below.

LabMark PTY LTD ABN 27 079 798 397
* SYDNEY: Unit 1, 8 Leighton Place Asquith NSW 2077 * MELBOURNE: 116 Moray Street, South Melbourne VIC 3205
* Telephone: (02) 9476 6533 * Fax: (02) 9476 8219 * Telephone: (03) 9686 8344 * Fax: (03) 9686 7344

CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

Environmental Laboratory Industry Group
Foundation Member

Laboratory Report: E034489

Laboratory QA/QC data shall relate specifically to this report, and may provide an indication of site specific sample result quality. LabMark DOES NOT report NON-RELEVANT BATCH QA/QC data. Acceptance of this self assessment certificate does not preclude any requirement for a QA/QC review by a accredited contaminated site EPA auditor, when and wherever necessary. Laboratory QA/QC self assessment references available upon request.

LabMark PTY LTD ABN 27 079 798 397
* SYDNEY: Unit 1, 8 Leighton Place Asquith NSW 2077 * MELBOURNE: 116 Moray Street, South Melbourne VIC 3205
* Telephone: (02) 9476 6533 * Fax: (02) 9476 8219 * Telephone: (03) 9686 8344 * Fax: (03) 9686 7344

Laboratory Report No: E034489
Client Name: Douglas Partners
Contact Name: Lindsay Rockett
Client Reference: Concord West 45146A

Page: 1 of 6
plus cover page
Date: 19/10/07
This report supercedes reports issued on: N/A

Final
Certificate
of Analysis

Laboratory Identification		**119542**	**119543**	**lcs**	**mb**						
Sample Identification		BD2	BD4	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		11/10/07	11/10/07	--	--						
Laboratory Extraction (Preparation) Date		15/10/07	15/10/07	15/10/07	15/10/07						
Laboratory Analysis Date		16/10/07	16/10/07	15/10/07	15/10/07						
Method : E002.2											
BTEX by P&T	**EQL**										
Benzene	0.2	<0.2	<0.2	90%	<0.2						
Toluene	0.5	<0.5	<0.5	93%	<0.5						
Ethylbenzene	0.5	<0.5	<0.5	89%	<0.5						
meta- and para-Xylene	1	<1	<1	93%	<1						
ortho-Xylene	0.5	<0.5	<0.5	92%	<0.5						
Total Xylene	--	--	--	--	--						
CDFB (Surr @ 10mg/kg)	--	*81%*	*86%*	*79%*	*76%*						
Method : E003.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	<10	<10	89%	<10						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E002.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/PID/MSD.
E003.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID.

Laboratory Identification		**119542**	**119543**	**lcs**	**mb**						
Sample Identification		BD2	BD4	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		11/10/07	11/10/07	--	--						
Laboratory Extraction (Preparation) Date		15/10/07	15/10/07	15/10/07	15/10/07						
Laboratory Analysis Date		16/10/07	16/10/07	16/10/07	16/10/07						
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	<50	90	86%	<50						
C15 - C28 Fraction	100	190	<100	--	<100						
C29 - C36 Fraction	100	320	<100	--	<100						
Sum of TPH C10 - C36	--	510	90	--	--						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

