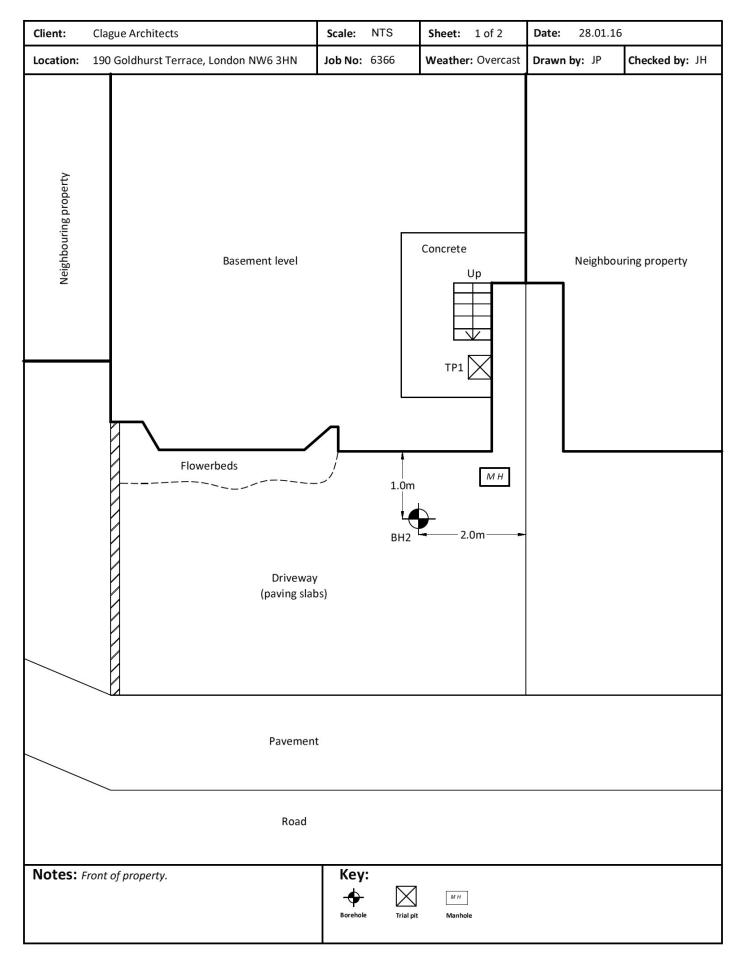


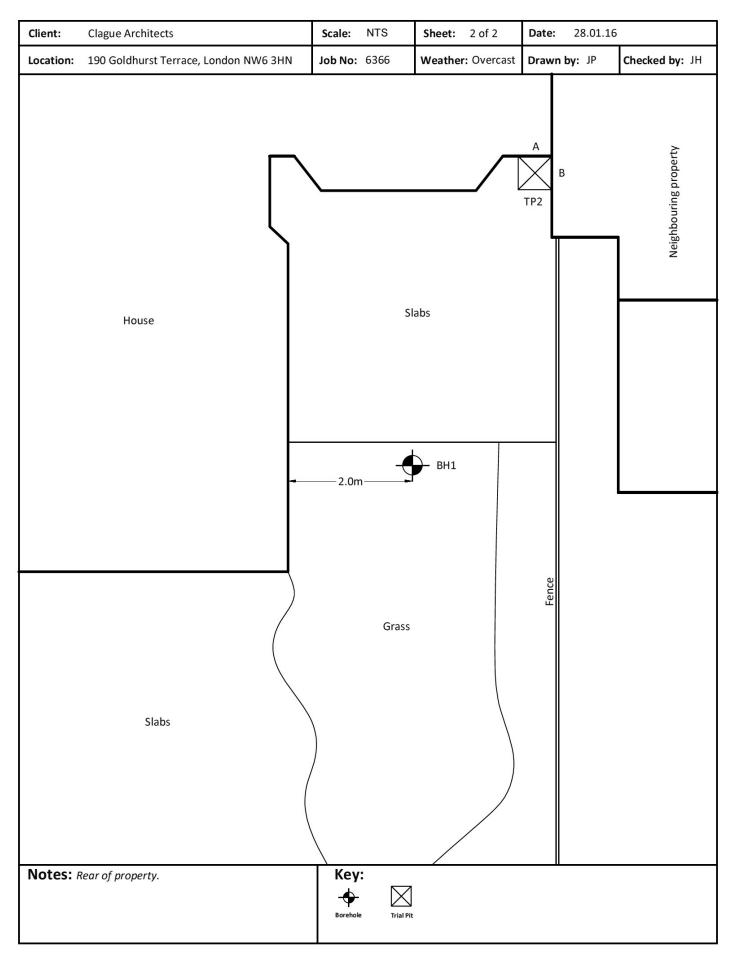
### Appendix 4 Site Investigation Data













Client: Clague Archit		Scale:	NTS	Sheet No:	1 of 1	Date:	28.01.16
Location: 190 Goldhurs London NW6	st Terrace, 3 3HN	Job No:	6366	Trial Pit No:	1	Weather:	Overcast
Excavation Method:	Hand tools			Drawn by:	JP	Checked by:	JH
BRICK	50,40,5	100	150 D 150 SZZ	grave	CONCRE GROUND: d Ily silty claye rous brick fra	lark brown y sand with agments.	GL 50mm
CONCRETE	°C		140	No ro	ots observed	oarse SAND.	X* 
400	0,0			* × ×	^ × ^ ×	<u>*</u> **	X 465mm
	00	DUE TO DE		465mm OBSTRUCTION IDERSIDE OF FOUNI	DATION		<u></u>
Remarks:				<b>Key:</b> GL Ground level D Small disturbed	sample		



Client: Clague Arch	nitects	Scale:	NTS	Sheet N	<b>No:</b> 1 of 1	<b>Date:</b> 28.01.16	
Location: 190 Goldhu NW6 3HN	rst Terrace, London	Job No:	6366	Trial Pi	t No: 2	Weather: Overcast	
Excavation Method:	Hand tools			Drawn	by: JP	Checked by: JH	
