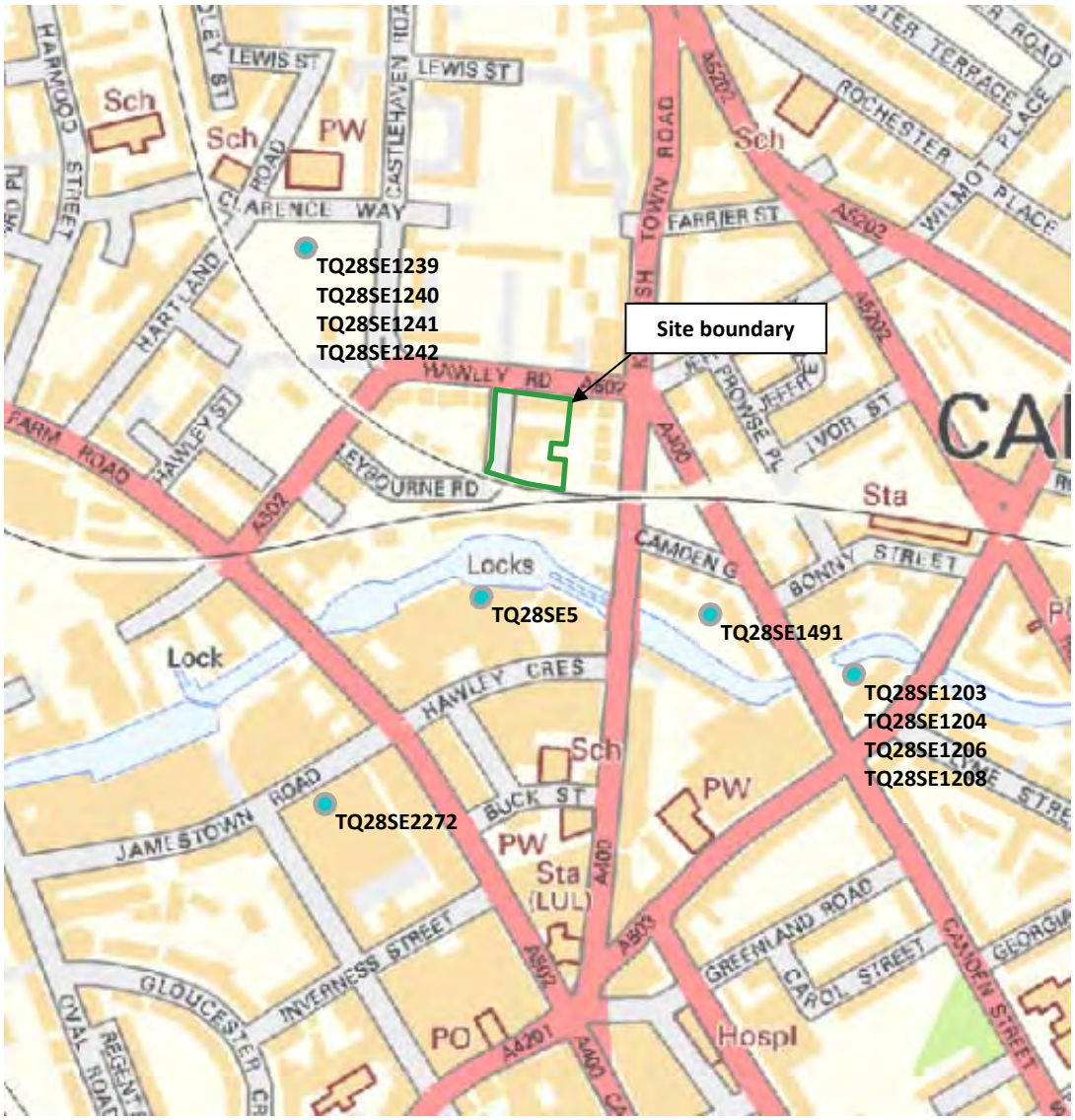
APPENDIX B

Historical BGS boreholes logs



N

Base figure taken from BGS online

Not to scale

Client	Project	Job No
Walsh Group	**Camden Lock, London – Proposed School Site**	**CG/18067**
CGL	Title **BGS borehole location plan**	

Project: ARLINGTON HOUSE, 220 ARLINGTON ROAD, CAMDEN, LONDON	Client: [redacted]	Trial Pit Excavation Methods: BRADFORD WATTS HAND PIT	Hole No. **TH8A**
	Engineer: [redacted]	Pit Dimensions: Length - 1.80 m Width - 1.40 m	Sheet 1 of 1
Ground Level: 25.33 m.A.O.D.	Coordinates: m.E. m.N.	Orientation: Length -	Job No **10482**

WATER		STRATA				SAMPLING/IN SITU TEST			LAB TESTING				
Date/Time at Depth	Depth to Water m	Description	Legend	Level m.A.O.D.	Depth m	Depth m	Type & No.	Test Result	% <425	W %	W_P %	W_L %	OTHER TESTS AND NOTES
		Made Ground (Brickwork wall)				0.20	D1						TH8A logged from north west face of Trial hole CLEA screen with speciated polyaromatic hydrocarbons (D1)
						0.50	D2		100	34	27	75	No groundwater recorded during fieldwork
				24.60	0.73								
30/10/06	DRY C	Made Ground (Concrete)											Water in hole from Diamond Drilling corehole in wall above pit
				24.25	1.08								
													Trial pit complete at 1.09m

Pit Stability, Shoring, etc.

