08 April 2015

Our ref J14364/AT/1

Geotechnical & Environmental Associates

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Rachel Glaister
13 Egbert Street
London
MW1 8LJ

Dear Rachel

Re: 13 EGBERT STREET, LONDON, NW1 8LJ

Further to your written instruction, dated 5 March 2015, we have now completed the ground investigation at the above site and this letter comprises our report on our findings. The borehole records are enclosed, together with a site plan indicating the investigation locations and the results of the geotechnical and contamination testing.

The conclusions and recommendations made in this letter are limited to those that can be made on the basis of the investigation. The results of the work should be viewed in the context of the range of data sources consulted, the number of locations where the ground was sampled and the number of soil samples tested; no liability can be accepted for information in other data sources or conditions not revealed by the sampling or testing. Any comments made on the basis of information obtained from the client or other third parties are given in good faith on the assumption that the information is accurate; no independent validation of such information has been made by GEA.

1.0 INTRODUCTION

1.1 Purpose of Work

Consideration is being given to the construction of a single storey infill extension at the rear of the house and the relocation of the existing front entrance at lower ground floor level to create a porch beneath the existing stairs at street level. No areas of soft landscaping are proposed.

A desk study has previously been carried out by GEA (report ref J14364 Issue 2, dated 23 December 2014) and revealed the adjacent sites to the east and south to have been occupied by a number of potentially contaminative uses throughout the developed history of the area, including a chemical works. Consultation with an environmental health officer from Camden Council resulted in the raising of a planning condition detailing that a ground investigation would be required to determine if the site has been affected by the adjacent sites and whether remedial works should be carried out prior to the commencement of the development.

The principal technical objectives of the work carried out were as follows

- to determine the configuration of the existing footings of the area of the proposed extension;
- to provide an indication of the degree of soil contamination present; and

- to assess the risk that any such contamination may pose to the proposed development, its users or the wider environment.

A desk study has been reported separately by GEA and should be referred to for information on the history of the site and environmental information.

This report is specific to the proposed development and the advice herein should be reviewed if the development proposals are amended.

1.2 Scope of Work

In order to meet the above objectives, an intrusive ground investigation was carried out which comprised, in summary, the following activities:

- a series of six boreholes advanced to a maximum depth of 4.00 m through window sampling techniques;
- two hand dug trial pits excavated to depths of 0.63 m and 0.95 m to determine the configuration of the footings of the existing buildings in the area of the proposed extension;
- on site screening of the soils for volatile organic compound (VOCs) and semi-volatile organic compounds (SVOCs) at approximately 300 mm intervals with a photoionisation detector (PID);
- laboratory testing of selected soil samples for geotechnical purposes and for the presence of contamination; and
- provision of a report presenting and interpreting the above data, together with our advice and recommendations with respect to the proposed development.

2.0 THE SITE

2.1 Site Description

The site is located about 400 m to the south of Chalk Farm London Underground station, and 700 west of Camden Town London Underground station. It may be additionally located by National Grid Reference 528169, 184006.

The site fronts onto Egbert Street to the northwest. It is bordered to the southwest by an adjoining five-storey terrace house and to the southeast and northeast by Utopia Village, a two-storey and three-storey studio and office space. The site is roughly rectangular in shape, measuring approximately 16 m northwest-southeast by 5 m northeast-southwest.

The site is occupied by a four-storey brick built house, with a lower ground floor level (semi-basement), with a lightwell at the front of the house and a rear garden at lower ground floor level. The building occupies the majority of the site and both the front lightwell and rear garden are entirely hard covered, such that the site is essentially devoid of vegetation, with the exception of plants and small trees within a number of pots.

2.2 Desk Study Findings

The previous desk study indicated that the site has been occupied by the existing building since at least 1875. The adjacent site to the east and south was found to have been occupied by a Pianoforte Works from 1916 to 1954 when the area was redeveloped with three chemical works which remained until the map dated 1966, when the surrounding area is shown to be largely in its existing configuration.

Goads insurance plans indicate that the Pianoforte Works was occupied by J. Spencer & Co piano factory with a gramophone factory in the northwestern corner of the complex. A storage tank and a chimney were also indicated in the southeastern corner of the factory.

The plans indicate the piano factory to have been redeveloped with Westminster Laboratories, Druggists and Sundries at some time between 1930 and 1957, which comprised a number of drug factories, laboratories and offices and an engineer's shop in the southern corner. At this time the tank in the southeastern corner of the factory is labelled as an oil storage tank.

The factory was then redeveloped again at some time between 1963 and 1966 when it is shown on the Goads plans to be occupied by the Modern Telephone (supply service) and telephone assembly.

3.0 EXPLORATORY WORK

In order to meet the objectives described in Section 1.1, a series of six boreholes was drilled using window sampling techniques to a maximum depth of 4.00 m. In addition, two trial pits were hand excavated to depths of 0.63 m and 0.95 m to determine the configuration of the existing foundations in the area of the proposed extension.

On site headspace testing was carried out at regular intervals within the trial pits and boreholes using a PID to test for the presence of volatile organic compounds (VOCs) within the shallow soils.

A selection of the samples recovered from the boreholes was submitted to a soil mechanics laboratory for a programme of geotechnical testing and an analytical laboratory for a programme of contamination testing. All of the field work was supervised by a geotechnical engineer from GEA.

The borehole positions were selected by GEA to provide optimum coverage of the site, whilst avoiding the areas of known services, and the trial pit locations were specified by the consulting engineers.

The scope of the works was developed by GEA and was agreed with the Local Authority environmental health officer (EHO) prior to the commencement of the works.

Four samples of made ground were subjected to analysis for a range of common industrial contaminants and contamination indicative parameters. For this investigation the analytical suite for the soil included a range of metals, speciation of total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAH), total cyanide and monohydric phenols. The soil samples were selected to provide a general view of the chemical conditions of the soils that are likely to be involved in a human exposure or groundwater pathway and to provide advice in respect of re-use or for waste disposal classification.

Three samples of made ground were scheduled for an asbestos identification screen and a single sample of the made ground was additionally tested for a range of semi-volatile organic compounds (SVOC) and volatile organic compounds (VOC).

The contamination analyses were carried out at a MCERTs accredited laboratory with the majority of the testing suite accredited to MCERTS standards. Details of the MCERTs accreditation and test methods are included in the Appendix together with the analytical results.

4.0 GROUND CONDITIONS

The investigation encountered a moderate thickness of made ground overlying the London Clay Formation which extended to the full depth of the investigation of 4.00 m.

4.1 Made Ground

Beneath a surface covering of paving or concrete, the made ground initially comprised brown silty sandy clay with gravel, brick, concrete, ash and china fragments extending to a depth of about 0.50 m, whereupon dark greyish brown slightly sandy clay with gravel, brick and ash fragments was encountered, and extended to depths of between 0.80 m and 0.70 m. A third horizon of made ground was then encountered and comprised grey organic clay with rare brick fragments, black speckling and a humic odour and extended to depths of between 0.90 m and 1.20 m.

