



Orchard Hills Waste and Resource Management Facility

Preliminary In-situ Waste Classification

Prepared by:

Douglas Partners Pty Ltd

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Preliminary In-situ Waste Classification

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CONTENTS

	Page
EXECUTIVE SUMMARY	1-4
1 INTRODUCTION	1-5
2 SCOPE OF WORK	1-6
3 SITE INFORMATION	1-6
4 WASTE CLASSIFICATION AND ENVIRONMENTAL ASSESSMENT CRITERIA	1-7
5 FIELD METHODOLOGY AND OBSERVATIONS	1-9
6 LABORATORY RESULTS	1-10
7 DISCUSSION AND CONCLUSION	1-10
7.1 Waste Classification	1-10
7.2 Contamination Evaluation	1-13
8 LIMITATIONS	1-13

APPENDICES

Appendix A	Figures 1, 2, 3 and A
Appendix B	Site Photographs
Appendix C	Test Bore Reports and Notes Relating to this Report
Appendix D	Laboratory Results (Tables A, B and C)
Appendix E	Laboratory Reports and Chain of Custody Documentation
Appendix F	Quality Assurance/Quality Control Procedures and Results
Appendix G	Protection of the Environment Operations (Waste) Regulation 2005

TABLES

Table 1.1	Six Step Classification for Test Bores 1-5, 14-16 and 19	1-11
Table 1.2	Six Step Classification for Test Bores 6-11, 12, 17, 18 and 20	1-11

EXECUTIVE SUMMARY

Douglas Partners Pty Ltd was engaged by R.W. Corkery & Co Pty Ltd on behalf of Dellara Pty Ltd, to undertake a preliminary *in situ* waste classification assessment of materials within the bund walls of the proposed landfill site located at Patons Lane, Orchard Hills.

The bund walls subject to waste classification assessment are situated along the north-eastern, north-western and south-western boundaries of the site.

The investigation was conducted during the period of 15-24 April 2009 and included the drilling of 20 bores, sample collection and analysis and the preparation of this report.

The subject materials were assessed in accordance with the DECC *Waste Classification Guidelines*, April 2008 (revised July 2009).

The Australian Department of Health and Ageing, *enHealth: Management of asbestos in the non-occupational environment*, 2005 and the Western Australian Department of Health, *Guidelines for the Assessment, Remediation and Management of Asbestos – Contaminated Sites in Western Australia*, May 2009 were referenced in order to establish the degree and level of asbestos contamination in the materials assessed.

For contamination evaluation purposes, the soil analytical results were also assessed against the health-based investigation levels for commercial/industrial land use (HIL Column 4, as set out in Appendix II, *Guideline for the NSW Site Auditor Scheme (2nd Edition)* 2006).

Analytical results from 60 samples indicated that, with the exception of one sample, all total and leachable contaminant concentrations were within the General Solid Waste criteria. Asbestos was found embedded in plaster fragments in one sample, slightly above the reporting limit of 0.1 g/kg at 0.42 g/kg.

Based on visual observations and the laboratory results, the materials within the perimeter bund walls were classified into three categories. The bund walls located adjacent to the northern boundary of the site (i.e. Test Bores 1 - 5 and 19) and the bund walls located at the southern west corner of the site (i.e. Test Bores 14 - 16) were classified as **General Solid Waste (non-putrescible)** as these bund walls essentially comprise 'excavated natural material' from the site itself. The materials in the vicinity of Test Bore 12, from the surface to 1.5 m depth into the bund wall were classified as **Special Waste (Asbestos)**. The materials containing building and demolition waste with asbestos fibre analysis below reporting limits (i.e. Test Bores 6 - 9, 17 and 18) and the materials located in close proximity (i.e. Test Bores 10, 11, 13 and 20) should be considered as **Possible General Solid Waste** which may contain minor traces of asbestos.

It should be noted that if detectable Asbestos-based materials are identified during future excavation works, this may change the classification of the fill material from General Solid Waste (non-putrescible) to Special Waste (Asbestos). Materials that contain asbestos (i.e. around Test Bore 12) are required to be disposed of in a landfill licensed to accept Special Waste (Asbestos). The classification of waste defined on site will allow the Proponent to either leave the materials classified as General Solid Waste (non putrescible) on site within the existing bund walls or emplace the materials on site within one of the planned emplacement cells.

1 INTRODUCTION

This report provides details of the methodology and findings of a preliminary *in situ* waste classification of materials located at the above site. The work was conducted by Douglas Partners (DP) Pty Ltd at the request of R.W. Corkery & Co Pty Ltd on behalf of Dellara Pty Ltd. It is understood that the currently non-operational Erskine Park Quarry at Orchard Hills is proposed to operate as a waste and resource management facility incorporating a non-putrescible waste recycling and reprocessing plant, along with ancillary waste emplacement, continued shale/clay extraction and site rehabilitation. For site location refer to Figure 1, Appendix A.

The objective of the investigation is to provide a waste classification and contamination assessment of the materials that have been incorporated into the perimeter bunding along the north-eastern, north-western and south-western boundaries of the site. It is further understood that the subject bund walls are to be reduced in size and the assessed material either managed *in situ* or *ex situ* on site or disposed off site depending on the outcome of the waste classification.

A report entitled *Preliminary Environmental Assessment for the Orchard Hills Waste Recycling and Management Facility* (prepared by R.W. Corkery & Co. Pty Ltd and Design Collaborative Pty Ltd, dated February 2009) was provided by the client. It was understood that the material/bund wall at the north-east corner of the site (approximate length 400 m) most likely comprises construction and demolition (C&D) waste and there is the possibility for asbestos to be present (refer to Figure A, Appendix A). It was assumed that the rest of the bunding most likely comprises 'clean material with brick capping' (approximate length 1400 m). The 'clean material' component most likely comprises clay and shale materials excavated from the area located in the north-western corner of the site.

DP inspected the site on 4 February 2009 and 24 February 2009 (J.M.Nash and J.Supree – drilling manager) to determine rig accessibility. Construction and demolition waste including bricks and concrete were noted on the surface of the subject bunding areas. Based on visual observations and the survey plan provided by the client, the average height of the bund walls was estimated to be approximately 12 - 13 m. The bunding was observed to be generally accessible for a drilling rig with the exception of some sections which required minor access works. Therefore, a backhoe was used to construct minor track works and a 4x4 truck-mounted drill rig was used for drilling and sampling purposes.

The site investigation was conducted during the period of 15 - 24 April 2009 and included the drilling of 20 bores, sample collection and analysis and the preparation of this report in general accordance with the Department of Environment and Climate Change (DECC) requirements as outlined in Section 4. It should be noted that this preliminary waste assessment provides only indicative information for disposal or on-site management purposes, but it is nevertheless considered that the investigation has covered the potential range of bund wall (waste) materials which are likely to be encountered during future deconstruction i.e. General Solid Wastes (Non-Putrescible) and Special Waste (Asbestos).

2 SCOPE OF WORK

The scope of works for the waste classification was as follows:

- Collection of samples and logging of 20 sampling locations from the subject areas;
- Screening of all samples with a photo ionisation detector (PID) to detect the presence of volatile organic compounds;
- Laboratory analysis on 60 selected samples (plus 10% QA/QC samples) at a NATA accredited analytical laboratory for a variety of common contaminants including:
 - 60 samples for Heavy Metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc);
 - 60 samples for Polycyclic Aromatic Hydrocarbons (PAHs);
 - 60 samples for Total Recoverable Hydrocarbons (TRHs);
 - 60 samples for Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX);
 - 20 samples for Polychlorinated Biphenyls (PCBs);
 - 20 samples Organochlorine Pesticides (OCPs);
 - 20 samples for Phenols;
 - 60 samples for Asbestos; and
 - 6 QA/QC samples for heavy metals and PAH.
- Toxicity Characteristic Leaching Procedure (TCLP), was undertaken on selected filling samples (5 samples for lead and 6 samples for PAH);
- It should be noted that DP collected an additional portion of each sample to allow for further testing at a later stage if required [Note: the holding times for volatiles is only 2 weeks]. Therefore, the remaining samples that were not analysed were stored for a period of two months pending the need for further analysis.
- Provision of a report generally in accordance with the DECC requirements. The report includes a waste classification and characterisation of the subject materials/filling, comments on the characteristics of the material from contamination point of view, discussion and recommendations for further investigations, if applicable.

3 SITE INFORMATION

The site is located within a rural area surrounded by grazing land, pockets of established tree canopy and low density housing. To the west of the site is land owned by the Commonwealth which is used by the Australian Defence Force. To the north and east of the site is open grazing land and rural housing. Blaxland Creek passes through the north-west boundary of the site. The land south-west of the site is occupied by facilities associated with an existing horse stud.

The site is occupied by the currently non-operational Erskine Park Quarry. Amenity bund walls with approximate total length of 1800 m and approximate heights of 9 m – 19 m are located around the perimeter of the site (refer to site photographs, Appendix B). A number of clay and shale stockpiles are also present within the site. A range of demountable office buildings and equipment facilities are situated at the south-eastern and north-western sections of the site, respectively.

The water bodies present on site are the existing quarry void, part of Blaxland Creek and the dams at the south-east, north-west and north-east sections of the site. A surface water assessment comprising the collection and analysis of surface water samples from the above water bodies was conducted by DP in March 2009 and the findings were presented in a report entitled *Surface Water Sampling and Analysis, Erskine Park Quarry, Orchard Hills*, reference number 71005.

4 WASTE CLASSIFICATION AND ENVIRONMENTAL ASSESSMENT CRITERIA

As discussed above, the material assessed is likely to be managed on site as part of the proposed waste emplacement facility or disposed off site. Therefore, the materials were assessed in accordance with the DECC *Waste Classification Guidelines* April 2008 (revised July 2009), which supersede the former guidelines i.e. *Environmental Guidelines: Assessment Classification and Management of Liquid and Non-Liquid Wastes (2004)*. According to the above guidelines General Solid Waste includes Virgin Excavated Natural Material (VENM) and Building and Demolition Waste (B & D Waste). However, it should be noted that by definition (EPA website) 'Excavated material that has been stored or processed in any way cannot be classified as VENM'. Therefore, the natural material originating on site that has been stored in the bund walls is referred as Excavated Natural Material (ENM). For consistency purposes in this report, the B & D Waste is referred as Construction and Demolition Waste (C & D Waste).

In order to characterise the materials from a contamination point of view, the analytical results were also assessed against the health-based investigation levels for commercial/industrial land use (HIL Column 4, as set out in Appendix II, *Guideline for the NSW Site Auditor Scheme (2nd Edition)* 2006)¹.

In assessing the analytical data against guideline levels for human health, the site conditions can be stated to meet the human health based guidelines if:

- the 95% Upper Confidence Limit (UCL) of the average concentrations for a data set of samples of like material complies with the adopted criteria;
- individual concentrations of analytes (non-volatile) are less than 250% of the adopted guideline value; and
- the standard deviation of the population is <50% of the guideline.

¹ Note that this report does not constitute a 'Site Contamination Assessment' as defined in the *Guidelines for Consultants Reporting on Contaminated Site* dated November 1997, or other guidelines made or endorsed under S. 105 of the Contaminated Land Management Act, 1997.

In order to establish the degree and level of asbestos contamination in soil, the following guidelines were referred to:

- Australian Department of Health and Ageing, enHealth: Management of asbestos in the non-occupational environment, 2005;
- Western Australian Department of Health, Guidelines for the Assessment, Remediation and Management of Asbestos – Contaminated Sites in Western Australia, May 2009.

The soil asbestos investigation criteria according to the WA Guidelines for the Assessment, Remediation and Management of Asbestos (considered a precursor to a national approach) are as follows:

- 0.001% w/w asbestos for FA and AF – All site uses
- 0.01% w/w asbestos for ACM – Residential use, day care centres, preschools, etc.
- 0.02% w/w asbestos for ACM – Parks, public open spaces, playing fields, etc.
- 0.04% w/w asbestos for ACM – Residential, minimal soil access.
- 0.05% w/w asbestos for ACM – Commercial/Industrial.

Where ACM (asbestos containing material) is defined as material 'in sound condition, although possibly broken or fragmented, and the asbestos is bound in a matrix; for instance, asbestos fencing or vinyl tiles. This is also restricted to material that cannot pass through a 7mm x 7mm sieve.' Fibrous asbestos (FA) is defined as 'asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure.' Asbestos fines (AF) includes 'free fibres of asbestos, small fibre bundles and also ACM fragments that pass through a 7mm x 7mm sieve.

Taking into consideration that both ACM and AF materials were detected in the soil samples collected from the site, the most conservative reporting limit of 0.01 g/kg (or 0.001% w/w) is adopted for the purposes of this study.

5 FIELD METHODOLOGY AND OBSERVATIONS

The DECC does not specify the sampling density for waste classification, however, based on related guidelines and industry practice a sampling rate of 1 sample to be collected and analysed per 25 m³ – 250 m³ is adopted depending on the volume and homogeneity of the material. Due to the large volume of the material to be assessed, DP conducted a preliminary *in situ* assessment by sampling from 20 bore locations (approximately one bore every 100 - 150 m at the brick 'capping' area and one bore every 50 m at the C&D waste area as per the supplied plan - Figure A, Appendix A).

The sampling distribution was based on anecdotal information provided by a landfill employee and from observations made during DP's site inspection. The location of individual bores was based on a loose grid pattern, where feasible, and on accessibility (for the drilling rig to the top of the bund walls). The test bores were drilled to a depth of at least 0.5 m into natural material or material which may have been reworked ENM (maximum depth of 15 m) or prior refusal. Samples were collected at various depth intervals based on observed changes in material characteristics or signs of contamination such as odour or staining, or at 1.0 m intervals where the materials were relatively homogenous. The replicate samples collected in plastic bags were allowed to equilibrate under ambient temperatures before screening for Total Photoionisable Compounds (TOPIC) using a calibrated Photoionisation Detector (PID).

It should be noted that this waste classification and material characterisation assessment provides only indicative information for disposal or on-site management purposes. A more representative validation assessment of the materials is recommended to be undertaken from an *ex situ* assessment, following or during excavation.

For the purpose of the *in situ* waste classification, twenty test bores were drilled over the accessible sections of the investigation areas. The description of the test bores are given in the log sheets (Appendix C) together with notes defining classification methods and descriptive terms. For test bore locations refer to Figure 2, Appendix A.

In general, the profile encountered in Bores 4, 5, 6, 7, 7A, 8, 9, 10, 11 and 20 confirmed the presence of substantial amount of concrete, bricks, building rubble and gravel at the north-eastern section, marked on Figure A provided by R.W. Corkery & Co Pty Ltd as 'Material Likely Containing C&D Waste', (Appendix A). The filling at this bund comprised a variety of materials such as brown silty/sandy clay and orange/red-brown mottled grey clay with less building rubble present at the southern section of the bund (Bores 12 and 13). Test Bores 6, 7, 7A and 10 were discontinued at depths of 6.5 m, 2.3 m, 0.85 m and 2.75 m, respectively, due to refusal on concrete. Hydrocarbon/organic odour was detected in Bore 7 at 0.8 m, in Bore 9 at 8.5 m, in Bore 12 at 9.5 m and in Bore 13 at 7.7 m.

The north-western bund wall (Bores 1, 2 and 3) contained a variety of materials such as grey silt and brown to orange-brown clay filling with shale and ironstone fragments. Concrete and demolition waste were not encountered in this bund wall which is consistent with the advice from R.W. Corkery & Co Pty Ltd that this bund wall was constructed from overburden when extractive operations first commenced at the quarry in 1981. Slight hydrocarbon (organic) odour was detected at 7.3 m – 8 m in Bore 1. The depth of the material within the drilled section of the bund wall varied between 5.5 m to 11.3 m.

The bund wall immediately north of the sump was very narrow and was accessible only at its eastern end, where Bore 19 was drilled. The material within this bund wall comprised grey silt material with some gravel. Again, no concrete and demolition waste were encountered.

Five bores (Bores 14, 15, 16, 17 and 18) were drilled in the south-western bund wall. This bund contained a variety of materials such as brown/black sandy clay and grey/orange/brown clay with some gravel, wood, wire and brick fragments. Organic odour was detected in Bore 14 at depths of 6 m and 9 - 10 m, in Bore 16 at 5.1 m, in Bore 17 at 8 m and 14 - 15 m and in Bore 18 at 7.5 m. Bore 18 was discontinued at 9.4 m due to refusal on wood with the second attempt discontinued at 8.7 m due to refusal possibly on concrete or a hard rock boulder. Slag fragments were encountered at a depth of 2.2 m in Bore 17.

Asbestos cement material (fibro) was not visually identified in any of the bores during fieldwork.

Free groundwater was not encountered in any of the bores during drilling.

6 LABORATORY RESULTS

Sixty-six soil samples (including 10% QA/QC samples) were selected and sent for analysis at a NATA accredited laboratory for a range of common contaminants as detailed in Section 2.

Based on the results of the first round of laboratory analysis, TCLP leachability tests were carried out on 11 selected samples with elevated concentrations of either lead or PAH.

Based on site observations, tests for putrescible waste were not considered necessary as the material comprised largely clay, shale (soil), building materials, wood and gravel with no evidence of putrescible materials observed.

The laboratory results are summarised in Table A, (Appendix D) and the laboratory reports and chain-of-custody information are presented in Appendix E.

Results of PID sample screening are shown in the Test Bore Reports in Appendix C. All PID readings were below 2 ppm which represents background conditions.

7 DISCUSSION AND CONCLUSION

7.1 Waste Classification

Classification of the material was generally conducted in accordance with the six step process as set out in the *Waste Classification Guidelines 2008* (Tables 1.1 and 1.2).

Table 1.1
Six Step Classification for Test Bores 1-5, 14-16 and 19

Step	Comments	Rationale
1. Is it special waste?	No	Waste not considered to include clinical and related materials, asbestos or tyres.
2. Is it liquid waste?	No	Waste composed of soil, building materials, wood and gravel (i.e. no liquids).
3. Is the waste "pre-classified"?	No	Filling material is not pre-classified.
4. Does the Waste have hazardous waste characteristics	No	Material not observed to/ or considered at risk to contain explosives, gases, flammable solids, oxidising agents, organic peroxides, toxic substances or corrosive substances, have pH values within 2 to 12.5, material not observed to contain coal tar, batteries, lead paint or dangerous goods containers.
5. Chemical Assessment	Conducted	Refer to Table A.
6. Is the Waste Putrescible?	No	All observed components of filling comprised materials pre-classified as non-putrescible (i.e. soil, building and demolition material)

Table 1.2
Six Step Classification for Test Bores 6-11, 12, 17, 18 and 20

Step	Comments	Rationale
1. Is it special waste?	Yes	Waste considered likely to include asbestos. Test bores 10, 11, 13 and 20 are likely to include asbestos since these bores are located in the vicinity of bores where asbestos was detected.
2. Is it liquid waste?	No	Waste composed of soil, building materials, wood and gravel (i.e. no liquids).
3. Is the waste "pre-classified"?	No	Filling material is not pre-classified
4. Does the Waste have hazardous waste characteristics	No	Waste not observed to/ or considered at risk to contain explosives, gases, flammable solids, oxidising agents, organic peroxides, toxic substances or corrosive substances, have pH values within 2 to 12.5, waste not observed to contain coal tar, batteries, lead paint or dangerous goods containers.
5. Chemical Assessment	Conducted	Refer to Table A.
6. Is the Waste Putrescible?	No	All observed components of filling composed of materials pre-classified as non-putrescible (i.e. soil, building and demolition waste).

All recorded total and TCLP concentrations were within the General Solid Waste criteria.

Asbestos was found embedded in plaster² fragments in sample 12/0-0.3, slightly above the reporting limit of 0.1 g/kg at 0.42 g/kg. Asbestos was also detected, but below the reporting limit, in samples 6/0-0.5, 7/0.8-1, 8/0-1, 9/8.5-9, 17/2.0 and 18/4.9-5.0. Test bores 6, 7, 8, 9 and 12 are located in the north eastern bund where construction and demolition materials were identified. The detection of asbestos may be associated with the presence of construction and demolition materials.

Based on the above information and the laboratory results, the materials within the perimeter bund walls is provisionally classified as follows:

² A small piece of plaster was noticed by the laboratory, however, plaster was not observed in the filling material during fieldwork as plaster fragments may have been too small to be seen with the naked eye.

- **General Solid Waste (non-putrescible)** – The bund walls located adjacent to the northern boundary of the site (i.e. Test Bores 1-5 and 19) and bund walls located at the southern west corner of the site (i.e. Test Bores 14-16) - these bund walls are classified as General Solid Waste (non-putrescible) provided the material is not cross-contaminated/ mixed with other non-reported material. It should be noted, however, that the current assessment provides only indicative information and as such that the building rubble noted in Test Bores 4, 5, 15 and 16 may be a possible source of asbestos fibres and/or fragments in similar materials (not tested). It is therefore recommended that during any excavation works in filling materials containing construction and demolition waste should be managed in a manner which assumes that asbestos may be present until cleared through testing i.e. in compliance with clause 42, part 3 c) and d) of the *Protection of the Environment Operations (Waste) Regulation 2005*, Appendix G. The requirements of the regulation state that 'asbestos waste must be transported in a covered, leak-proof vehicle' and 'when unloading and disposing of asbestos waste at a landfill site, the waste must be unloaded and disposed of in such a manner as to prevent the generation of dust or the stirring up of dust', which can be achieved by the application of a water spray system.
- **Special Waste (Asbestos)** – Asbestos was detected in the C&D waste retrieved from a 0.3 m section at the top of Test Bore 12. Based on the bore log record, the C&D waste material extends from the surface to 1.5 m into the bund wall. This asbestos impacted waste is suitable for disposal to a landfill licensed by NSW DECC to accept Special Waste (Asbestos), provided the material is not cross-contaminated/ mixed with other non-reported material. However, the horizontal and lateral extent of asbestos contamination is unclear at this stage. It should be noted that the depiction of the Special Waste (Asbestos) materials on Figure 3 is indicative only.

As a general rule, on delivery of any filling/material to an off-site landfill facility, the material should be checked to ensure that they match the above descriptions and contain no cross contamination, such as asbestos-containing material. Any material exhibiting obvious signs of cross-contamination from other sources or materials not described above should be stockpiled and assessed separately.

- Until further asbestos investigations are undertaken, the fill layers containing construction waste with asbestos analysis below reporting limits i.e. in Test Bores 6 - 9, 17 and 18 should be considered as **Possible General Solid Waste** which may contain minor traces of asbestos and is therefore provisionally suitable for retention on site, provided the material is not cross-contaminated/ mixed with other non-reported material. As Test Bores 10, 11, 13 and 20 are located in close proximity to Test Bores 6-9, 12, 17 and 18, the materials should be considered as **Possible General Solid Waste** which may contain minor traces of asbestos and would require further investigations to determine the extent of asbestos contamination in the filling. As with all General Solid Waste materials, it is recommended that during excavation works any filling materials containing construction and demolition waste should be managed in a manner that assumes that asbestos is present unless proven otherwise i.e. in compliance with clause 42, part 3 c) and d) of the *Protection of the Environment Operations (Waste) Regulation 2005*.

In this regard, it should be noted that there was a significant amount of building rubble present in the materials in some sections of the perimeter bund walls on site which may potentially contain fragments of fibrous cement. If asbestos-based materials are identified during excavation, this may change the classification of the fill materials from General Solid Waste (non-putrescible) to Special Waste (Asbestos). Materials containing asbestos are required to be disposed to a landfill licensed to accept Special Waste (Asbestos). In any event, further investigation is recommended for any potential asbestos-containing zones in the bund walls where the detected level of asbestos fibres was below the reporting limit.

Another option for the materials management is to leave the bund walls on-site subject to the proviso that suitable environmental controls are applied in accordance with the *Protection of the Environment Operations (Waste) Regulation 2005*. The regulation states that asbestos waste (at a landfill site) 'must be covered with virgin excavated material or other material, as provided in the facility's environmental protection licence, to a depth of at least 1 metre (in case of bonded asbestos waste or asbestos contaminated soils) or 3 metres (in the case of friable asbestos material) beneath the final land surface of the landfill site'. It should also be noted that clause 42 (5) states that it is not permissible that 'asbestos waste in any form to be re-used or recycled'.

The approximate vertical distribution of the materials in the bund walls as identified on site is shown on Figure 3, Appendix A. It should be noted that the depiction of the materials on Figure 3 is indicative only. The estimated maximum and minimum volumes of the materials is shown in Table B and C, Appendix D.

7.2 Contamination Evaluation

In general, the contaminants analysed met the Column 4 HILs with the exception of sample 8/4.7-5 for PAH at 102.3 mg/kg which exceeded the published guideline level of 100 mg/kg and sample 11/6.8-7 for benzo(a)pyrene (5.6 mg/kg vs. a guideline of 0.8 mg/kg). In addition, samples 8/4.7-5 and 11/6.8-7 exceeded the Column 4 HIL for TPH C10-C36 of 1000 mg/kg at 1440 mg/kg and 1030 mg/kg respectively. It should be noted that these exceedances were not at hotspot levels (2.5 x HIL), and statistically these minor exceedances of the HIL are considered insignificant. This conclusion was confirmed by the PID results which were below the adopted trigger level of 50 ppm indicating that significant amount of volatile organic compounds was not detected in the samples collected.

From a contamination evaluation perspective, the trace asbestos found in the samples is considered insignificant in the context of the proposed commercial/industrial land use.

8 LIMITATIONS

The scope of the material classification and consulting services undertaken by DP were limited to those outlined in the DP proposal dated 26 February 2009.

