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**GROUND INVESTIGATION INTERPRETIVE REPORT
KENAVON DRIVE, FORBURY RETAIL PARK,
READING**

**FOR
OLD MUTUAL PROPERTY FUND c/o CBRE GLOBAL
INVESTORS**

DELTA-SIMONS PROJECT NO. 13-0258.01



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EXECUTIVE SUMMARY
GROUND INVESTIGATION INTERPRETIVE REPORT
KENAVON DRIVE, FORBURY RETAIL PARK, READING
DELTA-SIMONS PROJECT NO. 13-0258.01

Purpose	The Ground Investigation has been undertaken to provide a mix of shallow and deep boreholes across the Site to determine ground conditions beneath the Site and preliminary geotechnical recommendations.
Current Site Status	The Site is located to the south of Kenavon Drive, and to the north of the River Kennet and is currently occupied by two large retail warehouses and associated car parking areas, which are both currently trading.
Redevelopment Proposal	It is understood that the Site is being considered for redevelopment, however, at the present time a final development plan has not been confirmed. For the purposes of this Assessment it has been assumed that the end-use is likely to comprise either residential apartments with communal landscaping areas or a commercial end-use as these are in keeping with the surrounding established land uses.
Geology Hydrogeology and Hydrology	From the British Geological Survey (BGS) Geology of Britain Viewer the Site is indicated to be underlain by superficial deposits of the Taplow Gravel Formation followed by bedrock of the Seaford and Newhaven Chalk Formation. The Superficial Deposits are indicated to be a Secondary A Aquifer and the Chalk bedrock is classified as a Principle Aquifer. The Site is located in a Zone 3 Total Catchment Area. Information from previous boreholes from adjacent to the Site indicates that standing groundwater is approximately 0.50 to 1.00 m bgl. The closest surface water feature to the Site is the River Kennet, a tributary of the River Thames, located on the southern boundary. The southern part of the Site is located within an area at risk from flooding from rivers or seas without defences. The Site has a moderate risk of flooding. The chance of flooding each year is 1.3% (1 in 75) or less, but greater than 0.5% (1 in 200).
Site History	The historical development of the Site has been assessed through a review of available historical Ordnance Survey maps dating from 1883. A summary of the key historical developments on the Site itself and within the surrounding area is presented below. 1883 – 1979: The Site was occupied by a biscuit factory with associated railway tracks. 1979 – 1990: No maps available to cover this period. However, by 1990 the Site had been partially redeveloped with a single rectangular retail building in the east of the Site. 1990 – 2013: By 1995 the Site itself had been redeveloped further with another large rectangular retail unit in the west of the Site, to accompany the previously developed retail unit in the east of the Site. No further significant changes were mapped at the Site to the most recent edition.
Site Ground Conditions	The ground conditions at the Site show a surface layer of Made Ground across the Site from ground level to depths of 2.40 to 4.50 m, with an average thickness of approximately 2.60 m. This is underlain across much of the Site by superficial deposits of the Taplow Gravel Formation underlain by bedrock of the Seaford and Newhaven Chalk Formation. The Made Ground is typically a firm to stiff gravelly, sandy clay with areas of crushed brick and concrete and tends to be variable in thickness and composition across the Site. The underlying possible alluvial deposits typically comprise of very soft to soft, slightly sandy or gravelly, clays and silts with occasional shell fragments. The alluvial deposits are not present across the whole Site. Medium dense sandy fine to coarse flint and chalk gravel were encountered locally in the east of the Site, identified as River Terrace Deposits. The Chalk of the Seaford and Newhaven Chalk Formation underlies the whole Site at depths of between 2.40 m to 5.60 m below ground level. The chalk is typically medium dense with occasional flint gravels and cobbles within the matrix.

Geotechnical Recommendations	Traditional strip or pad foundations are not likely to be economically viable at this Site. A fully piled foundation is likely to be the most suitable. A specialist contractor should be contacted to assist with design of foundations. Excavations will require support to their sides. Foundation concrete will require protection against aggressive chemicals in the geology above the Chalk. Soil stabilisation may assist in limiting slab settlements and reducing construction risk. Some limited further investigation recommendations have been made, principally relating to the areas beneath existing buildings. The extent of any such investigation will be dependent on the nature and extent of the development. A piling risk assessment may also be required, due to the presence of the Principal Aquifer within the chalk strata.
This Executive Summary is intended as a summary of the Assessment of the Site based on information received by Delta-Simons at the time of production.	

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
1.1	Authorisation.....	1
1.2	Context/Purpose.....	1
1.3	Scope of Works	1
1.4	Project Limitations	2
2.0	SITE STATUS.....	4
2.1	Site Location, Description and Surrounding Area.....	4
2.2	Proposed Development.....	4
2.3	History of the Site and Surrounding Area.....	4
2.4	Explosive Ordnance (UXO) Threat Assessment	5
2.5	Geology	5
2.6	Drainage / Hydrological Studies	5
2.7	Contaminated Land	6
2.8	Hydrology and Hydrogeology	6
2.9	Geomorphology.....	6
3.0	FIELD AND LABORATORY STUDIES	7
3.1	Ground Investigation Fieldwork	7
3.1.1	Dynamic Sampler Boreholes	7
3.1.2	Cable Percussion Boreholes	7
3.2	Laboratory Investigation	7
4.0	GROUND CONDITIONS SUMMARY	9
4.1	Geography/Topography.....	9
4.2	Geology	9
4.3	Geotechnical Findings.....	10
4.3.1	Plasticity Index.....	10
4.3.2	Particle Size Distribution (PSD).....	10
4.3.3	Soil Strength.....	11
4.3.4	Remoulded CBRs.....	11
4.3.5	Sulphate	11
4.4	Groundwater	12
5.0	PRELIMINARY ENGINEERING ASSESSMENT AND RECOMMENDATIONS	13
5.1	Spread Foundations	13
5.2	Alternative Foundations.....	13
5.3	Ground Floor Slabs	14
5.4	Pavements.....	14
5.5	Earthworks.....	14
5.6	Groundwater	15
5.7	Concrete Grade	15
5.8	Further Work.....	15
6.0	LIMITATIONS TO GEOTECHNICAL ASSESSMENTS	16
7.0	REFERENCES.....	17

Tables

Table 1	Summary of Soil Volume Change Potential
Table 2	Summary of Particle Size Distribution
Table 3	Soil Strength Results and Derived Values
Table 4	Aggressive Chemical Environment Concrete Classification
Table 5	Depths to Groundwater within Monitoring Wells

Figures

Figure 1	Site Location Map
Figure 2	Site Layout Plan
Figure 3	Approximate Intrusive Location Plan

Appendices

Appendix I	UXO Risk Map of Berkshire
Appendix II	Borehole Logs
Appendix III	Geotechnical Laboratory Test Results
Appendix IV	Chemical Laboratory Test Results
Appendix V	Monitoring Results

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1.0 INTRODUCTION

1.1 Authorisation

Delta-Simons Environmental Consultants Limited (Delta-Simons) was instructed by Tuffin Ferraby Taylor LLP on behalf of Old Mutual Property Fund c/o CBRE Global Investors ('the Client'), to undertake a Ground Investigation of a plot of land, currently occupied by two large retail warehouses off Kenavon Drive, Reading (hereafter referred to as the 'Site').

The approximate Ordnance Survey Grid Reference for the Site is E 472242, N 173586.

A Site location map is presented as Figure 1.

1.2 Context/Purpose

It is understood that the Site is being considered for redevelopment, however, at the present time at final development plan has not been confirmed. For the purposes of this Ground Investigation it has been assumed that the end-use is likely to comprise either residential apartments with communal landscaping areas or a commercial end-use as these are in keeping with the surrounding established land uses.

The purpose of completing a Ground Investigation at the Site is to:

- Δ Provide preliminary advice on appropriate foundations solutions and design parameters for any future proposed buildings, external paving and highways; and
- Δ Establish potential abnormal development costs for the Client.

The Site is currently occupied by two large commercial retail units, a Toy's R Us in the east of the Site and a Homebase in the west.

1.3 Scope of Works

The scope of works undertaken during the Ground Investigation is summarised as follows:

- Δ Review of available desk-top information and a Site reconnaissance to plan the works;

- Δ A service avoidance exercise;
- Δ Advancement of five (5 No.) cable percussion boreholes to a maximum depth of 30.00 m bgl, with standard penetration tests (SPTs) and selected sampling;
- Δ Advancement of seventeen (17 No.) dynamic sampler boreholes to investigate shallow soils;
- Δ The installation of all boreholes and five (5 No.) dynamic sampler boreholes with 50 mm groundwater monitoring wells;
- Δ Site attendance during the intrusive works by a Delta-Simons' representative to record observations, log borehole arisings and collect samples;
- Δ Groundwater monitoring in all of the monitoring wells on one occasion;
- Δ Four (4 No.) rounds of ground gas monitoring; and
- Δ Factual and Interpretative Reporting.

This Report was completed in conjunction with an Environmental Assessment and Flood Risk Assessment by Delta-Simons, which are reported under separate cover.

1.4 Project Limitations

Service avoidance was carried out and several of the proposed exploratory locations were required to be moved and re-scanned for services prior to commencement.

Large areas of the Site are not accessible under the footprint of the two large existing retail premises on the Site. Despite this a good spread of drilling locations around the Site was possible in areas of car parking and soft landscaping.

Any other issues not listed in the scope of works, but subsequently identified during the completion of the site investigation and reported herein (such as the potential presence of contamination, flood assessment studies or ecological surveys) are provided for information only and fall outside the scope of this assessment. The Report does not constitute an environmental, archaeological or ecological assessment, nor does it constitute an asbestos inspection or flood assessment.

Delta-Simons obtained, reviewed and evaluated information in preparing this Report from the Client, Landmark, Chemtech Limited, Professional Soils Laboratory Limited and Infosoil Limited. Delta-Simons' conclusions, opinions and recommendations are based upon this

information and the information obtained during the site investigation. Delta-Simons does not warrant the accuracy of the information provided to it and will not be responsible for any opinions that Delta-Simons has expressed, or conclusions which it has reached in reliance upon information which is subsequently proven to be inaccurate.

2.0 SITE STATUS

The Site location, past uses (from a review of historical maps), the current use and the ground setting (geological, hydrogeological and hydrological) are discussed in the following sections.

2.1 Site Location, Description and Surrounding Area

The Site comprises an irregular shaped plot, approximately 2.74 ha in area, situated to the south of Kenavon Drive, Reading (Figure 1).

The Site is currently occupied by two large commercial retail units, a Toy's R Us in the east of the Site and a Homebase in the west (Figure 2).

The Site is bound to the south by a watercourse, The River Kennet, with office units beyond, to the east by further office units and to the north by Kenavon Drive. The western boundary is formed by the A329 Road with a Young Offenders Institute beyond.

Established trees and shrubs are to be found around the entire perimeter of the Site. At the time of visiting there was no evidence of invasive weed species on the Site.

The Ordnance Survey mapping of the area indicates topographic levels of approximately 40 m above Ordnance Datum across the Site and surrounding area.

2.2 Proposed Development

It is understood that the Site is being considered for redevelopment, however, at the present time a final development plan has not been confirmed. For the purposes of this Report it has been assumed that the end-use is likely to comprise either residential apartments with communal landscaping areas or a commercial end-use as these are in keeping with the surrounding established land uses.

2.3 History of the Site and Surrounding Area

From information contained within the WSP Phase I Environmental Audit and from historical mapping of the area held by Delta-Simons, it is understood that the Site was formerly occupied by a number of buildings associated with a large biscuit factory which extended beyond the Site boundary to the south. The factory buildings present across the Site were removed by circa 1979. From planning records it is understood that planning permission for

the redevelopment of the west of the Site was granted in 1984. The east of the Site remained undeveloped until circa 1995 when it was redeveloped into its current layout.

2.4 Explosive Ordnance (UXO) Threat Assessment

An initial screening indicates the Site to be in an area where the available records of aerial bombing are interpreted by Zetica as low bomb risk and this suggests no further consideration of UXO is required, but may be prudent. If undertaken, any further consideration would start with a preliminary risk assessment in accordance with CIRIA C681, Chapter 5. A copy of the UXO Risk map of Berkshire is included as Appendix I.

2.5 Geology

The local superficial and solid geology, including Made Ground materials which are likely to be present beneath the Site, and as indicated from published data and British Geological Survey (BGS) archive borehole logs ^[Ref. 1] are summarised below.

From the BGS Geology of Britain Viewer the Site is indicated to be underlain by superficial deposits of the Taplow Gravel Formation followed by bedrock of the Seaford and Newhaven Chalk Formation.

From the BGS Borehole Record Viewer a number of previous boreholes are mapped relating to the Reading Inner Distribution Road (A329) to the west of the Site. The boreholes indicate that approximately 2.00 m of Made Ground is present followed by soft greenish silty clay (possible Alluvium) to depths 3.90 and 4.40 m bgl underlain by chalk. A borehole located to the north of the Site indicates that beneath any Made Ground a thin layer of soft silty clay (possible Alluvium) is present followed by dense to very dense sandy gravel (Taplow Gravel) to a depth of 7.00 m bgl underlain by chalk.

The absence of any gravel deposits from boreholes located to the west of the Site indicates that the geology beneath the Site is likely have a limited thickness of Alluvium, associated with the River Kennet and/or gravels River Terrace Deposits associated with the River Thames, it is possible that gravel maybe absent at the Site. Chalk bedrock would be expected at approximately 5.00 m bgl.

2.6 Drainage / Hydrological Studies

The Environment Agency aquifer designation maps indicate that the Superficial Deposits are indicted to be a Secondary A Aquifer and the Chalk bedrock is classified as a Principal Aquifer. The Site is located in a Zone 3 Total Catchment Area.

Information from previous boreholes from adjacent to the Site indicates that standing groundwater is approximately 0.50 to 1.00 m bgl.

2.7 Contaminated Land

Please see the associated Delta-Simons Environmental Assessment Report.

2.8 Hydrology and Hydrogeology

The closest surface water feature to the Site is the River Kennet, a tributary of the River Thames, located on the southern boundary.

The Environment Agency on-line flood map indicates that the southern part of the Site is located within an area at risk from flooding from rivers or seas without defences. The Site has a moderate risk of flooding. The chance of flooding each year is 1.3% (1 in 75) or less, but greater than 0.5% (1 in 200). A Flood Risk Assessment has been provided under separate cover.

2.9 Geomorphology

The immediate superficial geology beneath the Site and the surrounding area comprise River Terrace Deposits which form low lying floodplain areas with generally shallow slope angles.

3.0 FIELD AND LABORATORY STUDIES

3.1 Ground Investigation Fieldwork

The main objectives of the fieldwork were to:

- Δ Confirm the anticipated ground and groundwater conditions as identified in Section 2.0 of this Report;
- Δ Obtain in-situ geotechnical parameters for design purposes; and
- Δ Obtain samples for laboratory testing.

3.1.1 Dynamic Sampler Boreholes

A total of seventeen boreholes (DS101, DS101A, DS202, DS202A, DS103 and DS105 to DS116) were advanced at the Site over the 5th and 7th June 2013 to a maximum depth of 4.00 m bgl using a tracked mounted dynamic sampler rig. Boreholes DS105, DS108 and DS111 were installed as 50 mm internal diameter groundwater and ground gas monitoring wells. The remaining locations were backfilled with arisings.

The ground conditions and monitoring well installation details are detailed on the individual logs, which are included as Appendix II. The locations of the boreholes are shown on Figure 3.

3.1.2 Cable Percussion Boreholes

A total of five boreholes (CP101 to CP105) were advanced at the Site between the 3rd and 14th June 2013 using cable percussion techniques to a maximum depth of 30.00 m bgl. Boreholes CP101 to CP105 were installed as 50 mm internal diameter groundwater and ground gas monitoring wells. The boreholes were advanced using 200 mm and 150 mm diameter casings through the Made Ground and superficial deposits to prevent the creation of preferential pathways.

The ground conditions and monitoring well installation details are detailed on the individual logs, which are included as Appendix II. The locations of the boreholes are shown on Figure 3.

3.2 Laboratory Investigation

Following the Ground Investigation, a schedule of geotechnical and chemical laboratory testing was prepared by Delta-Simons. The geotechnical testing was carried out by

Professional Soils Laboratory in accordance with BS 1377 ^[Ref. 2]. The chemical testing was carried by Chemtech Limited in accordance with UKAS accredited standards. Copies of geotechnical and chemical laboratory test results are presented in Appendix III and IV, respectively.

The geotechnical laboratory analysis comprised:

- Δ Five (5 No.) liquid and plastic limits;
- Δ Six (6 No.) particle size distribution (PSD) tests;
- Δ Eight (8 No.) natural moisture content tests;
- Δ Seventeen (17 No.) full BRE concrete in aggressive ground suites;
- Δ Six (6 No.) remoulded CBRs;
- Δ Two (2 No.) one-dimensional Consolidation tests; and
- Δ Two (2No.) quick undrained triaxial tests.

4.0 GROUND CONDITIONS SUMMARY

This Section outlines the ground conditions of the study area as identified during the Delta-Simons Ground Investigation.

4.1 Geography/Topography

The general area surrounding the Site generally comprises flat commercial and residential land.

4.2 Geology

The ground conditions were generally consistent with the published BGS geological mapping and BGS boreholes logs for the Site, as detailed below.

Made Ground

Exploratory locations revealed Made Ground from the surface to a maximum depth of 4.50 m bgl and generally comprised 0.10 m of asphalt surfacing over Made Ground generally comprising firm to stiff gravelly sandy clay with variable amounts of sand, gravel and cobbles. The granular fraction includes brick, flint, concrete, glass, ash, cinders and rare metal. The cobble and boulder fraction along with reinforced concrete caused borehole advancement to be discontinued at several locations in the south west of the Site.

Possible Alluvial Deposits

These were laterally and vertically variable deposits, generally comprising gravelly fine to coarse sands and gravelly sandy silty clay (possible alluvial deposits) from depths between 1.80 and 5.50 m bgl. Gravel comprised sub-angular fine to coarse chalk and flint. Inclusions of shell fragments no greater than 5mm and relict organic matter are also present.

The possible alluvial deposits are not present across the whole Site, and appear to be absent across the central portion where Made Ground lies directly above the Chalk Bedrock.

River Terrace Deposits

Exploratory locations CP104 and CP105 in the east of the Site encountered medium dense sandy to very sandy angular to sub-angular fine to coarse chalk and flint gravel (River Terrace Deposits). The River Terrace Deposits were encountered from depths between 4.50 and 5.60 m bgl, and up to 2.70 m thick.

The Seaford Chalk Formation and Newhaven Chalk Formation

Chalk of the Seaford and Newhaven Chalk Formation underlies the Made Ground, possible alluvial deposits or River Terrace Deposits from depths of between 2.40 and 7.20 m bgl to

>30.00 m bgl. The Chalk is typically extremely weak to weak generally completely weathered with occasional flint gravel and cobbles within the matrix.

4.3 Geotechnical Findings

4.3.1 Plasticity Index

The plasticity index and moisture content has been determined on samples of cohesive soils. These are summarised in Table 1.

Table 1 – Summary of Soil Volume Change Potential

Borehole	Depth (m)	Plasticity Index (%)	Moisture Content (%)	Plasticity Designation
CP102	4.50	22	17	Intermediate
CP104	3.00	55	44	Very High
CP104	3.20	25	33	Intermediate
CP104	4.50	22	37	Intermediate
CP105	4.00	31	41	High

4.3.2 Particle Size Distribution (PSD)

Six PSD (wet sieve) tests were undertaken on soils at the Site and are summarised in Table 2.

Table 2 – Summary of Particle Size Distribution

Stratum	Silt/Clay (%)	Sand (%)	Gravel (%)	Cobbles (%)	Description
Possible Alluvial Deposits	27-63	31-38	3-39	0	Varying composition from very sandy very clayey GRAVEL to very sandy CLAY.
River Terrace Deposits	1-14	9-27	59-79	0-11	Sandy silty GRAVEL, locally cobbly.

4.3.3 Soil Strength

Table 3, summarises derived soil strength parameters and factual results for laboratory tests, field tests (e.g. hand shear vane) and uncorrected Standard Penetration Tests (SPT).

Table 3 - Soil Strength Results and Derived Values

Stratum	Uncorrected SPT (N-value)	Shear Strength from Triaxial Tests	Coefficient of Volume Change
		c_u (kPa)	Mv (m ² /MN)
Made Ground	4 - 50+	-	-
Possible Alluvium	2 - 14	25 - 31	0.22 - 0.48
River Terrace Deposits	11 - 20	-	-
Chalk	4 - 50+	-	-

SPTs were carried out in all five of the cable percussive holes advanced at 1.00 to 1.50 m centres. All SPT 'N' values quoted above are uncorrected, the SPT hammer calibration certificate is presented in Appendix II, if the calculation of corrected N_{60} values is required.

4.3.4 Remoulded CBRs

A total of six samples of Made Ground were taken for CBR tests at locations spread across the Site in areas of possible future pavement at depths from ground level to 1.95 m bgl. The CBR results are included as Appendix III.

In general laboratory remoulded CBR test results are high at 14.1 to 78.8 %, although a single sample returned a very low CBR of 1.1 %, indicating that soft spots are present.

4.3.5 Sulphate

A total of 20 soil samples were tested for the full Special Digest 1 - BRE sulphate suite for the purpose of determining the required concrete grade. Three of these were taken from boreholes CP101 to CP105 from within the Made Ground, the superficial deposits and from within the Chalk Bedrock. Made Ground and recent alluvial deposits can be a potential source of oxidisable sulphates (pyrite) and, therefore, total sulphate and acid soluble concentrations have also been determined. The results are presented in Appendix IV.

In accordance with BRE (Special Digest 1), the Design Sulphate (DS) classification and the Aggressive Chemical Environment for Concrete (ACEC) classifications are presented in Table 4. However, BRE Special Digest 1 contains further guidance regarding specification of concrete in aggressive ground.

Table 4 - Aggressive Chemical Environment Concrete Classification

Stratum	No. Tests	Maximum ws SO ₄ (mg/kg)	pH Range	Oxidisable Sulphates Likely?	DS	ACEC
Made Ground	11	1,618	7.6-11.4	Yes	DS-4	AC-4
Possible Alluvial Deposits	4	362	7.7-10.3	Yes	DS-3	AC-3
River Terrace Deposits	1	179	7.7	No	DS-1	AC-1
Chalk	4	368	8.3	No	DS-1	AC-1

4.4 Groundwater

Groundwater strikes were noted in BH101, BH102, BH104 and BH105 during the drilling, with depths ranging between 3.80 and 5.50 m bgl. Monitoring wells were installed in five of the intrusive locations in order to target the shallow depth groundwater. A summary of the maximum and minimum groundwater depths measured in each of the monitoring wells during the monitoring events is summarised in Table 5.

Table 5 – Depths to Groundwater in Monitoring Wells

Intrusive Location	Depth to Groundwater (m below top of pipe)	Depth to Base (m below top of pipe)	Height of Water Column (m)
BH101	2.97	6.07	3.10
BH102	3.27	11.43	8.10
BH103	2.96	5.53	2.57
BH104	2.38	11.40	9.02
BH105	2.50	10.83	8.33

The groundwater level monitoring record sheets are included in Appendix V.

5.0 PRELIMINARY ENGINEERING ASSESSMENT AND RECOMMENDATIONS

The ground conditions described in previous sections of this Report have been assessed with respect to an assumed end-use that is likely to comprise either residential apartments with communal landscaping areas or commercial use, as these are in keeping with the surrounding established land uses.

5.1 Spread Foundations

The Made Ground and possible alluvial deposits at the Site are variable in nature, weak and compressible. Groundwater is present at a shallow depth, and reliable, competent strata occurs at approximately 2.40 to 5.50 m below the Site surface. Therefore, traditional strip, pad or spread foundations are unsuitable and are not considered further.

5.2 Alternative Foundations

The ground conditions may be suitable for a range of different deep foundations that transfer structural loads to the more competent geology of the Seaford Chalk Formation and Newhaven Chalk Formation.

Vibro-stone columns or concrete columns may be suitable, provided the proximity of adjacent structures and presence of weak alluvium is taken into account.

Piled foundations are likely to represent the most secure foundation system for the new development. The geology is reasonably favourable for bored, driven or continuous flight auger (CFA) piles. Foundation design may need to take into account the possibility of negative skin friction (through the soft possible alluvial deposits), subject to detailed civil engineering design and finished floor levels.

It is recommended that specialist contractors are approached for advice on the most suitable alternatives. When considering the contamination aspects of the project and the potential to cause vertical pathways between water bodies, CFA piles are likely to represent the most effective solution.

A working platform will need to be provided for the specific plant to be used in forming the new foundations. Consideration of the Chalk as a principal aquifer will need to be taken, and construction techniques employed to avoid creating a pathway for pollutants into the important aquifer, a piling risk assessment may also be required by the Environment Agency, prior to piling.

5.3 Ground Floor Slabs

All ground floor slabs will have a formation which is potentially Made Ground and as such unsuitable for structural reliance for high quality finishes and modern building codes.

Ground floor slabs can be either bearing on the ground following an engineering treatment of the Made Ground, or can be suspended on piers and groundbeams off piles.

5.4 Pavements

Laboratory CBR tests on samples of Made Ground in general indicate that it is suitable for use as a formation, although the occasional very low CBR values do show it is highly variable in nature.

It is considered likely a CBR of at least 5 % will be achievable at depths of up to 1.00 m across the majority of the Site and can be used for preliminary design, subject to *in-situ* testing during construction.

Proof rolling of the formation level will be required and any loose, unsuitable or soft materials will need to be removed and replaced with an engineered fill, in accordance with a suitable specification.

CBR is dependent on the condition of the strata and could be different upon excavation to the formation subject to seasonal conditions. Clay in Made Ground may be frost susceptible and due to the presence of variable clay fraction it is recommended that a minimum pavement thickness is adopted according to current guidance.

The use of a geotextile is recommended where variable ground conditions are encountered or across changes in strata to protect against potential differential settlement.

Soil stabilisation of the pavement formation could be considered to mitigate risk of construction issues.

5.5 Earthworks

The soil conditions encountered in the boreholes above the chalk are generally considered to be possible to dig out with normal hydraulic plant, however, some breaking out may be required where obstructions are encountered.

In a constrained development area, batters to deep excavations are not normally appropriate.

All excavations are likely to be unstable and support will be required.

5.6 Groundwater

Groundwater was recorded in the boreholes at approximately 5.00 m, and the water depth in standpipes monitored after the fieldwork was at approximately 2.60 m bgl.

The depth of the Made Ground combined with the recorded groundwater level make traditional soakaways unviable due to the soakage zone being in Made Ground.

Alternatives such as discharge to existing facility should be investigated.

5.7 Concrete Grade

This Report has confirmed the presence of chemicals in the Made Ground and within the Superficial Deposits which may be aggressive to concrete in the ground. Therefore, concrete grade may need to be increased to account for potential aggressive conditions.

Based on the data obtained within the Made Ground, there is a case for using a classification of DS-4 AC-4 throughout, but BRE Special Digest 1 contains further guidance regarding specification of concrete in aggressive ground.

5.8 Further Work

The investigation was limited by the presence of existing structures. The data contained in this Report is considered to be sufficient for initial design principles to be established, and for detailed design where coverage is good. The following options for further investigation may be considered:

- Δ Further investigation is recommended on complete demolition of the Site. The purpose would be to identify the ground conditions under the existing floor and obtain relevant geotechnical parameters;
- Δ A piling risk assessment may be required, due to the presence of the Principal Aquifer within the chalk strata; and
- Δ There may be a case for obtaining further data for optimum design of concrete, pavements or soil stabilisation.

6.0 LIMITATIONS TO GEOTECHNICAL ASSESSMENTS

The recommendations contained in this Report represent our professional opinions. These opinions were arrived in accordance with currently accepted industry practices and hydrological and engineering practices at this time and location and, as such, are not a guarantee that the Site is free of hazardous or potentially hazardous materials or conditions.

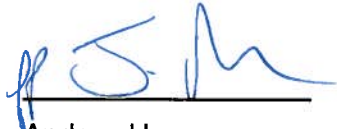
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7.0 REFERENCES

Ref. 1 British Geological Survey: <http://www.bgs.ac.uk/data/boreholescans/home>.

Ref. 2 BS1377 (1990): Methods of test for soils for civil engineering purposes.

The Report was prepared by:



Andrew Hare

Geotechnical Engineer

12/07/13

Date

This Report was reviewed by:



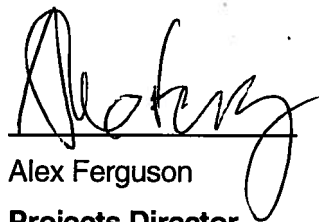
Christopher Rudd

Geoenvironmental Project Manager

12/07/2013

Date

This Report was authorised by:



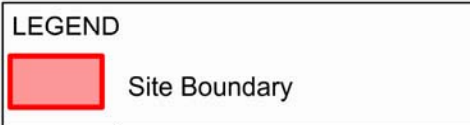
Alex Ferguson

Projects Director

12 July 2013

Date

Figures



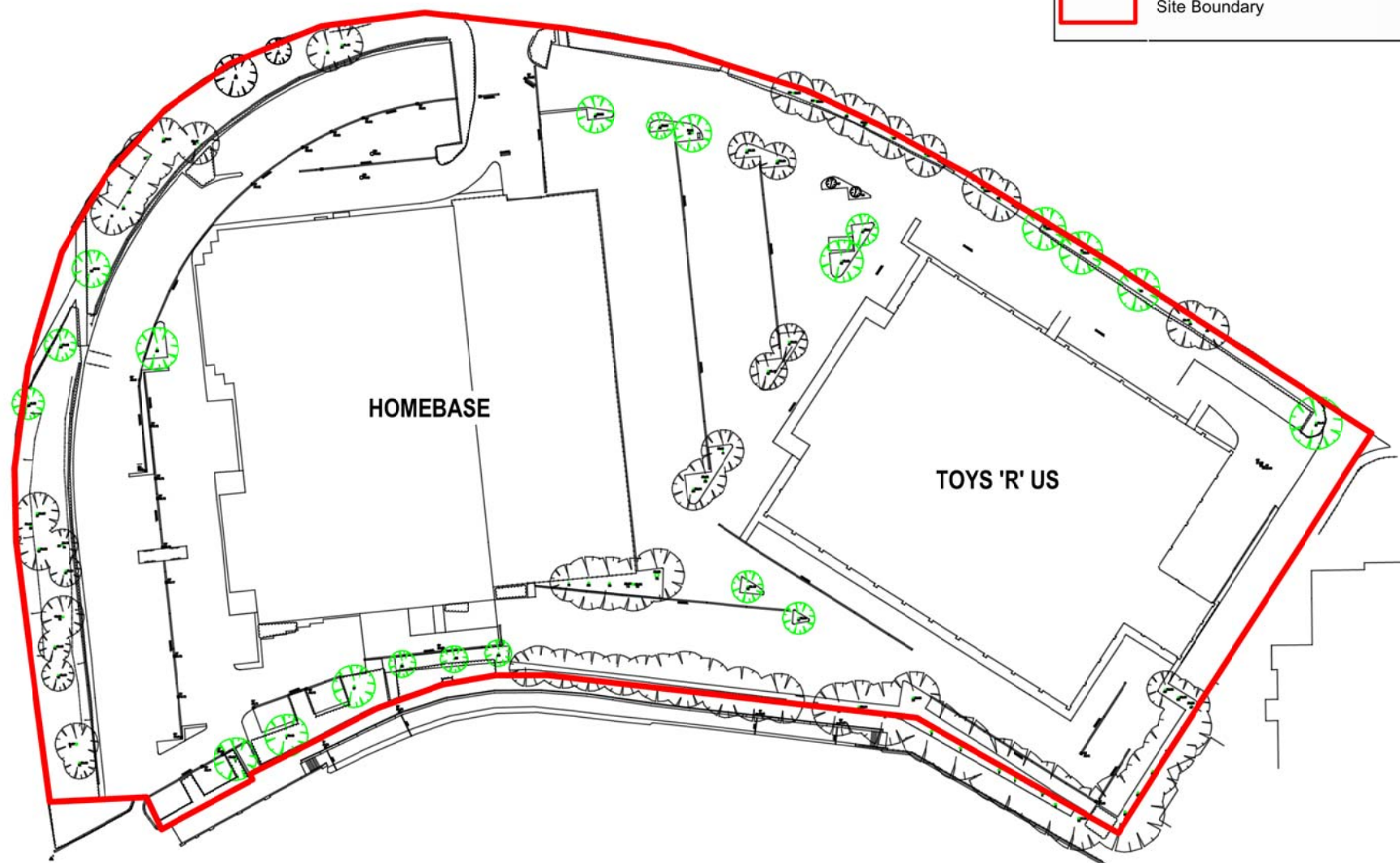
Scale: 1 / 10,000 @ A4

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LEGEND

 Site Boundary



Not to Scale

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LEGEND



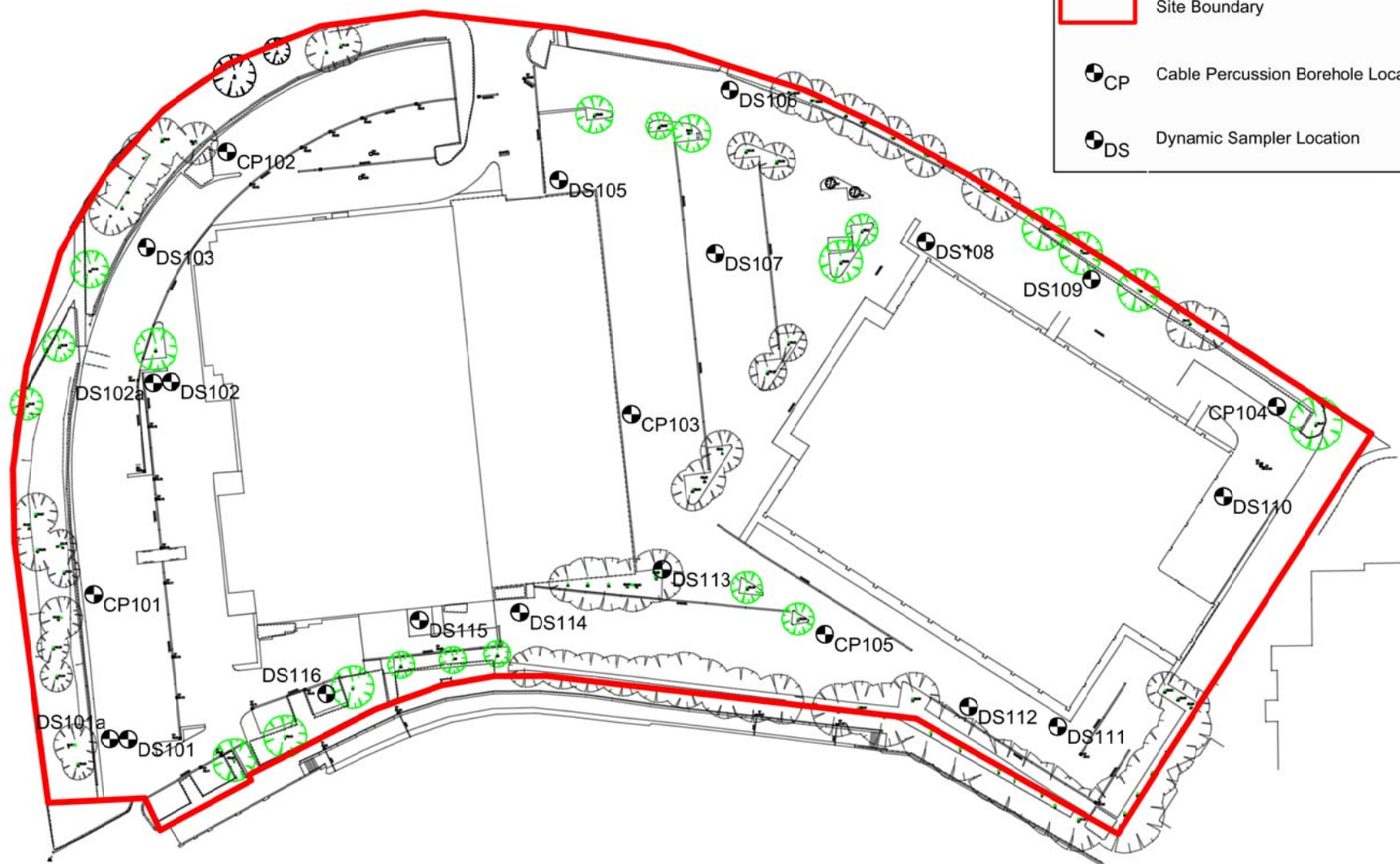
Site Boundary



Cable Percussion Borehole Location



Dynamic Sampler Location



Not to Scale

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Appendix I

REGIONAL UNEXPLODED BOMB RISK

WEST BERKSHIRE

DENSITY OF BOMBS PER BOROUGH			
Borough	High explosive	Anti-personnel	Incendiary
Reading	5	0	0
Wokingham	235	0	5
Windsor	237	0	13
Hungerford	66	0	1
Abingdon	160	0	2
Wantage	143	0	6
Cookham	143	0	24
Newbury	98	0	4
Bradfield	161	0	6



The information in this regional UXB risk map is derived from a number of sources and should be read in conjunction with the "Users' Guide" (printed overleaf). Zetica cannot guarantee the accuracy or completeness of the information or data.

This map covers regions of coast with beaches, estuaries and alike. Further consideration of the bomb risk is required in these areas. The often inaccessible nature and changing ground conditions (e.g. movement of silt that may contain ordnance) means that historical bombing records for these areas are often poor or inaccurate and further assessment of the bomb risk may be required as part of a site specific study.

A FOUR-STEP PROCESS



Risk assessment and method statement from a qualified explosive ordnance clearance (EOC) operative.