Laboratory Identification		**119542**	**119543**	**lcs**	**mb**						
Sample Identification		BD2	BD4	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		11/10/07	11/10/07	--	--						
Laboratory Extraction (Preparation) Date		15/10/07	15/10/07	15/10/07	15/10/07						
Laboratory Analysis Date		16/10/07	16/10/07	16/10/07	16/10/07						
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	<0.5	<0.5	91%	<0.5						
Acenaphthylene	0.5	0.8	<0.5	84%	<0.5						
Acenaphthene	0.5	<0.5	<0.5	89%	<0.5						
Fluorene	0.5	0.5	<0.5	88%	<0.5						
Phenanthrene	0.5	4.7	<0.5	86%	<0.5						
Anthracene	0.5	1.2	<0.5	88%	<0.5						
Fluoranthene	0.5	8.4	<0.5	89%	<0.5						
Pyrene	0.5	8.1	<0.5	90%	<0.5						
Benz(a)anthracene	0.5	3.4	<0.5	86%	<0.5						
Chrysene	0.5	3.9	<0.5	90%	<0.5						
Benzo(b)&(k)fluoranthene	1	5	<1	92%	<1						
Benzo(a) pyrene	0.5	4.0	<0.5	87%	<0.5						
Indeno(1,2,3-c,d)pyrene	0.5	1.6	<0.5	89%	<0.5						
Dibenz(a,h)anthracene	0.5	0.5	<0.5	90%	<0.5						
Benzo(g,h,i)perylene	0.5	1.9	<0.5	86%	<0.5						
Sum of reported PAHs	--	44.0	--	--	--						
2-FBP (Surr @ 5mg/kg)	--	*88%*	*86%*	*87%*	*83%*						
TP-d14 (Surr @ 5mg/kg)	--	*93%*	*90%*	*89%*	*92%*						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**119542**	**119543**	**crm**	**lcs**	**mb**					
Sample Identification		BD2	BD4	QC	QC	QC					
Depth (m)		--	--	--	--	--					
Sampling Date recorded on COC		11/10/07	11/10/07	--	--	--					
Laboratory Extraction (Preparation) Date		15/10/07	15/10/07	15/10/07	15/10/07	15/10/07					
Laboratory Analysis Date		17/10/07	17/10/07	15/10/07	16/10/07	16/10/07					
Method : E022.2											
Acid extractable metals (M7)	**EQL**										
Arsenic	1	29	4	94%	86%	<1					
Cadmium	0.1	0.2	<0.1	103%	98%	<0.1					
Chromium	1	17	7	99%	107%	<1					
Copper	2	59	12	99%	95%	<2					
Nickel	1	6	4	99%	94%	<1					
Lead	2	34	7	103%	111%	<2					
Zinc	5	63	18	111%	113%	<5					

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		**119542**	**119543**	**crm**	**lcs**	**mb**					
Sample Identification		BD2	BD4	QC	QC	QC					
Depth (m)		--	--	--	--	--					
Sampling Date recorded on COC		11/10/07	11/10/07	--	--	--					
Laboratory Extraction (Preparation) Date		15/10/07	15/10/07	15/10/07	15/10/07	15/10/07					
Laboratory Analysis Date		17/10/07	17/10/07	16/10/07	16/10/07	16/10/07					
Method : E026.2											
Acid extractable mercury	**EQL**										
Mercury	0.05	0.07	<0.05	111%	98%	<0.05					

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		**119542**	**119543**								
Sample Identification		BD2	BD4								
Depth (m)		--	--								
Sampling Date recorded on COC		11/10/07	11/10/07								
Laboratory Extraction (Preparation) Date		15/10/07	15/10/07								
Laboratory Analysis Date		16/10/07	16/10/07								
Method : E005.2											
Moisture	**EQL**										
Moisture	--	38	13								

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Quality, Service, Support

Report Date : 15/10/2007
Report Time : 3:04:30PM

Sample **Receipt** Notice (SRN) for **E034489**

Client Details		Laboratory Reference Information	
Client Name:	Douglas Partners	**Please have this information ready when contacting Labmark.**	
Client Phone:	02 9809 0666		
Client Fax:	02 98094095	**Laboratory Report:**	**E034489**
Contact Name:	Lindsay Rockett	**Quotation Number:**	- Not provided, standard prices apply
Contact Email:	rockettl@douglaspartners.com.au	**Laboratory Address:**	Unit 1, 8 Leighton Pl. Asquith NSW 2077
Client Address:	96 Hermitage Road West Ryde NSW 2114	**Phone:**	61 2 9476 6533
		Fax:	61 2 9476 8219
Project Name:	Concord West	**Sample Receipt Contact:**	Jakleen El Galada
Project Number:	45146A	**Email:**	jakleen.galada@labmark.com.au
CoC Serial Number:	- Not provided -	**Reporting Contact:**	Jyothi Lal
Purchase Order:	73308	**Email:**	jyothi.lal@labmark.com.au
Surcharge:	No surcharge applied (results by 6:30pm on due date)		
Sample Matrix:	SOIL		