			SECTION	Α			
				20		SLAB	GL 50mm
BRICK WALL			550	100	MADE GROUNI	AIX CONCRETE	150mm
	50 60		75 75 75	925	fragments. No roots obser		
CONCRETE FOUNDATION		0.	300				
X X X X X X X X X X X X X X X X X X X	DV 80 82	000		200	Stiff mid brown partings of bro and fine sand.  No roots obser	· · · · · ·	1075mm
		TP2 SEC	CTION A END	S AT 1275			1275mm
Remarks:			D	Ground I	turbed sample		



Client: Clague Architects	Scale: NTS	Sheet No: 1 of 1	<b>Date:</b> 28.01.16
Location: 190 Goldhurst Terrace, London NW6 3HN	Job No: 6366	Trial Pit No: 2	Weather: Overcast
Excavation Method: Hand tools		Drawn by: JP	Checked by: JH
BRICK WALL	SECTION 27 57 57 57 57 57 57 57 57 57 57 57 57 57	OF CON LEAN M	clayey silt with brick
CONCRETE FOUNDATION	0°0 0°0 225		
875 DM 21 20 AS OPPOSITE 17 18	500	Becoming medi	ûm dense from 875mm. \\ \tag{975mm}
	TP2 SECTION B END		
Remarks:	D	<b>y:</b> Ground level Small disturbed sample Mackintosh Probe	