No collapse of sides of trial pit

Water Level observations during digging, depths below GL.					
Strike	Depth Obs.	Depth after 5min	10 min	15 min	20 min

WATER

- ▼ 1 First Strike
- ▽ 2 Subsequent Strike
- N - Overnight Depth
- C- Completion Depth
- S Seepage not rising

SAMPLE AND TEST KEY

- D Small disturbed sample
- B Bulk disturbed sample
- W Water sample
- U Undisturbed sample
- K Percolation Test
- PP Perth Penetrometer Test
- HV Hand shear vane test
- SRD Sand replacement density test
- CBR In situ CBR test
- PB Plate Bearing Test

TEST RESULT

- Np = Np Value
- V = Average Hand Shear Vane Strength - kN/m^2
- BD = In-Situ Bulk Density - Mg/m^3
- CBR = California Bearing Ratio - %

Fieldwork By	GJB
Dates	30/10/03
Log	GJB

Sheet 1 of 1

TH8A

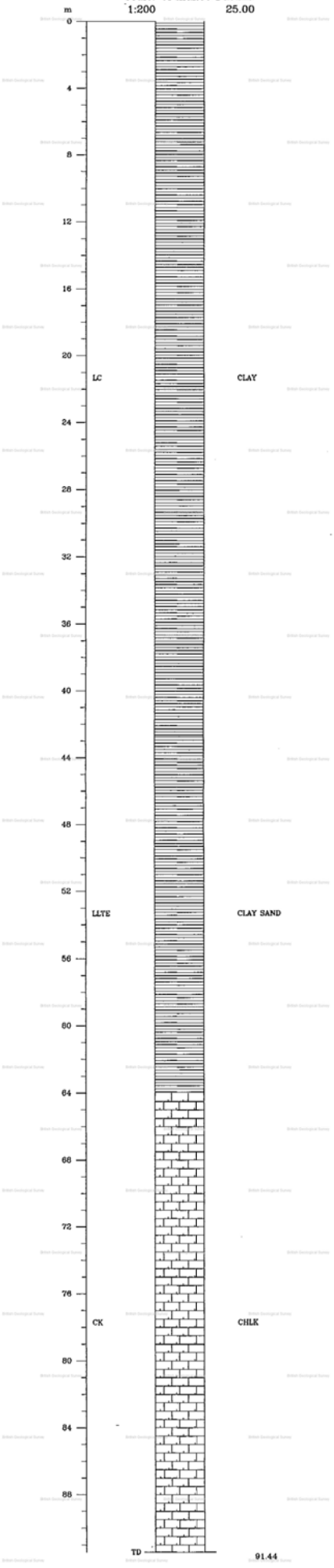
RSA GEOTECHNICS LTD (01449) 723723

5 TQ28SE 5

N-WHITAKERS BREWERY HAMPSTEAD

Grid Reference: 28850 84138

Scale: 1:200 Ordnance Datum: 25.00



TERRESEARCH LIMITED

BOREHOLE NO. 1 TQ28SE 1203

Contract Name Camden Town
Report No. S. 808/15
Client S. Bottis Ltd.
Site Address Corner of Camden Street and Camden Road
Engineers: Leonard & Partners, 344 - 360 South Lambeth Rd, London S.W.8.
2708 8'40

Standing Water Level 55'0" 17.6.65. 30'0" 21.6.65.
Diameter 8"
Water Struck 3'6"
Method of Boring Shell/Auger
Ground Level 78.49
Start 14.6.65. Finish 16.6.65.
Remarks:

Description of Strata	Thickness	Depth	Disturbed Samples	'U' Cores and 'N' P. Test
Made ground (sand, bricks stones etc.)	1'0"	1'0"	J2101 0'6"	
Soft brown mottled clay	2'6"	3'6"	J2102 2'6"	
Brown sandy clay with gravel	5'0"	8'6"	B2103 5'0" J2104 7'6"	5'0" N=14
Stiff brown mottled clay with layers of silt and sulphate crystals	8'0"	16'6"	J2106 12'6"	U2105 10'0" U2107 14'0"
Stiff fissured brown clay with sulphate crystals	5'6"	22'0"	J2108 17'6"	U2109 19'0"
Hard fissured grey silty clay with traces of organic material	6'0"	28'0"	J2110 22'6" J2112 27'6"	U2111 24'0"
Hard fissured silty grey clay	10'0"	38'0"	J2114 32'6" J2116 37'6"	U2113 29'0" U2115 34'0"
Hard fissured grey clay with layers of silt and occasional sulphate crystals	23'6"	61'6"	J2118 42'6" J2120 47'6" J2122 52'6" J2124 57'6"	U2117 39'0" J2119 45'0" U2121 49'0" U2123 54'0" U2125 60'0"
			W2126	
TOTALS	61'6"	61'6"		