Date Sampled (earliest date):	11/10/2007	**NATA Accreditation:**	13542
Date Samples Received:	15/10/2007	**TGA GMP License:**	185-336 (Sydney)
Date Sample Receipt Notice issued:	15/10/2007	**APVMA License:**	6105 (Sydney)
Date Preliminary Report Due:	23/10/2007	**AQIS Approval:**	NO356 (Sydney)
		AQIS Entry Permit:	200521534 (Sydney)

Reporting Requirements: Electronic Data Download required: No

Invoice Number: 28603

Sample Condition: COC received with samples. Report number and lab ID's defined on COC.
Samples received in good order .
Samples received with cooling media: Ice bricks .
Samples received chilled.
Security seals not used .
Sample container & chemical preservation suitable .

Comments:

Holding Times: Date received allows for sufficient time to meet Technical Holding Times.

Preservation: Chemical preservation of samples satisfactory for requested analytes.

Important Notes:

LabMark shall responsibly dispose of spent customer soil and water samples which includes the disintegration of the sample label. A sample disposal fee of $1.00 is applicable on all samples received by the laboratory regardless of whether they have undergone analytical testing. Sample disposal of environmental samples shall be 31 days (water) and 3 months (soil, HN03 preserved samples) after laboratory receipt, unless otherwise requested in writing by the client. Samples requested to be held in non-refrigerated storage shall incur $5.00/ sample/ 3 months. Additional refrigerated storage shall incur $30/ sample/ 3 months. Combination prices apply only if requested. Transfer of report ownership from LabMark to the client shall occur once full and final payment has been settled and verified. All report copies may be retracted where full payment does not occur within the agreed settlement period.

Analysis comments:

Subcontracted Analyses:

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

Report Date : 15/10/2007
Report Time : 3:04:30PM

Quality, Service, Support

Sample **Receipt** Notice (SRN) for **E034489**

The table below represents LabMark's understanding and interpretation of the customer supplied sample COC request (refer to SRN comments section on first page for external subcontracting method details). Please confirm that your COC request has been entered correctly. Due to THT and TAT requirements, testing shall commence immediately as per this table, unless the customer intervenes with a correction prior to testing.

GRID REVIEW TABLE

				Requested Analysis																						
No.	**Date**	**Depth**	**Client Sample ID**	BTEX by P&T	Acid extractable mercury	Acid extractable metals (M7)	Moisture	Polyaromatic Hydrocarbons (PAH)	PREP Not Reported	Petroleum Hydrocarbons (TPH)	Volatile TPH by P&T (vTPH)															
119542	11/10		BD2	●	●	●	●	●	●	●	●															
119543	11/10		BD4	●	●	●	●	●	●	●	●															
			Totals:	2	2	2	2	2	2	2	2															

'PREP Not Reported' refers to an internal laboratory instruction - client confirmation of this parameter is not required.

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

Quality, Service, Support

Report Date : 15/10/2007
Report Time : 3:04:30PM

Sample **Receipt** Notice (SRN) for **E034489**

No.	Date	Depth	Client Sample ID	Requested Analysis: M8 - M7-T_S																			
119542	11/10		BD2	●																			
119543	11/10		BD4	●																			
			Totals:	2																			

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Concord West
Project No: 45146A Sampler: ~~BE~~ David Walker
Project Mgr: LR Mob. Phone: ~~0412168649~~ 0437 396499
Email: walker d @ douglas partners . com . au
Date Required: Standard T/A Lab Quote No.

To: Labmark
Unit1, 8 Leighton Place ASQUITH NSW 2077
Attn: Simon Mills
Phone: 9476 6533 Fax: 9476 8219
Email:

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: ~~BE~~ HM(8)	TPH	BTEX	PAH	Phenols	PCB/ OCP	Asbestos	VOC		Notes
BD2-111007	1.0	119542				✓	✓	✓	✓						
BD4-111007		119543				✓	✓	✓	✓						

Envirolab Services
54 Frenchs Rd
Willoughby NSW 2068
Ph: 9958 5801
Job No: 14346
Date received:
Received by:
Time:
Temp: Cool/Ambient
Security: Intact/Broken/None