Client:	Clague Architects	Scale:	NTS	Sheet No	o: 1 of 1	Wea	ther: Overcast	Date: 28	3.01.16		
Site:	190 Goldhurst Terrace, London NW6 3HN	Job No	<b>6366</b>	Borehole	No: 1	Borin	g method: CFA 100mm	0mmØ Secondman			
Depth Mtrs	Description of Strata	Thick- ness	Legend	Sample	Tes Type		Root Information	Depth to Water	Depth Mtrs		
GL	TURF OVER TOPSOIL	0.2					No roots observed.				
0.2	MADE GROUND: dark brown gravelly silty clay with brick fragments and pieces.	0.7		D D				0.8	0.25 0.5		
0.9	Stiff mid brown grey veined silty CLAY with partings of brown and orange silt and fine sand and occasional fine gravel.		×××× ×××× ××××	D D		80 82		0.9	1.0		
		2.6	**** ***** *****	D		102 102			2.0		
			**** **** **** ****	D					2.5		
	Becoming very stiff from 3.0m.		× × × × × × × × × × × × × × × × × × ×	D		140+ 140+			3.0		
3.5	Very stiff dark brown silty CLAY with partings of brown and orange silt and fine sand and crystals.		×	D D	V	140+			3.5 4.0		
		2.0	***** ***** ****	D		140+			4.5		
				D		140+ 140+			5.0		
5.5	Very stiff mid grey silty CLAY with crystals.		×××× ×××× ×××××	D					5.5		
			× × _ × × × × - × × × × – × – ×	D	1.00	140+ 140+			6.0		
		2.5	X X X X X X X X X X X X X X X X X X X	D		140+ 140+			7.0		
8.0	BOREHOLE ENDS AT 8.0m		×××× × ×× × ×××	D		140+ 140+			8.0		
Drawn Remark	by: JP Approved by: JH  ss: Groundwater strike at 0.8m. Groundwater standing at 0.9m. Borehole open on completion. Plastic standpipe installed to 6.0m.		D S		s Flight Aug rbed sampl e			•			



	Clague Architects		N.T.S.	Sheet No			ther: Overcast	Date: 28.01.16		
Site:	190 Goldhurst Terrace, London NW6 3HN	-	<b>6366</b>	Borehole			g method: CFA 100mm		man	
Depth Mtrs	Description of Strata	Thick- ness	Legend	Sample	Test Type p		Root Information	Depth to Water	Depth Mtrs	
GL 0.04	SLAB	0.04					No veets absorved			
0.04	CONCRETE	0.06	70				No roots observed.			
0.1	MADE GROUND: dark brown gravelly sandy silty clay with numerous brick and concrete fragments.	1.1		D D					0.25 0.5	
1.2	concrete magnitudes.			D	2	.2 !1			1.0	
	Stiff mid brown grey veined silty CLAY with partings of brown and orange silt and fine sand and occasional gravel.		×××× ×××× ××××	D		20 22			1.5	
			* -* * <u>*</u> * * * * * * * * * *	D					2.0	
			× × × × × × × × × × × × × × × × × × ×	D					2.5	
	Becoming stiff from 3.0m.	3.8	× × × × × × × × ×	D		.40+ .40+			3.0	
			×× × × × × × × ×	D					3.5	
				4.0						
			× × × × × × × × × × × × × × × × × × ×	D					4.5	
5.0	Very stiff mid to dark brown CLAY with partings of brown and orange silt		** * ** * * * * * *	D		.40+ .40+			5.0	
	and fine sand and crystals.	1.0	* × × * · × * · × * · ×	D					5.5	
6.0	Very stiff mid grey silty CLAY with crystals.		*X	D	1,000	.40+ .40+			6.0	
		2.0	×x x x x x x x x x x x x x x x x x x x x	D		.40+ .40+			7.0	
8.0	BOREHOLE ENDS AT 8.0m		××××	D		.40+ .40+			8.0	
Drawn Remark	by: JP Approved by: JH  SS: Borehole dry and open on completion. Plastic standpipe installed to 8.0m.		D S V P					1		





### Laboratory Report



Site 190 Goldhurst Terrace, London, NW6 3HN

Client Clague LLP

Date 09-Feb-16

Our Ref CSI6366

CGL Ref CGL6366

**Chelmer Site Investigation Laboratories Ltd** 

Unit 15 East Hanningfield Industrial Estate, Old Church Road, East Hanningfield, Essex CM3 8AB Essex: 01245 400930 | London: 0203 6409136 | info@siteinvestigations.co.uk | www.siteinvestigations.com





### **Content Summary**

This report contains all test results as indicated on the test instruction/summary.