NOTES: 1. Descriptions are given in accordance with the B.S. Civil Engineering Code of Practice C.P.2001 "Site Investigations"
2. J indicates Jar Samples.
B " Bulk Samples.
W " Water Samples.
U " Undisturbed Core Samples. These are nominal 4 in. diam. and 18 in. long. Depths shown are top of sample.
N " Number of blows per ft. penetration with Standard Penetration Tests.

TERRESEARCH LIMITED

BOREHOLE NO. 2 TQ28SE

Contract Name Camden Town — Report No. S. 808/15 1204

Client [illegible] — Site Address Corner of Camden Street.

Engineers: Leonard & Partners, — and Camden Road.

344 - 360 South Lambeth Rd., — London N.W.1.

London S.W.8. — 270, 3406

Standing Water Level None — Diameter 8"

Water Struck None — Method of Boring Shell/Auger

Ground Level 78.23 — Start 19.6.65. Finish 21.6.65.

Remarks:

Description of Strata	Thickness	Depth	Disturbed Samples	'U' Cores and 'N' P. Test
Made ground (concrete, grey silty clay with bricks)	3'0"	3'0"	J3724 2'6"	
Brown sandy clay with gravel	2'6"	5'6"	B3725 5'0"	
Stiff fissured mottled brown clay with occasional sulphate crystals and layers of silt	17'6"	23'0"	J3727 8'6" J3729 12'6" J3731 17'6" J3733 22'6"	U3726 6'0" U3728 10'0" U3730 14'0" U2732 19'0"
Hard silty mottled grey clay with sulphate crystals	5'0"	28'0"	J3735 27'6"	U3734 24'0"
Stiff to hard fissured grey silty clay with layers of light grey silt. Small crystalline aggregates of pyrites towards the base	32'6"	60'6"	J3737 32'6" J3739 37'6" J3741 42'6" J3743 47'6" J3745 52'6" J3747 57'6"	U3736 29'0" U3738 34'0" U3740 39'0" U3742 44'0" U3744 49'0" U3746 54'0" U3748 59'0"
TOTALS	60'6"	60'6"		

Notes: 1. Descriptions are given in accordance with the B.S. Civil Engineering Code of Practice C.P.2001 "Site Investigations"

2. J indicates Jar Samples.
   B " Bulk Samples.
   W " Water Samples.
   U " Undisturbed Core Samples. These are nominal 4 in. diam. and 18 in. long. Depths shown are top of sample.
   N " Number of blows per ft. penetration with Standard Penetration Tests.

TERRESEARCH LIMITED

BOREHOLE NO. 4 TQ28SE

Contract Name Camden Town
Client: G. Baltin Ltd.,
Engineers: Leonard & Partners.
344-360 South Lambeth Rd.
London. S.W.8.

Report No. S. 808/15 1206
Site Address Corner of Camden Street, and Camden Road
2910, 8410

Standing Water Level 25'0" 17.6.65.
25'9" 21.6.65.
Water Struck 3'6"
Ground Level 79.60

Diameter 8"
Method of Boring Shell/Auger
Start 16.6.65 Finish 16.6.65

Remarks:

Description of Strata		Thickness	Depth	Disturbed Samples	'U' Cores and 'N' P. Test
MADE GROUND	Sand bricks and stones etc.	0'9"	0'9"		
	Brown sandy clay with bricks and stones	2'9"	3'6"	J2127 2'6"	
Grey silty clay		7'0"	10'6"	B2128 5'0" J2129 7'6"	U2130 9'0"
Brown mottled clay		12'6"	23'0"	J2131 12'6" J2133 17'6" J2135 22'6"	U2132 14'0" U2134 19'0"
Grey clay		8'6"	31'6"	J3127 27'6"	U2136 24'0" U2138 30'0"
				W2139	
TOTALS		31'6"	31'6"		

NOTES: 1. Descriptions are given in accordance with the B.S. Civil Engineering Code of Practice C.P.2001 "Site Investigations"
2. J indicates Jar Samples.
B " Bulk Samples.
W " Water Samples.
U " Undisturbed Core Samples. These are nominal 4 in. diam. and 18 in. long. Depths shown are top of sample.
N " Number of blows per ft. penetration with Standard Penetration Tests.

TERRESEARCH LIMITED

BOREHOLE NO. 6 TQ28SE

Contract Name Camden Town Report No. S. 808/15 1208

Client LL.Baltic Ltd. Site Address Corner of Camden Street,

Engineers Halcrow and Partners, and Camden Road

344-360 South Lambeth Rd.

