Chelmer Site Investigations

Unit 15, East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400 930 **Fax:** 01245 400 933
Email: info@siteinvestigations.co.uk **Website**: www.siteinvestigations.co.uk

Factual Report

Client:	Ms Christine Hancock
Site:	46 Inverness Street London NW1 7HB
CSI Ref:	FACT/4792
Dated:	October 2014

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Unit 15 East Hanningfield Industrial Estate
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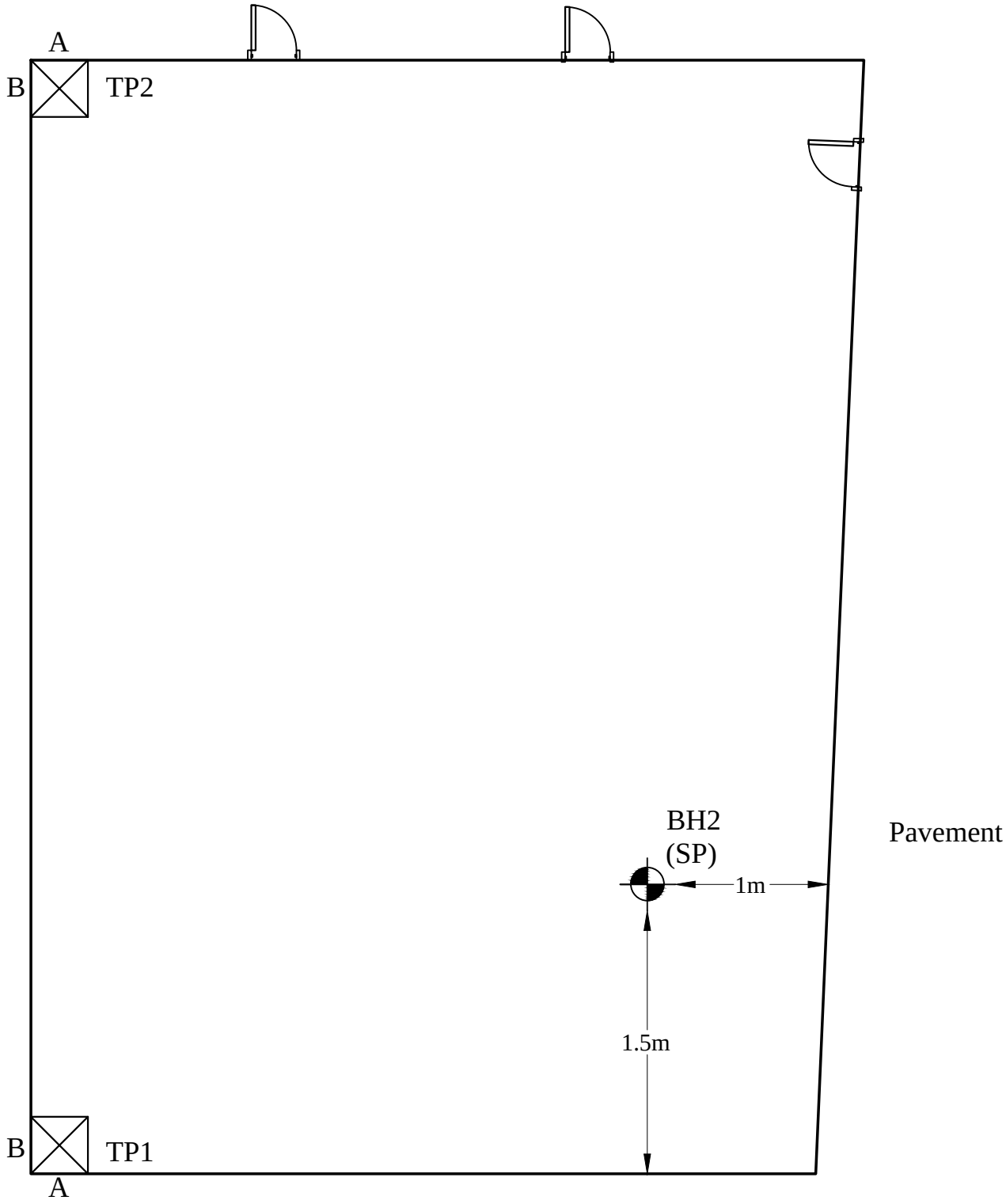
Chelmer Site Investigations

Client: Christine Hancock	**Scale:** N.T.S.	**Sheet:** 1 of 2	**Date:** 15.09.14	
Location: 46 Inverness Street, London, NW1 7HB	**Job No:** 4792	**Weather:** Internal	**Drawn by: TP**	**Checked by: JH**



Notes: *On site tree identification for guidance only. Not authenticated.*

Key:

Tree/Shrub | Borehole | Trial Pit | G Gully | Tree Stump | Rain Water/ Soil Pipe | MH Manhole

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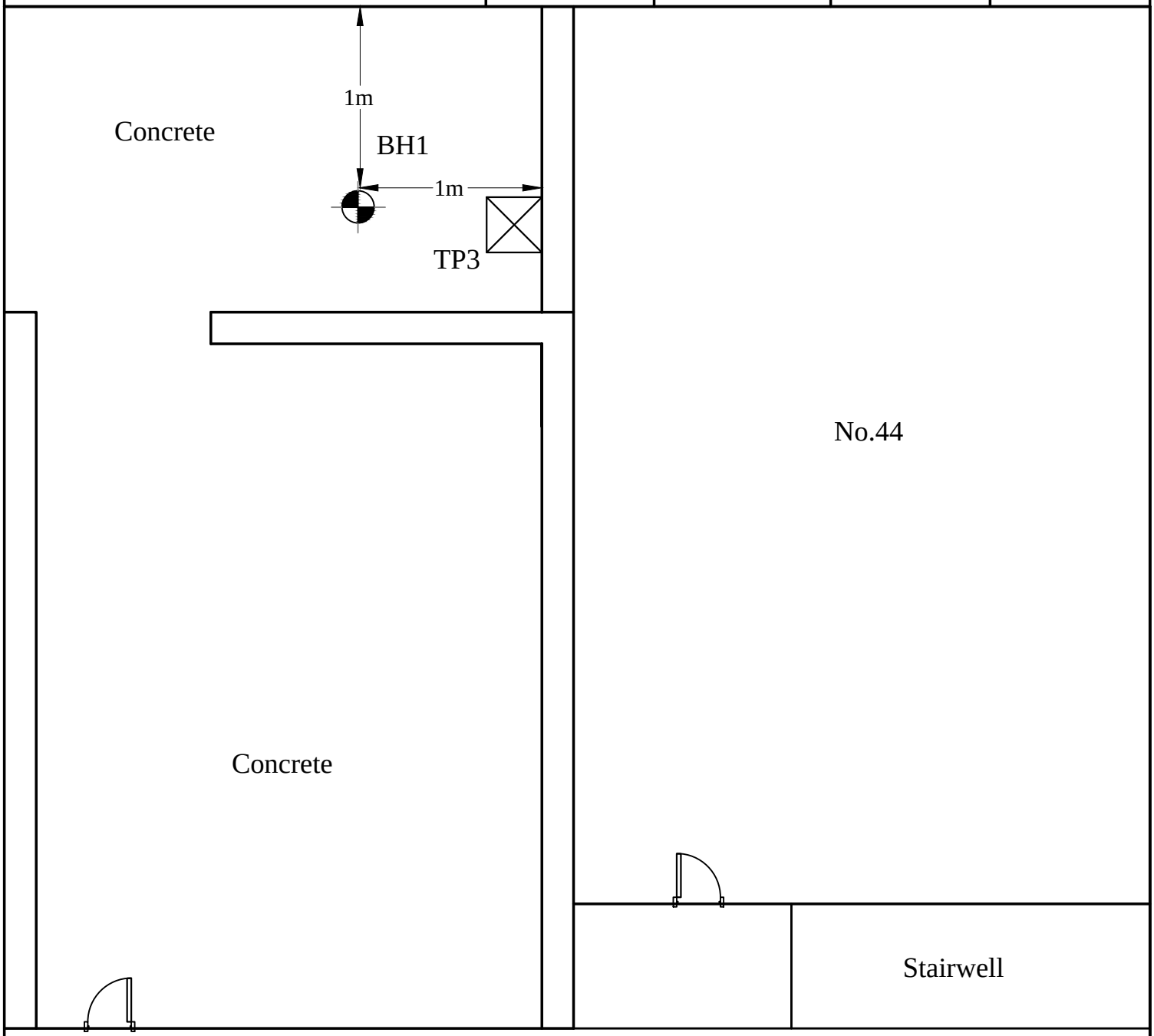
Chelmer Site Investigations

Client: Christine Hancock	**Scale:** N.T.S.	**Sheet:** 2 of 2	**Date:** 15.09.14	
Location: 46 Inverness Street, London, NW1 7HB	**Job No:** 4792	**Weather:** Internal	**Drawn by: TP**	**Checked by: JH**



Notes: *On site tree identification for guidance only. Not authenticated.*

Key:

Tree/Shrub | Borehole | Trial Pit | G Gully | Tree Stump | Rain Water/ Soil Pipe | MH Manhole