DP's assessment is necessarily based on the result of limited site investigations and sample testing. Neither DP, nor any other reputable consultant, can provide unqualified warranties nor does DP assume any liability for site conditions not observed, or accessible during the time of the investigations.

Despite all reasonable care and diligence, the materials encountered and concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. In addition, site characteristics may change at any time in response to variations in natural conditions, chemical reactions and other events, e.g. groundwater movement and or spillages of contaminating substances. These changes may occur subsequent to DP's investigations and assessment.

This report and associated documentation and the information herein have been prepared solely for the use of R.W. Corkery & Co Pty Ltd, Dellara Pty Ltd and interested parties at the time and is valid (for the purposes of excavation and relocation/transportation of materials) for a period of twelve months only from the date of issue. Any other reliance assumed by third parties on this report shall be at such parties' own risk. Any ensuing liability resulting from use of the report by third parties cannot be transferred to DP.

Please note that Part 5.6, Section 143 of the Protection of the Environment Operations (POEO) Act 1997 states that is an offence for waste to be transported to a place that cannot lawfully be used as a facility to accept that waste. It is the duty of the owner and transporter of the waste to ensure that the waste is disposed of appropriately. DP accepts no liability for the unlawful disposal of waste materials from any site. DP accepts no responsibility for the material tracking, loading, management, transport or disposal of waste from the site. Before disposal of the material to a licensed landfill is undertaken, the waste producer will be required to obtain prior consent from the landfill.

Yours faithfully

DOUGLAS PARTNER PTY LTD

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APPENDICES

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Note: Appendices marked * are not included in the hard copy version but are included in full on the project CD.

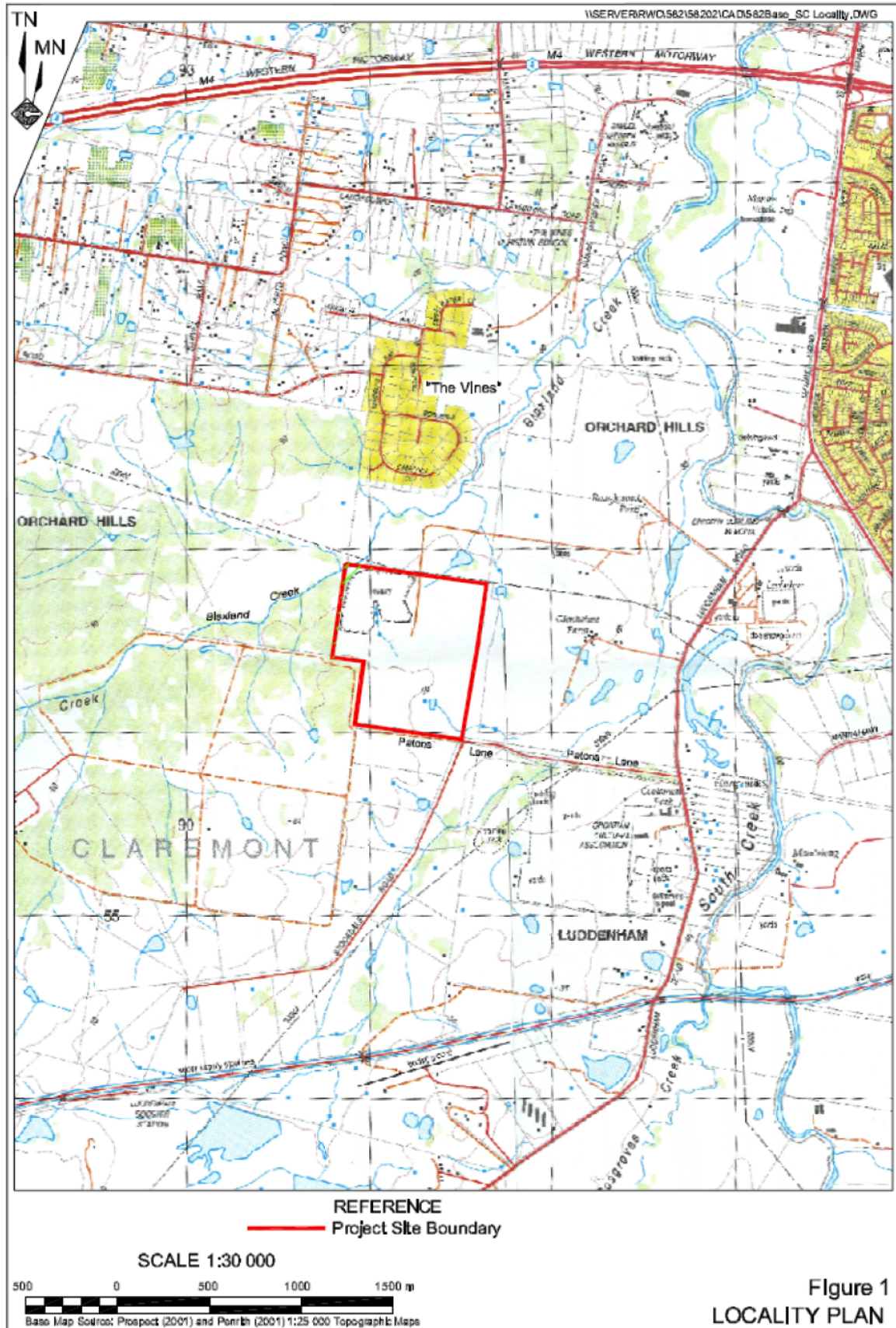
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Appendix A

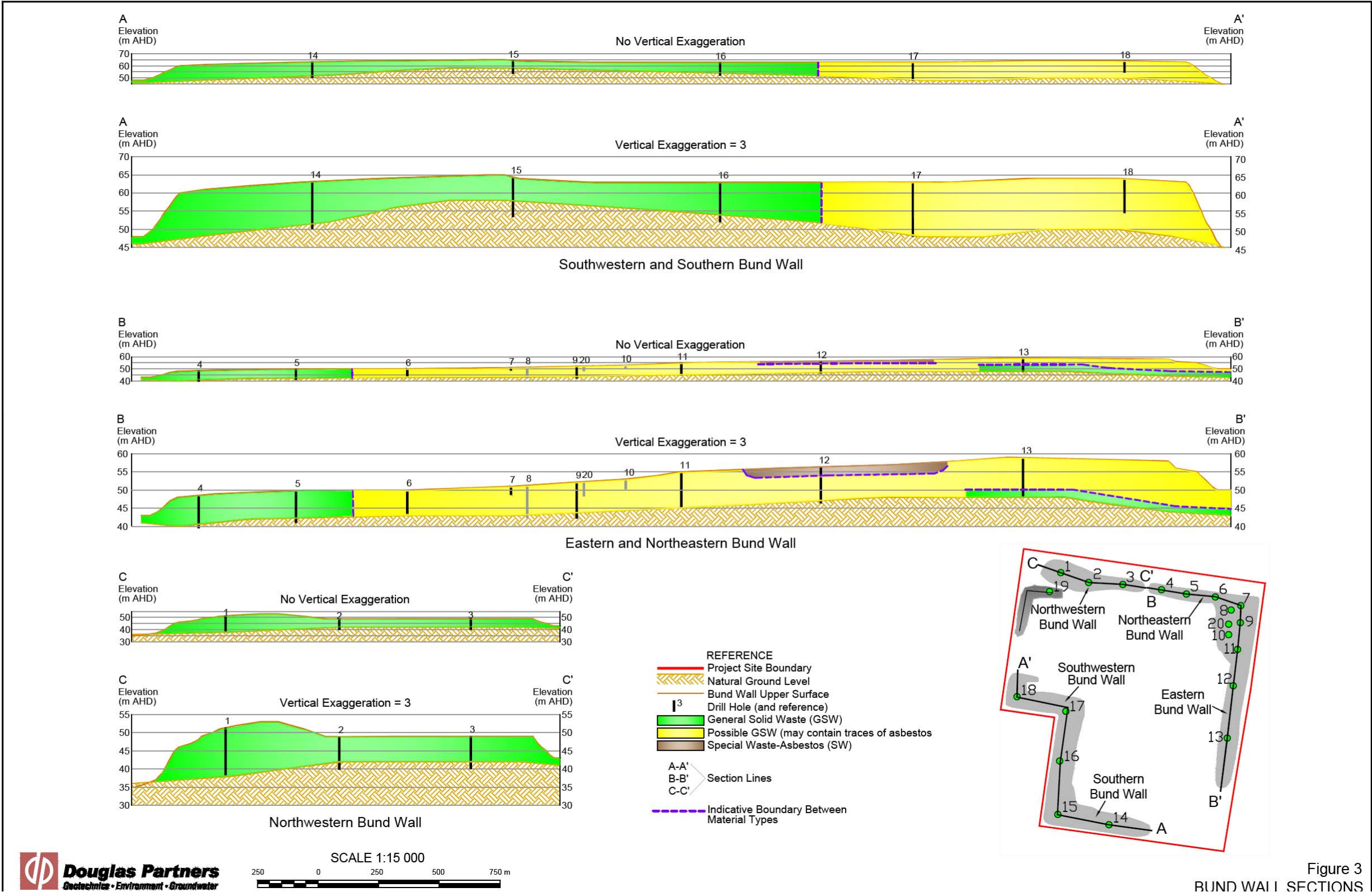
Figures 1, 2, 3 and A

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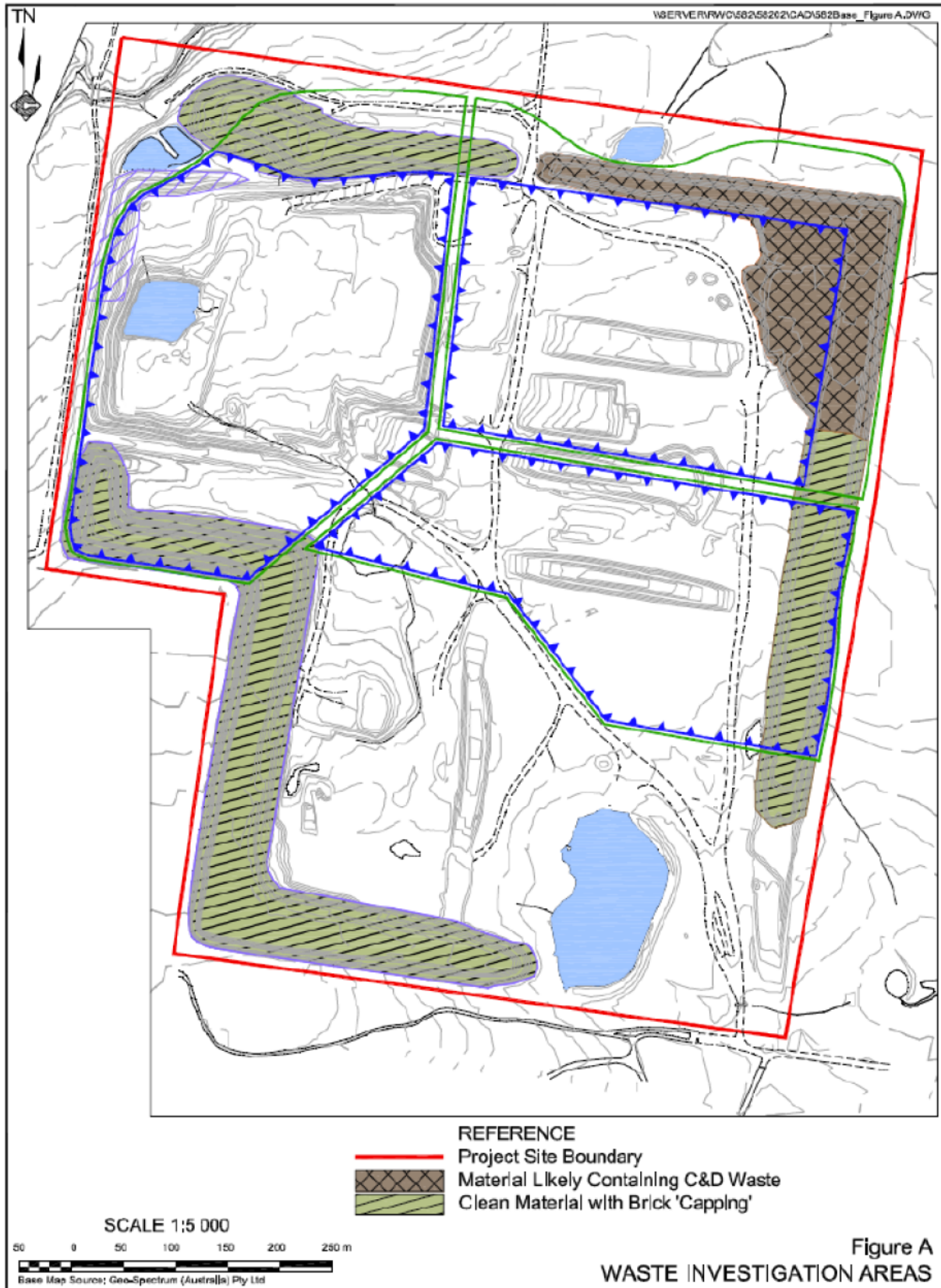
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Appendix B

Site Photographs

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Photo 1: General view of the south-western bund wall



Photo 2: General view of the south-eastern bund wall

Material Classification Patons Lane, Orchard Hills	Project 71102	May 2009	Plate 1
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Photo 3: General view of the north-western bund wall



Photo 4: General view of the bund wall north-west of the void

Material Classification Patons Lane, Orchard Hills	Project 71102	May 2009	Plate 2
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Appendix C

Test Bore Reports and Notes Relating to this Report

(No. of pages excluding this page = 32)

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GRAPHIC SYMBOLS FOR SOIL & ROCK

SOIL AND OTHER MATERIALS ①

	BITUMINOUS CONCRETE
	CONCRETE
	TOPSOIL
	FILLING
	PEAT
	CLAY
	SILTY CLAY
	SILT
	SANDY CLAY
	GRAVELLY CLAY
	SHALY CLAY
	CLAYEY SILT
	SANDY SILT
	SAND
	CLAYEY SAND
	SILTY SAND
	GRAVEL
	SANDY GRAVEL
	COBBLES/BOULDER
	TALUS

SEDIMENTARY ROCK

	BOULDER CONGLOMERATE
	CONGLOMERATE
	CONGLOMERATIC SANDSTONE
	SANDSTONE FINE GRAINED
	SANDSTONE COARSE GRAINED
	SILTSTONE
	LAMINITE
	MUDSTONE, CLAYSTONE, SHALE
	COAL
	LIMESTONE

SEAMS

	SEAM >10mm		SEAM <10mm
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METAMORPHIC ROCK

	SLATE, PHYLLITE, SCHIST
	GNEISS
	QUARTZITE

IGNEOUS ROCK

	GRANITE
	DOLERITE, BASALT
	TUFF
	PORPHYRY

① As Amended August 2009 For the Purpose of this Report



Douglas Partners
 Geotechnics • Environment • Groundwater

BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 1
PROJECT No: 71102
DATE: 16-17 Apr 09
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILLING - grey silt with gravel		A	0.0		PID<1ppm			
		0.6-0.75m: higher strength (possibly shale fragments)		A	0.5					
				A	0.75		PID<1ppm			
		1.4-1.65m: higher strength (possibly shale fragments)			1.0					
					1.65		PID<1ppm			
		FILLING - orange-brown mottled grey/red, clay with some ironstone nodules and gravel		A	2.0					
		2.2-2.25m: higher strength (possibly shale fragments)			2.5		PID<1ppm			
		- same as above but grey mottled red/orange-brown clay			3.0					
		3.5-3.6m: higher strength (possibly shale fragments)			3.5		PID<1ppm			
		FILLING - grey silt with gravel (from weathered shale-rock flour)		A	4.0		PID<1ppm			
		4.23-4.7m: higher strength (possibly shale fragments)			4.5					
				A	5.0		PID<1ppm			
		FILLING - brown clay			5.3					
		FILLING - grey silt (from weathered shale-rock flour), with some shale fragments		A	6.0		PID<1ppm			
					6.5					
		FILLING - orange/brown mottled red-brown, clay with some ironstone fragments/nodules (possibly excavated natural material)		A	7.0		PID<1ppm			
		7.3m: orange brown mottled grey/red-brown clay		A**	7.3		PID<1ppm			
					8.0					
					8.5					
		FILLING - orange-brown mottled yellow-brown/grey (possibly excavated natural material)		A	9.0		PID<1ppm			
					9.5					
				A			PID<1ppm			

RIG: 4x4 truck-mounted drill rig

DRILLER: L Cooper

LOGGED: W Yuan

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BD3/70409 collected. **Slight hydrocarbon odour
^Approximate levels shown on Figure 3, Appendix A

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 (50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	D	Water seep
		±	Water level

CHECKED
Initials:
Date:



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Part 1: Preliminary In-situ Waste Classification
Report No. 582/04

DELLARA PTY LTD
*Orchard Hills Waste and
Resource Management Facility*

BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 1
PROJECT No: 71102
DATE: 16-17 Apr 09
SHEET 2 OF 2

[illegible]

RIG: 4x4 truck-mounted drill rig **DRILLER:** L. Cooper

LOGGED: W Yuan

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BD3/70409 collected. **Slight hydrocarbon odour

^Approximate levels shown on Figure 3, Appendix A

SAMPLING & IN SITU TESTING LEGEND

SAMPLING & IN SITU TESTING LEGEND	
A	Auger sample
D	Disturbed sample
B	Bulk sample
U	Tube sample (x min dia.)
W	Water sample
C	Core drilling
pp	Pocket penetrometer (kPa)
PID	Photo ionisation detector
S	Standard penetration test
PL	Point load strength ts(50) MPa
V	Shear Vane (kPa)
Δ	Water seep
W	Water level

CHECKED
Initials:
Date:



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Geotechnics • Environment • Groundwater

BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 2
PROJECT No: 71102
DATE: 17 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
1		FILLING - grey silty clay with gravel		A	0.0		PID<1ppm			
	A			0.5		PID<1ppm				
				1.0						
	A			1.5		PID<1ppm				
				2.0						
2					2.5					
	3	FILLING - orange-brown, clay with some ironstone cobbles/gravel		A	2.8		PID<1ppm			
		FILLING - brown silty clay with gravel		A	3.0		PID<1ppm			
	4					4.0				
5		FILLING - orange-brown, clay with some ironstone nodules		A	4.5		PID<1ppm			
					5.0					
					5.7		PID<1ppm			
6						6.0				
	7	FILLING - higher strength (possibly shale/ironstone boulders)			6.5					
					6.8					
		FILLING - grey clay with gravel, wet		A	6.8		PID<1ppm			
	8					7.0				
9		CLAY - red-brown mottled orange-brown clay with some ironstone gravel		A	7.5		PID<1ppm			
					8.0					
					8.5					
9		SHALY CLAY - grey shaly clay		A			PID<1ppm			
		Bore discontinued at 9.0m - target depth reached			9.0					

RIG: 4x4 truck-mounted drill rig
DRILLER: L Cooper
TYPE OF BORING: 100mm diameter solid flight auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS: ^Approximate levels shown on Figure 3, Appendix A

LOGGED: W Yuan

CASING: Uncased

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 (50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	D	Water seep
		W	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 3
PROJECT No: 71102
DATE: 17 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILLING - grey, silty (from weathered shale-rock flour) with some shale gravel		A	0.0		PID<1ppm			
		0.6-0.8m: higher strength (possibly shale boulder)			0.5					
		1.0-1.3m: higher strength (possibly shale boulder)		A	0.8		PID<1ppm			
					1.0					
					1.8		PID<1ppm			
					2.0					
					2.7		PID<1ppm			
					3.0					
					3.5		PID<1ppm			
					4.0					
					4.5		PID<1ppm			
		FILLING - orange-brown clay, with some shale gravel, wet (possibly excavated natural material)		A	4.5		PID<1ppm			
					5.0					
		SHALY CLAY - orange-brown mottled red/yellow-brown, shaly clay with some ironstone cobbles/gravel			6.0					
					6.6		PID<1ppm			
					7.0					
					7.8		PID<1ppm			
		7.8m: as above with ironstone bands			8.0		PID<1ppm			
					8.5					
					8.8		PID<1ppm			
		Bore discontinued at 9.0m - target depth reached			9.0					

RIG: 4x4 truck-mounted drill rig **DRILLER:** L Cooper

LOGGED: W Yuan

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: ^Approximate levels shown on Figure 3, Appendix A

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
S	Bulk sample	S	Standard penetration test
U	Tube sample (x mm dia.)	PL	Point load strength ls(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Cone drilling	W	Water seep
		z	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 4
PROJECT No: 71102
DATE: 24 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILLING - brown silty clay with aggregate/gravel		A	0.0		PID<1ppm			
				A	0.5		PID<1ppm			
1				A	1.0					
		1.5m: as above but with building rubble (tile fragments)		A	1.5		PID<1ppm			
				A	2.0					
2				A	2.5		PID<1ppm			
		FILLING - orange-brown mottled red-brown, clay with ironstone nodules and aggregate		A	3.0		PID<1ppm			
2.5				A	3.5					
3		FILLING - brown clay with some aggregate		A	4.0		PID<1ppm			
3.5				A	4.5		PID<1ppm			
4		FILLING - brown silty clay, with building rubble (tile fragments) and aggregate		A	5.0		PID<1ppm			
4.5				A	5.5		PID<1ppm			
5		FILLING - brown clay, with ironstone gravel and aggregate		A	6.0		PID<1ppm			
5.5				A	6.5		PID<1ppm			
6		FILLING - brown sandy/silty clay, with aggregate and tile fragments, moist		A	7.0		PID<1ppm			
6.5				A	8.3		PID<1ppm			
7		CLAY - orange-brown clay		A	9.0					
8										
8.3										
9		Bore discontinued at 9.0m - target depth reached								

RIG: 4x4 truck-mounted drill rig

DRILLER: K Kerney-Ennis

LOGGED: W Yuan

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: ^Approximate levels shown on Figure 3, Appendix A

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	D	Water seep
		F	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 5
PROJECT No: 71102
DATE: 24 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILLING - brown silty clay		A	0.0		PID<1ppm			
		0.5m: red-brown mottled grey clay with aggregate		A	0.5		PID<1ppm			
1					1.0					1
		1.5-1.7m: higher strength (possibly concrete)		A	1.7		PID<1ppm			
2	2.0	FILLING - brown silty clay with aggregate/gravel			2.0					2
		2.5m: becoming grey silty clay with aggregate		A	2.5		PID<1ppm			
3					3.0					3
	3.5	FILLING - brown silty clay, with some aggregate and ironstone gravel		A	3.5		PID<1ppm			
4					4.0					4
		4.6-4.8m: higher strength (possibly concrete)		A	4.5		PID<1ppm			
5		4.8m: as above with concrete fragments		A	5.0		PID<1ppm			5
				A	5.5		PID<1ppm			
6					6.0					6
				A	6.5		PID<1ppm			
7					7.0					7
8										8
	8.6	CLAY - red-brown mottled orange-brown clay with ironstone nodules		A	8.6		PID<1ppm			
9	9.0	Bore discontinued at 9.0m - target depth reached			9.0					9

RIG: 4x4 truck-mounted drill rig **DRILLER:** K Kerney-Ennis

LOGGED: W Yuan

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

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	Tube sample (x mm dia.)	PL	Point load strength (s(50) MPa)
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	Δ	Water seep
		≡	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 6
PROJECT No: 71102
DATE: 16 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing			Water	Well Construction Details	
				Type	Depth	Sample			
		FILLING - brown, silty clay with some gravel		A*	0.0		PID<1ppm		
				A	0.6		PID<1ppm		
1	1.0	FILLING - orange-brown, clay with some gravel			1.0				
		1.5m: orange-brown mottled red-brown, clay with gravel		A	1.5		PID<1ppm		
2	2.0				2.0				
	2.5	FILLING - brown, silty clay with some gravel		A	2.5		PID<1ppm		
3	3.0	3.1-3.25m: higher strength (possibly gravel)			3.0				
				A	3.5		PID<1ppm		
4	4.0				4.0				
		4.5m: brown clay with some gravel		A	4.5		PID<1ppm		
5	5.0				5.0				
				A	5.5		PID<1ppm		
6	6.0				6.0				
	6.5	Bore discontinued at 6.5m - refusal on concrete		A	6.5		(bag sample only)		
7	7.0								
8	8.0								
9	9.0								

RIG: 4x4 truck-mounted drill rig **DRILLER:** L Cooper

LOGGED: W Yuan

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BD2/160409 collected
^Approximate levels shown on Figure 3, Appendix A

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	D	Water seep
		↑	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 7
PROJECT No: 71102
DATE: 16 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILLING - brown silty clay, with some building rubble (tiles), gravel and rootlets		A	0.0		PID<1ppm			
		0.6m: higher strength (possibly bricks)			0.5					
	0.8	FILLING - poorly compacted, fine grained, brown silty clay with some building rubble and gravel, strong odour		A	0.85		PID<1ppm			
	1				1.0					
					1.5					
				A	2.0		PID<1ppm			
	2	2.3m: higher strength (possibly concrete)								
	2.3	Bore discontinued at 2.3m - refusal on possible concrete, moved to borehole 7A								
	3									
	4									
	5									
	6									
	7									
	8									
	9									

RIG: 4x4 truck-mounted drill rig **DRILLER:** L Cooper
TYPE OF BORING: 100mm diameter solid flight auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS: ^Approximate levels shown on Figure 3, Appendix A