CGL Reference : CGL6366 Client Reference : CSI6366

For the attention of : Clague LLP

This report comprises of the following: 1 Cover Page

1 Inside Cover/Contents Page

3 Pages of Results

1 Moisture/Shear Strength Chart

1 Plasticity Chart

5 Pages of BRE SD1 Results

1 Limitations of Report Page

### 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

A date and time of sampling was provided

Yes

Arrived damaged and/or denatured

No

## Laboratory Testing Results

Chelmer
Geotechnical Laboratories
'Goundbreaking Services'

Com	[3] B: [4] B: [5] B:	[2] E	Notes :-					В	В	В	В	ВНЛ	Clien
Comments :-	S 1377 : P S 1377 : P S 1377 : P S 1377 : P RE Digest	S 1377 : P stimated if	-					ВН1	ВН1	ВН1	BH1	San BH/TP/WS	Job Nun C t Refere Site Na
	[3] BS 1377: Part 2: 1990 [4] BS 1377: Part 2: 1990 [5] BS 1377: Part 2: 1990 [6] BRE Digest 240: 1993	art 2 : 199 <5%, othe	KAS Accre					8.0 6	4.0	2.5	1.0	mple Ref Depth (m)	Job Number: CGL6366 Client: Clague LI Client Reference: CSI6366 Site Name: 190 Gold
	[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	<ul><li>[1] BS 1377: Part 2: 1990, Test No 3.2</li><li>[2] Estimated if &lt;5%, otherwise measured</li></ul>	*UKAS Accredited Tests					69748	69747	69746	69745	DID	Job Number: CGL6366 Client: Clague LLP nt Reference: CSl6366 Site Name: 190 Goldhur
		۵						D	D	D	D	Sample Type	.P nurst Terrac
	[9] Values of shear strength were deterr Geonor vane (GV). [10] BS 1377 : Part 3 : 1990, Test No 4 [11] BS 1377 : Part 2 : 1990, Test No 9	[7] BS 5930 : 1981 : Figure 31 - Plasticity Chart for t [8] In-house method S9a adapted from BRE IP 4/93						38	37	33	33	*Moisture Content (%) [1]	ob Number: CGL6366 Client: Clague LLP Reference: CSI6366 Site Name: 190 Goldhurst Terrace, London, NW6 3HN
	strength were detern 3 : 1990, Test No 4 2 : 1990, Test No 9	Figure 31 - Plasticit S9a adapted from I						<5	<5	<5	27	*Soil Faction > 0.425mm (%) [ 2 ]	6 3HN
	[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	<ul> <li>[7] BS 5930: 1981: Figure 31 - Plasticity Chart for the classification of fine soils</li> <li>[8] In-house method S9a adapted from BRE IP 4/93</li> </ul>						81	70	70	70	*Liquid Limit (%) [ 3 ]	
	mer Site Investig	ification of fine soils						32	25	26	23	*Plastic Limit (%) [4]	
	ations using a Pilo							49	45	44	47	*Plasticity Index (%) [5]	
								0.13	0.26	0.17	0.20	*Liquidity Index (%) [ 5 ]	
	[14] BRE Special C Note that if the SO. sample as falling in testing is undertake	[12] BS 1377 : Part 3 [13] SO <sub>4</sub> = 1.2 x SO <sub>3</sub>						47	43	42	35	*Modified Plasticity Index (%) [6]	
	ligest One (Concrete content falls into the to the DS-4m or DS n to prove otherwise	[12] BS 1377 : Part 3 : 1990, Test No 5.6 [13] SO <sub>4</sub> = 1.2 x SO <sub>3</sub>						CV	CV	CV	CV	*Soil Class [7]	
	[14] BRE Spedal Digest One (Concrete in Aggressive Ground) 2005  Note that if the SO <sub>4</sub> content fals into the DS-4 or DS-5 class, it would be prudent to consider the sample as faling into the DS-4m or DS-5m dass respectively unless water soluble magnesium testing is undertaken to prove otherwise	Ġ										Filter Paper Contact Time (h) [ 8 ]	
	nd) 2005 , it would be prudent ly unless water solub											*Soil Sample Suction (kPa)	
	to consider the e magnesium							140+	140+		81	Insitu Shear Vane Strength (kPa) [ 9 ]	Date To Date Testin
	W - Water sample  ENP - Essentially Non-Plastic  UIS - Underside Foundation	B - Bulk sample	Key									Organic Content (%) [10]	Date Received: 03/02/2016 Date Testing Started: 05/02/2016 Date Testing Completed: 09/02/2016 Laboratory Used: Chelmer Geotechnical, CM3 8AB
	ed sample) n-Plastic ndation											*pH Value [11]	03/02/2016 05/02/2016 09/02/2016 Chelmer Ge
												*Sulpha \$0 <sub>3</sub> [12]	otechnica
	TESTING 8284	(+)	3									ate Content SO <sub>4</sub> [13]	al, CM3 8
	S											(g/l) Class [14]	8AB
'	1												