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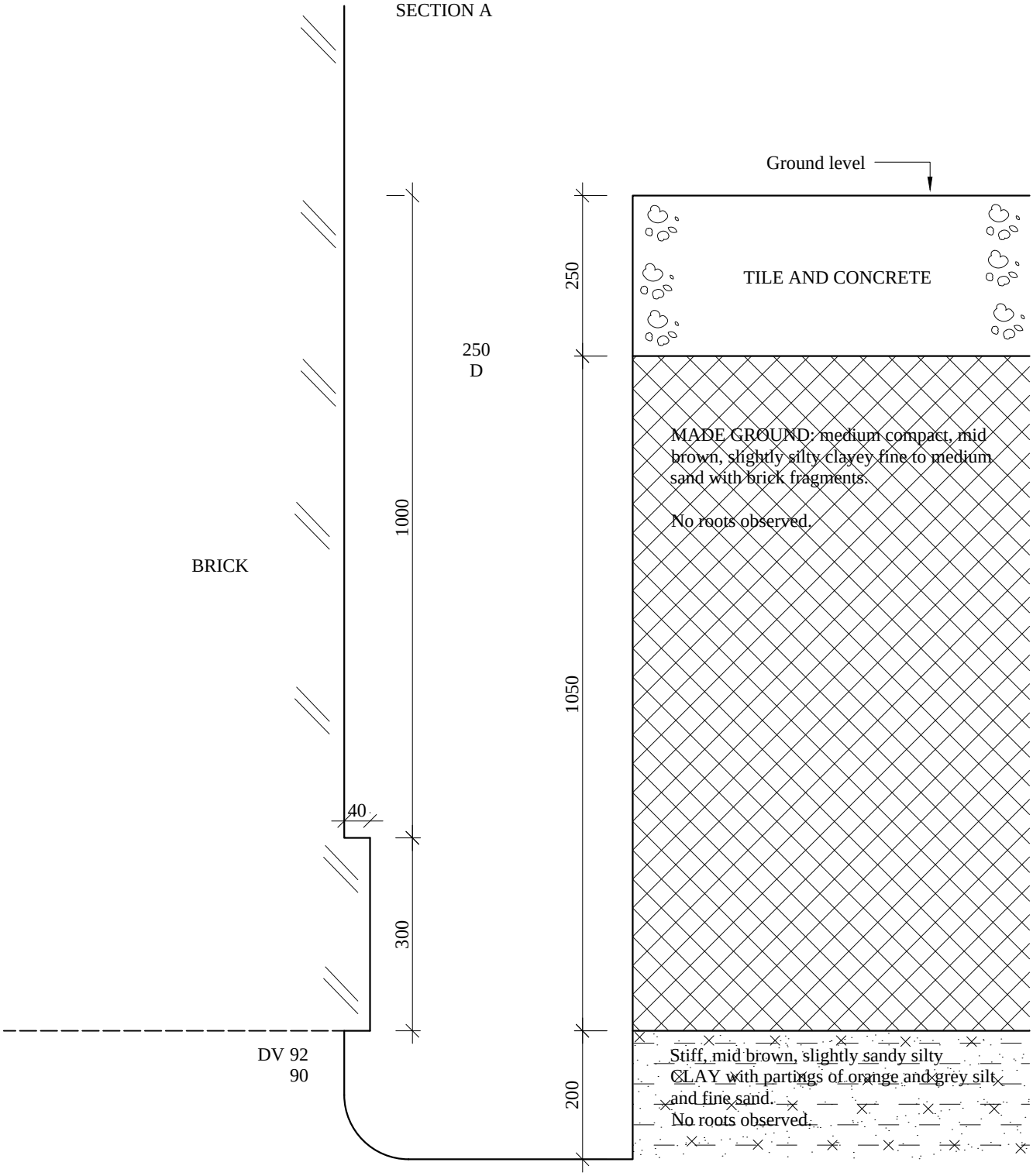
Client: Christine Hancock	**Scale:** N.T.S.	**Sheet No:** 1 of 2	**Date:** 15.09.14
Location: 46 Inverness Street, London, NW1 7HB	**Job No:** 4792	**Trial Pit No:** 1	**Weather:** Internal
Excavation Method: Hand tools		**Drawn by:** TP	**Checked by:** JH

SECTION A



TP1 SECTION A ENDS AT 1500mm

Remarks:

Key:

D Small disturbed sample	**J** Jar sample
B Bulk disturbed sample	**V** Pilcon Vane (kPa)
U Undisturbed sample (U100)	**M** Mackintosh Probe
N Standard Penetration Test Blow Count	**W** Water Sample

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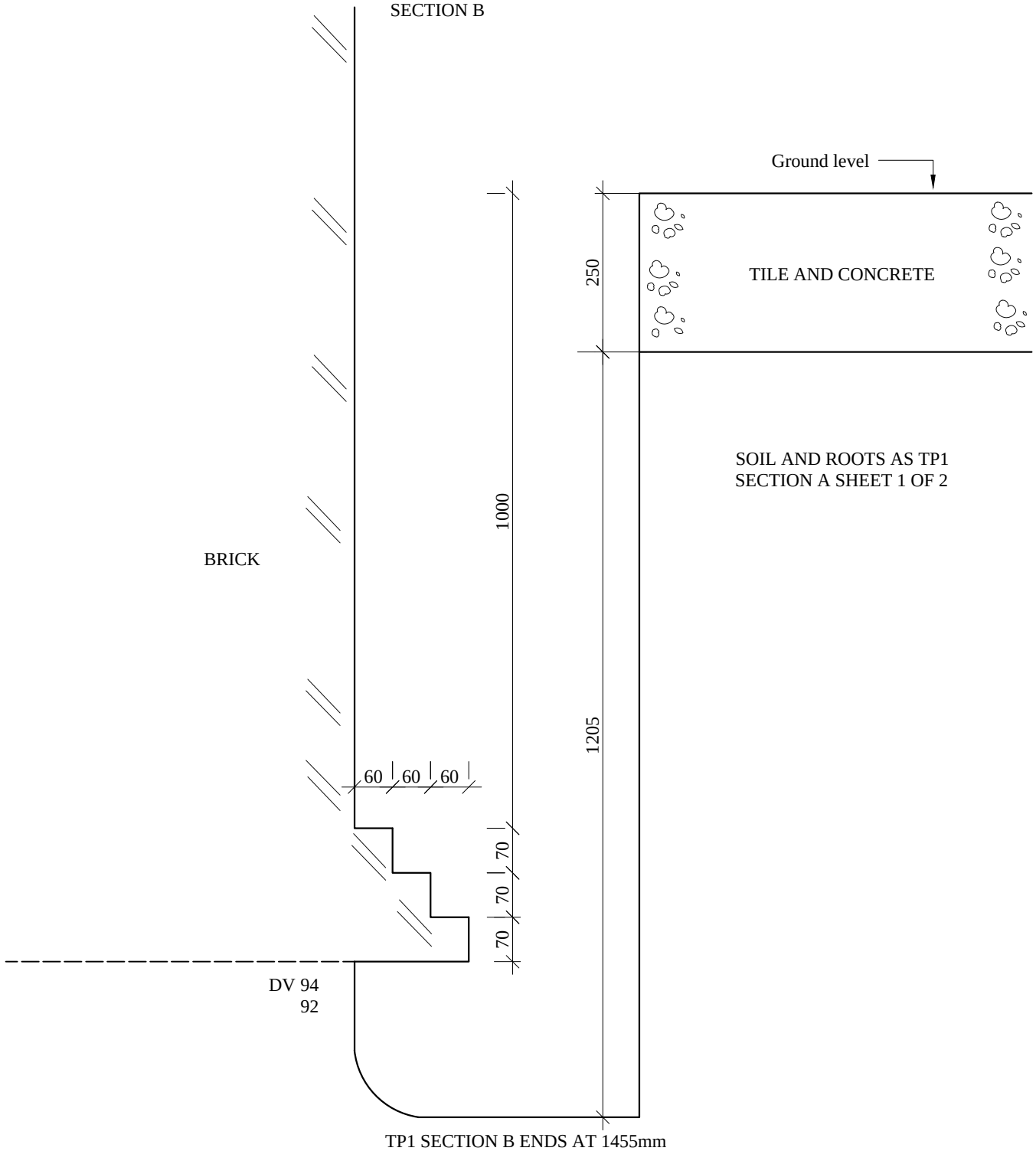
Chelmer Site Investigations

Client: Christine Hancock	**Scale:** N.T.S.	**Sheet No:** 2 of 2	**Date:** 15.09.14
Location: 46 Inverness Street, London, NW1 7HB	**Job No:** 4792	**Trial Pit No:** 1	**Weather:** Internal
Excavation Method: Hand tools		**Drawn by:** TP	**Checked by:** JH

SECTION B



TP1 SECTION B ENDS AT 1455mm

Remarks:

Key:

D Small disturbed sample	**J** Jar sample
B Bulk disturbed sample	**V** Pilcon Vane (kPa)
U Undisturbed sample (U100)	**M** Mackintosh Probe
N Standard Penetration Test Blow Count	**W** Water Sample