London, S.W.8. 2913, 8411

Standing Water Level Diameter 8"

Water Struck None Method of Boring Shell/Auger

Ground Level 76.27 Start 17.6.65 Finish 17.6.65

Remarks: 2 men breaking out concrete from ground level to 6" and pitting to 1'6".

Description of Strata		Thickness	Depth	Disturbed Samples	'U' Cores and 'N' P. Test
MADE GROUND	Concrete	0'6"	0'6"		
	Cobble stones	1'0"	1'6"		
Brown mottled silty clay clay		4'6"	6'0"	J3712 2'6" J3713 5'0"	
Mottled brown clay clay		14'0"	20'0"	J3714 7'6" J3716 12'6" J3718 17'6"	U3715 9'0" U3717 15'0" U3719 19'6"
Grey clay clay		4'0"	24'0"	J2720 22'6"	
Grey clay with layers of silt		7'0"	31'0"	J3722 27'6"	U3721 25'0" U3723 29'6"
TOTALS		31'0"	31'0"		

NOTES: 1. Descriptions are given in accordance with the B.S. Civil Engineering Code of Practice C.P.2001 "Site Investigations"

2. J indicates Jar Samples.
B " Bulk Samples.
W " Water Samples.
U " Undisturbed Core Samples. These are nominal 4 in. diam. and 18 in. long. Depths shown are top of sample.
N " Number of blows per ft. penetration with Standard Penetration Tests.

Terresearch

Contract: Hawley Road, Camden

Client: Materials Science Consultants Ltd

Borehole No. 1

Sheet No. 1 Of 1.
Depth 0 to 5 metres.

Equipment and Methods
Hand Auger 100mm diameter

Orientation : Vertical

Ground Level : m.O.D.

Coordinates : 287, 843

Job Number : S91/191
Location : TP28SE 1239
Dates : 20/11/91

Daily Prog.	Water Levels	Remarks	In Situ Tests	Samples Taken	Depth (Thick)	Reduced Level	Description	Legend
					0.00			
					0.05		MADE GROUND (tarmac)	
					0.15		MADE GROUND (concrete)	
				J 12	(0.48)		Firm greyish brown silty CLAY with scattered gravel traces	
				J 13	0.63		Firm to stiff brown slightly silty CLAY with occasional blue-grey reduction zones and traces of selenite crystals	
				U 14				
				J 15				
					(2.37)			
				U 16				
				J 17				
				J 18				
				U 19				
20/11					3.00		End of Borehole	

Operator
NF

General Remarks:

Appendix
1

Scale
5m/sheet

Sheet No.
1

Terresearch Limited, Taywood Road, Northolt, Middlesex UB5 6RL. Tel: 081 575 4901 Fax: 081 575 4462

Terresearch

Contract: Hawley Road, Camden

Client: Materials Science Consultants Ltd

Borehole No. 2

Sheet No. 1 Of 1.
Depth 0 to 5 metres.

Equipment and Methods
Hand Auger 100mm diameter

Orientation : Vertical

Ground Level : m.O.D.

Coordinates : 287,483

Job Number : S91/191

Location : TQ28SE 1240

Dates : 20/11/91

Daily Prog.	Water Levels	Remarks	In Situ Tests	Samples Taken	Depth (Thick)	Reduced Level	Description	Legend
					0.00			
					0.05		MADE GROUND (tarmac)	
					0.15		MADE GROUND (concrete)	
					(0.35)		Firm greyish brown silty CLAY	
				J 20	0.50		Firm brown silty CLAY with frequent blue-grey reduction zones, occasional pockets of orange-brown sandy clay and traces of selenite crystals becoming more abundant with depth	
				J 21				
				U*				
				U 22				
				J 23				
					(2.50)			
				U 24				
				J 25				
				J 26				
				U 27				
20/11					3.00		End of Borehole	

Operator NF

General Remarks:

Appendix 1

Scale 5m/sheet

Sheet No. 2

Terresearch Limited, Taywood Road, Northolt, Middlesex UB5 6RL. Tel: 081 575 4901 Fax: 081 575 4462

Terresearch

Contract: Hawley Road, Camden

Client: Materials Science Consultants Ltd

Borehole No. 3

Sheet No. 1 Of 1.
Depth 0 to 5 metres.

Equipment and Methods
Hand Auger 100mm diameter

Orientation : Vertical

Ground Level : m.O.D.