Chelmer Site Investigations 2014

Checked By :- SG

Date Checked : 15-Feb-16

Q170 Rev 4

Technician :- SW/HS/LA

### Laboratory Testing Results

Job Number: CGL6366 Client: Clague LLP Client Reference: CSI6366 Site Name: 190 Goldhurst Terrace, London, NW6 3HN

Chelmer
Geotechnical Laboratories
'Groundbreaking Services'

Date Received: 03/02/2016
Date Testing Started: 05/02/2016
Date Testing Completed: 09/02/2016
Laboratory Used: Chelmer Geotechnical, CM3 8AB

Comments :-	[6] BRE Digest 240 : 1993	[5] BS 1377	[4] BS 1377	[3] BS 1377	[2] Estimate	[1]BS 1377	Notes :-						вн2	вн2	вн2	вн2	вн/тр/ws
Y.	gest 240 : 1	7 : Part 2 : 1	7 : Part 2 : 1	7 : Part 2 : 1	ed if <5%, o	7 : Part 2 : 1	*UKAS A						8.0	5.5	3.5	1.5	Depth (m)
	993	[5] BS 1377 : Part 2 : 1990, Test No 5.4	[4] BS 1377 : Part 2 : 1990, Test No 5.3	[3] BS 1377 : Part 2 : 1990, Test No 4.4	[2] Estimated if <5%, otherwise measured	[1] BS 1377 : Part 2 : 1990, Test No 3.2	*UKAS Accredited Tests						69753	69752	69751	69750	UID
		0 5.4	0 5.3	0 4.4	asured	0 3.2	sts						D	D	D	D	Sample Type
	[11] BS 1377 : Pa	[10] BS 1377 : Pa	Geonor vane (GV)	[9] Values of shea	[8] In-house metho	[7] BS 5930 : 1981							31	31	32	30	*Moisture Content (%) [ 1 ]
	[11] BS 1377 : Part 2 : 1990, Test No 9	[10] BS 1377 : Part 3 : 1990, Test No 4		r strength were deter	[8] In-house method S9a adapted from BRE IP 4/93	: Figure 31 - Plastic							۶.	<b>%</b>	<b>%</b>	<b>&lt;</b> 5	> 0.425mm (%)[2]
		-		[9] Values of shear strength were determined in situ by Chelmer Site Investigations using a Pilcon hand vane or	BRE IP 4/93	[7] BS 5930 : 1981 : Figure 31 - Plasticity Chart for the classification of fine soils							77	74	73	73	(%)[3]
				lmer Site Investig		sification of fine soils							23	25	24	23	(%)[4]
				gations using a Pilc									54	49	49	50	(%) [5]
				on hand vane or									0.16	0.13	0.16	0.15	(%) [5]
	result to direct take	sample as falling in	Note that if the SO	[14] BRE Special [	$[13] SO_4 = 1.2 \times SO_3$	[12] BS 1377 : Par							51	46	46	47	Index (%)[6]
	The prove officials	sample as falling into the DS-4m or DS-5m class testing is undertaken to prove otherwise	content falls into the	ligest One (Concrete	ű	[12] BS 1377 : Part 3 : 1990, Test No 5.6							CV	CV	CV	CV	[7]
		-5m class respective	e DS-4 or DS-5 class	[14] BRE Special Digest One (Concrete in Aggressive Ground) 2005		.6											Contact Time (h) [8]
		respectively unless water soluble magnesium	it would be prudent	nd) 2005													Suction (kPa)
		le magnesium	to consider the										140+				Strength (kPa) [9]
	U/S - Underside Foundation	ENP - Essentially Non-Plastic	W - Water sample	U - U100 (undisturbed sample)	B - Bulk sample	D - Disturbed sample	Кеу										(%)[10]
	ndation	n-Plastic		d sample)		2580											[11]
		<u> </u>		Щ													SO <sub>3</sub> [12]
	8284	TESTING	K A S	<b>→</b>	∠\ ∀/	E	***										SO <sub>4</sub> [13]
			ر ا	Щ	ш			L									Class [14]