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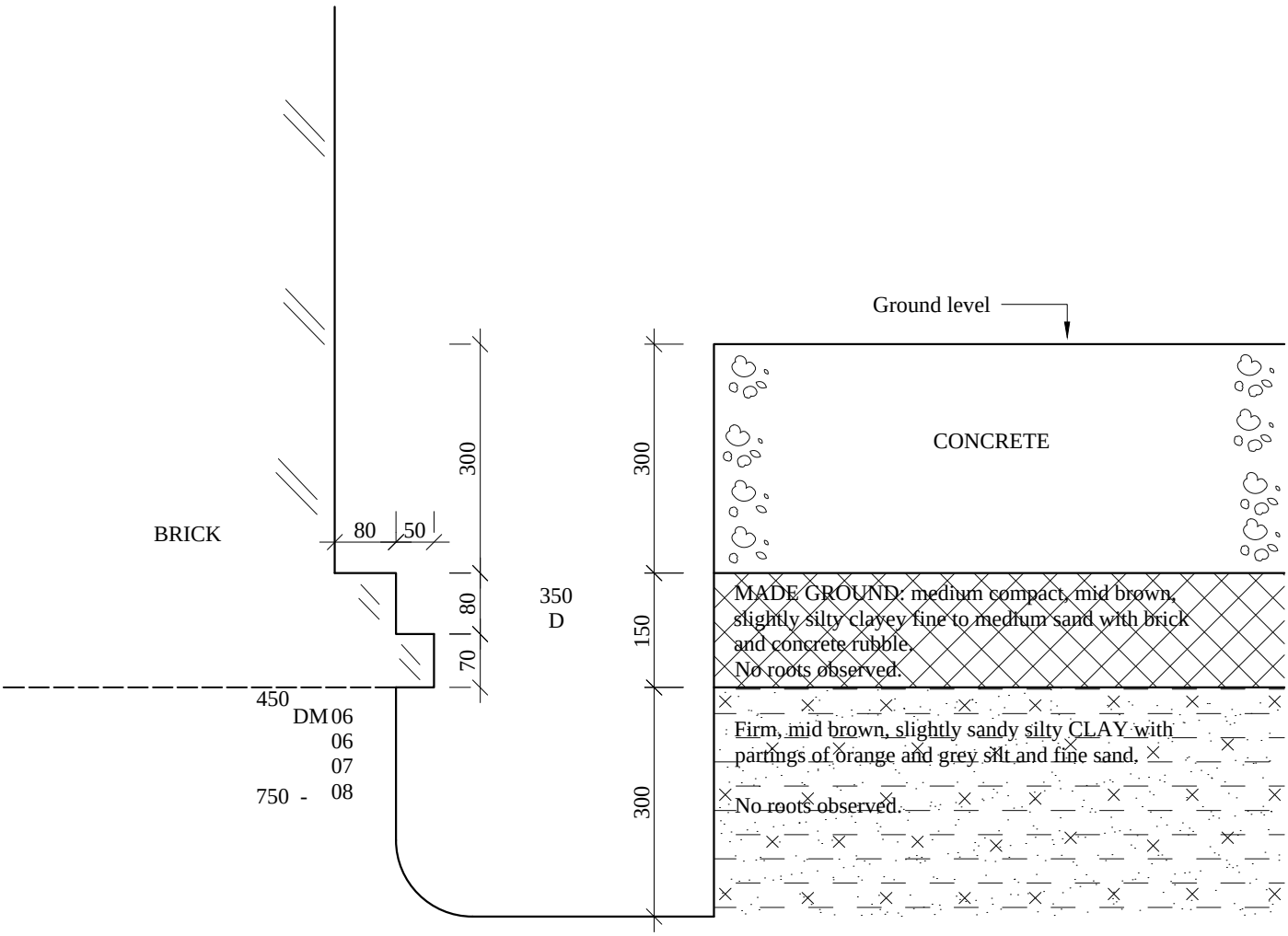
Client: Christine Hancock	**Scale:** N.T.S.	**Sheet No:** 1 of 2	**Date:** 15.09.14
Location: 46 Inverness Street, London, NW1 7HB	**Job No:** 4792	**Trial Pit No:** 2	**Weather:** Internal
Excavation Method: Hand tools		**Drawn by:** TP	**Checked by:** JH

SECTION A



TP2 SECTION A ENDS AT 750mm

Remarks:

Key:

D Small disturbed sample	**J** Jar sample
B Bulk disturbed sample	**V** Pilcon Vane (kPa)
U Undisturbed sample (U100)	**M** Mackintosh Probe
N Standard Penetration Test Blow Count	**W** Water Sample

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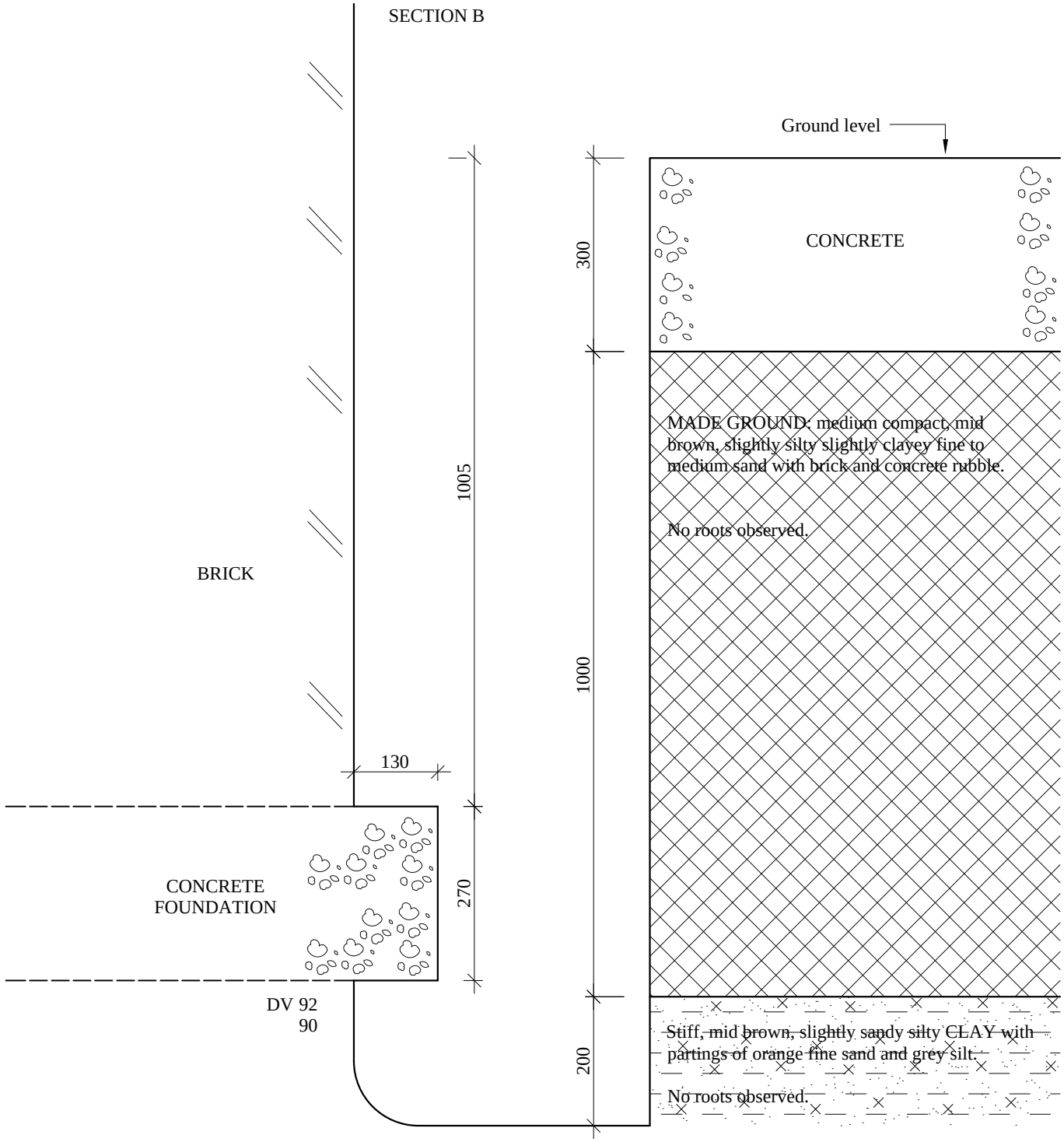
Chelmer Site Investigations

Client: Christine Hancock	**Scale:** N.T.S.	**Sheet No:** 2 of 2	**Date:** 15.09.14
Location: 46 Inverness Street, London, NW1 7HB	**Job No:** 4792	**Trial Pit No:** 2	**Weather:** Internal
Excavation Method: Hand tools		**Drawn by:** TP	**Checked by:** JH

SECTION B



TP2 SECTION B ENDS AT 1500mm

Remarks:

Key:

D Small disturbed sample
B Bulk disturbed sample
U Undisturbed sample (U100)
N Standard Penetration Test Blow Count
J Jar sample
V Pilcon Vane (kPa)
M Mackintosh Probe
W Water Sample