Surface geophysical survey to allow shallow groundwork.



MAGCONE detects UXBs and obstructions on piling layout to the no-risk depth.



Detected UXBs can be dealt with by our EOC engineers and a Clearance Certificate issued for the site.

zetica

For more details on this and related services, telephone: +44 (0) 1993 886682 or visit our website: www.zetica.com

BOMB MAP USERS' GUIDE

Sources of information and explanation of bomb risk

Why?

Unexploded bombs (UXB) still present a risk to construction projects long after the end of the Second World War (WWII). UXBs often entered the ground unnoticed at high velocity and penetrated to a depth of several metres. Here they remain – vulnerable to disturbances from construction work. Beyond the depth of shallow excavation work, the greatest risk is to piling, drilling and probing crews. A piling rig could repeatedly hit a UXBs with considerable force before the crew realises an obstruction has been impacted. It could then be up to 72 hours before the detonator activates.

Who?

The responsibility for avoiding UXB risk usually lies with construction companies or house builders particularly those who are redeveloping urban sites. In addition, project engineering or environmental consultants are expected to advise their clients of a site's history. Other interested parties include those organisations whose employees are physically at most risk from intrusive works, normally piling companies, drillers or probing operators.

How?

UXB risk should be assessed for every site, but especially those in known heavily bombed areas or those situated near war-time strategic installations that were priority targets for enemy aircraft, for example, airfields. Zetica's regional bomb risk map is therefore a first point of reference from which the relative, potential abundance of UXBs can be judged. Consultants then advise their clients that an ordnance-risk desk study is required, which they may obtain from external sources. Construction companies or house builders who assess their own risk could choose to come direct to Zetica.

When?

Do not wait for the piling or drilling company to be on site before thinking about UXB risk – it will inevitably cause delays and higher costs. Request the regional bomb risk map from Zetica as soon as a site is being considered, and then use it to help you or your clients to decide if an ordnance-risk desk study is required.

Where?

Maps can be obtained for any county in England, Scotland, Wales or Northern Ireland – or for any London borough. They can help determine the areas that were most heavily bombed – but no part of the country should be considered 100% safe from UXB risk. Even remote rural areas can have a high risk if, for example, they were locations for decoy airfields or beacons that were lit to fool enemy pilots into thinking they had located a burning city that had been successfully hit by others in the raid.

How to use this regional map

This map is designed to give you an indication of the potential risk from UXBs in your area. If you are conducting work that involves excavation, piling or other disturbance of the ground, then you should use the map to identify the category of risk for your site.

The risk boundaries are a guide, compiled from data based on the political areas for which records are held; being just outside a high-risk area does not mean there is no UXB risk. You should use the map to assist in your decision of whether to investigate the UXB risk further.

Information on the regional risk remaining from UXBs in the UK

Zetica has built the largest UXB database of its kind in the UK. It includes a unique digital library of bomb census data, and maps showing key strategic points and bombing densities from the First and Second World Wars. The main sources of information include records from central government (Public Records Office), the Ministry of Defence, and the German Luftwaffe.

Using information from this database, Zetica has published maps of UXB risk on a regional, county and borough scale. The maps indicate relative degrees of UXB risk based on available records for bombing densities and known targeted areas for regions within the UK. The risk is broken down into individual boroughs, towns or cities. The data are based on the historical boroughs and are then overlaid onto the modern map. It is important to note that more-detailed research may be required for individual sites, particularly where proximity to a potential WWII target means the local risk may be higher.

High risk

Areas designated as high risk are those that show a high density of bombing hits (50+ bombs per 1000 acres) and abundant potential WWII targets. In high-risk regions, further action to mitigate UXB risk is considered essential.

Moderate risk

Moderate-risk regions are those that show a bomb density of between 11 and 50 bombs per 1000 acres and that may contain potential WWII targets. Action to mitigate the risk is considered essential, albeit more likely that a reduced scope of work is required compared with that needed for high-risk regions.

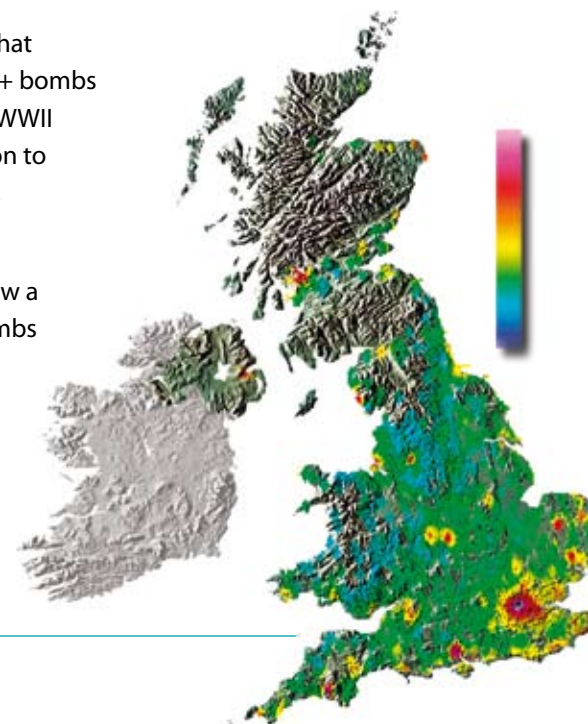
Low risk

Low-risk regions are those with a bombing density of up to 10 bombs per 1000 acres. These areas are considered to have a significant but low UXB risk. In general, further action to mitigate the risk is considered prudent, although not essential. Care is required when assessing the risk for specific sites where the risk may be higher because of local wartime activity.

Other WWII targets

Other regions with the risk of UXBs are key strategic points as defined by the government during WWII as representing potential enemy targets. Where these exist outside areas mapped as high, moderate or low risk, a site-specific assessment of the UXB risk may be required.

Relative UXB risk across UK



What to do if...

...you have a site that has a potential UXB risk

In the absence of current legislation requiring you to address the risk from UXBs, your responsibilities under health and safety legislation and regulations such as construction design and management require that you address all identified risks. The first stage is to request further advice from a professional adviser such as Zetica, or to gain more site-specific information by commissioning an ordnance-risk desk study. Then a strategy to deal with the risk can be established that is tailored to your proposed work.

...you find a suspect item or require advice

If during site works you find a suspect (ordnance-related) item, it is very important that you do not touch or move it (even if it has already been moved by an excavator). If it is clearly ordnance related, then dial 999 and ask for the police. Ensure that the area around the item is kept as clear as possible without placing yourself at risk. If you are unsure and do not wish to cause undue alarm, or you just require some advice, then you can call Zetica. We have experienced qualified UXB specialists on hand who can offer support and advice during any site works.

More-detailed procedures should be established in advance if you are in an area where the risk of finding a UXB is shown to be significant (moderate to high).

Site-specific desktop studies

Zetica is able to provide high-quality, site-specific UXB risk information for any residential, industrial or commercial property in the UK. These desktop studies provide details of the bombing density within an area and for the site itself, in order to indicate the risks of UXBs still being present. A risk assessment is provided to facilitate informed decision making on whether any further risk mitigation measures are required.

Appendix II

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS101			
DYNAMIC SAMPLER LOG				Date: 05/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
MADE GROUND: Tarmacadam.				39.90 0.10					
MADE GROUND: Brown sandy subrounded coarse gravel. Sand is fine to coarse. (SUB-BASE)				39.80 0.20					
MADE GROUND: Stiff light brown slightly sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, concrete and flint. Sand is fine to coarse. Abundant cobbles of brick and concrete. Occasional boulders of concrete.				(0.30) 39.50 0.50					
Borehole refused at 0.50 m bgl due to impenetrable ground.									

REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.	CHISELLING		WATER LEVEL OBSERVATIONS						
	Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth	
	BOREHOLE DIAMETER		CASING DIAMETER		DEPTH SEALED				
	300mm to 0.50m								

All measurements in metres unless otherwise stated	5m/page Scale: 1:31.25	Coordinates to Local Grid Ground Level to Ordnance Datum	Page 1 of 1
Plant Used: Dando Terrier 2002 series	Coordinates / Level (mAOD): E: -0.962611 N: 51.456018 Level: 40	Logged By: WC	Checked By: WC Approved By: CR

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS101A			
DYNAMIC SAMPLER LOG				Date: 05/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
MADE GROUND: Tarmacadam.				39.90 0.10					
MADE GROUND: Brown sandy subrounded coarse gravel. Sand is fine to coarse. (SUB-BASE)				39.80 0.20					
MADE GROUND: Stiff light brown slightly sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, concrete and flint. Sand is fine to coarse. Abundant cobbles of brick and concrete. Occasional boulders of concrete.				(0.30) 39.50 0.50					
Borehole refused at 0.50 m bgl due to impenetrable ground.									

REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.	CHISELLING			WATER LEVEL OBSERVATIONS					
	Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth	
	NO CHISELLING UNDERTAKEN:			NO WATER ENCOUNTERED:					
	BOREHOLE DIAMETER			CASING DIAMETER			DEPTH SEALED		
	300mm to 0.50m								

All measurements in metres unless otherwise stated	5m/page Scale: 1:31.25	Coordinates to Local Grid Ground Level to Ordnance Datum	Page 1 of 1
Plant Used: Dando Terrier 2002 series	Coordinates / Level (mAOD): E: -0.962634 N: 51.456017 Level: 40	Logged By: WC	Checked By: WC Approved By: CR

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com												
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS102						
DYNAMIC SAMPLER LOG				Date: 07/06/2013		Client: Old Mutual Property Fund.						
DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details			
					TYPE	REF	Depth	SPT N Value/Drive mm				
MADE GROUND: Tarmacadam				40.90 0.10	ES	1	0.20 - 0.30					
MADE GROUND: Brown sandy subrounded coarse gravel. Sand is fine to coarse. (SUB-BASE)				40.80 0.20								
MADE GROUND: Stiff light brown slightly sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, concrete and flint. Sand is fine to coarse. Abundant cobbles of brick and concrete. Rare boulders of concrete. Manmade material including steel and glass.				(0.30) 40.50 0.50								
Borehole refused at 0.50 m bgl due to impenetrable ground.												
REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.					CHISELLING		WATER LEVEL OBSERVATIONS					
					Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth
					NO CHISELLING UNDERTAKEN:			NO WATER ENCOUNTERED:				
					BOREHOLE DIAMETER			CASING DIAMETER		DEPTH SEALED		
					300mm to 0.50m							
All measurements in metres unless otherwise stated		5m/page Scale: 1:31.25		Coordinates to Local Grid Ground Level to Ordnance Datum				Page 1 of 1				
Plant Used: Dando Terrier 2002 series		Coordinates / Level (mAOD): E: -0.962481 N: 51.456654 Level: 41		Logged By: WC		Checked By: WC		Approved By: CR				

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com																																																					
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS102A																																															
DYNAMIC SAMPLER LOG				Date: 07/06/2013		Client: Old Mutual Property Fund.																																															
DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details																																												
					TYPE	REF	Depth	SPT N Value/Drive mm																																													
MADE GROUND: Tarmacadam				40.90 0.10																																																	
MADE GROUND: Brown sandy subrounded coarse gravel. Sand is fine to coarse. (SUB-BASE)				40.80 0.20																																																	
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Borehole refused at 0.50 m bgl due to impenetrable ground.																																																					
REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3">CHISELLING</th> <th colspan="6">WATER LEVEL OBSERVATIONS</th> </tr> <tr> <th>Depth From</th> <th>Depth To</th> <th>Time Taken</th> <th>Date</th> <th>Time</th> <th>Water Strike</th> <th>Standing Level</th> <th>Casing Depth</th> </tr> <tr> <td colspan="3" style="text-align: center;">NO CHISELLING UNDERTAKEN:</td> <td colspan="6" style="text-align: center;">NO WATER ENCOUNTERED:</td> </tr> <tr> <th colspan="3">BOREHOLE DIAMETER</th> <th colspan="2">CASING DIAMETER</th> <th colspan="4">DEPTH SEALED</th> </tr> <tr> <td colspan="3">300mm to 0.50m</td> <td colspan="2"></td> <td colspan="4"></td> </tr> </table>					CHISELLING			WATER LEVEL OBSERVATIONS						Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth	NO CHISELLING UNDERTAKEN:			NO WATER ENCOUNTERED:						BOREHOLE DIAMETER			CASING DIAMETER		DEPTH SEALED				300mm to 0.50m								
CHISELLING			WATER LEVEL OBSERVATIONS																																																		
Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth																																														
NO CHISELLING UNDERTAKEN:			NO WATER ENCOUNTERED:																																																		
BOREHOLE DIAMETER			CASING DIAMETER		DEPTH SEALED																																																
300mm to 0.50m																																																					
All measurements in metres unless otherwise stated		5m/page Scale: 1:31.25		Coordinates to Local Grid Ground Level to Ordnance Datum				Page 1 of 1																																													
Plant Used: Dando Terrier 2002 series		Coordinates / Level (mAOD): E: -0.96251 N: 51.456654 Level: 41		Logged By: WC		Checked By: WC		Approved By: CR																																													

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS103			
DYNAMIC SAMPLER LOG				Date: 07/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
MADE GROUND: Tarmacadam				40.90 0.10					
MADE GROUND: Brown sandy subrounded coarse gravel. Sand is fine to coarse. (SUB-BASE)				40.80 0.20	ES	1	0.20 - 0.30		
MADE GROUND: Stiff light brown slightly sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, concrete and flint. Sand is fine to coarse. Occasional cobbles of brick and concrete. Rare boulders of concrete. Manmade material including steel and glass.				(0.30) 40.50 0.50					
Borehole refused at 0.50 m bgl due to impenetrable ground.									

REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.	CHISELLING			WATER LEVEL OBSERVATIONS					
	Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth	
	NO CHISELLING UNDERTAKEN:			NO WATER ENCOUNTERED:					
BOREHOLE DIAMETER			CASING DIAMETER			DEPTH SEALED			
300mm to 0.50m									

All measurements in metres unless otherwise stated	5m/page Scale: 1:31.25	Coordinates to Local Grid Ground Level to Ordnance Datum	Page 1 of 1
Plant Used: Dando Terrier 2002 series	Coordinates / Level (mAOD): E: -0.962553 N: 51.456904 Level: 41	Logged By: WC	Checked By: WC Approved By: CR

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS105			
DYNAMIC SAMPLER LOG				Date: 07/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
MADE GROUND: Tarmacadam				39.90 0.10					
MADE GROUND: Brown sandy subrounded coarse gravel. Sand is fine to coarse. (SUB-BASE)				(0.40)					
MADE GROUND: Stiff dark brown black sandy slightly gravelly clay. Gravel is subrounded to subangular fine to coarse and of mixed lithologies including brick, flint and chalk. Sand is fine to coarse. Occasional cobbles of brick and concrete. Ash throughout.				39.50 0.50	ES	1	0.50 - 0.80		
				(0.80)					
MADE GROUND: Creamy-white subangular fine to coarse chalk and flint gravel.				38.70 1.30					
				(1.10)	ES	2	1.50 - 1.70		
MADE GROUND: Stiff dark brown black sandy slightly gravelly clay. Gravel is subrounded to subangular fine to coarse and of mixed lithologies including brick, flint and chalk. Sand is fine to coarse. Occasional cobbles of brick and concrete. Ash throughout.				37.60 2.40					
				37.40 2.60					
				37.20 2.80					
MADE GROUND: Creamy-white subangular fine to coarse chalk and flint gravel.									
MADE GROUND: Light brown clayey gravelly fine to coarse sand. Gravel is subrounded to subangular fine to coarse of mixed lithologies including brick, flint and chalk. Sand is fine to coarse.				(1.20)					
					ES	3	3.70 - 4.00		
				36.00 4.00					
Borehole complete at 4.00 m bgl.									

REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Installed with a 63 mm HDPE standpipe to 3.5 m bgl.					CHISELLING			WATER LEVEL OBSERVATIONS					
					Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth	
					NO CHISELLING UNDERTAKEN:			NO WATER ENCOUNTERED:					
					BOREHOLE DIAMETER			CASING DIAMETER			DEPTH SEALED		
					300mm to 1.00m 102mm to 2.00m 76 mm to 3.00m 51 mm to 4.00m								

All measurements in metres unless otherwise stated		5m/page Scale: 1:31.25	Coordinates to Local Grid Ground Level to Ordnance Datum		Page 1 of 1
Plant Used: Dando Terrier 2002 series	Coordinates / Level (mAOD): E: -0.961424 N: 51.457042 Level: 40		Logged By: WC	Checked By: WC	Approved By: CR

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS106			
DYNAMIC SAMPLER LOG				Date: 07/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
MADE GROUND: Tarmacadam				39.90 0.10					
MADE GROUND: Brown sandy subrounded coarse gravel. Sand is fine to coarse. (SUB-BASE)				(0.40) 39.50 0.50	ES	1	0.20 - 0.50		
MADE GROUND: Stiff dark brown sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including chalk, brick and concrete. Sand is fine to coarse. Occasional cobbles of brick and concrete.				(2.20)	ES	2	1.80 - 2.00		
Soft grey slightly sandy slightly gravelly clayey SILT. Gravel is subangular fine to medium flint and chalk. Shell fragments no greater than 5mm and relict organic matter throughout. (POSSIBLE ALLUVIAL DEPOSITS)				(1.30) 37.30 2.70					
Borehole complete at 4.00 m bgl.				36.00 4.00					

REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.	CHISELLING			WATER LEVEL OBSERVATIONS					
	Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth	
	NO CHISELLING UNDERTAKEN:			NO WATER ENCOUNTERED:					
	BOREHOLE DIAMETER			CASING DIAMETER			DEPTH SEALED		
	300mm to 1.00m 102mm to 2.00m 76 mm to 3.00m 51 mm to 4.00m								

All measurements in metres unless otherwise stated	5m/page Scale: 1:31.25	Coordinates to Local Grid Ground Level to Ordnance Datum	Page 1 of 1
Plant Used: Dando Terrier 2002 series	Coordinates / Level (mAOD): E: -0.960945 N: 51.457156 Level: 40	Logged By: WC	Checked By: WC Approved By: CR

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS107			
DYNAMIC SAMPLER LOG				Date: 07/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
MADE GROUND: Tarmacadam				39.90 0.10 39.80 0.20	ES	1	0.20 - 0.50		
MADE GROUND: Brown sandy subrounded coarse gravel. Sand is fine to coarse. (SUB-BASE)				(0.50)					
MADE GROUND: Stiff brown sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, flint and concrete. Sand is fine to coarse. Occasional brick and concrete cobbles. Rare cinders.				39.30 0.70	ES	2	1.50 - 1.80		
MADE GROUND: Yellow fine sand.				(1.20)					
MADE GROUND: Brown slightly sandy slightly gravelly clay. Gravel is subangular fine to medium flint and chalk. Sand is fine to coarse.				(2.10)					
				38.10 1.90					
				(2.10)					
				36.00 4.00					
Borehole complete at 4.00 m bgl.									

REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.				CHISELLING			WATER LEVEL OBSERVATIONS				
				Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth
				NO CHISELLING UNDERTAKEN:							
				NO WATER ENCOUNTERED:							
BOREHOLE DIAMETER			CASING DIAMETER			DEPTH SEALED					
300mm to 1.00m 102mm to 2.00m 76 mm to 3.00m 51 mm to 4.00m											
All measurements in metres unless otherwise stated		5m/page Scale: 1:31.25		Coordinates to Local Grid Ground Level to Ordnance Datum				Page 1 of 1			
Plant Used: Dando Terrier 2002 series		Coordinates / Level (mAOD): E: -0.961004 N: 51.456926 Level: 40		Logged By: WC		Checked By: WC		Approved By: CR			

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS108			
DYNAMIC SAMPLER LOG				Date: 05/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
MADE GROUND: Tarmacadam				0.10					
MADE GROUND: Brown sandy subrounded coarse gravel. Sand is fine to coarse. (SUB-BASE)				(0.60)					
MADE GROUND: Firm dark brown gravelly sandy clay. Gravel is subangular to subrounded fine to coarse and of mixed lithologies including flint, brick and sandstone. Sand is fine to coarse. Rare timber fragments. Possible ash and rare subangular fine coal gravel.				0.70	ES	1	0.70 - 0.90		
MADE GROUND: Firm yellow brown sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including flint, brick and concrete. Sand is fine to coarse. Rare timber fragments.				0.90					
MADE GROUND: Firm dark brown black sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including flint, brick and concrete. Sand is fine to coarse. Rare timber fragments.				(0.80)					
MADE GROUND: Firm dark brown black sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including flint, brick and concrete. Sand is fine to coarse. Rare timber fragments.				1.70	ES	2	1.70 - 1.90		
MADE GROUND: Firm dark brown black sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including flint, brick and concrete. Sand is fine to coarse. Rare timber fragments.				(0.50)					
MADE GROUND: Yellow sandy subangular medium to coarse flint gravel. Rare organic staining.				2.20					
MADE GROUND: Yellow sandy subangular medium to coarse flint gravel. Rare organic staining.				(0.30)					
MADE GROUND: Yellow sandy subangular medium to coarse flint gravel. Rare organic staining.				2.50					
Soft grey slightly sandy slightly gravelly clayey SILT. Gravel is subangular fine to medium flint and chalk. Shell fragments no greater than 5mm and relict organic matter throughout. (POSSIBLE ALLUVIAL DEPOSITS)				(1.50)	ES	3	2.70 - 3.00		
Borehole complete at 4.00 m bgl.				4.00					

REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.		CHISELLING			WATER LEVEL OBSERVATIONS				
		Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth
		NO CHISELLING UNDERTAKEN:			NO WATER ENCOUNTERED:				
		BOREHOLE DIAMETER			CASING DIAMETER		DEPTH SEALED		
		300mm to 1.00m 102mm to 2.00m 76 mm to 3.00m 51 mm to 4.00m							

All measurements in metres unless otherwise stated		5m/page Scale: 1:31.25	Coordinates to Local Grid No Datum Information Available		Page 1 of 1
Plant Used: Dando Terrier 2002 series	Coordinates / Level (mAOD): E: -0.960423 N: 51.456928		Logged By: WC	Checked By: WC	Approved By: CR

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS109			
DYNAMIC SAMPLER LOG				Date: 07/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
MADE GROUND: Tarmacadam				37.90 0.10					
MADE GROUND: Stiff brown sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, flint and concrete. Sand is fine to coarse. Occasional brick and concrete cobbles. Ash in top 500mm of strata.				(1.10)	ES	1	0.30 - 0.50		
MADE GROUND: Stiff brown slightly sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, flint and concrete. Sand is fine to coarse. Rare brick and concrete cobbles.				36.80 1.20					
				(1.20)					
Soft blue grey slightly sandy slightly gravelly CLAY. Gravel is subangular fine to medium flint and chalk. Sand is coarse. Occasional shell fragments no greater than 5mm and relict organic matter throughout. (POSSIBLE ALLUVIAL DEPOSITS)				35.60 2.40	ES	2	2.60 - 2.80		
				(1.60)					
				34.00 4.00					
Borehole complete at 4.00 m bgl.									

REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.		CHISELLING			WATER LEVEL OBSERVATIONS				
		Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth
		NO CHISELLING UNDERTAKEN:					NO WATER ENCOUNTERED:		
		BOREHOLE DIAMETER			CASING DIAMETER		DEPTH SEALED		
		300mm to 1.00m 102mm to 2.00m 76 mm to 3.00m 51 mm to 4.00m							

All measurements in metres unless otherwise stated		5m/page Scale: 1:31.25	Coordinates to Local Grid Ground Level to Ordnance Datum		Page 1 of 1
Plant Used: Dando Terrier 2002 series		Coordinates / Level (mAOD): E: -0.960014 N: 51.456849 Level: 38		Logged By: WC	Checked By: WC
				Approved By: CR	

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Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS110						
DYNAMIC SAMPLER LOG				Date: 07/06/2013		Client: Old Mutual Property Fund.						
DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details			
					TYPE	REF	Depth	SPT N Value/Drive mm				
MADE GROUND: Reinforced concrete. Borehole terminated at 0.26 m bgl due to very high resistance to penetration assumed concrete boulder.				(0.26) 37.74 0.26								
REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.					CHISELLING		WATER LEVEL OBSERVATIONS					
					Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth
					NO CHISELLING UNDERTAKEN:					NO WATER ENCOUNTERED:		
					BOREHOLE DIAMETER		CASING DIAMETER		DEPTH SEALED			
					300mm to 0.26m							
All measurements in metres unless otherwise stated		5m/page Scale: 1:31.25		Coordinates to Local Grid Ground Level to Ordnance Datum				Page 1 of 1				
Plant Used: Dando Terrier 2002 series		Coordinates / Level (mAOD): E: -0.959596 N: 51.45647 Level: 38		Logged By: WC		Checked By: WC		Approved By: CR				

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Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS111						
DYNAMIC SAMPLER LOG				Date: 05/06/2013		Client: Old Mutual Property Fund.						
DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details			
					TYPE	REF	Depth	SPT N Value/Drive mm				
MADE GROUND: Tarmacadam				36.90 0.10	ES	1	0.20 - 0.50					
MADE GROUND: Stiff brown sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, flint and concrete. Sand is fine to coarse. Occasional brick and concrete cobbles.			(0.40)									
MADE GROUND: Stiff orange black sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including occasional brick, flint and rare concrete. Sand is fine to coarse. Occasional brick and concrete cobbles. Ash throughout.			36.50 0.50									
MADE GROUND: Stiff dark brown sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, flint and concrete. Sand is fine to coarse. Occasional brick and concrete cobbles. Abundant ash throughout.				(0.70)	ES	2	1.50 - 1.50					
MADE GROUND: Firm brown sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse and of mixed lithologies including brick, flint and concrete. Sand is fine to coarse. Occasional ash throughout. Rare organic staining.			35.80 1.20									
MADE GROUND: Soft light brown with orange mottling slightly sandy slightly gravelly silty CLAY. Gravel is subangular fine flint. Sand is fine. Shell fragments no greater than 5mm and relict organic matter throughout. (POSSIBLE ALLUVIAL DEPOSITS)			(0.40)									
MADE GROUND: Soft blue grey slightly sandy slightly gravelly clayey SILT. Gravel is subangular to subrounded fine to medium flint. Sand is fine. Shell fragments no greater than 5mm and relict organic matter throughout. (POSSIBLE ALLUVIAL DEPOSITS)			35.40 1.60	(0.30)	ES	3	2.80 - 3.00					
			35.10 1.90									
			(0.75)									
			34.35 2.65									
				(1.35)								
			33.00 4.00									
Borehole complete at 4.00 m bgl.												
REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Installed with a 63 mm HDPE standpipe to 2.00 m bgl.					CHISELLING		WATER LEVEL OBSERVATIONS					
					Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth
					NO CHISELLING UNDERTAKEN:			NO WATER ENCOUNTERED:				
					BOREHOLE DIAMETER			CASING DIAMETER		DEPTH SEALED		
					300mm to 1.00m 102mm to 2.00m 76 mm to 3.00m 51 mm to 4.00m							
All measurements in metres unless otherwise stated		5m/page	Scale: 1:31.25		Coordinates to Local Grid Ground Level to Ordnance Datum				Page 1 of 1			
Plant Used: Dando Terrier 2002 series		Coordinates / Level (mAOD): E: -0.96005 N: 51.45609 Level: 37		Logged By: WC		Checked By: WC		Approved By: CR				

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Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS112						
DYNAMIC SAMPLER LOG				Date: 05/06/2013		Client: Old Mutual Property Fund.						
DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details			
					TYPE	REF	Depth	SPT N Value/Drive mm				
MADE GROUND: Tarmacadam				37.90 0.10								
MADE GROUND: Stiff brown sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, flint and concrete. Sand is fine to coarse. Occasional brick and concrete cobbles. Occasional ash.				(1.70)	ES	1	1.60 - 1.60					
Firm light brown slightly sandy gravelly silty CLAY. Gravel is subangular fine flint. Sand is fine to coarse. Shell fragments no greater than 5mm and relict organic matter throughout. Rare organic staining. (SUSPECTED ALLUVIAL DEPOSITS).				36.20 1.80 (0.90)								
Stiff light brown with orange mottling sandy gravelly silty CLAY. Gravel is subangular fine to coarse flint. Sand is fine. Shell fragments no greater than 5mm and relict organic matter throughout. Rare organic staining. (SUSPECTED ALLUVIAL DEPOSITS).				35.30 2.70 (1.25)	ES	2	3.20 - 3.50					
Soft blue grey slightly sandy slightly gravelly clayey SILT. Gravel is subangular to subrounded fine to medium flint. Sand is fine. Shell fragments no greater than 5mm and relict organic matter (POSSIBLE ALLUVIAL DEPOSITS).				34.05 3.95 34.00 4.00								
Borehole complete at 4.00 m bgl.												
REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.					CHISELLING		WATER LEVEL OBSERVATIONS					
					Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth
					NO CHISELLING UNDERTAKEN:			NO WATER ENCOUNTERED:				
					BOREHOLE DIAMETER			CASING DIAMETER		DEPTH SEALED		
					300mm to 1.00m 102mm to 2.00m 76 mm to 3.00m 51 mm to 4.00m							
All measurements in metres unless otherwise stated		5m/page	Scale: 1:31.25		Coordinates to Local Grid Ground Level to Ordnance Datum				Page 1 of 1			
Plant Used: Dando Terrier 2002 series		Coordinates / Level (mAOD): E: -0.960267 N: 51.45612 Level: 38			Logged By: WC		Checked By: WC		Approved By: CR			

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Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS113			
DYNAMIC SAMPLER LOG				Date: 05/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
MADE GROUND: Tarmacadam.				38.90 0.10					
MADE GROUND: Stiff light brown sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, chalk and flint. Sand is fine to coarse. Ash throughout.				(2.00)	ES	1	0.80 - 1.00		
CHALK: Extremely weak greyish white mottled orange CHALK. recovered as a subangular medium to coarse chalk and flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)				(1.90)	ES	2	2.30 - 2.50		
Borehole complete at 4.00 m bgl.				35.00 4.00					

REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.	CHISELLING			WATER LEVEL OBSERVATIONS					
	Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth	
	NO CHISELLING UNDERTAKEN:			NO WATER ENCOUNTERED:					
	BOREHOLE DIAMETER			CASING DIAMETER			DEPTH SEALED		
	300mm to 1.00m 102mm to 2.00m 76 mm to 3.00m 51 mm to 4.00m								

All measurements in metres unless otherwise stated	5m/page Scale: 1:31.25	Coordinates to Local Grid Ground Level to Ordnance Datum	Page 1 of 1
Plant Used: Dando Terrier 2002 series	Coordinates / Level (mAOD): E: -0.96112 N: 51.456354 Level: 39	Logged By: WC	Checked By: WC
		Approved By: CR	

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Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS114						
DYNAMIC SAMPLER LOG				Date: 05/06/2013		Client: Old Mutual Property Fund.						
DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details			
					TYPE	REF	Depth	SPT N Value/Drive mm				
MADE GROUND: Tarmacadam				39.90 0.10								
MADE GROUND: Stiff brown sandy gravelly clay. Gravel is subangular to subrounded fine to coarse is of mixed lithologies including brick, concrete and flint. Sand is fine to coarse. Abundant cobbles of brick and concrete. Rare concrete boulders.				(0.26) 39.64 0.36								
Borehole terminated at 0.36 m bgl due to impenetrable ground.												
REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.					CHISELLING		WATER LEVEL OBSERVATIONS					
					Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth
					NO CHISELLING UNDERTAKEN:					NO WATER ENCOUNTERED:		
					BOREHOLE DIAMETER		CASING DIAMETER		DEPTH SEALED			
					399mm to 0.36m							
All measurements in metres unless otherwise stated		5m/page Scale: 1:31.25		Coordinates to Local Grid Ground Level to Ordnance Datum				Page 1 of 1				
Plant Used: Dando Terrier 2002 series		Coordinates / Level (mAOD): E: -0.961533 N: 51.456309 Level: 40		Logged By: WC		Checked By: WC		Approved By: CR				

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Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS115						
DYNAMIC SAMPLER LOG				Date: 05/06/2013		Client: Old Mutual Property Fund.						
DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details			
					TYPE	REF	Depth	SPT N Value/Drive mm				
MADE GROUND: Stiff brown sandy gravelly clay. Gravel is subangular to subrounded fine to coarse is of mixed lithologies including brick, concrete and flint. Sand is fine to coarse. Abundant cobbles of brick and concrete. Rare concrete boulders.				(0.80)	ES	1	0.50 - 0.80					
Borehole complete at 0.80 m bgl.				39.20 0.80								
REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.					CHISELLING		WATER LEVEL OBSERVATIONS					
					Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth
					NO CHISELLING UNDERTAKEN:					NO WATER ENCOUNTERED:		
					BOREHOLE DIAMETER			CASING DIAMETER		DEPTH SEALED		
					300mm to 0.80m							
All measurements in metres unless otherwise stated		5m/page Scale: 1:31.25		Coordinates to Local Grid Ground Level to Ordnance Datum				Page 1 of 1				
Plant Used: Dando Terrier 2002 series		Coordinates / Level (mAOD): E: -0.961822 N: 51.456276 Level: 40		Logged By: WC		Checked By: WC		Approved By: CR				

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Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: DS116						
DYNAMIC SAMPLER LOG				Date: 05/06/2013		Client: Old Mutual Property Fund.						
DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	DEPTH (Thickness)	Sample Details			Test Results	Backfill Details			
					TYPE	REF	Depth	SPT N Value/Drive mm				
Tarmacadam MADE GROUND: Stiff light brown sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, concrete and flint. Sand is fine to coarse. Manmade materials throughout including wire and glass. Borehole terminated at 0.70 m bgl due to impenetrable ground.				0.10 (0.60) 0.70	ES	1	0.10 - 0.30					
REMARKS : 1. Engineer verified logged in general accordance to BS 5930. 2. Area CAT scanned prior to excavation. 3. Borehole remained dry on completion. 4. Backfilled with arisings.					CHISELLING		WATER LEVEL OBSERVATIONS					
					Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth
					NO CHISELLING UNDERTAKEN:					NO WATER ENCOUNTERED:		
					BOREHOLE DIAMETER			CASING DIAMETER		DEPTH SEALED		
					300mm to 0.70m							
All measurements in metres unless otherwise stated		5m/page Scale: 1:31.25		Coordinates to Local Grid No Datum Information Available				Page 1 of 1				
Plant Used: Dando Terrier 2002 series		Coordinates / Level (mAOD): E: -0.962064 N: 51.456155		Logged By: WC		Checked By: WC		Approved By: CR				

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Project:	Forbury Retail Park, Reading.	Project No:	13-0258.01	Hole ID:	CP101
CABLE PERCUSSION BOREHOLE LOG		Date From / To:	13/06/2013 - 14/06/2013		
		Client:	Old Mutual Property Fund.		

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth		
MADE GROUND: Tarmacadam.				40.90 0.10/ 40.70 0.30	D	1	0.40		
MADE GROUND: Brown sandy subrounded coarse gravel. Sand is fine to coarse. (SUBBASE)					B	2	0.60 - 0.80		
MADE GROUND: Stiff light brown sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, concrete and flint. Sand is fine to coarse. Abundant cobbles of brick and concrete. Rare boulders of concrete.			(200mm)	(1.80)	D	3	1.20		
					B	4	1.50 - 1.95 1.50 - 1.95	CPT N=50/95mm (6,19/70mm/36,14/20mm)	
MADE GROUND: Concrete. (Suspected slab)				38.90 2.10 38.70 2.30 38.60 2.40	D	5	2.20		
MADE GROUND: Stiff light brown sandy gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, concrete and flint. Sand is fine to coarse. Abundant brick cobbles.			3.00		U	6	2.50 - 2.95	U=53/338mm	
Extremely weak to weak completely weathered creamy white CHALK. Recovered as very clayey chalk gravel with widely spaced bands of angular to subrounded fine to coarse flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)					D	7	3.00		
					B	8	3.00 - 3.30		
					D	9	3.50 - 3.95 3.50 - 3.95	SPT N=8 1,2/2,2,2,2	
					D	10	4.50 - 4.95 4.50 - 4.95	SPT N=13 1,2/3,4,3,3	
					D	11	6.00 - 6.45		
					B	12	6.00 - 6.45	SPT N=14 2,5/4,3,4,3	
					D	13	7.50 - 7.95 7.50 - 7.95	SPT N=26 3,5/5,6,8,7	
					D	14	9.00 - 9.45		
					B	15	9.00 - 9.45	SPT N=31 10,13/7,8,8,8	

REMARKS :

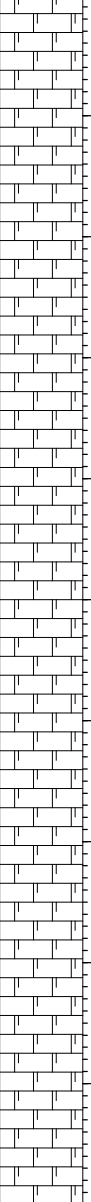
- Engineer verified logged in general accordance to BS 5930:2010.
- Hand pit to 1.20 m bgl.
- Groundwater encountered at 3.80 m bgl.
- Installed with a 63 mm HDPE standpipe to 7.00 m bgl.
- Coordinates and depths (mAOD) approx.