LOGGED: W Yuan

CASING: Uncased

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 (50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	Δ	Water seep
		Σ	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 7A
PROJECT No: 71102
DATE: 16 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details
				Type	Depth	Sample	Results & Comments		
	0.1	FILLING - brown silty/sandy clay with gravel, building rubble (concrete, tiles) and roots							
		FILLING - red-brown, clay with gravel and building rubble (concrete, tiles)			0.5		PID<1ppm		
	0.85	0.85m: higher strength (possibly concrete)		A					
	1	Bore discontinued at 0.85m - refusal on concrete			0.85				
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								

RIG: 4x4 truck-mounted drill rig DRILLER: L Cooper
TYPE OF BORING: 100mm diameter solid flight auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS: ^Approximate levels shown on Figure 3, Appendix A

LOGGED: W Yuan

CASING: Uncased

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	D	Water seep
		W	Water level

CHECKED	
Initials:	
Date:	



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 8
PROJECT No: 71102
DATE: 16 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing			Water	Well Construction Details	
				Type	Depth	Results & Comments			
		FILLING - brown silty clay with some plastic, gravel, building rubble (tiles), rootlets		A	0.0	PID<1ppm			
1	1.0								
		1.6-1.7m: higher strength (possibly gravel/concrete)		A	1.7	PID<1ppm			
2	2.0	1.7m: trace of glass							
		2.0m: trace of concrete		A	2.0	PID<1ppm			
3	3.0								
		3.5-3.6m: higher strength (possibly gravel/concrete)		A	3.6	PID<1ppm			
4	4.0	3.7m: higher strength							
4.7	4.7			A	4.7	PID<1ppm			
5	5.0	FILLING - yellow-brown, sandy/silty clay with some gravel, rootlets and building rubble (concrete and tiles)							
6	6.0			A	6.0	PID<1ppm			
		FILLING - yellow-brown, sand with rootlets, wet							
7	7.0			A	7.0	PID<1ppm			
		CLAY - red-brown clay, with some ironstone nodules							
8	8.0			A	8.0	PID<1ppm			
		8.5m: becoming grey mottled red-brown clay		A	8.5	PID<1ppm			
9	9.0	Bore discontinued at 9.0m - target depth reached							

RIG: 4x4 truck-mounted drill rig **DRILLER:** L Cooper

LOGGED: W Yuan

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: ^Approximate levels shown on Figure 3, Appendix A

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	D	Water seep
		W	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 9
PROJECT No: 71102
DATE: 23 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILLING - brown silty clay with trace of aggregate, ironstone gravel, rubble and plastic		A	0.0		PID=1ppm			
		0.5m: trace of nails, sand/limestone fragments		A	0.5		PID=1ppm			
					1.0					
					1.5					
		FILLING - red-brown, silty clay with trace of concrete fragments, paint, aggregate, tile fragments and timber		A	1.5		PID=1ppm			
					2.0					
					2.4					
		FILLING - black silty clay with trace of tile fragments, aggregate and timber		A	2.4		PID=1ppm			
					3.0					
					3.5					
		3.5m: with trace of plastic, glass		A	3.5		PID<1ppm			
					4.0					
					4.5					
		FILLING - orange-brown clay with some plastic, building rubble		A	4.5		PID<1ppm			
					5.0					
					5.5					
		FILLING - brown silty/sandy clay with trace of tile fragments, rootlets and ironstone gravel		A	5.5		PID=1ppm			
					6.0					
					6.5					
		FILLING - brown clay with some tile, concrete fragments, aggregate and ironstone gravel		A	6.5		PID<1ppm			
					7.0					
					7.5					
		FILLING - dark brown/black, peaty clay with tile fragments and ironstone gravel		A	7.5		PID=1ppm			
					8.0					
					8.5					
		FILLING - dark brown/black, peaty clay with aggregate (hydrocarbon odour), wet		A	8.5		PID<1ppm			
					9.0					
					9.2					
		CLAY - red-brown mottled orange-brown/grey clay		A	9.2					
					9.5					
					10.0		PID<1ppm			

Bore discontinued at 10.0m - target depth reached

RIG: 4x4 truck-mounted drill rig DRILLER: K Kerney-Ennis

LOGGED: W Yuan

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: ^Approximate levels shown on Figure 3, Appendix A

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 (50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	>	Water seep
		#	Water level

CHECKED
Initials:
Date:



Douglas Partners
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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 10
PROJECT No: 71102
DATE: 15 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILLING - brown sandy clay with some gravel and bricks, ceramic, sandstone, glass, plastic fragments		A*	0.5		PID<1ppm			
	1			A	1.0		PID<1ppm			
	2			A	2.0		PID<1ppm			
	2.75	Bore discontinued at 2.75m - refusal on concrete								
	3									
	4									
	5									
	6									
	7									
	8									
	9									

RIG: 4x4 truck-mounted drill rig **DRILLER:** L Cooper

LOGGED: G Nikolaeva

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BDI/150409 collected
^Approximate levels shown on Figure 3, Appendix A

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 ₁ Tube sample (x mm dia.)	PL Point load strength Is(50) MPa		
W Water sample	V Shear Vane (kPa)		
C Core drilling	Δ Water seep	W Water level	

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 11
PROJECT No: 71102
DATE: 23 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing			Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments		
		FILLING - brown silty clay with trace of glass, plastic then aggregate		A	0.0		PID<1ppm		
				A	0.5		PID<1ppm		
1					1.0				
	1.5	FILLING - orange-brown, clay with ironstone gravel		A	1.5		PID<1ppm		
2					2.0				
	2.5m	as above with some tile fragments and aggregate		A	2.5		PID<1ppm		
3					3.0				
	3.5	FILLING - grey shaly clay with some shale fragments		A	3.5		PID<1ppm		
4					4.0				
	4.5m	trace of glass, tiles and ironstone gravel		A	4.5		PID<1ppm		
5					5.0				
	5.5	FILLING - red-brown silty clay with some ironstone gravel		A	5.5		PID<1ppm		
6					6.0				
	6.7-6.8m	higher strength (possibly roof tiles)			6.8				
7		FILLING - dark brown silty clay with some aggregate, tile fragments and trace of aluminium scraps and ironstone gravel		A	7.0		PID<1ppm		
	7.5m	as above but with rootlets		A	7.5		PID=2ppm		
8					8.0				
	8.6	FILLING - brown clay with some rootlets and dark brown/black peaty clay with trace of steel scraps, wires, aggregate and tile fragments		A	8.6		PID<1ppm		
9					9.0				
	9.3	CLAY - orange-brown mottled grey/red-brown clay		A	9.3		PID<1ppm		
10	10.0				10.0				

Bore discontinued at 10.0m - target depth reached
RIG: 4x4 truck-mounted drill rig DRILLER: K Kerney-Ennis
TYPE OF BORING: 100mm diameter solid flight auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS: ^Approximate levels shown on Figure 3, Appendix A

LOGGED: W Yuan

CASING: Uncased

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 (x50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep
		■	Water level

CHECKED	
Initials:	
Date:	



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 12
PROJECT No: 71102
DATE: 23 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILLING - brown silty clay with some aggregate and tiles		A	0.0		PID<1ppm			
					0.3					
		0.7m: with some sand		A	0.7		PID<1ppm			
					1.0					
1										
	1.5	FILLING - red-brown silty clay with aggregate								
				A	1.8		PID<1ppm			
					2.0					
2										
					2.5					
	2.8	FILLING - brown silty/sandy clay with some aggregate		A			PID<1ppm			
					3.0					
3										
		3.6m: red-brown clay and some ironstone gravel			3.5					
				A			PID<1ppm			
					4.0					
4										
					4.5					
				A			PID<1ppm			
					5.0					
5										
		5.5m: as above but with PVC (plastic)			5.5					
				A			PID<1ppm			
					6.0					
6										
		6.4m: trace of tile fragments			6.4					
				A			PID<1ppm			
					7.0					
7										
		7.6m: becoming brown silty clay			7.8					
				A			PID<1ppm			
					8.0					
8										
9										
	9.5	CLAY - red/orange brown mottled grey clay with some ironstone nodules (organic odour)			9.5					
				A			PID<1ppm			
					10.0					
10										

Bore discontinued at 10.0m- target depth reached

RIG: 4x4 truck-mounted drill rig **DRILLER:** K Kerney-Ennis

LOGGED: W Yuan

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Approximate levels shown on Figure 3, Appendix A

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	D	Water seep
		W	Water level

CHECKED	
Initials:	
Date:	



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 13
PROJECT No: 71102
DATE: 23 Apr 09
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing			Water	Well Construction Details	
				Type	Depth	Sample			
		FILLING - brown sandy/silty clay with some ironstone gravel		A	0.0		PID<1ppm		
	0.5	FILLING - brown clay with some ironstone gravel		A	0.5		PID<1ppm		
	1.0				1.0				
	1.5	FILLING - grey mottled orange-brown, clay with some ironstone gravel, wet		A	1.5		PID<1ppm		
	2.0				2.0				
	2.4	FILLING - red-brown mottled grey, clay with some ironstone nodules		A	2.4		PID<1ppm		
	3.0				3.0				
	3.5				3.5				
	3.8	FILLING - orange/red-brown, clay with some ironstone gravel		A	4.0		PID<1ppm		
	4.2	4.2m: ironstone/sandstone boulder			4.5				
	4.5	4.5m: as above but with some dark brown peaty sand and trace rootlets		A	5.0		PID<1ppm		
	5.0				5.0				
	5.5			A	6.0		PID<1ppm		
	6.0				6.0				
	6.7	FILLING - brown clay with some ironstone gravel, aggregate and shale fragments		A	6.7		PID<1ppm		
	7.0				7.0				
	7.5	7.5m: medium strength			7.7				
	7.7	FILLING - dark brown silty clay with some crushed building rubble (tiles, sandstone fragments, paint) and aggregate		A	8.0		PID<1ppm		
	8.0				8.0				
	8.5	8.5m: medium strength			8.7				
	8.7			A*	9.0		PID<1ppm		
	9.0				9.0				
	9.8	FILLING - see next page		A	9.8		PID<1ppm		

RIG: 4x4 truck-mounted drill rig

DRILLER: K Kerney-Ennis

LOGGED: W Yuan

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BD4/230409 collected
^Approximate levels shown on Figure 3, Appendix A

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	D	Water seep
		§	Water level

CHECKED
Initials:
Date:



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Part 1: Preliminary In-situ Waste Classification
Report No. 582/04

DELLARA PTY LTD
*Orchard Hills Waste and
Resource Management Facility*

BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 13
PROJECT No: 71102
DATE: 23 Apr 09
SHEET 2 OF 2

[illegible]

RIG: 4x4 truck-mounted drill rig

DRILLER: K Kerney-Ennis

LOGGED: W Yuan

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BD4/230409 collected
^Approximate levels shown on Figure 3, Appendix A

SAMPLING AND IN SITU TESTING LEGEND			
A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	SL	Standard penetration test
U	Tube sample (x mm dia.)	PL	Point load strength (50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Cone drilling	D	Water seep
			Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 14
PROJECT No: 71102
DATE: 21 Apr 09
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
	0.1	TOPSOIL - brown sandy clay with some gravel and some roadbase								
		FILLING - brown sandy clay with some gravel		A	0.5		PID<1ppm			
				A	0.9		PID<1ppm			
					1.0					
	1.7	FILLING - grey clay								
				A	1.9		PID<1ppm			
					2.0					
	2.5	FILLING - orange clay								
				A	2.9		PID<1ppm			
					3.0					
	3.3	FILLING - brown to grey clay with some gravel and ironstone (?slight odour)								
				A	3.9		PID<1ppm			
					4.0					
				A	4.9		PID<1ppm			
					5.0					
	5.5	FILLING - grey to green clay with some gravel								
		- odour at 6.0m		A	5.9		PID<1ppm			
					6.0					
				A	6.9		PID<1ppm			
					7.0					
				A	7.9		PID<1ppm			
					8.0					
	8.8	FILLING - grey clay with shale fragments								
				A	8.9		PID<1ppm			
					9.0					
	9.4	FILLING - black sandy clay with some wood and brick fragments, organic odour								
					9.9		PID<1ppm			

RIG: 4x4 truck-mounted drill rig

DRILLER: L Cooper

LOGGED: G Nikolaeva

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: ^Approximate levels shown on Figure 3, Appendix A

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	pp	Pocket penetrometer (kPa)
B	Disturbed sample	PID	Photo ionisation detector
D	Bulk sample	S	Standard penetration test
U	Tube sample (x mm dia.)	PL	Point load strength (kPa)
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	>	Water seep
		W	Water level

CHECKED
Initials:
Date:



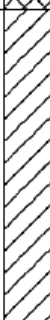
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DELLARA PTY LTD
*Orchard Hills Waste and
Resource Management Facility*

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 14
PROJECT No: 71102
DATE: 21 Apr 09
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing			Water	Well Construction Details		
				Type	Depth	Sample		Results & Comments		
		FILLING - black sandy clay with some wood and brick fragments, organic odour (<i>continued</i>)		A	10.0					
	10.5	CLAY - brown clay								
	11			A	10.8 11.0		PID<1ppm		11	
	12			A	11.9 12.0		PID<1ppm		12	
	13			A	12.9 13.0		PID<1ppm		13	
	13.0	Bore discontinued at 13.0m - target depth reached								
	14									
	15									
	16									
	17									
	18									
	19									

RIG: 4x4 truck-mounted drill rig **DRILLER:** L Cooper
TYPE OF BORING: 100mm diameter solid flight auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS: ^Approximate levels shown on Figure 3, Appendix A

LOGGED: G Nikolaeva

CASING: Uncased

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PHO	Photo ionisation detector
B	Bulk sample	SL	Standard penetration test
U	Tube sample (x mm dia.)	P	Point load strength (x50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	D	Water seep
		W	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 15
PROJECT No: 71102
DATE: 17-20/4/09
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
	0.7	FILLING - brown silty clay with some building rubble (eg tiles), ash and sandstone fragments		A	0.2		PID<1ppm			
				A	0.5					
				A	0.7		PID<1ppm			
		FILLING - orange-brown mottled red-brown clay with some ironstone gravel			1.0					
					1.6					
				A	2.0		PID<1ppm			
		2.5m: as above becoming slightly silty			2.5					
				A	3.0		PID<1ppm			
		3.5m: becoming red-brown mottled orange-brown clay with some ironstone cobbles/gravel			3.5					
				A	4.0		PID<1ppm			
		4.5m: orange-brown mottled red-brown/grey clay			4.5					
				A	5.0		PID<1ppm			
		FILLING - grey silt with gravel (from weathered shale rock flour)			5.5					
				A	6.0		PID<1ppm			
		6.5-6.8m: higher strength (possibly shale boulder)			6.5					
				A	7.0		PID<1ppm			
		FILLING - grey clay with a trace of gravel			7.8					
				A	8.0		PID<1ppm			
		8.4-8.7m: higher strength (possibly shale/ironstone boulder)								
		FILLING - red-brown/grey clay with some ironstone cobbles/gravel			8.7					
				A	9.0		PID<1ppm			

RIG: 4x4 truck-mounted drill rig DRILLER: L Cooper
TYPE OF BORING: 100mm diameter solid flight auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS: ^Approximate levels shown on Figure 3, Appendix A

LOGGED: W Yuan

CASING: Uncased

SAMPLING & IN SITU TESTING LEGEND			
A Auger sample	pp Pocket penetrometer (kPa)		
D Disturbed sample	PID Photo ionisation detector		
S Bulk sample	S Standard penetration test		
U Tube sample (x mm dia.)	PL Point load strength (50) MPa		
W Water sample	V Shear Vane (kPa)		
C Core drilling	D Water seep		
	# Water level		

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 15
PROJECT No: 71102
DATE: 17-20/4/09
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
	10.0	CLAY - orange mottled grey clay, moist		A	10.0					
				A	10.8					
11	11.0	Bore discontinued at 11.0m - target depth reached			11.0					
12										
13										
14										
15										
16										
17										
18										
19										

RIG: 4x4 truck-mounted drill rig **DRILLER:** L Cooper
TYPE OF BORING: 100mm diameter solid flight auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS: ^Approximate levels shown on Figure 3, Appendix A

LOGGED: W Yuan

CASING: Uncased

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 (50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep
		≡	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 16
PROJECT No: 71102
DATE: 22 Apr 09
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
	0.5	FILLING - orange clay with some gravel		A*	0.5		PID<1ppm			
	1	FILLING - black sandy clay with some gravel		A	1.0		PID<1ppm			
	2			A	2.0		PID<1ppm			
	3	2.5m: pink sandstone inclusions and wood fragments		A	2.9 3.0		PID<1ppm			
	3.5	FILLING - brown clay		A	3.9 4.0		PID<1ppm			
	4.5	FILLING - black sandy clay with some gravel, pink sandstone fragments, bricks, plastic		A	4.9 5.0		PID<1ppm			
	5.1	FILLING - black sandy clay with some gravel and wood fragments, organic odour		A	5.1		PID<1ppm			
	5.9	FILLING - brown sandy clay with some gravel and wood fragments			5.9					
	6.5	FILLING - brown clay		A	6.9 7.0		PID<1ppm			
	7.5	FILLING - brown mottled orange and grey clay		A	7.9 8.0		PID<1ppm			
	8.5	FILLING - brown clay		A	8.9 9.0		PID<1ppm			
	9				9.9		PID<1ppm			

RIG: 4x4 truck-mounted drill rig

DRILLER: L Cooper

LOGGED: G Nikolaeva

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BD5/220409 collected
^Approximate levels shown on Figure 3, Appendix A

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 (50) MPa
W Water sample	V Shear Vane (kPa)
C Core drilling	d- Water seep
	Σ Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 16
PROJECT No: 71102
DATE: 22 Apr 09
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILLING - brown clay (<i>continued</i>)		A	10.0					
	10.5	CLAY - orange clay								
	11.0	Bore discontinued at 11.0m - target depth reached		A	10.9 11.0		PID<1ppm			
	12									
	13									
	14									
	15									
	16									
	17									
	18									
	19									

RIG: 4x4 truck-mounted drill rig **DRILLER:** L Cooper

LOGGED: G Nikolaeva

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BD5/220409 collected
^Approximate levels shown on Figure 3, Appendix A

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	Δ	Water seep
		≡	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 17
PROJECT No: 71102
DATE: 21 Apr 09
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILLING - brown sandy clay with some gravel		A	0.5		PID<1ppm			
				A	1.0		PID<1ppm			
1	1.2	FILLING - black sandy clay		A	1.2		PID<1ppm			
	1.5	FILLING - orange clay			1.5					
2	2.2	FILLING - brown to black sandy clay with some gravel, glass, slag fragments		A*	2.0		PID<1ppm			
3	3.4	FILLING - grey clay		A	3.0		PID<1ppm			
4	4.5	FILLING - light brown clay		A	4.0		PID<1ppm			
5				A	5.0		PID<1ppm			
6				A	6.0		PID<1ppm			
6.5		FILLING - brown clay with some gravel		A	6.9		PID<1ppm			
7					7.0					
8		8.0m: slight organic odour		A	7.9		PID<1ppm			
					8.0					
9				A	8.9		PID<1ppm			
					9.0					
					9.9		PID<1ppm			

RIG: 4x4 truck-mounted drill rig

DRILLER: L Cooper

LOGGED: G Nikolaeva

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BD4/210409 collected

*Approximate levels shown on Figure 3, Appendix A

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 (50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	D	Water seep
		E	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 17
PROJECT No: 71102
DATE: 21 Apr 09
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing			Water	Well Construction Details	
				Type	Depth	Sample			
		FILLING - brown clay with some gravel (continued)		A	10.0				
	11			A	10.9 11.0		PID<1ppm		11
	12	12.0m: wood, ceramic, shale inclusions		A	11.9 12.0		PID<1ppm		12
	13			A	12.9 13.0		PID<1ppm		13
	14	14.0m: organic (manure) odour		A	13.9 14.0		PID<1ppm		14
	15	Bore discontinued at 15.0m - target depth reached		A	14.9 15.0		PID<1ppm		15
	16								16
	17								17
	18								18
	19								19

RIG: 4x4 truck-mounted drill rig **DRILLER:** L Cooper

LOGGED: G Nikolaeva

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BD4/210409 collected
^Approximate levels shown on Figure 3, Appendix A

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 (50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	>	Water seep
		§	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 18
PROJECT No: 71102
DATE: 21 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILLING - brown mottled orange and grey clay with some gravel		A	0.5		PID<1ppm			
				A	0.9		PID<1ppm			
					1.0					
				A	1.9		PID<1ppm			
					2.0					
				A	2.9		PID<1ppm			
					3.0					
				A	3.9		PID<1ppm			
					4.0					
		FILLING - brown to black clay with some gravel and wood fragments		A	4.9		PID<1ppm			
					5.0					
		FILLING - orange clay		A	5.9		PID<1ppm			
					6.0					
		FILLING - grey to black clay with some gravel		A	6.9		PID<1ppm			
					7.0					
		FILLING - black sandy clay with some gravel, wood fragments, metal rods, organic odour		A	7.9		PID<1ppm			
					8.0					
				A	8.9		PID<1ppm			
					9.0					
		Bore discontinued at 9.4m - refusal on wood - second attempt - refusal on concrete (?) at 8.7m								

RIG: 4x4 truck-mounted drill rig
TYPE OF BORING: 100mm diameter solid flight auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS: ^Approximate levels shown on Figure 3, Appendix A

DRILLER: L Cooper

LOGGED: G Nikolaeva

CASING: Uncased

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:



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Part 1: Preliminary In-situ Waste Classification
Report No. 582/04

BOREHOLE LOG

BORE No: 19
PROJECT No: 71102
DATE: 15 Apr 09
SHEET 1 OF 1

[illegible]

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PIt	Photo ionisation detector
B	Bulk sample	SL	Standard penetration test
U	Tube sample (x mm dia.)	PL	Point load strength ls(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	↳	Water seep
		W	Water level

CHECKED
Initials:
Date:



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BOREHOLE LOG

CLIENT: RW Corkery & Co Pty Ltd
PROJECT: Material Classification
LOCATION: Patons Lane, Orchard Hills

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

BORE No: 20
PROJECT No: 71102
DATE: 24 Apr 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILLING - brown silty/sandy clay with sandstone/concrete fragments, aggregate, paint, tile fragments, roof tile fragments		A	0.0		PID<1ppm			
				A	0.5		PID<1ppm			
				A	1.0					
				A	1.5		PID<1ppm			
				A	2.0					
				A	2.8		PID<1ppm			
				A	3.0					
				A	3.5		PID<1ppm			
				A*	4.0					
	4.0	Bore discontinued at 4.0m - refusal on concrete boulders								
	5									
	6									
	7									
	8									
	9									

RIG: 4x4 truck-mounted drill rig **DRILLER:** K Kerney-Ennis

LOGGED: W Yuan

CASING: Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Bag sample only due to collapse of test bore
*Approximate levels shown on Figure 3, Appendix A

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 ts(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	D	Water seep
		W	Water level

CHECKED	
Initials:	
Date:	



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NOTES RELATING TO THIS REPORT

Introduction

These notes have been provided to amplify the geotechnical report in regard to classification methods, specialist field procedures and certain matters relating to the Discussion and Comments section. Not all, of course, are necessarily relevant to all reports.

Geotechnical reports are based on information gained from limited subsurface test boring 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.

Description and Classification Methods

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

Soil types are described according to the predominating particle size, qualified by the grading of other particles present (eg. sandy clay) on the following bases:

Soil Classification	Particle Size
Clay	less than 0.002 mm
Silt	0.002 to 0.06 mm
Sand	0.06 to 2.00 mm
Gravel	2.00 to 60.00 mm

Cohesive soils are classified on the basis of strength either by laboratory testing or engineering examination. The strength terms are defined as follows.

Classification	Undrained Shear Strength kPa
Very soft	less than 12
Soft	12—25
Firm	25—50
Stiff	50—100
Very stiff	100—200
Hard	Greater than 200

Non-cohesive soils are classified on the basis of relative density, generally from the results of standard penetration tests (SPT) or Dutch cone penetrometer tests (CPT) as below:

Relative Density	SPT "N" Value (blows/300 mm)	CPT Cone Value (q_c — MPa)
Very loose	less than 5	less than 2
Loose	5—10	2—5
Medium dense	10—30	5—15
Dense	30—50	15—25

Very dense greater than 50 greater than 25

Rock types are classified by their geological names. Where relevant, further information regarding rock classification is given on the following sheet.

Sampling

Sampling is carried out during drilling 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 with 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.

Details of the type and method of sampling are given in the report.

Drilling Methods.

The following is a brief summary of drilling methods currently adopted by the Company and some comments on their use and application.

Test Pits — these are excavated with a backhoe or a tracked excavator, allowing close examination of the in-situ soils if it is safe to descent into the pit. The depth of penetration is limited to about 3 m for a backhoe and up to 6 m for an excavator. A potential disadvantage is the disturbance caused by the excavation.

Large Diameter Auger (eg. Pengo) — the hole is advanced by a rotating plate or short spiral auger, generally 300 mm or larger in diameter. The cuttings are returned to the surface at intervals (generally of 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 sampling.

Continuous Sample Drilling — the hole is advanced by pushing a 100 mm diameter socket into the ground and withdrawing it at intervals to extrude the sample. This is the most reliable method of drilling in soils, since moisture content is unchanged and soil structure, strength, etc. is only marginally affected.