Coordinates : 287, 843

Job Number : S91/191
TQ 2 5 E
Location : 1241
Dates : 19/11/91

Daily Prog.	Water Levels	Remarks	In Situ Tests	Samples Taken	Depth (Thick)	Reduced Level	Description	Legend
					0.00			
				J 1	0.05		MADE GROUND (tarmac)	
					0.15		MADE GROUND (concrete)	
					(0.45)		MADE GROUND (dark grey clayey sand with bricks and stones)	
				J 2				
					0.60			
				J 3	(0.20)		MADE GROUND (ash with bricks and stones)	
	19/11			W 11	0.80			
				J 4			Firm brown silty CLAY with occasional blue-grey reduction zones	
				U 5				
				J 6				
					(2.20)			
				U 7				
				J 8				
				J 9				
				U 10				
19/11					3.00		End of Borehole	

Operator NF

General Remarks:

Appendix 1

Scale 5m/sheet

Sheet No. 3

Terresearch Limited, Taywood Road, Northolt, Middlesex UB5 6RL. Tel: 081 575 4901 Fax: 081 575 4462

Terresearch

Contract: Hawley Road, Camden
Client: Materials Science Consultants Ltd

Borehole No. 4
Sheet No. 1 Of 1.
Depth 0 to 5 metres.

Equipment and Methods
Hand Auger 100mm diameter

Orientation : Vertical

Ground Level : m.O.D.

Coordinates : 287, 843

Job Number : S91/191
Location : TQ28SE 1242
Dates : 20/11/91

Daily Prog.	Water Levels	Remarks	In Situ Tests	Samples Taken	Depth (Thick)	Reduced Level	Description	Legend
					0.00			
					0.05		MADE GROUND (tarmac)	
					0.15		MADE GROUND (concrete)	
					(0.45)		MADE GROUND (soft silty sandy brown clay with occasional gravel and brick traces)	
				J 28				
				J 29	0.60			
					(0.55)		Soft to firm dark brownish grey silty CLAY with organic traces	
				U 30				
				J 31	1.15			
				J 32			Firm to stiff brown silty CLAY with some blue-grey reduction zones and occasional organic traces	
				U 33				
				J 34	(1.85)			
				J 35				
				U 36				
20/11					3.00		End of Borehole	

Operator
NF

General Remarks:

Appendix
1

Scale
5m/sheet

Sheet No.
4

Terresearch Limited, Taywood Road, Northolt, Middlesex UB5 6RL. Tel: 081 575 4901 Fax: 081 575 4462

C16 2 598 398

RECORD of WELL or BORING

Survey No. 1" N.S. 256
1" O.S.

at (or farm) Camden Road B. P. No. 2
Town Camden Town N.W. St. Pancras. County London
Six-inch map n 5 NW
Exact site (unless a tracing from a map is supplied, give distance and direction from parish church, cross-roads, or other object shown on maps). A little S of the SW from Camden Town Stn. Ltd sheet 16 Vol I
Popular Edition (Sheet of one-inch map. (Square) TQ 28/50

Surface level of ground c 85 ft. above Ordnance Datum. Well or Bore commenced at ..... ft. below surface level of ground.
Sunk 4 ft., diameter 4 ft. Bored ..... ft.; diameter of boring: at top ..... in., at bottom ..... in.
Details of lining tubes (internal diameters preferred) 34' 2" of 16 in. Top. 3' 4" b/o
197' 6" .. 12 .. .. 2' 6" ..

Water struck at depths of (feet) 301', 315' 333'. NGR TQ 2902 8412
Rest-level of water ~~above~~ below top of well or bore 278 ft. Pumping level ?278 ft. Time of recovery ..... hours.
Suction at 598 ft. depth. Yield: (i) on test 7000/8000 galls. per hour, (ii) normal ..... galls. per .....
Quality (attach copy of analysis if available) Hardness Temp 0° Temp 4° Total 4°
Made by LE GRAND, SUTCLIFF & GELL, LD. for Mr. Aerated Bread Co. Ltd Date of boring Aug/Oct, 1934
Information from LE GRAND, SUTCLIFF & GELL, LD. S134/p. 673.

(For Survey use only). GEOLOGICAL CLASSIFICATION.	NATURE OF STRATA. (and any additional remarks)	THICKNESS. Feet.	Inches.	DEPTH. Feet.	Inches.
Made 2	Made ground	2	.	2	.
	Brown clay	50	.	52	.
L.C. 106	Blue clay	28	.	50	.
	Blue clay & stone	25	.	75	.
	Blue clay	33	.	108	.
	Mottled clay	39	.	147	.
W.R.B. 50	Conglomerate	6	.	153	.
	Green loamy sand	5	.	158	.
T.S. 20	Thanet Sand	19	.	177	.
	Green flints	1	.	178	.
CK. 474	Chalk & flints	232	.	440	.
	Hard grey Chalk	242	.	652	.

JB
26:10:35.

Site visited 30th July 1946.
Pumping controlled by demand &.
Well top in basement 10' below ground level.

Confidential Water very soft. – have to harden it.

~~Rec.~~ P.W.L. 300 Yield 10,328 Nov. 1937 2 July 1946

GEOLOGICAL SURVEY AND MUSEUM,
SOUTH KENSINGTON,
LONDON, S.W. 7.

For Survey use only.

Date received.	G.S.M.	M. of H. notified.	Site marked on 1" map.
Oct 1935.			