CHISELLING			WATER LEVEL OBSERVATIONS					
Depth From	Depth To	Time Taken		Date	Time	Water Strike	Standing Level	Casing Depth
22.10	22.10	00:30	1	13-06-13		3.80	3.58	3.50
0.00	1.20	01:15						
2.10	2.30	00:30						

BOREHOLE DIAMETER		CASING DIAMETER	DEPTH SEALED
200mm to 3.00 m 150mm to 22.10m		150mm to 22.10m 200mm to 3.00 m	Sealed at 3.00m

All measurements in metres unless otherwise stated	10m/page Scale: 1:62.50	Coordinates to Local Grid Ground Level to Ordnance Datum		Page 1 of 3
Plant Used: Dando 2000	Coordinates / Level (mAOD): E: -0.962687 N: 51.456349 Level: 41	Logged By: GB	Checked By: WC	Approved By: CR

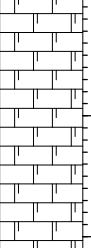
Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: CP101			
CABLE PERCUSSION BOREHOLE LOG				Date From / To: 13/06/2013 - 14/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
Extremely weak to weak completely weathered creamy white CHALK. Recovered as very clayey chalk gravel with widely spaced bands of angular to subrounded fine to coarse flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)(BH Continued)			(150mm)	(19.70)	D	16	10.50 - 10.95 10.50 - 10.95	SPT N=35 3,6/8,9,8,10	
					D B	17 18	12.00 - 12.45 12.00 - 12.45	SPT N=39 5,8/9,9,10,11	
					D	19	13.50 - 13.95 13.50 - 13.95	SPT N=50/265mm (4,8/13,13,15,9/40mm)	
					D B	20 21	15.00 - 15.45 15.00 - 15.45	SPT N=36 6,7/7,8,10,11	
					D	22	16.50 - 16.95 16.50 - 16.95	SPT N=40 4,6/9,9,10,12	
					D B	23 24	18.00 - 18.45 18.00 - 18.45	SPT N=45 5,9/10,10,13,12	
					D	25	19.50 - 19.95 19.50 - 19.95	SPT N=41 5,7/8,10,12,11	
					D	26	20.00 - 21.45		

REMARKS : 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Hand pit to 1.20 m bgl. 3. Groundwater encountered at 3.80 m bgl. 4. Installed with a 63 mm HDPE standpipe to 7.00 m bgl. 5. Coordinates and depths (mAOD) approx.	CHISELLING			WATER LEVEL OBSERVATIONS					
	Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth	
	22.10	22.10	00:30	1	13-06-13		3.80	3.58	3.50
	0.00	1.20	01:15						
	2.10	2.30	00:30						
BOREHOLE DIAMETER			CASING DIAMETER			DEPTH SEALED			
200mm to 3.00 m 150mm to 22.10m			150mm to 22.10m 200mm to 3.00 m			Sealed at 3.00m			

All measurements in metres unless otherwise stated	10m/page Scale: 1:62.50	Coordinates to Local Grid Ground Level to Ordnance Datum	Page 2 of 3
Plant Used: Dando 2000	Coordinates / Level (mAOD): E: -0.962687 N: 51.456349 Level: 41	Logged By: GB	Checked By: WC Approved By: CR

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: CP101			
CABLE PERCUSSION BOREHOLE LOG				Date From / To: 13/06/2013 - 14/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
Extremely weak to weak completely weathered creamy white CHALK. Recovered as very clayey chalk gravel with widely spaced bands of angular to subrounded fine to coarse flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)(BH Continued)					B	27	21.00 - 21.45	SPT N=47 7,9/11,11,12,13	
Grey angular to subrounded fine to coarse flint GRAVEL with occasional flint cobbles. (SEAFORD CHALK AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)			22.10	18.90 22.10 18.80 22.20	B	28	22.20		
Borehole complete at 22.20 m bgl.									

REMARKS : 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Hand pit to 1.20 m bgl. 3. Groundwater encountered at 3.80 m bgl. 4. Installed with a 63 mm HDPE standpipe to 7.00 m bgl. 5. Coordinates and depths (mAOD) approx.	CHISELLING			WATER LEVEL OBSERVATIONS					
	Depth From	Depth To	Time Taken		Date	Time	Water Strike	Standing Level	Casing Depth
	22.10	22.10	00:30	1	13-06-13		3.80	3.58	3.50
	0.00	1.20	01:15						
	2.10	2.30	00:30						
BOREHOLE DIAMETER			CASING DIAMETER			DEPTH SEALED			
200mm to 3.00 m 150mm to 22.10m			150mm to 22.10m 200mm to 3.00 m			Sealed at 3.00m			

All measurements in metres unless otherwise stated	10m/page Scale: 1:62.50	Coordinates to Local Grid Ground Level to Ordnance Datum	Page 3 of 3
Plant Used: Dando 2000	Coordinates / Level (mAOD): E: -0.962687 N: 51.456349 Level: 41	Logged By: GB	Checked By: WC Approved By: CR

Delta-Simons Environmental Consultants Ltd
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Project:	Forbury Retail Park, Reading.	Project No:	13-0258.01	Hole ID:	CP102
CABLE PERCUSSION BOREHOLE LOG		Date:	12/06/2013	Client:	Old Mutual Property Fund.

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL / DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth		
MADE GROUND: Tarmacadam.				39.90 0.10 39.70 0.30	D	1	0.40		
MADE GROUND: Brown sandy subrounded coarse gravel. Sand is fine to coarse. (SUBBASE)					B	2	0.60 - 0.80		
MADE GROUND: Very stiff light brown sandy gravelly clay. Gravel is angular to subrounded fine to coarse of mixed lithologies including brick concrete and flint. Sand is fine to coarse. Abundant cobbles of brick and concrete. Rare boulders of concrete.				(1.30)	D	3	1.20		
				38.40 1.60 38.20 1.80	B	4	1.50 - 1.95 1.50 - 1.95	CPT N=25/30mm (4,18/25/30mm)	
MADE GROUND: Concrete boulders.				37.90 2.10	D	5	2.00		
MADE GROUND: Stiff light brown slightly sandy gravelly clay. Gravel is angular to subrounded fine to coarse and of mixed lithologies including brick, concrete and flint. Abundant brick and concrete cobbles.			(200mm)	37.60 2.40	B	6	2.50 - 2.95 2.50 - 2.95	CPT N=50 15,10/60mm/12,16,22	
MADE GROUND: Concrete. (Suspected slab)				(1.40)					
MADE GROUND: Stiff light brown slightly sandy gravelly clay. gravel is angular to subrounded fine to coarse and of mixed lithologies including brick, concrete and flint. Abundant brick and concrete cobbles.				36.20 3.80	B	7	3.50 - 3.95 3.50 - 3.95	CPT N=7 8,5/3,2,1,1	
					D	8	4.00		
Very soft grey slightly sandy slightly gravelly clayey SILT. Gravel is subangular fine flint. Occasional shell fragments no greater than 5mm diameter. Rare relict organic matter. (POSSIBLE ALLUVIAL DEPOSITS)				(1.10)	B	9	4.50 - 4.95 4.50 - 4.95	CPT N=14 1,2/2,3,4,5	
			5.00	35.10 4.90					
Very soft grey slightly sandy slightly gravelly clayey SILT. Gravel is subangular to subrounded fine to medium flint and chalk gravel. Sand is fine. Occasional shell fragments no greater than 5mm diameter. Rare relict organic matter. (POSSIBLE ALLUVIAL DEPOSITS)				(0.60)	D	10	5.20		
				34.50 5.50					
Extremely weak to weak creamy white CHALK. Recovered as very clayey chalk gravel with widely spaced bands of angular to subrounded fine to coarse flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)					U	11	6.00 - 6.45	U=22/0mm	
					B	12	6.00		
					D	13	7.00 - 7.95		
					D	14	7.50 - 9.45 7.50 - 7.95	SPT N=10 1,3/2,3,3,2	
					D	15	9.00 - 9.45		
					B	16	9.00 - 10.95 9.00 - 9.45	SPT N=19 4,5/3,5,5,6	

REMARKS :

- Engineer verified logged in general accordance to BS 5930:2010.
- Hand pit to 1.20 m bgl.
- Groundwater encountered at 6.00 m bgl.
- Installed with a 63 mm HDPE standpipe to 12.00 m bgl.
- Coordinates and depths (mAOD) approx.

CHISELLING			WATER LEVEL OBSERVATIONS					
Depth From	Depth To	Time Taken		Date	Time	Water Strike	Standing Level	Casing Depth
0.00	1.20	01:30	1	12-06-13		6.00	5.62	6.00
1.60	1.80	01:30						
2.10	2.40	01:30						

BOREHOLE DIAMETER		CASING DIAMETER	DEPTH SEALED
200mm to 5.00 m 150mm to 19.50m		150mm to 19.50m 200mm to 5.00 m	Sealed at 5.00m

All measurements in metres unless otherwise stated	10m/page Scale: 1:62.50	Coordinates to Local Grid Ground Level to Ordnance Datum			Page 1 of 2
Plant Used: Dando 2000	Coordinates / Level (mAOD): E: -0.962318 N: 51.457103 Level: 40	Logged By: GB	Checked By: WC	Approved By: CR	

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: CP102			
CABLE PERCUSSION BOREHOLE LOG				Date: 12/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
Extremely weak to weak creamy white CHALK. Recovered as very clayey chalk gravel with widely spaced bands of angular to subrounded fine to coarse flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)(BH Continued)			(150mm)	(14.00)	D	17	10.50 - 12.45 10.50 - 10.95	SPT N=19 2,3/4,5,5,5	
					D B	18 19	12.00 - 12.45 12.00 - 12.95 12.00 - 12.45	SPT N=28 3,6/6,6,7,9	
					D	20	13.50 - 13.95 13.50 - 13.95	SPT N=45 3,6/8,16,10,11	
					D B	21 22	15.00 - 15.45 15.00 - 15.45	SPT N=30 4,6/6,7,9,8	
					D	23	16.50 - 16.95 16.50 - 16.95	SPT N=38 5,6/8,8,12,10	
					D B	24 25	18.00 - 18.45 18.00 - 18.45	SPT N=46 5,9/10,12,11,13	
Borehole complete at 19.50 m bgl.			19.50	20.50 19.50	D	26	19.50 - 19.95 19.50 - 19.95	SPT N=40 3,5/9,10,10,11	

REMARKS : 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Hand pit to 1.20 m bgl. 3. Groundwater encountered at 6.00 m bgl. 4. Installed with a 63 mm HDPE standpipe to 12.00 m bgl. 5. Coordinates and depths (mAOD) approx.	CHISELLING			WATER LEVEL OBSERVATIONS					
	Depth From	Depth To	Time Taken		Date	Time	Water Strike	Standing Level	Casing Depth
	0.00	1.20	01:30	1	12-06-13		6.00	5.62	6.00
	1.60	1.80	01:30						
	2.10	2.40	01:30						
BOREHOLE DIAMETER			CASING DIAMETER			DEPTH SEALED			
200mm to 5.00 m 150mm to 19.50m			150mm to 19.50m 200mm to 5.00 m			Sealed at 5.00m			

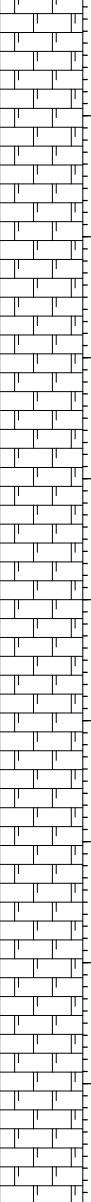
All measurements in metres unless otherwise stated	10m/page Scale: 1:62.50	Coordinates to Local Grid Ground Level to Ordnance Datum	Page 2 of 2
Plant Used: Dando 2000	Coordinates / Level (mAOD): E: -0.962318 N: 51.457103 Level: 40	Logged By: GB	Checked By: WC Approved By: CR

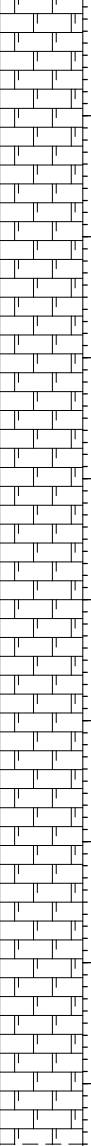
Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: CP103			
CABLE PERCUSSION BOREHOLE LOG				Date From / To: 07/06/2013 - 11/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details		
					TYPE	REF	Depth	SPT N Value/Drive mm			
MADE GROUND: Tarmacadam.		3.00	39.80	0.20	D	1	0.40	CPT N=23 2,2/3,5,6,9			
MADE GROUND: Red orange subangular fine to coarse brick gravel. Sand is fine to coarse. Occasional brick cobbles.			39.50	0.50			0.80				
MADE GROUND: Stiff light brown sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, concrete and chalk. Sand is fine to coarse. Occasional brick and concrete cobbles. Rare timber fragments.			(1.00)	B	3	1.20 - 1.70 1.20 - 1.65					
MADE GROUND: Red orange sandy angular to subangular fine to coarse brick and concrete gravel. Sand is fine to coarse. Abundant brick and concrete cobbles.			38.50			1.50	2.00 - 2.50 2.00				
MADE GROUND: Stiff light brown sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, concrete and chalk. Sand is fine to coarse. Occasional brick and concrete cobbles. Rare timber fragments.			(0.80)	B D	4	2.00 - 2.45 2.00 - 2.45					
			37.70			2.30	2.70 - 3.00				
			37.30	2.70	3.00 - 3.50	U	6			3.00 - 3.50	U=16/250mm
					3.50 - 3.80						
					4.00 - 4.45 4.00 - 4.45	D	8			4.00 - 4.45	SPT N=4 4,3/2,1,0,1
					5.00 - 5.45 5.00 - 5.45						
					6.00 - 6.45 6.00 - 6.45	D	10			6.00 - 6.45	SPT N=9 8,8/4,2,2,1
					6.50 - 6.80						
					7.50 - 7.95 7.50 - 7.95	D	12			7.50 - 7.95	SPT N=5 1,0/1,1,1,2
					9.00 - 9.45 9.00 - 9.45						
			9.50 - 9.80	D B	13 14	9.00 - 9.45 9.50 - 9.80	SPT N=16 1,1/2,3,6,5				

REMARKS : 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Hand pit to 1.20 m bgl. 3. Groundwater encountered at 3.80 m bgl. 4. Installed with a 63 mm HDPE standpipe to 6.00 m bgl. 5. Coordinates and depths (mAOD) approx.	CHISELLING			WATER LEVEL OBSERVATIONS					
	Depth From	Depth To	Time Taken		Date	Time	Water Strike	Standing Level	Casing Depth
	23.20	23.50	00:30	1	10-06-13		3.80	3.14	3.60
	13.90	14.30	00:45						
	BOREHOLE DIAMETER			CASING DIAMETER			DEPTH SEALED		
200mm to 3.00 m 150mm to 26.00m			150mm to 26.00m 200mm to 3.00 m			Sealed at 3.00m			

All measurements in metres unless otherwise stated	10m/page Scale: 1:62.50	Coordinates to Local Grid Ground Level to Ordnance Datum	Page 1 of 3
Plant Used: Dando 2000	Coordinates / Level (mAOD): E: -0.961216 N: 51.456613 Level: 40	Logged By: GB	Checked By: WC Approved By: CR

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com											
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: CP103					
CABLE PERCUSSION BOREHOLE LOG				Date From / To: 07/06/2013 - 11/06/2013		Client: Old Mutual Property Fund.					
DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details		
					TYPE	REF	Depth	SPT N Value/Drive mm			
Extremely weak to weak completely weathered creamy white CHALK. Recovered as very clayey chalk gravel with widely spaced bands of angular to subrounded fine to coarse flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)(BH Continued)			(150mm)	(26.80)	D	15	10.50 - 10.95 10.50 - 10.95	SPT N=19 1,3/5,4,5,5			
					D	16	12.00 - 12.45 12.00 - 12.45	SPT N=36 2,6/7,8,10,11			
					B	17	12.50 - 12.80				
					D	18	13.50 - 13.95 13.50 - 13.95	SPT N=42 4,9/8,8,9,17			
					D	19	15.00 - 15.45 15.00 - 15.45	SPT N=26 4,6/7,6,7,6			
					B	20	15.50 - 15.80				
					D	21	16.50 - 16.95 16.50 - 16.95	SPT N=30 5,6/6,7,8,9			
					D	22	18.00 - 18.45 18.00 - 18.45	SPT N=44 5,11/10,10,11,13			
					D	23	19.50 - 19.95 19.50 - 19.95	SPT N=40 5,7/8,10,11,11			
					REMARKS : 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Hand pit to 1.20 m bgl. 3. Groundwater encountered at 3.80 m bgl. 4. Installed with a 63 mm HDPE standpipe to 6.00 m bgl. 5. Coordinates and depths (mAOD) approx.			CHISELLING			WATER LEVEL OBSERVATIONS
Depth From	Depth To	Time Taken	Date	Time				Water Strike	Standing Level	Casing Depth	
23.20	23.50	00:30	1	10-06-13					3.80	3.14	3.60
13.90	14.30	00:45									
BOREHOLE DIAMETER			CASING DIAMETER					DEPTH SEALED			
200mm to 3.00 m 150mm to 26.00m			150mm to 26.00m 200mm to 3.00 m		Sealed at 3.00m						
All measurements in metres unless otherwise stated		10m/page Scale: 1:62.50		Coordinates to Local Grid Ground Level to Ordnance Datum				Page 2 of 3			
Plant Used: Dando 2000		Coordinates / Level (mAOD): E: -0.961216 N: 51.456613 Level: 40		Logged By: GB		Checked By: WC		Approved By: CR			

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com												
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: CP103						
CABLE PERCUSSION BOREHOLE LOG				Date From / To: 07/06/2013 - 11/06/2013		Client: Old Mutual Property Fund.						
DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details			
					TYPE	REF	Depth	SPT N Value/Drive mm				
Extremely weak to weak completely weathered creamy white CHALK. Recovered as very clayey chalk gravel with widely spaced bands of angular to subrounded fine to coarse flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)(BH Continued)			26.00									
Borehole complete at 29.50 m bgl.												
REMARKS : 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Hand pit to 1.20 m bgl. 3. Groundwater encountered at 3.80 m bgl. 4. Installed with a 63 mm HDPE standpipe to 6.00 m bgl. 5. Coordinates and depths (mAOD) approx.				CHISELLING			WATER LEVEL OBSERVATIONS					
				Depth From	Depth To	Time Taken	Date	Time	Water Strike	Standing Level	Casing Depth	
				23.20	23.50	00:30	1	10-06-13		3.80	3.14	3.60
				13.90	14.30	00:45						
				BOREHOLE DIAMETER		CASING DIAMETER		DEPTH SEALED				
				200mm to 3.00 m 150mm to 26.00m		150mm to 26.00m 200mm to 3.00 m		Sealed at 3.00m				
All measurements in metres unless otherwise stated		10m/page Scale: 1:62.50		Coordinates to Local Grid Ground Level to Ordnance Datum				Page 3 of 3				
Plant Used: Dando 2000		Coordinates / Level (mAOD): E: -0.961216 N: 51.456613 Level: 40		Logged By: GB		Checked By: WC		Approved By: CR				

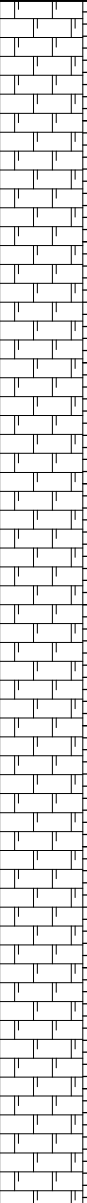
Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: CP104			
CABLE PERCUSSION BOREHOLE LOG				Date From / To: 05/06/2013 - 06/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
MADE GROUND: Tarmacadam.		 (200mm)	37.80	0.20					
MADE GROUND: Red orange subangular fine to coarse brick gravel. Sand is fine to coarse. Occasional brick cobbles.				D	1	0.40			
				D	2	0.80			
MADE GROUND: Stiff light brown sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, concrete and chalk. Sand is fine to coarse. Occasional brick and concrete cobbles. Rare timber fragments.			(2.20)	B	3	1.20 - 1.70 1.20 - 1.65		CPT N=5 1,0/1,1,2,1	
				D	4	2.00			
				B	5	2.00 - 2.50 2.00 - 2.45		CPT N=4 1,1/1,1,1,1	
MADE GROUND: Red orange subangular fine to coarse brick gravel. Sand is fine to coarse. Occasional brick cobbles.			35.20	2.80					
			34.80	3.20					
				D	6	3.00			
				U	7	3.00 - 3.50		U=18/450mm	
				B	9	3.20 - 3.60			
				D	8	3.50			
Soft yellow light brown slightly sandy slightly gravelly silty CLAY. Gravel is subangular fine flint and chalk. Sand is fine. (POSSIBLE ALLUVIAL DEPOSITS)			(1.30)	D	10	4.00 - 4.50 4.00 - 4.45		SPT N=2 1,0/1,0,0,1	
			33.50	4.50					
				B	11	4.50 - 5.00			
Soft grey slightly sandy slightly gravelly silty CLAY. Gravel is subangular fine flint and chalk. Sand is fine. Occasional shell fragments no greater than 5 mm diameter. Rare relict organic matter. Rare organic staining. (POSSIBLE ALLUVIAL DEPOSITS)			(1.10)	D	12	5.00 - 5.50 5.00 - 5.45		SPT N=5 1,1/1,2,1,1	
			32.40	5.60					
		B	13	5.60 - 6.00					
Medium dense light grey slightly sandy angular to subangular fine to medium flint and chalk GRAVEL. Sand is coarse. (RIVER TERRACE DEPOSITS)	(1.10)								
	31.30	6.70							
		B	14	6.50 - 7.00 6.50 - 6.95		CPT N=11 2,3/2,3,3,3			
Extremely weak to weak completely weathered creamy white CHALK. Recovered as very clayey chalk gravel with widely spaced bands of angular to subrounded fine to coarse flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)									
	7.50								
		D	15	8.00 - 8.50					
		B	16	8.00 - 8.45		SPT N=14 2,2/3,3,4,4			
		D	17	9.50 - 10.00 9.50 - 9.95		SPT N=17 2,3/3,4,5,5			

REMARKS : 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Hand pit to 1.20 m bgl. 3. Groundwater encountered at 5.50 m bgl. 4. Installed with a 63 mm HDPE standpipe to 12.00 m bgl. 5. Coordinates and depths (mAOD) approx.		CHISELLING			WATER LEVEL OBSERVATIONS					
		Depth From	Depth To	Time Taken		Date	Time	Water Strike	Standing Level	Casing Depth
		16.70	17.30	01:00	1	05-06-13		5.50	3.60	4.50
		BOREHOLE DIAMETER			CASING DIAMETER			DEPTH SEALED		
200mm to 7.50 m 150mm to 21.00m			150mm to 21.00m 200mm to 7.50 m			Sealed at 7.50m				

All measurements in metres unless otherwise stated		10m/page Scale: 1:62.50	Coordinates to Local Grid Ground Level to Ordnance Datum		Page 1 of 3
Plant Used: Dando 2000	Coordinates / Level (mAOD): E: -0.959443 N: 51.456622 Level: 38		Logged By: GB	Checked By: WC	Approved By: CR

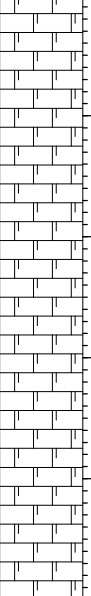
Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: CP104			
CABLE PERCUSSION BOREHOLE LOG				Date From / To: 05/06/2013 - 06/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
Extremely weak to weak completely weathered creamy white CHALK. Recovered as very clayey chalk gravel with widely spaced bands of angular to subrounded fine to coarse flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)(BH Continued)			(150mm)		D	18	11.00 - 11.50 11.00 - 11.45	SPT N=35 5,6/8,8,9,10	
					D B	19 20	12.50 - 13.00 12.50 - 12.95	SPT N=29 3,6/6,7,8,8	
					D	21	14.00 - 14.50 14.00 - 14.45	SPT N=23 4,4/5,6,6,6	
					D	22	15.50 - 16.00 15.50 - 15.95	SPT N=37 6,7/8,8,9,12	
					D	23	17.50 - 18.00 17.50 - 17.95	SPT N=30 5,6/6,7,8,9	
					D	24	19.00 - 19.50 19.00 - 19.45	SPT N=43 7,8/8,10,12,13	
REMARKS : 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Hand pit to 1.20 m bgl. 3. Groundwater encountered at 5.50 m bgl. 4. Installed with a 63 mm HDPE standpipe to 12.00 m bgl. 5. Coordinates and depths (mAOD) approx.									

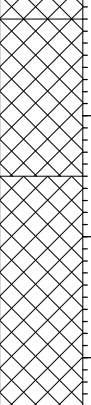
CHISELLING			WATER LEVEL OBSERVATIONS					
Depth From	Depth To	Time Taken		Date	Time	Water Strike	Standing Level	Casing Depth
16.70	17.30	01:00	1	05-06-13		5.50	3.60	4.50

BOREHOLE DIAMETER		CASING DIAMETER	DEPTH SEALED
200mm to 7.50 m 150mm to 21.00m		150mm to 21.00m 200mm to 7.50 m	Sealed at 7.50m

All measurements in metres unless otherwise stated		10m/page Scale: 1:62.50	Coordinates to Local Grid Ground Level to Ordnance Datum		Page 2 of 3
Plant Used: Dando 2000	Coordinates / Level (mAOD): E: -0.959443 N: 51.456622 Level: 38		Logged By: GB	Checked By: WC	Approved By: CR

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com													
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: CP104							
CABLE PERCUSSION BOREHOLE LOG				Date From / To: 05/06/2013 - 06/06/2013		Client: Old Mutual Property Fund.							
DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details				
					TYPE	REF	Depth	SPT N Value/Drive mm					
Extremely weak to weak completely weathered creamy white CHALK. Recovered as very clayey chalk gravel with widely spaced bands of angular to subrounded fine to coarse flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)(BH Continued)			21.00		D	25	20.50 - 21.00 20.50 - 20.95	SPT N=46 8,10/10,11,12,13					
				D	26	22.00 - 22.50 22.00 - 22.45	SPT N=50 7,13/14,15,17,4						
				D	27	23.50 - 24.00 23.50 - 23.95	SPT N=50+/100mm (12,13/25mm)						
				D	28	25.00							
Borehole complete at 25.00 m bgl.													
REMARKS : 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Hand pit to 1.20 m bgl. 3. Groundwater encountered at 5.50 m bgl. 4. Installed with a 63 mm HDPE standpipe to 12.00 m bgl. 5. Coordinates and depths (mAOD) approx.					CHISELLING			WATER LEVEL OBSERVATIONS					
					Depth From	Depth To	Time Taken		Date	Time	Water Strike	Standing Level	Casing Depth
					16.70	17.30	01:00	1	05-06-13		5.50	3.60	4.50
					BOREHOLE DIAMETER				CASING DIAMETER		DEPTH SEALED		
					200mm to 7.50 m 150mm to 21.00m				150mm to 21.00m 200mm to 7.50 m		Sealed at 7.50m		
All measurements in metres unless otherwise stated		10m/page Scale: 1:62.50		Coordinates to Local Grid Ground Level to Ordnance Datum				Page 3 of 3					
Plant Used: Dando 2000		Coordinates / Level (mAOD): E: -0.959443 N: 51.456622 Level: 38		Logged By: GB		Checked By: WC		Approved By: CR					

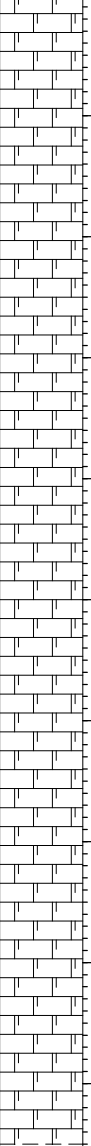
Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: CP105			
CABLE PERCUSSION BOREHOLE LOG				Date From / To: 04/06/2013 - 05/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details	
					TYPE	REF	Depth	SPT N Value/Drive mm		
MADE GROUND: Tarmacadam.		↓		38.80 0.20						
MADE GROUND: Firm brown gravelly sandy clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies concrete, brick and flint. Sand is fine to coarse. Rare rootlets.			D	1	0.50					
			D	2	1.00					
			B	3	1.20 - 1.70 1.20 - 1.65		CPT N=6 1,1/2,1,1,2			
MADE GROUND: Firm brown gravelly sandy clay. Gravel is subangular to subrounded fine to coarse of mixed lithologies including brick, concrete and flint. Sand is fine to coarse. Occasional manmade material including plastic and glass. Rare timber fragments.					37.50 1.50					
			D	4	2.00					
			B	5	2.00 - 2.50 2.00 - 2.45		CPT N=6 1,0/1,1,2,2			
MADE GROUND: Soft grey slightly gravelly clay. Gravel is subangular coarse flint. High organic content. Occasional organic staining.			D	6	3.00					
			B	7	3.00 - 3.50 3.00 - 3.45		CPT N=4 2,1/1,1,1,1			
			D	8	3.50					
MADE GROUND: Soft grey slightly gravelly clay. Gravel is subangular coarse flint. High organic content. Occasional organic staining.			35.60 3.40							
	U	9	4.00 - 4.50		U=11/450mm					
Medium dense grey slightly sandy angular to subangular fine to medium flint GRAVEL. Sand is coarse. (RIVER TERRACE DEPOSITS)			34.50 4.50							
	D	9a	4.50							
Medium dense light grey slightly sandy angular to subangular fine to coarse flint and chalk GRAVEL. Sand is coarse. (RIVER TERRACE DEPOSITS)				(1.00)	D	10	5.00			
	B	11	5.00 - 5.50 5.00 - 5.45		CPT N=20 4,5/4,5,5,6					
Extremely weak to weak completely weathered creamy white CHALK. Recovered as very clayey chalk gravel with widely spaced bands of angular to subrounded fine to coarse flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)			33.50 5.50							
	D	12	6.00							
				(1.70)	B	13	6.50 - 7.00 6.50 - 6.95		CPT N=18 3,4/4,4,5,5	
			31.80 7.20							
			7.50		D	14	8.00 - 8.50		SPT N=19 7,6/5,5,4,5	
					D	15	8.00 - 8.45			
					D	16	9.50 - 10.00 9.50 - 9.95		SPT N=35 7,7/8,8,9,10	

REMARKS : 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Hand pit to 1.20 m bgl. 3. Groundwater encountered at 4.50 m bgl. 4. Installed with a 63 mm HDPE standpipe to 11.00 m bgl. 5. Coordinates and depths (mAOD) approx.										CHISELLING			WATER LEVEL OBSERVATIONS					
										Depth From	Depth To	Time Taken		Date	Time	Water Strike	Standing Level	Casing Depth
										8.50	8.80	01:00	1	04-06-13		4.70	3.45	4.50
			BOREHOLE DIAMETER			CASING DIAMETER			DEPTH SEALED									
			200mm to 7.50 m 150mm to 17.50m			200mm to 7.50 m 150mm to 17.50m			Sealed at 7.50m									

All measurements in metres unless otherwise stated		10m/page Scale: 1:62.50	Coordinates to Local Grid Ground Level to Ordnance Datum		Page 1 of 2
Plant Used: Dando 2000	Coordinates / Level (mAOD): E: -0.960704 N: 51.456236 Level: 39		Logged By: GB		Checked By: WC
				Approved By: CR	

Delta-Simons Environmental Consultants Ltd The Lawn, Union Road, Lincoln LN1 3BL Tel: 08700 400 012 Fax: 01522 882 567 Email: info@deltasimons.com									
Project: Forbury Retail Park, Reading.				Project No: 13-0258.01		Hole ID: CP105			
CABLE PERCUSSION BOREHOLE LOG				Date From / To: 04/06/2013 - 05/06/2013		Client: Old Mutual Property Fund.			

DESCRIPTION OF STRATA	LEGEND	WATER	CASING DEPTH / (Diam. mm)	REDUCED LEVEL/ DEPTH (Thickness)	Sample Details			Test Results	Backfill Details
					TYPE	REF	Depth	SPT N Value/Drive mm	
Extremely weak to weak completely weathered creamy white CHALK. Recovered as very clayey chalk gravel with widely spaced bands of angular to subrounded fine to coarse flint gravel. (SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION UNDIFFERENTIATED)(BH Continued)			(150mm)	(12.30)	D	17	11.00 - 11.50 11.00 - 11.45	SPT N=48 7,8/10,14,12,12	
					D	18	12.50 - 13.00 12.50 - 12.95	SPT N=31 4,5/7,7,8,9	
					D	19	14.00 - 14.50 14.00 - 14.45	SPT N=28 3,4/5,7,8,8	
					D	20	15.50 - 16.00 15.50 - 15.95	SPT N=29 7,6/7,6,8,8	
					D	21	17.00 - 17.50 17.00 - 17.45	SPT N=38 8,10/8,8,10,12	
					D	22	18.50 - 19.00 18.50 - 18.95	SPT N=50/265mm (7,8/10,13,16,11/40mm)	
Borehole complete at 19.50 m bgl.									
					D	23	20.00		

REMARKS : 1. Engineer verified logged in general accordance to BS 5930:2010. 2. Hand pit to 1.20 m bgl. 3. Groundwater encountered at 4.50 m bgl. 4. Installed with a 63 mm HDPE standpipe to 11.00 m bgl. 5. Coordinates and depths (mAOD) approx.	CHISELLING			WATER LEVEL OBSERVATIONS					
	Depth From	Depth To	Time Taken		Date	Time	Water Strike	Standing Level	Casing Depth
	8.50	8.80	01:00	1	04-06-13		4.70	3.45	4.50
			BOREHOLE DIAMETER		CASING DIAMETER		DEPTH SEALED		
			200mm to 7.50 m 150mm to 17.50m		200mm to 7.50 m 150mm to 17.50m		Sealed at 7.50m		

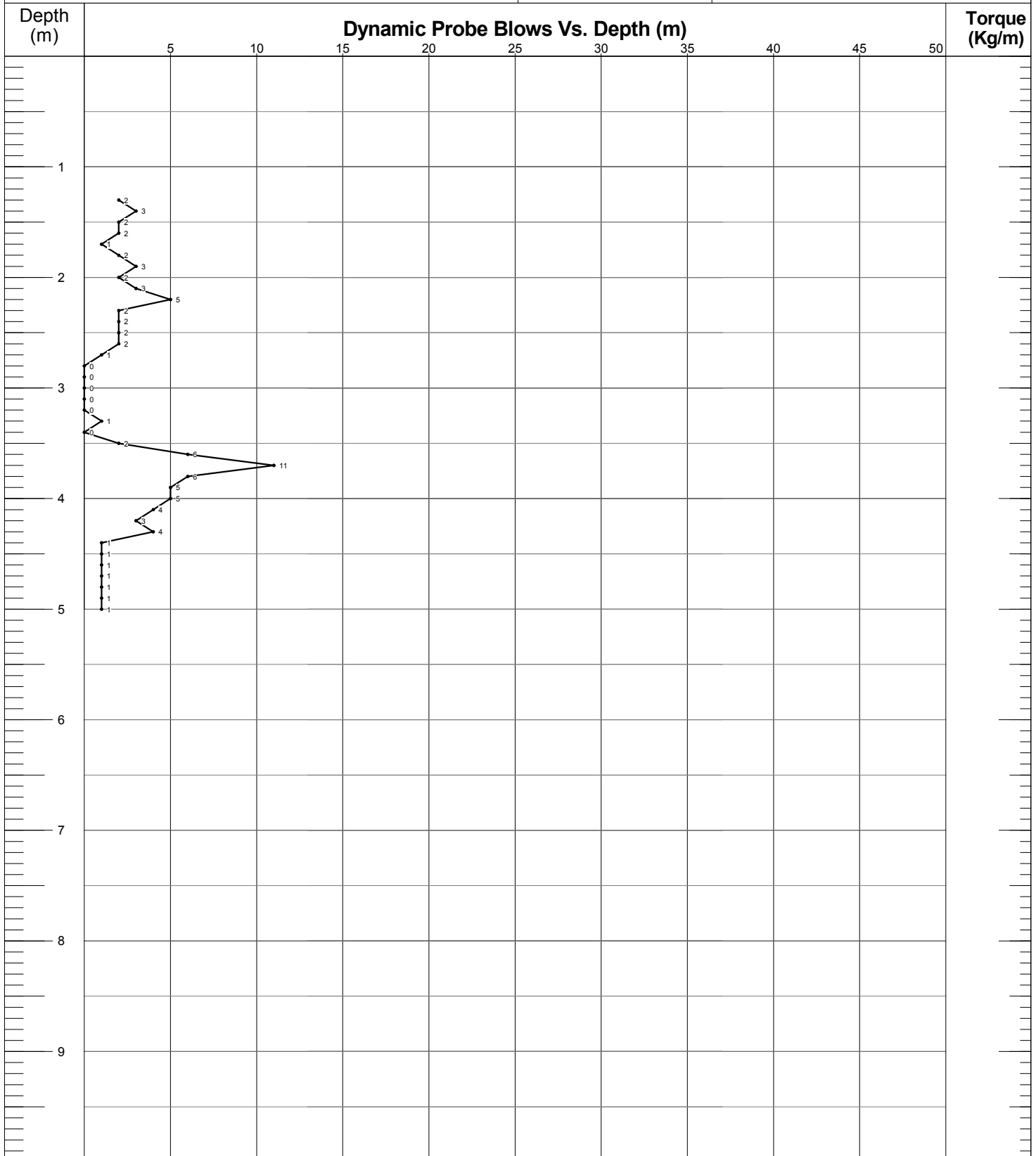
All measurements in metres unless otherwise stated	10m/page Scale: 1:62.50	Coordinates to Local Grid Ground Level to Ordnance Datum	Page 2 of 2
Plant Used: Dando 2000	Coordinates / Level (mAOD): E: -0.960704 N: 51.456236 Level: 39	Logged By: GB	Checked By: WC Approved By: CR

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 Email: info@deltasimons.com



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Project:	Forbury Retail Park, Reading.	Project No:	13-0258.01	Hole ID:	DPT105
DYNAMIC PROBE LOG		Date:	05/06/2013	Client:	Old Mutual Property Fund.