Continuous Spiral Flight Augers — the hole 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 in sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are very disturbed and may be contaminated. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively lower reliability, due to remoulding, contamination or softening of samples by ground water.

Non-core Rotary Drilling — the hole is advanced by a rotary bit, with water 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 'feel' and rate of penetration.

Rotary Mud Drilling — similar to rotary drilling, but using drilling mud as a circulating fluid. The mud tends to mask the cuttings and reliable identification is again only possible from separate intact sampling (eg. from SPT).

Continuous Core Drilling — a continuous core sample is obtained using a diamond-tipped core barrel, usually 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in very weak rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation.

Standard Penetration Tests

Standard penetration tests (abbreviated as SPT) are used mainly in non-cohesive soils, but occasionally also in cohesive soils as a means of determining density or strength 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 short of full penetration, 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 tests can be related empirically to the engineering properties of the soil.

Occasionally, the test method is used to obtain

samples in 50 mm diameter thin walled sample tubes in clays. In such circumstances, the test results are shown on the borelogs in brackets.

Cone Penetrometer Testing and Interpretation

Cone penetrometer testing (sometimes referred to as Dutch cone — abbreviated as CPT) described in this report has been carried out using an electrical friction cone penetrometer. The test is described in Australian Standard 1289, Test 6.4.1.

In the tests, a 35 mm diameter rod with a cone-tipped end is pushed continuously into the soil, the reaction being provided by a specially designed truck or rig which is fitted with an hydraulic ram system. Measurements are made of the end bearing resistance on the cone and the friction resistance on a separate 130 mm long sleeve, immediately behind the cone. Transducers in the tip of the assembly are connected by electrical wires passing through the centre of the push rods to an amplifier and recorder unit mounted on the control truck.

As penetration occurs (at a rate of approximately 20 mm per second) the information is plotted on a computer screen and at the end of the test is stored on the computer for later plotting of the results.

The information provided on the plotted results comprises:—

- Cone resistance — the actual end bearing force divided by the cross sectional area of the cone — expressed in MPa.
- Sleeve friction — the frictional force on the sleeve divided by the surface area — expressed in kPa.
- Friction ratio — the ratio of sleeve friction to cone resistance, expressed in percent.

There are two scales available for measurement of cone resistance. The lower scale (0—5 MPa) is used in very soft soils where increased sensitivity is required and is shown in the graphs as a dotted line. The main scale (0—50 MPa) is less sensitive and is shown as a full line.

The ratios of the sleeve friction to cone resistance will vary with the type of soil encountered, with higher relative friction in clays than in sands. Friction ratios of 1%—2% are commonly encountered in sands and very soft clays rising to 4%—10% in stiff clays.

In sands, the relationship between cone resistance and SPT value is commonly in the range:—

$$q_c \text{ (MPa)} = (0.4 \text{ to } 0.6) N \text{ (blows per 300 mm)}$$

In clays, the relationship between undrained shear strength and cone resistance is commonly in the range:—

$$q_c = (12 \text{ to } 18) c_u$$

Interpretation of CPT values can also be made to allow estimation of modulus or compressibility values to allow calculation of foundation settlements.

Inferred stratification as shown on the attached reports is assessed from the cone and friction traces and from experience and information from nearby boreholes, etc. This information is presented for general guidance, but must be regarded as being to some extent interpretive. The test method provides a continuous profile of engineering properties, and where precise information on



soil classification is required, direct drilling and sampling may be preferable.

Hand Penetrometers

Hand penetrometer tests are carried out by driving a rod into the ground with a falling weight hammer and measuring the blows for successive 150 mm increments of penetration. 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 relatively similar tests are used.

- Perth sand penetrometer — a 16 mm diameter flat-ended rod is driven with a 9 kg hammer, dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands (originating in Perth) and is mainly used in granular soils and filling.
- Cone penetrometer (sometimes known as the Scala Penetrometer) — a 16 mm rod with a 20 mm diameter cone end is driven with a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). The test was developed initially for pavement subgrade investigations, and published correlations of the test results with California bearing ratio have been published by various Road Authorities.

Laboratory Testing

Laboratory testing is carried out in accordance with Australian Standard 1289 "Methods of Testing Soil for Engineering Purposes". Details of the test procedure used are given on the individual report forms.

Bore Logs

The bore logs presented herein 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. 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 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, the frequency of sampling and the possibility of other than 'straight line' variations between the boreholes.

Ground Water

Where ground water levels are measured in boreholes, there are several potential problems;

- In low permeability soils, ground water although present, may enter the hole slowly or perhaps not at all during the time it 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.

- The use of water or mud as a drilling fluid will mask any ground water inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water observations 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.

Engineering Reports

Engineering reports are prepared by qualified personnel and are based on the information obtained and on current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal (eg. a three storey building), the information and interpretation may not be relevant if the design proposal is changed (eg. to a twenty storey building). If this happens, the Company 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 condition, discussion of geotechnical aspects and recommendations or suggestions for design and construction. However, the Company cannot always anticipate or assume responsibility for:

- unexpected variations in ground conditions — the potential for this will depend partly on bore spacing and sampling frequency
- changes in policy or interpretation of policy by statutory authorities
- the actions of contractors responding to commercial pressures.

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

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, the Company requests that it immediately be notified. Most problems are much more readily resolved when conditions are exposed than at some later stage, well after the event.

Reproduction of Information for Contractual Purposes

Attention is drawn to the document "Guidelines for the Provision of Geotechnical Information in Tender Documents", published by the Institution of Engineers,



Australia. Where information obtained from this investigation 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. The Company 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 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.

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Appendix D

Laboratory Results (Tables A, B and C)

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Available on CD only

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Table A – Results of Laboratory Analysis

Sample ID	Heavy Metals									PAH				TRH		Benzene	Toluene	Ethyl- Benzene	Total Xylene	Total Phenols	PCB ⁴	OCP ⁴	asbestos
	As	Cd	Cr ³	Cu	Pb		Hg	Ni	Zn	Total PAH ⁴		B(a)P ⁵		C6-C9	C10-C36								
	total ¹	total ¹	total ¹	total ¹	total ¹	TCLP ²	total ¹	total ¹	total ¹	total ¹	TCLP ²	total ¹	TCLP ²	total ¹	total ¹								
1/0.75-1	7	<0.5	5	51	18	-	<0.1	21	76	0.1		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
1/7.3-8	7	<0.5	13	21	17	-	<0.1	12	43	0.2		<0.05		<25	<100	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
1/12.5-13 ¹¹	6	<0.5	13	14	13	-	<0.1	3	10	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
BD3/170409 ¹⁰	8	<0.5	8	20	14	-	<0.1	4	17	-		<0.05		-	-	-	-	-	-	-	-	-	-
2/0-0.5	7	<0.5	7	48	18	-	<0.1	20	74	0.2		<0.05		<25	<100	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
2/3.5-4	7	<0.5	9	38	18	-	<0.1	22	75	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
2/6.8-7	6	<0.5	7	49	18	-	<0.1	21	73	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
3/1.8-2	5	<0.5	9	43	17	-	<0.1	20	74	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
3/4.5-5	9	<0.5	15	41	21	-	<0.1	26	84	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
3/7.8-8 ¹¹	6	<0.5	10	12	10	-	<0.1	2	8	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
4/1.5-2	8	<0.5	13	40	41	-	<0.1	17	100	1.3		0.1		<25	<100	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
4/4.5-5	13	<0.5	9	37	26	-	<0.1	16	65	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
4/5.5-6	10	<0.5	13	37	20	-	<0.1	26	81	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
5/0-0.5	9	<0.5	14	48	39	-	<0.1	20	130	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
5/3.5-4	6	<0.5	11	41	54	-	<0.1	13	88	1.7		0.2		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
5/8.6-9 ¹¹	12	0.9	51	23	46	-	<0.1	12	32	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
6/0-0.5	12	0.9	48	14	25	-	<0.1	8	25	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
BD2/160409 ¹⁰	12	0.6	55	13	27	-	<0.1	9	22	-		<0.05		-	-	-	-	-	-	-	-	-	-
6/2.5-3	10	0.6	25	30	53	-	<0.1	15	120	66.3		2.7	INS	<25	260	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
6/5.5-6	8	0.6	16	74	35	-	<0.1	15	86	1.8		0.2		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
7/0-0.5	7	0.6	23	25	55	-	<0.1	6	100	1.9		0.2		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
7/0.8-1	5	<0.5	17	11	26	-	<0.1	5	26	0.67		0.07		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
7/1.5-2	5	<0.5	26	15	38	-	<0.1	8	43	3.6		0.3		<25	<100	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
8/0-1	5	<0.5	19	22	58	-	<0.1	10	86	2.5		0.3		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
8/4.7-5	<4	<0.5	12	10	18	-	<0.1	3	20	102.3		0.4		<25	1440	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
8/6-7	<4	<0.5	8	2	6	-	<0.1	<1	8	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
9/2.4-3	5	3.3	22	43	110	<0.03	0.3	12	230	10		0.8		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
9/8.5-9	10	0.6	28	37	71	-	<0.1	9	78	11.3		1		<25	<100	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
9/9.5-10 ¹¹	11	<0.5	16	29	50	-	<0.1	5	51	0.8		0.1		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
10/0.5	5	<0.5	9	48	53	-	<0.1	5	56	5.5		0.5		<25	<100	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
BD1/150409 ¹⁰	8	1	13	24	59	-	<0.1	7	72	7.6		0.6		-	-	-	-	-	-	-	-	-	-
10/2.0	5	<0.5	21	41	56	-	<0.1	6	88	6.5		0.6		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
11/0.5-1	6	<0.5	19	27	290	0.03	<0.1	13	150	3.5		0.3		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
11/6.8-7	10	<0.5	29	25	58	-	<0.1	10	89	84.6		5.6	<0.001	<25	1030	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
11/8.5-9	9	<0.5	26	48	33	-	<0.1	8	91	3.5		0.2		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
12/0-0.3	11	0.7	24	10	46	-	<0.1	4	43	-		0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	AD
12/5.5-6	15	<0.5	22	38	77	-	<0.1	12	150	2.4		0.3		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
12/9.5-10 ¹¹	5	<0.5	17	11	18	-	<0.1	2	13	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
13/5-6	<4	<0.5	8	4	12	-	<0.1	2	22	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
13/7.7-8	13	0.7	27	26	44	-	<0.1	5	34	17.4		1		<25	<100	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
13/8.7-9	9	0.6	25	25	34	-	<0.1	8	48	16.9		1.5	<0.001	<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
14/4.9-5.0	8	<0.5	8	46	23	-	<0.1	20	81	0.58		0.08		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
14/5.9-6.0	<4	<0.5	13	19	17	-	<0.1	27	37	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	<5	<0.1	<0.1	Nil
14/9.9-10.0	6	<0.5	16	72	540	0.09	<0.1	9	92	4.5		0.4		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
15/0.2-0.5	8	<0.5	16	37	200	0.06	<0.1	13	200	6.4		0.6		<25	<100	<0.5	<0.5	<1	<2	<5	<0.1	0.1	Nil
15/2.5-3	8	<0.5	16	35	22	-	<0.1	18	55	-		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
15/5.5-6	8	0.5	7	43	20	-	<0.1	20	70	0.2		<0.05		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
16/0.5	8	2	29	110	38	-	<0.1	3	30	0.16		0.06		<25	<100	<0.5	<0.5	<1	<2	-	-	-	Nil
BD5/220409 ¹⁰	7	3.9	25	26	35	-	<0.1	3	37	0.16		0.06		-	-	-	-	-	-	-	-	-	-
16/2.9-3.0	7	<0.5	15	100	230	0.8	0.8	4	240														

Table B - Estimated Waste Volumes Based on Approximated Bund Walls Dimensions

Type of Waste	Vicinity of Bores	Estimated Length (m)	Estimated Width (m)	Estimated Height (m)	Estimated Volume (m ³)	MinimumTotal Estimated Volume (m3)
General Solid Waste (GSW)	1 to 5	450	25	8.5	95,625	260,000
	19	250	10	8	20,000	
	14 to 16	550	25	10.5	144,375	
Possible General Solid Waste (may contain minor traces of asbestos)	6 to 11	400	50	10	200,000	387,500
	13	200	25	10.5	52,500	
	17 & 18	300	25	18	135,000	
Special Waste - Asbestos (SW)	12	100	25	1.5	3,750	3,750

Table C - Possible Range of General Solid Waste and Special Waste Volumes

	General Solid Waste (GSW)		Special Waste - Asbestos (SW)	
	min	max	min	max
	260,000	260,000 + 387,500	3,750	3,750+ 387,500
Total	260,000	647,500	3,750	391,250

Appendix E

Laboratory Reports and Chain of Custody Documentation

(No. of pages excluding this page = 71)

Available on CD only

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EnviroLab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
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CERTIFICATE OF ANALYSIS 28452

Client:

Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Galia Nikolaeva

Sample log in details:

Your Reference:
No. of samples:
Date samples received:
Date completed instructions received:

71102, Material Classification

67 Soils
27/04/09
20/04/09, 24/04/09

Analysis Details:

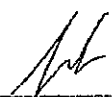
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: 4/05/09
Date of Preliminary Report: Not Issued
Issue Date: 4/05/09

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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

EnviroLab Reference: 28452
Revision No: R 00



Client Reference: 71102, Material Classification

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-1 1/0.75-1 17/04/2009 Soil	28452-2 1/7.3-8 17/04/2009 Soil	28452-3 1/12.5-13 17/04/2009 Soil	28452-5 2/0-0.5 17/04/2009 Soil	28452-6 2/3.5-4 17/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
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	%	101	103	108	112	114

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-7 2/6.8-7 17/04/2009 Soil	28452-8 3/1.8-2 17/04/2009 Soil	28452-9 3/4.5-5 17/04/2009 Soil	28452-10 3/7.8-8 17/04/2009 Soil	28452-11 4/1.5-2 24/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
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	%	105	115	109	104	106

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-12 4/4.5-5 24/04/2009 Soil	28452-13 4/5.5-6 24/04/2009 Soil	28452-14 5/0-0.5 24/04/2009 Soil	28452-15 5/3.5-4 24/04/2009 Soil	28452-16 5/8.6-9 24/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	29/04/2009	29/04/2009
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	%	113	111	116	109	105

Client Reference: 71102, Material Classification

vTPH & BTEX in Soil	UNITS	28452-17	28452-19	28452-20	28452-21	28452-22
Our Reference:	-----	6/0-0.5	6/2.5-3	6/5.5-6	7/0-0.5	7/0.8-1
Your Reference	-----	16/04/2009	16/04/2009	16/04/2009	16/04/2009	16/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	110	115	109	101	107

vTPH & BTEX in Soil	UNITS	28452-23	28452-24	28452-25	28452-26	28452-27
Our Reference:	-----	7/1.5-2	8/0-1	8/4.7-5	8/6-7	9/2.4-3
Your Reference	-----	16/04/2009	16/04/2009	16/04/2009	16/04/2009	23/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	115	104	114	109

vTPH & BTEX in Soil	UNITS	28452-28	28452-29	28452-30	28452-32	28452-33
Our Reference:	-----	9/8.5-9	9/9.5-10	10/0.5	10/2.0	11/0.5-1
Your Reference	-----	23/04/2009	23/04/2009	15/04/2009	15/04/2009	23/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	99	104	120	107	109

Client Reference: 71102, Material Classification

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-34 11/6.8-7 23/04/2009 Soil	28452-35 11/8.5-9 23/04/2009 Soil	28452-36 12/0-0.3 23/04/2009 Soil	28452-37 12/5.5-6 23/04/2009 Soil	28452-38 12/9.5-10 23/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	106	103	108	106	117

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-39 13/5-6 23/04/2009 Soil	28452-40 13/7.7-8 23/04/2009 Soil	28452-41 13/8.7-9 23/04/2009 Soil	28452-42 14/4.9-5.0 21/04/2009 Soil	28452-43 14/5.9-6.0 21/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	106	100	104	108	109

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-44 14/9.9-10.0 21/04/2009 Soil	28452-45 15/0.2-0.5 17/04/2009 Soil	28452-46 15/2.5-3 17/04/2009 Soil	28452-47 15/5.5-6 17/04/2009 Soil	28452-48 16/0.5 22/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	108	106	113	105	104

Client Reference: 71102, Material Classification

vTPH & BTEX in Soil	UNITS	28452-50	28452-51	28452-52	28452-54	28452-55
Our Reference:	-----	16/2.9-3.0	16/5.1-5.9	17/2.0	17/3.0	17/7.9-8.0
Your Reference	-----	22/04/2009	22/04/2009	21/04/2009	21/04/2009	21/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
vTPH C6 - C9	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	%	103	111	106	106	108

vTPH & BTEX in Soil	UNITS	28452-56	28452-57	28452-58	28452-59	28452-60
Our Reference:	-----	17/9.9-10.0	17/11.9-12.0	17/13.9-14.0	18/4.9-5.0	18/6.9-7.0
Your Reference	-----	21/04/2009	21/04/2009	21/04/2009	21/04/2009	21/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
vTPH C6 - C9	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	%	99	110	114	100	111

vTPH & BTEX in Soil	UNITS	28452-61	28452-62	28452-63	28452-64	28452-65
Our Reference:	-----	18/7.9-8.0	18/8.9-9.0	19/0.8-1	19/2-2.5	20/0.5-1
Your Reference	-----	21/04/2009	21/04/2009	15/04/2009	15/04/2009	24/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
vTPH C6 - C9	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	%	109	117	114	121	117

Client Reference: 71102, Material Classification

vTPH & BTEX in Soil		
Our Reference:	UNITS	28452-66
Your Reference	-----	20/2.8-3
Date Sampled	-----	24/04/2009
Type of sample		Soil
Date extracted	-	28/04/2009
Date analysed	-	29/04/2009
vTPH C6 - C8	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	%	116

EnviroLab Reference: 28452
Revision No: R 00



Client Reference: 71102, Material Classification

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	28452-1	28452-2	28452-3	28452-5	28452-6
Your Reference	-----	1/0.75-1	1/7.3-8	1/12.5-13	2/0-0.5	2/3.5-4
Date Sampled	-----	17/04/2009	17/04/2009	17/04/2009	17/04/2009	17/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	<100	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	90	90	88	93	90

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	28452-7	28452-8	28452-9	28452-10	28452-11
Your Reference	-----	2/6.8-7	3/1.8-2	3/4.5-5	3/7.8-8	4/1.5-2
Date Sampled	-----	17/04/2009	17/04/2009	17/04/2009	17/04/2009	24/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	<100	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	92	92	89	88	90

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	28452-12	28452-13	28452-14	28452-15	28452-16
Your Reference	-----	4/4.5-5	4/5.5-6	5/0-0.5	5/3.5-4	5/8.6-9
Date Sampled	-----	24/04/2009	24/04/2009	24/04/2009	24/04/2009	24/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	29/04/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	<100	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	89	89	90	90	87

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	28452-17	28452-19	28452-20	28452-21	28452-22
Your Reference	-----	6/0-0.5	6/2.5-3	6/5.5-6	7/0-0.5	7/0.8-1
Date Sampled	-----	16/04/2009	16/04/2009	16/04/2009	16/04/2009	16/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	260	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	90	112	89	90	87

Client Reference: 71102, Material Classification

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	28452-23	28452-24	28452-25	28452-26	28452-27
Your Reference	-----	7/1.5-2	8/0-1	8/4.7-5	8/6-7	9/2.4-3
Date Sampled	-----	16/04/2009	16/04/2009	16/04/2009	16/04/2009	23/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	<100	1,300	<100	<100
TPH C29 - C36	mg/kg	<100	<100	140	<100	<100
Surrogate o-Terphenyl	%	89	88	112	88	89

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	28452-28	28452-29	28452-30	28452-32	28452-33
Your Reference	-----	9/8.5-9	9/9.5-10	10/0.5	10/2.0	11/0.5-1
Date Sampled	-----	23/04/2009	23/04/2009	15/04/2009	15/04/2009	23/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	130	<100	<100	<100	<100
TPH C29 - C36	mg/kg	100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	92	87	92	88	86

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	28452-34	28452-35	28452-36	28452-37	28452-38
Your Reference	-----	11/6.8-7	11/8.5-9	12/0-0.3	12/5.5-6	12/9.5-10
Date Sampled	-----	23/04/2009	23/04/2009	23/04/2009	23/04/2009	23/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	930	<100	<100	<100	<100
TPH C29 - C36	mg/kg	100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	98	88	89	93	92

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	28452-39	28452-40	28452-41	28452-42	28452-43
Your Reference	-----	13/5-6	13/7.7-8	13/8.7-9	14/4.9-5.0	14/5.9-6.0
Date Sampled	-----	23/04/2009	23/04/2009	23/04/2009	21/04/2009	21/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	<100	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	91	94	91	90	94

Client Reference: 71102, Material Classification

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	28452-44	28452-45	28452-46	28452-47	28452-48
Your Reference	-----	14/9.9-10.0	15/0.2-0.5	15/2.5-3	15/5.5-6	16/0.5
Date Sampled	-----	21/04/2009	17/04/2009	17/04/2009	17/04/2009	22/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	<100	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	93	93	89	93	86

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	28452-50	28452-51	28452-52	28452-54	28452-55
Your Reference	-----	16/2.9-3.0	16/5.1-5.9	17/2.0	17/3.0	17/7.9-8.0
Date Sampled	-----	22/04/2009	22/04/2009	21/04/2009	21/04/2009	21/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	110	<100	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	93	90	88	91	89

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	28452-56	28452-57	28452-58	28452-59	28452-60
Your Reference	-----	17/9.9-10.0	17/11.9-12.0	17/13.9-14.0	18/4.9-5.0	18/6.9-7.0
Date Sampled	-----	21/04/2009	21/04/2009	21/04/2009	21/04/2009	21/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	<100	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	93	85	91	89	87

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	28452-61	28452-62	28452-63	28452-64	28452-65
Your Reference	-----	18/7.9-8.0	18/8.9-9.0	19/0.8-1	19/2-2.5	20/0.5-1
Date Sampled	-----	21/04/2009	21/04/2009	15/04/2009	15/04/2009	24/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	<100	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	89	89	90	88	88

Client Reference: 71102, Material Classification

sTPH in Soil (C10-C36)		
Our Reference:	UNITS	28452-66
Your Reference	-----	20/2.8-3
Date Sampled	-----	24/04/2009
Type of sample		Soil
Date extracted	-	28/04/2009
Date analysed	-	29/04/2009
TPH C10 - C14	mg/kg	<50
TPH C15 - C28	mg/kg	<100
TPH C29 - C36	mg/kg	<100
Surrogate o-Terphenyl	%	86

Envirolab Reference: 28452
Revision No: R 00



Client Reference: 71102, Material Classification

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-1 1/0.75-1 17/04/2009 Soil	28452-2 1/7.3-8 17/04/2009 Soil	28452-3 1/12.5-13 17/04/2009 Soil	28452-4 BD3/170409 17/04/2009 Soil	28452-5 2/0-0.5 17/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	0.2
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<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-d14	%	98	98	95	95	96

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-6 2/3.5-4 17/04/2009 Soil	28452-7 2/6.8-7 17/04/2009 Soil	28452-8 3/1.8-2 17/04/2009 Soil	28452-9 3/4.5-5 17/04/2009 Soil	28452-10 3/7.8-8 17/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<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-d14	%	93	94	95	97	93

Client Reference: 71102, Material Classification

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-11 4/1.5-2 24/04/2009 Soil	28452-12 4/4.5-5 24/04/2009 Soil	28452-13 4/5.5-6 24/04/2009 Soil	28452-14 5/0-0.5 24/04/2009 Soil	28452-15 5/3.5-4 24/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	0.2
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1	<0.1	<0.1	0.3
Pyrene	mg/kg	0.3	<0.1	<0.1	<0.1	0.3
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1
Chrysene	mg/kg	0.2	<0.1	<0.1	<0.1	0.2
Benzo(b+k)fluoranthene	mg/kg	0.2	<0.2	<0.2	<0.2	0.3
Benzo(a)pyrene	mg/kg	0.1	<0.05	<0.05	<0.05	0.2
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-d14	%	95	96	96	98	98

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-16 5/8.6-9 24/04/2009 Soil	28452-17 6/0-0.5 16/04/2009 Soil	28452-18 BD2/160409 16/04/2009 Soil	28452-19 6/2.5-3 16/04/2009 Soil	28452-20 6/5.5-6 16/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	1.5	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	3.2	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	21	0.2
Anthracene	mg/kg	<0.1	<0.1	<0.1	3.3	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	8.3	0.3
Pyrene	mg/kg	<0.1	<0.1	<0.1	10	0.3
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	4.4	0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	4.6	0.2
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	4.2	0.3
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	2.7	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	1.2	0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	0.4	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	1.1	0.1
Surrogate p-Terphenyl-d14	%	98	96	94	91	98

Client Reference: 71102, Material Classification

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-21 7/0-0.5 16/04/2009 Soil	28452-22 7/0.8-1 16/04/2009 Soil	28452-23 7/1.5-2 16/04/2009 Soil	28452-24 8/0-1 16/04/2009 Soil	28452-25 8/4.7-5 16/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	0.2	0.5	0.2	0.8
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Fluoranthene	mg/kg	0.3	0.2	0.7	0.4	8.4
Pyrene	mg/kg	0.3	0.2	0.7	0.4	68
Benzo(a)anthracene	mg/kg	0.2	<0.1	0.3	0.2	10
Chrysene	mg/kg	0.2	<0.1	0.3	0.2	14
Benzo(b+k)fluoranthene	mg/kg	0.3	<0.2	0.4	0.4	0.4
Benzo(a)pyrene	mg/kg	0.2	0.07	0.3	0.3	0.4
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	0.2	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	<0.1	0.2	0.2	<0.1
Surrogate p-Terphenyl-d14	%	100	97	101	101	102