Checked By :- SG

Date Checked : 15-Feb-16

Q170 Rev 4

Technician :- SW/HS/LA

## Laboratory Testing Results

Job Number: CGL6366 Client: Clague LLP Client Reference: CSI6366 Site Name: 190 Goldhurst Terrace, London, NW6 3HN

Date Received: 03/02/2016
Date Testing Started: 05/02/2016
Date Testing Completed: 09/02/2016
Laboratory Used: Chelmer Geotechnical, CM3 8AB Chelmer
Geotechnical Laboratories
'Goundbreaking Services'

Technician :- SW/HS/LA	Comments :-	[6] BRE Digest 240 : 1993	[5] BS 1377 : Part 2 : 1990, Test No 5.4	[4] BS 1377 : Part 2 : 1990, Test No 5.3	[3] BS 1377 : Part 2 : 1990, Test No 4.4	[2] Estimated if <5%, otherwise measured	[1] BS 1377 : Part 2 : 1990, Test No 3.2	Notes :-							TP2A	внльма
SW/HS/LA		st 240 : 19	Part 2 : 19	Part 2 : 19	Part 2 : 19	if <5%, ot	Part 2 : 19	*UKAS Acc							1.075	ample Ref Depth (m)
		93	90, Test No	90, Test No	90, Test No	nerwise mea	90, Test No	*UKAS Accredited Tests							69755	UID
								เร							D	Sample Type
		[11] BS 1377 : Part 2 : 1990, Test No 9	[10] BS 1377 : Part 3 : 1990, Test No 4	Geonor vane (GV).	[9] Values of shear strength were determined in situ by Chelmer Site Investigations using a Picon hand vane or	[8] In-house method S9a adapted from BRE IP 4/93	[7] BS 5930 : 1981 : Figure 31 - Plasticity Chart for the classification of fine soils								31	*Moisture Content (%) [1]
		2:1990, Test No 9	3 : 1990, Test No 4		strength were determ	S9a adapted from E	Figure 31 - Plasticity								23	*Soil Faction > 0.425mm (%) [ 2 ]
					nined in situ by Chel	3RE IP 4/93	y Chart for the classi								83	*Liquid Limit (%)[3]
					mer Site Investiga		fication of fine soils								27	*Plastic Limit (%) [ 4 ]
Checked By :- SG					ations using a Pilcor										56	*Plasticity Index (%) [ 5 ]
SG															0.07	*Liquidīty Index (%) [ 5 ]
		configuration brose one image	sample as falling into	Note that if the SO4	[14] BRE Special Dig	$[13]$ SO <sub>4</sub> = $1.2 \times$ SO <sub>3</sub>	[12] BS 1377 : Part 3 : 1990, Test No 5.6								43	*Modified Plasticity Index (%) [6]
		to broke officialise	the DS-4m or DS-	content falls into the	jest One (Concrete		3: 1990, Test No 5.								CV	*Soil Class [7]
			5m class respectively	DS-4 or DS-5 class.	[14] BRE Special Digest One (Concrete in Aggressive Ground) 2005		6									Filter Paper Contact Time (h) [ 8 ]
			sample as falling into the DS-4m or DS-5m class respectively unless water soluble magnesium testing is undertaken to prove otherwise.	Note that if the SO4 content falls into the DS-4 or DS-5 class, it would be prudent to consider the	d) 2005											*Soil Sample Suction (kPa)
																Insitu Shear Vane Strength (kPa) [ 9 ]
D		U/S - Underside Foundation	ENP - Essentially Non-Plastic	W - Water sample	U - U100 (undisturbed sample)	B - Bulk sample	D - Disturbed sample	Key								Organic Content (%) [ 10 ]
Date Checked :-		dation	-Plastic		sample)											*pH Value [11]
16				_ `			1									*Sulpha \$0 <sub>3</sub> [12]
15-Feb-16		8284	TESTING	KAS	\ <del>\</del>	← \ ← )	E	-								ste Content (
				<b>J</b> ,	Ē											(g/l) Class [ 14 ]