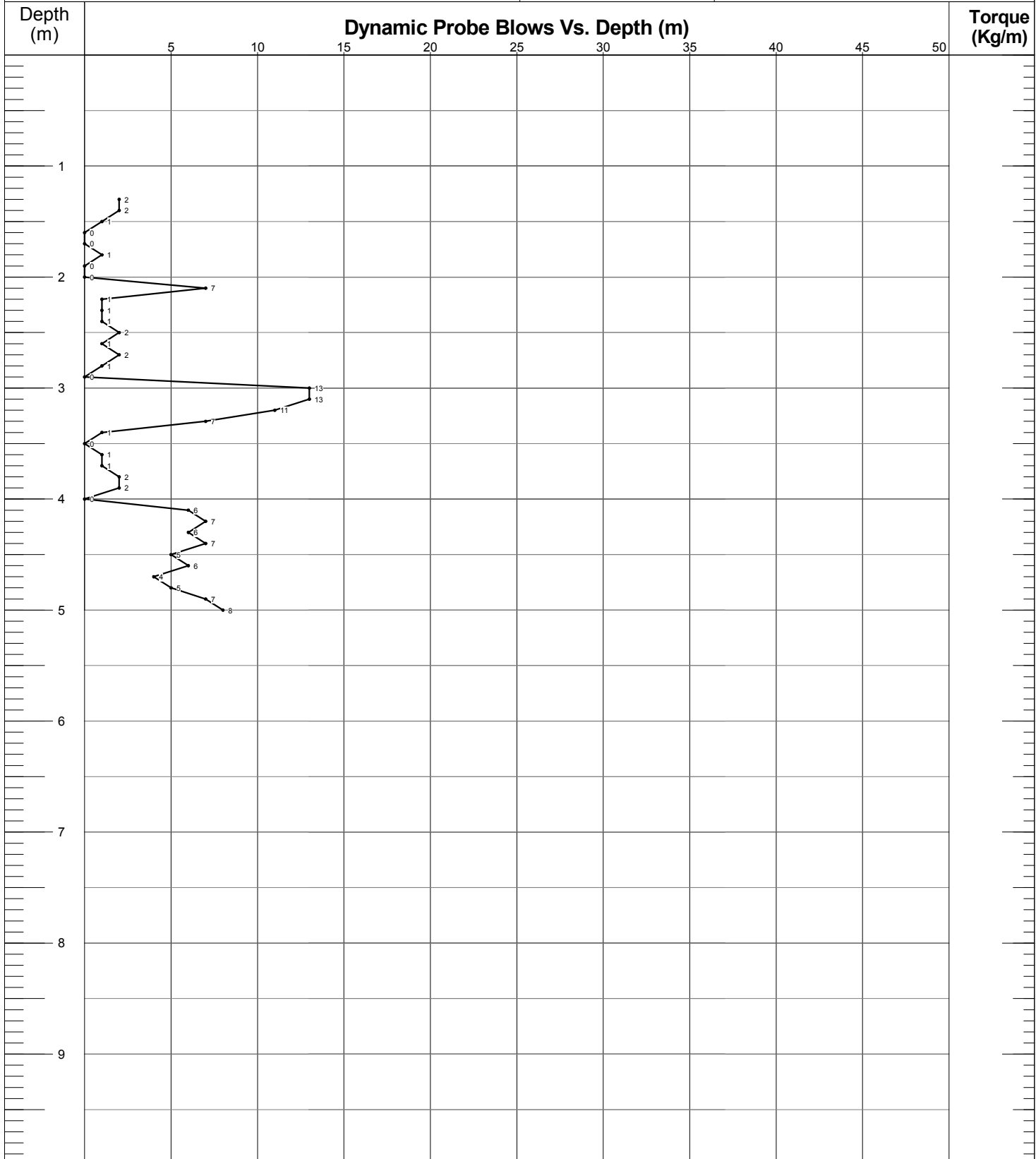
BS EN ISO 22476-2:2005 **63.5kg Hammer Mass** **750mm Standard Drop** **50mm Cone Base Diameter** **35mm Rod Diameter**

Plant Used:	Coordinates / Level (mAOD):	Drilled By:	Checked By:	Approved By:
			WC	CR

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Project:	Forbury Retail Park, Reading.	Project No:	13-0258.01	Hole ID:	DPT106
DYNAMIC PROBE LOG		Date:	05/06/2013	Client:	Old Mutual Property Fund.



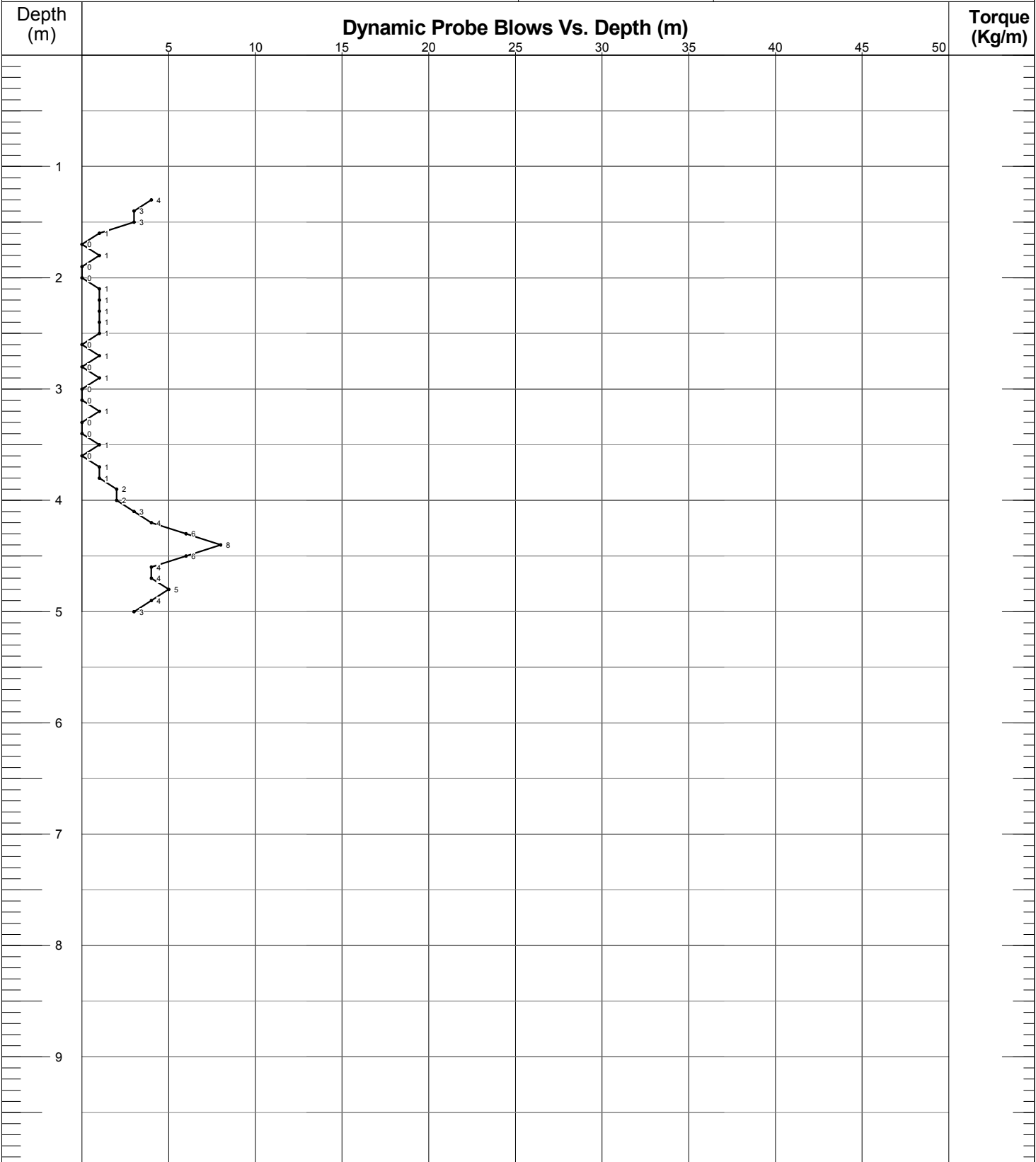
BS EN ISO 22476-2:2005 **63.5kg Hammer Mass** **750mm Standard Drop** **50mm Cone Base Diameter** **35mm Rod Diameter**

Plant Used:	Coordinates / Level (mAOD):	Drilled By:	Checked By:	Approved By:
			WC	CR

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Project:	Forbury Retail Park, Reading.	Project No:	13-0258.01	Hole ID:	DPT107
DYNAMIC PROBE LOG		Date:	05/06/2013	Client:	Old Mutual Property Fund.

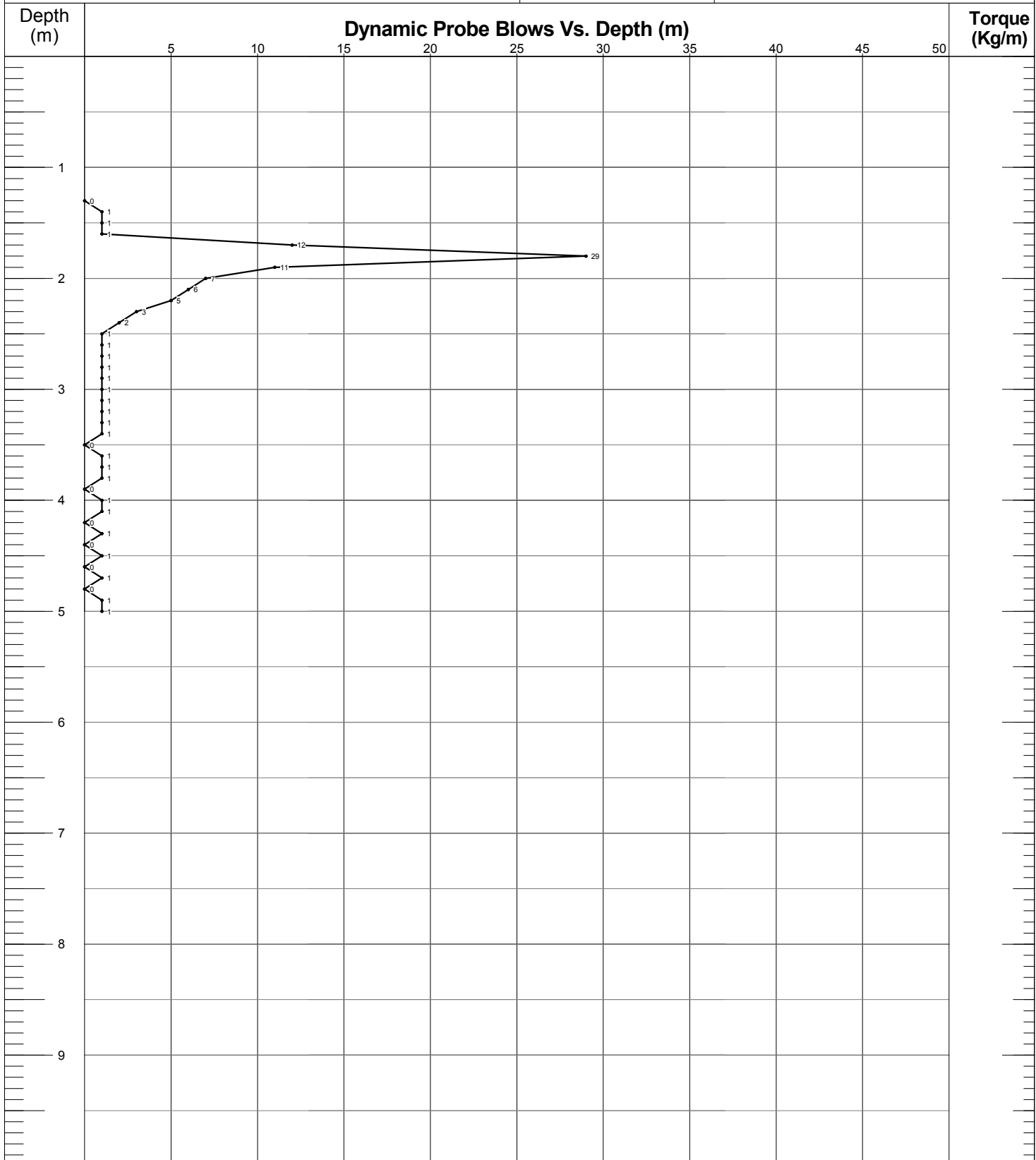


BS EN ISO 22476-2:2005	63.5kg Hammer Mass	750mm Standard Drop	50mm Cone Base Diameter	35mm Rod Diameter
Plant Used:	Coordinates / Level (mAOD):	Drilled By:	Checked By:	Approved By:
			WC	CR

Delta-Simons Environmental Consultants Ltd
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Project:	Forbury Retail Park, Reading.	Project No:	13-0258.01	Hole ID:	DPT108
DYNAMIC PROBE LOG		Date:	05/06/2013	Client:	Old Mutual Property Fund.

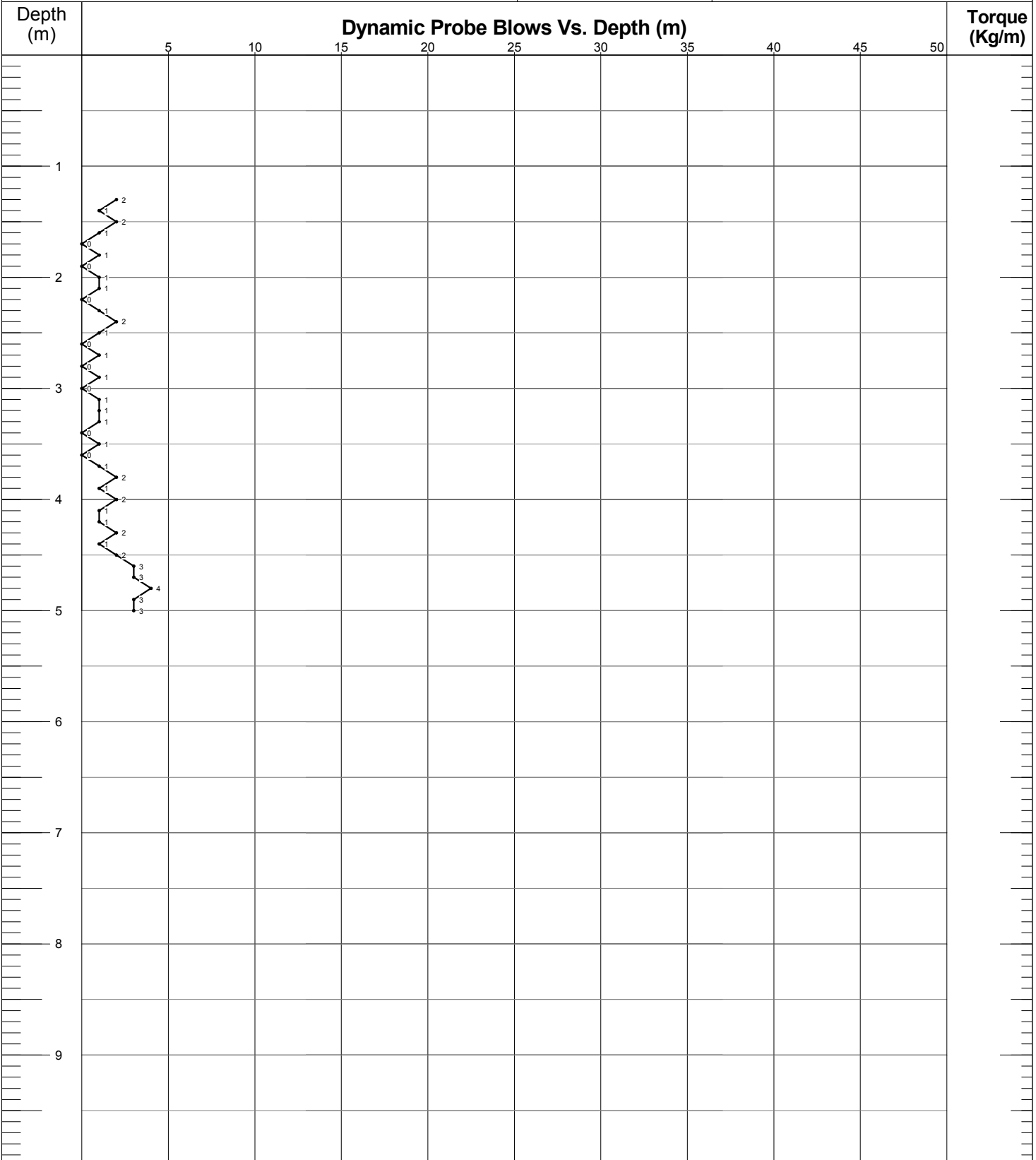


BS EN ISO 22476-2:2005	63.5kg Hammer Mass	750mm Standard Drop	50mm Cone Base Diameter	35mm Rod Diameter
Plant Used:	Coordinates / Level (mAOD):	Drilled By:	Checked By:	Approved By:
			WC	CR

Delta-Simons Environmental Consultants Ltd
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 Tel: 08700 400 012
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Project:	Forbury Retail Park, Reading.	Project No:	13-0258.01	Hole ID:	DPT109
DYNAMIC PROBE LOG		Date:	05/06/2013	Client:	Old Mutual Property Fund.



BS EN ISO 22476-2:2005	63.5kg Hammer Mass	750mm Standard Drop	50mm Cone Base Diameter	35mm Rod Diameter
Plant Used:	Coordinates / Level (mAOD):	Drilled By:	Checked By:	Approved By:
			WC	CR

Delta-Simons Environmental Consultants Ltd
 The Lawn, Union Road,
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Project:	Forbury Retail Park, Reading.	Project No:	13-0258.01	Hole ID:	DPT110
DYNAMIC PROBE LOG		Date:	05/06/2013	Client:	Old Mutual Property Fund.

Depth (m)	Dynamic Probe Blows Vs. Depth (m)										Torque (Kg/m)
	5	10	15	20	25	30	35	40	45	50	
1	6	6	7								
2											
3											
4											
5											
6											
7											
8											
9											

BS EN ISO 22476-2:2005 **63.5kg Hammer Mass** **750mm Standard Drop** **50mm Cone Base Diameter** **35mm Rod Diameter**

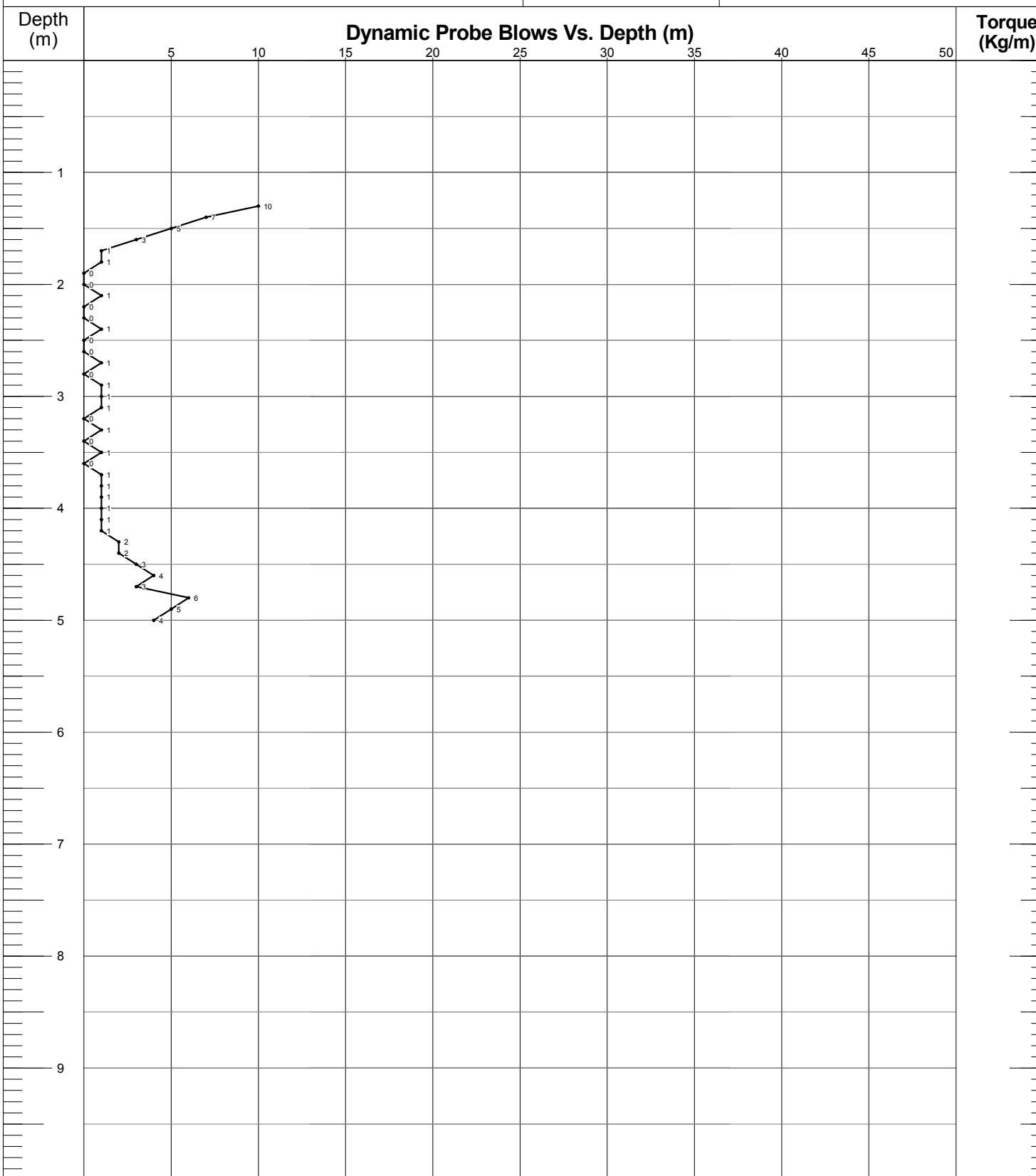
Plant Used:	Coordinates / Level (mAOD):	Drilled By:	Checked By:	Approved By:
			WC	CR

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Project:	Forbury Retail Park, Reading.	Project No:	13-0258.01	Hole ID:	DPT111
DYNAMIC PROBE LOG		Date:	05/06/2013	Client:	Old Mutual Property Fund.



BS EN ISO 22476-2:2005

63.5kg Hammer Mass

750mm Standard Drop

50mm Cone Base Diameter

35mm Rod Diameter

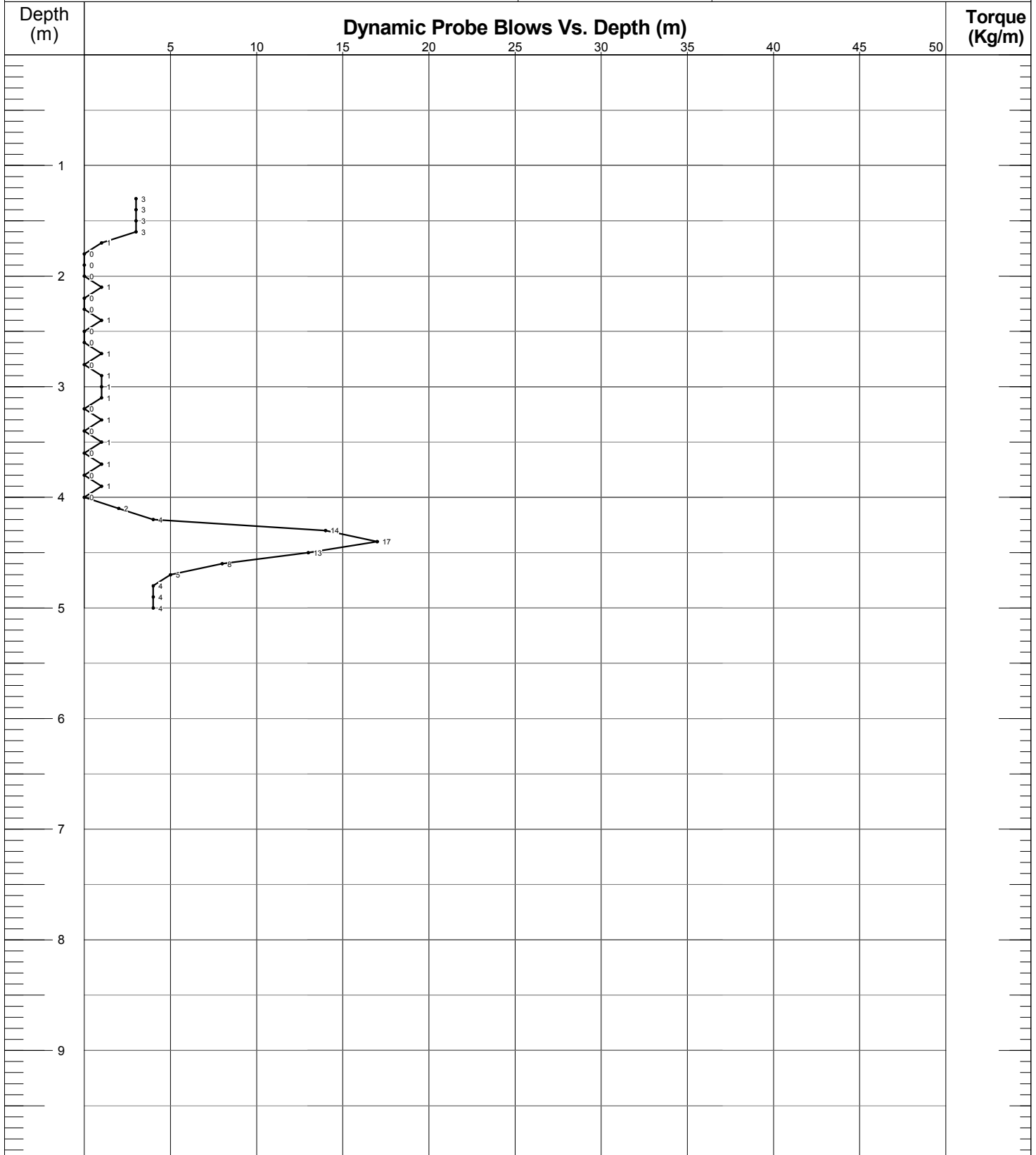
Plant Used:	Coordinates / Level (mAOD):	Drilled By:	Checked By:	Approved By:
			WC	CR

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Project:	Forbury Retail Park, Reading.	Project No:	13-0258.01	Hole ID:	DPT112
DYNAMIC PROBE LOG		Date:	05/06/2013	Client:	Old Mutual Property Fund.



BS EN ISO 22476-2:2005

63.5kg Hammer Mass

750mm Standard Drop

50mm Cone Base Diameter

35mm Rod Diameter

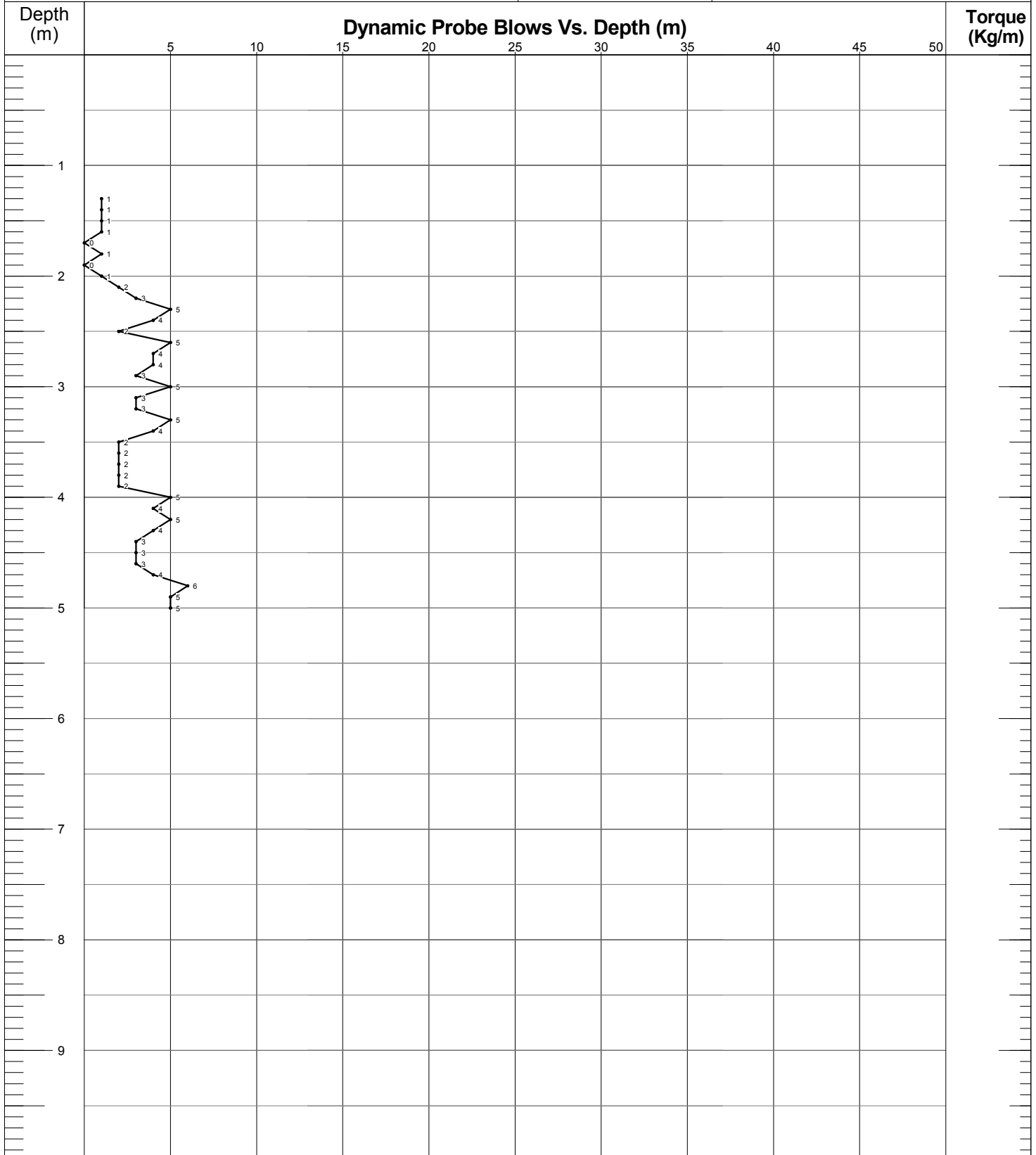
Plant Used:	Coordinates / Level (mAOD):	Drilled By:	Checked By:	Approved By:
			WC	CR

Delta-Simons Environmental Consultants Ltd
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Project:	Forbury Retail Park, Reading.	Project No:	13-0258.01	Hole ID:	DPT113
DYNAMIC PROBE LOG		Date:	05/06/2013	Client:	Old Mutual Property Fund.



BS EN ISO 22476-2:2005

63.5kg Hammer Mass

750mm Standard Drop

50mm Cone Base Diameter

35mm Rod Diameter

Plant Used:	Coordinates / Level (mAOD):	Drilled By:	Checked By:	Approved By:
			WC	CR

SPT Calibration Report

Hammer Energy Measurement Report

Type of Hammer SPT HAMMER
 Client SI DRILLING
 Test No EQU752
 Test Depth (m) 6.70
 Date of Test 02 January 2013
 Valid until 02 January 2014
 Hammer ID SI012

Mass of the hammer $m = 63.5\text{kg}$
 Falling height $h = 0.76\text{m}$
 $E_{\text{theor}} = m \times g \times h = 473\text{J}$

Characteristics of the instrumented rod

Diameter $d_r = 0.052\text{m}$
 Length of the instrumented rod 0.558m
 Area $A = 11.61\text{cm}^2$
 Modulus $E_s = 206843\text{MPa}$

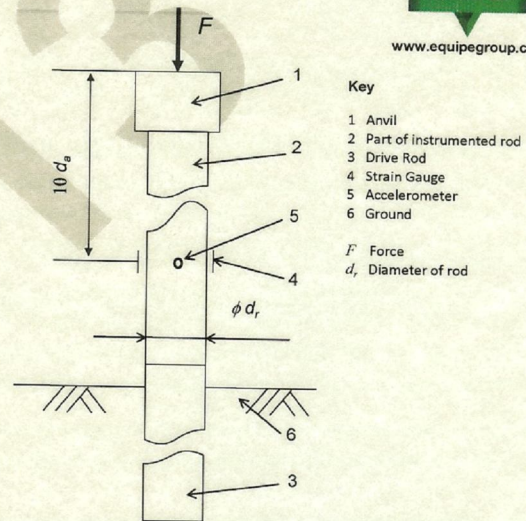
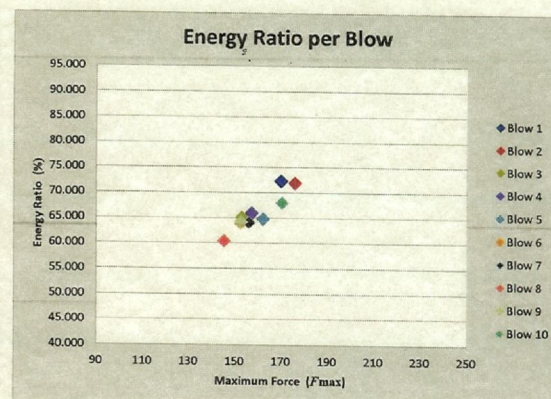
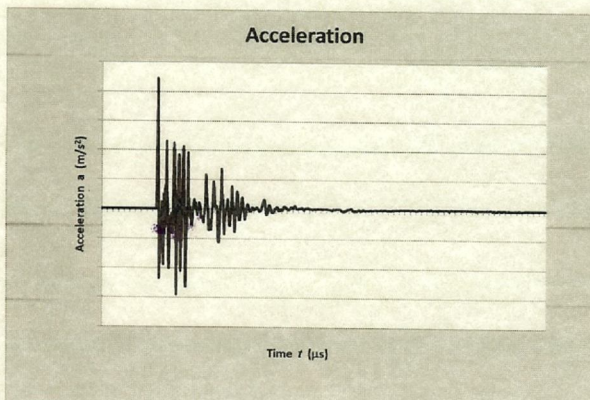
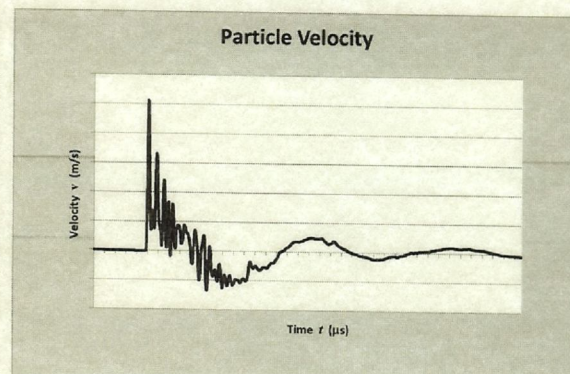
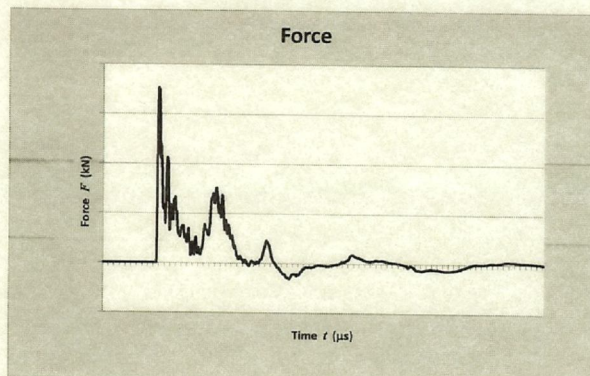


Fig. B.1 and B.2 BS EN ISO 22476-3 : 2005 + A1 : 2011



Observations:

1.

$E_{\text{meas}} = 0.311\text{ kN-m}$

$E_{\text{theor}} = 0.473\text{ kN-m}$

$$\text{Energy Ratio} = \frac{E_{\text{meas}}}{E_{\text{theor}}} = 65.75\%$$

Equipe SPT Analyzer Operators: CS

Prepared by:

[Signature]

Checked by:

[Signature]

Date

03/01/2013

Appendix III



LABORATORY REPORT



4043

Contract Number: PSL13/2189

Client's Reference:

Report Date: 09 July 2013

Client Name: Delta Simons
The Lawn
Union Road
Lincoln

LN1 3BL

For the attention of: Andrew Hare

Contract Title: Kenavon Drive, Reading

Date Received: 19/6/2013

Date Commenced: 19/6/2013

Date Completed: 9/7/2013

Notes: Observations and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

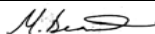
R Gunson
(Director)

A Watkins
(Director)

M Beastall
(Laboratory Manager)

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Depth m	Description of Sample
CP101		B	0.60-0.80	MADE GROUND brown very sandy slightly clayey gravel.
CP102		B	0.60-0.80	Brown very gravelly slightly clayey SAND.
CP102		B	1.50-1.95	Brown very sandy slightly clayey GRAVEL.
CP102		B	4.50-4.95	Brown very clayey SAND & GRAVEL.
CP103		B	1.20-1.70	MADE GROUND brown very sandy gravel of crushed brick.
CP104		B	1.20-1.70	MADE GROUND grey mottled brown very gravelly very sandy CLAY.
CP104		U	3.00-3.50	Soft grey mottled brown slightly sandy CLAY.
CP104		B	3.20-3.60	Brown slightly gravelly very sandy CLAY.
CP104		B	4.50-5.00	Brown mottled grey slightly gravelly very sandy CLAY.
CP104		B	6.50-7.00	White sandy very clayey GRAVEL.
CP105		B	1.20-1.70	MADE GROUND brown gravelly slightly clayey sand.
CP105		U	4.00-4.50	Very soft grey mottled dark grey sandy CLAY.
CP105		B	5.00-5.50	Brown slightly sandy slightly silty GRAVEL with cobbles.
CP105		B	6.50-7.00	White very sandy silty GRAVEL.