(11969B) Wt 10256/0175 2,500 9/32 H, J, R & L, Ld

APPENDIX C

CGL borehole logs

BOREHOLE LOG

Project				BOREHOLE No
Camden Lock Village Phase 1				**BH1**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/18067	04-11-14	25.75		
Client				Sheet
Walsh Group				1 of 2

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
				25.45		0.30	Concrete. [MADE GROUND]	
0.30	D1							
0.30-0.90	B2					(0.60)	Soft dark brown sandy gravelly silt. Sand is fine to coarse. Gravel is fine to coarse subrounded to subangular of brick and flint. [MADE GROUND]	
				24.85		0.90		
							Firm dark orange brown occasionally mottled grey slightly silty CLAY. [LONDON CLAY FORMATION]	
1.25	D3							
1.50-1.95	D4							
1.50		N10						
2.25	D5							
2.50-3.00	B6							
3.00-3.45	U100	16 blows						
3.50	D8							
3.50-4.00	B9							
4.00-4.45	D10							
4.00		N13						
4.75	D11							
5.00-5.45	U100	17 blows						
5.50	D13							
6.00	D13a							
6.50-6.95	D14							
6.50		N17						
							7.40 Becoming stiff and dark grey.	
7.50-8.00	B15		1					
						(14.10)	7.85 - 8.00 Claystone noted.	
8.00-8.45	U100	17 blows						

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth
	Slight seepage. 7.85				

General Remarks

1. Slight groundwater seepage from claystone band noted at 7.85-8.0mbgl.

2. ES= environmental samples, D= disturbed sample, B= bulk sample, N= SPT 'N' value, U100= U100 sample.

3. Installation details: 0.0-1.0mbgl: plain pipe with bentonite backfill; 1.0-8.0mbgl: slotted pipe with gravel backfill; 8.0-9.0mbgl: bentonite backfill; 9.0-15.0mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Cable percussion	Gary Wheeler Drilling Ltd	JJM	DWM

BOREHOLE LOG

Project				BOREHOLE No
Camden Lock Village Phase 1				**BH1**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/18067	04-11-14	25.75		
Client				Sheet
Walsh Group				2 of 2

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
9.00	D17						Firm dark orange brown occasionally mottled grey slightly silty CLAY. [LONDON CLAY FORMATION] *(continued)*	
9.50-9.95	D18							
9.50		N21						
10.50-11.00	B19							
11.00-11.45	U100	20 blows						
11.50	D21							
12.00	D22							
12.50-12.95	D23							
12.50		N26						
13.50-14.00	B24							
14.00-14.45	U100							
14.50	D26	24 blows						
				10.75		15.00		
15.00	D27						*(Borehole terminated at 15m)*	

Boring Progress and Water Observations

Date	Comment	Strike Depth	Casing Depth	Casing Dia. mm	Standing Depth

General Remarks

1. Slight groundwater seepage from claystone band noted at 7.85-8.0mbgl.

2. ES= environmental samples, D= disturbed sample, B= bulk sample, N= SPT 'N' value, U100= U100 sample.

3. Installation details: 0.0-1.0mbgl: plain pipe with bentonite backfill; 1.0-8.0mbgl: slotted pipe with gravel backfill; 8.0-9.0mbgl: bentonite backfill; 9.0-15.0mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Cable percussion	Gary Wheeler Drilling Ltd	JJM	DWM

WINDOW SAMPLE LOG

Project				HOLE No
Camden Lock Village Phase 1				**WS1**
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/18067	21-10-14	26.00	E 528,872.2 N 184,263.2	
Client				Sheet
Walsh Group				1 of 1

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
				25.70		(0.30) 0.30	Paving slab over concrete. No rebar noted. [MADE GROUND]	
0.40	ES103			24.80		(0.90) 1.20	Soft dark brown slightly sandy gravelly silt. Sand is fine to coarse. Gravel is fine to coarse subrounded to subangular of brick and occasional concrete. [MADE GROUND]	
1.50	ES104			23.30		(1.50) 2.70	Firm dark orange brown silty CLAY. Occasional claystone noted. [LONDON CLAY FORMATION]	
							(Window sample terminated at 2.7m)	

Boring Progress and Water Observations

Date	Strike depth	Casing depth	Comment	Time measured	Standing Depth

General Remarks

1. No groundwater encountered in borehole.

2. ES= environmental samples, D= disturbed sample, B= bulk sample, N= SPT 'N' value, U100= U100 sample.

3. Installation details: 0.0-0.5mbgl: plain pipe with bentonite backfill; 0.5-1.5mbgl: slotted pipe with gravel backfill; 1.5-2.7mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Hand held window sampler	RP Drilling	JJM	DWM

WINDOW SAMPLE LOG

Project				HOLE No
Camden Lock Village Phase 1				WS2
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/18067	22-10-14	26.02	E 528,868.4 N 184,250.3	
Client				Sheet
Walsh Group				1 of 1