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-26 8/6-7 16/04/2009 Soil	28452-27 9/2.4-3 23/04/2009 Soil	28452-28 9/8.5-9 23/04/2009 Soil	28452-29 9/9.5-10 23/04/2009 Soil	28452-30 10/0.5 15/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	1.2	1.3	0.1	0.6
Anthracene	mg/kg	<0.1	0.3	0.2	<0.1	0.1
Fluoranthene	mg/kg	<0.1	1.8	2.0	0.2	0.9
Pyrene	mg/kg	<0.1	1.8	2.0	0.2	1
Benzo(a)anthracene	mg/kg	<0.1	0.8	0.9	0.1	0.5
Chrysene	mg/kg	<0.1	0.9	1	0.1	0.5
Benzo(b+k)fluoranthene	mg/kg	<0.2	1.2	1.6	<0.2	0.8
Benzo(a)pyrene	mg/kg	<0.05	0.8	1.0	0.1	0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.5	0.6	<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	0.5	0.6	<0.1	0.3
Surrogate p-Terphenyl-d14	%	99	97	104	100	100

Client Reference: 71102, Material Classification

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-31 BD1/150409 15/04/2009 Soil	28452-32 10/2.0 15/04/2009 Soil	28452-33 11/0.5-1 23/04/2009 Soil	28452-34 11/6.8-7 23/04/2009 Soil	28452-35 11/8.5-9 23/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Acenaphthylene	mg/kg	<0.1	0.1	<0.1	1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	0.5	<0.1
Fluorene	mg/kg	0.2	<0.1	<0.1	1.0	<0.1
Phenanthrene	mg/kg	1.1	0.7	0.4	16	0.6
Anthracene	mg/kg	0.3	0.1	<0.1	3.4	0.1
Fluoranthene	mg/kg	1.2	1.1	0.7	16	0.7
Pyrene	mg/kg	1.2	1.1	0.6	14	0.7
Benzo(a)anthracene	mg/kg	0.7	0.6	0.3	6.3	0.3
Chrysene	mg/kg	0.7	0.6	0.3	5.9	0.3
Benzo(b+k)fluoranthene	mg/kg	0.9	0.9	0.5	8.6	0.4
Benzo(a)pyrene	mg/kg	0.6	0.6	0.3	5.6	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	0.3	0.4	0.2	3.0	0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	0.4	<0.1
Benzo(g,h,i)perylene	mg/kg	0.4	0.3	0.2	2.6	0.1
Surrogate p-Terphenyl-d14	%	97	99	98	96	101

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-36 12/0-0.3 23/04/2009 Soil	28452-37 12/5.5-6 23/04/2009 Soil	28452-38 12/9.5-10 23/04/2009 Soil	28452-39 13/5-6 23/04/2009 Soil	28452-40 13/7.7-8 23/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	30/04/2009	30/04/2009	30/04/2009	30/04/2009
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	0.4
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Phenanthrene	mg/kg	<0.1	0.2	<0.1	<0.1	4.3
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.5
Fluoranthene	mg/kg	<0.1	0.4	<0.1	<0.1	3.2
Pyrene	mg/kg	<0.1	0.4	<0.1	<0.1	2.8
Benzo(a)anthracene	mg/kg	<0.1	0.2	<0.1	<0.1	1.1
Chrysene	mg/kg	<0.1	0.2	<0.1	<0.1	1.2
Benzo(b+k)fluoranthene	mg/kg	<0.2	0.4	<0.2	<0.2	1.6
Benzo(a)pyrene	mg/kg	0.05	0.3	<0.05	<0.05	1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.1	<0.1	<0.1	0.5
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	0.2	<0.1	<0.1	0.5
Surrogate p-Terphenyl-d14	%	99	98	100	101	97

Client Reference: 71102, Material Classification

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-41 13/8.7-9 23/04/2009 Soil	28452-42 14/4.9-5.0 21/04/2009 Soil	28452-43 14/5.9-6.0 21/04/2009 Soil	28452-44 14/9.9-10.0 21/04/2009 Soil	28452-45 15/0.2-0.5 17/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	30/04/2009	30/04/2009	30/04/2009	30/04/2009	30/04/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.2	<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	1.8	0.2	<0.1	0.6	0.8
Anthracene	mg/kg	0.4	<0.1	<0.1	0.1	<0.1
Fluoranthene	mg/kg	3.0	0.1	<0.1	0.9	1.1
Pyrene	mg/kg	3.0	0.1	<0.1	0.8	1.1
Benzo(a)anthracene	mg/kg	1.6	<0.1	<0.1	0.3	0.5
Chrysene	mg/kg	1.6	0.1	<0.1	0.4	0.7
Benzo(b+k)fluoranthene	mg/kg	2.2	<0.2	<0.2	0.6	1.0
Benzo(a)pyrene	mg/kg	1.5	0.08	<0.05	0.4	0.6
Indeno(1,2,3-c,d)pyrene	mg/kg	0.8	<0.1	<0.1	0.2	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	0.7	<0.1	<0.1	0.2	0.3
Surrogate p-Terphenyl-d14	%	99	100	99	103	101

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-46 15/2.5-3 17/04/2009 Soil	28452-47 15/5.5-6 17/04/2009 Soil	28452-48 16/0.5 22/04/2009 Soil	28452-49 BD5/220409 22/04/2009 Soil	28452-50 16/2.9-3.0 22/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	30/04/2009	30/04/2009	30/04/2009	30/04/2009	30/04/2009
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	0.2
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Phenanthrene	mg/kg	<0.1	0.2	<0.1	<0.1	2.0
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	3.7
Pyrene	mg/kg	<0.1	<0.1	0.1	0.1	3.8
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.7
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.9
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	3.1
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.06	0.06	2.1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.2
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	1.2
Surrogate p-Terphenyl-d14	%	104	101	100	96	106

Client Reference: 71102, Material Classification

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-51 16/5.1-5.9 22/04/2009 Soil	28452-52 17/2.0 21/04/2009 Soil	28452-53 BD4/210409 21/04/2009 Soil	28452-54 17/3.0 21/04/2009 Soil	28452-55 17/7.9-8.0 21/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	30/04/2009	30/04/2009	30/04/2009	30/04/2009	30/04/2009
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	0.6	<0.1	<0.1	0.2	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.8	<0.1	<0.1	0.5	<0.1
Pyrene	mg/kg	0.8	<0.1	<0.1	0.5	<0.1
Benzo(a)anthracene	mg/kg	0.4	<0.1	<0.1	0.2	<0.1
Chrysene	mg/kg	0.4	<0.1	<0.1	0.3	<0.1
Benzo(b+k)fluoranthene	mg/kg	0.6	<0.2	<0.2	0.5	<0.2
Benzo(a)pyrene	mg/kg	0.4	<0.05	<0.05	0.3	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	<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	0.2	<0.1	<0.1	0.2	<0.1
Surrogate p-Terphenyl-d14	%	100	104	98	97	100

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-56 17/9.9-10.0 21/04/2009 Soil	28452-57 17/11.9-12.0 21/04/2009 Soil	28452-58 17/13.9-14.0 21/04/2009 Soil	28452-59 18/4.9-5.0 21/04/2009 Soil	28452-60 18/6.9-7.0 21/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	30/04/2009	30/04/2009	30/04/2009	30/04/2009	30/04/2009
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	1.8	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	1.3	0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	3.8	0.6	<0.1	0.2
Anthracene	mg/kg	<0.1	0.7	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	3.4	0.6	<0.1	<0.1
Pyrene	mg/kg	<0.1	2.6	0.5	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	1.3	0.3	<0.1	<0.1
Chrysene	mg/kg	<0.1	1.4	0.3	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	1.8	0.4	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.9	0.2	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.5	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	0.5	0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	100	101	102	96	103

Client Reference: 71102, Material Classification

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-61 18/7.9-8.0 21/04/2009 Soil	28452-62 18/8.9-9.0 21/04/2009 Soil	28452-63 19/0.8-1 15/04/2009 Soil	28452-64 19/2-2.5 15/04/2009 Soil	28452-65 20/0.5-1 24/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	30/04/2009	30/04/2009	30/04/2009	30/04/2009	30/04/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
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	0.6	0.6	0.1	<0.1	1.7
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Fluoranthene	mg/kg	0.7	0.9	<0.1	<0.1	2.1
Pyrene	mg/kg	0.7	0.9	<0.1	<0.1	2.1
Benzo(a)anthracene	mg/kg	0.3	0.4	<0.1	<0.1	1.1
Chrysene	mg/kg	0.4	0.4	<0.1	<0.1	1.1
Benzo(b+k)fluoranthene	mg/kg	0.5	0.6	<0.2	<0.2	1.6
Benzo(a)pyrene	mg/kg	0.3	0.4	<0.05	<0.05	1.1
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	0.2	<0.1	<0.1	0.5
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	0.2	<0.1	<0.1	0.5
Surrogate p-Terphenyl-d14	%	99	101	99	100	98

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-66 20/2.8-3 24/04/2009 Soil	28452-67 BD6/240409 24/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009
Date analysed	-	30/04/2009	30/04/2009
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	0.8	<0.1
Anthracene	mg/kg	0.2	<0.1
Fluoranthene	mg/kg	1.1	<0.1
Pyrene	mg/kg	1.1	<0.1
Benzo(a)anthracene	mg/kg	0.5	<0.1
Chrysene	mg/kg	0.5	<0.1
Benzo(b+k)fluoranthene	mg/kg	0.8	<0.2
Benzo(a)pyrene	mg/kg	0.6	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.3	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.3	<0.1
Surrogate p-Terphenyl-d14	%	97	95

Client Reference: 71102, Material Classification

Organochlorine Pesticides in soil	UNITS	28452-2	28452-5	28452-9	28452-11	28452-14
Our Reference:	-----	1/7.3-8	2/0-0.5	3/4.5-5	4/1.5-2	5/0-0.5
Your Reference	-----	17/04/2009	17/04/2009	17/04/2009	24/04/2009	24/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	113	108	98	112	106

Client Reference: 71102, Material Classification

Organochlorine Pesticides in soil	UNITS	28452-19	28452-23	28452-25	28452-28	28452-30
Our Reference:	-----	6/2.5-3	7/1.5-2	8/4.7-5	9/8.5-9	10/0.5
Your Reference	-----	16/04/2009	16/04/2009	16/04/2009	23/04/2009	15/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	96	97	119	109	120

Client Reference: 71102, Material Classification

Organochlorine Pesticides in soil	UNITS	28452-34	28452-38	28452-40	28452-43	28452-45
Our Reference:	-----	11/6.8-7	12/9.5-10	13/7.7-8	14/5.9-6.0	15/0.2-0.5
Your Reference	-----	23/04/2009	23/04/2009	23/04/2009	21/04/2009	17/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	117	106	118	104	108

Client Reference: 71102, Material Classification

Organochlorine Pesticides in soil	UNITS	28452-51	28452-55	28452-62	28452-63	28452-65
Our Reference:	-----	16/5.1-5.9	17/7.9-8.0	18/8.9-9.0	19/0.8-1	20/0.5-1
Your Reference	-----	22/04/2009	21/04/2009	21/04/2009	15/04/2009	24/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	139	126	107	101	103

Client Reference: 71102, Material Classification

PCBs In Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-2 1/7.3-8 17/04/2009 Soil	28452-5 2/0-0.5 17/04/2009 Soil	28452-9 3/4.5-5 17/04/2009 Soil	28452-11 4/1.5-2 24/04/2009 Soil	28452-14 5/0-0.5 24/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	113	108	98	112	106

PCBs In Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-19 6/2.5-3 16/04/2009 Soil	28452-23 7/1.5-2 16/04/2009 Soil	28452-25 8/4.7-5 16/04/2009 Soil	28452-28 9/8.5-9 23/04/2009 Soil	28452-30 10/0.5 15/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	96	97	119	109	120

PCBs In Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-34 11/6.8-7 23/04/2009 Soil	28452-38 12/9.5-10 23/04/2009 Soil	28452-40 13/7.7-8 23/04/2009 Soil	28452-43 14/5.9-6.0 21/04/2009 Soil	28452-45 15/0.2-0.5 17/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	117	106	118	104	108

Client Reference: 71102, Material Classification

PCBs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-51 16/5.1-5.9 22/04/2009 Soil	28452-55 17/7.9-8.0 21/04/2009 Soil	28452-62 18/8.9-9.0 21/04/2009 Soil	28452-63 19/0.8-1 15/04/2009 Soil	28452-65 20/0.5-1 24/04/2009 Soil
Date extracted	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
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	%	139	126	109	101	103

Client Reference: 71102, Material Classification

Total Phenolics in Soil	UNITS	28452-2	28452-5	28452-9	28452-11	28452-14
Our Reference:	-----	1/7.3-8	2/0-0.5	3/4.5-5	4/1.5-2	5/0-0.5
Your Reference	-----	17/04/2009	17/04/2009	17/04/2009	24/04/2009	24/04/2009
Date Sampled	-----	Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Date analysed	-	4/05/2009	4/05/2009	4/05/2009	4/05/2009	4/05/2009
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Total Phenolics in Soil	UNITS	28452-19	28452-23	28452-25	28452-28	28452-30
Our Reference:	-----	6/2.5-3	7/1.5-2	8/4.7-5	9/8.5-9	10/0.5
Your Reference	-----	16/04/2009	16/04/2009	16/04/2009	23/04/2009	15/04/2009
Date Sampled	-----	Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Date analysed	-	4/05/2009	4/05/2009	4/05/2009	4/05/2009	4/05/2009
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Total Phenolics in Soil	UNITS	28452-34	28452-38	28452-40	28452-43	28452-45
Our Reference:	-----	11/6.8-7	12/9.5-10	13/7.7-8	14/5.9-6.0	15/0.2-0.5
Your Reference	-----	23/04/2009	23/04/2009	23/04/2009	21/04/2009	17/04/2009
Date Sampled	-----	Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Date analysed	-	4/05/2009	4/05/2009	4/05/2009	4/05/2009	4/05/2009
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Total Phenolics in Soil	UNITS	28452-51	28452-55	28452-62	28452-63	28452-65
Our Reference:	-----	16/5.1-5.9	17/7.9-8.0	18/8.9-9.0	19/0.8-1	20/0.5-1
Your Reference	-----	22/04/2009	21/04/2009	21/04/2009	15/04/2009	24/04/2009
Date Sampled	-----	Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Date analysed	-	4/05/2009	4/05/2009	4/05/2009	4/05/2009	4/05/2009
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Client Reference: 71102, Material Classification

Acid Extractable metals in soil	UNITS	28452-1	28452-2	28452-3	28452-4	28452-5
Our Reference:	-----	1/0.75-1	1/7.3-8	1/12.5-13	BD3/170409	2/0-0.5
Your Reference	-----	17/04/2009	17/04/2009	17/04/2009	17/04/2009	17/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	7	7	6	8	7
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	5	13	13	8	7
Copper	mg/kg	51	21	14	20	48
Lead	mg/kg	18	17	13	14	18
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	21	12	3	4	20
Zinc	mg/kg	76	43	10	17	74

Acid Extractable metals in soil	UNITS	28452-6	28452-7	28452-8	28452-9	28452-10
Our Reference:	-----	2/3.5-4	2/6.8-7	3/1.8-2	3/4.5-5	3/7.8-8
Your Reference	-----	17/04/2009	17/04/2009	17/04/2009	17/04/2009	17/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	7	6	5	9	6
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	9	7	9	15	10
Copper	mg/kg	38	49	43	41	12
Lead	mg/kg	18	18	17	21	10
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	22	21	20	26	2
Zinc	mg/kg	75	73	74	84	8

Acid Extractable metals in soil	UNITS	28452-11	28452-12	28452-13	28452-14	28452-15
Our Reference:	-----	4/1.5-2	4/4.5-5	4/5.5-6	5/0-0.5	5/3.5-4
Your Reference	-----	24/04/2009	24/04/2009	24/04/2009	24/04/2009	24/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	8	13	10	9	6
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	13	9	13	14	11
Copper	mg/kg	40	37	37	48	41
Lead	mg/kg	41	26	20	39	54
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	17	16	26	20	13
Zinc	mg/kg	100	65	81	130	88

Client Reference: 71102, Material Classification

Acid Extractable metals in soil	UNITS	28452-16	28452-17	28452-18	28452-19	28452-20
Our Reference:	-----	5/8.6-9	6/0-0.5	BD2/160409	6/2.5-3	8/5.5-6
Your Reference	-----	24/04/2009	16/04/2009	16/04/2009	16/04/2009	16/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	12	12	12	10	8
Cadmium	mg/kg	0.9	0.9	0.6	0.6	0.6
Chromium	mg/kg	51	48	55	25	16
Copper	mg/kg	23	14	13	30	74
Lead	mg/kg	46	25	27	53	35
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	12	8	9	15	15
Zinc	mg/kg	32	25	22	120	86

Acid Extractable metals in soil	UNITS	28452-21	28452-22	28452-23	28452-24	28452-25
Our Reference:	-----	7/0-0.5	7/0.8-1	7/1.5-2	8/0-1	8/4.7-5
Your Reference	-----	16/04/2009	16/04/2009	16/04/2009	16/04/2009	16/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	7	5	5	5	<4
Cadmium	mg/kg	0.6	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	23	17	26	19	12
Copper	mg/kg	25	11	15	22	10
Lead	mg/kg	55	26	38	58	18
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	5	8	10	3
Zinc	mg/kg	100	26	43	86	20

Acid Extractable metals in soil	UNITS	28452-26	28452-27	28452-28	28452-29	28452-30
Our Reference:	-----	8/6-7	9/2.4-3	9/8.5-9	9/9.5-10	10/0.5
Your Reference	-----	16/04/2009	23/04/2009	23/04/2009	23/04/2009	15/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	<4	5	10	11	5
Cadmium	mg/kg	<0.5	3.3	0.6	<0.5	<0.5
Chromium	mg/kg	8	22	28	16	9
Copper	mg/kg	2	43	37	29	48
Lead	mg/kg	6	110	71	50	53
Mercury	mg/kg	<0.1	0.3	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	12	9	5	5
Zinc	mg/kg	8	230	78	51	56

Client Reference: 71102, Material Classification

Acid Extractable metals in soil	UNITS	28452-31	28452-32	28452-33	28452-34	28452-35
Our Reference:	-----	BD1/150409	10/2.0	11/0.5-1	11/6.8-7	11/8.5-9
Your Reference	-----	15/04/2009	15/04/2009	23/04/2009	23/04/2009	23/04/2009
Date Sampled	-----	Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	8	5	6	10	9
Cadmium	mg/kg	1.0	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	13	21	19	29	26
Copper	mg/kg	24	41	27	25	48
Lead	mg/kg	59	56	290	58	33
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	6	13	10	8
Zinc	mg/kg	72	88	150	89	91

Acid Extractable metals in soil	UNITS	28452-36	28452-37	28452-38	28452-39	28452-40
Our Reference:	-----	12/0-0.3	12/5.5-6	12/9.5-10	13/5-6	13/7.7-8
Your Reference	-----	23/04/2009	23/04/2009	23/04/2009	23/04/2009	23/04/2009
Date Sampled	-----	Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	11	15	5	<4	13
Cadmium	mg/kg	0.7	<0.5	<0.5	<0.5	0.7
Chromium	mg/kg	24	22	17	8	27
Copper	mg/kg	10	38	11	4	26
Lead	mg/kg	46	77	18	12	44
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	12	2	2	5
Zinc	mg/kg	43	150	13	22	34

Acid Extractable metals in soil	UNITS	28452-41	28452-42	28452-43	28452-44	28452-45
Our Reference:	-----	13/8.7-9	14/4.9-5.0	14/5.9-6.0	14/9.9-10.0	15/0.2-0.5
Your Reference	-----	23/04/2009	21/04/2009	21/04/2009	21/04/2009	17/04/2009
Date Sampled	-----	Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	9	8	<4	6	8
Cadmium	mg/kg	0.6	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	25	8	13	16	16
Copper	mg/kg	25	46	19	72	37
Lead	mg/kg	34	23	17	540	200
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	20	27	9	13
Zinc	mg/kg	48	81	37	92	200

Client Reference: 71102, Material Classification

Acid Extractable metals in soil	UNITS	28452-46	28452-47	28452-48	28452-49	28452-50
Our Reference:	-----	15/2.5-3	15/5.5-6	16/0.5	BD5/220409	16/2.9-3.0
Your Reference	-----	17/04/2009	17/04/2009	22/04/2009	22/04/2009	22/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	8	8	8	7	7
Cadmium	mg/kg	<0.5	0.5	2.0	3.9	<0.5
Chromium	mg/kg	16	7	29	25	15
Copper	mg/kg	35	43	110	26	100
Lead	mg/kg	22	20	38	35	230
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.8
Nickel	mg/kg	18	20	3	3	4
Zinc	mg/kg	55	70	30	37	240

Acid Extractable metals in soil	UNITS	28452-51	28452-52	28452-53	28452-54	28452-55
Our Reference:	-----	16/5.1-5.9	17/2.0	BD4/210409	17/3.0	17/7.9-8.0
Your Reference	-----	22/04/2009	21/04/2009	21/04/2009	21/04/2009	21/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	7	6	5	6	8
Cadmium	mg/kg	<0.5	<0.5	0.6	0.6	<0.5
Chromium	mg/kg	21	24	26	21	12
Copper	mg/kg	31	14	13	120	25
Lead	mg/kg	81	27	22	86	20
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	13	3	2	15	8
Zinc	mg/kg	180	20	11	350	43

Acid Extractable metals in soil	UNITS	28452-56	28452-57	28452-58	28452-59	28452-60
Our Reference:	-----	17/9.9-10.0	17/11.9-12.0	17/13.9-14.0	18/4.9-5.0	18/6.9-7.0
Your Reference	-----	21/04/2009	21/04/2009	21/04/2009	21/04/2009	21/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	9	6	<4	<4	<4
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	12	32	20	10	11
Copper	mg/kg	34	34	17	5	48
Lead	mg/kg	41	38	52	28	24
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	10	13	5	2	23
Zinc	mg/kg	74	73	94	34	82

Client Reference: 71102, Material Classification

Acid Extractable metals in soil	UNITS	28452-61	28452-62	28452-63	28452-64	28452-65
Our Reference:	-----	18/7.9-8.0	18/8.9-9.0	19/0.8-1	19/2-2.5	20/0.5-1
Your Reference	-----	21/04/2009	21/04/2009	15/04/2009	15/04/2009	24/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date digested	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Arsenic	mg/kg	8	7	5	11	6
Cadmium	mg/kg	0.6	<0.5	<0.5	0.7	<0.5
Chromium	mg/kg	18	18	7	32	17
Copper	mg/kg	29	52	47	22	28
Lead	mg/kg	100	65	17	24	65
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	14	20	14	10	8
Zinc	mg/kg	75	82	73	29	95

Acid Extractable metals in soil	UNITS	28452-66	28452-67
Our Reference:	-----	20/2.8-3	BD6/240409
Your Reference	-----	24/04/2009	24/04/2009
Date Sampled		Soil	Soil
Type of sample			
Date digested	-	28/04/2009	28/04/2009
Date analysed	-	29/04/2009	29/04/2009
Arsenic	mg/kg	4	13
Cadmium	mg/kg	<0.5	0.8
Chromium	mg/kg	14	52
Copper	mg/kg	23	12
Lead	mg/kg	53	24
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	7	5
Zinc	mg/kg	110	11

Client Reference: 71102, Material Classification

Moisture						
Our Reference:	UNITS	28452-1	28452-2	28452-3	28452-4	28452-5
Your Reference	-----	1/0.75-1	1/7.3-8	1/12.5-13	BD3/170409	2/0-0.5
Date Sampled	-----	17/04/2009	17/04/2009	17/04/2009	17/04/2009	17/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	6.9	11	18	15	8.6

Moisture						
Our Reference:	UNITS	28452-6	28452-7	28452-8	28452-9	28452-10
Your Reference	-----	2/3.5-4	2/6.8-7	3/1.8-2	3/4.5-5	3/7.8-8
Date Sampled	-----	17/04/2009	17/04/2009	17/04/2009	17/04/2009	17/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	12	22	9.9	20	24

Moisture						
Our Reference:	UNITS	28452-11	28452-12	28452-13	28452-14	28452-15
Your Reference	-----	4/1.5-2	4/4.5-5	4/5.5-6	5/0-0.5	5/3.5-4
Date Sampled	-----	24/04/2009	24/04/2009	24/04/2009	24/04/2009	24/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	10	13	15	11	12

Moisture						
Our Reference:	UNITS	28452-16	28452-17	28452-18	28452-19	28452-20
Your Reference	-----	5/8.6-9	6/0-0.5	BD2/160409	6/2.5-3	6/5.5-6
Date Sampled	-----	24/04/2009	16/04/2009	16/04/2009	16/04/2009	16/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	19	6.6	8.1	9.8	13

Moisture						
Our Reference:	UNITS	28452-21	28452-22	28452-23	28452-24	28452-25
Your Reference	-----	7/0-0.5	7/0.8-1	7/1.5-2	8/0-1	8/4.7-5
Date Sampled	-----	16/04/2009	16/04/2009	16/04/2009	16/04/2009	16/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	15	7.8	7.4	14	13