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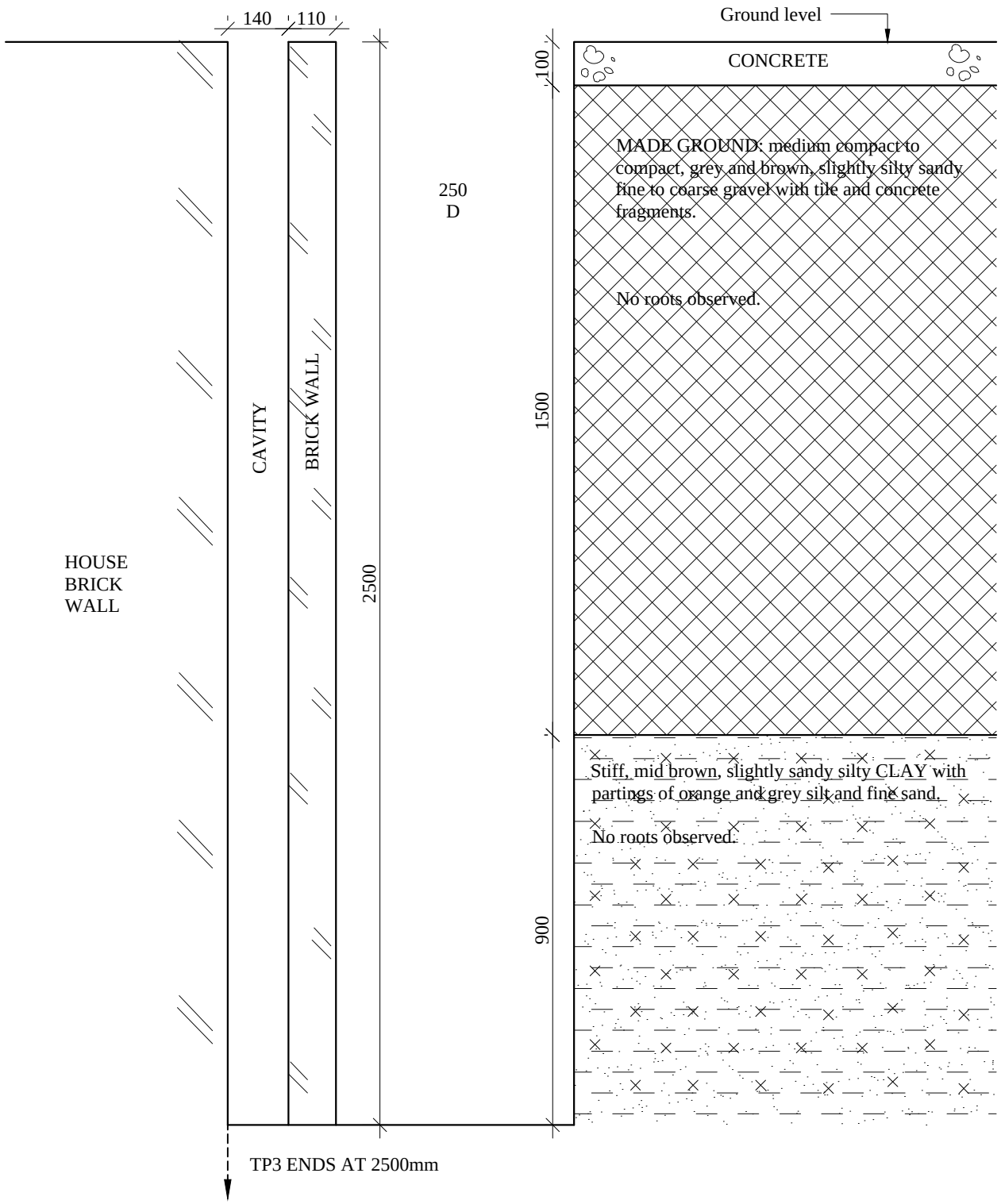
Chelmer Site Investigations

Client: Christine Hancock	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Date:** 15.09.14
Location: 46 Inverness Street, London, NW1 7HB	**Job No:** 4792	**Trial Pit No:** 3	**Weather:** Internal
Excavation Method: Hand tools		**Drawn by:** TP	**Checked by:** JH



Remarks: *Unable to establish underside foundation.*

Key:

D Small disturbed sample	**J** Jar sample
B Bulk disturbed sample	**V** Pilcon Vane (kPa)
U Undisturbed sample (U100)	**M** Mackintosh Probe
N Standard Penetration Test Blow Count	**W** Water Sample

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Old Church Road, East Hanningfield, Essex CM3 8AB
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Client: Christine Hancock	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Weather:** Overcast	**Date:** 16.09.14
Site: 46 Inverness Street, London, NW1 7HB	**Job No:** 4792	**Borehole No:** 1	**Boring method:** CFA 100mmØ Secondman	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type	Test Result	Root Information	Depth to Water	Depth Mtrs
G.L.	CONCRETE	0.075							
0.075	MADE GROUND: medium compact, dark brown, gravelly silt with numerous concrete and brick fragments.	0.425		D			Roots of live and dead appearance to 2mmØ to 1.6m.		0.3
				D					0.5
0.5	MADE GROUND: medium compact, mid brown, gravelly very silty clay with numerous brick fragments.	0.3							
0.8	Firm, mid brown, grey veined, silty CLAY with partings of orange and brown silt and fine sand.	1.7		D	V	62 68			1.0
	Becoming stiff from 1.8m.			D			↓		1.5
				D	V	78 84	No roots observed below 1.6m.		2.0
2.5	Very stiff, mid brown, silty CLAY with partings of orange and brown silt and fine sand.	5.0		D					2.5
				D	V	140+ 140+			3.0
				D					3.5
				D	V	140+ 140+			4.0
				D					4.5
				D	V	140+ 140+			5.0
				D					5.5
				D	V	140+ 140+			6.0
				D	V	140+ 140+			7.0
7.5	Very stiff, dark brown, grey veined, silty CLAY with partings of brown silt and fine sand.	2.5		D	V	140+ 140+			8.0
				D	V	140+ 140+			9.0
10.0	Borehole ends at 10.0m			D	V	140+ 140+			10.0

Drawn by: MM **Approved by:** JH

Remarks: *Borehole dry and open on completion.*

Key: T.D.T.D. Too Dense to Drive
D Small Disturbed Sample J Jar Sample
B Bulk Disturbed Sample V Pilcon Vane (kPa)
U Undisturbed Sample (U100) M Mackintosh Probe
W Water Sample N Standard Penetration Test Blow Count

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Client: Christine Hancock	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Weather:** Overcast	**Date:** 16.09.14
Site: 46 Inverness Street, London, NW1 7HB	**Job No:** 4792	**Borehole No:** 2	**Boring method:** CFA 100mmØ Secondman	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type	Test Result	Root Information	Depth to Water	Depth Mtrs
G.L.	TIMBER FLOOR BOARDS	0.025							
0.025	CONCRETE	0.225		D					0.3
0.25	MADE GROUND: medium compact, mid brown, very silty CLAY with numerous gravel, concrete and brick fragments.	0.65		D			Roots of live and dead appearance to 1mmØ to 1.8m.		0.5
0.9	MADE GROUND: medium compact, mid brown, very silty clay with occasional gravel and brick fragments.	0.9		D	M	14 14 15			1.0
				D		17	No roots observed below 1.8m.		1.5
1.8	Firm, mid brown, grey veined, silty CLAY with partings of brown silt and fine sand.			D	V	68 70			2.0
				D					2.5
	Becoming stiff from 2.7m.	1.9		D	V	78 84			3.0
				D					3.5
3.7	Very stiff, mid brown, grey veined, silty CLAY with partings of brown silt and fine sand.	4.0		D	V	140+ 140+			4.0
				D					4.5
				D	V	140+ 140+			5.0
				D					5.5
				D	V	140+ 140+			6.0
				D	V	140+ 140+			7.0
7.7	Very stiff, dark brown, grey veined, silty CLAY with partings of brown silt and fine sand.	2.3		D	V	140+ 140+			8.0
				D	V	140+ 140+			9.0
10.0	Borehole ends at 10.0m			D	V	140+ 140+			10.0

Drawn by: MM **Approved by:** JH

Remarks: *Borehole dry and open on completion.*
Standpipe installed to 6.0m on completion.

Key: T.D.T.D. Too Dense to Drive
D Small Disturbed Sample J Jar Sample
B Bulk Disturbed Sample V Pilcon Vane (kPa)
U Undisturbed Sample (U100) M Mackintosh Probe
W Water Sample N Standard Penetration Test Blow Count

Chelmer Geotechnical Laboratories

Unit 15, East Hanningfield Industrial Estate

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Telephone: 01245 400 930 **Fax:** 01245 400 933

Email: info@siteinvestigations.co.uk **Website**: www.soillabs.co.uk

Geotechnical Testing

Client : Christine Hancock

Site Name : 46 Inverness Street

Client Reference : CSI4792

CGL Reference : CGL04412

Date of Completion : 13/10/2014

UKAS TESTING
8284

Chelmer Geotechnical Laboratories

Content Summary

This report contains all test results indicated on the attached test instruction/summary (Q17).

CGL Reference :	CGL04412
Client Reference :	CSI4792
For the attention of :	Christine Hancock
This report comprises of the following :	2 Pages of Results
	1 Moisture/Shear Strength Chart
	1 Plasticity Chart
	1 BRE SD1 Results
	5 Pages of BRE SD1 Results

Notes :

General

Please refer to report summary notes for details pertaining to methods undertaken and their subsequent accreditations

Samples were supplied by Chelmer Site Investigations

All tests performed in-house unless otherwise stated

Deviant Samples

Samples were received in suitable containers	Yes
A date and time of sampling was provided	Yes
Arrived damaged and/or denatured	No

Laboratory Testing Results

BS 1377 : 1990

Chelmer Geotechnical Laboratories

Job Number : CGL04412
Client : Christine Hancock
Client Reference : CSI4792
Site Name : 46 Inverness Street

Date Received : 06/10/2014
Date Testing Started : 08/10/2014
Date Testing Completed : 13/10/2014
Laboratory Used : Chelmer Geotechnical, CM3 8AB

Sample Ref			Sample Type	*Moisture Content (%) [1]	*Soil Faction > 0.425mm (%) [2]	*Liquid Limit (%) [3]	*Plastic Limit (%) [4]	*Plasticity Index (%) [5]	*Liquidity Index (%) [5]	*Modified Plasticity Index (%) [6]	*Soil Class [7]	Filter Paper Contact Time (h) [8]	*Soil Sample Suction (kPa)	Insitu Shear Vane Strength (kPa) [9]	Organic Content (%) [10]	*pH Value [11]	*Sulphate Content (g/l)		
BH/TP/WS	Depth (m)	UID															SO_3 [12]	SO_4 [13]	Class [14]
BH1	1.5	57554	D	33	<5	82	18	64	0.24	64	CV								
BH1	3.0	57556	D	32	<5	81	18	63	0.22	63	CV			>140					
BH1	6.0	57558	D	31	<5	79	15	64	0.24	64	CV			>140					
BH1	10.0	57559	D	30	<5	75	19	56	0.20	56	CV			>140					