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
				25.82		(0.20) 0.20	Concrete. No rebar noted. [MADE GROUND]	
0.30	ES107			25.12		(0.70) 0.90	Soft dark brown sandy slightly gravelly clay. Sand is fine to coarse. Gravel is fine to coarse subrounded to subangular of brick and occasional flint. [MADE GROUND]	
1.20	ES108						Soft to firm dark grey silty CLAY. [LONDON CLAY FORMATION] 1.10 Occasional fragments of shell.	
2.00	ES111			22.87		(2.25) 3.15	2.20 Becoming firm.	
							(Window sample terminated at 3.15m)	

Boring Progress and Water Observations

Date	Strike depth	Casing depth	Comment	Time measured	Standing Depth

General Remarks

1. No groundwater encountered in borehole.

2. ES= environmental samples, D= disturbed sample, B= bulk sample, N= SPT 'N' value, U100= U100 sample.

3. Installation details: 0.0-0.25mbgl: plain pipe with bentonite backfill; 0.25-1.0mbgl: slotted pipe with gravel backfill; 1.0-3.15mbgl: arisings backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Hand held window sampler	RP Drilling	JJM	DWM

WINDOW SAMPLE LOG

Project				HOLE No
Camden Lock Village Phase 1				WS3
Job No	Date	Ground Level (m)	Co-Ordinates (m)	
CG/18067	21-10-14	25.79	E 528,890.2 N 184,224.9	
Client				Sheet
Walsh Group				1 of 1

SAMPLES & TESTS			Water	STRATA				Instrument /Backfill
Depth	Type No	Test Result (N/kPa/ppm)		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	
				25.29		(0.50) 0.50	Cobbles over concrete. No rebar noted. [MADE GROUND]	
0.60	ES101			24.79		(0.50) 1.00	Soft dark grey slightly gravelly silty clay. Gravel is fine to coarse subrounded to subangular of brick. [REWORKED LONDON CLAY FORMATION]	
1.20	ES110						Firm dark grey slightly silty CLAY. [LONDON CLAY FORMATION]	
1.50	ES102					(2.10)		
							2.50 Occasional gravel of claystone noted.	
				22.69		3.10	*(Window sample terminated at 3.1m)*	

Boring Progress and Water Observations

Date	Strike depth	Casing depth	Comment	Time measured	Standing Depth

General Remarks

1. No groundwater encountered in borehole.

2. ES= environmental samples, D= disturbed sample, B= bulk sample, N= SPT 'N' value, U100= U100 sample.

3. Installation details: 0.0-1.0mbgl: plain pipe with bentonite backfill; 1.0-3.0mbgl: slotted pipe with gravel backfill. Gas tap, bung and flush cover installed.

Method/ Plant Used	Field Crew	Logged By	Checked By
Hand held window sampler	RP Drilling	JJM	DWM

APPENDIX D

Ground gas and groundwater monitoring records

GAS MONITORING RECORD SHEET

JOB DETAILS			
Site:	Camden Lock Phase 1	Job No:	CG/18067
Date:	05/11/2014	Engineer:	TOP
Time:	am	Client	Walsh Group

METEOROLOGICAL & SITE INFORMATION

State of ground:	Dry	X	Moist		Wet			
Wind:	Calm		Light	X	Moderate		Strong	
Cloud cover:	None		Slight		Cloudy		Overcast	X
Precipitation:	None	X	Slight		Moderate		Heavy	

Barometric pressure (mb): 999 to 1004 Local pressure system*: Rising Air temperature (°C): 7

Well No.	Time (s)	Flow (l/hr)	dA (PA)	O_2 (% vol. in air)	CO_2 (% vol. in air)	CH_4 (% vol. in air)	PID (ppm)	Depth to GW (mbgl)	Comments
BH1	0	NR	NR	NR	NR	NR	NR	NR	Borehole not complete at time of visit - unable to monitor
	15								
	30								
	45								
	60								
	90								
	120								
	150								
	180								
	240								
	300								
WS1	0	0.1	0.0	20.0	<0.1	<0.1	NR	1.28	Base of borehole at 1.55mbgl
	15	0.0	0.0	19.9	<0.1	<0.1			
	30	0.1	0.0	19.8	<0.1	<0.1			
	45	0.0	0.0	19.8	<0.1	<0.1			
	60	0.1	0.0	19.6	<0.1	<0.1			
	90	0.0	0.0	19.6	<0.1	<0.1			
	120	0.0	0.0	19.6	<0.1	<0.1			
	150			19.5	<0.1	<0.1			
	180			19.5	<0.1	<0.1			
	240			19.6	<0.1	<0.1			
	300			19.7	<0.1	<0.1			
WS2	0	<0.1	0.0	19.1	0.7	<0.1	NR	DRY	Base of borehole at 1.15mbgl
	15	<0.1	0.0	19.2	0.7	<0.1			
	30	<0.1	0.0	19.2	0.7	<0.1			
	45	<0.1	0.0	19.2	0.7	<0.1			
	60	<0.1	0.0	19.2	0.8	<0.1			
	90	<0.1	0.0	19.1	0.8	<0.1			
	120	<0.1	0.0	19.1	0.8	<0.1			
	150			19.1	0.8	<0.1			
	180			19.1	0.8	<0.1			
	240			19.2	0.8	<0.1			
	300			19.2	0.8	<0.1			
WS3	0	0.4	1.0	20.1	<0.1	<0.1	NR	0.68	Base of borehole at 3.03mbgl
	15	0.4	1.0	20.1	<0.1	<0.1			
	30	0.3	1.0	20.1	<0.1	<0.1			
	45	0.3	1.0	20.1	<0.1	<0.1			
	60	0.4	1.0	20.1	<0.1	<0.1			
	90	0.3	1.0	20.0	<0.1	<0.1			
	120	0.3	1.0	20.0	<0.1	<0.1			
	150			20.0	<0.1	<0.1			
	180			20.0	<0.1	<0.1			
	240			20.0	<0.1	<0.1			
	300			20.0	<0.1	<0.1			