Lab Report No. E0344489
Send Results to: Douglas Partners Address: Phone: Fax:
Relinquished by: ~~BE~~ David Walker Signed: Date & Time: 12/10/07 Received By: Date & Time: 15/10/07 2PM
Relinquished by: Signed: Date & Time: Received By: Date & Time:

Envirolab Services Pty Ltd
ABN 37 112 535 645
54 Frenchs Rd Willoughby NSW 2068
ph 02 9958 5801 fax 02 9958 5803
email: tnotaras@envirolabservices.com.au

CERTIFICATE OF ANALYSIS 14735

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: David Walker

Sample log in details:

Your Reference:	**45146A, Concord West**
No. of samples:	2 Soils
Date samples received:	30/10/07
Date completed instructions received:	30/10/07

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:	6/11/07
Date of Preliminary Report:	Not Issued
Issue Date:	6/11/07

NATA accreditation number 2901. This document shall not be reproduced except in full.
This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025.
Tests not covered by NATA are denoted with *.

Results Approved By:

Jacinta Hurst
Operations Manager

VOC's in soil		
Our Reference:	UNITS	14735-1
Your Reference	----------	229/1.1-1.5
Date Sampled	----------	30/10/2007
Type of sample		Soil
Date extracted	-	31/10/2007
Date analysed	-	2/11/2007
Dichlorodifluoromethane	mg/kg	<10
Chloromethane	mg/kg	<10
Vinyl Chloride	mg/kg	<10
Bromomethane	mg/kg	<10
Chloroethane	mg/kg	<10
Trichlorofluoromethane	mg/kg	<10
1,1-Dichloroethene	mg/kg	<1.0
trans-1,2-dichloroethene	mg/kg	<1.0
1,1-dichloroethane	mg/kg	<1.0
cis-1,2-dichloroethene	mg/kg	<1.0
bromochloromethane	mg/kg	<1.0
chloroform	mg/kg	<1.0
2,2-dichloropropane	mg/kg	<1.0
1,2-dichloroethane	mg/kg	<1.0
1,1,1-trichloroethane	mg/kg	<1.0
1,1-dichloropropene	mg/kg	<1.0
carbon tetrachloride	mg/kg	<1.0
Benzene	mg/kg	<0.5
dibromomethane	mg/kg	<1.0
1,2-dichloropropane	mg/kg	<1.0
trichloroethene	mg/kg	<1.0
bromodichloromethane	mg/kg	<1.0
trans-1,3-dichloropropene	mg/kg	<1.0
cis-1,3-dichloropropene	mg/kg	<1.0
1,1,2-trichloroethane	mg/kg	<1.0
Toluene	mg/kg	<0.5
1,3-dichloropropane	mg/kg	<1.0
dibromochloromethane	mg/kg	<1.0
1,2-dibromoethane	mg/kg	<1.0
tetrachloroethene	mg/kg	<1.0
1,1,1,2-tetrachloroethane	mg/kg	<1.0
chlorobenzene	mg/kg	<1.0
Ethylbenzene	mg/kg	<1.0
bromoform	mg/kg	<1.0
m + p-Xylene	mg/kg	<2.0
styrene	mg/kg	<1.0
1,1,2,2-tetrachloroethane	mg/kg	<1.0
o-Xylene	mg/kg	<1.0

VOC's in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	14735-1 229/1.1-1.5 30/10/2007 Soil
1,2,3-trichloropropane*	mg/kg	<1.0
isopropylbenzene	mg/kg	<1.0
bromobenzene	mg/kg	<1.0
n-propyl benzene	mg/kg	<1.0
2-chlorotoluene	mg/kg	<1.0
4-chlorotoluene	mg/kg	<1.0
1,3,5-trimethyl benzene	mg/kg	<1.0
tert-butyl benzene	mg/kg	<1.0
1,2,4-trimethyl benzene	mg/kg	<1.0
1,3-dichlorobenzene	mg/kg	<1.0
sec-butyl benzene	mg/kg	<1.0
1,4-dichlorobenzene	mg/kg	<1.0
4-isopropyl toluene	mg/kg	<1.0
1,2-dichlorobenzene	mg/kg	<1.0
n-butyl benzene	mg/kg	<1.0
1,2-dibromo-3-chloropropane	mg/kg	<1.0
1,2,4-trichlorobenzene	mg/kg	<1.0
napthalene	mg/kg	<1.0
hexachlorobutadiene	mg/kg	<1.0
1,2,3-trichlorobenzene	mg/kg	<1.0
Surrogate Dibromofluorometha	%	98
Surrogate aaa-Trifluorotoluene	%	66
Surrogate Toluene-d_8	%	90
Surrogate 4-Bromofluorobenzene	%	74