Notes :- *UKAS Accredited Tests

[1] BS 1377 : Part 2 : 1990, Test No 3.2
[2] Estimated if <5%, otherwise measured
[3] BS 1377 : Part 2 : 1990, Test No 4.4
[4] BS 1377 : Part 2 : 1990, Test No 5.3
[5] BS 1377 : Part 2 : 1990, Test No 5.4
[6] BRE Digest 240 : 1993
[7] BS 5930 : 1981 : Figure 31 - Plasticity Chart for the classification of fine soils
[8] In-house method S9a adapted from BRE IP 4/93
[9] Values of shear strength were determined in situ by Chelmer Site Investigations using a Pilcon hand vane or Geonor vane (GV).
[10] BS 1377 : Part 3 : 1990, Test No 4
[11] BS 1377 : Part 2 : 1990, Test No 9
[12] BS 1377 : Part 3 : 1990, Test No 5.6
[13] $SO_4 = 1.2 \times SO_3$
[14] BRE Special Digest One (Concrete in Aggressive Ground) 2005

Note that if the SO_4 content falls into the DS-4 or DS-5 class, it would be prudent to consider the sample as falling into the DS-4m or DS-5m class respectively unless water soluble magnesium testing is undertaken to prove otherwise

Key

D - Disturbed sample
B - Bulk sample
U - U100 (undisturbed sample)
W - Water sample
ENP - Essentially Non-Plastic
U/S - Underside Foundation

UKAS TESTING
8284

Comments :-

Technician :- MT/HS
Checked By :- MC
Date Checked :- 13-Oct-14

Laboratory Testing Results

BS 1377 : 1990

Chelmer Geotechnical Laboratories

Job Number : CGL04412
Client : Christine Hancock
Client Reference : CSI4792
Site Name : 46 Inverness Street

Date Received : 06/10/2014
Date Testing Started : 08/10/2014
Date Testing Completed : 13/10/2014
Laboratory Used : Chelmer Geotechnical, CM3 8AB

Sample Ref			Sample Type	*Moisture Content (%) [1]	*Soil Faction > 0.425mm (%) [2]	*Liquid Limit (%) [3]	*Plastic Limit (%) [4]	*Plasticity Index (%) [5]	*Liquidity Index (%) [5]	*Modified Plasticity Index (%) [6]	*Soil Class [7]	Filter Paper Contact Time (h) [8]	*Soil Sample Suction (kPa)	Insitu Shear Vane Strength (kPa) [9]	Organic Content (%) [10]	*pH Value [11]	*Sulphate Content (g/l)		
BH/TP/WS	Depth (m)	UID															SO_3 [12]	SO_4 [13]	Class [14]
BH2	2.5	57561	D	32	<5	81	16	65	0.25	65	CV								
BH2	5.0	56563	D	29	<5	77	18	59	0.18	59	CV			>140					
BH2	8.0	56565	D	30	<5	79	19	60	0.19	60	CV			>140					

Notes :- *UKAS Accredited Tests

[1] BS 1377 : Part 2 : 1990, Test No 3.2
[2] Estimated if <5%, otherwise measured
[3] BS 1377 : Part 2 : 1990, Test No 4.4
[4] BS 1377 : Part 2 : 1990, Test No 5.3
[5] BS 1377 : Part 2 : 1990, Test No 5.4
[6] BRE Digest 240 : 1993
[7] BS 5930 : 1981 : Figure 31 - Plasticity Chart for the classification of fine soils
[8] In-house method S9a adapted from BRE IP 4/93
[9] Values of shear strength were determined in situ by Chelmer Site Investigations using a Pilcon hand vane or Geonor vane (GV).
[10] BS 1377 : Part 3 : 1990, Test No 4
[11] BS 1377 : Part 2 : 1990, Test No 9
[12] BS 1377 : Part 3 : 1990, Test No 5.6
[13] $SO_4 = 1.2 \times SO_3$
[14] BRE Special Digest One (Concrete in Aggressive Ground) 2005

Note that if the SO_4 content falls into the DS-4 or DS-5 class, it would be prudent to consider the sample as falling into the DS-4m or DS-5m class respectively unless water soluble magnesium testing is undertaken to prove otherwise

Key
D - Disturbed sample
B - Bulk sample
U - U100 (undisturbed sample)
W - Water sample
ENP - Essentially Non-Plastic
U/S - Underside Foundation

UKAS TESTING 8284

Comments :-

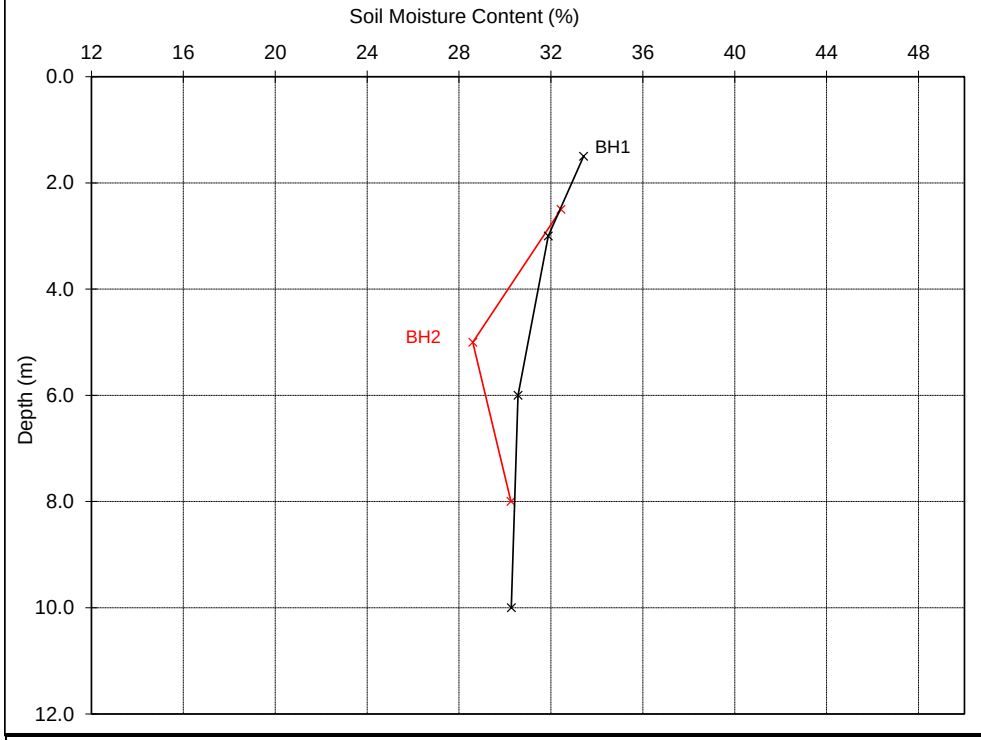
Technician :- MT/HS
Checked By :- MC
Date Checked :- 13-Oct-14

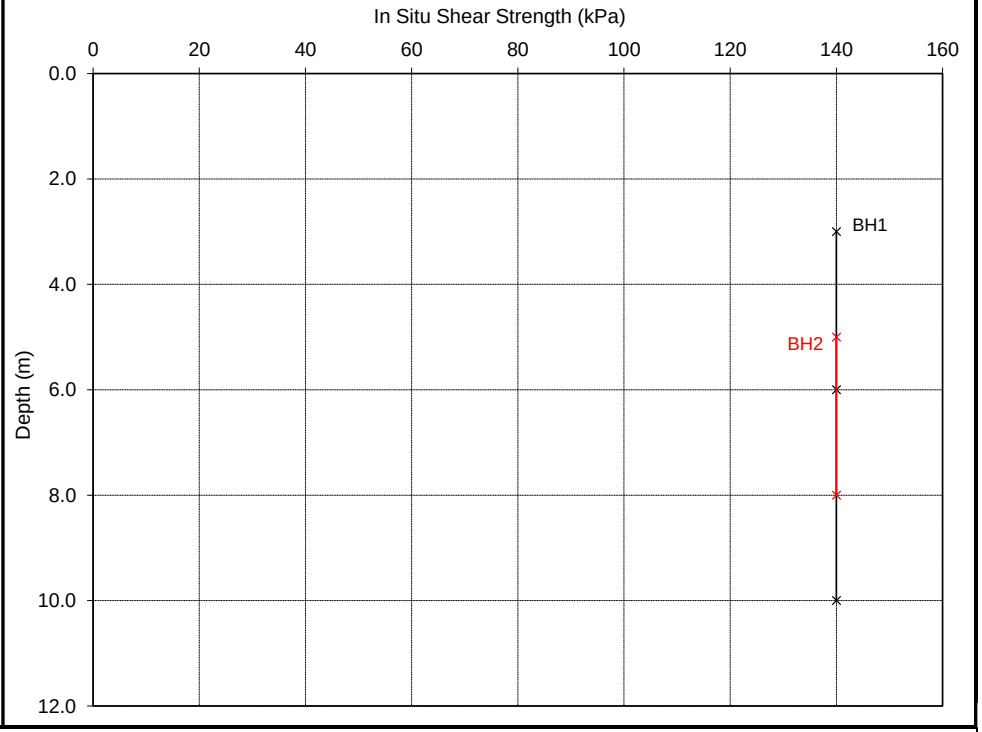
Laboratory Testing Results

Moisture Content/Shear Strength Profile

Chelmer Geotechnical Laboratories

Job Number :	CGL04412	Date Received :	06/10/2014
Client :	Christine Hancock	Date Testing Started :	08/10/2014
Client Reference :	CSI4792	Date Testing Completed :	13/10/2014
Site Name :	46 Inverness Street	Laboratory :	Chelmer Geotechnical Laboratories, CM3 8AB





Notes :-

1. If the Soil Fraction > 0.425mm exceeds 5% the Equivalent Moisture Content of the remainder (calculated in accordance with BS 1377: Part 2 : 1990, cl.3.2.4 note 1) is also plotted and the alternative profile additionally shown as an appropriately coloured broken line.
2. If plotted, 0.4 LL and PL+2 (after Driscoll, 1983) should only be applied to London Clay (and similarly over consolidated clays) at shallow depths.