Headspace analysis using a PID was carried out at intervals of about 300 mm within each of the boreholes and trial pits and did not indicate any measurable concentrations of VOCs to be present within these soils. Additionally, with the exception of the fragments of extraneous material, no visual or olfactory evidence of contamination was observed within these soils no sources of contamination were noted during the site walkover. Six samples of made ground were scheduled for chemical testing as a precaution and the results are tabulated in Section 4.4.

4.2 London Clay Formation

The London Clay generally comprised soft and firm becoming stiff fissured clay with bluish grey veins and pockets of fine sand and selenite crystals and extended to the full depth of the investigation, of 4.00 m.

The results of laboratory plasticity index tests indicate that the London Clay is of high volume change potential.

Headspace analysis using a PID was carried out at intervals of about 300 mm within each of the boreholes and trial pits and did not indicate any measurable concentrations of VOCs to be present within these soils. In addition, these soils were observed to be free of any evidence of soil contamination.

4.3 Groundwater

Groundwater was encountered at depths of between 0.52 m and 1.00 m within Trial Pit Nos 1 and 2 and Borehole No 4. These inflows are through to represent perched groundwater within the made ground in the vicinity of the existing foundations.

4.4 Soil Contamination

The table below sets out the values measured within four samples of made ground that have been analysed for contaminant concentrations; all concentrations are in mg/kg unless otherwise stated.

Determinant	BH6 0.20 m	BH1 0.20 m	BH5 0.70 m	BH3 0.80 m
pH	10.5	10.8	8.0	7.6
Arsenic	31	26	3.6	6.5
Cadmium	0.20	0.49	<0.10	<0.10
Chromium	20	58	8.4	17
Copper	41	85	6.6	19
Mercury	2.2	2.0	<0.10	0.25
Nickel	20	26	8.8	11

Determinant	BH6 0.20 m	BH1 0.20 m	BH5 0.70 m	BH3 0.80 m
Lead	**580**	**3500**	17	34
Selenium	<0.20	0.38	<0.20	0.24
Zinc	97	760	29	35
Total Cyanide	<0.50	<0.50	<0.50	<0.50
Total Phenols	<0.30	<0.30	<0.30	<0.30
Sulphide	9.7	1.6	**77**	**120**
Total PAH	<2	<2	<2	<2
Benzo(a)pyrene	<0.10	<0.10	<0.10	<0.10
Naphthalene	<0.10	<0.10	<0.10	<0.10
TPH	<10	<10	<10	<10
Total organic carbon %	4.5	2.3	5.5	4.7

Notes: Figure in **bold** indicates concentration in excess of risk-based soil guideline values, as discussed in Part 2 of this report

In addition to the above, a single sample of the made ground was tested for semi volatile organic and volatile organic compounds and the results show no measurable concentrations to be present.

Three samples of made ground were screened for the presence of asbestos, all of which were found to be free of asbestos fibres.

4.5 Existing Foundations

The findings of the trial pits are summarised in the table below. Sketches and photographs of each pit are included in the Appendix.

Trial Pit No	Structure	Foundation detail	Bearing Stratum
1	No 14 Egbert Street	Brick corbelled footings Top: 260 mm Base: 470 mm Lateral projection: 130 mm	Made Ground – dark greyish brown slightly silty organic clay
2	No 13 Egbert Street	Mass concrete strip footing Top: 300 mm Base: 850 mm Lateral projection: 160 mm	Made Ground – dark greyish brown speckled black slightly silty organic clay with rare brick fragments

5.0 ADVICE AND RECOMMENDAIONS

It is understood that it is proposed to construct a house and detached garage which will have a garden and two car parking spaces. Loads are not known but are anticipated to be light.

The London Clay should provide a suitable bearing stratum for the support of spread foundations.

Contamination testing has indicated the presence of elevated concentrations of lead within two of the samples of the made ground tested.

5.1 Spread Foundations

Where it is feasible to by pass the made ground, moderate width strip or pad foundations bearing on the firm London Clay should be placed at a minimum depth of 1.50 m, assuming that no restrictions are applied on planting of shrubs in the vicinity of foundations, and that a no planting zone is applied

in accordance with Table 4 of NBHC Standards Chapter 4.2 (2014).

If trees are excluded within the zone of influence shown in Table 2 of the NHBC guidance, the minimum depth can be reduced to 1.00 m (high) subject also to the further advice on new tree and shrub planting as detailed in the NHBC guidelines.

The foundations may be designed to apply a net allowable bearing pressure of 100 kN/m^2. This value incorporates an adequate factor of safety against bearing capacity failure and should ensure that settlement remains within normal tolerable limits.

If trees are to be planted in close proximity to the new buildings founding depths should be deepened in accordance with NHBC guidelines and using the mature height of the tree. High shrinkability clay should be assumed.

5.2 Effect of Sulphates

Chemical analyses have revealed relatively low concentrations of soluble sulphate and near-neutral pH in accordance with Class DS-2 conditions of Table C2 of BRE Special Digest 1:SD Third Edition (2005). The measured pH values of the samples show that an ACES class of AC-1s would be appropriate for the site. This assumes a static water condition at the site.

The guidelines contained in the above digest should be followed in the design of foundation concrete.

5.3 Contamination Risk Assessment

The desk study has revealed that the site has not had a potentially contaminative history, but that the adjacent sites to the east and south previously been occupied by a number of works buildings including a chemical works.

The results of contamination testing have indicated two of the four samples of made ground tested to contain elevated concentrations of lead. The source of the lead contamination is likely to be fragments of metal, paint, ash and coal dust, and the made ground was noted to contain fragments of extraneous material. As a result the contamination is not considered likely to be in a soluble form and as such does not present a risk to adjacent sites or, given that the made ground is directly underlain by the London Clay which is classified as Unproductive Strata, a risk to groundwater at depth.

Site workers will be protected from the contamination through adherence to normal high standards of site safety and there is not considered to be any risk to buried plastic services laid within the made ground.

End users will be effectively isolated from direct contact with the identified contaminants by the proposed building and areas of external hardstanding. No area of soft landscaping are proposed, therefore a requirement for remedial works is not envisaged.

5.3.1 Site Workers

Site workers should be made aware of the contamination and a programme of working should be identified to protect workers handling any soil. The method of site working should be in accordance with guidelines set out by HSE and CIRIA[1] and the requirements of the Local Authority Environmental Health Officer.

5.4 Waste Disposal

Any spoil arising from excavations or landscaping works, which is not to be re-used in accordance with the CL:AIRE guidance[2], will need to be disposed of to a licensed tip. Under the European Waste Directive, waste is classified as being either Hazardous or Non-Hazardous and landfills receiving

1 CIRIA (1996) *A guide for safe working on contaminated sites* - Report 132, Construction Industry Research and Information Association

2 CL:AIRE (2011) *The Definition of Waste: Development Industry Code of Practice* Version 2, March 2011

waste are classified as accepting hazardous or non-hazardous wastes or the non-hazardous sub-category of inert waste in accordance with the Waste Directive. Waste going to landfill is subject to landfill tax at either the standard rate of £80 per tonne (about £145 per m^3) or at the lower rate of £2.50 per tonne (roughly £5 per m^3). However, the classification for tax purposes is not the same as that for disposal purposes. Currently all made ground and topsoil is taxable at the 'standard' rate and only naturally occurring rocks and soils which are accurately described as such in terms of the 2011 Order[3] would qualify for the 'lower rate' of landfill tax.