 Professional Soils Laboratory	Compiled by	Date	Checked by	Date	Approved by	Date
		08/07/13		09/07/13		09/07/13
	KENAVON DRIVE, READING.				Contract No:	PSL13/2189
					Client Ref:	13-0258.01

SUMMARY OF SOIL CLASSIFICATION TESTS

(B.S. 1377 : PART 2 : 1990)

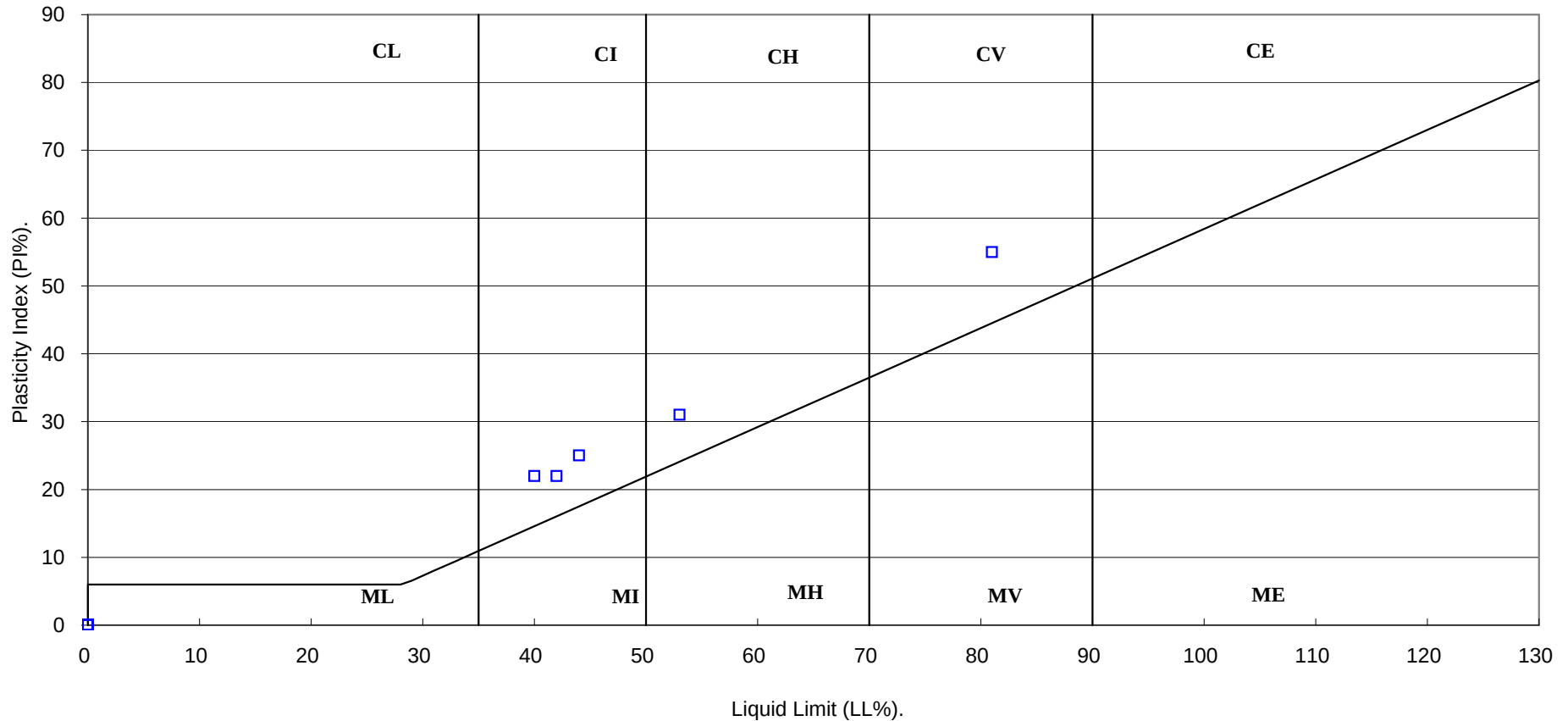
[illegible]

SYMBOLS : NP : Non Plastic

 PSL Professional Soils Laboratory	Compiled by	Date	Checked by	Date	Approved by	Date
		08/07/13		09/07/13		09/07/13
	KENAVON DRIVE, READING.				Contract No:	PSL13/2189
Client Ref:					13-0258.01	

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

(B.S.5930 : 1999)



PSL

Professional Soils Laboratory

Compiled by

[Signature]

Date

08/07/13

Checked by

Date

09/07/13

Approved by

Date

09/07/13

KENAVON DRIVE, READING.

Contract No:

PSL13/2189

Client Ref:

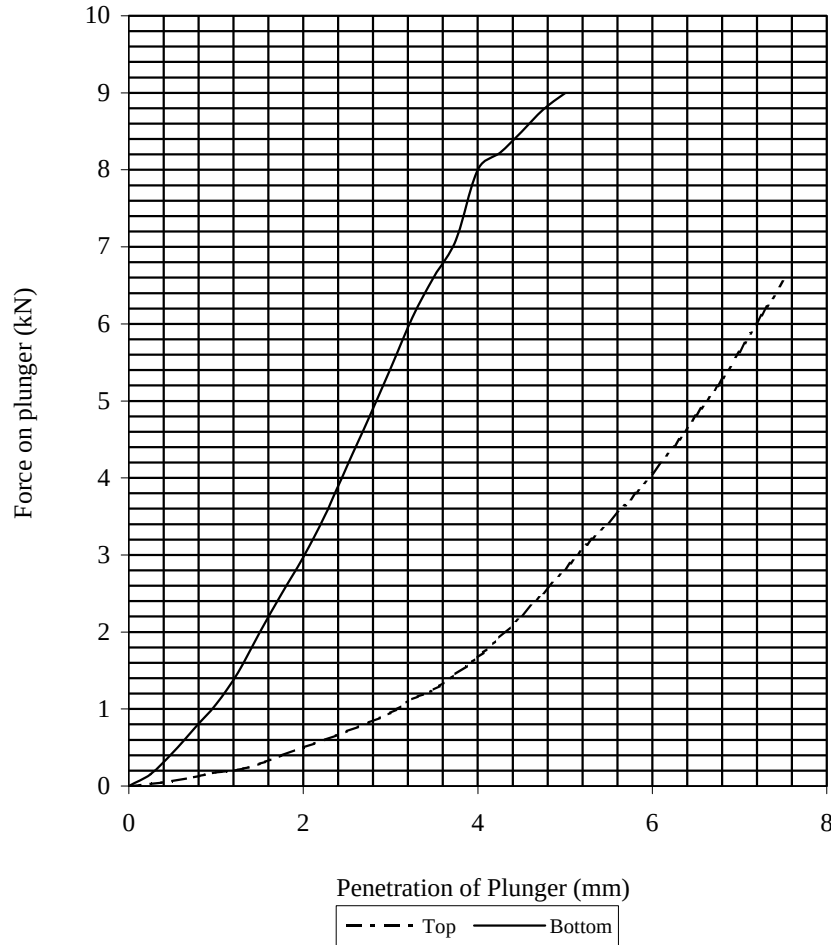
13-0258.01

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP101 Depth (m): 0.60-0.80

Sample Number: Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	16	Surcharge Kg:	4.00	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	2.06	Soaking Time hrs	0	Sample Top	17	Sample Top	14.1
Dry Density Mg/m3:	1.77	Swelling mm:	0	Sample Bottom	16	Sample Bottom	45.0
Percentage retained on 20mm BS test sieve:	36	Remarks: See Summary of Soil Description. Maximum load reached @ 5mm on base.					

Checked by	Date	Approved By	Date
<i>H. bin</i>	09/07/13	<i>H. bin</i>	09/07/13

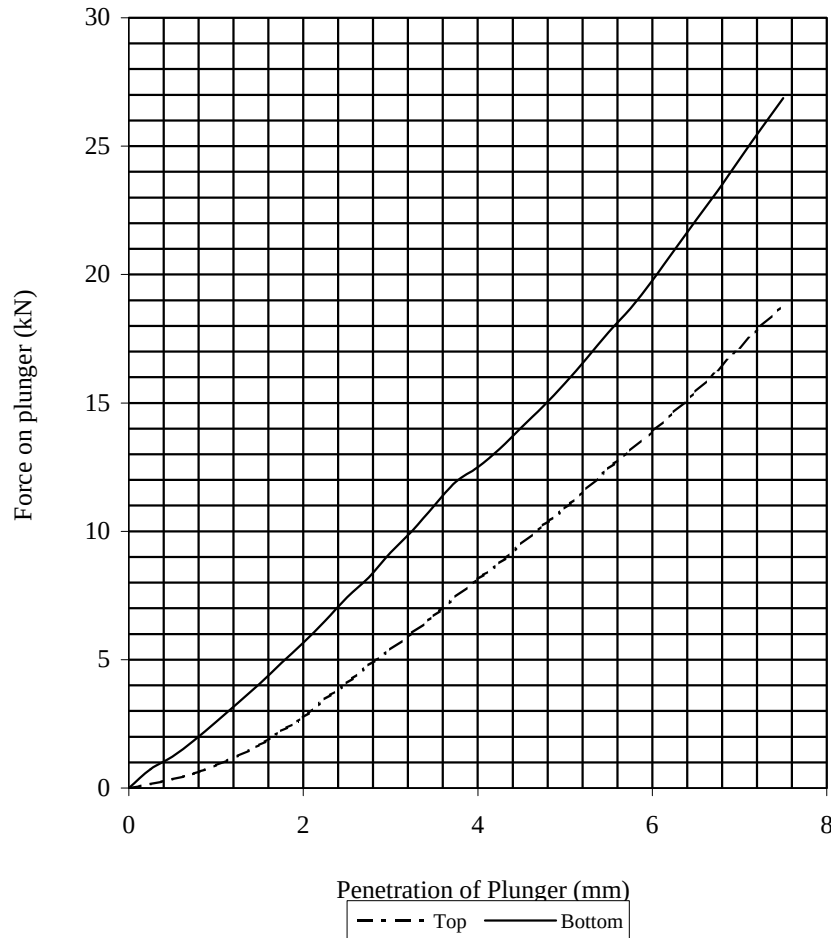
PSL Professional Soils Laboratory	KENAVON DRIVE, READING.	Contract No.
		PSL13/2189

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP102 Depth (m): 0.60-0.80

Sample Number: Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	11	Surcharge Kg:	4.00	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	2.06	Soaking Time hrs	0	Sample Top	12	Sample Top	54.5
Dry Density Mg/m3:	1.85	Swelling mm:	0	Sample Bottom	11	Sample Bottom	78.8
Percentage retained on 20mm BS test sieve:	35	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>M. be</i>	09/07/13	<i>M. be</i>	09/07/13

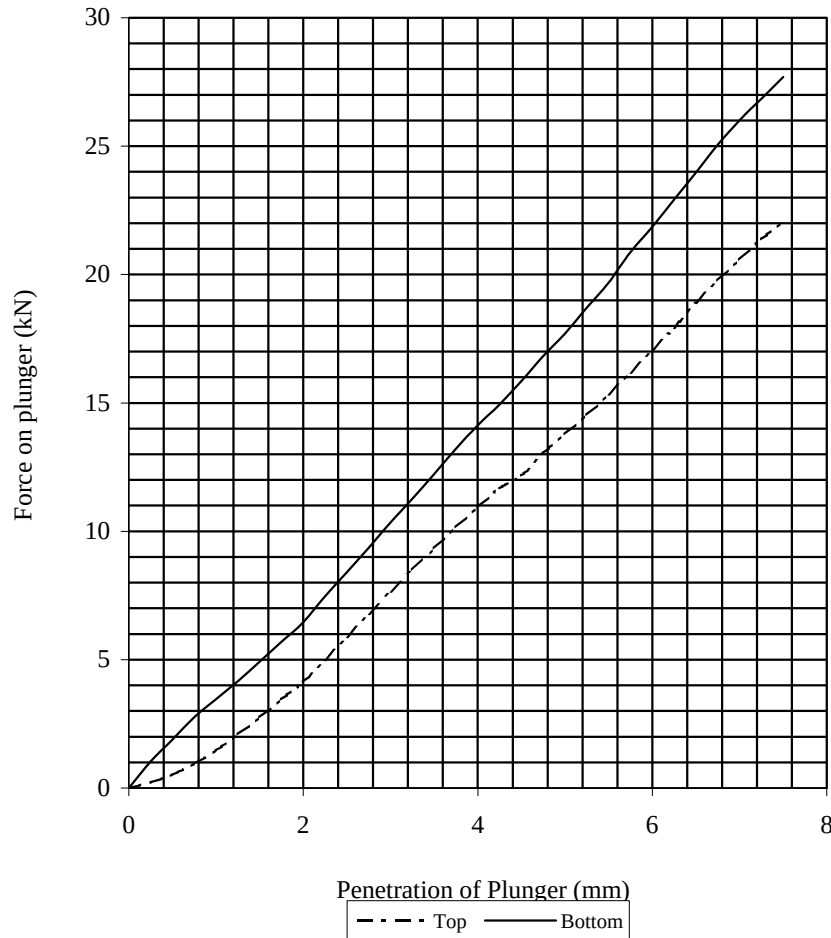
PSL Professional Soils Laboratory	KENAVON DRIVE, READING.	Contract No.
		PSL13/2189

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP102 Depth (m): 1.50-1.95

Sample Number: Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	16	Surcharge Kg:	4.00	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	2.08	Soaking Time hrs	0	Sample Top	16	Sample Top	69.0
Dry Density Mg/m3:	1.80	Swelling mm:	0	Sample Bottom	16	Sample Bottom	88.5
Percentage retained on 20mm BS test sieve:	49	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>M. S.</i>	09/07/13	<i>M. S.</i>	09/07/13

PSL Professional Soils Laboratory	KENAVON DRIVE, READING.	Contract No.
		PSL13/2189

Particle Size Distribution Test

BS1377 : Part 2 : 1990

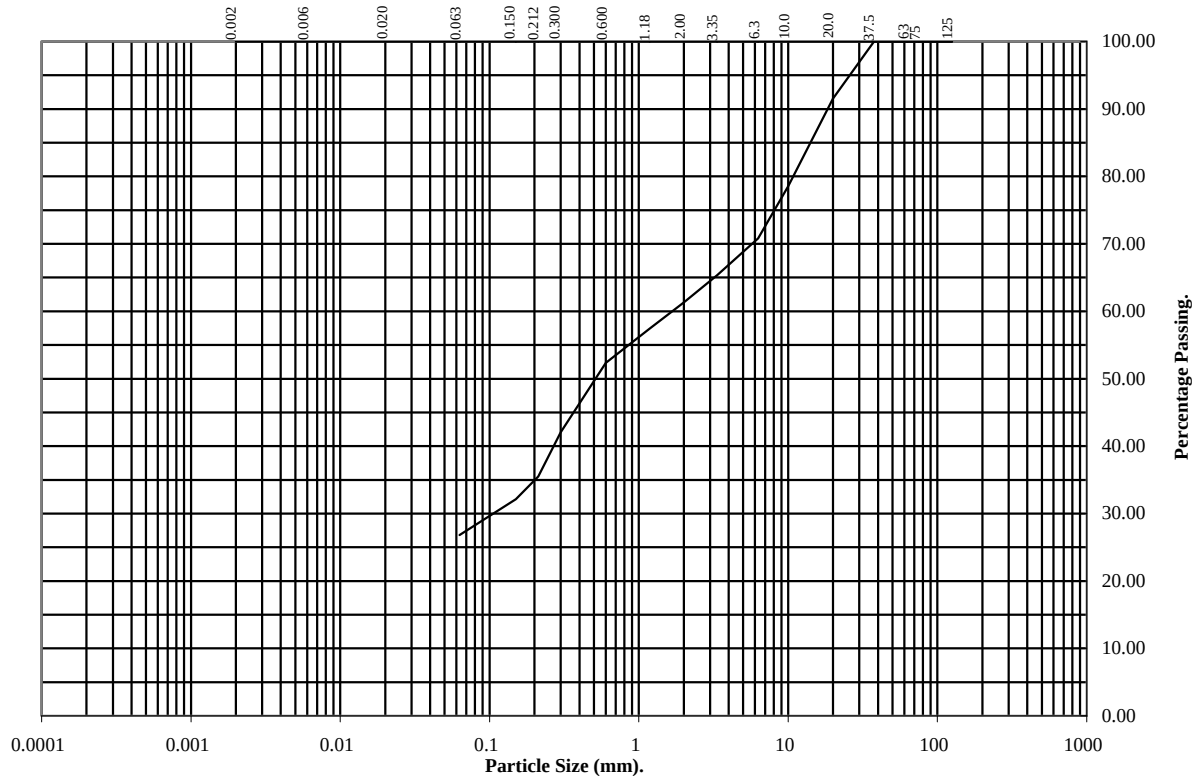
Wet Sieve, Clause 9.2

Hole Number: CP102

Depth (m): 4.50-4.95

Sample Number:

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	92
10	79
6.3	71
3.35	65
2	61
1.18	57
0.6	52
0.3	42
0.212	36
0.15	32
0.063	27

Soil Fraction	Total Percentage
Cobbles	0
Gravel	39
Sand	34
Silt / Clay	27

Remarks:

See summary of soils descriptions.

Checked By	Date	Approved By	Date
<i>H. S.</i>	09/07/13	<i>H. S.</i>	09/07/13

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KENAVON DRIVE, READING.

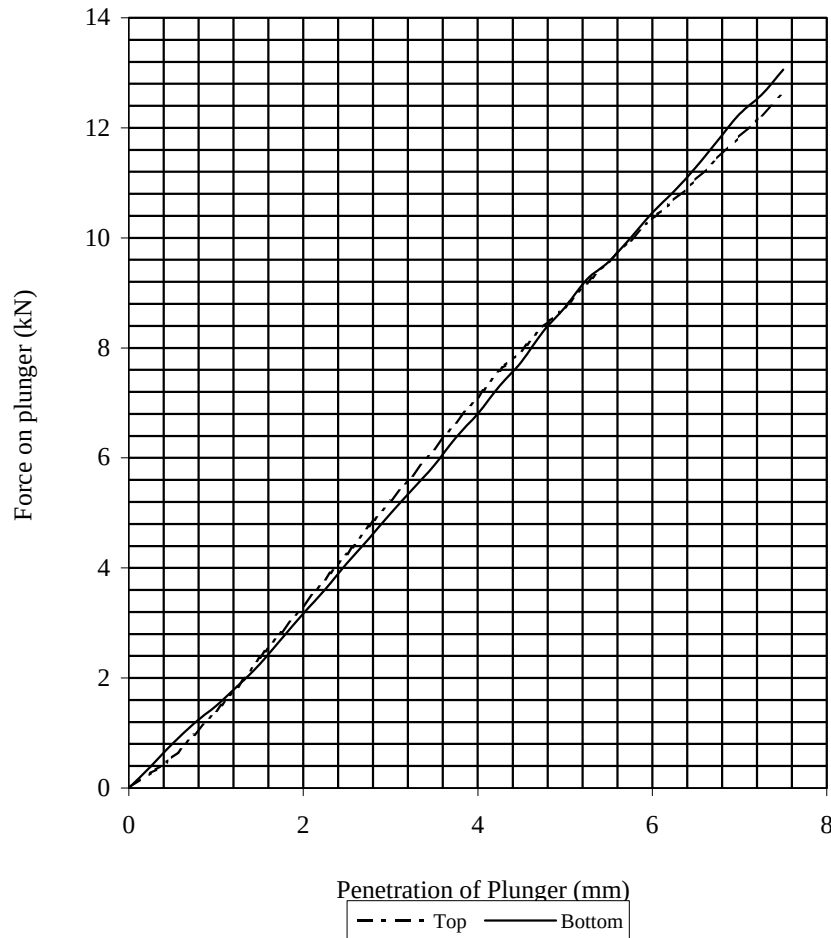
Contract No.:
PSL13/2189

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP103 Depth (m): 1.20-1.70

Sample Number: Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	19	Surcharge Kg:	4.00	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	1.93	Soaking Time hrs	0	Sample Top	19	Sample Top	43.7
Dry Density Mg/m3:	1.63	Swelling mm:	0	Sample Bottom	19	Sample Bottom	43.7
Percentage retained on 20mm BS test sieve:	50	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>M. J. S.</i>	09/07/13	<i>M. J. S.</i>	09/07/13

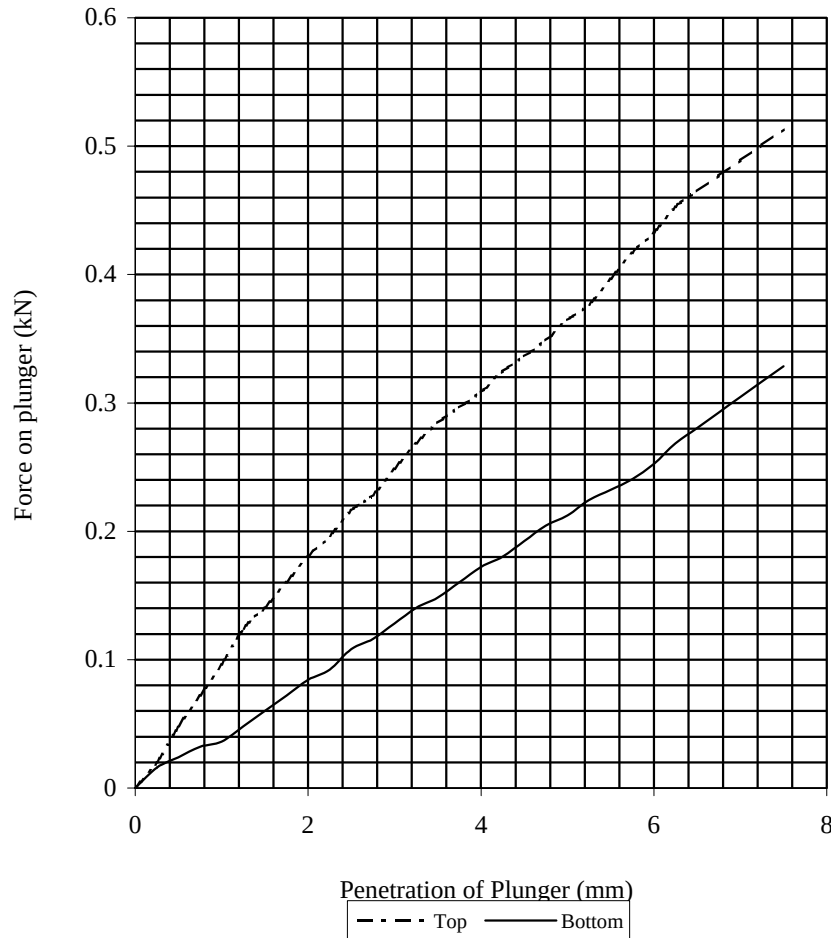
PSL Professional Soils Laboratory	KENAVON DRIVE, READING.	Contract No.
		PSL13/2189

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP104 Depth (m): 1.20-1.70

Sample Number: Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	25	Surcharge Kg:	4.00	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	1.94	Soaking Time hrs	0	Sample Top	24	Sample Top	1.8
Dry Density Mg/m3:	1.55	Swelling mm:	0	Sample Bottom	25	Sample Bottom	1.1
Percentage retained on 20mm BS test sieve:	32	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>H. B. S.</i>	09/07/13	<i>H. B. S.</i>	09/07/13

PSL Professional Soils Laboratory	KENAVON DRIVE, READING.	Contract No.
		PSL13/2189

One Dimensional Consolidation Properties

BS 1377: Part 5: 1990

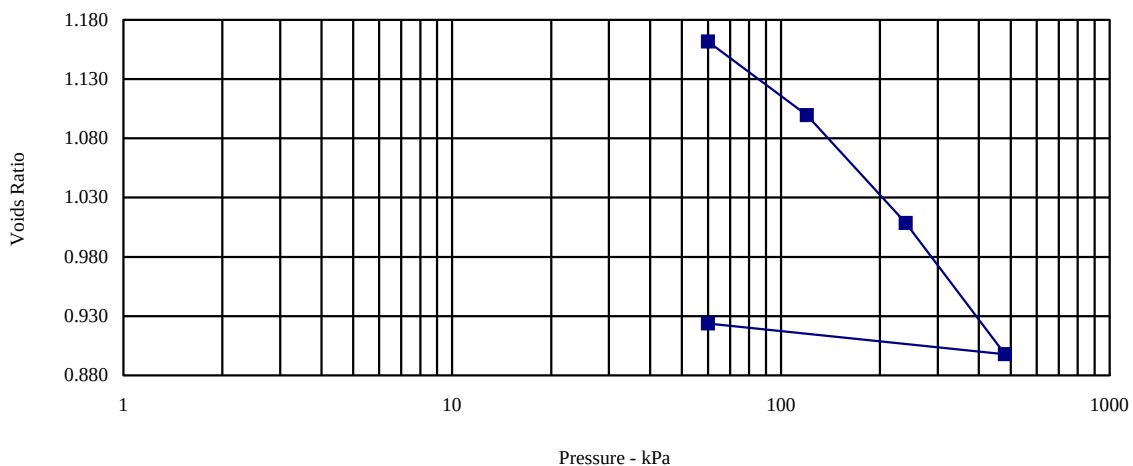
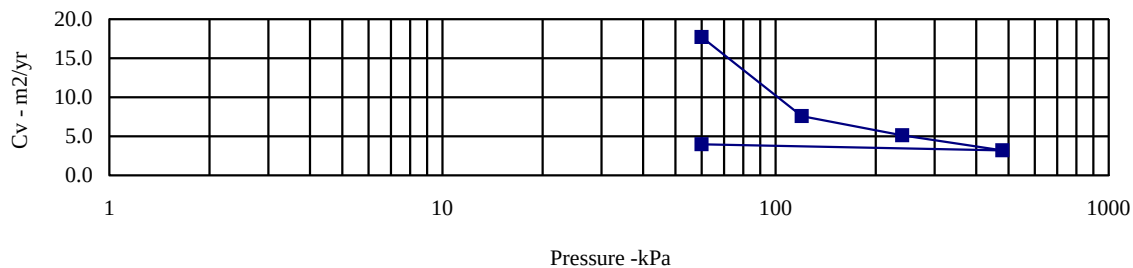
Hole Number: CP104

Depth (m): 3.00-3.50

Sample Number:

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	42	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	1.72	0	-	60	0.219	17.710	Method used to	t90
Dry Density (Mg/m3):	1.21	60	-	120	0.478	7.580	determine CV:	
Voids Ratio:	1.1904	120	-	240	0.362	5.124	Nominal temperature	20
Degree of saturation:	93.3	240	-	480	0.229	3.185	during test ' C:	
Height (mm):	20.1	480	-	60	0.033	3.970	Remarks:	
Diameter (mm)	75.17						See summary of soils description.	
Particle Density (Mg/m3):	2.65							
Assumed								



Checked by	Date	Approved by	Date
<i>H. Jones</i>	09/07/13	<i>H. Jones</i>	09/07/13



KENAVON DRIVE, READING.

Contract No.

PSL13/2189

Page of

Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

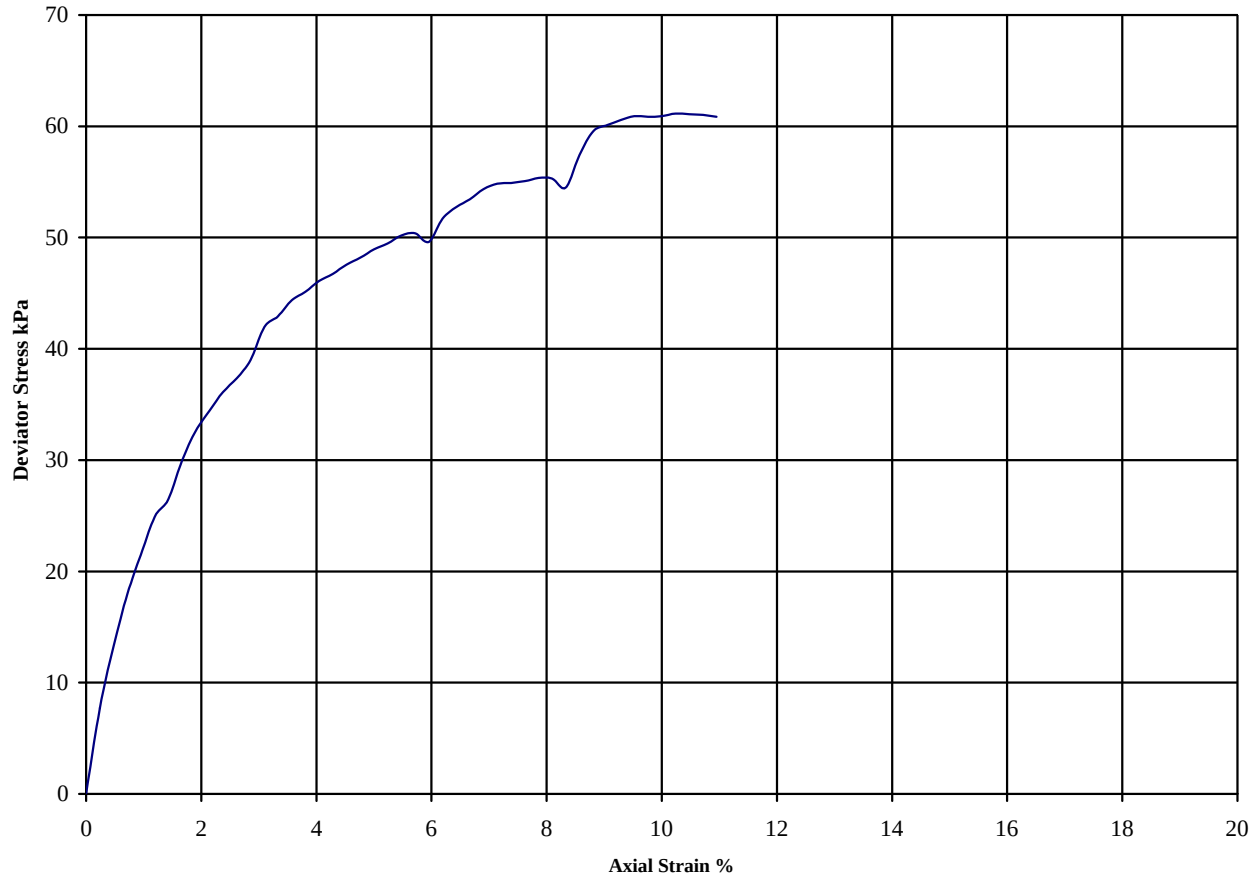
B.S. 1377 : Part 7 : Clause 9 : 1990

Hole Number: BH104

Depth (m): 3.00-3.50

Sample Number:

Sample Type: U



Diameter (mm):		102	Height (mm):		210	Test:	100mm Multistage						
Specimen	Moisture	Bulk	Dry	Cell	Corr. Max.	Shear	Failure	Mode	Remarks				
	Content	Density	Density	Pressure	Deviator	Strength	Strain	of					
	(%)	(Mg/m3)	(Mg/m3)	(kPa)	Stress	Cu	(%)	Failure					
				θ_3	$(\theta_1-\theta_3)_f$	$\frac{1}{2}(\theta_1-\theta_3)_f$							
A	44	1.72	1.19	80	50	25	5.7		0.36	0.36	0.35	See summary of soil descriptions.	
				160	55	28	7.9						
				320	61	31	10.2	Plastic	Checked	Date	Approved	Date	
									<i>H.S.</i>	09/07/13	<i>H.S.</i>	09/07/13	

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KENAVON DRIVE, READING.

Contract No:
PSL13/2189

Particle Size Distribution Test

BS1377 : Part 2 : 1990

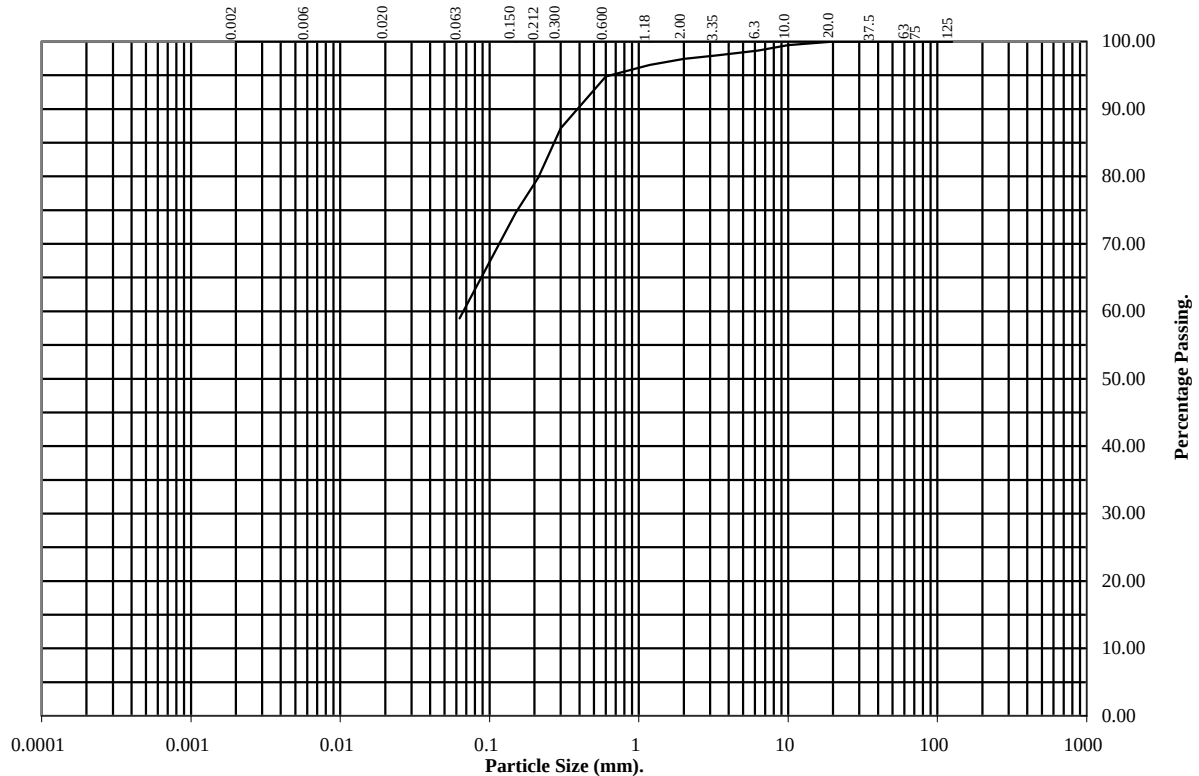
Wet Sieve, Clause 9.2

Hole Number: CP104

Depth (m): 3.20-3.60

Sample Number:

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	99
6.3	99
3.35	98
2	97
1.18	97
0.6	95
0.3	87
0.212	80
0.15	75
0.063	59

Soil Fraction	Total Percentage
Cobbles	0
Gravel	3
Sand	38
Silt / Clay	59

Remarks:

See summary of soils descriptions.

Checked By	Date	Approved By	Date
<i>H. S.</i>	09/07/13	<i>H. S.</i>	09/07/13

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KENAVON DRIVE, READING.

Contract No.:
PSL13/2189

Particle Size Distribution Test

BS1377 : Part 2 : 1990

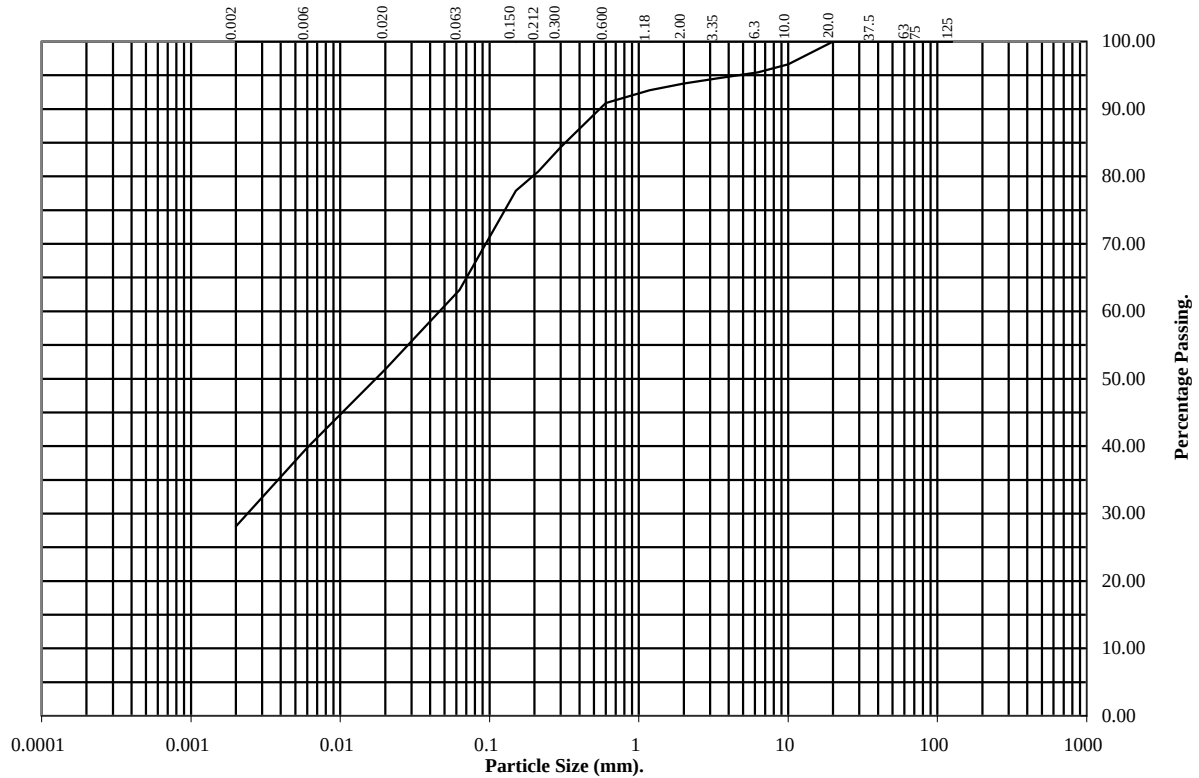
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP104

Depth (m): 4.50-5.00

Sample Number:

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	97
6.3	95
3.35	95
2	94
1.18	93
0.6	91
0.3	84
0.212	81
0.15	78
0.063	63

Particle Diameter	Percentage Passing
0.02	51
0.006	40
0.002	28

Soil Fraction	Total Percentage
Cobbles	0
Gravel	6
Sand	31
Silt	35
Clay	28

Remarks:

See summary of soils descriptions.