Unless otherwise stated, values of Shear Strength were determined in situ by Chelmer Site Investigations using a Pilcon Hand Vane the calibration of which is limited to a maximum reading of 140 kPa.

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Comments :-

Checked By :- MC

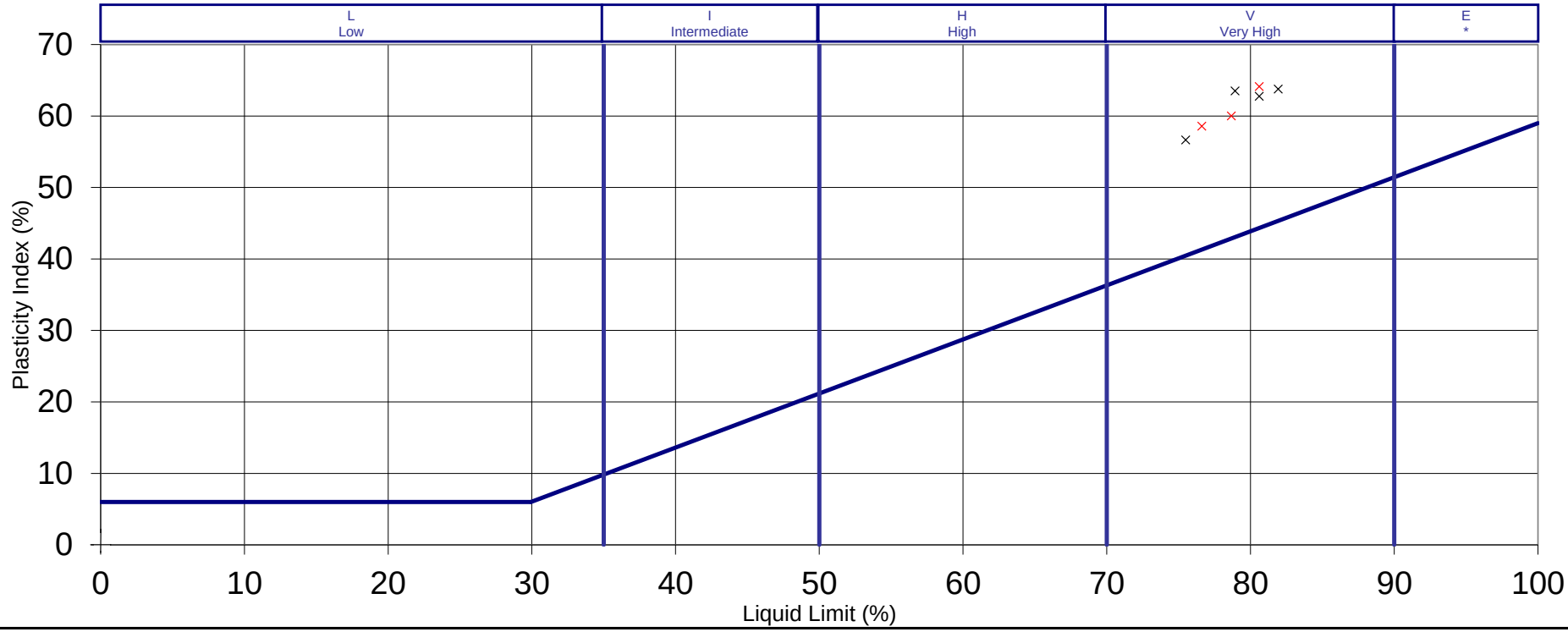
Date Checked :- 13-Oct-14

Laboratory Testing Results

Plasticity Chart for the classification of fine soils and the finer part of coarse soils
In Compliance with BS5930 : 1999

Chelmer Geotechnical Laboratories

Job Number :	CGL04412	Date Received :	06/10/2014
Client :	Christine Hancock	Date Testing Started :	08/10/2014
Client Reference :	CSI4792	Date Testing Completed :	13/10/2014
Site Name :	46 Inverness Street	Laboratory :	Chelmer Geotechnical Laboratories, CM3 8AB



Notes :-

SILT (M-SOIL), M, plots below A-Line
CLAY, C, plots above A-Line }M and C may be combined as FINE SOIL, F.

Key :- BH1
BH2

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Comments :-

Checked By :- MC Date Checked :- 13-Oct-14

8284

This report is personal to the client, confidential and non assignable. It is issued with no admission of liability to any third party.

This report shall not be reproduced, except in full, without the written approval of Chelmer Site Investigations Laboratories Ltd.

Where our involvement consists exclusively of testing samples, the results and comments (if provided) relate only to the samples tested.

Any samples that are deemed to be subject to deviation will be recorded as such within the test summary.

Nicholls Colton Analytical
7 - 11 Harding Street
Leicester
LE1 4DH

Chelmer Site Investigations
Unit 15
East Hanningfield Industrial Estate
CM3 8AB

Analytical Test Report: L14/2029/CSI/001

Your Project Reference:	**46 Inverness Street**	Samples Received on:	06.10.2014
Your Order Number:	PO/2978/CSI4792	Testing Instruction Received:	06.10.2014
Report Issue Number:	1	Sample Tested:	06 to 14.10.2014
Samples Analysed:	7 Soils	Report issued:	14.10.2014

Signed

James Gane
Manager - Data Logistics
Nicholls Colton Analytical

Notes:

General

Please refer to Methodologies tab for details pertaining to the analytical methods undertaken.

Samples will be retained for 14 days after issue of this report.

With the exception of Sulphate and Sulpur, which are crushed over the 2mm test sieve, concentrations are reported as a percentage mass of the dry soil passing the 10mm BS test sieve. As received samples have been corrected for moisture content but not stone content.

Samples were supplied by customer.

Deviant Samples

Samples were received in suitable containers	**Yes**
A date and time of sampling was provided	**Yes**
Sample handling times were exceeded prior to analysis of determinants	**Yes**

Where samples do not meet one or more of the above criteria they will be classed as deviant, this means data may not be representative of the sample at the time of sampling and it is possible that results provided may be compromised.

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Nicholls Colton Analytical
7 - 11 Harding Street
Leicester
LE1 4DH

L14/2029/CSI/001

Project Reference - 46 Inverness Street

Analytical Test Results - BRE Suite

NCA Reference			14-32624	14-32625	14-32626	14-32627	14-32629	14-32630
Client Sample Reference			BH1	BH1	BH1	BH2	BH2	BH2
Client Sample Location			BH1	BH1	BH1	BH2	BH2	BH2
Depth (m)			0.50	2.00	4.00	1.50	3.00	6.00
Date of Sampling			15.09.2014	15.09.2014	15.09.2014	15.09.2014	15.09.2014	15.09.2014
Time of Sampling			Not provided	Not provided	Not provided	Not provided	Not provided	Not provided
Sample Matrix			Clay	Clay	Clay	Clay	Clay	Clay
Determinant	**Units**	**Accreditation**						
Water soluble sulphate	(mg/l)	None	170	600	2600	490	930	2900
Acid Soluble Sulphate	(%)	None	0.13	0.15	0.70	0.15	0.19	0.72
Total Sulphur	(%)	None	0.12	0.06	0.25	0.06	0.06	0.25
pH Value	pH Units	MCERTS	8.3	8.0	7.7	7.5	7.6	7.8

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Nicholls Colton Analytical
7 - 11 Harding Street
Leicester
LE1 4DH

L14/2029/CSI/001

Project Reference - 46 Inverness Street

Analytical Test Results - BRE Suite

NCA Reference			14-32631
Client Sample Reference			BH2
Client Sample Location			BH2
Depth (m)			10.00
Date of Sampling			15.09.2014
Time of Sampling			Not provided
Sample Matrix			Clay
Determinant	**Units**	**Accreditation**	
Water soluble sulphate	(mg/l)	None	2100
Acid Soluble Sulphate	(%)	None	0.45
Total Sulphur	(%)	None	0.17
pH Value	pH Units	MCERTS	8.0

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7 - 11 Harding Street
Leicester
LE1 4DH

L14/2029/CSI/001

Project Reference - 46 Inverness Street

Sample Descriptions

NCA Reference	Client Sample Reference	Sample Depth (m)	Description	% Passing 2mm BS test sieve
14-32624	BH1	0.50	Dark brown slightly sandy clay.	98
14-32625	BH1	2.00	Brown slightly sandy clay.	100
14-32626	BH1	4.00	Brown slightly sandy clay.	100
14-32627	BH2	1.50	Brown slightly sandy clay.	98
14-32629	BH2	3.00	Brown slightly sandy clay.	100
14-32630	BH2	6.00	Brown slightly sandy clay.	100
14-32631	BH2	10.00	Brown slightly sandy clay.	100

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7 - 11 Harding Street
Leicester
LE1 4DH

L14/2029/CSI/001

Project Reference - 46 Inverness Street

Analysis Methodologies

Matrix	Determinant	Sample condition for analysis	Test Method used
Soil	pH	As Received	In house method statement - MS - CL - pH (Soil)
Soil	Sulphate	Air Dried	In house method statement - MS - CL - Anions (Aquakem)
Soil	Acid Sulphate	Air Dried	In house method statement - MS - CL - BRE
Soil	Total Sulphur	Air Dried	In house method statement - MS - CL - BRE