Based upon on the technical guidance provided by the Environment Agency[4] it is considered likely that the made ground from this site, as represented by the two chemical analyses carried out, would be classified as a NON-HAZARDOUS waste under the waste code 17 05 04 (soils and stones not containing dangerous substances) and would be taxable at the standard rate; although the made ground in the sample from Borehole No 1 would be classed as hazardous waste due to the highly elevated concentration of lead encountered. It is likely that the natural soils, if separated out, could be classified as an INERT waste also under the waste code 17 05 04. This material would be taxable at the lower rate, if accurately described as naturally occurring sand and gravel in terms of the 2011 Order on the waste transfer note. As this site has not had a contaminative history there should be no requirement for WAC leaching analyses to confirm that this material is suitable for landfilling, although this would require confirmation from the receiving site.

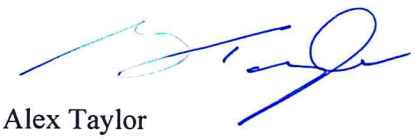
Under the requirements of the European Waste Directive all waste needs to be pre-treated prior to disposal. The pre-treatment process must be physical, thermal, chemical or biological, including sorting. It must change the characteristics of the waste in order to reduce its volume, hazardous nature, facilitate handling or enhance recovery. The waste producer can carry out the treatment but they will need to provide documentation to prove that this has been carried out. Alternatively, the treatment can be carried out by an approved contractor. The Environment Agency has issued a position paper[5] which states that in certain circumstances, segregation at source may be considered as pre-treatment and thus excavated material may not have to be treated prior to landfilling if the soils can be segregated onsite prior to excavation by sufficiently characterising the soils insitu prior to excavation.

The above opinion with regard to the classification of the excavated soils and its likely landfill taxable rate is provided for guidance only and should be confirmed by the receiving landfill once the soils to be discarded have been identified.

The local waste regulation department of the Environment Agency should be contacted to obtain details of tips that are licensed to accept the soil represented by the test results. The tips will be able to provide costs for disposing of this material but may require further testing.

We trust that this information is sufficient for your present requirements, but, please do not hesitate to contact us if we can be of any further assistance.

Yours sincerely
GEOTECHNICAL & ENVIRONMENTAL ASSOCIATES



Alex Taylor

Encs

cc *Helen Hawker – Conisbee*
cc *Joanna Macdonald – Joanna Macdonald Architects*

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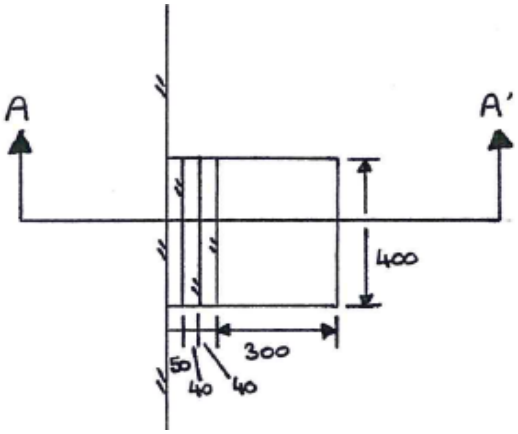
3 *Landfill Tax (Qualifying Material) Order 2011*
4 Environment Agency (2013) *Hazardous Waste: Interpretation of the definition and classification of hazardous waste. Technical Guidance* WM2 Third Edition, August 2013
5 Regulatory Position Statement (2007) *Treating non-hazardous waste for landfill - Enforcing the new requirement* Environment Agency 23 Oct 2007

GEA Geotechnical & Environmental Associates Widbury Barn Widbury Hill Ware Herts SG12 7QE			**Site** 13 Egbert Street, London, NW1 8LJ	**Trial Pit Number** **1**
Excavation Method Manual	**Dimensions** 400 x 430 x 630	**Ground Level (mOD)**	**Client** Rachel Glaister	**Job Number** J14364
	Location	**Dates** 09/03/2015	**Engineer** Conisbee	**Sheet** 1 / 1

Plan: -



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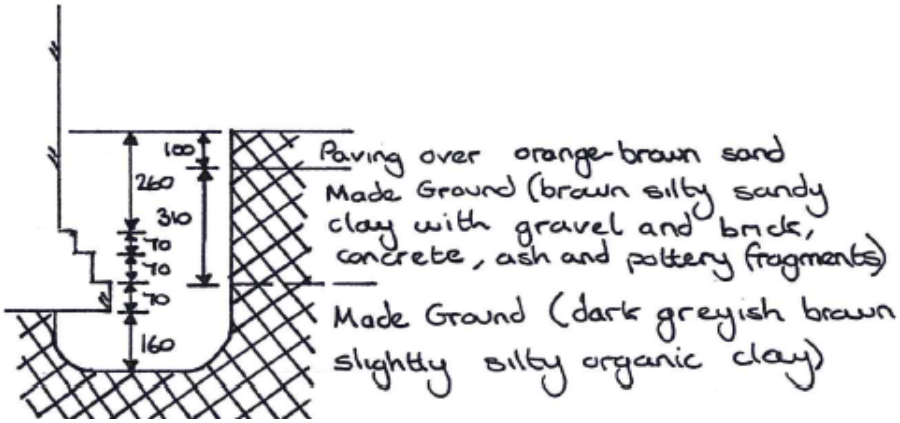
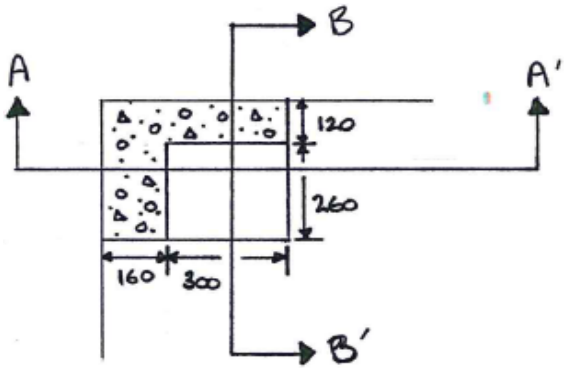


Remarks: All dimensions in millimetres Sides of trial pit remained stable during excavation Groundwater: Not encountered	Scale: 1:20 Logged by: AT

GEA Geotechnical & Environmental Associates Widbury Barn Widbury Hill Ware Herts SG12 7QE			**Site** 13 Egbert Street, London, NW1 8LJ	**Trial Pit Number** 2
Excavation Method Manual	**Dimensions** 380 x 460 x 950	**Ground Level (mOD)**	**Client** Rachel Glaister	**Job Number** J14364
	Location	**Dates** 09/03/2015	**Engineer** Conisbee	**Sheet** 1 / 2