Q170 Rev 4

# \_aboratory Testing Results

Moisture Content/Shear Strength Profile

Job Number : CGL6366 Client : Clague LLP

Client : Clague LLP
Client Reference : CSI6366

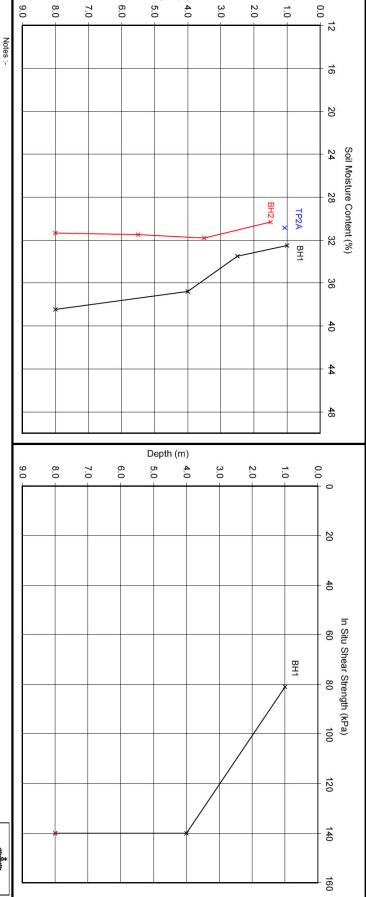
Site Name: 190 Goldhurst Terrace, London, NW6 3HN

Date Received: 03/02/2016
Date Testing Started: 05/02/2016

Chelmer Geotechnical Laboratories Groundbreaking Services

Date Testing Started: 05/02/2016
Date Testing Completed: 09/02/2016

Laboratory : Chelmer Geotechnical Laboratories, CM3 8AB



Depth (m)

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

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. (Not UKAS accredited)

UKAS TESTING 8284

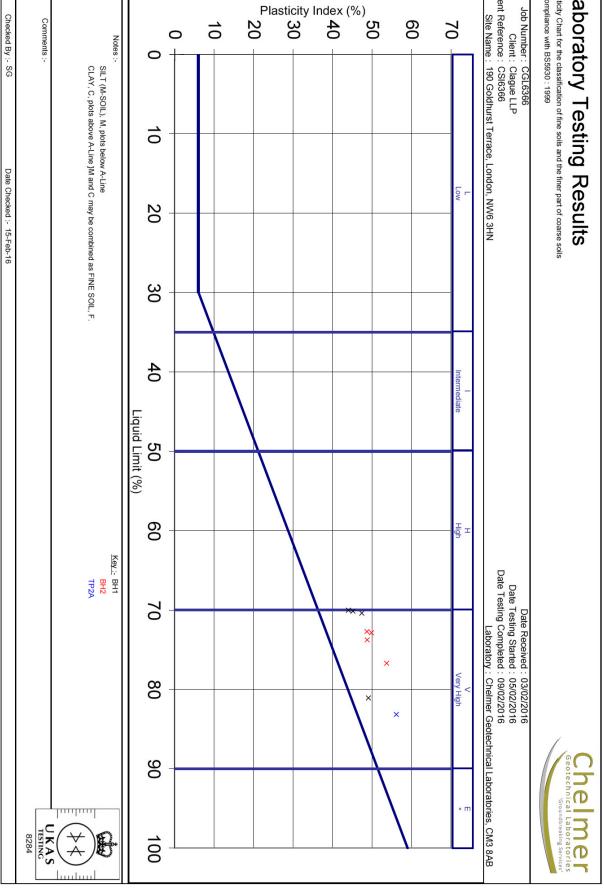
Q170 Rev 4 plotted and the alternative profile additionally shown as an appropriately coloured broken line
2. If plotted, 0.4 LL and PL+2 ( after Driscoll, 1983 ) should only be applied to London Clay

and similarly over consolidated clays ) at shallow depths.

Comments:-

Checked By :- SG

Date Checked :- 15-Feb-16



Q170 Rev 4