Client Reference: 71102, Material Classification

Moisture						
Our Reference:	UNITS	28452-26	28452-27	28452-28	28452-29	28452-30
Your Reference	-----	8/6-7	9/2.4-3	9/8.5-9	9/9.5-10	10/0.5
Date Sampled	-----	16/04/2009	23/04/2009	23/04/2009	23/04/2009	15/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	16	11	17	19	8.9

Moisture						
Our Reference:	UNITS	28452-31	28452-32	28452-33	28452-34	28452-35
Your Reference	-----	BD1/150409	10/2.0	11/0.5-1	11/6.8-7	11/8.5-9
Date Sampled	-----	15/04/2009	15/04/2009	23/04/2009	23/04/2009	23/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	9.7	12	45	11	16

Moisture						
Our Reference:	UNITS	28452-36	28452-37	28452-38	28452-39	28452-40
Your Reference	-----	12/0-0.3	12/5.5-6	12/9.5-10	13/5-6	13/7.7-8
Date Sampled	-----	23/04/2009	23/04/2009	23/04/2009	23/04/2009	23/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	11	13	19	15	16

Moisture						
Our Reference:	UNITS	28452-41	28452-42	28452-43	28452-44	28452-45
Your Reference	-----	13/8.7-9	14/4.9-5.0	14/5.9-6.0	14/9.9-10.0	15/0.2-0.5
Date Sampled	-----	23/04/2009	21/04/2009	21/04/2009	21/04/2009	17/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	20	15	19	13	14

Moisture						
Our Reference:	UNITS	28452-46	28452-47	28452-48	28452-49	28452-50
Your Reference	-----	15/2.5-3	15/5.5-6	16/0.5	BD5/220409	16/2.9-3.0
Date Sampled	-----	17/04/2009	17/04/2009	22/04/2009	22/04/2009	22/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	10	6.0	13	9.6	13

Client Reference: 71102, Material Classification

Moisture						
Our Reference:	UNITS	28452-51	28452-52	28452-53	28452-54	28452-55
Your Reference	-----	16/5.1-5.9	17/2.0	BD4/210409	17/3.0	17/7.9-8.0
Date Sampled	-----	22/04/2009	21/04/2009	21/04/2009	21/04/2009	21/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	13	17	18	11	15

Moisture						
Our Reference:	UNITS	28452-56	28452-57	28452-58	28452-59	28452-60
Your Reference	-----	17/9.9-10.0	17/11.9-12.0	17/13.9-14.0	18/4.9-5.0	18/6.9-7.0
Date Sampled	-----	21/04/2009	21/04/2009	21/04/2009	21/04/2009	21/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	13	7.0	6.3	15	8.6

Moisture						
Our Reference:	UNITS	28452-61	28452-62	28452-63	28452-64	28452-65
Your Reference	-----	18/7.9-8.0	18/8.9-9.0	19/0.8-1	19/2-2.5	20/0.5-1
Date Sampled	-----	21/04/2009	21/04/2009	15/04/2009	15/04/2009	24/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009	28/04/2009	28/04/2009	28/04/2009
Moisture	%	12	11	7.6	14	12

Moisture			
Our Reference:	UNITS	28452-66	28452-67
Your Reference	-----	20/2.8-3	BD6/240409
Date Sampled	-----	24/04/2009	24/04/2009
Type of sample		Soil	Soil
Date prepared	-	28/04/2009	28/04/2009
Date analysed	-	28/04/2009	28/04/2009
Moisture	%	13	20

Client Reference: 71102, Material Classification

Asbestos ID - soils Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-1 1/0.75-1 17/04/2009 Soil	28452-2 1/7.3-8 17/04/2009 Soil	28452-3 1/12.5-13 17/04/2009 Soil	28452-5 2/0-0.5 17/04/2009 Soil	28452-6 2/3.5-4 17/04/2009 Soil
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Sample Description	-	40g soil	40g soil	40g soil	40g soil	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
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: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-7 2/6.8-7 17/04/2009 Soil	28452-8 3/1.8-2 17/04/2009 Soil	28452-9 3/4.5-5 17/04/2009 Soil	28452-10 3/7.8-8 17/04/2009 Soil	28452-11 4/1.5-2 24/04/2009 Soil
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Sample Description	-	40g soil	40g soil	40g soil	40g soil	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
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: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-12 4/4.5-5 24/04/2009 Soil	28452-13 4/5.5-6 24/04/2009 Soil	28452-14 5/0-0.5 24/04/2009 Soil	28452-15 5/3.5-4 24/04/2009 Soil	28452-16 5/8.6-9 24/04/2009 Soil
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Sample Description	-	40g soil	40g soil	40g soil	40g soil	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Client Reference: 71102, Material Classification

Asbestos ID - soils Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-17 6/0-0.5 16/04/2009 Soil	28452-19 6/2.5-3 16/04/2009 Soil	28452-20 6/5.5-6 16/04/2009 Soil	28452-21 7/0-0.5 16/04/2009 Soil	28452-22 7/0.8-1 16/04/2009 Soil
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Sample Description	-	40g soil	40g soil	40g soil	40g soil	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
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: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-23 7/1.5-2 16/04/2009 Soil	28452-24 8/0-1 16/04/2009 Soil	28452-25 8/4.7-5 16/04/2009 Soil	28452-26 8/6-7 16/04/2009 Soil	28452-27 9/2.4-3 23/04/2009 Soil
Date analysed	-	29/04/2009	30/04/2009	30/04/2009	30/04/2009	30/04/2009
Sample Description	-	40g soil	40g soil	40g soil	40g soil	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
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: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-28 9/8.5-9 23/04/2009 Soil	28452-29 9/9.5-10 23/04/2009 Soil	28452-30 10/0.5 15/04/2009 Soil	28452-32 10/2.0 15/04/2009 Soil	28452-33 11/0.5-1 23/04/2009 Soil
Date analysed	-	30/04/2009	30/04/2009	30/04/2009	30/04/2009	30/04/2009
Sample Description	-	40g soil	40g soil	40g soil	40g soil	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Client Reference: 71102, Material Classification

Asbestos ID - soils Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-34 11/6.8-7 23/04/2009 Soil	28452-35 11/8.5-9 23/04/2009 Soil	28452-36 12/0-0.3 23/04/2009 Soil	28452-37 12/5.5-6 23/04/2009 Soil	28452-38 12/9.5-10 23/04/2009 Soil
Date analysed	-	30/04/2009	30/04/2009	30/04/2009	30/04/2009	30/04/2009
Sample Description	-	40g soil	40g soil	40g soil	40g soil	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	Chrysotile asbestos detected	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
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: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-39 13/5-6 23/04/2009 Soil	28452-40 13/7.7-8 23/04/2009 Soil	28452-41 13/8.7-9 23/04/2009 Soil	28452-42 14/4.9-5.0 21/04/2009 Soil	28452-43 14/5.9-6.0 21/04/2009 Soil
Date analysed	-	30/04/2009	30/04/2009	30/04/2009	30/04/2009	30/04/2009
Sample Description	-	40g soil	40g soil	40g soil	40g soil	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
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: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-44 14/9.9-10.0 21/04/2009 Soil	28452-45 15/0.2-0.5 17/04/2009 Soil	28452-46 15/2.5-3 17/04/2009 Soil	28452-47 15/5.5-6 17/04/2009 Soil	28452-48 16/0.5 22/04/2009 Soil
Date analysed	-	30/04/2009	30/04/2009	30/04/2009	30/04/2009	30/04/2009
Sample Description	-	40g soil	40g soil	40g soil	40g soil	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Client Reference: 71102, Material Classification

Asbestos ID - soils						
Our Reference:	UNITS	28452-50	28452-51	28452-52	28452-54	28452-55
Your Reference	-----	16/2.9-3.0	16/5.1-5.9	17/2.0	17/3.0	17/7.9-8.0
Date Sampled	-----	22/04/2009	22/04/2009	21/04/2009	21/04/2009	21/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	30/04/2009	30/04/2009	29/04/2009	29/04/2009	29/04/2009
Sample Description	-	40g soil	40g soil	40g soil	40g soil	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
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	28452-56	28452-57	28452-58	28452-59	28452-60
Your Reference	-----	17/9.9-10.0	17/11.9-12.0	17/13.9-14.0	18/4.9-5.0	18/6.9-7.0
Date Sampled	-----	21/04/2009	21/04/2009	21/04/2009	21/04/2009	21/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Sample Description	-	40g soil	40g soil	40g soil	40g soil	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
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	28452-61	28452-62	28452-63	28452-64	28452-65
Your Reference	-----	18/7.9-8.0	18/8.9-9.0	19/0.8-1	19/2-2.5	20/0.5-1
Date Sampled	-----	21/04/2009	21/04/2009	15/04/2009	15/04/2009	24/04/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	29/04/2009	29/04/2009	29/04/2009	29/04/2009	29/04/2009
Sample Description	-	40g soil	40g soil	40g soil	40g soil	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Client Reference: 71102, Material Classification

Asbestos ID - soils		
Our Reference:	UNITS	28452-66
Your Reference	-----	20/2.8-3
Date Sampled	-----	24/04/2009
Type of sample		Soil
Date analysed	-	29/04/2009
Sample Description	-	40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected

Envirolab Reference: 28452
Revision No: R 00



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.3	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
GC.12 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
GC-5	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
GC-6	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
LAB.30	Total Phenolics - determined colorimetrically following distillation.
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.

Client Reference: 71102, Material Classification

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTPH & BTEX in Soil						Base Duplicate %RPD		
Date extracted	-			28/4/09	28452-1	28/04/2009 28/04/2009	LCS-2	28/4/09
Date analysed	-			28/4/09	28452-1	28/04/2009 28/04/2009	LCS-2	28/4/09
vTPH C6 - C9	mg/kg	25	GC.16	<25	28452-1	<25 <25	LCS-2	91%
Benzene	mg/kg	0.5	GC.16	<0.5	28452-1	<0.5 <0.5	LCS-2	88%
Toluene	mg/kg	0.5	GC.16	<0.5	28452-1	<0.5 <0.5	LCS-2	91%
Ethylbenzene	mg/kg	1	GC.16	<1.0	28452-1	<1.0 <1.0	LCS-2	91%
m+p-xylene	mg/kg	2	GC.16	<2.0	28452-1	<2.0 <2.0	LCS-2	93%
o-Xylene	mg/kg	1	GC.16	<1.0	28452-1	<1.0 <1.0	LCS-2	98%
Surrogate aaa-Trifluorotoluene	%		GC.16	115	28452-1	101 122 RPD: 19	LCS-2	124%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
sTPH in Soil (C10-C36)						Base Duplicate %RPD		
Date extracted	-			28/4/09	28452-1	28/04/2009 28/04/2009	LCS-2	28/4/09
Date analysed	-			28/4/09	28452-1	28/04/2009 28/04/2009	LCS-2	28/4/09
TPH C10 - C14	mg/kg	50	GC.3	<50	28452-1	<50 <50	LCS-2	90%
TPH C15 - C28	mg/kg	100	GC.3	<100	28452-1	<100 <100	LCS-2	91%
TPH C29 - C36	mg/kg	100	GC.3	<100	28452-1	<100 <100	LCS-2	82%
Surrogate o-Terphenyl	%		GC.3	87	28452-1	90 91 RPD: 1	LCS-2	85%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base Duplicate %RPD		
Date extracted	-			28/4/09	28452-1	28/04/2009 28/04/2009	LCS-2	28/4/09
Date analysed	-			29/4/09	28452-1	29/04/2009 29/04/2009	LCS-2	29/4/09
Naphthalene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	<0.1 <0.1	LCS-2	95%
Acenaphthylene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	<0.1 <0.1	LCS-2	96%
Phenanthrene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	0.1 0.1 RPD: 0	LCS-2	96%
Anthracene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	<0.1 <0.1	LCS-2	92%
Pyrene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	<0.1 <0.1	LCS-2	97%
Benzo(a)anthracene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	<0.1 <0.1	LCS-2	111%

Client Reference: 71102, Material Classification

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base Duplicate %RPD		
Benzo(b+k)fluoranthene	mg/kg	0.2	GC.12 subset	<0.2	28452-1	<0.2 <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	GC.12 subset	<0.05	28452-1	<0.05 <0.05	LCS-2	84%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	GC.12 subset	<0.1	28452-1	<0.1 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		GC.12 subset	97	28452-1	98 98 RPD: 0	LCS-2	96%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base Duplicate %RPD		
Date extracted	-			28/4/09	[NT]	[NT]	LCS-2	28/4/09
Date analysed	-			29/4/09	[NT]	[NT]	LCS-2	29/4/09
HCB	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	117%
gamma-BHC	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	128%
Heptachlor	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	117%
delta-BHC	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	132%
Heptachlor Epoxide	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	121%
gamma-Chlordane	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	106%
Dieldrin	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	122%
Endrin	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	124%
pp-DDD	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	111%
Endosulfan II	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	115%
Methoxychlor	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		GC-5	107	[NT]	[NT]	LCS-2	119%

Client Reference: 71102, Material Classification

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Soil						Base II Duplicate II %RPD		
Date extracted	-			28/4/09	[NT]	[NT]	LCS-2	28/4/09
Date analysed	-			29/4/09	[NT]	[NT]	LCS-2	29/4/09
Arochlor 1016	mg/kg	0.1	GC-6	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	GC-6	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	GC-6	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	GC-6	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	GC-6	<0.1	[NT]	[NT]	LCS-2	104%
Arochlor 1260	mg/kg	0.1	GC-6	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		GC-6	107	[NT]	[NT]	LCS-2	108%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Total Phenolics in Soil						Base II Duplicate II %RPD		
Date extracted	-			29/4/09	28452-2	29/04/2009 29/04/2009	LCS-2	29/4/09
Date analysed	-			4/5/09	28452-2	4/05/2009 4/05/2009	LCS-2	4/5/09
Total Phenolics (as Phenol)	mg/kg	5	LAB.30	<5.0	28452-2	<5.0 <5.0	LCS-2	84%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			28/04/09	28452-1	28/04/2009 28/04/2009	LCS-1	28/04/09
Date analysed	-			29/04/09	28452-1	29/04/2009 29/04/2009	LCS-1	29/04/09
Arsenic	mg/kg	4	Metals.20 ICP-AES	<4	28452-1	7 7 RPD: 0	LCS-1	105%
Cadmium	mg/kg	0.5	Metals.20 ICP-AES	<0.5	28452-1	<0.5 <0.5	LCS-1	106%
Chromium	mg/kg	1	Metals.20 ICP-AES	<1	28452-1	5 5 RPD: 0	LCS-1	108%
Copper	mg/kg	1	Metals.20 ICP-AES	<1	28452-1	51 52 RPD: 2	LCS-1	111%
Lead	mg/kg	1	Metals.20 ICP-AES	<1	28452-1	18 17 RPD: 6	LCS-1	105%
Mercury	mg/kg	0.1	Metals.21 CV-AAS	<0.1	28452-1	<0.1 <0.1	LCS-1	109%
Nickel	mg/kg	1	Metals.20 ICP-AES	<1	28452-1	21 23 RPD: 9	LCS-1	109%
Zinc	mg/kg	1	Metals.20 ICP-AES	<1	28452-1	76 78 RPD: 3	LCS-1	108%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank
Moisture				
Date prepared	-			28/4/09
Date analysed	-			28/4/09
Moisture	%	0.1	LAB.8	[NT]

QUALITY CONTROL	UNITS	PQL	METHOD	Blank
Asbestos ID - soils				
Date analysed	-			[NT]

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-11	28/04/2009 28/04/2009	LCS-3	28/4/09
Date analysed	-	28452-11	28/04/2009 28/04/2009	LCS-3	28/4/09
vTPH C6 - C9	mg/kg	28452-11	<25 <25	LCS-3	109%
Benzene	mg/kg	28452-11	<0.5 <0.5	LCS-3	93%
Toluene	mg/kg	28452-11	<0.5 <0.5	LCS-3	103%
Ethylbenzene	mg/kg	28452-11	<1.0 <1.0	LCS-3	115%
m+p-xylene	mg/kg	28452-11	<2.0 <2.0	LCS-3	116%
o-Xylene	mg/kg	28452-11	<1.0 <1.0	LCS-3	124%
Surrogate aaa-Trifluorotoluene	%	28452-11	106 111 RPD: 5	LCS-3	123%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-11	28/04/2009 28/04/2009	LCS-3	28/4/09
Date analysed	-	28452-11	28/04/2009 28/04/2009	LCS-3	29/4/09
TPH C10 - C14	mg/kg	28452-11	<50 <50	LCS-3	92%
TPH C15 - C28	mg/kg	28452-11	<100 <100	LCS-3	92%
TPH C29 - C36	mg/kg	28452-11	<100 <100	LCS-3	83%
Surrogate o-Terphenyl	%	28452-11	90 88 RPD: 2	LCS-3	86%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-11	28/04/2009 28/04/2009	LCS-3	28/4/09
Date analysed	-	28452-11	29/04/2009 29/04/2009	LCS-3	29/4/09
Naphthalene	mg/kg	28452-11	<0.1 <0.1	LCS-3	98%
Acenaphthylene	mg/kg	28452-11	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	28452-11	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	28452-11	<0.1 <0.1	LCS-3	98%
Phenanthrene	mg/kg	28452-11	0.2 0.2 RPD: 0	LCS-3	104%
Anthracene	mg/kg	28452-11	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	28452-11	0.2 0.3 RPD: 40	LCS-3	98%
Pyrene	mg/kg	28452-11	0.3 0.3 RPD: 0	LCS-3	103%
Benzo(a)anthracene	mg/kg	28452-11	0.1 0.2 RPD: 67	[NR]	[NR]
Chrysene	mg/kg	28452-11	0.2 0.2 RPD: 0	LCS-3	113%

Client Reference: 71102, Material Classification

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Benzo(b+k)fluoranthene	mg/kg	28452-11	0.2 0.3 RPD: 40	[NR]	[NR]
Benzo(a)pyrene	mg/kg	28452-11	0.1 0.2 RPD: 67	LCS-3	99%
Indeno(1,2,3-c,d)pyrene	mg/kg	28452-11	<0.1 0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	28452-11	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	28452-11	<0.1 0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	28452-11	95 100 RPD: 5	LCS-3	100%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date extracted	-	28452-11	28/04/2009 28/04/2009		
Date analysed	-	28452-11	29/04/2009 29/04/2009		
HCB	mg/kg	28452-11	<0.1 <0.1		
alpha-BHC	mg/kg	28452-11	<0.1 <0.1		
gamma-BHC	mg/kg	28452-11	<0.1 <0.1		
beta-BHC	mg/kg	28452-11	<0.1 <0.1		
Heptachlor	mg/kg	28452-11	<0.1 <0.1		
delta-BHC	mg/kg	28452-11	<0.1 <0.1		
Aldrin	mg/kg	28452-11	<0.1 <0.1		
Heptachlor Epoxide	mg/kg	28452-11	<0.1 <0.1		
gamma-Chlordane	mg/kg	28452-11	<0.1 <0.1		
alpha-chlordane	mg/kg	28452-11	<0.1 <0.1		
Endosulfan I	mg/kg	28452-11	<0.1 <0.1		
pp-DDE	mg/kg	28452-11	<0.1 <0.1		
Dieldrin	mg/kg	28452-11	<0.1 <0.1		
Endrin	mg/kg	28452-11	<0.1 <0.1		
pp-DDD	mg/kg	28452-11	<0.1 <0.1		
Endosulfan II	mg/kg	28452-11	<0.1 <0.1		
pp-DDT	mg/kg	28452-11	<0.1 <0.1		
Endrin Aldehyde	mg/kg	28452-11	<0.1 <0.1		
Endosulfan Sulphate	mg/kg	28452-11	<0.1 <0.1		
Methoxychlor	mg/kg	28452-11	<0.1 <0.1		
Surrogate TCLMX	%	28452-11	112 117 RPD: 4		

EnviroLab Reference: 28452
Revision No: R 00



Client Reference: 71102, Material Classification

QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date extracted	-	28452-11	28/04/2009 28/04/2009		
Date analysed	-	28452-11	29/04/2009 29/04/2009		
Arochlor 1016	mg/kg	28452-11	<0.1 <0.1		
Arochlor 1232	mg/kg	28452-11	<0.1 <0.1		
Arochlor 1242	mg/kg	28452-11	<0.1 <0.1		
Arochlor 1248	mg/kg	28452-11	<0.1 <0.1		
Arochlor 1254	mg/kg	28452-11	<0.1 <0.1		
Arochlor 1260	mg/kg	28452-11	<0.1 <0.1		
Surrogate TCLMX	%	28452-11	112 117 RPD: 4		
QUALITY CONTROL Total Phenolics in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-34	29/04/2009 29/04/2009	28452-5	29/4/09
Date analysed	-	28452-34	4/05/2009 4/05/2009	28452-5	4/5/09
Total Phenolics (as Phenol)	mg/kg	28452-34	<5.0 <5.0	28452-5	87%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	28452-11	28/04/2009 28/04/2009	LCS-2	28/04/09
Date analysed	-	28452-11	29/04/2009 29/04/2009	LCS-2	29/04/09
Arsenic	mg/kg	28452-11	8 8 RPD: 0	LCS-2	104%
Cadmium	mg/kg	28452-11	<0.5 <0.5	LCS-2	103%
Chromium	mg/kg	28452-11	13 13 RPD: 0	LCS-2	107%
Copper	mg/kg	28452-11	40 43 RPD: 7	LCS-2	107%
Lead	mg/kg	28452-11	41 42 RPD: 2	LCS-2	104%
Mercury	mg/kg	28452-11	<0.1 <0.1	LCS-2	99%
Nickel	mg/kg	28452-11	17 18 RPD: 6	LCS-2	108%
Zinc	mg/kg	28452-11	100 93 RPD: 7	LCS-2	107%
QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-21	28/04/2009 28/04/2009	LCS-4	28/4/09
Date analysed	-	28452-21	29/04/2009 29/04/2009	LCS-4	29/4/09
vTPH C6 - C9	mg/kg	28452-21	<25 <25	LCS-4	113%
Benzene	mg/kg	28452-21	<0.5 <0.5	LCS-4	84%
Toluene	mg/kg	28452-21	<0.5 <0.5	LCS-4	108%
Ethylbenzene	mg/kg	28452-21	<1.0 <1.0	LCS-4	114%
m+p-xylene	mg/kg	28452-21	<2.0 <2.0	LCS-4	130%
o-Xylene	mg/kg	28452-21	<1.0 <1.0	LCS-4	130%
Surrogate aaa-Trifluorotoluene	%	28452-21	101 104 RPD: 3	LCS-4	107%

Client Reference: 71102, Material Classification

QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-21	28/04/2009 28/04/2009	LCS-4	28/4/09
Date analysed	-	28452-21	29/04/2009 29/04/2009	LCS-4	29/4/09
TPH C10 - C14	mg/kg	28452-21	<50 <50	LCS-4	87%
TPH C15 - C28	mg/kg	28452-21	<100 <100	LCS-4	88%
TPH C29 - C36	mg/kg	28452-21	<100 <100	LCS-4	80%
Surrogate o-Terphenyl	%	28452-21	90 88 RPD: 2	LCS-4	84%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-21	28/04/2009 28/04/2009	LCS-4	28/4/09
Date analysed	-	28452-21	29/04/2009 29/04/2009	LCS-4	29/4/09
Naphthalene	mg/kg	28452-21	<0.1 <0.1	LCS-4	98%
Acenaphthylene	mg/kg	28452-21	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	28452-21	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	28452-21	<0.1 <0.1	LCS-4	97%
Phenanthrene	mg/kg	28452-21	0.2 0.2 RPD: 0	LCS-4	103%
Anthracene	mg/kg	28452-21	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	28452-21	0.3 0.3 RPD: 0	LCS-4	96%
Pyrene	mg/kg	28452-21	0.3 0.3 RPD: 0	LCS-4	102%
Benzo(a)anthracene	mg/kg	28452-21	0.2 0.2 RPD: 0	[NR]	[NR]
Chrysene	mg/kg	28452-21	0.2 0.2 RPD: 0	LCS-4	113%
Benzo(b+k)fluoranthene	mg/kg	28452-21	0.3 0.3 RPD: 0	[NR]	[NR]
Benzo(a)pyrene	mg/kg	28452-21	0.2 0.2 RPD: 0	LCS-4	103%
Indeno(1,2,3-c,d)pyrene	mg/kg	28452-21	0.1 0.1 RPD: 0	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	28452-21	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	28452-21	0.1 0.2 RPD: 67	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	28452-21	100 98 RPD: 2	LCS-4	99%