Plan: -



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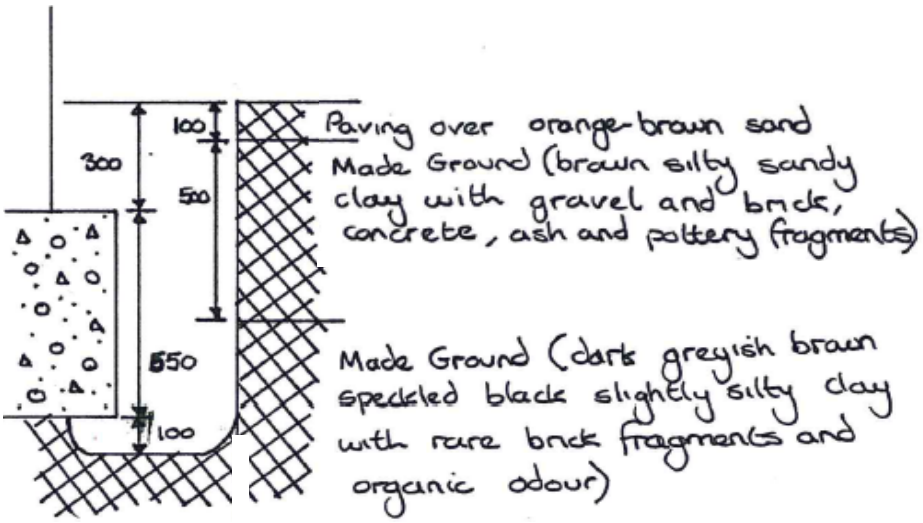
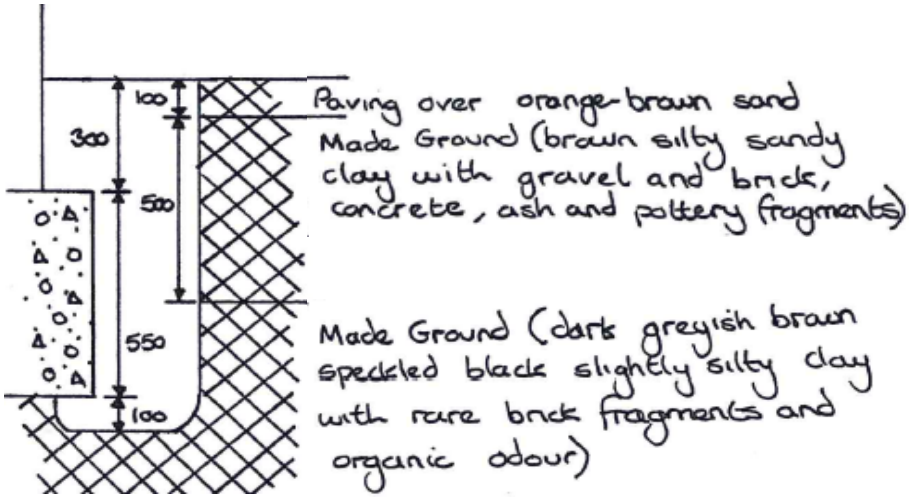


Remarks: All dimensions in millimetres Sides of trial pit remained stable during excavation Groundwater: Not encountered	Scale: 1:20 Logged by: AT

GEA Geotechnical & Environmental Associates Widbury Barn Widbury Hill Ware Herts SG12 7QE			**Site** 13 Egbert Street, London, NW1 8LJ	**Trial Pit Number** **2**
Excavation Method Manual	**Dimensions** 380 x 460 x 950	**Ground Level (mOD)**	**Client** Rachel Glaister	**Job Number** J14364
	Location	**Dates** 09/03/2015	**Engineer** Conisbee	**Sheet** 2 / 2

Section B - B': -



Remarks: All dimensions in millimetres Sides of trial pit remained stable during excavation Groundwater: Not encountered	Scale: 1:20 Logged by: AT

Geotechnical & Environmental Associates	Tyttenhanger House Coursers Road St Albans AL4 0PG	**Site** 13 Egbert Street, London, NW1 8LJ	**Number** **BH1**

Excavation Method	**Dimensions**	**Ground Level (mOD)**	**Client**	**Job Number**
Drive-in Window Sampler			Rachel Glaister	J14364
	Location	**Dates** 09/03/2015	**Engineer** Conisbee	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					0.10	Made Ground (paving over a sub-base of orange-brown sand)		
0.20	D1		PID=0.0		(0.40)			
					0.50	Made Ground (brown silty sandy clay with gravel, brick, concrete, ash and china fragments)		
0.60	D2		PID=0.0		(0.30)			
0.90	D3		PID=0.0		0.80	Made Ground (dark greyish brown slightly sandy clay with gravel, brick and ash fragments)		
					(0.40)			
1.30	D4		PID=0.0		1.20	Made Ground (grey organic clay with rare brick fragments and black speckling and a humic odour)		
					(0.80)	Soft brown CLAY with bluish grey veins		
1.80	D5		PID=0.0		2.00	Complete at 2.00m		

Remarks
Groundwater not encountered.

Scale (approx)	**Logged By**
1:50	AT

Figure No.
J14364.BH1

Geotechnical & Environmental Associates	Tyttenhanger House Coursers Road St Albans AL4 0PG	**Site** 13 Egbert Street, London, NW1 8LJ	**Number** **BH2**

Excavation Method	**Dimensions**	**Ground Level (mOD)**	**Client**	**Job Number**
Drive-in Window Sampler			Rachel Glaister	J14364
	Location	**Dates** 09/03/2015	**Engineer** Conisbee	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					0.10	Made Ground (paving over a subbase of orange-brown sand)		
0.20	D1		PID=0.0		(0.40)			
					0.50	Made Ground (brown silty sandy clay with gravel, brick, concrete, ash and china fragments)		
					(0.30)			
0.70	D2		PID=0.0		0.80	Made Ground (dark greyish brown slightly sandy clay with gravel, brick and ash fragments)		
0.90	D3		PID=0.0		(0.30)			
					1.10	Made Ground (grey slightly silty clay with occasional brick fragments, humic odour and black speckling)		
1.50	D4		PID=0.0		(0.90)	Firm brown fissured CLAY with bluish grey veins and pockets of orange-brown fine sand		
					2.00	Complete at 2.00m		

Remarks
Groundwater not encountered.