Checked By	Date	Approved By	Date
<i>M. S.</i>	09/07/13	<i>M. S.</i>	09/07/13

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KENAVON DRIVE, READING.

Contract No.:
PSL13/2189

Particle Size Distribution Test

BS1377 : Part 2 : 1990

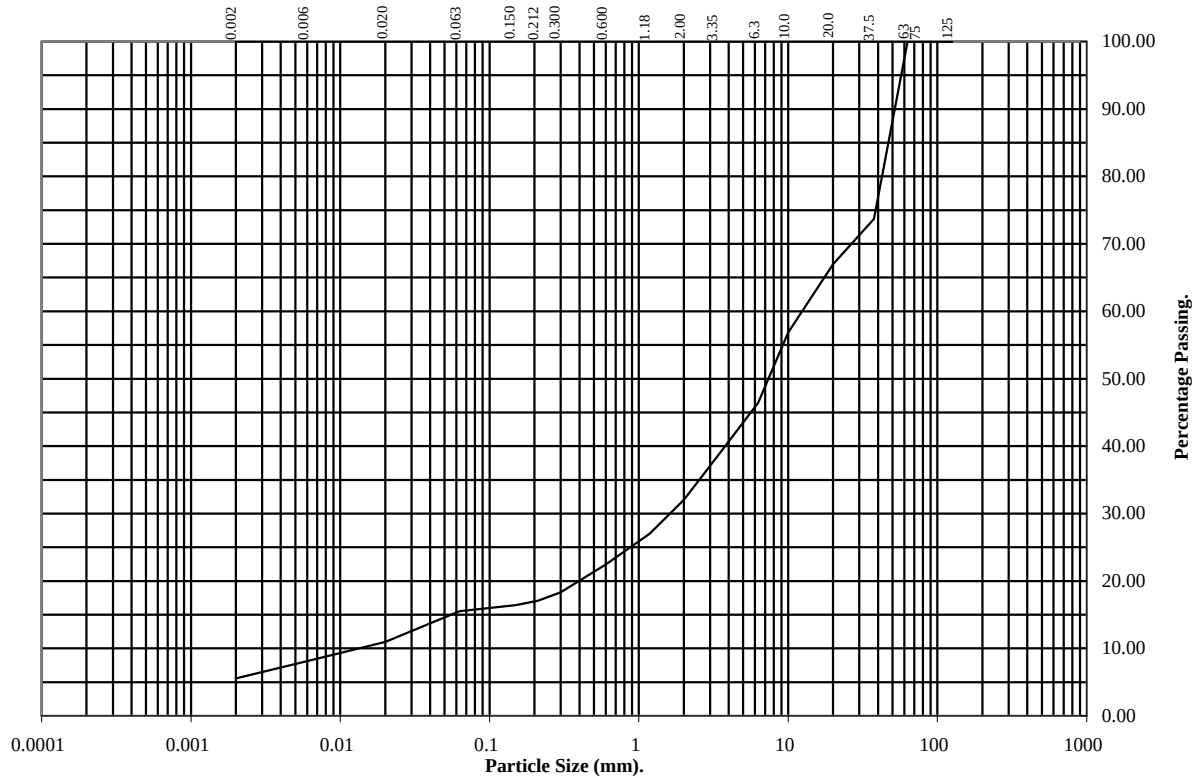
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP104

Depth (m): 6.50-7.00

Sample Number:

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	74
20	67
10	57
6.3	46
3.35	38
2	32
1.18	27
0.6	22
0.3	18
0.212	17
0.15	16
0.063	16

Particle Diameter	Percentage Passing
0.02	11
0.006	8
0.002	6

Soil Fraction	Total Percentage
Cobbles	0
Gravel	68
Sand	16
Silt	10
Clay	6

Remarks:

See summary of soils descriptions.

Checked By	Date	Approved By	Date
<i>H. S.</i>	09/07/13	<i>H. S.</i>	09/07/13

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KENAVON DRIVE, READING.

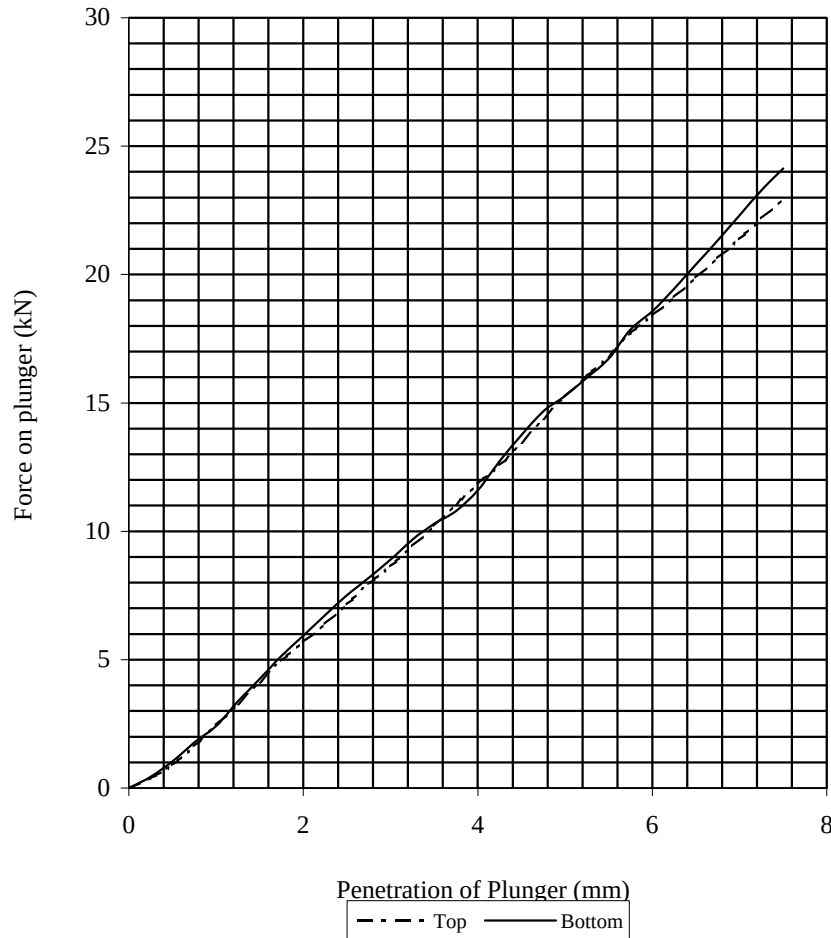
Contract No.:
PSL13/2189

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP105 Depth (m): 1.20-1.70

Sample Number: Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	10	Surcharge Kg:	4.00	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	2.08	Soaking Time hrs	0	Sample Top	10	Sample Top	76.2
Dry Density Mg/m3:	1.89	Swelling mm:	0	Sample Bottom	10	Sample Bottom	76.3
Percentage retained on 20mm BS test sieve:	8	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>H. be</i>	09/07/13	<i>H. be</i>	09/07/13

PSL Professional Soils Laboratory	KENAVON DRIVE, READING.	Contract No.
		PSL13/2189

One Dimensional Consolidation Properties

BS 1377: Part 5: 1990

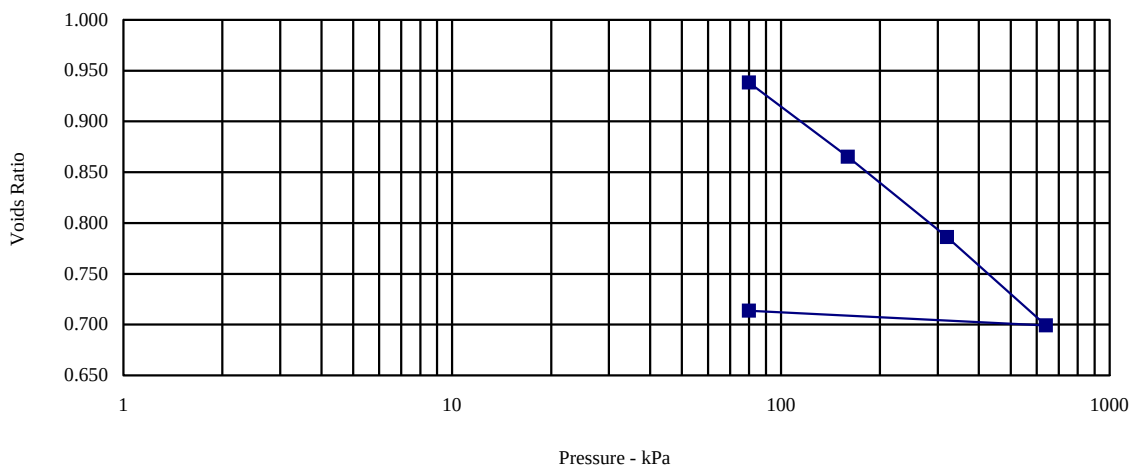
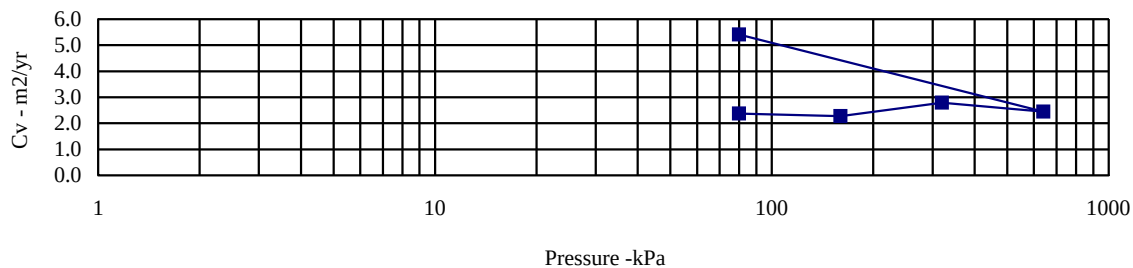
Hole Number: CP105

Depth (m): 4.00-4.50

Sample Number:

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	40	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	1.79	0	-	80	0.788	2.370	Method used to	t90
Dry Density (Mg/m3):	1.28	80	-	160	0.470	2.278	determine CV:	
Voids Ratio:	1.0685	160	-	320	0.265	2.794	Nominal temperature	20
Degree of saturation:	98.4	320	-	640	0.152	2.447	during test ' C:	
Height (mm):	20.02	640	-	80	0.015	5.406	Remarks:	
Diameter (mm)	75.34						See summary of soils description.	
Particle Density (Mg/m3):	2.65							
Assumed								



Checked by	Date	Approved by	Date
<i>M. Jones</i>	09/07/13	<i>M. Jones</i>	09/07/13



KENAVON DRIVE, READING.

Contract No.

PSL13/2189

Page of

Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

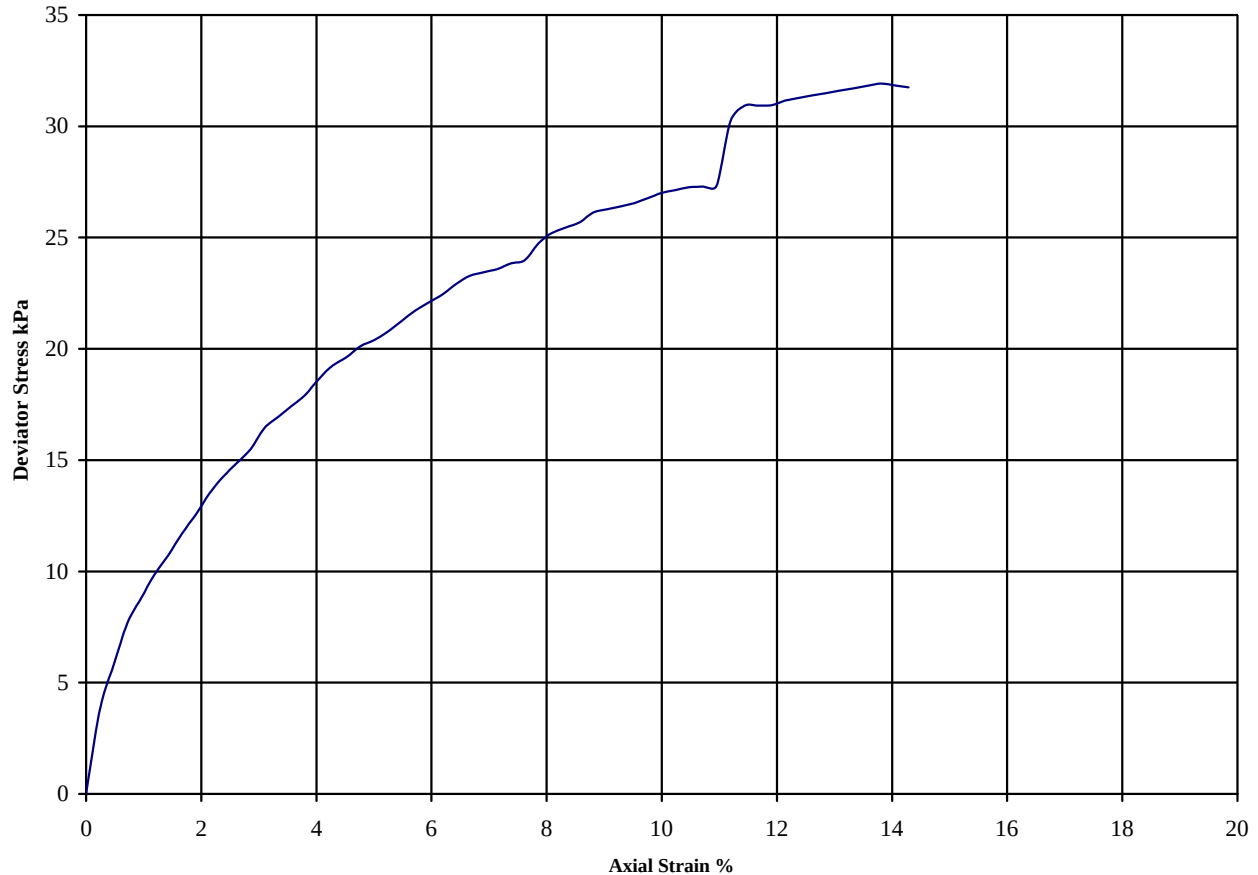
B.S. 1377 : Part 7 : Clause 9 : 1990

Hole Number: BH105

Depth (m): 4.00-4.50

Sample Number:

Sample Type: U



Diameter (mm):		102	Height (mm):		210	Test:	100mm Multistage						
Specimen	Moisture	Bulk	Dry	Cell	Corr. Max.	Shear	Failure	Mode	Remarks				
	Content	Density	Density	Pressure	Deviator	Strength	Strain	of					
	(%)	(Mg/m3)	(Mg/m3)	(kPa)	Stress	Cu	(%)	Failure					
				θ_3	($\theta_1 - \theta_3$) _f	$\frac{1}{2}(\theta_1 - \theta_3)$ _f							
	A	41	1.81	1.28	80	24	12	7.6		0.36	0.35	0.35	
				160	27	14	11.0		See summary of soil descriptions.				
				320	32	16	13.8	Plastic	Checked	Date	Approved	Date	
										09/07/13		09/07/13	

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KENAVON DRIVE, READING.

Contract No:
PSL13/2189

Particle Size Distribution Test

BS1377 : Part 2 : 1990

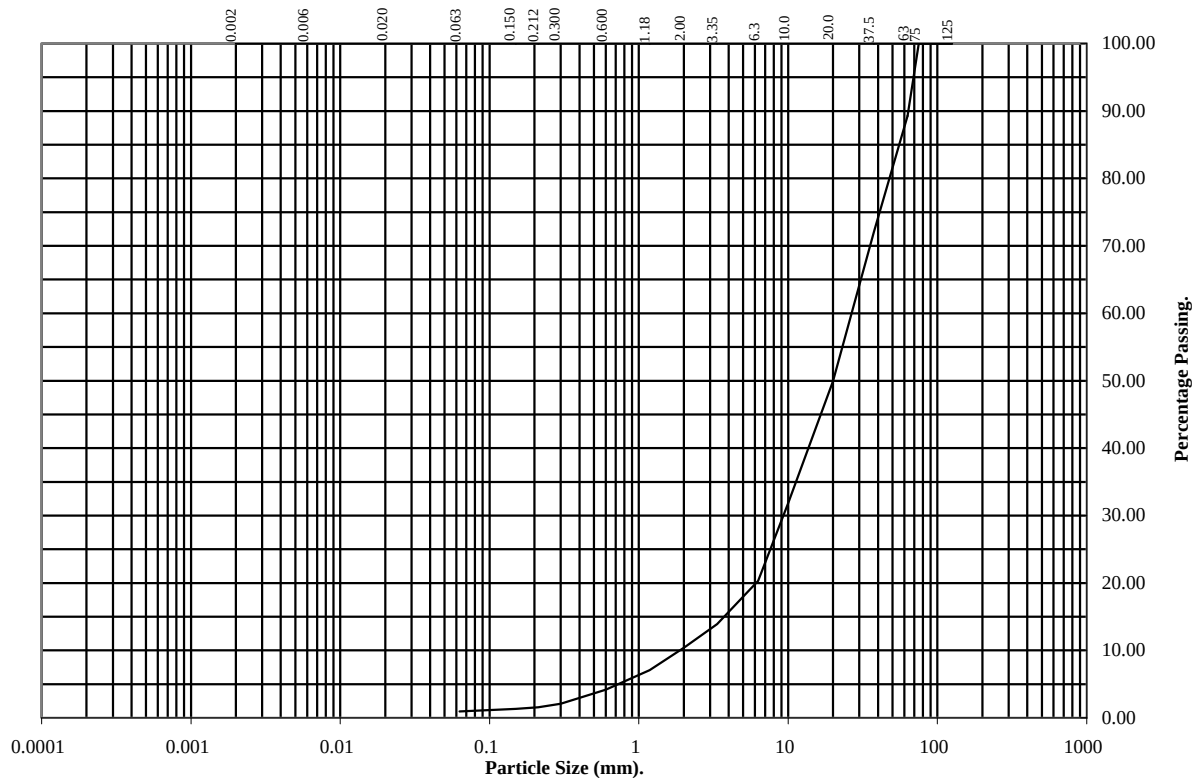
Wet Sieve, Clause 9.2

Hole Number: CP105

Depth (m): 5.00-5.50

Sample Number:

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	89
37.5	72
20	50
10	32
6.3	20
3.35	14
2	10
1.18	7
0.6	4
0.3	2
0.212	2
0.15	1
0.063	1

Soil Fraction	Total Percentage
Cobbles	11
Gravel	79
Sand	9
Silt / Clay	1

Remarks:
See summary of soils descriptions.

Checked By	Date	Approved By	Date
<i>H. S.</i>	09/07/13	<i>H. S.</i>	09/07/13

Particle Size Distribution Test

BS1377 : Part 2 : 1990

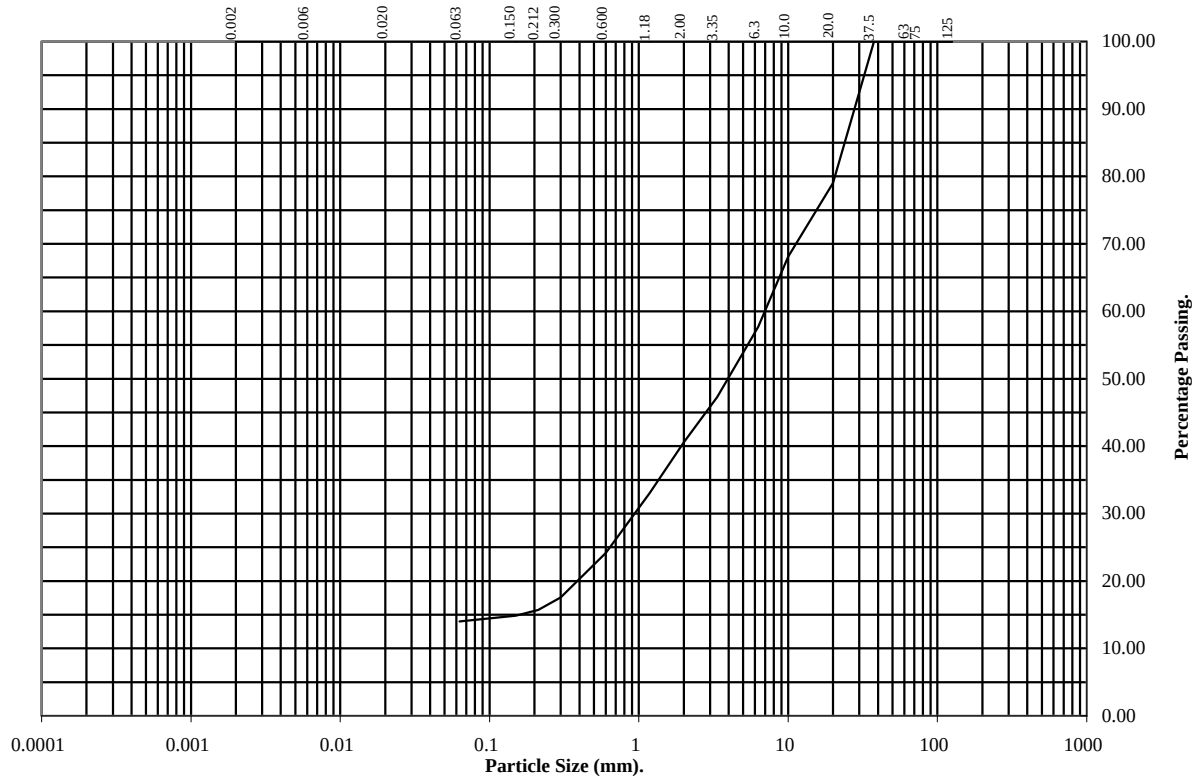
Wet Sieve, Clause 9.2

Hole Number: CP105

Depth (m): 6.50-7.00

Sample Number:

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	79
10	68
6.3	58
3.35	47
2	41
1.18	33
0.6	24
0.3	18
0.212	16
0.15	15
0.063	14

Soil Fraction	Total Percentage
Cobbles	0
Gravel	59
Sand	27
Silt / Clay	14

Remarks:

See summary of soils descriptions.

Checked By	Date	Approved By	Date
<i>H. S.</i>	09/07/13	<i>H. S.</i>	09/07/13

PSL

Professional Soils Laboratory

KENAVON DRIVE, READING.

Contract No.:
PSL13/2189

Appendix IV



2531



ANALYTICAL TEST REPORT

Contract no: 48316

Contract name: Forbury Retail Park, Kenavon Drive, Reading

Client reference: 13-0258.01

Clients name: Delta Simons

Clients address: The Lawn
Union Road
Lincoln
LN1 3BL

Samples received: 10 June 2013 & 12 June 2013

Analysis started: 12 June 2013

Analysis completed 19 June 2013

Report issued: 19 June 2013

Notes: Opinions and interpretations expressed herein are outside the UKAS accreditation scope.
Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.
Methods, procedures and performance data are available on request.
Results reported herein relate only to the material supplied to the laboratory.
This report shall not be reproduced except in full, without prior written approval.
Samples will be disposed of 6 weeks from initial receipt unless otherwise instructed.

Key: U UKAS accredited test
M MCERTS & UKAS accredited test
\$ Test carried out by an approved subcontractor
I/S Insufficient sample to carry out test
N/S Sample not suitable for testing
NAD No Asbestos Detected

Approved by:

Karan Campbell
Director

John Campbell
Director

Chemtech Environmental Limited

SAMPLE INFORMATION

MCERTS (Soils):

Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

All results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.
Analytical results are exclusive of stones.

Lab ref	Sample id	Depth (m)	Soil description passing 2mm sieve	Description of material retained on 2mm sieve	% Retained on 2mm sieve	Moisture (%)
48316-1	CP 103	0.50	Sand	Stones, Slag & Gravel	66.5	10.6
48316-2	DS 102	0.20-0.30	Sand	Stones & Gravel	64.6	6.2
48316-3	DS 103	0.20-0.30	Sand	Stones & Gravel	65.6	5.4
48316-4	DS 105	0.50-0.80	Sandy Clay	Stones & Gravel	68.2	<0.1
48316-5	DS 105	1.50-1.70	Silty Clay	Stones & Gravel	31.3	15.9
48316-6	DS105	3.70-4.00	Sandy Clay	Stones, Slag & Gravel	75.5	19.3
48316-7	DS106	0.20-0.50	Sandy Clay	Stones & Gravel	60.2	10.6
48316-8	DS 106	1.80-2.00	Sandy Loamy Clay	Gravel	44.7	15.1
48316-9	DS 107	0.20-0.50	Sand	Stones, Slag & Gravel	66.2	8.6
48316-10	DS 107	1.50-1.80	Sand	N/A	<1	13.8
48316-11	DS 108	0.70-0.90	Sand	Stones, Slag & Gravel	67.1	12.6
48316-12	DS 108	1.70-1.90	Sand	Slag, Gravel & Wood	53.2	17.6
48316-13	DS 108	2.70-3.00	Sandy Clay	Stones & Gravel	52.9	17.4
48316-14	DS 109	0.30-0.50	Sandy Loamy Clay	Stones & Gravel	50.7	11.9
48316-15	DS 109	2.60-2.80	Sandy Clay	N/A	<1	27.6
48316-16	DS 111	0.20-0.50	Sandy Clay	Stones & Gravel	54.0	10.8
48316-17	DS 111	1.50	Silty Sandy Clay	N/A	<1	22.6
48316-18	DS 111	2.80-3.00	Sand	Stones, Slag & Gravel	60.7	16.4
48316-19	DS 112	1.60	Silty Sandy Clay	N/A	<1	26.1
48316-20	DS 112	3.20-3.50	Silty Sandy Clay	Gravel	19.5	20.8
48316-21	DS 113	0.80-1.00	Sand	Stones, Slag & Gravel	64.0	13.8
48316-22	DS 113	2.30-2.50	Sandy Clay	Stones & Gravel	57.1	11.6
48316-23	DS 115	0.50-0.80	Sand	Stones & Gravel	48.5	8.5
48316-24	DS 116	0.10-0.30	Sand	Stones & Gravel	75.5	6.5

Chemtech Environmental Limited

SOILS

Lab number			48316-1	48316-2	48316-3	48316-4	48316-5	48316-6
Sample id			CP 103	DS 102	DS 103	DS 105	DS 105	DS105
Depth (m)			0.50	0.20-0.30	0.20-0.30	0.50-0.80	1.50-1.70	3.70-4.00
Date sampled			10/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013
Test	Method	Units						
Arsenic (total)	CE054 ^M	mg/kg As	17	6.9	3.5	16	-	-
Boron (water soluble)	CE063 ^M	mg/kg B	1.3	0.9	0.9	1.1	-	-
Cadmium (total)	CE054 ^M	mg/kg Cd	0.4	<0.2	<0.2	0.6	-	-
Chromium (total)	CE054 ^M	mg/kg Cr	18	9.3	6.1	16	-	-
Chromium (VI)	CE050	mg/kg CrVI	<1	<1	<1	<1	-	-
Copper (total)	CE054 ^M	mg/kg Cu	40	10	8.3	75	-	-
Lead (total)	CE054 ^M	mg/kg Pb	124	27	19	78	-	-
Mercury (total)	CE054	mg/kg Hg	1.1	0.7	0.7	1.2	-	-
Nickel (total)	CE054 ^M	mg/kg Ni	30	11	7.3	45	-	-
Selenium (total)	CE054 ^M	mg/kg Se	<0.3	<0.3	<0.3	<0.3	-	-
Zinc (total)	CE054 ^M	mg/kg Zn	226	31	28	115	-	-
pH	CE004 ^M	units	10.1	11.2	10.9	8.1	8.4	7.7
Organic matter content (OMC)	CE005 ^M	% w/w	2.27	1.63	-	-	-	-
Estimate of TOC (calculated from OMC)	CE005 ^M	% w/w C	1.32	0.95	-	-	-	-
Loss On Ignition at 440°C	CE006 ^U	% w/w	5.65	3.94	-	-	-	-
PAH								
Naphthalene	CE087	mg/kg	-	<0.1	<0.1	<0.1	-	-
Acenaphthylene	CE087	mg/kg	-	<0.1	<0.1	<0.1	-	-
Acenaphthene	CE087	mg/kg	-	<0.1	<0.1	<0.1	-	-
Fluorene	CE087	mg/kg	-	<0.1	<0.1	<0.1	-	-
Phenanthrene	CE087	mg/kg	-	0.3	0.2	<0.1	-	-
Anthracene	CE087	mg/kg	-	<0.1	<0.1	<0.1	-	-
Fluoranthene	CE087	mg/kg	-	0.7	0.6	1.0	-	-
Pyrene	CE087	mg/kg	-	0.7	0.8	0.1	-	-
Benzo(a)anthracene	CE087	mg/kg	-	0.5	0.5	<0.1	-	-
Chrysene	CE087	mg/kg	-	0.5	0.5	<0.1	-	-
Benzo(b)fluoranthene	CE087	mg/kg	-	0.8	0.8	0.1	-	-
Benzo(k)fluoranthene	CE087	mg/kg	-	0.3	0.3	<0.1	-	-
Benzo(a)pyrene	CE087	mg/kg	-	0.5	0.5	<0.1	-	-
Indeno(123cd)pyrene	CE087	mg/kg	-	0.6	0.6	0.1	-	-
Dibenz(ah)anthracene	CE087	mg/kg	-	0.2	0.2	<0.1	-	-
Benzo(ghi)perylene	CE087	mg/kg	-	0.6	0.5	0.2	-	-
PAH (total)	CE087	mg/kg	-	5.7	5.5	<5	-	-
TPH								
TPH Aromatic EC5-EC7	CE068	mg/kg	-	<0.01	-	-	-	-
TPH Aromatic EC7-EC8	CE068	mg/kg	-	<0.01	-	-	-	-
TPH Aromatic EC8-EC10	CE068	mg/kg	-	0.01	-	-	-	-
TPH Aromatic EC10-EC12	CE068	mg/kg	-	<1	-	-	-	-
TPH Aromatic EC12-EC16	CE068	mg/kg	-	<1	-	-	-	-
TPH Aromatic EC16-EC21	CE068	mg/kg	-	2	-	-	-	-
TPH Aromatic EC21-EC35	CE068	mg/kg	-	3	-	-	-	-

Chemtech Environmental Limited

SOILS

Lab number			48316-1	48316-2	48316-3	48316-4	48316-5	48316-6
Sample id			CP 103	DS 102	DS 103	DS 105	DS 105	DS105
Depth (m)			0.50	0.20-0.30	0.20-0.30	0.50-0.80	1.50-1.70	3.70-4.00
Date sampled			10/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013
Test	Method	Units						
TPH Aromatic EC35-EC44	CE068	mg/kg	-	<1	-	-	-	-
TPH Aliphatic EC5-EC6	CE068	mg/kg	-	<0.1	-	-	-	-
TPH Aliphatic EC6-EC8	CE068	mg/kg	-	<0.1	-	-	-	-
TPH Aliphatic EC8-EC10	CE068	mg/kg	-	0.2	-	-	-	-
TPH Aliphatic EC10-EC12	CE068	mg/kg	-	8	-	-	-	-
TPH Aliphatic EC12-EC16	CE068	mg/kg	-	22	-	-	-	-
TPH Aliphatic EC16-EC35	CE068	mg/kg	-	367	-	-	-	-
TPH Aliphatic EC35-EC44	CE068	mg/kg	-	289	-	-	-	-
TPH (C10-C40)	CE033 ^U	mg/kg	-	-	618	125	-	518
Volatiles								
Dichlorodifluoromethane	CE066	mg/kg	-	<0.01	-	-	-	-
Chloromethane	CE066	mg/kg	-	<0.01	-	-	-	-
Vinyl chloride	CE066	mg/kg	-	<0.01	-	-	-	-
Bromomethane	CE066	mg/kg	-	<0.01	-	-	-	-
Chloroethane	CE066	mg/kg	-	<0.01	-	-	-	-
Trichlorofluoromethane	CE066	mg/kg	-	<0.01	-	-	-	-
1,1-Dichloroethene	CE066	mg/kg	-	<0.01	-	-	-	-
Cis-1,2-Dichloroethene	CE066	mg/kg	-	<0.01	-	-	-	-
1,1-Dichloroethane	CE066	mg/kg	-	<0.01	-	-	-	-
Trans-1,2-Dichloroethene	CE066	mg/kg	-	<0.01	-	-	-	-
Chloroform	CE066	mg/kg	-	<0.01	-	-	-	-
1,1,1-Trichloroethane	CE066	mg/kg	-	<0.01	-	-	-	-
1,2-Dichloroethane	CE066	mg/kg	-	<0.01	-	-	-	-
Carbon tetrachloride	CE066	mg/kg	-	<0.01	-	-	-	-
Trichloroethene	CE066	mg/kg	-	<0.01	-	-	-	-
1,3-Dichloropropane	CE066	mg/kg	-	<0.01	-	-	-	-
Dibromomethane	CE066	mg/kg	-	<0.01	-	-	-	-
Bromodichloromethane	CE066	mg/kg	-	<0.01	-	-	-	-
1,1-Dichloro-1-propene	CE066	mg/kg	-	<0.01	-	-	-	-
1,3-Dichloropropene	CE066	mg/kg	-	<0.01	-	-	-	-
1,1,2-Trichloroethane	CE066	mg/kg	-	<0.01	-	-	-	-
Dibromochloromethane	CE066	mg/kg	-	<0.01	-	-	-	-
Tetrachloroethene	CE066	mg/kg	-	<0.01	-	-	-	-
1,2-Dibromoethane	CE066	mg/kg	-	<0.01	-	-	-	-
Chlorobenzene	CE066	mg/kg	-	<0.01	-	-	-	-
1,1,1,2-Tetrachloroethane	CE066	mg/kg	-	<0.01	-	-	-	-
Styrene	CE066	mg/kg	-	<0.01	-	-	-	-
Tribromomethane	CE066	mg/kg	-	<0.01	-	-	-	-
1,1,2,2-Tetrachloroethane	CE066	mg/kg	-	<0.01	-	-	-	-
Isopropylbenzene	CE066	mg/kg	-	<0.01	-	-	-	-
1,2,3-Trichloropropane	CE066	mg/kg	-	<0.01	-	-	-	-

Chemtech Environmental Limited

SOILS

Lab number			48316-1	48316-2	48316-3	48316-4	48316-5	48316-6
Sample id			CP 103	DS 102	DS 103	DS 105	DS 105	DS105
Depth (m)			0.50	0.20-0.30	0.20-0.30	0.50-0.80	1.50-1.70	3.70-4.00
Date sampled			10/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013
Test	Method	Units						
Bromobenzene	CE066	mg/kg	-	<0.01	-	-	-	-
2-Chlorotoluene	CE066	mg/kg	-	<0.01	-	-	-	-
Propylbenzene	CE066	mg/kg	-	<0.01	-	-	-	-
4-Chlorotoluene	CE066	mg/kg	-	<0.01	-	-	-	-
1,3,5-Trimethylbenzene	CE066	mg/kg	-	<0.01	-	-	-	-
tert-Butylbenzene	CE066	mg/kg	-	<0.01	-	-	-	-
1,2,4-Trimethylbenzene	CE066	mg/kg	-	<0.01	-	-	-	-
1,3-Dichlorobenzene	CE066	mg/kg	-	<0.01	-	-	-	-
sec-Butylbenzene	CE066	mg/kg	-	<0.01	-	-	-	-
1,4-Dichlorobenzene	CE066	mg/kg	-	<0.01	-	-	-	-
4-Isopropyltoluene	CE066	mg/kg	-	<0.01	-	-	-	-
1,2-Dichlorobenzene	CE066	mg/kg	-	<0.01	-	-	-	-
Butylbenzene	CE066	mg/kg	-	<0.01	-	-	-	-
1,2-Dibromo-3-chloropropane	CE066	mg/kg	-	<0.01	-	-	-	-
1,2,4-Trichlorobenzene	CE066	mg/kg	-	<0.01	-	-	-	-
1,2,3-Trichlorobenzene	CE066	mg/kg	-	<0.01	-	-	-	-
Hexachloro-1,3-butadiene	CE066	mg/kg	-	<0.01	-	-	-	-
Semi-volatiles								
N-Nitrosodimethylamine	CE065	mg/kg	-	-	-	-	-	-
Phenol	CE065	mg/kg	-	-	-	-	-	-
Bis(2-chloroethyl)ether	CE065	mg/kg	-	-	-	-	-	-
2-Chlorophenol	CE065	mg/kg	-	-	-	-	-	-
1,3-Dichlorobenzene	CE065	mg/kg	-	-	-	-	-	-
1,4-Dichlorobenzene	CE065	mg/kg	-	-	-	-	-	-
2-Methylphenol	CE065	mg/kg	-	-	-	-	-	-
1,2-Dichlorobenzene	CE065	mg/kg	-	-	-	-	-	-
Bis(2-chloroisopropyl)ether	CE065	mg/kg	-	-	-	-	-	-
4-Methylphenol	CE065	mg/kg	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	CE065	mg/kg	-	-	-	-	-	-
Hexachloroethane	CE065	mg/kg	-	-	-	-	-	-
Nitrobenzene	CE065	mg/kg	-	-	-	-	-	-
Isophorone	CE065	mg/kg	-	-	-	-	-	-
2,4-Dimethylphenol	CE065	mg/kg	-	-	-	-	-	-
2-Nitrophenol	CE065	mg/kg	-	-	-	-	-	-
Bis(2-chloroethoxy)methane	CE065	mg/kg	-	-	-	-	-	-
2,4-Dichlorophenol	CE065	mg/kg	-	-	-	-	-	-
1,2,4-Trichlorobenzene	CE065	mg/kg	-	-	-	-	-	-
4-Chloroaniline	CE065	mg/kg	-	-	-	-	-	-
Hexachlorobutadiene	CE065	mg/kg	-	-	-	-	-	-
4-Chloro-3-methylphenol	CE065	mg/kg	-	-	-	-	-	-
2-Methylnaphthalene	CE065	mg/kg	-	-	-	-	-	-