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	14735-1 229/1.1-1.5 30/10/2007 Soil	14735-2 229/0.6-1.0 30/10/2007 Soil
Date extracted	-	31/10/2007	31/10/2007
Date analysed	-	31/10/2007	31/10/2007
vTPH C_6 - C_9	mg/kg	<25	<25
Benzene	mg/kg	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	66	98

sTPH in Soil (C10-C36)			
Our Reference:	UNITS	14735-1	14735-2
Your Reference	----------	229/1.1-1.5	229/0.6-1.0
Date Sampled	----------	30/10/2007	30/10/2007
Type of sample		Soil	Soil
Date extracted	-	31/10/2007	31/10/2007
Date analysed	-	31/10/2007	31/10/2007
TPH C_{10} - C_{14}	mg/kg	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	1,400
TPH C_{29} - C_{36}	mg/kg	<100	990
Surrogate o-Terphenyl	%	101	#

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	14735-1 229/1.1-1.5 30/10/2007 Soil	14735-2 229/0.6-1.0 30/10/2007 Soil
Date extracted	-	31/10/2007	31/10/2007
Date analysed	-	31/10/2007	31/10/2007
Naphthalene	mg/kg	<0.1	0.9
Acenaphthylene	mg/kg	<0.1	3.1
Acenaphthene	mg/kg	<0.1	1.5
Fluorene	mg/kg	<0.1	2.6
Phenanthrene	mg/kg	<0.1	35
Anthracene	mg/kg	<0.1	10
Fluoranthene	mg/kg	<0.1	64
Pyrene	mg/kg	<0.1	66
Benzo(a)anthracene	mg/kg	<0.1	33
Chrysene	mg/kg	<0.1	32
Benzo(b,k)fluoranthene	mg/kg	<0.2	49
Benzo(a)pyrene	mg/kg	<0.05	32
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	20
Dibenzo(a,h)anthracene	mg/kg	<0.1	3.7
Benzo(g,h,i)perylene	mg/kg	<0.1	17
Surrogate p-Terphenyl-d_{14}	%	125	119

Acid Extractable metals in soil			
Our Reference:	UNITS	14735-1	14735-2
Your Reference	----------	229/1.1-1.5	229/0.6-1.0
Date Sampled	----------	30/10/2007	30/10/2007
Type of sample		Soil	Soil
Date digested	-	31/10/2007	31/10/2007
Date analysed	-	1/11/2007	1/11/2007
Arsenic	mg/kg	40	9.8
Cadmium	mg/kg	<1.0	<1.0
Chromium	mg/kg	14	15
Copper	mg/kg	20	200
Lead	mg/kg	24	97
Mercury	mg/kg	<0.10	0.17
Nickel	mg/kg	3.7	14
Zinc	mg/kg	8.8	280

Moisture			
Our Reference:	UNITS	14735-1	14735-2
Your Reference	----------	229/1.1-1.5	229/0.6-1.0
Date Sampled	----------	30/10/2007	30/10/2007
Type of sample		Soil	Soil
Date prepared	-	31/10/2007	31/10/2007
Date analysed	-	31/10/2007	31/10/2007
Moisture	%	33	25

Method ID	Methodology Summary
GC.14	Soil samples extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
GC.16	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.
GC.3	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
GC.12	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Metals.20 ICP-AES	Determination of various metals by ICP-AES.
Metals.21 CV-AAS	Determination of Mercury by Cold Vapour AAS.
LAB.8	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.