Scale (approx)	**Logged By**
1:50	AT

Figure No.
J14364.BH2

Geotechnical & Environmental Associates	Tyttenhanger House Coursers Road St Albans AL4 0PG	**Site** 13 Egbert Street, London, NW1 8LJ	**Number** **BH3**
Excavation Method Drive-in Window Sampler	**Dimensions**	**Ground Level (mOD)**	**Client** Rachel Glaister	**Job Number** J14364
	Location	**Dates** 09/03/2015	**Engineer** Conisbee	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.70)	Made ground (as TP2)		
					0.70			
0.80	D1		PID=0.0		(0.30)	Made Ground (dark greyish brown speckled black slightly silty clay with rare brick fragments and a humic odour)		
					1.00			
					(1.00)	Firm brown fissured CLAY with bluish grey veins and pockets of orange-brown fine sand and selenite crystals		
1.70	D2		PID=0.0					
					2.00	Complete at 2.00m		

Remarks
Boehole advanced through the base of TP2.

Scale (approx)	Logged By
1:50	AT

Figure No.
J14364.BH3

Geotechnical & Environmental Associates	Tyttenhanger House Coursers Road St Albans AL4 0PG	**Site** 13 Egbert Street, London, NW1 8LJ	**Number** **BH4**

Excavation Method	**Dimensions**	**Ground Level (mOD)**	**Client**	**Job Number**
Drive-in Window Sampler			Rachel Glaister	J14364
	Location	**Dates** 09/03/2015	**Engineer** Conisbee	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					0.10	Made Ground (paving over a sub-base of orange-brown fine sand)		
0.20	D1		PID=0.0		(0.40)			
					0.50	Made Ground (brown silty sandy clay with gravel, brick, concrete and ash fragments)		
0.60	D2		PID=0.0		(0.20)			
					0.70	Made Ground (dark greyish brown slightly sandy clay with gravel, brick and ash fragments)		
0.90	D3		PID=0.0 Water strike(1) at 1.00m.		(0.30)			▽1
					1.00	Made Ground (grey specked black clay with humic ocour and occasional brick fragments)		
1.20	D4		PID=0.0		(1.00)	Firm brown fissured CLAY with cluish grey veins and pockets of orange-brown fine sand		
					2.00	Complete at 2.00m		

Remarks
Groundwater encountered at a depth of 1.00 m.

Scale (approx)	**Logged By**
1:50	AT

Figure No.
J14364.BH4

Geotechnical & Environmental Associates	Tyttenhanger House Coursers Road St Albans AL4 0PG	**Site** 13 Egbert Street, London, NW1 8LJ	**Number** **BH5**

Excavation Method	**Dimensions**	**Ground Level (mOD)**	**Client**	**Job Number**
Drive-in Window Sampler			Rachel Glaister	J14364
	Location	**Dates** 09/03/2015	**Engineer** Conisbee	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.60)	Made Ground (see Trial Pit No 1)		
					0.60			
					(0.20)	Made Ground (brown slightly silty slightly sandy clay with occasional brick fragments)		
0.70	D1		PID=0.0		0.80			
0.90	D2		PID=0.0		(0.30)	Made Ground (dark greyish brown speckled black slightly silty clay with a humic odour)		
					1.10			
1.20	D3		PID=0.0			Firm, becoming stiff from 3.40 m, brown fissured CLAY with bluish grey veins and pockets of orange-brown fine sand and selenite crystals		
2.50	D4		PID=0.0		(2.90)			
3.50	D5		PID=0.0					
					4.00	Complete at 4.00m		

Remarks
Borehole advanced throuhg the base of Trial Pit No 1.

Scale (approx)	**Logged By**
1:50	AT

Figure No.
J14364.BH5

Geotechnical & Environmental Associates	Tyttenhanger House Coursers Road St Albans AL4 0PG	**Site** 13 Egbert Street, London, NW1 8LJ	**Number** **BH6**

Excavation Method	**Dimensions**	**Ground Level (mOD)**	**Client**	**Job Number**
Drive-in Window Sampler			Rachel Glaister	J14364
	Location	**Dates** 09/03/2015	**Engineer** Conisbee	**Sheet** 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					0.10	Made Ground (tiles over concrete)		
0.20	D1		PID=0.0		(0.40)	Made Ground (brown silty clayey sand with brick fragments and occasional pockets of ash and clinker)		
					0.50			
					(0.20)			
0.60	D2		PID=0.0		0.70	Made Ground (brown slightly silty organic clay with brick and ash fragments)		
0.80	D3		PID=0.0		(0.20)			
					0.90	Made Ground (dark greyish brown slightly silty clay with black speckling and a humic odour)		
1.20	D4		PID=0.0		(1.10)	Firm brown fissured CLAY with occasional pocklets of orange-brown fine sand		
					2.00	Complete at 2.00m		

Remarks
Groundwater not encountered.

Scale (approx)	**Logged By**
1:50	AT

Figure No.
J14364.BH6

SUMMARY OF GEOTECHNICAL TESTING

Sample details					Classification Tests					Density Tests		Undrained Triaxial Compression			Chemical Tests			Other tests and comments
Borehole / Trial Pit	Sample Ref	Depth (m)	Type	Description	MC (%)	LL (%)	PL (%)	PI (%)	<425 µm (%)	Bulk Mg/m³	Dry Mg/m³	Cell Pressure kPa	Deviator Stress kPa	Shear Stress kPa	pH	2:1 W/S SO4 (g/L)	W/S Mg (mg/L)	
BH1		1.30	D	Dark orange brown and dark grey silty CLAY	37	84	28	56	100									
BH2		1.50	D	Dark orange brown and grey brown silty CLAY	39	86	28	58	100						7.7	0.69		
BH4		1.20	D	Dark orange brown and grey brown silty CLAY	38	81	26	55	100						7.8	0.22		

Sample type: B (Bulk disturb.) BLK (Block) C (Core) D (Disturbed) LB (Large Bulk dist.) U (Undisturbed)

Checked and Approved by

Operations Manager
30/03/2015

Project Number:

GEO / 22391

Project Name:

13 EGBERT STREET, LONDON NW1 8LJ
J14364

GEOLABS®

Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.co.uk

Final Report

Report Number:	15-05647 Issue-1
Initial Date of Issue:	17-Mar-2015
Client:	GEA
Client Address:	Widbury Barn Widbury Hill Ware Hertfordshire SG12 7QE
Contact(s):	Alex Taylor
Project:	J14364- 13 Egbert Street, London, NW1 8LJ
Quotation No.:	
Order No.:	
No. of Samples:	19
Turnaround: (Wkdays)	3
Date Approved:	17-Mar-2015
Approved By:	
Details:	Phil Hellier, Project Director

Date Received:	12-Mar-2015
Date Instructed:	12-Mar-2015
Results Due Date:	16-Mar-2015