Client Reference: 71102, Material Classification

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	28452-21	28/04/2009 28/04/2009	LCS-3	28/04/09
Date analysed	-	28452-21	29/04/2009 29/04/2009	LCS-3	29/04/09
Arsenic	mg/kg	28452-21	7 6 RPD: 15	LCS-3	101%
Cadmium	mg/kg	28452-21	0.6 0.6 RPD: 0	LCS-3	103%
Chromium	mg/kg	28452-21	23 20 RPD: 14	LCS-3	104%
Copper	mg/kg	28452-21	25 19 RPD: 27	LCS-3	105%
Lead	mg/kg	28452-21	55 74 RPD: 29	LCS-3	101%
Mercury	mg/kg	28452-21	<0.1 <0.1	LCS-3	107%
Nickel	mg/kg	28452-21	6 6 RPD: 0	LCS-3	105%
Zinc	mg/kg	28452-21	100 110 RPD: 10	LCS-3	104%
QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-30	28/04/2009 28/04/2009	28452-5	28/4/09
Date analysed	-	28452-30	29/04/2009 29/04/2009	28452-5	28/4/09
vTPH C6 - C9	mg/kg	28452-30	<25 <25	28452-5	87%
Benzene	mg/kg	28452-30	<0.5 <0.5	28452-5	85%
Toluene	mg/kg	28452-30	<0.5 <0.5	28452-5	84%
Ethylbenzene	mg/kg	28452-30	<1.0 <1.0	28452-5	87%
m+p-xylene	mg/kg	28452-30	<2.0 <2.0	28452-5	89%
o-Xylene	mg/kg	28452-30	<1.0 <1.0	28452-5	94%
Surrogate aaa-Trifluorotoluene	%	28452-30	120 110 RPD: 9	28452-5	115%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-30	28/04/2009 28/04/2009	28452-5	28/4/09
Date analysed	-	28452-30	29/04/2009 29/04/2009	28452-5	28/4/09
TPH C10 - C14	mg/kg	28452-30	<50 <50	28452-5	95%
TPH C15 - C28	mg/kg	28452-30	<100 <100	28452-5	97%
TPH C29 - C36	mg/kg	28452-30	<100 <100	28452-5	87%
Surrogate o-Terphenyl	%	28452-30	92 91 RPD: 1	28452-5	90%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-30	28/04/2009 28/04/2009	LCS-6	28/4/09
Date analysed	-	28452-30	29/04/2009 29/04/2009	LCS-6	30/4/09
Naphthalene	mg/kg	28452-30	<0.1 <0.1	LCS-6	97%
Acenaphthylene	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	28452-30	<0.1 0.1	LCS-6	97%
Phenanthrene	mg/kg	28452-30	0.6 0.9 RPD: 40	LCS-6	104%
Anthracene	mg/kg	28452-30	0.1 0.2 RPD: 67	[NR]	[NR]

Client Reference: 71102, Material Classification

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Fluoranthene	mg/kg	28452-30	0.9 1.1 RPD: 20	LCS-6	97%
Pyrene	mg/kg	28452-30	1 1.1 RPD: 10	LCS-6	103%
Benzo(a)anthracene	mg/kg	28452-30	0.5 0.6 RPD: 18	[NR]	[NR]
Chrysene	mg/kg	28452-30	0.5 0.6 RPD: 18	LCS-6	113%
Benzo(b+k)fluoranthene	mg/kg	28452-30	0.8 0.9 RPD: 12	[NR]	[NR]
Benzo(a)pyrene	mg/kg	28452-30	0.5 0.6 RPD: 18	LCS-6	103%
Indeno(1,2,3-c,d)pyrene	mg/kg	28452-30	0.3 0.3 RPD: 0	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	28452-30	0.3 0.4 RPD: 29	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	28452-30	100 98 RPD: 2	LCS-6	100%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-30	28/04/2009 28/04/2009	28452-5	28/4/09
Date analysed	-	28452-30	29/04/2009 29/04/2009	28452-5	29/4/09
HCB	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
alpha-BHC	mg/kg	28452-30	<0.1 <0.1	28452-5	113%
gamma-BHC	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
beta-BHC	mg/kg	28452-30	<0.1 <0.1	28452-5	124%
Heptachlor	mg/kg	28452-30	<0.1 <0.1	28452-5	117%
delta-BHC	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Aldrin	mg/kg	28452-30	<0.1 <0.1	28452-5	128%
Heptachlor Epoxide	mg/kg	28452-30	<0.1 <0.1	28452-5	117%
gamma-Chlordane	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Endosulfan I	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
pp-DDE	mg/kg	28452-30	<0.1 <0.1	28452-5	101%
Dieldrin	mg/kg	28452-30	<0.1 <0.1	28452-5	117%
Endrin	mg/kg	28452-30	<0.1 <0.1	28452-5	120%
pp-DDD	mg/kg	28452-30	<0.1 <0.1	28452-5	108%
Endosulfan II	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
pp-DDT	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	28452-30	<0.1 <0.1	28452-5	112%
Methoxychlor	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Surrogate TCLMX	%	28452-30	120 117 RPD: 3	28452-5	98%

Client Reference: 71102, Material Classification

QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-30	28/04/2009 28/04/2009	28452-5	28/4/09
Date analysed	-	28452-30	29/04/2009 29/04/2009	28452-5	29/4/09
Arochlor 1016	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	28452-30	<0.1 <0.1	28452-5	111%
Arochlor 1260	mg/kg	28452-30	<0.1 <0.1	[NR]	[NR]
Surrogate TOLMX	%	28452-30	120 117 RPD: 3	28452-5	118%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	28452-30	28/04/2009 28/04/2009	LCS-4	28/04/09
Date analysed	-	28452-30	29/04/2009 29/04/2009	LCS-4	29/04/09
Arsenic	mg/kg	28452-30	5 8 RPD: 46	LCS-4	106%
Cadmium	mg/kg	28452-30	<0.5 <0.5	LCS-4	107%
Chromium	mg/kg	28452-30	9 11 RPD: 20	LCS-4	110%
Copper	mg/kg	28452-30	48 52 RPD: 8	LCS-4	109%
Lead	mg/kg	28452-30	53 70 RPD: 28	LCS-4	109%
Mercury	mg/kg	28452-30	<0.1 <0.1	LCS-4	104%
Nickel	mg/kg	28452-30	5 6 RPD: 18	LCS-4	109%
Zinc	mg/kg	28452-30	56 73 RPD: 26	LCS-4	110%
QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-41	28/04/2009 28/04/2009	28452-22	28/4/09
Date analysed	-	28452-41	29/04/2009 29/04/2009	28452-22	29/4/09
vTPH C6 - C9	mg/kg	28452-41	<25 <25	28452-22	86%
Benzene	mg/kg	28452-41	<0.5 <0.5	28452-22	84%
Toluene	mg/kg	28452-41	<0.5 <0.5	28452-22	84%
Ethylbenzene	mg/kg	28452-41	<1.0 <1.0	28452-22	86%
m+p-xylene	mg/kg	28452-41	<2.0 <2.0	28452-22	88%
o-Xylene	mg/kg	28452-41	<1.0 <1.0	28452-22	92%
Surrogate aaa-Trifluorotoluene	%	28452-41	104 110 RPD: 6	28452-22	115%

Client Reference: 71102, Material Classification

QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-41	28/04/2009 28/04/2009	28452-22	28/4/09
Date analysed	-	28452-41	29/04/2009 29/04/2009	28452-22	29/4/09
TPH C10 - C14	mg/kg	28452-41	<50 <50	28452-22	87%
TPH C15 - C28	mg/kg	28452-41	<100 <100	28452-22	89%
TPH C29 - C36	mg/kg	28452-41	<100 <100	28452-22	83%
Surrogate o-Terphenyl	%	28452-41	91 90 RPD: 1	28452-22	88%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-41	28/04/2009 28/04/2009	28452-5	28/4/09
Date analysed	-	28452-41	30/04/2009 30/04/2009	28452-5	29/4/09
Naphthalene	mg/kg	28452-41	<0.1 <0.1	28452-5	88%
Acenaphthylene	mg/kg	28452-41	0.2 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	28452-41	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	28452-41	<0.1 <0.1	28452-5	93%
Phenanthrene	mg/kg	28452-41	1.8 0.1 RPD: 179	28452-5	82%
Anthracene	mg/kg	28452-41	0.4 <0.1	[NR]	[NR]
Fluorenone	mg/kg	28452-41	3.0 0.2 RPD: 175	28452-5	91%
Pyrene	mg/kg	28452-41	3.0 0.3 RPD: 164	28452-5	93%
Benzo(a)anthracene	mg/kg	28452-41	1.6 0.1 RPD: 176	[NR]	[NR]
Chrysene	mg/kg	28452-41	1.6 0.2 RPD: 156	28452-5	105%
Benzo(b+k)fluoranthene	mg/kg	28452-41	2.2 0.2 RPD: 167	[NR]	[NR]
Benzo(a)pyrene	mg/kg	28452-41	1.5 0.1 RPD: 175	28452-5	81%
Indeno(1,2,3-c,d)pyrene	mg/kg	28452-41	0.8 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	28452-41	0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	28452-41	0.7 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	28452-41	99 101 RPD: 2	28452-5	95%

Client Reference: 71102, Material Classification

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	28452-41	28/04/2009 28/04/2009	LCS-5	28/04/09
Date analysed	-	28452-41	29/04/2009 29/04/2009	LCS-5	29/04/09
Arsenic	mg/kg	28452-41	9 9 RPD: 0	LCS-5	104%
Cadmium	mg/kg	28452-41	0.6 <0.5	LCS-5	107%
Chromium	mg/kg	28452-41	25 24 RPD: 4	LCS-5	108%
Copper	mg/kg	28452-41	25 28 RPD: 11	LCS-5	110%
Lead	mg/kg	28452-41	34 32 RPD: 6	LCS-5	106%
Mercury	mg/kg	28452-41	<0.1 <0.1	LCS-5	104%
Nickel	mg/kg	28452-41	8 10 RPD: 22	LCS-5	107%
Zinc	mg/kg	28452-41	48 54 RPD: 12	LCS-5	108%
QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-51	28/04/2009 28/04/2009	28452-42	28/4/09
Date analysed	-	28452-51	29/04/2009 29/04/2009	28452-42	29/4/09
vTPH C6 - C9	mg/kg	28452-51	<25 <25	28452-42	87%
Benzene	mg/kg	28452-51	<0.5 <0.5	28452-42	82%
Toluene	mg/kg	28452-51	<0.5 <0.5	28452-42	81%
Ethylbenzene	mg/kg	28452-51	<1.0 <1.0	28452-42	90%
m+p-xylene	mg/kg	28452-51	<2.0 <2.0	28452-42	92%
o-Xylene	mg/kg	28452-51	<1.0 <1.0	28452-42	97%
Surrogate aaa-Trifluorotoluene	%	28452-51	111 113 RPD: 2	28452-42	113%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-51	28/04/2009 28/04/2009	28452-42	28/4/09
Date analysed	-	28452-51	29/04/2009 29/04/2009	28452-42	29/4/09
TPH C10 - C14	mg/kg	28452-51	<50 <50	28452-42	96%
TPH C15 - C28	mg/kg	28452-51	<100 <100	28452-42	101%
TPH C29 - C36	mg/kg	28452-51	<100 <100	28452-42	89%
Surrogate o-Terphenyl	%	28452-51	90 92 RPD: 2	28452-42	90%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-51	28/04/2009 28/04/2009	28452-22	28/4/09
Date analysed	-	28452-51	30/04/2009 30/04/2009	28452-22	29/4/09
Naphthalene	mg/kg	28452-51	<0.1 <0.1	28452-22	93%
Acenaphthylene	mg/kg	28452-51	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	28452-51	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	28452-51	<0.1 <0.1	28452-22	94%
Phenanthrene	mg/kg	28452-51	0.6 0.3 RPD: 67	28452-22	98%
Anthracene	mg/kg	28452-51	0.1 <0.1	[NR]	[NR]

Envirolab Reference: 28452
Revision No: R 00



Client Reference: 71102, Material Classification

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Fluoranthene	mg/kg	28452-51	0.8 0.4 RPD: 67	28452-22	93%
Pyrene	mg/kg	28452-51	0.8 0.3 RPD: 91	28452-22	99%
Benzo(a)anthracene	mg/kg	28452-51	0.4 0.2 RPD: 67	[NR]	[NR]
Chrysene	mg/kg	28452-51	0.4 0.2 RPD: 67	28452-22	106%
Benzo(b+k)fluoranthene	mg/kg	28452-51	0.6 0.3 RPD: 67	[NR]	[NR]
Benzo(a)pyrene	mg/kg	28452-51	0.4 0.2 RPD: 67	28452-22	89%
Indeno(1,2,3-c,d)pyrene	mg/kg	28452-51	0.2 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	28452-51	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	28452-51	0.2 0.1 RPD: 67	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	28452-51	100 98 RPD: 2	28452-22	96%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	28452-51	28/04/2009 28/04/2009	28452-5	28/04/09
Date analysed	-	28452-51	29/04/2009 29/04/2009	28452-5	29/04/09
Arsenic	mg/kg	28452-51	7 7 RPD: 0	28452-5	97%
Cadmium	mg/kg	28452-51	<0.5 <0.5	28452-5	92%
Chromium	mg/kg	28452-51	21 21 RPD: 0	28452-5	97%
Copper	mg/kg	28452-51	31 33 RPD: 6	28452-5	103%
Lead	mg/kg	28452-51	81 95 RPD: 16	28452-5	93%
Mercury	mg/kg	28452-51	<0.1 <0.1	28452-5	104%
Nickel	mg/kg	28452-51	13 16 RPD: 21	28452-5	97%
Zinc	mg/kg	28452-51	180 200 RPD: 11	28452-5	92%
QUALITY CONTROL VTPH & BTEX In Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date extracted	-	28452-61	28/04/2009 28/04/2009		
Date analysed	-	28452-61	29/04/2009 29/04/2009		
VTPH C6 - C9	mg/kg	28452-61	<25 <25		
Benzene	mg/kg	28452-61	<0.5 <0.5		
Toluene	mg/kg	28452-61	<0.5 <0.5		
Ethylbenzene	mg/kg	28452-61	<1.0 <1.0		
m+p-xylene	mg/kg	28452-61	<2.0 <2.0		
o-Xylene	mg/kg	28452-61	<1.0 <1.0		
Surrogate aaa-Trifluorotoluene	%	28452-61	109 114 RPD: 4		

Client Reference: 71102, Material Classification

QUALITY CONTROL sTPH In Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date extracted	-	28452-61	28/04/2009 28/04/2009		
Date analysed	-	28452-61	29/04/2009 29/04/2009		
TPH C10 - C14	mg/kg	28452-61	<50 <50		
TPH C15 - C28	mg/kg	28452-61	<100 <100		
TPH C29 - C36	mg/kg	28452-61	<100 <100		
Surrogate o-Terphenyl	%	28452-61	89 89 RPD: 0		
QUALITY CONTROL PAHs In Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	28452-61	28/04/2009 28/04/2009	28452-42	28/4/09
Date analysed	-	28452-61	30/04/2009 30/04/2009	28452-42	29/4/09
Naphthalene	mg/kg	28452-61	<0.1 <0.1	28452-42	95%
Acenaphthylene	mg/kg	28452-61	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	28452-61	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	28452-61	<0.1 <0.1	28452-42	97%
Phenanthrene	mg/kg	28452-61	0.6 0.5 RPD: 18	28452-42	93%
Anthracene	mg/kg	28452-61	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	28452-61	0.7 0.7 RPD: 0	28452-42	90%
Pyrene	mg/kg	28452-61	0.7 0.7 RPD: 0	28452-42	96%
Benzo(a)anthracene	mg/kg	28452-61	0.3 0.3 RPD: 0	[NR]	[NR]
Chrysene	mg/kg	28452-61	0.4 0.4 RPD: 0	28452-42	103%
Benzo(b+k)fluoranthene	mg/kg	28452-61	0.5 0.5 RPD: 0	[NR]	[NR]
Benzo(a)pyrene	mg/kg	28452-61	0.3 0.3 RPD: 0	28452-42	92%
Indeno(1,2,3-c,d)pyrene	mg/kg	28452-61	0.2 0.2 RPD: 0	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	28452-61	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	28452-61	0.2 0.2 RPD: 0	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	28452-61	99 97 RPD: 2	28452-42	98%

Client Reference: 71102, Material Classification

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	28452-61	28/04/2009 28/04/2009	28452-22	28/04/09
Date analysed	-	28452-61	29/04/2009 29/04/2009	28452-22	29/04/09
Arsenic	mg/kg	28452-61	8 5 RPD: 46	28452-22	102%
Cadmium	mg/kg	28452-61	0.6 0.6 RPD: 0	28452-22	98%
Chromium	mg/kg	28452-61	18 14 RPD: 25	28452-22	103%
Copper	mg/kg	28452-61	29 29 RPD: 0	28452-22	108%
Lead	mg/kg	28452-61	100 110 RPD: 10	28452-22	97%
Mercury	mg/kg	28452-61	<0.1 <0.1	28452-22	99%
Nickel	mg/kg	28452-61	14 14 RPD: 0	28452-22	103%
Zinc	mg/kg	28452-61	75 72 RPD: 4	28452-22	98%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	28452-62	28/4/09
Date analysed	-	[NT]	[NT]	28452-62	29/4/09
Naphthalene	mg/kg	[NT]	[NT]	28452-62	79%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	28452-62	96%
Phenanthrene	mg/kg	[NT]	[NT]	28452-62	96%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	28452-62	99%
Pyrene	mg/kg	[NT]	[NT]	28452-62	103%
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	28452-62	108%
Benzo(b+k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	28452-62	94%
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-d14	%	[NT]	[NT]	28452-62	96%

Client Reference: 71102, Material Classification

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	28452-42	28/04/09
Date analysed	-	[NT]	[NT]	28452-42	29/04/09
Arsenic	mg/kg	[NT]	[NT]	28452-42	99%
Cadmium	mg/kg	[NT]	[NT]	28452-42	101%
Chromium	mg/kg	[NT]	[NT]	28452-42	104%
Copper	mg/kg	[NT]	[NT]	28452-42	108%
Lead	mg/kg	[NT]	[NT]	28452-42	101%
Mercury	mg/kg	[NT]	[NT]	28452-42	103%
Nickel	mg/kg	[NT]	[NT]	28452-42	96%
Zinc	mg/kg	[NT]	[NT]	28452-42	102%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	28452-62	28/04/09
Date analysed	-	[NT]	[NT]	28452-62	29/04/09
Arsenic	mg/kg	[NT]	[NT]	28452-62	110%
Cadmium	mg/kg	[NT]	[NT]	28452-62	107%
Chromium	mg/kg	[NT]	[NT]	28452-62	111%
Copper	mg/kg	[NT]	[NT]	28452-62	118%
Lead	mg/kg	[NT]	[NT]	28452-62	105%
Mercury	mg/kg	[NT]	[NT]	28452-62	104%
Nickel	mg/kg	[NT]	[NT]	28452-62	107%
Zinc	mg/kg	[NT]	[NT]	28452-62	111%

Envirolab Reference: 28452
Revision No: R 00



Report Comments:

Sample 28452-36; Chrysotile found embedded in several fragments of plaster (total weight 0.112g). It is estimated that plaster or fibre cement sheet can contain up to 15% chrysotile asbestos fibres by weight. This gives up to 16.8mg of chrysotile fibres, which in 40g of soil gives 0.42g/kg.

The following samples had asbestos below the detection limit:

6/0-0.5

7/0.8-1

8/0-1

9/8.5-9

17/2.0

18/4.9-5.0

This report R01 replaces the original R00 due to additional comments about asbestos.

Asbestos was analysed by Approved Identifier: Joshua Lim

INS: Insufficient sample for this test NT: Not tested PQL: Practical Quantitation Limit <: Less than >: Greater than

RPD: Relative Percent Difference NA: Test not required LCS: Laboratory Control Sample NR: Not requested

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria:

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the sample batch were within 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: 60-140% is acceptable for general organics and 10-140% for SVOC and speciated phenols.



Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 28452-A

Client:

Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Galia Nikolaeva

Sample log in details:

Your Reference:
No. of samples:
Date samples received:
Date completed instructions received:

71102, Material Classification

Additional Testing on 10 Soils
27/04/09
04/05/09

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: 11/05/09
Date of Preliminary Report: Not Issued
Issue Date: 7/05/09
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:

David Springer
Business Development & Quality Manager

Envirolab Reference: 28452-A
Revision No: R 00



Client Reference: 71102, Material Classification

Metals in TCLP USEPA1311 Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-A-19 6/2.5-3 16/04/2009 Soil	28452-A-27 9/2.4-3 23/04/2009 Soil	28452-A-33 11/0.5-1 23/04/2009 Soil	28452-A-34 11/6.8-7 23/04/2009 Soil	28452-A-41 13/8.7-9 23/04/2009 Soil
Date extracted	-	5/05/2009	5/05/2009	5/05/2009	5/05/2009	5/05/2009
Date analysed	-	[NA]	7/05/2009	7/05/2009	[NA]	[NA]
pH of soil for fluid# determ.	pH units	INS	7.00	6.80	7.20	7.30
pH of soil for fluid # determ. (acid)	pH units	INS	1.40	1.40	1.40	1.50
Extraction fluid used	-	INS	1	1	1	1
pH of final Leachate	pH units	INS	6.10	6.00	5.20	5.00
Lead in TCLP	mg/L	[NA]	<0.030	0.030	[NA]	[NA]

Metals in TCLP USEPA1311 Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	28452-A-44 14/9.9-10.0 21/04/2009 Soil	28452-A-45 15/0.2-0.5 17/04/2009 Soil	28452-A-50 16/2.9-3.0 22/04/2009 Soil	28452-A-57 17/11.9-12.0 21/04/2009 Soil	28452-A-65 20/0.5-1 24/04/2009 Soil
Date extracted	-	5/05/2009	5/05/2009	5/05/2009	5/05/2009	5/05/2009
Date analysed	-	7/05/2009	7/05/2009	7/05/2009	[NA]	[NA]
pH of soil for fluid# determ.	pH units	7.30	7.20	7.20	7.80	7.90
pH of soil for fluid # determ. (acid)	pH units	1.40	1.50	1.50	1.50	1.40
Extraction fluid used	-	1	1	1	1	1
pH of final Leachate	pH units	5.40	5.40	5.20	5.30	6.10
Lead in TCLP	mg/L	0.090	0.060	0.80	[NA]	[NA]

Client Reference: 71102, Material Classification

PAHs in TCLP (USEPA 1311)	UNITS	28452-A-19	28452-A-34	28452-A-41	28452-A-50	28452-A-57
Our Reference:	-----	6/2.5-3	11/6.8-7	13/8.7-9	16/2.9-3.0	17/11.9-12.0
Your Reference	-----	16/04/2009	23/04/2009	23/04/2009	22/04/2009	21/04/2009
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	5/05/2009	5/05/2009	5/05/2009	5/05/2009	5/05/2009
Date analysed	-	6/05/2009	6/05/2009	6/05/2009	6/05/2009	6/05/2009
Naphthalene in TCLP	mg/L	INS	<0.001	<0.001	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	INS	<0.001	<0.001	<0.001	<0.001
Acenaphthene in TCLP	mg/L	INS	<0.001	<0.001	<0.001	0.007
Fluorene in TCLP	mg/L	INS	<0.001	<0.001	<0.001	0.003
Phenanthrene in TCLP	mg/L	INS	0.002	<0.001	<0.001	0.003
Anthracene in TCLP	mg/L	INS	<0.001	<0.001	<0.001	<0.001
Fluoranthene in TCLP	mg/L	INS	<0.001	<0.001	<0.001	<0.001
Pyrene in TCLP	mg/L	INS	<0.001	<0.001	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	INS	<0.001	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	INS	<0.001	<0.001	<0.001	<0.001
Benzo(b+k)fluoranthene in TCLP	mg/L	INS	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	INS	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	INS	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	INS	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	INS	<0.001	<0.001	<0.001	<0.001
Surrogate p-Terphenyl-d14	%	INS	113	122	117	118

PAHs in TCLP (USEPA 1311)	UNITS	28452-A-66
Our Reference:	-----	20/0.5-1
Your Reference	-----	24/04/2009
Date Sampled		Soil
Type of sample		
Date extracted	-	5/05/2009
Date analysed	-	6/05/2009
Naphthalene in TCLP	mg/L	<0.001
Acenaphthylene in TCLP	mg/L	<0.001
Acenaphthene in TCLP	mg/L	<0.001
Fluorene in TCLP	mg/L	<0.001
Phenanthrene in TCLP	mg/L	<0.001
Anthracene in TCLP	mg/L	<0.001
Fluoranthene in TCLP	mg/L	<0.001
Pyrene in TCLP	mg/L	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001
Chrysene in TCLP	mg/L	<0.001
Benzo(b+k)fluoranthene in TCLP	mg/L	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001
Surrogate p-Terphenyl-d14	%	114

EnviroLab Reference: 28452-A
Revision No: R 00



Client Reference: 71102, Material Classification

Method ID	Methodology Summary
LAB.4	Toxicity Characteristic Leaching Procedure (TCLP).
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP).
LAB.1	pH - Measured using pH meter and electrode in accordance with APHA 20th ED, 4500-H+.
Metals.20 ICP-AES	Determination of various metals by ICP-AES.
GC.12 subset	Leachates are extracted with Dichloromethane and analysed by GC-MS.
GC.12 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
GC.12	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.

Client Reference: 71102, Material Classification

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Metals in TCLP USEPA1311						Base II Duplicate II %RPD		
Date extracted	-			05/05/09	[NT]	[NT]	[NR]	[NR]
Date analysed	-			07/05/09	[NT]	[NT]	LCS-W1	07/05/09
Lead in TCLP	mg/L	0.03	Metals.20 ICP-AES	<0.030	[NT]	[NT]	LCS-W1	87%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in TCLP (USEPA 1311)						Base II Duplicate II %RPD		
Date extracted	-			5/05/2009	[NT]	[NT]	LCS-W2	5/05/2009
Date analysed	-			6/05/09	[NT]	[NT]	LCS-W2	6/05/09
Naphthalene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	LCS-W2	88%
Acenaphthylene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Acenaphthene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Fluorene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	LCS-W2	88%
Phenanthrene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	LCS-W2	83%
Anthracene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Fluoranthene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	LCS-W2	80%
Pyrene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	LCS-W2	83%
Benzo(a)anthracene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Chrysene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	LCS-W2	94%
Benzo(b+k)fluoranthene in TCLP	mg/L	0.002	GC.12 subset	<0.002	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	LCS-W2	73%
Indeno(1,2,3-c,d)pyrene -TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	GC.12 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		GC.12	98	[NT]	[NT]	LCS-W2	101%

Report Comments:

Asbestos was analysed by Approved Identifier: Not applicable for this job

INS: Insufficient sample for this test NT: Not tested PQL: Practical Quantitation Limit <: Less than >: Greater than

RPD: Relative Percent Difference NA: Test not required LCS: Laboratory Control Sample NR: Not requested

Quality Control Definitions

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Laboratory Acceptance Criteria:

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the sample batch were within 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: 60-140% is acceptable for general organics and 10-140% for SVOC and speciated phenols.