QUALITY CONTROL VOC's in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			31/10/07	14735-1	31/10/2007 || 31/10/2007	LCS-1	31/10/07%
Date analysed	-			2/11/07	14735-1	2/11/2007 || 2/11/2007	LCS-1	2/11/07%
Dichlorodifluoromethane	mg/kg	10	GC.14	<10	14735-1	<10 || <10	[NR]	[NR]
Chloromethane	mg/kg	10	GC.14	<10	14735-1	<10 || <10	[NR]	[NR]
Vinyl Chloride	mg/kg	10	GC.14	<10	14735-1	<10 || <10	[NR]	[NR]
Bromomethane	mg/kg	10	GC.14	<10	14735-1	<10 || <10	[NR]	[NR]
Chloroethane	mg/kg	10	GC.14	<10	14735-1	<10 || <10	[NR]	[NR]
Trichlorofluoromethane	mg/kg	10	GC.14	<10	14735-1	<10 || <10	[NR]	[NR]
1,1-Dichloroethene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,1-dichloroethane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	LCS-1	63%
cis-1,2-dichloroethene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
bromochloromethane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
chloroform	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	LCS-1	73%
2,2-dichloropropane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,2-dichloroethane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	LCS-1	71%
1,1,1-trichloroethane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	LCS-1	64%
1,1-dichloropropene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
carbon tetrachloride	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
Benzene	mg/kg	0.5	GC.14	<0.5	14735-1	<0.5 || <0.5	[NR]	[NR]
dibromomethane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,2-dichloropropane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
trichloroethene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	LCS-1	64%
bromodichloromethane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	LCS-1	84%
trans-1,3-dichloropropene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
Toluene	mg/kg	0.5	GC.14	<0.5	14735-1	<0.5 || <0.5	[NR]	[NR]
1,3-dichloropropane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
dibromochloromethane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	LCS-1	84%
1,2-dibromoethane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
tetrachloroethene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	LCS-1	83%
1,1,1,2-tetrachloroethane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
chlorobenzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
Ethylbenzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
bromoform	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
m + p-Xylene	mg/kg	2	GC.14	<2.0	14735-1	<2.0 || <2.0	[NR]	[NR]
styrene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
o-Xylene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]

QUALITY CONTROL VOC's in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
1,2,3-trichloropropane*	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
isopropylbenzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
bromobenzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
n-propyl benzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
2-chlorotoluene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
4-chlorotoluene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
tert-butyl benzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
sec-butyl benzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
4-isopropyl toluene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
n-butyl benzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
napthalene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
hexachlorobutadiene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	[NR]	[NR]
Surrogate Dibromofluorometha	%		GC.14	98	14735-1	98 || 92 || RPD: 6	LCS-1	96%
Surrogate aaa-Trifluorotoluene	%		GC.14	66	14735-1	66 || 97 || RPD: 38	LCS-1	105%
Surrogate Toluene-d_8	%		GC.14	90	14735-1	90 || 107 || RPD: 17	LCS-1	102%
Surrogate 4-Bromofluorobenzene	%		GC.14	74	14735-1	74 || 76 || RPD: 3	LCS-1	74%