Chemtest
The right chemistry to deliver results

Results Summary - Soil

Project: J14364- 13 Egbert Street, London, NW1 8LJ

Client: GEA					Chemtest Job No.:	15-05647	15-05647	15-05647	15-05647	15-05647	15-05647
Quotation No.:					Chemtest Sample ID.:	114199	114201	114202	114203	114204	114205
Order No.:					Client Sample Ref.:						
					Client Sample ID.:	BH6	TP2	BH4	BH1	BH5	BH3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.20	0.30	0.20	0.20	0.70	0.80
					Bottom Depth(m):						
					Date Sampled:						
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type	U	2192			-	-	-			
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected			
Moisture	N	2030	%	0.02	18			11	36	28
Stones	N	2030	%	0.02	< 0.020			< 0.020	< 0.020	< 0.020
Soil Colour	N				Brown			Brown	Brown	Brown
Other Material	N				Stones			Stones	Stones	Stones
Soil Texture	N				Sand			Sand	Sand	Sand
pH	M	2010			10.5			10.8	8.0	7.6
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.01	0.62			0.17	0.035	0.049
Chloride (Extractable)	M	2220	g/l	0.01	0.096			0.019	< 0.010	< 0.010
Cyanide (Total)	M	2300	mg/kg	0.5	< 0.50			< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)	M	2325	mg/kg	0.5	9.7			1.6	77	120
Sulphate (Total)	M	2430	mg/kg	100	4500			2900	790	2600
Arsenic	M	2450	mg/kg	1	31			26	3.6	6.5
Cadmium	M	2450	mg/kg	0.1	0.20			0.49	< 0.10	< 0.10
Chromium	M	2450	mg/kg	1	20			58	8.4	17
Copper	M	2450	mg/kg	0.5	41			85	6.6	19
Mercury	M	2450	mg/kg	0.1	2.2			2.0	< 0.10	0.25
Nickel	M	2450	mg/kg	0.5	20			26	8.8	11
Lead	M	2450	mg/kg	0.5	580			3500	17	34
Selenium	M	2450	mg/kg	0.2	< 0.20			0.38	< 0.20	0.24
Zinc	M	2450	mg/kg	0.5	97			760	29	35
Total Organic Carbon	M	2625	%	0.2	4.5			2.3	5.5	4.7
TPH >C5-C6	N	2670	mg/kg	1	A < 1.0			A < 1.0	A < 1.0	A < 1.0
TPH >C6-C7	N	2670	mg/kg	1	A < 1.0			A < 1.0	A < 1.0	A < 1.0
TPH >C7-C8	N	2670	mg/kg	1	A < 1.0			A < 1.0	A < 1.0	A < 1.0
TPH >C8-C10	N	2670	mg/kg	1	A < 1.0			A < 1.0	A < 1.0	A < 1.0
TPH >C10-C12	N	2670	mg/kg	1	A < 1.0			A < 1.0	A < 1.0	A < 1.0
TPH >C12-C16	N	2670	mg/kg	1	A < 1.0			A < 1.0	A < 1.0	A < 1.0
TPH >C16-C21	N	2670	mg/kg	1	A < 1.0			A < 1.0	A < 1.0	A < 1.0
TPH >C21-C35	N	2670	mg/kg	1	A < 1.0			A < 1.0	A < 1.0	A < 1.0
Total TPH >C5-C35	N	2670	mg/kg	10	A < 10			A < 10	A < 10	A < 10

Results Summary - Soil

Project: J14364- 13 Egbert Street, London, NW1 8LJ

Client: GEA			**Chemtest Job No.:**		15-05647	15-05647	15-05647	15-05647	15-05647	15-05647
Quotation No.:			**Chemtest Sample ID.:**		114199	114201	114202	114203	114204	114205
Order No.:			Client Sample Ref.:							
			Client Sample ID.:		BH6	TP2	BH4	BH1	BH5	BH3
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.20	0.30	0.20	0.20	0.70	0.80
			Bottom Depth(m):							
			Date Sampled:							
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Naphthalene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.1	< 0.10			0.61	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.1	< 0.10			0.57	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.1	< 0.10			< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2	< 2.0			< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	U	2760	µg/kg	1				A < 1.0		
Chloromethane	M	2760	µg/kg	1				A < 1.0		
Vinyl Chloride	M	2760	µg/kg	1				A < 1.0		
Bromomethane	M	2760	µg/kg	20				A < 20		
Chloroethane	U	2760	µg/kg	2				A < 2.0		
Trichlorofluoromethane	M	2760	µg/kg	1				A < 1.0		
1,1-Dichloroethene	M	2760	µg/kg	1				A < 1.0		
Trans 1,2-Dichloroethene	M	2760	µg/kg	1				A < 1.0		
1,1-Dichloroethane	M	2760	µg/kg	1				A < 1.0		
cis 1,2-Dichloroethene	M	2760	µg/kg	1				A < 1.0		
Bromochloromethane	U	2760	µg/kg	5				A < 5.0		
Trichloromethane	M	2760	µg/kg	1				A < 1.0		
1,1,1-Trichloroethane	M	2760	µg/kg	1				A < 1.0		
Tetrachloromethane	M	2760	µg/kg	1				A < 1.0		
1,1-Dichloropropene	U	2760	µg/kg	1				A < 1.0		
Benzene	M	2760	µg/kg	1				A < 1.0		

Chemtest
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Results Summary - Soil

Project: J14364- 13 Egbert Street, London, NW1 8LJ

Client: GEA					Chemtest Job No.:	15-05647	15-05647	15-05647	15-05647	15-05647	15-05647
Quotation No.:					Chemtest Sample ID.:	114199	114201	114202	114203	114204	114205
Order No.:					Client Sample Ref.:						
					Client Sample ID.:	BH6	TP2	BH4	BH1	BH5	BH3
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.20	0.30	0.20	0.20	0.70	0.80
					Bottom Depth(m):						
					Date Sampled:						
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
1,2-Dichloroethane	M	2760	µg/kg	2				A < 2.0		
Trichloroethene	M	2760	µg/kg	1				A < 1.0		
1,2-Dichloropropane	M	2760	µg/kg	1				A < 1.0		
Dibromomethane	M	2760	µg/kg	1				A < 1.0		
Bromodichloromethane	M	2760	µg/kg	5				A < 5.0		
cis-1,3-Dichloropropene	N	2760	µg/kg	10				A < 10		
Toluene	M	2760	µg/kg	1				A < 1.0		
Trans-1,3-Dichloropropene	N	2760	µg/kg	10				A < 10		
1,1,2-Trichloroethane	M	2760	µg/kg	10				A < 10		
Tetrachloroethene	M	2760	µg/kg	1				A < 1.0		
1,3-Dichloropropane	U	2760	µg/kg	2				A < 2.0		
Dibromochloromethane	U	2760	µg/kg	10				A < 10		
1,2-Dibromoethane	M	2760	µg/kg	5				A < 5.0		
Chlorobenzene	M	2760	µg/kg	1				A < 1.0		
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2				A < 2.0		
Ethylbenzene	M	2760	µg/kg	1				A < 1.0		
m & p-Xylene	M	2760	µg/kg	1				A < 1.0		
o-Xylene	M	2760	µg/kg	1				A < 1.0		
Styrene	M	2760	µg/kg	1				A < 1.0		
Tribromomethane	U	2760	µg/kg	1				A < 1.0		
Isopropylbenzene	M	2760	µg/kg	1				A < 1.0		
Bromobenzene	M	2760	µg/kg	1				A < 1.0		
1,2,3-Trichloropropane	N	2760	µg/kg	50				A < 50		
N-Propylbenzene	U	2760	µg/kg	1				A < 1.0		
2-Chlorotoluene	M	2760	µg/kg	1				A < 1.0		
1,3,5-Trimethylbenzene	M	2760	µg/kg	1				A < 1.0		
4-Chlorotoluene	U	2760	µg/kg	1				A < 1.0		
Tert-Butylbenzene	U	2760	µg/kg	1				A < 1.0		
1,2,4-Trimethylbenzene	M	2760	µg/kg	1				A < 1.0		
Sec-Butylbenzene	U	2760	µg/kg	1				A < 1.0		
1,3-Dichlorobenzene	M	2760	µg/kg	1				A < 1.0		
4-Isopropyltoluene	U	2760	µg/kg	1				A < 1.0		
1,4-Dichlorobenzene	M	2760	µg/kg	1				A < 1.0		