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2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	14-00770
Issue:	1
Date of Issue:	14/10/2014
Contact:	Martin Edwards
Customer Details:	Chelmer Site Investigations Ltd Unit 15 East Hanningfield Ind Est Chelmsford Essex
Quotation No:	Q14-00004
Order No:	PO / 2978 / CSI4792
Customer Reference:	4792
Date Received:	03/10/2014
Date Approved:	14/10/2014
Details:	46 Inverness Street, London, NW1
Approved by:	

John Wilson, Operations Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

Sample Summary

Report No.: 14-00770

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
5233	BH1 0.30	17/09/2014	06/10/2014	Silty loam	cfg
5234	BH1 0.50	17/09/2014	06/10/2014	Silty loam	fg
5235	BH2 0.50	17/09/2014	06/10/2014	Silty clayey loam	fg
5236	BH2 1.00	17/09/2014	06/10/2014	Silty loam	fg
5237	TP1 0.25	17/09/2014	06/10/2014	Silty loam	fg
5238	TP2 0.35	17/09/2014	06/10/2014	Silty loam	fg

Results Summary

Report No.: 14-00770

ELAB Reference				5233	5234	5235	5236	5237	5238
Customer Reference									
Sample ID									
Sample Type				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location				BH1	BH1	BH2	BH2	TP1	TP2
Sample Depth (m)				0.30	0.50	0.50	1.00	0.25	0.35
Sampling Date				17/09/2014	17/09/2014	17/09/2014	17/09/2014	17/09/2014	17/09/2014
Determinand	**Codes**	**Units**	**LOD**						
Metals									
Arsenic	M	mg/kg	1	37.7	n/t	14.0	n/t	13.3	11.6
Cadmium	M	mg/kg	0.5	1.6	n/t	< 0.5	n/t	< 0.5	< 0.5
Chromium	M	mg/kg	5	24.6	n/t	29.2	n/t	22.6	19.4
Copper	M	mg/kg	5	126	n/t	45.2	n/t	37.7	44.1
Lead	M	mg/kg	5	1980	n/t	483	n/t	630	811
Mercury	M	mg/kg	0.5	9.8	n/t	1.3	n/t	1.3	2.8
Nickel	M	mg/kg	5	22.3	n/t	28.2	n/t	20.8	16.6
Selenium	M	mg/kg	1	6.3	n/t	< 1.0	n/t	< 1.0	< 1.0
Zinc	M	mg/kg	45	818	n/t	216	n/t	206	117
Inorganics									
Elemental Sulphur	N	mg/kg	20	< 20	n/t	< 20	n/t	< 20	< 20
Free Cyanide	N	mg/kg	1	f < 1.0	n/t	f < 1.0	n/t	f < 1.0	f < 1.0
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	n/t	< 0.8	n/t	< 0.8	< 0.8
Total Cyanide	M	mg/kg	1	f < 1.0	n/t	f < 1.0	n/t	f < 1.0	f < 1.0
Water Soluble Boron	N	mg/kg	0.5	1.5	n/t	1.6	n/t	1.8	2.6
Miscellaneous									
Acid Neutralisation Capacity	N	mol/kg	0.1	n/t	< 0.1	n/t	< 0.1	n/t	n/t
Loss Of Ignition (450°C)	N	%	0.01	n/t	4.3	n/t	2.5	n/t	n/t
Moisture Content	N	%	0.1	14.3	n/t	19.6	n/t	10.6	14.5
pH	M	units	0.1	8.1	8.0	8.9	8.8	8.8	8.3
Stones Content	N	%	0.1	32.7	n/t	9.8	n/t	22.6	10.8
Total Organic Carbon	N	%	0.01	n/t	2.6	n/t	0.8	n/t	n/t

Results Summary

Report No.: 14-00770

			ELAB Reference	5233	5234	5235	5236	5237	5238
			Customer Reference						
			Sample ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Location	BH1	BH1	BH2	BH2	TP1	TP2
			Sample Depth (m)	0.30	0.50	0.50	1.00	0.25	0.35
			Sampling Date	17/09/2014	17/09/2014	17/09/2014	17/09/2014	17/09/2014	17/09/2014
Determinand	**Codes**	**Units**	**LOD**						
Phenols									
Total Monohydric Phenols	N	mg/kg	5	cf < 5	n/t	f < 5	n/t	f < 5	f < 5
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.5	cf < 0.5	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Acenaphthylene	M	mg/kg	0.5	cf < 0.5	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Acenaphthene	M	mg/kg	0.5	cf < 0.5	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Fluorene	M	mg/kg	0.5	cf < 0.5	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Phenanthrene	M	mg/kg	0.5	cf 0.6	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Anthracene	M	mg/kg	0.5	cf < 0.5	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Fluoranthene	M	mg/kg	0.5	cf 1.2	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Pyrene	M	mg/kg	0.5	cf 1.1	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Benzo (a) anthracene	M	mg/kg	0.5	cf 0.8	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Chrysene	M	mg/kg	0.5	cf 1.0	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Benzo (b) fluoranthene	M	mg/kg	0.5	cf 0.9	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Benzo (k) fluoranthene	M	mg/kg	0.5	cf 1.1	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Benzo (a) pyrene	M	mg/kg	0.5	cf 0.8	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.5	cf 0.9	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Dibenzo(a,h)anthracene	M	mg/kg	0.5	cf < 0.5	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Benzo(ghi)perylene	M	mg/kg	0.5	cf 0.8	n/t	f < 0.5	n/t	f < 0.5	f < 0.5
Total PAH(16) Speciated	M	mg/kg	2	cf 10	n/t	f < 2	n/t	f < 2	f < 2
Total PAH (Including Coronene)	N	mg/kg	2.1	n/t	f 5	n/t	f < 2	n/t	n/t
BTEX									
Benzene	M	ug/kg	10	cfg < 10.0	n/t	fg < 10.0	n/t	fg < 10.0	fg < 10.0
Toluene	M	ug/kg	10	cfg < 10.0	n/t	fg < 10.0	n/t	fg < 10.0	fg < 10.0
Ethylbenzene	M	ug/kg	10	cfg < 10.0	n/t	fg < 10.0	n/t	fg < 10.0	fg < 10.0
Xylenes	M	ug/kg	10	cfg < 10.0	n/t	fg < 10.0	n/t	fg < 10.0	fg < 10.0
Total BTEX	M	mg/kg	0.01	n/t	fg < 0.01	n/t	fg < 0.01	n/t	n/t
TPH CWG									
>C5-C6 Aliphatic	N	mg/kg	0.01	cfg < 0.01	n/t	fg < 0.01	n/t	fg < 0.01	fg < 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	cfg < 0.01	n/t	fg < 0.01	n/t	fg < 0.01	fg < 0.01
>C8-C10 Aliphatic	N	mg/kg	1	cfg < 1.0	n/t	fg < 1.0	n/t	fg < 1.0	fg < 1.0
>C10-C12 Aliphatic	N	mg/kg	1	cfg < 1.0	n/t	fg < 1.0	n/t	fg < 1.0	fg < 1.0
>C12-C16 Aliphatic	N	mg/kg	1	cfg < 1.0	n/t	fg < 1.0	n/t	fg < 1.0	fg < 1.0
>C16-C21 Aliphatic	N	mg/kg	1	cfg < 1.0	n/t	fg < 1.0	n/t	fg < 1.0	fg < 1.0
>C21-C35 Aliphatic	N	mg/kg	1	cfg < 1.0	n/t	fg < 1.0	n/t	fg < 1.0	fg < 1.0
>C35-C40 Aliphatic	N	mg/kg	1	cfg < 1.0	n/t	fg < 1.0	n/t	fg < 1.0	fg < 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	cfg < 0.01	n/t	fg < 0.01	n/t	fg < 0.01	fg < 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	cfg < 0.01	n/t	fg < 0.01	n/t	fg < 0.01	fg < 0.01
>C8-C10 Aromatic	N	mg/kg	1	c < 1.0	n/t	< 1.0	n/t	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	cfg < 1.0	n/t	fg < 1.0	n/t	fg < 1.0	fg < 1.0
>C12-C16 Aromatic	N	mg/kg	1	cfg < 1.0	n/t	fg < 1.0	n/t	fg < 1.0	fg < 1.0
>C16-C21 Aromatic	N	mg/kg	1	cfg < 1.0	n/t	fg < 1.0	n/t	fg < 1.0	fg < 1.0
>C21-C35 Aromatic	N	mg/kg	1	cfg < 1.0	n/t	fg < 1.0	n/t	fg < 1.0	fg < 1.0
>C35-C40 Aromatic	N	mg/kg	1	cfg < 1.0	n/t	fg < 1.0	n/t	fg < 1.0	fg < 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	cfg < 1.0	n/t	fg < 1.0	n/t	fg < 1.0	fg < 1.0
Total Petroleum Hydrocarbons									
Mineral Oil	U	mg/kg	5	n/t	fg 426	n/t	fg < 5	n/t	n/t
PCB (ICES 7 congeners)									
PCB (Total of 7 Congeners)	M	mg/kg	0.03	n/t	< 0.03	n/t	< 0.03	n/t	n/t