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			31/10/07	14735-1	31/10/2007 || 31/10/2007	LCS-1	31/10/07%
Date analysed	-			31/10/07	14735-1	31/10/2007 || 31/10/2007	LCS-1	31/10/07%
vTPH C_6 - C_9	mg/kg	25	GC.16	<25	14735-1	<25 || <25	LCS-1	60%
Benzene	mg/kg	0.5	GC.14	<0.5	14735-1	<0.5 || <0.5	LCS-1	76%
Toluene	mg/kg	0.5	GC.14	<0.5	14735-1	<0.5 || <0.5	LCS-1	74%
Ethylbenzene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	LCS-1	69%
m + p-Xylene	mg/kg	2	GC.14	<2.0	14735-1	<2.0 || <2.0	LCS-1	74%
o-Xylene	mg/kg	1	GC.14	<1.0	14735-1	<1.0 || <1.0	LCS-1	66%
Surrogate aaa-Trifluorotoluene	%		GC.14	92	14735-1	66 || 97 || RPD: 38	LCS-1	94%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			31/10/07	[NT]	[NT]	LCS-2	31/10/07%
Date analysed	-			31/10/07	[NT]	[NT]	LCS-2	31/10/07%
TPH C_{10} - C_{14}	mg/kg	50	GC.3	<50	[NT]	[NT]	LCS-2	94%
TPH C_{15} - C_{28}	mg/kg	100	GC.3	<100	[NT]	[NT]	LCS-2	90%
TPH C_{29} - C_{36}	mg/kg	100	GC.3	<100	[NT]	[NT]	LCS-2	93%
Surrogate o-Terphenyl	%		GC.3	93	[NT]	[NT]	LCS-2	97%
QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			31/10/07	[NT]	[NT]	LCS-3	31/10/07%
Date analysed	-			31/10/07	[NT]	[NT]	LCS-3	31/10/07%
Naphthalene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	LCS-3	85%
Acenaphthylene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	LCS-3	96%
Phenanthrene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	LCS-3	106%
Anthracene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	LCS-3	107%
Pyrene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	LCS-3	108%
Benzo(a)anthracene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	LCS-3	108%
Benzo(b,k)fluoranthene	mg/kg	0.2	GC.12	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	GC.12	<0.05	[NT]	[NT]	LCS-3	106%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Benzo(g,h,i)perylene	mg/kg	0.1	GC.12	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		GC.12	118	[NT]	[NT]	LCS-3	106%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date digested	-			31/10/07	[NT]	[NT]	LCS-3	31/10/07%
Date analysed	-			01/11/07	[NT]	[NT]	LCS-3	01/11/07%
Arsenic	mg/kg	4	Metals.20 ICP-AES	<4.0	[NT]	[NT]	LCS-3	102%
Cadmium	mg/kg	1	Metals.20 ICP-AES	<1.0	[NT]	[NT]	LCS-3	103%
Chromium	mg/kg	1	Metals.20 ICP-AES	<1.0	[NT]	[NT]	LCS-3	104%
Copper	mg/kg	1	Metals.20 ICP-AES	<1.0	[NT]	[NT]	LCS-3	105%
Lead	mg/kg	1	Metals.20 ICP-AES	<1.0	[NT]	[NT]	LCS-3	102%
Mercury	mg/kg	0.1	Metals.21 CV-AAS	<0.10	[NT]	[NT]	LCS-3	104%
Nickel	mg/kg	1	Metals.20 ICP-AES	<1.0	[NT]	[NT]	LCS-3	103%
Zinc	mg/kg	1	Metals.20 ICP-AES	<1.0	[NT]	[NT]	LCS-3	105%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD
Date prepared	-			31/10/07	14735-1	31/10/2007 || 31/10/2007
Date analysed	-			31/10/07	14735-1	31/10/2007 || 31/10/2007
Moisture	%	0.1	LAB.8	<0.10	14735-1	33 || 33 || RPD: 0

Report Comments:

Total Petroleum Hydrocarbons in soil:# Percent recovery not available due to significant background levels of analyte in the sample.

Asbestos analysed by: Not applicable for this job

INS: Insufficient sample for this test	NT: Not tested	PQL: Practical Quantitation Limit
RPD: Relative Percent Difference	NA: Test not required	LCS: Laboratory Control Sample
NR: Not requested	<: Less than	>: Greater than

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:

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable. Surrogates: Generally 60-140% is acceptable.

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Concord West
Project No: 45146A Sampler: DW
Project Mgr: LR Mob. Phone: 0437396499
Email: walker.d@douglaspartners.com.au
Date Required: Standard T/A Lab Quote No.

To: Envirolab Services
54 Frenchs Rd, Willoughby NSW 2068
Attn: Tania Notaras
Phone: 02 9958 5801 Fax: 02 9958 5803
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes: Heavy Metals	TPH/ BTEX	PAH	VOC's						Notes
229/1.1-1.5	30/10/07		30/10/07		Jw	✓	✓	✓	✓						
229/0.6-1.0	30/10/07		30/10/07		Jw	✓	✓	✓							

Envirolab Services
54 Frenchs Rd
Willoughby NSW 2068
Ph: 9958 5801
Job No: 14735
Date received: 30/10/07
Received by: AH
Time: 20m
Temp: Cool/Ambient
Security: Intact/Broken/None

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: David Walker	Signed:	Date & Time: 30/10/07 9.30am	Received By: AH	Date & Time:	30/10/07
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:	