Results Summary - Soil

Project: J14364- 13 Egbert Street, London, NW1 8LJ

Client: GEA			**Chemtest Job No.:**		15-05647	15-05647	15-05647	15-05647	15-05647	15-05647
Quotation No.:			**Chemtest Sample ID.:**		114199	114201	114202	114203	114204	114205
Order No.:			Client Sample Ref.:							
			Client Sample ID.:		BH6	TP2	BH4	BH1	BH5	BH3
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.20	0.30	0.20	0.20	0.70	0.80
			Bottom Depth(m):							
			Date Sampled:							
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
N-Butylbenzene	U	2760	µg/kg	1				A < 1.0		
1,2-Dichlorobenzene	M	2760	µg/kg	1				A < 1.0		
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50				A < 50		
1,2,4-Trichlorobenzene	M	2760	µg/kg	1				A < 1.0		
Hexachlorobutadiene	U	2760	µg/kg	1				A < 1.0		
1,2,3-Trichlorobenzene	U	2760	µg/kg	2				A < 2.0		
Methyl Tert-Butyl Ether	M	2760	µg/kg	1				A < 1.0		
N-Nitrosodimethylamine	N	2790	mg/kg	0.5				< 0.50		
Phenol	N	2790	mg/kg	0.5				< 0.50		
2-Chlorophenol	N	2790	mg/kg	0.5				< 0.50		
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.5				< 0.50		
1,3-Dichlorobenzene	N	2790	mg/kg	0.5				< 0.50		
1,4-Dichlorobenzene	N	2790	mg/kg	0.5				< 0.50		
1,2-Dichlorobenzene	N	2790	mg/kg	0.5				< 0.50		
2-Methylphenol	N	2790	mg/kg	0.5				< 0.50		
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.5				< 0.50		
Hexachloroethane	N	2790	mg/kg	0.5				< 0.50		
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.5				< 0.50		
4-Methylphenol	N	2790	mg/kg	0.5				< 0.50		
Nitrobenzene	N	2790	mg/kg	0.5				< 0.50		
Isophorone	N	2790	mg/kg	0.5				< 0.50		
2-Nitrophenol	N	2790	mg/kg	0.5				< 0.50		
2,4-Dimethylphenol	N	2790	mg/kg	0.5				< 0.50		
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.5				< 0.50		
2,4-Dichlorophenol	N	2790	mg/kg	0.5				< 0.50		
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.5				< 0.50		
Naphthalene	N	2790	mg/kg	0.5				< 0.50		
4-Chloroaniline	N	2790	mg/kg	0.5				< 0.50		
Hexachlorobutadiene	N	2790	mg/kg	0.5				< 0.50		
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.5				< 0.50		
2-Methylnaphthalene	N	2790	mg/kg	0.5				< 0.50		
4-Nitrophenol	N	2790	mg/kg	0.5				< 0.50		
Hexachlorocyclopentadiene	N	2790	mg/kg	0.5				< 0.50		

Results Summary - Soil

Project: J14364- 13 Egbert Street, London, NW1 8LJ

Client: GEA			**Chemtest Job No.:**		15-05647	15-05647	15-05647	15-05647	15-05647	15-05647
Quotation No.:			**Chemtest Sample ID.:**		114199	114201	114202	114203	114204	114205
Order No.:			Client Sample Ref.:							
			Client Sample ID.:		BH6	TP2	BH4	BH1	BH5	BH3
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.20	0.30	0.20	0.20	0.70	0.80
			Bottom Depth(m):							
			Date Sampled:							
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
2,4,6-Trichlorophenol	N	2790	mg/kg	0.5				< 0.50		
2,4,5-Trichlorophenol	N	2790	mg/kg	0.5				< 0.50		
2-Chloronaphthalene	N	2790	mg/kg	0.5				< 0.50		
2-Nitroaniline	N	2790	mg/kg	0.5				< 0.50		
Acenaphthylene	N	2790	mg/kg	0.5				< 0.50		
Dimethylphthalate	N	2790	mg/kg	0.5				< 0.50		
2,6-Dinitrotoluene	N	2790	mg/kg	0.5				< 0.50		
Acenaphthene	N	2790	mg/kg	0.5				< 0.50		
3-Nitroaniline	N	2790	mg/kg	0.5				< 0.50		
Dibenzofuran	N	2790	mg/kg	0.5				< 0.50		
4-Chlorophenylphenylether	N	2790	mg/kg	0.5				< 0.50		
2,4-Dinitrotoluene	N	2790	mg/kg	0.5				< 0.50		
Fluorene	N	2790	mg/kg	0.5				< 0.50		
Diethyl Phthalate	N	2790	mg/kg	0.5				< 0.50		
4-Nitroaniline	N	2790	mg/kg	0.5				< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.5				< 0.50		
Azobenzene	N	2790	mg/kg	0.5				< 0.50		
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.5				< 0.50		
Hexachlorobenzene	N	2790	mg/kg	0.5				< 0.50		
Pentachlorophenol	N	2790	mg/kg	0.5				< 0.50		
Phenanthrene	N	2790	mg/kg	0.5				0.77		
Anthracene	N	2790	mg/kg	0.5				< 0.50		
Carbazole	N	2790	mg/kg	0.5				< 0.50		
Di-N-Butyl Phthalate	N	2790	mg/kg	0.5				< 0.50		
Fluoranthene	N	2790	mg/kg	0.5				1.2		
Pyrene	N	2790	mg/kg	0.5				0.88		
Butylbenzyl Phthalate	N	2790	mg/kg	0.5				< 0.50		
Benzo[a]anthracene	N	2790	mg/kg	0.5				< 0.50		
Chrysene	N	2790	mg/kg	0.5				< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.5				< 0.50		
Di-N-Octyl Phthalate	N	2790	mg/kg	0.5				< 0.50		
Benzo[b]fluoranthene	N	2790	mg/kg	0.5				< 0.50		
Benzo[k]fluoranthene	N	2790	mg/kg	0.5				< 0.50		

Chemtest
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Results Summary - Soil