Chemtech Environmental Limited

SOILS

Lab number			48316-1	48316-2	48316-3	48316-4	48316-5	48316-6
Sample id			CP 103	DS 102	DS 103	DS 105	DS 105	DS105
Depth (m)			0.50	0.20-0.30	0.20-0.30	0.50-0.80	1.50-1.70	3.70-4.00
Date sampled			10/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013
Test	Method	Units						
Hexachlorocyclopentadiene	CE065	mg/kg	-	-	-	-	-	-
2,4,6-Trichlorophenol	CE065	mg/kg	-	-	-	-	-	-
2,4,5-Trichlorophenol	CE065	mg/kg	-	-	-	-	-	-
2-Chloronaphthalene	CE065	mg/kg	-	-	-	-	-	-
2-Nitroaniline	CE065	mg/kg	-	-	-	-	-	-
Dimethyl phthalate	CE065	mg/kg	-	-	-	-	-	-
2,6-Dinitrotoluene	CE065	mg/kg	-	-	-	-	-	-
3-Nitroaniline	CE065	mg/kg	-	-	-	-	-	-
2,4-Dinitrophenol	CE065	mg/kg	-	-	-	-	-	-
4-Nitrophenol	CE065	mg/kg	-	-	-	-	-	-
2,4-Dinitrotoluene	CE065	mg/kg	-	-	-	-	-	-
Dibenzofuran	CE065	mg/kg	-	-	-	-	-	-
Diethyl phthalate	CE065	mg/kg	-	-	-	-	-	-
4-Chlorophenylphenyl ether	CE065	mg/kg	-	-	-	-	-	-
4-Nitroaniline	CE065	mg/kg	-	-	-	-	-	-
2-Methyl-4,6-dinitrophenol	CE065	mg/kg	-	-	-	-	-	-
Azobenzene	CE065	mg/kg	-	-	-	-	-	-
4-Bromophenylphenyl ether	CE065	mg/kg	-	-	-	-	-	-
Hexachlorobenzene	CE065	mg/kg	-	-	-	-	-	-
Pentachlorophenol	CE065	mg/kg	-	-	-	-	-	-
Carbazole	CE065	mg/kg	-	-	-	-	-	-
Di-n-butyl phthalate	CE065	mg/kg	-	-	-	-	-	-
Butylbenzyl phthalate	CE065	mg/kg	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	CE065	mg/kg	-	-	-	-	-	-
Di-n-octyl phthalate	CE065	mg/kg	-	-	-	-	-	-
PCB								
PCB Congener 28	CE070	mg/kg	-	-	-	-	<0.01	-
PCB Congener 52	CE070	mg/kg	-	-	-	-	<0.01	-
PCB Congener 101	CE070	mg/kg	-	-	-	-	<0.01	-
PCB Congener 118	CE070	mg/kg	-	-	-	-	<0.01	-
PCB Congener 138	CE070	mg/kg	-	-	-	-	<0.01	-
PCB Congener 153	CE070	mg/kg	-	-	-	-	<0.01	-
PCB Congener 180	CE070	mg/kg	-	-	-	-	<0.01	-
PCB (total)	CE070	mg/kg	-	-	-	-	<0.01	-
Subcontracted analysis								
Asbestos	\$	-	NAD	-	NAD	-	NAD	-

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SOILS

Lab number			48316-7	48316-8	48316-9	48316-10	48316-11	48316-12
Sample id			DS106	DS 106	DS 107	DS 107	DS 108	DS 108
Depth (m)			0.20-0.50	1.80-2.00	0.20-0.50	1.50-1.80	0.70-0.90	1.70-1.90
Date sampled			07/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013
Test	Method	Units						
Arsenic (total)	CE054 ^M	mg/kg As	17	-	8.9	-	21	-
Boron (water soluble)	CE063 ^M	mg/kg B	1.1	-	1.8	-	1.2	-
Cadmium (total)	CE054 ^M	mg/kg Cd	<0.2	-	<0.2	-	0.4	-
Chromium (total)	CE054 ^M	mg/kg Cr	21	-	13	-	22	-
Chromium (VI)	CE050	mg/kg CrVI	<1	-	<1	-	<1	-
Copper (total)	CE054 ^M	mg/kg Cu	82	-	15	-	90	-
Lead (total)	CE054 ^M	mg/kg Pb	214	-	47	-	62	-
Mercury (total)	CE054	mg/kg Hg	1.4	-	0.8	-	0.8	-
Nickel (total)	CE054 ^M	mg/kg Ni	33	-	13	-	60	-
Selenium (total)	CE054 ^M	mg/kg Se	<0.3	-	<0.3	-	<0.3	-
Zinc (total)	CE054 ^M	mg/kg Zn	112	-	45	-	96	-
pH	CE004 ^M	units	7.9	8.0	10.2	7.2	7.7	7.6
Organic matter content (OMC)	CE005 ^M	% w/w	-	-	-	-	7.68	-
Estimate of TOC (calculated from OMC)	CE005 ^M	% w/w C	-	-	-	-	4.45	-
Loss On Ignition at 440°C	CE006 ^U	% w/w	-	-	-	-	11.87	-
PAH								
Naphthalene	CE087	mg/kg	<0.1	-	<0.1	-	<0.1	<0.1
Acenaphthylene	CE087	mg/kg	0.2	-	<0.1	-	<0.1	<0.1
Acenaphthene	CE087	mg/kg	0.2	-	<0.1	-	<0.1	<0.1
Fluorene	CE087	mg/kg	0.3	-	<0.1	-	<0.1	<0.1
Phenanthrene	CE087	mg/kg	3.5	-	<0.1	-	0.1	0.9
Anthracene	CE087	mg/kg	1.0	-	<0.1	-	<0.1	0.2
Fluoranthene	CE087	mg/kg	11.3	-	0.2	-	0.3	2.1
Pyrene	CE087	mg/kg	8.9	-	0.2	-	0.3	1.4
Benzo(a)anthracene	CE087	mg/kg	7.3	-	0.1	-	2.0	0.7
Chrysene	CE087	mg/kg	7.4	-	0.2	-	0.2	0.8
Benzo(b)fluoranthene	CE087	mg/kg	12.9	-	0.3	-	0.4	1.2
Benzo(k)fluoranthene	CE087	mg/kg	4.6	-	0.1	-	0.1	0.4
Benzo(a)pyrene	CE087	mg/kg	8.7	-	0.2	-	0.3	0.7
Indeno(123cd)pyrene	CE087	mg/kg	7.3	-	0.4	-	0.3	0.8
Dibenz(ah)anthracene	CE087	mg/kg	1.6	-	0.1	-	0.1	0.2
Benzo(ghi)perylene	CE087	mg/kg	6.0	-	0.4	-	0.3	0.8
PAH (total)	CE087	mg/kg	81	-	-	-	<5	-
TPH								
TPH Aromatic EC5-EC7	CE068	mg/kg	-	-	<0.01	-	<0.01	<0.01
TPH Aromatic EC7-EC8	CE068	mg/kg	-	-	<0.01	-	<0.01	<0.01
TPH Aromatic EC8-EC10	CE068	mg/kg	-	-	<0.01	-	<0.01	<0.01
TPH Aromatic EC10-EC12	CE068	mg/kg	-	-	<1	-	<1	<1
TPH Aromatic EC12-EC16	CE068	mg/kg	-	-	<1	-	<1	<1
TPH Aromatic EC16-EC21	CE068	mg/kg	-	-	<1	-	<1	5
TPH Aromatic EC21-EC35	CE068	mg/kg	-	-	1	-	3	5

Chemtech Environmental Limited

SOILS

Lab number			48316-7	48316-8	48316-9	48316-10	48316-11	48316-12
Sample id			DS106	DS 106	DS 107	DS 107	DS 108	DS 108
Depth (m)			0.20-0.50	1.80-2.00	0.20-0.50	1.50-1.80	0.70-0.90	1.70-1.90
Date sampled			07/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013
Test	Method	Units						
TPH Aromatic EC35-EC44	CE068	mg/kg	-	-	<1	-	<1	<1
TPH Aliphatic EC5-EC6	CE068	mg/kg	-	-	<0.1	-	<0.1	<0.1
TPH Aliphatic EC6-EC8	CE068	mg/kg	-	-	<0.1	-	<0.1	<0.1
TPH Aliphatic EC8-EC10	CE068	mg/kg	-	-	0.2	-	0.2	0.5
TPH Aliphatic EC10-EC12	CE068	mg/kg	-	-	9	-	6	5
TPH Aliphatic EC12-EC16	CE068	mg/kg	-	-	15	-	12	15
TPH Aliphatic EC16-EC35	CE068	mg/kg	-	-	705	-	210	108
TPH Aliphatic EC35-EC44	CE068	mg/kg	-	-	1195	-	222	26
TPH (C10-C40)	CE033 ^U	mg/kg	1111	543	-	19	-	-
Volatiles								
Dichlorodifluoromethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Chloromethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Vinyl chloride	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Bromomethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Chloroethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Trichlorofluoromethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,1-Dichloroethene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Cis-1,2-Dichloroethene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,1-Dichloroethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Trans-1,2-Dichloroethene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Chloroform	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,1,1-Trichloroethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,2-Dichloroethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Carbon tetrachloride	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Trichloroethene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,3-Dichloropropane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Dibromomethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Bromodichloromethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,1-Dichloro-1-propene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,3-Dichloropropene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,1,2-Trichloroethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Dibromochloromethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Tetrachloroethene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,2-Dibromoethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Chlorobenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,1,1,2-Tetrachloroethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Styrene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Tribromomethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,1,2,2-Tetrachloroethane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Isopropylbenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,2,3-Trichloropropane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01

Chemtech Environmental Limited

SOILS

Lab number			48316-7	48316-8	48316-9	48316-10	48316-11	48316-12
Sample id			DS106	DS 106	DS 107	DS 107	DS 108	DS 108
Depth (m)			0.20-0.50	1.80-2.00	0.20-0.50	1.50-1.80	0.70-0.90	1.70-1.90
Date sampled			07/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013
Test	Method	Units						
Bromobenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
2-Chlorotoluene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Propylbenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
4-Chlorotoluene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,3,5-Trimethylbenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
tert-Butylbenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,2,4-Trimethylbenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,3-Dichlorobenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
sec-Butylbenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,4-Dichlorobenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
4-Isopropyltoluene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,2-Dichlorobenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Butylbenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,2-Dibromo-3-chloropropane	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,2,4-Trichlorobenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
1,2,3-Trichlorobenzene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Hexachloro-1,3-butadiene	CE066	mg/kg	-	-	<0.01	<0.01	-	<0.01
Semi-volatiles								
N-Nitrosodimethylamine	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Phenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Bis(2-chloroethyl)ether	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2-Chlorophenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
1,3-Dichlorobenzene	CE065	mg/kg	-	-	<0.1	-	-	<0.1
1,4-Dichlorobenzene	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2-Methylphenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
1,2-Dichlorobenzene	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Bis(2-chloroisopropyl)ether	CE065	mg/kg	-	-	<0.1	-	-	<0.1
4-Methylphenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
N-Nitrosodi-n-propylamine	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Hexachloroethane	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Nitrobenzene	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Isophorone	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2,4-Dimethylphenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2-Nitrophenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Bis(2-chloroethoxy)methane	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2,4-Dichlorophenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
1,2,4-Trichlorobenzene	CE065	mg/kg	-	-	<0.1	-	-	<0.1
4-Chloroaniline	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Hexachlorobutadiene	CE065	mg/kg	-	-	<0.1	-	-	<0.1
4-Chloro-3-methylphenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2-Methylnaphthalene	CE065	mg/kg	-	-	<0.1	-	-	<0.1

Chemtech Environmental Limited

SOILS

Lab number			48316-7	48316-8	48316-9	48316-10	48316-11	48316-12
Sample id			DS106	DS 106	DS 107	DS 107	DS 108	DS 108
Depth (m)			0.20-0.50	1.80-2.00	0.20-0.50	1.50-1.80	0.70-0.90	1.70-1.90
Date sampled			07/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013	07/06/2013
Test	Method	Units						
Hexachlorocyclopentadiene	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2,4,6-Trichlorophenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2,4,5-Trichlorophenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2-Chloronaphthalene	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2-Nitroaniline	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Dimethyl phthalate	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2,6-Dinitrotoluene	CE065	mg/kg	-	-	<0.1	-	-	<0.1
3-Nitroaniline	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2,4-Dinitrophenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
4-Nitrophenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2,4-Dinitrotoluene	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Dibenzofuran	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Diethyl phthalate	CE065	mg/kg	-	-	<0.1	-	-	<0.1
4-Chlorophenylphenyl ether	CE065	mg/kg	-	-	<0.1	-	-	<0.1
4-Nitroaniline	CE065	mg/kg	-	-	<0.1	-	-	<0.1
2-Methyl-4,6-dinitrophenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Azobenzene	CE065	mg/kg	-	-	<0.1	-	-	<0.1
4-Bromophenylphenyl ether	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Hexachlorobenzene	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Pentachlorophenol	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Carbazole	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Di-n-butyl phthalate	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Butylbenzyl phthalate	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Bis(2-ethylhexyl)phthalate	CE065	mg/kg	-	-	<0.1	-	-	<0.1
Di-n-octyl phthalate	CE065	mg/kg	-	-	<0.1	-	-	<0.1
PCB								
PCB Congener 28	CE070	mg/kg	-	-	-	-	-	-
PCB Congener 52	CE070	mg/kg	-	-	-	-	-	-
PCB Congener 101	CE070	mg/kg	-	-	-	-	-	-
PCB Congener 118	CE070	mg/kg	-	-	-	-	-	-
PCB Congener 138	CE070	mg/kg	-	-	-	-	-	-
PCB Congener 153	CE070	mg/kg	-	-	-	-	-	-
PCB Congener 180	CE070	mg/kg	-	-	-	-	-	-
PCB (total)	CE070	mg/kg	-	-	-	-	-	-
Subcontracted analysis								
Asbestos	\$	-	NAD	-	-	-	-	-

Chemtech Environmental Limited

SOILS

Lab number			48316-13	48316-14	48316-15	48316-16	48316-17	48316-18
Sample id			DS 108	DS 109	DS 109	DS 111	DS 111	DS 111
Depth (m)			2.70-3.00	0.30-0.50	2.60-2.80	0.20-0.50	1.50	2.80-3.00
Date sampled			07/06/2013	07/06/2013	07/06/2013	05/06/2013	05/06/2013	05/06/2013
Test	Method	Units						
Arsenic (total)	CE054 ^M	mg/kg As	-	16	-	9.5	-	-
Boron (water soluble)	CE063 ^M	mg/kg B	-	0.8	-	0.3	-	-
Cadmium (total)	CE054 ^M	mg/kg Cd	-	0.2	-	0.2	-	-
Chromium (total)	CE054 ^M	mg/kg Cr	-	22	-	20	-	-
Chromium (VI)	CE050	mg/kg CrVI	-	<1	-	<1	-	-
Copper (total)	CE054 ^M	mg/kg Cu	-	140	-	39	-	-
Lead (total)	CE054 ^M	mg/kg Pb	-	476	-	134	-	-
Mercury (total)	CE054	mg/kg Hg	-	1.4	-	1.2	-	-
Nickel (total)	CE054 ^M	mg/kg Ni	-	31	-	23	-	-
Selenium (total)	CE054 ^M	mg/kg Se	-	<0.3	-	<0.3	-	-
Zinc (total)	CE054 ^M	mg/kg Zn	-	146	-	96	-	-
pH	CE004 ^M	units	7.5	8.2	7.8	8.3	8.0	7.8
Organic matter content (OMC)	CE005 ^M	% w/w	-	-	-	2.33	-	9.53
Estimate of TOC (calculated from OMC)	CE005 ^M	% w/w C	-	-	-	1.35	-	5.53
Loss On Ignition at 440°C	CE006 ^U	% w/w	-	-	-	4.46	-	15.02
PAH								
Naphthalene	CE087	mg/kg	-	<0.1	-	<0.1	-	-
Acenaphthylene	CE087	mg/kg	-	<0.1	-	<0.1	-	-
Acenaphthene	CE087	mg/kg	-	<0.1	-	<0.1	-	-
Fluorene	CE087	mg/kg	-	<0.1	-	<0.1	-	-
Phenanthrene	CE087	mg/kg	-	0.3	-	0.1	-	-
Anthracene	CE087	mg/kg	-	<0.1	-	<0.1	-	-
Fluoranthene	CE087	mg/kg	-	0.7	-	0.5	-	-
Pyrene	CE087	mg/kg	-	0.7	-	0.4	-	-
Benzo(a)anthracene	CE087	mg/kg	-	0.5	-	0.4	-	-
Chrysene	CE087	mg/kg	-	0.5	-	0.4	-	-
Benzo(b)fluoranthene	CE087	mg/kg	-	1.0	-	0.6	-	-
Benzo(k)fluoranthene	CE087	mg/kg	-	0.4	-	0.2	-	-
Benzo(a)pyrene	CE087	mg/kg	-	0.7	-	0.4	-	-
Indeno(123cd)pyrene	CE087	mg/kg	-	0.8	-	0.4	-	-
Dibenz(ah)anthracene	CE087	mg/kg	-	0.2	-	0.1	-	-
Benzo(ghi)perylene	CE087	mg/kg	-	0.7	-	0.4	-	-
PAH (total)	CE087	mg/kg	-	6.5	-	<5	-	-
TPH								
TPH Aromatic EC5-EC7	CE068	mg/kg	-	-	-	<0.01	-	-
TPH Aromatic EC7-EC8	CE068	mg/kg	-	-	-	<0.01	-	-
TPH Aromatic EC8-EC10	CE068	mg/kg	-	-	-	<0.01	-	-
TPH Aromatic EC10-EC12	CE068	mg/kg	-	-	-	<1	-	-
TPH Aromatic EC12-EC16	CE068	mg/kg	-	-	-	<1	-	-
TPH Aromatic EC16-EC21	CE068	mg/kg	-	-	-	1	-	-
TPH Aromatic EC21-EC35	CE068	mg/kg	-	-	-	3	-	-

Chemtech Environmental Limited

SOILS

Lab number			48316-13	48316-14	48316-15	48316-16	48316-17	48316-18
Sample id			DS 108	DS 109	DS 109	DS 111	DS 111	DS 111
Depth (m)			2.70-3.00	0.30-0.50	2.60-2.80	0.20-0.50	1.50	2.80-3.00
Date sampled			07/06/2013	07/06/2013	07/06/2013	05/06/2013	05/06/2013	05/06/2013
Test	Method	Units						
TPH Aromatic EC35-EC44	CE068	mg/kg	-	-	-	<1	-	-
TPH Aliphatic EC5-EC6	CE068	mg/kg	-	-	-	<0.1	-	-
TPH Aliphatic EC6-EC8	CE068	mg/kg	-	-	-	<0.1	-	-
TPH Aliphatic EC8-EC10	CE068	mg/kg	-	-	-	0.2	-	-
TPH Aliphatic EC10-EC12	CE068	mg/kg	-	-	-	9	-	-
TPH Aliphatic EC12-EC16	CE068	mg/kg	-	-	-	9	-	-
TPH Aliphatic EC16-EC35	CE068	mg/kg	-	-	-	83	-	-
TPH Aliphatic EC35-EC44	CE068	mg/kg	-	-	-	24	-	-
TPH (C10-C40)	CE033 ^U	mg/kg	61	462	90	-	326	62
Volatiles								
Dichlorodifluoromethane	CE066	mg/kg	-	-	-	-	-	-
Chloromethane	CE066	mg/kg	-	-	-	-	-	-
Vinyl chloride	CE066	mg/kg	-	-	-	-	-	-
Bromomethane	CE066	mg/kg	-	-	-	-	-	-
Chloroethane	CE066	mg/kg	-	-	-	-	-	-
Trichlorofluoromethane	CE066	mg/kg	-	-	-	-	-	-
1,1-Dichloroethene	CE066	mg/kg	-	-	-	-	-	-
Cis-1,2-Dichloroethene	CE066	mg/kg	-	-	-	-	-	-
1,1-Dichloroethane	CE066	mg/kg	-	-	-	-	-	-
Trans-1,2-Dichloroethene	CE066	mg/kg	-	-	-	-	-	-
Chloroform	CE066	mg/kg	-	-	-	-	-	-
1,1,1-Trichloroethane	CE066	mg/kg	-	-	-	-	-	-
1,2-Dichloroethane	CE066	mg/kg	-	-	-	-	-	-
Carbon tetrachloride	CE066	mg/kg	-	-	-	-	-	-
Trichloroethene	CE066	mg/kg	-	-	-	-	-	-
1,3-Dichloropropane	CE066	mg/kg	-	-	-	-	-	-
Dibromomethane	CE066	mg/kg	-	-	-	-	-	-
Bromodichloromethane	CE066	mg/kg	-	-	-	-	-	-
1,1-Dichloro-1-propene	CE066	mg/kg	-	-	-	-	-	-
1,3-Dichloropropene	CE066	mg/kg	-	-	-	-	-	-
1,1,2-Trichloroethane	CE066	mg/kg	-	-	-	-	-	-
Dibromochloromethane	CE066	mg/kg	-	-	-	-	-	-
Tetrachloroethene	CE066	mg/kg	-	-	-	-	-	-
1,2-Dibromoethane	CE066	mg/kg	-	-	-	-	-	-
Chlorobenzene	CE066	mg/kg	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	CE066	mg/kg	-	-	-	-	-	-
Styrene	CE066	mg/kg	-	-	-	-	-	-
Tribromomethane	CE066	mg/kg	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	CE066	mg/kg	-	-	-	-	-	-
Isopropylbenzene	CE066	mg/kg	-	-	-	-	-	-
1,2,3-Trichloropropane	CE066	mg/kg	-	-	-	-	-	-

Chemtech Environmental Limited

SOILS

Lab number			48316-13	48316-14	48316-15	48316-16	48316-17	48316-18
Sample id			DS 108	DS 109	DS 109	DS 111	DS 111	DS 111
Depth (m)			2.70-3.00	0.30-0.50	2.60-2.80	0.20-0.50	1.50	2.80-3.00
Date sampled			07/06/2013	07/06/2013	07/06/2013	05/06/2013	05/06/2013	05/06/2013
Test	Method	Units						
Bromobenzene	CE066	mg/kg	-	-	-	-	-	-
2-Chlorotoluene	CE066	mg/kg	-	-	-	-	-	-
Propylbenzene	CE066	mg/kg	-	-	-	-	-	-
4-Chlorotoluene	CE066	mg/kg	-	-	-	-	-	-
1,3,5-Trimethylbenzene	CE066	mg/kg	-	-	-	-	-	-
tert-Butylbenzene	CE066	mg/kg	-	-	-	-	-	-
1,2,4-Trimethylbenzene	CE066	mg/kg	-	-	-	-	-	-
1,3-Dichlorobenzene	CE066	mg/kg	-	-	-	-	-	-
sec-Butylbenzene	CE066	mg/kg	-	-	-	-	-	-
1,4-Dichlorobenzene	CE066	mg/kg	-	-	-	-	-	-
4-Isopropyltoluene	CE066	mg/kg	-	-	-	-	-	-
1,2-Dichlorobenzene	CE066	mg/kg	-	-	-	-	-	-
Butylbenzene	CE066	mg/kg	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane	CE066	mg/kg	-	-	-	-	-	-
1,2,4-Trichlorobenzene	CE066	mg/kg	-	-	-	-	-	-
1,2,3-Trichlorobenzene	CE066	mg/kg	-	-	-	-	-	-
Hexachloro-1,3-butadiene	CE066	mg/kg	-	-	-	-	-	-
Semi-volatiles								
N-Nitrosodimethylamine	CE065	mg/kg	-	-	-	-	-	-
Phenol	CE065	mg/kg	-	-	-	-	-	-
Bis(2-chloroethyl)ether	CE065	mg/kg	-	-	-	-	-	-
2-Chlorophenol	CE065	mg/kg	-	-	-	-	-	-
1,3-Dichlorobenzene	CE065	mg/kg	-	-	-	-	-	-
1,4-Dichlorobenzene	CE065	mg/kg	-	-	-	-	-	-
2-Methylphenol	CE065	mg/kg	-	-	-	-	-	-
1,2-Dichlorobenzene	CE065	mg/kg	-	-	-	-	-	-
Bis(2-chloroisopropyl)ether	CE065	mg/kg	-	-	-	-	-	-
4-Methylphenol	CE065	mg/kg	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	CE065	mg/kg	-	-	-	-	-	-
Hexachloroethane	CE065	mg/kg	-	-	-	-	-	-
Nitrobenzene	CE065	mg/kg	-	-	-	-	-	-
Isophorone	CE065	mg/kg	-	-	-	-	-	-
2,4-Dimethylphenol	CE065	mg/kg	-	-	-	-	-	-
2-Nitrophenol	CE065	mg/kg	-	-	-	-	-	-
Bis(2-chloroethoxy)methane	CE065	mg/kg	-	-	-	-	-	-
2,4-Dichlorophenol	CE065	mg/kg	-	-	-	-	-	-
1,2,4-Trichlorobenzene	CE065	mg/kg	-	-	-	-	-	-
4-Chloroaniline	CE065	mg/kg	-	-	-	-	-	-
Hexachlorobutadiene	CE065	mg/kg	-	-	-	-	-	-
4-Chloro-3-methylphenol	CE065	mg/kg	-	-	-	-	-	-
2-Methylnaphthalene	CE065	mg/kg	-	-	-	-	-	-

Chemtech Environmental Limited

SOILS

Lab number			48316-13	48316-14	48316-15	48316-16	48316-17	48316-18
Sample id			DS 108	DS 109	DS 109	DS 111	DS 111	DS 111
Depth (m)			2.70-3.00	0.30-0.50	2.60-2.80	0.20-0.50	1.50	2.80-3.00
Date sampled			07/06/2013	07/06/2013	07/06/2013	05/06/2013	05/06/2013	05/06/2013
Test	Method	Units						
Hexachlorocyclopentadiene	CE065	mg/kg	-	-	-	-	-	-
2,4,6-Trichlorophenol	CE065	mg/kg	-	-	-	-	-	-
2,4,5-Trichlorophenol	CE065	mg/kg	-	-	-	-	-	-
2-Chloronaphthalene	CE065	mg/kg	-	-	-	-	-	-
2-Nitroaniline	CE065	mg/kg	-	-	-	-	-	-
Dimethyl phthalate	CE065	mg/kg	-	-	-	-	-	-
2,6-Dinitrotoluene	CE065	mg/kg	-	-	-	-	-	-
3-Nitroaniline	CE065	mg/kg	-	-	-	-	-	-
2,4-Dinitrophenol	CE065	mg/kg	-	-	-	-	-	-
4-Nitrophenol	CE065	mg/kg	-	-	-	-	-	-
2,4-Dinitrotoluene	CE065	mg/kg	-	-	-	-	-	-
Dibenzofuran	CE065	mg/kg	-	-	-	-	-	-
Diethyl phthalate	CE065	mg/kg	-	-	-	-	-	-
4-Chlorophenylphenyl ether	CE065	mg/kg	-	-	-	-	-	-
4-Nitroaniline	CE065	mg/kg	-	-	-	-	-	-
2-Methyl-4,6-dinitrophenol	CE065	mg/kg	-	-	-	-	-	-
Azobenzene	CE065	mg/kg	-	-	-	-	-	-
4-Bromophenylphenyl ether	CE065	mg/kg	-	-	-	-	-	-
Hexachlorobenzene	CE065	mg/kg	-	-	-	-	-	-
Pentachlorophenol	CE065	mg/kg	-	-	-	-	-	-
Carbazole	CE065	mg/kg	-	-	-	-	-	-
Di-n-butyl phthalate	CE065	mg/kg	-	-	-	-	-	-
Butylbenzyl phthalate	CE065	mg/kg	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	CE065	mg/kg	-	-	-	-	-	-
Di-n-octyl phthalate	CE065	mg/kg	-	-	-	-	-	-
PCB								
PCB Congener 28	CE070	mg/kg	-	-	-	<0.01	-	-
PCB Congener 52	CE070	mg/kg	-	-	-	<0.01	-	-
PCB Congener 101	CE070	mg/kg	-	-	-	<0.01	-	-
PCB Congener 118	CE070	mg/kg	-	-	-	<0.01	-	-
PCB Congener 138	CE070	mg/kg	-	-	-	<0.01	-	-
PCB Congener 153	CE070	mg/kg	-	-	-	<0.01	-	-
PCB Congener 180	CE070	mg/kg	-	-	-	<0.01	-	-
PCB (total)	CE070	mg/kg	-	-	-	<0.01	-	-
Subcontracted analysis								
Asbestos	\$	-	-	NAD	-	-	-	-

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SOILS

Lab number			48316-19	48316-20	48316-21	48316-22	48316-23	48316-24
Sample id			DS 112	DS 112	DS 113	DS 113	DS 115	DS 116
Depth (m)			1.60	3.20-3.50	0.80-1.00	2.30-2.50	0.50-0.80	0.10-0.30
Date sampled			05/06/2013	05/06/2013	05/06/2013	05/06/2013	10/06/2013	05/06/2013
Test	Method	Units						
Arsenic (total)	CE054 ^M	mg/kg As	3.1	-	26	-	-	6.3
Boron (water soluble)	CE063 ^M	mg/kg B	0.6	-	1.5	-	-	0.6
Cadmium (total)	CE054 ^M	mg/kg Cd	<0.2	-	0.6	-	-	<0.2
Chromium (total)	CE054 ^M	mg/kg Cr	17	-	22	-	-	11
Chromium (VI)	CE050	mg/kg CrVI	<1	-	<1	-	-	<1
Copper (total)	CE054 ^M	mg/kg Cu	5.8	-	170	-	-	15
Lead (total)	CE054 ^M	mg/kg Pb	5.3	-	1760	-	-	76
Mercury (total)	CE054	mg/kg Hg	0.8	-	5.1	-	-	0.8
Nickel (total)	CE054 ^M	mg/kg Ni	19	-	43	-	-	10
Selenium (total)	CE054 ^M	mg/kg Se	<0.3	-	0.3	-	-	<0.3
Zinc (total)	CE054 ^M	mg/kg Zn	31	-	386	-	-	250
pH	CE004 ^M	units	7.3	7.9	8.4	7.2	10.0	11.8
Organic matter content (OMC)	CE005 ^M	% w/w	-	-	-	-	-	1.32
Estimate of TOC (calculated from OMC)	CE005 ^M	% w/w C	-	-	-	-	-	0.76
Loss On Ignition at 440°C	CE006 ^U	% w/w	-	-	-	-	-	6.31
PAH								
Naphthalene	CE087	mg/kg	<0.1	-	<0.1	-	-	<0.1
Acenaphthylene	CE087	mg/kg	<0.1	-	<0.1	-	-	<0.1
Acenaphthene	CE087	mg/kg	<0.1	-	<0.1	-	-	<0.1
Fluorene	CE087	mg/kg	<0.1	-	<0.1	-	-	<0.1
Phenanthrene	CE087	mg/kg	<0.1	-	<0.1	-	-	0.2
Anthracene	CE087	mg/kg	<0.1	-	<0.1	-	-	<0.1
Fluoranthene	CE087	mg/kg	<0.1	-	<0.1	-	-	0.8
Pyrene	CE087	mg/kg	<0.1	-	<0.1	-	-	0.8
Benzo(a)anthracene	CE087	mg/kg	<0.1	-	<0.1	-	-	0.3
Chrysene	CE087	mg/kg	<0.1	-	<0.1	-	-	0.4
Benzo(b)fluoranthene	CE087	mg/kg	<0.1	-	<0.1	-	-	0.4
Benzo(k)fluoranthene	CE087	mg/kg	<0.1	-	<0.1	-	-	0.2
Benzo(a)pyrene	CE087	mg/kg	<0.1	-	<0.1	-	-	0.3
Indeno(123cd)pyrene	CE087	mg/kg	<0.1	-	<0.1	-	-	0.2
Dibenz(ah)anthracene	CE087	mg/kg	<0.1	-	<0.1	-	-	<0.1
Benzo(ghi)perylene	CE087	mg/kg	0.1	-	0.1	-	-	0.2
PAH (total)	CE087	mg/kg	<5	-	-	-	-	<5
TPH								
TPH Aromatic EC5-EC7	CE068	mg/kg	-	-	<0.01	-	-	-
TPH Aromatic EC7-EC8	CE068	mg/kg	-	-	<0.01	-	-	-
TPH Aromatic EC8-EC10	CE068	mg/kg	-	-	<0.01	-	-	-
TPH Aromatic EC10-EC12	CE068	mg/kg	-	-	<1	-	-	-
TPH Aromatic EC12-EC16	CE068	mg/kg	-	-	<1	-	-	-
TPH Aromatic EC16-EC21	CE068	mg/kg	-	-	<1	-	-	-
TPH Aromatic EC21-EC35	CE068	mg/kg	-	-	<1	-	-	-

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SOILS

Lab number			48316-19	48316-20	48316-21	48316-22	48316-23	48316-24
Sample id			DS 112	DS 112	DS 113	DS 113	DS 115	DS 116
Depth (m)			1.60	3.20-3.50	0.80-1.00	2.30-2.50	0.50-0.80	0.10-0.30
Date sampled			05/06/2013	05/06/2013	05/06/2013	05/06/2013	10/06/2013	05/06/2013
Test	Method	Units						
TPH Aromatic EC35-EC44	CE068	mg/kg	-	-	<1	-	-	-
TPH Aliphatic EC5-EC6	CE068	mg/kg	-	-	<0.1	-	-	-
TPH Aliphatic EC6-EC8	CE068	mg/kg	-	-	<0.1	-	-	-
TPH Aliphatic EC8-EC10	CE068	mg/kg	-	-	<0.1	-	-	-
TPH Aliphatic EC10-EC12	CE068	mg/kg	-	-	7	-	-	-
TPH Aliphatic EC12-EC16	CE068	mg/kg	-	-	2	-	-	-
TPH Aliphatic EC16-EC35	CE068	mg/kg	-	-	35	-	-	-
TPH Aliphatic EC35-EC44	CE068	mg/kg	-	-	11	-	-	-
TPH (C10-C40)	CE033 ^U	mg/kg	54	243	-	97	197	444
Volatiles								
Dichlorodifluoromethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Chloromethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Vinyl chloride	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Bromomethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Chloroethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Trichlorofluoromethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,1-Dichloroethene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Cis-1,2-Dichloroethene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,1-Dichloroethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Trans-1,2-Dichloroethene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Chloroform	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,1,1-Trichloroethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,2-Dichloroethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Carbon tetrachloride	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Trichloroethene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,3-Dichloropropane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Dibromomethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Bromodichloromethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,1-Dichloro-1-propene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,3-Dichloropropene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,1,2-Trichloroethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Dibromochloromethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Tetrachloroethene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,2-Dibromoethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Chlorobenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,1,1,2-Tetrachloroethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Styrene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Tribromomethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,1,2,2-Tetrachloroethane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Isopropylbenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,2,3-Trichloropropane	CE066	mg/kg	-	-	<0.01	-	-	<0.01

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SOILS

Lab number			48316-19	48316-20	48316-21	48316-22	48316-23	48316-24
Sample id			DS 112	DS 112	DS 113	DS 113	DS 115	DS 116
Depth (m)			1.60	3.20-3.50	0.80-1.00	2.30-2.50	0.50-0.80	0.10-0.30
Date sampled			05/06/2013	05/06/2013	05/06/2013	05/06/2013	10/06/2013	05/06/2013
Test	Method	Units						
Bromobenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
2-Chlorotoluene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Propylbenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
4-Chlorotoluene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,3,5-Trimethylbenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
tert-Butylbenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,2,4-Trimethylbenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,3-Dichlorobenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
sec-Butylbenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,4-Dichlorobenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
4-Isopropyltoluene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,2-Dichlorobenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Butylbenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,2-Dibromo-3-chloropropane	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,2,4-Trichlorobenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
1,2,3-Trichlorobenzene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Hexachloro-1,3-butadiene	CE066	mg/kg	-	-	<0.01	-	-	<0.01
Semi-volatiles								
N-Nitrosodimethylamine	CE065	mg/kg	-	-	<0.1	-	-	-
Phenol	CE065	mg/kg	-	-	<0.1	-	-	-
Bis(2-chloroethyl)ether	CE065	mg/kg	-	-	<0.1	-	-	-
2-Chlorophenol	CE065	mg/kg	-	-	<0.1	-	-	-
1,3-Dichlorobenzene	CE065	mg/kg	-	-	<0.1	-	-	-
1,4-Dichlorobenzene	CE065	mg/kg	-	-	<0.1	-	-	-
2-Methylphenol	CE065	mg/kg	-	-	<0.1	-	-	-
1,2-Dichlorobenzene	CE065	mg/kg	-	-	<0.1	-	-	-
Bis(2-chloroisopropyl)ether	CE065	mg/kg	-	-	<0.1	-	-	-
4-Methylphenol	CE065	mg/kg	-	-	<0.1	-	-	-
N-Nitrosodi-n-propylamine	CE065	mg/kg	-	-	<0.1	-	-	-
Hexachloroethane	CE065	mg/kg	-	-	<0.1	-	-	-
Nitrobenzene	CE065	mg/kg	-	-	<0.1	-	-	-
Isophorone	CE065	mg/kg	-	-	<0.1	-	-	-
2,4-Dimethylphenol	CE065	mg/kg	-	-	<0.1	-	-	-
2-Nitrophenol	CE065	mg/kg	-	-	<0.1	-	-	-
Bis(2-chloroethoxy)methane	CE065	mg/kg	-	-	<0.1	-	-	-
2,4-Dichlorophenol	CE065	mg/kg	-	-	<0.1	-	-	-
1,2,4-Trichlorobenzene	CE065	mg/kg	-	-	<0.1	-	-	-
4-Chloroaniline	CE065	mg/kg	-	-	<0.1	-	-	-
Hexachlorobutadiene	CE065	mg/kg	-	-	<0.1	-	-	-
4-Chloro-3-methylphenol	CE065	mg/kg	-	-	<0.1	-	-	-
2-Methylnaphthalene	CE065	mg/kg	-	-	<0.1	-	-	-