Results Summary

Report No.: 14-00770

WAC Analysis								
Elab Ref:	5236					**Landfill Waste Acceptance Criteria Limits**		
Sample Date:	17/09/2014					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	BH2							
Depth:	1							
Site:	46 Inverness Street, London, NW1							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		0.8	3	5	6
Loss on Ignition		M	%		2.5	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			8.8	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**2:1**	**8:1**	**10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
			mg/l	**mg/l**	**mg/kg**			
Arsenic		N	< 0.005	< 0.005	< 0.05	0.5	2	25
Barium		N	0.019	0.006	0.07	20	100	300
Cadmium		N	< 0.001	< 0.001	< 0.01	0.04	1	5
Chromium		N	0.029	< 0.005	0.06	0.5	10	70
Copper		N	0.007	< 0.005	< 0.05	2	50	100
Mercury		N	< 0.005	< 0.005	< 0.01	0.01	0.2	2
Molybdenum		N	0.074	0.009	0.14	0.5	10	30
Nickel		N	0.001	< 0.001	< 0.05	0.4	10	40
Lead		N	< 0.001	< 0.001	< 0.05	0.5	10	50
Antimony		N	< 0.005	< 0.005	< 0.05	0.06	0.7	5
Selenium		N	0.008	< 0.005	< 0.05	0.1	0.5	7
Zinc		N	0.014	< 0.005	< 0.05	4	50	200
Chloride		N	34.000	< 5	68.00	800	15000	25000
Fluoride		N	< 1	< 1	< 10	10	150	500
Sulphate		N	336.000	50.000	729.00	1000	20000	50000
Total Dissolved Solids		N	960.000	130.000	1950.00	4000	60000	100000
Phenol Index		N	< 0.01	< 0.01	< 0.10	1	-	-
Dissolved Organic Carbon		N	28.600	12.200	134.00	500	800	1000
Leach Test Information								
Eluent Volume (ml)		N	140	1410				
pH		N	7.1	6.9				
Conductivity (uS/cm)		N	1310	219				
Temperature (°C)		N	19	18				
Solid Information								
Dry mass of test portion (g)			178					
Moisture (%)			25.2					

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ELAB cannot be held responsible for any discrepencies with current legislation

Results Summary

Report No.: 14-00770

WAC Analysis								
Elab Ref:	5234					**Landfill Waste Acceptance Criteria Limits**		
Sample Date:	17/09/2014					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	BH1							
Depth:	0.5							
Site:	46 Inverness Street, London, NW1							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		2.6	3	5	6
Loss on Ignition		M	%		4.3	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		426	500	--	--
Total (of 17) PAHs		N	mg/kg		5.0	100	--	--
pH		M			8.0	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**2:1**	**8:1**	**10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
			mg/l	**mg/l**	**mg/kg**			
Arsenic		N	0.013	0.011	0.11	0.5	2	25
Barium		N	0.051	0.011	0.15	20	100	300
Cadmium		N	< 0.001	< 0.001	< 0.01	0.04	1	5
Chromium		N	< 0.005	< 0.005	< 0.05	0.5	10	70
Copper		N	0.013	< 0.005	< 0.05	2	50	100
Mercury		N	< 0.005	< 0.005	< 0.01	0.01	0.2	2
Molybdenum		N	0.024	< 0.005	0.06	0.5	10	30
Nickel		N	0.003	< 0.001	< 0.05	0.4	10	40
Lead		N	0.002	0.002	< 0.05	0.5	10	50
Antimony		N	0.009	< 0.005	< 0.05	0.06	0.7	5
Selenium		N	< 0.005	< 0.005	< 0.05	0.1	0.5	7
Zinc		N	0.026	0.007	0.09	4	50	200
Chloride		N	103.000	10.000	203.00	800	15000	25000
Fluoride		N	< 1	< 1	< 10	10	150	500
Sulphate		N	1220.000	40.000	1680.00	**1000**	20000	50000
Total Dissolved Solids		N	2130.000	150.000	3660.00	4000	60000	100000
Phenol Index		N	< 0.01	< 0.01	< 0.10	1	-	-
Dissolved Organic Carbon		N	28.900	12.700	145.00	500	800	1000
Leach Test Information								
Eluent Volume (ml)		N	192	1400				
pH		N	7.5	7				
Conductivity (uS/cm)		N	259	393				
Temperature (°C)		N	19	18				
Solid Information								
Dry mass of test portion (g)			176					
Moisture (%)			16.8					

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ELAB cannot be held responsible for any discrepencies with current legislation

Method Summary

Report No.: 14-00770

Parameter	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil				
Free cyanide	As submitted sample	08/10/2014	107	Colorimetry
Hexavalent chromium	As submitted sample	07/10/2014	110	Colorimetry
Aqua regia extractable metals	Air dried sample	13/10/2014	118	ICPMS
Phenols in solids	As submitted sample	07/10/2014	121	HPLC
Elemental Sulphur	Air dried sample	13/10/2014	122	HPLC
Polyaromatic hydrocarbons (GC-FID)	As submitted sample	07/10/2014	133	GC-FID
Water soluble boron	Air dried sample	13/10/2014	202	Colorimetry
Total cyanide	As submitted sample	08/10/2014	204	Colorimetry
Aliphatic hydrocarbons in soil	As submitted sample	07/10/2014	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	As submitted sample	08/10/2014	214	GC-FID
Aromatic hydrocarbons in soil	As submitted sample	07/10/2014	214	GC-FID
Low range Aliphatic hydrocarbons soil	As submitted sample	08/10/2014	214	GC-MS
Low range Aromatic hydrocarbons soil	As submitted sample	08/10/2014	214	GC-MS
Leachate				
Arsenic*		08/10/2014	101	ICPMS
Cadmium*		08/10/2014	101	ICPMS
Chromium*		08/10/2014	101	ICPMS
Lead*		08/10/2014	101	ICPMS
Nickel*		08/10/2014	101	ICPMS
Copper*		08/10/2014	101	ICPMS
Zinc*		08/10/2014	101	ICPMS
Mercury*		08/10/2014	101	ICPMS
Selenium*		08/10/2014	101	ICPMS
Antimony		08/10/2014	101	ICPMS
Barium*		08/10/2014	101	ICPMS
Molybdenum*		08/10/2014	101	ICPMS
pH Value*		08/10/2014	113	Electrometric
Electrical Conductivity*		08/10/2014	136	Probe
Dissolved Organic Carbon		08/10/2014	102	TOC analyser
Chloride*		08/10/2014	131	Ion Chromatography
Fluoride*		08/10/2014	131	Ion Chromatography
Sulphate*		08/10/2014	131	Ion Chromatography
Total Dissolved Solids		08/10/2014	144	Gravimetric
Phenol index		08/10/2014	121	HPLC
WAC Solids analysis				
pH Value**	Air dried sample	08/10/2014	113	Electrometric
Total Organic Carbon	Air dried sample	08/10/2014	210	IR
Loss on Ignition**	Air dried sample	08/10/2014	129	Gravimetric
Acid Neutralization Capacity to pH 7	Air dried sample	08/10/2014	NEN 737	Electrometric
Total BTEX**	As submitted sample	08/10/2014	181	GCMS
Mineral Oil**	As submitted sample	08/10/2014	117	GCFID
Total PCBs (7 congeners)	Air dried sample	08/10/2014	120	GCMS
Total PAH (17)**	As submitted sample	08/10/2014	133	GCFID

Report Information

Report No.: 14-00770

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "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

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

Chelmer Consultancy Services
Unit 15, East Hanningfield Industrial Estate, Old Church Road
East Hanningfield, Essex CM3 8AB
Telephone: 01245 400 930 Fax: 01245 400 933
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Landborne Gas Assessment

Site Ref: **4792**
Site Name: **46 Inverness Street, London NW1 7HB**

Well	Date	Methane Peak	Methane Steady	Methane GSV	Carbon Dioxide Peak	Carbon Dioxide Steady	Carbon Dioxide GSV	Oxygen	Atmos.	Flow	Response Zone	Depth to Water	CO	H2S
		%v/v	%v/v	l/hr	%v/v	%v/v	l/hr	%v/v	mbar	l/hr	m bgl	m bgl	ppm	ppm
BH1	25/09/2014	0.1	<0.1	0.0001	1.3	1.0	0.0013	19.8	1017	0.1	1.00-6.00	Dry	0	0
	01/10/2014	0.1	<0.1	-0.0001	1.8	1.8	-0.0018	19.4	1022	-0.1		Dry	13	0
BH2	25/09/2014	0.1	<0.1	0.0001	0.1	<0.1	0.0001	20.1	1017	0.1	1.00-6.00	Dry	0	0
	01/10/2014	0.1	<0.1	-0.0001	0.4	0.2	-0.0004	20.5	1021	-0.1		Dry	0	0

Notes

NR = Not recorded
Values in Bold exceed the CO_2 Building Regulations threshold (>1.5%)
Values in Red exceed the Buildings Regulations Action Level (CO_2 >5.0% and CH_4 >1.5%)

Chelmer Site Investigations
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REPORT NOTES

Equipment Used

Hand tools, Mechanical Concrete Breaker and Spade, Hand Augers, 100mm/150mm diameter Mechanical Flight Auger Rig, GEO205 Flight Auger Rig, Window Sampling Rig, and Large or Limited Access Shell & Auger Rig upon request and/or access permitting.

On Site Tests

By Pilcon Shear-Vane Tester (Kn/m^2) in clay soils, and/or Mackintosh Probe in granular soils or made ground and/or upon request Continuous Dynamic Probe Testing and Standard Penetration Testing.

Note:

Details reported in trial-pits and boreholes relate to positions investigated only as instructed by the client or engineer on the date shown.

We are therefore unable to accept any responsibility for changes in soil conditions not investigated i.e. variations due to climate, season, vegetation and varying ground water levels.

Full terms and conditions are available upon request.