Project: J14364- 13 Egbert Street, London, NW1 8LJ

Client: GEA										
				Chemtest Job No.:	15-05647	15-05647	15-05647	15-05647	15-05647	15-05647
Quotation No.:				**Chemtest Sample ID.:**	114199	114201	114202	114203	114204	114205
Order No.:				Client Sample Ref.:						
				Client Sample ID.:	BH6	TP2	BH4	BH1	BH5	BH3
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.20	0.30	0.20	0.20	0.70	0.80
				Bottom Depth(m):						
				Date Sampled:						
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Benzo[a]pyrene	N	2790	mg/kg	0.5				< 0.50		
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.5				< 0.50		
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.5				< 0.50		
Benzo[g,h,i]perylene	N	2790	mg/kg	0.5				< 0.50		
Total Phenols	M	2920	mg/kg	0.3	< 0.30			< 0.30	< 0.30	< 0.30

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Containers Received:	Deviation Code(s):
114199		BH6	None Supplied	Amber Glass 250ml	A
114199		BH6	None Supplied	Plastic Tub 500g	A
114203		BH1	None Supplied	Amber Glass 250ml	A
114203		BH1	None Supplied	Amber Glass 60ml	A
114203		BH1	None Supplied	Plastic Bag	A
114204		BH5	None Supplied	Amber Glass 250ml	A
114204		BH5	None Supplied	Plastic Bag	A
114205		BH3	None Supplied	Amber Glass 250ml	A
114205		BH3	None Supplied	Plastic Bag	A

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable sample
N/E	not evaluated
<	"less than"
>	"greater than"

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis
The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVCOs, PCBs, Phenols
For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at our Coventry laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container

Sample Retention and Disposal

All soil samples will be retained for a period of 60 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.co.uk

GEA Geotechnical & Environmental Associates

Tyttenhanger House
Coursers Road
St Albans
AL4 0PG

Generic Risk-Based Soil Screening Values

Site	13 Egbert Street, London, NW1 8LJ	**Job Number** J14364
Client	Rachel Glaister	**Sheet** 1 / 1
Engineer	Conisbee	

Proposed End Use Residential without plant uptake

Soil pH 8

Soil Organic Matter content % 6.0

Contaminant	Screening Value mg/kg	Data Source
Metals		
Arsenic	40	C4SL
Cadmium	149	C4SL
Chromium (III)	3000	LQM/CIEH
Chromium (VI)	21	C4SL
Copper	2,330	LQM/CIEH
Lead	310	C4SL
Elemental Mercury	1.02	SGV
Inorganic Mercury	235	SGV
Nickel	130	LQM/CIEH
Selenium	595	SGV
Zinc	3,750	LQM/CIEH
Hydrocarbons		
Benzene	3.3	C4SL
Toluene	610	SGV
Ethyl Benzene	350	SGV
Xylene	230	SGV
Aliphatic C5-C6	110	LQM/CIEH
Aliphatic C6-C8	370	LQM/CIEH
Aliphatic C8-C10	110	LQM/CIEH
Aliphatic C10-C12	540	LQM/CIEH
Aliphatic C12-C16	3000	LQM/CIEH
Aliphatic C16-C35	76,000	LQM/CIEH
Aromatic C6-C7	See Benzene	LQM/CIEH
Aromatic C7-C8	See Toluene	LQM/CIEH
Aromatic C8-C10	151	LQM/CIEH
Aromatic C10-C12	346	LQM/CIEH
Aromatic C12-C16	593	LQM/CIEH
Aromatic C16-C21	770	LQM/CIEH
Aromatic C21-C35	1230	LQM/CIEH
PRO (C_5 –C_{10})	1354	Calc
DRO (C_{12} –C_{28})	80,363	Calc
Lube Oil (C_{28} –C_{44})	77,230	Calc
TPH	**1000**	Trigger for speciated testing

Contaminant	Screening Value mg/kg	Data Source
Anions		
Soluble Sulphate	0.5 g/l	Structures
Sulphide	50	Structures
Chloride	400	Structures
Others		
Organic Carbon (%)	6	Methanogenic potential
Total Cyanide	140	WRAS
Total Mono Phenols	520	SGV
PAH		
Naphthalene	13.10	Rev. LQM/CIEH
Acenaphthylene	3,870	LQM/CIEH
Acenaphthene	3,910	LQM/CIEH
Fluorene	2,870	LQM/CIEH
Phenanthrene	970	LQM/CIEH
Anthracene	23,300	LQM/CIEH
Fluoranthene	1,000	LQM/CIEH
Pyrene	2,400	LQM/CIEH
Benzo(a) Anthracene	9.4	Rev. LQM/CIEH
Chrysene	15	Rev. LQM/CIEH
Benzo(b) Fluoranthene	11.2	Rev. LQM/CIEH
Benzo(k) Fluoranthene	15.8	Rev. LQM/CIEH
Benzo(a) pyrene	5.30	C4SL
Indeno(1 2 3 cd) Pyrene	6.7	Rev. LQM/CIEH
Dibenzo(a h) Anthracene	1.41	Rev. LQM/CIEH
Benzo (g h i) Perylene	72	Rev. LQM/CIEH
Screening value for PAH	**75.7**	B(a)P / 0.15
Chlorinated Solvents		
1,1,1 trichloroethane (TCA)	28.4	LQM/CIEH
tetrachloroethane (PCA)	5.76	LQM/CIEH
tetrachloroethene (PCE)	5.26	LQM/CIEH
trichloroethene (TCE)	0.511	LQM/CIEH
1,2-dichloroethane (DCA)	0.016	LQM/CIEH
vinyl chloride (Chloroethene)	0.00107	LQM/CIEH
tetrachloromethane (Carbon tetra	0.18	LQM/CIEH
trichloromethane (Chloroform)	3.22	LQM/CIEH

Notes

Concentrations measured below the above values may be considered to represent 'uncontaminated conditions' which pose 'LOW' risk to human health. Concentrations measured in excess of these valuesindicate a potential risk which require further, site specific risk assessment.

SGV - Soil Guideline Value, derived from the CLEA model and published by Environment Agency 2009

LQM/CIEH - Generic Assessment Criteria for Human Health Risk Assessment 2nd edition (2009)derived using CLEA 1.04 model 2009

C4SL - Defra Category 4 Screening value based on Low Level of Toxicological Risk

Rev LQM/CIEH calculated using C4SL revisions to exposure assessment but LQM/CIEH health croiteria values

Calc - sum of nearest available carbon range specified including BTEX for PRO fraction

B(a)P / 0.15 - GEA experince indicates that Benzo(a) pyrene (one of the most common and most carcenogenic of the PAHs) rarely exceeds 15% of the total PAH concentration, hence this Total PAH threshold is regarded as being conservative

GEA Geotechnical & Environmental Associates

Widbury Barn
Widbury Hill
Ware
Herts SG12 7QE

Site Plan

Site	13 Egbert Street, London, NW1 8LJ
Client	Rachel Glaister
Engineer	Conisbee

Job Number J14364

Sheet 1 / 1