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SOILS

Lab number			48316-19	48316-20	48316-21	48316-22	48316-23	48316-24
Sample id			DS 112	DS 112	DS 113	DS 113	DS 115	DS 116
Depth (m)			1.60	3.20-3.50	0.80-1.00	2.30-2.50	0.50-0.80	0.10-0.30
Date sampled			05/06/2013	05/06/2013	05/06/2013	05/06/2013	10/06/2013	05/06/2013
Test	Method	Units						
Hexachlorocyclopentadiene	CE065	mg/kg	-	-	<0.1	-	-	-
2,4,6-Trichlorophenol	CE065	mg/kg	-	-	<0.1	-	-	-
2,4,5-Trichlorophenol	CE065	mg/kg	-	-	<0.1	-	-	-
2-Chloronaphthalene	CE065	mg/kg	-	-	<0.1	-	-	-
2-Nitroaniline	CE065	mg/kg	-	-	<0.1	-	-	-
Dimethyl phthalate	CE065	mg/kg	-	-	<0.1	-	-	-
2,6-Dinitrotoluene	CE065	mg/kg	-	-	<0.1	-	-	-
3-Nitroaniline	CE065	mg/kg	-	-	<0.1	-	-	-
2,4-Dinitrophenol	CE065	mg/kg	-	-	<0.1	-	-	-
4-Nitrophenol	CE065	mg/kg	-	-	<0.1	-	-	-
2,4-Dinitrotoluene	CE065	mg/kg	-	-	<0.1	-	-	-
Dibenzofuran	CE065	mg/kg	-	-	<0.1	-	-	-
Diethyl phthalate	CE065	mg/kg	-	-	<0.1	-	-	-
4-Chlorophenylphenyl ether	CE065	mg/kg	-	-	<0.1	-	-	-
4-Nitroaniline	CE065	mg/kg	-	-	<0.1	-	-	-
2-Methyl-4,6-dinitrophenol	CE065	mg/kg	-	-	<0.1	-	-	-
Azobenzene	CE065	mg/kg	-	-	<0.1	-	-	-
4-Bromophenylphenyl ether	CE065	mg/kg	-	-	<0.1	-	-	-
Hexachlorobenzene	CE065	mg/kg	-	-	<0.1	-	-	-
Pentachlorophenol	CE065	mg/kg	-	-	<0.1	-	-	-
Carbazole	CE065	mg/kg	-	-	<0.1	-	-	-
Di-n-butyl phthalate	CE065	mg/kg	-	-	<0.1	-	-	-
Butylbenzyl phthalate	CE065	mg/kg	-	-	<0.1	-	-	-
Bis(2-ethylhexyl)phthalate	CE065	mg/kg	-	-	<0.1	-	-	-
Di-n-octyl phthalate	CE065	mg/kg	-	-	<0.1	-	-	-
PCB								
PCB Congener 28	CE070	mg/kg	-	-	-	-	-	-
PCB Congener 52	CE070	mg/kg	-	-	-	-	-	-
PCB Congener 101	CE070	mg/kg	-	-	-	-	-	-
PCB Congener 118	CE070	mg/kg	-	-	-	-	-	-
PCB Congener 138	CE070	mg/kg	-	-	-	-	-	-
PCB Congener 153	CE070	mg/kg	-	-	-	-	-	-
PCB Congener 180	CE070	mg/kg	-	-	-	-	-	-
PCB (total)	CE070	mg/kg	-	-	-	-	-	-
Subcontracted analysis								
Asbestos	\$	-	NAD	-	NAD	-	-	NAD

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE054	Arsenic (total)	Aqua regia digest, ICP-OES	Dry	M	1	mg/kg As
CE063	Boron (water soluble)	Hot water extract, ICP-OES	Dry	M	0.3	mg/kg B
CE054	Cadmium (total)	Aqua regia digest, ICP-OES	Dry	M	0.2	mg/kg Cd
CE054	Chromium (total)	Aqua regia digest, ICP-OES	Dry	M	1	mg/kg Cr
CE050	Chromium (VI)	Acid extraction, Colorimetry	Dry		1	mg/kg CrVI
CE054	Copper (total)	Aqua regia digest, ICP-OES	Dry	M	1	mg/kg Cu
CE054	Lead (total)	Aqua regia digest, ICP-OES	Dry	M	1	mg/kg Pb
CE054	Mercury (total)	Aqua regia digest, ICP-OES	Dry		0.5	mg/kg Hg
CE054	Nickel (total)	Aqua regia digest, ICP-OES	Dry	M	1	mg/kg Ni
CE054	Selenium (total)	Aqua regia digest, ICP-OES	Dry	M	0.3	mg/kg Se
CE054	Zinc (total)	Aqua regia digest, ICP-OES	Dry	M	3	mg/kg Zn
CE004	pH	Based on BS 1377, pH Meter	Wet	M	-	units
CE005	Organic matter content (OMC)	Based on BS 1377, Colorimetry	Dry	M	0.01	% w/w
CE005	Estimate of TOC (calculated from OMC)	TOC calculated from Organic Matter Content	Dry	M	0.01	% w/w C
CE006	Loss On Ignition at 440°C	Based on BS 1377, Gravimetry	Dry	U	0.01	% w/w
CE087	PAH (speciated)	Solvent extraction, GC-MS	Wet		0.1	mg/kg
CE087	PAH (total)	Solvent extraction, GC-MS	Wet		5	mg/kg
CE068	TPH Aliphatic/Aromatic fractions (C5-C10)	Headspace GC-FID	Wet		0.01-0.1	mg/kg
CE068	TPH Aliphatic/Aromatic fractions (C10-C44)	Solvent extraction, GC-FID	Wet		1	mg/kg
CE033	TPH (C10-C40)	Solvent extraction, GC-FID	Wet	U	10	mg/kg
CE066	Volatile Organic Compounds	Headspace GC-MS	Wet		0.01	mg/kg
CE065	Semi-volatile Organic Compounds	Solvent extraction, GC-MS	Wet		0.1	mg/kg
CE070	PCB (ICES 7)	Solvent extraction, GC-MS	Wet		0.01	mg/kg
\$	Asbestos (qualitative)	HSG 248, Microscopy	Dry	U	-	-

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DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.

Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

- N No (not deviating sample)
- Y Yes (deviating sample)
- A Sampling date not provided
- B Sampling time not provided (waters only)
- C Sample exceeded holding time(s)
- D Sample not received in appropriate containers
- E Headspace present in sample container
- F Sample not chemically fixed (where appropriate)
- G Sample not cooled
- H Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
48316-1	CP 103	0.50	N	
48316-2	DS 102	0.20-0.30	N	
48316-3	DS 103	0.20-0.30	N	
48316-4	DS 105	0.50-0.80	N	
48316-5	DS 105	1.50-1.70	N	
48316-6	DS105	3.70-4.00	N	
48316-7	DS106	0.20-0.50	N	
48316-8	DS 106	1.80-2.00	N	
48316-9	DS 107	0.20-0.50	N	
48316-10	DS 107	1.50-1.80	N	
48316-11	DS 108	0.70-0.90	N	
48316-12	DS 108	1.70-1.90	N	
48316-13	DS 108	2.70-3.00	N	
48316-14	DS 109	0.30-0.50	N	
48316-15	DS 109	2.60-2.80	N	
48316-16	DS 111	0.20-0.50	N	
48316-17	DS 111	1.50	N	
48316-18	DS 111	2.80-3.00	N	
48316-19	DS 112	1.60	N	
48316-20	DS 112	3.20-3.50	N	
48316-21	DS 113	0.80-1.00	N	
48316-22	DS 113	2.30-2.50	N	
48316-23	DS 115	0.50-0.80	N	
48316-24	DS 116	0.10-0.30	N	



2531



ANALYTICAL TEST REPORT

Contract no: 48396

Contract name: Forbury Retail Park, Kenavon Drive, Reading

Client reference: 13-0258.01

Clients name: Delta Simons

Clients address: The Lawn
Union Road
Lincoln
LN1 3BL

Samples received: 10 & 17 June 2013

Analysis started: 19 June 2013

Analysis completed 26 June 2013

Report issued: 26 June 2013

Notes: Opinions and interpretations expressed herein are outside the UKAS accreditation scope.
Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.
Methods, procedures and performance data are available on request.
Results reported herein relate only to the material supplied to the laboratory.
BTEX compounds are identified by retention time only and may include interference from co-eluting compounds.
This report shall not be reproduced except in full, without prior written approval.
Samples will be disposed of 6 weeks from initial receipt unless otherwise instructed.

Key: U UKAS accredited test
M MCERTS & UKAS accredited test
\$ Test carried out by an approved subcontractor
I/S Insufficient sample to carry out test
N/S Sample not suitable for testing

Approved by:

K Campbell

Karan Campbell
Director

John Campbell
Director

Chemtech Environmental Limited

SAMPLE INFORMATION

MCERTS (Soils):

Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

All results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.
Analytical results are exclusive of stones.

Lab ref	Sample id	Depth (m)	Soil description passing 2mm sieve	Description of material retained on 2mm sieve	% Retained on 2mm sieve	Moisture (%)
48396-1	CP 101 D3	1.20	Sand	Brick, Gravel & Glass	82.4	11.1
48396-2	CP 101 D5	2.20	Concrete	Concrete	100.0	1.6
48396-3	CP 102 D3	1.20	Sand	Stones & Gravel	52.8	12.6
48396-4	CP 102 D5	2.00	Sand	Stones & Gravel	48.6	13.5
48396-5	CP 102 D8	4.00	Sandy Clay	Stones & Gravel	38.6	17.5
48396-6	CP 102 D10	5.20	Sandy Clay	Stones & Gravel	31.9	17.9
48396-7	CP 102 D13	7.00	Sandy Clay	Concrete & Gravel	70.2	10.4
48396-8	CP 103 D2	0.80	Sandy Clay	Stones & Gravel	58.8	15.4
48396-9	CP 103 D4	2.00	Sand	Stones, Brick & Gravel	57.1	13.2
48396-10	CP 103 D15	10.50-10.95	Sandy Clay	Gravel	23.4	20.0
48396-11	CP 104 D2	0.80	Sandy Clay	Gravel	41.5	15.4
48396-12	CP 104 D6	3.00	Clay	N/A	<1	28.4
48396-13	CP 104 D10	4.00-4.50	Sandy Clay	N/A	<1	19.1
48396-14	CP 104 D12	5.00-5.50	Sandy Clay	Stones & Gravel	31.5	17.3
48396-15	CP 104 D15	8.00-8.50	Sandy Clay	N/A	<1	18.2
48396-16	CP 105 D2	1.00	Sand	Stones & Gravel	62.7	9.0
48396-17	CP 105 D4	2.00	Sandy Clay	Stones & Gravel	57.7	16.5
48396-18	CP 105 D6	3.00	Sandy Clay	Stones & Gravel	36.6	22.8
48396-19	CP 105 D9A	4.50	Sandy Clay	N/A	<1	31.5
48396-20	CP 105 D18	12.50-13.00	Sandy Clay	N/A	<1	21.4

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SOILS

Lab number			48396-1	48396-2	48396-3	48396-4	48396-5	48396-6
Sample id			CP 101 D3	CP 101 D5	CP 102 D3	CP 102 D5	CP 102 D8	CP 102 D10
Depth (m)			1.20	2.20	1.20	2.00	4.00	5.20
Date sampled			10/06/2013	10/06/2013	10/06/2013	10/06/2013	10/06/2013	10/06/2013
Test	Method	Units						
Magnesium (2:1 water soluble)	CE120	mg/l Mg	<1	<1	<1	<1	<1	<1
pH	CE004 ^M	units	10.6	11.4	11.0	11.3	10.3	8.5
Chloride (2:1 water soluble)	CE049 ^U	mg/l Cl	43	86	21	33	20	6.1
Nitrate (2:1 water soluble)	CE049 ^U	mg/l NO ₃	4.1	19	5.6	2.0	<1	<1
Sulphate (2:1 water soluble)	CE061 ^M	mg/l SO ₄	1618	59	374	486	362	56
Sulphate (total)	CE062 ^M	mg/kg SO ₄	13810	8614	5711	5527	1174	316
Sulphur (total)	CE119	mg/kg S	4310	2363	1734	1803	529	85

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SOILS

Lab number			48396-7	48396-8	48396-9	48396-10	48396-11	48396-12
Sample id			CP 102 D13	CP 103 D2	CP 103 D4	CP 103 D15	CP 104 D2	CP 104 D6
Depth (m)			7.00	0.80	2.00	10.50-10.95	0.80	3.00
Date sampled			10/06/2013	10/06/2013	10/06/2013	10/06/2013	10/06/2013	10/06/2013
Test	Method	Units						
Magnesium (2:1 water soluble)	CE120	mg/l Mg	-	<1	<1	-	1.8	14
pH	CE004 ^M	units	-	8.5	9.1	-	8.3	7.6
Chloride (2:1 water soluble)	CE049 ^U	mg/l Cl	-	2.2	8.1	-	2.2	4.2
Nitrate (2:1 water soluble)	CE049 ^U	mg/l NO ₃	-	2.2	9.1	-	2.7	<1
Sulphate (2:1 water soluble)	CE061 ^M	mg/l SO ₄	-	31	75	-	26	587
Sulphate (total)	CE062 ^M	mg/kg SO ₄	259	812	1644	361	645	1561
Sulphur (total)	CE119	mg/kg S	-	296	619	-	298	949

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SOILS

Lab number			48396-13	48396-14	48396-15	48396-16	48396-17	48396-18
Sample id			CP 104 D10	CP 104 D12	CP 104 D15	CP 105 D2	CP 105 D4	CP 105 D6
Depth (m)			4.00-4.50	5.00-5.50	8.00-8.50	1.00	2.00	3.00
Date sampled			10/06/2013	10/06/2013	10/06/2013	10/06/2013	10/06/2013	10/06/2013
Test	Method	Units						
Magnesium (2:1 water soluble)	CE120	mg/l Mg	2.3	6.9	-	2.1	18	22
pH	CE004 ^M	units	8.1	7.7	-	8.3	8.4	7.7
Chloride (2:1 water soluble)	CE049 ^U	mg/l Cl	6.1	3.5	-	3.7	5.2	5.4
Nitrate (2:1 water soluble)	CE049 ^U	mg/l NO ₃	<1	<1	-	1.4	<1	<1
Sulphate (2:1 water soluble)	CE061 ^M	mg/l SO ₄	62	318	-	60	1053	1527
Sulphate (total)	CE062 ^M	mg/kg SO ₄	439	835	368	554	2304	3673
Sulphur (total)	CE119	mg/kg S	118	2525	-	352	4247	6848

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SOILS

Lab number			48396-19	48396-20
Sample id			CP 105 D9A	CP 105 D18
Depth (m)			4.50	12.50-13.00
Date sampled			10/06/2013	10/06/2013
Test	Method	Units		
Magnesium (2:1 water soluble)	CE120	mg/l Mg	4.3	1.1
pH	CE004 ^M	units	7.7	8.3
Chloride (2:1 water soluble)	CE049 ^U	mg/l Cl	4.1	5.9
Nitrate (2:1 water soluble)	CE049 ^U	mg/l NO ₃	<1	<1
Sulphate (2:1 water soluble)	CE061 ^M	mg/l SO ₄	179	28
Sulphate (total)	CE062 ^M	mg/kg SO ₄	855	302
Sulphur (total)	CE119	mg/kg S	211	104

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE120	Magnesium (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry		1	mg/l Mg
CE004	pH	Based on BS 1377, pH Meter	Wet	M	-	units
CE049	Chloride (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l Cl
CE049	Nitrate (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l NO ₃
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	M	10	mg/l SO ₄
CE062	Sulphate (total)	Acid extraction, ICP-OES	Dry	M	100	mg/kg SO ₄
CE119	Sulphur (total)	Acid extraction, ICP-OES	Dry		100	mg/kg S

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DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.

Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
A	Sampling date not provided
B	Sampling time not provided (waters only)
C	Sample exceeded holding time(s)
D	Sample not received in appropriate containers
E	Headspace present in sample container
F	Sample not chemically fixed (where appropriate)
G	Sample not cooled
H	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
48396-1	CP 101 D3	1.20	N	
48396-2	CP 101 D5	2.20	N	
48396-3	CP 102 D3	1.20	N	
48396-4	CP 102 D5	2.00	N	
48396-5	CP 102 D8	4.00	N	
48396-6	CP 102 D10	5.20	N	
48396-7	CP 102 D13	7.00	N	
48396-8	CP 103 D2	0.80	N	
48396-9	CP 103 D4	2.00	N	
48396-10	CP 103 D15	10.50-10.95	N	
48396-11	CP 104 D2	0.80	N	
48396-12	CP 104 D6	3.00	N	
48396-13	CP 104 D10	4.00-4.50	N	
48396-14	CP 104 D12	5.00-5.50	N	
48396-15	CP 104 D15	8.00-8.50	N	
48396-16	CP 105 D2	1.00	N	
48396-17	CP 105 D4	2.00	N	
48396-18	CP 105 D6	3.00	N	
48396-19	CP 105 D9A	4.50	N	
48396-20	CP 105 D18	12.50-13.00	N	



2531



ANALYTICAL TEST REPORT

Contract no: 48415
Contract name: Forbury Retail Park, Kenavon Drive, Reading
Client reference: 13-0258.01
Clients name: Delta Simons
Clients address: The Lawn
Union Road
Lincoln
LN1 3BL

Samples received: 21 June 2013

Analysis started: 21 June 2013

Analysis completed 08 July 2013

Report issued: 08 July 2013

Notes: Opinions and interpretations expressed herein are outside the UKAS accreditation scope.
Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.
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Samples will be disposed of 6 weeks from initial receipt unless otherwise instructed.

Key: U UKAS accredited test
M MCERTS & UKAS accredited test
\$ Test carried out by an approved subcontractor
I/S Insufficient sample to carry out test
N/S Sample not suitable for testing

Approved by:

Karan Campbell
Director

John Campbell
Director

Chemtech Environmental Limited

WATERS

Lab number			48415-1	48415-2	48415-3	48415-4	48415-5
Sample id			CP 101	CP 102	CP 103	CP 104	CP 105
Depth (m)			-	-	-	-	-
Date sampled			19/06/2013	19/06/2013	19/06/2013	19/06/2013	19/06/2013
Time sampled			-	-	-	-	-
Test	Method	Units					
Arsenic (dissolved)	CE128	µg/l As	2.43	2.39	0.54	0.91	1.02
Boron (dissolved)	CE128	µg/l B	143	177	315	139	67
Cadmium (dissolved)	CE128	µg/l Cd	<0.07	<0.07	<0.07	<0.07	<0.07
Chromium (dissolved)	CE128	µg/l Cr	34.6	1.5	0.4	0.2	<0.2
Copper (dissolved)	CE128	µg/l Cu	48.3	4.9	1.5	2.0	0.8
Lead (dissolved)	CE128	µg/l Pb	<0.2	<0.2	<0.2	<0.2	<0.2
Mercury (dissolved)	CE128	µg/l Hg	0.010	<0.008	<0.008	<0.008	<0.008
Nickel (dissolved)	CE128	µg/l Ni	5.2	17.9	9.2	5.1	2.6
Selenium (dissolved)	CE128	µg/l Se	2.41	2.49	2.28	0.11	0.21
Zinc (dissolved)	CE128	µg/l Zn	<1	<1	13	7	4
pH	CE004 ^u	units	10.7	9.7	7.2	7.1	7.2
Sulphate	CE049 ^u	mg/l SO ₄	191	208	145	<10	<10
TPH							
TPH Aromatic EC5-EC7	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aromatic EC7-EC8	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aromatic EC8-EC10	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aromatic EC10-EC12	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aromatic EC12-EC16	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aromatic EC16-EC21	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aromatic EC21-EC35	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aromatic EC35-EC44	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aliphatic EC5-EC6	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aliphatic EC6-EC8	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aliphatic EC8-EC10	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aliphatic EC10-EC12	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aliphatic EC12-EC16	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aliphatic EC16-EC35	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
TPH Aliphatic EC35-EC44	CE068	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Volatiles							
MTBE	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Benzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
m&p-Xylene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
o-Xylene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Dichlorodifluoromethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Chloromethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Vinyl chloride	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Bromomethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001

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WATERS

Lab number			48415-1	48415-2	48415-3	48415-4	48415-5
Sample id			CP 101	CP 102	CP 103	CP 104	CP 105
Depth (m)			-	-	-	-	-
Date sampled			19/06/2013	19/06/2013	19/06/2013	19/06/2013	19/06/2013
Time sampled			-	-	-	-	-
Test	Method	Units					
Chloroethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Trichlorofluoromethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Cis-1,2-Dichloroethene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Trans-1,2-Dichloroethene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Chloroform	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,1-Trichloroethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloroethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Carbon tetrachloride	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Trichloroethene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,3-Dichloropropane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Dibromomethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Bromodichloromethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloro-1-propene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,3-Dichloropropene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2-Trichloroethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Dibromochloromethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Tetrachloroethene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dibromoethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Chlorobenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,1,2-Tetrachloroethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Styrene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Tribromomethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2,2-Tetrachloroethane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Isopropylbenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,2,3-Trichloropropane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Bromobenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
2-Chlorotoluene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Propylbenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
4-Chlorotoluene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,3,5-Trimethylbenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
tert-Butylbenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,3-Dichlorobenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
sec-Butylbenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,4-Dichlorobenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
4-Isopropyltoluene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichlorobenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001

Chemtech Environmental Limited

WATERS

Lab number			48415-1	48415-2	48415-3	48415-4	48415-5
Sample id			CP 101	CP 102	CP 103	CP 104	CP 105
Depth (m)			-	-	-	-	-
Date sampled			19/06/2013	19/06/2013	19/06/2013	19/06/2013	19/06/2013
Time sampled			-	-	-	-	-
Test	Method	Units					
Butylbenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dibromo-3-chloropropane	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,2,4-Trichlorobenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
1,2,3-Trichlorobenzene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Hexachloro-1,3-butadiene	CE066	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001
Semi-volatiles							
Naphthalene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Acenaphthylene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Acenaphthene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Fluorene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Phenanthrene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Anthracene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Fluoranthene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Pyrene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Benzo(a)anthracene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chrysene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Benzo(b)fluoranthene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Benzo(k)fluoranthene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Benzo(a)pyrene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Indeno(1,2,3-cd)pyrene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dibenzo(a,h)anthracene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Benzo(ghi)perylene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
N-Nitrosodimethylamine	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Phenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Bis(2-chloroethyl)ether	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2-Chlorophenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
1,3-Dichlorobenzene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
1,4-Dichlorobenzene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2-Methylphenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
1,2-Dichlorobenzene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Bis(2-chloroisopropyl)ether	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
4-Methylphenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
N-Nitrosodi-n-propylamine	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Hexachloroethane	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nitrobenzene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Isophorone	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2,4-Dimethylphenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2-Nitrophenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Bis(2-chloroethoxy)methane	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

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WATERS

Lab number			48415-1	48415-2	48415-3	48415-4	48415-5
Sample id			CP 101	CP 102	CP 103	CP 104	CP 105
Depth (m)			-	-	-	-	-
Date sampled			19/06/2013	19/06/2013	19/06/2013	19/06/2013	19/06/2013
Time sampled			-	-	-	-	-
Test	Method	Units					
2,4-Dichlorophenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
1,2,4-Trichlorobenzene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
4-Chloroaniline	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Hexachlorobutadiene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2-Methylnaphthalene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Hexachlorocyclopentadiene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2,4,6-Trichlorophenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2,4,5-Trichlorophenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2-Chloronaphthalene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2-Nitroaniline	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dimethyl phthalate	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2,6-Dinitrotoluene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
3-Nitroaniline	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2,4-Dinitrophenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
4-Nitrophenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2,4-Dinitrotoluene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dibenzofuran	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Diethyl phthalate	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
4-Chlorophenylphenyl ether	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
4-Nitroaniline	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
2-Methyl-4,6-dinitrophenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Azobenzene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
4-Bromophenylphenyl ether	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Hexachlorobenzene	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Pentachlorophenol	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Carbazole	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Di-n-butyl phthalate	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Butylbenzyl phthalate	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Bis(2-ethylhexyl)phthalate	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Di-n-octyl phthalate	CE065	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

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METHOD DETAILS

METHOD	WATERS	METHOD SUMMARY	STATUS	LOD	UNITS
CE128	Arsenic (dissolved)	ICP-MS		0.06	µg/l As
CE128	Boron (dissolved)	ICP-MS		6	µg/l B
CE128	Cadmium (dissolved)	ICP-MS		0.07	µg/l Cd
CE128	Chromium (dissolved)	ICP-MS		0.2	µg/l Cr
CE128	Copper (dissolved)	ICP-MS		0.4	µg/l Cu
CE128	Lead (dissolved)	ICP-MS		0.2	µg/l Pb
CE128	Mercury (dissolved)	ICP-MS		0.008	µg/l Hg
CE128	Nickel (dissolved)	ICP-MS		0.5	µg/l Ni
CE128	Selenium (dissolved)	ICP-MS		0.07	µg/l Se
CE128	Zinc (dissolved)	ICP-MS		1	µg/l Zn
CE004	pH	Based on BS 1377, pH Meter	U	-	units
CE049	Sulphate	Ion Chromatography	U	10	mg/l SO ₄
CE068	TPH Aliphatic/Aromatic fractions (C5-C10)	Headspace GC-FID		0.001	mg/l
CE068	TPH Aliphatic/Aromatic fractions (C10-C44)	Solvent extraction, GC-FID		0.001	mg/l
CE066	Volatile Organic Compounds	Headspace GC-MS		0.001	mg/l
CE065	Semi-volatile Organic Compounds	Solvent extraction, GC-MS		0.0001	mg/l

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DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.

Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

- N No (not deviating sample)
- Y Yes (deviating sample)
- A Sampling date not provided
- B Sampling time not provided (waters only)
- C Sample exceeded holding time(s)
- D Sample not received in appropriate containers
- E Headspace present in sample container
- F Sample not chemically fixed (where appropriate)
- G Sample not cooled
- H Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
48415-1	CP 101	-	Y	Metals(F)
48415-2	CP 102	-	Y	Metals(F)
48415-3	CP 103	-	Y	Metals(F)
48415-4	CP 104	-	Y	Metals(F)
48415-5	CP 105	-	Y	Metals(F)

Appendix V

GROUNDWATER AND GROUND GAS MONITORING RECORD SHEET

Sheet:

1 of 1

Project Name:	Forbury Retail Park Reading	Weather Conditions:	Overcast 23 degrees celcius	Date:
Project Number:	13-0258.01	Gas Kit Model:	Gas Kit 1	19/06/2013
Personnel:	W Capps	Gas Kit Serial No:		

LOCATION	Flow Peak (L/hr)	Flow Steady (L/hr)	CH ₄ Peak (%v/v)	CH ₄ Steady (%v/v)	CO ₂ Peak (%v/v)	CO ₂ Steady (%v/v)	O ₂ Min. (%v/v)	O ₂ Steady (%v/v)	Atmospheric Pressure (mb)	PID (ppm)	Well I.D. (mm)	Depth to Product (DTP) (m)	Product Thickness (m)	Depth to Water (DTW) (m)	Depth to Base (DTB) (m)	Height of Water Column (m)	NOTES
CP101	>LoD	<0.1	<0.1	<0.1	<0.1	<0.1	20.4	20.4	1011		50			0.640	6.280	5.640	No odour/sheen
CP102	5.2	<0.1	<0.1	<0.1	<0.1	<0.1	19.7	19.7	1011		50			3.180	11.630	8.450	No odour/sheen
CP103	1.8	<0.1	<0.1	<0.1	0.2	0.2	19.5	19.5	1011		50			2.960	5.670	2.710	No odour/sheen
CP104	3.1	<0.1	<0.1	<0.1	0.2	0.2	20.0	20.0	1011		50			2.380	11.410	9.030	No odour/sheen
CP105	<0.1	<0.1	0.2	0.2	0.1	0.1	19.5	19.5	1011		50			2.500	10.860	8.360	No odour/sheen
DS105	<0.1	<0.1	<0.1	<0.1	12.3	12.3	17.0	17.0	1011		50			dry	3.040		No odour/sheen
DS108	<0.1	<0.1	<0.1	<0.1	1.2	1.0	18.5	18.7	1011		50			2.400	2.540	0.140	No odour/sheen
DS111	<0.1	<0.1	<0.1	<0.1	3.6	3.6	15.1	15.1	1011		50			dry	1.550		No odour/sheen

GUIDE TO PURGING VOLUMES

To calculate the number of litres to be purged from a well with a different diameter, use the formula $3\pi r^2 h$ (where r = radius of the well and h = height of the water column). Use the formula $\pi r^2 h$ to calculate the volume of a bailer. Please note that the standard bailers Delta-Simons use are typically 0.95 m in length.	Diameter of Casing (mm)	19	35	50	50	75	100
	Diameter of Bailer (mm)	18	19	19	38	38	38
	No. bails per m	4	12	22	6	13	23

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GROUNDWATER AND GROUND GAS MONITORING RECORD SHEET

Sheet:

1 of 1

Project Name: Forbury Retail Park Reading

Weather Conditions: Overcast / Sunny

Project Number: 13-0258.01

Gas Kit Model: Gas Kit 1

Personnel: D Sattaur

Gas Kit Serial No:

Date:

21/06/2013

LOCATION	Flow Peak	Flow Steady	CH ₄ Peak	CH ₄ Steady	CO ₂ Peak	CO ₂ Steady	O ₂ Min.	O ₂ Steady	Atmospheric Pressure	PID	Well I.D.	Depth to Product (DTP)	Product Thickness	Depth to Water (DTW)	Depth to Base (DTB)	Height of Water Column	NOTES
	(L/hr)	(L/hr)	(%v/v)	(%v/v)	(%v/v)	(%v/v)	(%v/v)	(%v/v)	(mb)	(ppm)	(mm)	(m)	(m)	(m)	(m)	(m)	
CP101	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	21.0	21.0	1005		50			2.970	6.070	3.100	Pipe = 0.17 m bgl
CP102	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.7	20.7	1005		50			3.270	11.430	8.160	Pipe = 0.18 m bgl
CP103	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.8	20.8	1004		50			2.960	5.530	2.570	No odour/sheen, Pipe = 0.18 m bgl
CP104	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	21.4	21.4	1004		50			2.380	11.400	9.020	No odour/sheen, Pipe = 0.17 m bgl
CP105	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.9	20.9	1005		50			2.500	10.830	8.330	No odour/sheen, Pipe = 0.1 m bgl
DS105	<0.1	<0.1	<0.1	<0.1	8.6	8.6	15.7	15.7	1004		50			dry	3.050		No odour/sheen, Pipe = 0.1 m bgl
DS108	<0.1	<0.1	<0.1	<0.1	1.7	1.7	17.8	17.8	1005		50			2.410	2.550	0.140	No odour/sheen, Pipe = 0.15 m bgl
DS111	<0.1	<0.1	<0.1	<0.1	5.3	5.3	13.7	13.7	1004		50			dry	1.550		No odour/sheen, Pipe = 0.15 m bgl

GUIDE TO PURGING VOLUMES

To calculate the number of litres to be purged from a well with a different diameter, use the formula $3\pi r^2 h$ (where r = radius of the well and h = height of the water column). Use the formula $\pi r^2 h$ to calculate the volume of a bailer. Please note that the standard bailers Delta-Simons use are typically 0.95 m in length.

Diameter of Casing (mm)	19	35	50	50	75	100
Diameter of Bailer (mm)	18	19	19	38	38	38
No. bails per m	4	12	22	6	13	23

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GROUNDWATER AND GROUND GAS MONITORING RECORD SHEET

Sheet:

1 of 1

Project Name:	Forbury Retail Park Reading	Weather Conditions:	Overcast	Date: 27/06/2013
Project Number:	13-0258.01	Gas Kit Model:	Gas Kit 1	
Personnel:	D Sattaur	Gas Kit Serial No:		

LOCATION	Flow Peak	Flow Steady	CH ₄ Peak	CH ₄ Steady	CO ₂ Peak	CO ₂ Steady	O ₂ Min.	O ₂ Steady	Atmospheric Pressure	PID	Well I.D.	Depth to Product (DTP)	Product Thickness	Depth to Water (DTW)	Depth to Base (DTB)	Height of Water Column	NOTES
	(L/hr)	(L/hr)	(%v/v)	(%v/v)	(%v/v)	(%v/v)	(%v/v)	(%v/v)	(mb)	(ppm)	(mm)	(m)	(m)	(m)	(m)	(m)	
CP101	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.7	20.7	1020		50			3.050	6.030	2.980	No Odour/ No Sheen
CP102	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.7	20.8	1020		50			3.240	11.430	8.190	No Odour/ No Sheen
CP103	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.8	20.9	1020		50			2.940	5.510	2.570	No Odour/ No Sheen
CP104	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	21.1	21.1	1019		50			2.350	11.390	9.040	No Odour/ No Sheen
CP105	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.8	20.9	1020		50			2.470	10.800	8.330	No Odour/ No Sheen
DS105	<0.1	<0.1	<0.1	<0.1	2.3	2.3	17.0	17.1	1019		50			dry	3.040		No Odour/ No Sheen
DS108	<0.1	<0.1	<0.1	<0.1	1.5	1.4	19.0	19.0	1019		50			2.400	2.530	0.130	No Odour/ No Sheen
DS111	<0.1	<0.1	<0.1	<0.1	5.2	3.6	13.1	16.0	1019		50			dry	1.540		No Odour/ No Sheen

GUIDE TO PURGING VOLUMES

To calculate the number of litres to be purged from a well with a different diameter, use the formula $3\pi r^2 h$ (where r = radius of the well and h = height of the water column). Use the formula $\pi r^2 h$ to calculate the volume of a bailer. Please note that the standard bailers Delta-Simons use are typically 0.95 m in length.

Diameter of Casing (mm)	19	35	50	50	75	100
Diameter of Bailer (mm)	18	19	19	38	38	38
No. bails per m	4	12	22	6	13	23

GROUNDWATER AND GROUND GAS MONITORING RECORD SHEET

Sheet:

1 of 1

Project Name:	Forbury Retail Park Reading	Weather Conditions:	Overcast 20 degrees celcius	Date: 04/07/2013
Project Number:	13-0258.01	Gas Kit Model:	GA2000	
Personnel:	M Llano	Gas Kit Serial No:		

LOCATION	Flow Peak	Flow Steady	CH ₄ Peak	CH ₄ Steady	CO ₂ Peak	CO ₂ Steady	O ₂ Min.	O ₂ Steady	Atmospheric Pressure	PID	Well I.D.	Depth to Product (DTP)	Product Thickness	Depth to Water (DTW)	Depth to Base (DTB)	Height of Water Column	NOTES
	(L/hr)	(L/hr)	(%v/v)	(%v/v)	(%v/v)	(%v/v)	(%v/v)	(%v/v)	(mb)	(ppm)	(mm)	(m)	(m)	(m)	(m)	(m)	
CP101	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.4	20.4	1008		50			3.080	6.020	2.940	No Odour/ No Sheen
CP102	0.1	0.1	<0.1	<0.1	<0.1	<0.1	20.4	20.4	1008		50			3.210	11.460	8.250	No Odour/ No Sheen
CP103	<0.1	<0.1	<0.1	<0.1	0.3	0.2	20.2	20.2	1008		50			2.930	5.970	3.040	No Odour/ No Sheen
CP104	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.6	20.6	1008		50			2.330	11.410	9.080	No Odour/ No Sheen
CP105	2.2	2.2	0.1	0.1	<0.1	<0.1	20.3	20.3	1008		50			2.480	10.920	8.440	No Odour/ No Sheen
DS105	<0.1	<0.1	<0.1	<0.1	0.4	0.4	20.0	20.0	1008		50			dry	3.060		No Odour/ No Sheen
DS108	<0.1	<0.1	<0.1	<0.1	1.1	1.1	19.1	19.1	1008		50			dry	2.540		No Odour/ No Sheen
DS111	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20.6	20.6	1008		50			dry	1.550		No Odour/ No Sheen

GUIDE TO PURGING VOLUMES

To calculate the number of litres to be purged from a well with a different diameter, use the formula $3\pi r^2 h$ (where r = radius of the well and h = height of the water column). Use the formula $\pi r^2 h$ to calculate the volume of a bailer. Please note that the standard bailers Delta-Simons use are typically 0.95 m in length.

Diameter of Casing (mm)	19	35	50	50	75	100
Diameter of Bailer (mm)	18	19	19	38	38	38
No. bails per m	4	12	22	6	13	23