Aileen Hie

From: Jacinta Hurst
Sent: Monday, 4 May 2009 03:51 PM
To: Aileen Hie
Subject: FW: Results for registration '28452 - 71102, Material Classification'

Envirolab Ref- 28452A
Due: 14/5/09
std T/A.

Regards,

Jacinta Hurst
Envirolab Services Pty Ltd
12 Ashley St Chatswood NSW 2067
T 02 9910 6200 F 02 9910 6201
D 02 9910 6220 M 0407 00 3037
jhurst@envirolabservices.com.au | www.envirolabservices.com.au

From: Galia Nikolaeva [mailto:Galia.Nikolaeva@douglaspartners.com.au]
Sent: Monday, 4 May 2009 03:54
To: Jacinta Hurst
Subject: RE: Results for registration '28452 - 71102, Material Classification'

Jacinta, 27 33 44 45 50
Could you please proceed with the following TCLP analysis:
samples 9/2.4-3, 11/0.5-1, 14/9.9-10, 15/0.2-0.5 and 16/2.9-3.0 for Pb TCLP
and samples 6/2.5-3, 11/6.8-7, 13/8.7-9, 16/2.9-3.0, 17/11.9-12 and 20/0.5-1 for PAH
Thanks 19 24 41 50 57 65

Galia Nikolaeva
Environmental Scientist
Douglas Partners
Ph: 8878 0607
Fax: 9809 4095
Mob: 0418651227
email: galia.nikolaeva@douglaspartners.com.au

From: Jacinta Hurst [mailto:JHurst@envirolabservices.com.au]
Sent: Monday, 4 May 2009 2:16 PM
To: Galia Nikolaeva
Subject: Results for registration '28452 - 71102, Material Classification'

Please refer to attached for:
a copy of the Certificate of Analysis
a copy of the COC
an excel file containing the results

Please note that a hard copy will not be posted.

Enquiries should be made directly to:
Joshua Lim on jlim@envirolabservices.com.au
or
David Springer on dspringer@envirolabservices.com.au
or
Tania Notaras on tnotaras@envirolabservices.com.au

4/05/2009

Regards

Envirolab Services
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
www.envirolabservices.com.au

4/05/2009

Wen-Fei Yuan

From: Alistair Hyde-Page
Sent: Thursday, 7 May 2009 3:17 PM
To: Wen-Fei Yuan
Subject: FW: Asbestos 28452 (DP 71102)

Alistair Hyde-Page | Geotechnical / Environmental Engineer
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
96 Hermitage Road West Ryde NSW 2114 | PO Box 472 West Ryde NSW 1685
P: 02 8878 0631 | F: 02 9809 4095 | M: 0434 561 888 | E: Alistair.Page@douglaspartners.com.au

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From: Joshua Lim [<mailto:JLim@envirolabservices.com.au>]
Sent: Thursday, 7 May 2009 3:03 PM
To: Alistair Hyde-Page
Subject: FW: Asbestos 28452 (DP 71102)

Hi Alistair

The following samples had asbestos below the detection limit:

6/0-0.5
7/0.8-1
8/0-1
9/8.5-9
17/2.0
18/4.9-5.0

How do you want the report to reflect this? As notes in the comments section?

Regards,

Joshua Lim
Envirolab Services Pty Ltd
12 Ashley St Chatswood NSW 2067
T 02 9910 6200 F 02 9910 6201
D 02 9910 6227 M 0408 088 555
jlim@envirolabservices.com.au | www.envirolabservices.com.au

From: Alistair Hyde-Page [<mailto:Alistair.Page@douglaspartners.com.au>]
Sent: Thursday, 7 May 2009 02:08
To: Jacinta Hurst
Subject: Asbestos 28452 (DP 71102)

Hi Jacinta,

Just a follow up email in regards to lab report 28452 (DP 71102).
There was Chrysotile asbestos detected in sample 12/0-0.3.
Could we get a report on all tested samples that had any detectable asbestos, even below the reporting limit of 0.1 g/kg

8/05/2009

Thanks,

Alistair

Alistair Hyde-Page | Geotechnical / Environmental Engineer
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
96 Hermitage Road West Ryde NSW 2114 | PO Box 472 West Ryde NSW 1685
P: 02 8878 0631 | F: 02 9809 4095 | M: 0434 561 888 | E: Alistair.Page@douglaspartners.com.au

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8/05/2009



三

To: EnviroLab Services 12 Ashley St, Chatswood 2067
~~54 Florence Rd, Willoughby NSW 2060~~
 Attn: Tania Notaras
 Phone: 02 9958 5801 Fax: 02 9958 5803
 Email: tnotaras@envirolabservices.com.au

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
						8 Hx	PAH	TRH/ BTEX	PCB	DGP	Phenols	Asbestos	
1075-1		17	04/09	S	G.P.								
173-8		2	-										
112.5-13		3	-										
803/170609		4	-										
2010.5		5	17/04/09										
235-4		6	-										
26.8-1		7	-										
318-2		8	-										
34.5-5		9	-										
37.8-8		10	-										
41.5-2		11	24/04/09										
44.5-5		12	-										

Environmental Services
12 Ashley St
Chesham NSW 2667
Ph: 9910 6200

JOB NO: 28452

Date received: 27/4/09
Time received: 3:30.
Revised by: JAL
Temp: C/G/Ambient
Cooling: Not used
Security/Other Instructions

Lab Report No.

Sent Results to: Douglas Partners Address: 96 Heritage Road, West Ryde 2114

Relinquished by: G. Nivola Signed: [Signature] Date & Time: 27/04/09

Phone: (02) 9809 0566 Fax: (02) 9809 4095

Received By: gha Date & Time: 27/4/09 3:33

Relinquished by: Signed: Date & Time:



Douglas Partners
Contaminated • Environment • Remediation

CHAIN OF CUSTODY

Project Name: To: EnviroLab Services
Project No: 54 Frenchs Rd, Willoughby NSW 2068
Project Mgr: Attn: Tania Notaras
Email: Phone: 02 9958 5801 Fax: 02 9958 5803
Date Required: Lab Quote No. Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes						Notes	
						BH ₄	PAH	TRH BTX	PCB	OCP	Phenols		Asbestos
4/5.5-6		13	11-11						✓				
5/0-0.5		14	11-11						✓				
5/3.5-4		15	11-11										
5/8.6-9		16	11-11										
6/0-0.5		17	16/04/09										
802/16409		18	11-11			✓	✓						
6/2.5-3		19	11-11						✓		✓		
6/5.5-6		20	11-11										
7/0-0.5		21	11-11										
7/0.8-1		22	11-11						✓		✓		
7/1.5-2		23	11-11										
8/0-1		24	11-11										

Lab Report No.
Send Results to: Douglas Partners Address: 98 Hargill Road, West Ryde 2114
Relinquished by: G. Notaras Signed: [Signature] Date & Time: 27/04/09
Received By: [Signature] Date & Time: 27/4/09 3:30
Relinquished by: Signed: [Signature] Date & Time:

Phone: (02) 9809 0666
Fax: (02) 9809 4096



Douglas Partners
Geotechnics - Environment - Infrastructure

CHAIN OF CUSTODY

Project Name: To: EnviroLab Services
Project No: 54 Frenchs Rd, Willoughby NSW 2068
Project Mgr: Attn: Tania Notaras
Email: Phone: 02 9958 5801 Fax: 02 9958 5803
Date Required: Email: tnotaras@envirolabservices.com.au
Lab Quote No.

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analyses						Notes	
						SHA	PAH	TRA/RTX	PCB	OCF	Phenols		Asbestos
84.7-5		25	25/11/04										
86-7		26	26/11/04										
92.4-3		27	23/04/09										
98.5-9		28	28/11/04										
99.5-10		29	29/11/04										
100.5		30	15/04/09										
801.150-09		31	11/11/04										
102.0		32	11/11/04										
110.5-1		33	23/04/05										
116.8-7		34	24/11/04										
118.5-9		35	25/11/04										
120-0.3		36	26/11/04										

Lab Report No.
Sand Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Relinquished by: G. N. Notaras Signed: [Signature] Date & Time: 27/04/09
Relinquished by: [Signature] Signed: [Signature] Date & Time: 27/04/09
Phone: (02) 9809 0666
Fax: (02) 9809 4095
Received By: [Signature] Date & Time: 27/04/09 8.30



Douglas Partners
Geotechnical - Environmental - Groundwater

CHAIN OF CUSTODY

Project Name: To: EnviroLab Services
Project No: 54 Francis Rd, Willoughby NSW 2068
Project Mgr: Attn: Tania Notaras
Email: Phone: 02 9958 5801 Fax: 02 9958 5803
Date Required: Lab Quote No. Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes						Notes	
						PH	PAH	TRH/BTEX	PCB	OCP	Phenols		Asbestos
12.5.5-6		37	11										
12.9.5-10		38	11										
13.5-6		39	11										
13.7.7-8		40	11										
13.8.7-9		41	11										
14.4.9-50		42	21/04/09										
14.5.9-6.0		43	11										
14.9.9-100		44	11										
15.0.2-0.5		45	17/04/09										
15.2.5-3		46	11										
15.5.5-6		47	11										
16.0.5-1		48	22/04/09										

Lab Report No.
Send Results to: Douglas Partners Address: 98 Heritage Road, West Ryde 2114
Relinquished by: G. Nicolais Signed: [Signature] Date & Time: 27/04/09
Relinquished by: Signed: [Signature] Date & Time: 27/04/09
Phone: (02) 9809 0866
Fax: (02) 9809 4095
Received By: [Signature] Date & Time: 27/04/09 3:30

Project Name: To: EnviroLab Services
 Project No: 54 Frenchs Rd, Willoughby NSW 2068
 Project Mgr: Attn: Tania Notaras
 Email: Phone: 02 9958 5801 Fax: 02 9958 5803
 Date Required: Lab Quote No. Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes					Notes	
						8Hx	PAH	PRH BTEx	PCB	OCP		Phenols
B05/220409	49	49	2/11/09			✓						
16/29-20	50	50	2/11/09									
16/5.1-5.9	51	51	2/11/09						✓			
17/2.0	52	52	2/11/09						✓			
B04/210409	53	53	2/11/09			✓						
17/4.0	54	54	2/11/09									
17/7.9-8.0	55	55	2/11/09						✓			
17/9.9-10.0	56	56	2/11/09									
17/11.9-12.0	57	57	2/11/09									
17/13.9-14.0	58	58	2/11/09									
18/4.9-5.0	59	59	2/11/09									
18/6.9-7.0	60	60	2/11/09									

Lab Report No.
 Send Results to: Douglas Partners Address: 196 Herringridge Road, West Ryde 2114.
 Relinquished by: G. Nicolovici Signed: [Signature] Date & Time: 27/04/09 Received By: [Signature] Date & Time: 27/4/09 3:30
 Relinquished by: Signed: [Signature] Date & Time: Received By: [Signature] Date & Time:



Douglas Partners
ANALYTICAL • ENVIRONMENTAL • CONSULTING

CHAIN OF CUSTODY

6

Project Name:
Project No:
Project Mgr:
Email:
Date Required:
Sampler:
Mob. Phone:
Lab Quote No.
To: EnviroLab Services
54 Franche 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
						PH	PAH	TRP BTEX	PCB	OCF	Phenols	Asbestos	
18	79-810	61	11										
18	89-00	62	11						✓	✓	✓		
19	0.8-1	63	15/04/09						✓	✓	✓		
19	2-2.5	64	11										
20	0.5-1	65	24/04/09						✓	✓	✓		
20	2.8-3	66	11										
BD6/24	0409	67	11			✓	✓						

Lab Report No.
Send Results to: Douglas Partners Address: 56 Hermitage Road, West Ryde 2114
Relinquished by: G. Noto (env) Signed: [Signature] Date & Time: 27/04/09
Received By: [Signature] Date & Time: 27/04/09 3:30
Relinquished by: Signed: [Signature] Date & Time:

Appendix F

Quality Assurance/Quality Control Procedures and Results

(No. of pages excluding this page = 7)

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QA/QC PROCEDURES AND RESULTS

Q1 - FIELD QUALITY ASSURANCE AND QUALITY CONTROL

The field quality control (QC) procedures for sampling as prescribed in Douglas Partners *Field Procedures Manual* were followed at all times during the assessment.

Q1.1 Sampling Team

Field sampling was undertaken by DP Environmental Scientists, Wen-Fei Yuan and Galia Nikolaeva over the period of 15-24 April 2009. Sampling was undertaken during fine weather conditions with the exception of 22 April 2009 – the weather condition was partly cloudy and raining. Although sampling was undertaken by two staff members, the same sample collection and handling techniques were adopted and therefore the results are considered to be comparable.

Q1.2 Sample Collection and Dispatch

Sample collection procedures and dispatch for soil and groundwater are reported in Section 4, Field Methodology and Observations.

Q1.3 Logs

Logs for each sampling location were recorded in the field. The location of individual samples were recorded on the field logs along with location, depth, initials of sampler, replicate locations, replicate type, site observations and weather conditions. Logs are presented in Appendix C.

Q1.4 Chain-of-Custody (COC)

Analysis to be performed on each sample was recorded on the COC which accompanied samples to the analytical laboratory. Signed copies of COCs are presented in Appendix E, following the laboratory reports.

Q1.5 Sample Splitting Techniques

Replicate samples were collected in the field as a measure of accuracy, precision and repeatability of the results. Field replicate samples for soil were collected from the same location and at an identical depth to the primary sample. Equal portions of the recovered

sample were placed into the sampling jars and sealed. Replicate samples were labelled with a DP identification number, recorded on DP bore logs, so as to conceal their relationship to their primary sample from the analysing laboratory.

Q1.6 Field Instrument Calibration

All soil samples were screened for the presence of total photo-ionisable compounds (TOPIC) using a calibrated photo-ionisation detector (PID).

Q1.7 Decontamination Procedures

Soil samples were recovered directly from the auger by the Environmental Scientist using disposable latex gloves. No additional sampling equipment was utilised therefore negating the need for decontamination.

Q1.8 Relative Percentage Difference

A measure of the consistency of results for field samples is derived by the calculation of relative percentage differences (RPDs) for duplicate samples. A RPD of $\pm 30\%$ is generally considered acceptable for inorganic analytes by the DECC, although in general a wider RPD range may be acceptable for organic analytes (up to 50%).

Q1.8.1 Intra-Laboratory Analysis

Intra-laboratory replicates were conducted as an internal check of the reproductively within the primary laboratory (Envirolab Services Pty Ltd) and as a measure of consistency of sampling techniques. Replicate samples were collected at a rate of approximately one replicate sample for every ten original samples collected and also analysed at a rate of 10% of primary samples analysed. Chemicals of concern were analysed at a higher frequency to other chemicals of secondary concern. In total six samples and their replicate pairs were analysed for heavy metals and PAH.

The comparative results of analysis between original and replicate samples are summarised in Table Q1 below.

Table Q1 Intra-laboratory Results – Heavy Metals

Sample ID	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
1/12.5-13	6	<0.5	13	14	13	<0.1	3	10
BD3/170409	8	<0.5	8	20	14	<0.1	4	17
Difference	2	0	5	6	1	0	1	7
RPD (%)	29	0	48	35	7	0	29	52
6/0-0.5	12	0.9	48	14	25	<0.1	8	25
BD2/160409	12	0.6	55	13	27	<0.1	9	22
Difference	0	0.3	7	1	2	0	1	3
RPD (%)	0	40	14	7	8	0	12	13
10/0.5	5	<0.5	9	48	53	<0.1	5	56
BD1/150409	8	1	13	24	59	<0.1	7	72
Difference	3	0.5	4	24	6	0	2	16
RPD (%)	46	67	36	67	11	0	33	25
16/0.5	8	2	29	110	38	<0.1	3	30
BD5/220409	7	3.9	25	26	35	<0.1	3	37
Difference	1	1.9	4	84	3	0	0	7
RPD (%)	13	64	15	124	8	0	0	21
17/2.0	6	<0.5	24	31	27	<0.1	3	20
BD4/210409	6	0.6	26	14	22	<0.1	2	11
Difference	0	0.1	2	17	5	0	1	9
RPD (%)	0	18	8	76	20	0	40	58
20/2.8-3	4	<0.5	14	23	53	<0.1	7	110
BD6/240409	13	0.8	52	12	24	<0.1	5	11
Difference	9	0.3	38	11	29	0	2	99
RPD (%)	106	46	115	63	75	0	33	164

The calculated RPD values were all within the acceptable range of ± 30 for the sample and its replicates with the exception of those bolded. However, these results are not considered to be of concern due to:

- The low concentrations and low actual difference between the concentrations;
- The duplicate samples being collected in filling material which is heterogeneous in nature, therefore differences are representative of the material and not the result inconsistencies in the sampling technique or laboratory precision; and/or

- The concentrations being at or close to the practical quantitation limit.

It is considered that the results, overall, indicate an acceptable consistency between the samples and their replicates and indicate that suitable field sampling methodology was adopted and laboratory precision was achieved.

Q1.8.2 Inter-Laboratory Analysis

The limited scope of sampling carried out as part of the assessment (i.e. less than 10 soil or groundwater samples were involved) was considered to render inter-laboratory sampling unwarranted. The 10% frequency for intra-laboratory duplicate sampling was considered an adequate measure of precision.

Q2 - LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL

Q2.1 Laboratory Accreditation

Only laboratories accredited by the National Association of Testing Authorities (NATA) for the chemical analyses undertaken were used for analysis of samples recovered as part of this assessment. Samples were submitted to Envirolab Services Pty Ltd (Chatswood) for analysis.

The laboratory is NATA accredited for the analyses undertaken. Envirolab's accreditation number is 2901 and they are accredited for compliance with ISO/IEC 17025. In-house procedures are employed by Envirolab in the absence of documented standards. This is performed yearly and is reviewed by NATA.

Envirolab participate in all common Proficiency Rounds including NARL (NMI) for organics and metals, PTA (NATA for organics, inorganics, asbestos and metals, QLD Govt for SPOCAS and National Residue Survey for metals). Envirolab also participate in non-accredited rounds conducted by the University of Wollongong.

Q2.2 Chain-of-Custody

Chain-of-custody information was recorded on the DP standard chain-of-custody (COC) sheets, which accompanied samples to the analytical laboratories. COCs contained sampling date,

receipt date and time and the identity of samples. Copies of COCs, signed by the analytical laboratories, are presented in Appendix E following the laboratory reports.

Q2.3 Practical Quantitation Limits - PQLs

The PQL (also referred to by some laboratories as the limit of reporting) is the lowest quantity of an analyte which can be detected by the adopted analysis. PQLs at different analytical laboratories can differ depending on the analytical techniques.

A review of the laboratory results indicated that all PQLs were below the site criteria for the laboratory with the exception of mercury (Hg), some PAHs and OCP in the analysed water samples. However, as all the soil sample results with respect to these analytes were low and all groundwater results were less than the PQL the exceedance of the site criteria was not considered significant.

Q2.4 Surrogate Spike

This sample is prepared by adding a known amount of surrogate, which behaves similarly to the analyte, prior to analysis of each sample. The recovery result indicates the proportion of the known concentration of the surrogate that is detected during analysis. Table Q2 summarises the reported recoveries and the acceptance criteria adopted by each of the laboratories.

Table Q2 – Surrogate Spike Recoveries

Laboratory	Reported Recoveries	Acceptance Limits
Envirolab	Refer to Laboratory Report (Ref. no. 28452)	60-140% organics 10-140% SVOC and speciated phenols

The reported recoveries are within acceptance limits, indicating that the extraction technique was effective.

Q2.5 Laboratory Control Sample (LCS)

This sample comprises spiking either a standard reference material or a control matrix (such as a blank of sand or water) with a known concentration of specific analytes. The control sample is analysed with the sample batch and the recorded concentrations reported as a percentage recovery of the known or expected concentration, in order to determine how the laboratory has

performed with regard to sample preparation and analytical procedure. LCS are analysed at a frequency of 1 in 20, with a minimum of one analysed per batch.

Table Q3 summarises the reported recoveries and the acceptance criteria adopted by the laboratory.

Table Q3 – Laboratory Control Samples

Laboratory	Reported Recoveries	Acceptance Limits
Envirolab	Refer to Laboratory Report (Ref. no. 28452)	70-130% inorganics / metals 60-140% organics 10-140% SVOC and speciated phenols

The results are within acceptance limits as specified by both laboratories, indicating that the extraction and analytical techniques were effective.

Q2.6 Laboratory Duplicate Results

The laboratory prepares duplicate samples from the supplied samples (original samples) and/or laboratory spiked samples, and carries out preparation and testing in the same manner as the original sample. The duplicate sample provides an indication of laboratory precision and reproducibility. The comparisons between the laboratory duplicates and original samples are reported on the laboratory test results certificates as Relative Percentage Difference (RPD).

Table Q4 summarises the reported RPD and the acceptance criteria adopted by the laboratory.

Table Q4 – Laboratory Duplicate Samples

Laboratory	Reported Recoveries	Acceptance Limits
Envirolab	Refer to Laboratory Report (Ref. no. 28452)	>5xPQL : 0-50% RPD <5xPQL : any RPD

The reported RPD for both laboratories were generally within the acceptance criteria adopted. The metals comparisons outside the acceptable limits were few and considered to be due to the non-homogeneous nature of the fill materials.

Q2.7 Laboratory Blank Results

The laboratory blank, sometimes referred to as the method blank or reagent blank is the sample prepared and analysed at the beginning of every analytical run, following calibration of the analytical apparatus. This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, it can be determined by processing solvents and reagents in exactly the same manner as for samples. Laboratory blanks are analysed at a frequency of 1 in 20, with a minimum of one per batch.

The laboratory results for blanks indicated concentrations of all analytes to be below PQL and therefore the results were considered to be acceptable.

Q2.8 Matrix Spike

The purpose of matrix spikes is to monitor the performance of the analytical methods used and to determine whether matrix interferences exist. Samples and replicates are spiked with identical concentrations of the target analyte before extraction or digestion. The results are reported as percentage recoveries of the known spike concentration.

Table Q5 summarises the reported RPD and the acceptance criteria adopted by each of the laboratories.

Table Q5 – Matrix Spike Samples

Laboratory	Reported Recoveries	Acceptance Limits
Envirolab	Refer to Laboratory Report (Ref. no. 28452)	70-130% inorganics / metals 60-140% organics 10-140% SVOC and speciated phenols

The matrix spike data presented fall within the acceptance limits of the laboratories.

Appendix G

Protection of the Environment Operations (Waste) Regulation 2005

(No. of pages excluding this page = 1)

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Protection of the Environment Operations (Waste) Regulation 2005

Current version for 10 December 2008 to date (accessed 1 May 2009 at 14:39)

Part 4 Clause 42

<< page >>

42 Special requirements relating to asbestos waste

- (1) This clause applies to any activity that involves the transportation, disposal, re-use or recycling of any type of asbestos waste, regardless of whether the activity is required to be licensed.
- (2) A person who carries on an activity to which this clause applies must comply with the requirements specified in this clause in relation to the activity concerned.

Maximum penalty: 400 penalty units in the case of a corporation, 200 penalty units in the case of an individual.

- (3) The requirements relating to the transportation of asbestos waste are as follows:
 - (a) bonded asbestos material must be securely packaged at all times,
 - (b) friable asbestos material must be kept in a sealed container,
 - (c) asbestos-contaminated soils must be wetted down,
 - (d) all asbestos waste must be transported in a covered, leak-proof vehicle.
- (4) The requirements relating to the off site disposal of asbestos waste are as follows:
 - (a) asbestos waste in any form must be disposed of only at a landfill site that may lawfully receive the waste,
 - (b) when asbestos waste is delivered to a landfill site, the occupier of the landfill site must be informed by the person delivering the waste that the waste contains asbestos,
 - (c) when unloading and disposing of asbestos waste at a landfill site, the waste must be unloaded and disposed of in such a manner as to prevent the generation of dust or the stirring up of dust,
 - (d) asbestos waste disposed of at a landfill site must be covered with virgin excavated natural material or other material as approved in the facility's environment protection licence:
 - (i) initially (at the time of disposal), to a depth of at least 0.15 metre, and
 - (ii) at the end of each day's operation, to a depth of at least 0.5 metre, and
 - (iii) finally, to a depth of at least 1 metre (in the case of bonded asbestos waste or asbestos-contaminated soils) or 3 metres (in the case of friable asbestos material) beneath the final land surface of the landfill site.
- (5) A person must not cause or permit asbestos waste in any form to be re-used or recycled.
- (6) In this clause:

bonded asbestos material means any material (other than friable asbestos material) that contains asbestos.

friable asbestos material means any material that contains asbestos and is in the form of a powder or can be crumbled, pulverised or reduced to powder by hand pressure when dry.