Notes:

The measurement of hydrogen sulphide and hydrocarbon free product is undertaken on a site specific basis, if deemed necessary.
** With reference to the Met Office rolling weather archive for* Northolt *weather station.*

GAS MONITORING RECORD SHEET

JOB DETAILS			
Site:	Camden Lock Phase 1	Job No:	CG/18067
Date:	19/11/2014	Engineer:	TOP
Time:	06:40	Client	Walsh Group

METEOROLOGICAL & SITE INFORMATION

State of ground:	Dry		Moist	X	Wet			
Wind:	Calm	X	Light		Moderate		Strong	
Cloud cover:	None		Slight		Cloudy	X	Overcast	
Precipitation:	None	X	Slight		Moderate		Heavy	

Barometric pressure (mb): 1017-1019 Local pressure system*: Rising Air temperature (°C): 8

Well No.	Time (s)	Flow (l/hr)	dA (PA)	O_2 (% vol. in air)	CO_2 (% vol. in air)	CH_4 (% vol. in air)	PID (ppm)	Depth to GW (mbgl)	Comments
BH1	0	NR	NR	NR	NR	NR	NR	NR	Unable to access borehole
	15								
	30								
	45								
	60								
	90								
	120								
	150								
	180								
	240								
	300								
WS1	0	<0.1	0.0	18.5	0.2	<0.1	NR	1.26	Base of borehole at 1.59mbgl
	15	<0.1	0.0	18.6	0.2	<0.1			
	30	<0.1	0.0	18.5	0.2	<0.1			
	45	<0.1	0.0	18.5	0.2	<0.1			
	60	<0.1	0.0	18.5	0.2	<0.1			
	90	<0.1	0.0	18.5	0.3	<0.1			
	120	<0.1	0.0	18.6	0.4	<0.1			
	150			18.7	0.4	<0.1			
	180			18.8	0.4	<0.1			
	240			19.0	0.4	<0.1			
	300			19.1	0.4	<0.1			
WS2	0	<0.1	0.0	19.6	0.6	<0.1	NR	DRY	Base of borehole at 1.13mbgl
	15	<0.1	0.0	19.4	0.6	<0.1			
	30	<0.1	0.0	19.4	0.6	<0.1			
	45	<0.1	0.0	19.4	0.7	<0.1			
	60	<0.1	0.0	19.3	0.7	<0.1			
	90	<0.1	0.0	19.3	0.7	<0.1			
	120	<0.1	0.0	19.3	0.7	<0.1			
	150			19.3	0.8	<0.1			
	180			19.3	0.8	<0.1			
	240			19.3	0.7	<0.1			
	300			19.3	0.7	<0.1			
WS3	0	2.1	0.0	19.9	0.1	<0.1	NR	0.63	Base of borehole at 3.07mbgl
	15	<0.1	0.0	19.9	0.1	<0.1			
	30	<0.1	0.0	19.9	0.1	<0.1			
	45	<0.1	0.0	19.9	0.1	<0.1			
	60	<0.1	0.0	19.9	0.1	<0.1			
	90	<0.1	0.0	19.9	0.1	<0.1			
	120	<0.1	0.0	19.9	0.1	<0.1			
	150			19.7	0.1	<0.1			
	180			19.8	0.1	<0.1			
	240			19.9	0.1	<0.1			
	300			19.8	0.1	<0.1			

Notes:

The measurement of hydrogen sulphide and hydrocarbon free product is undertaken on a site specific basis, if deemed necessary.
** With reference to the Met Office rolling weather archive for* Northolt *weather station.*

GAS MONITORING RECORD SHEET

JOB DETAILS			
Site:	Camden Lock Phase 1	Job No:	CG/18067
Date:	01/12/2014	Engineer:	TOP
Time:	8.30am	Client	Walsh Group

METEOROLOGICAL & SITE INFORMATION

State of ground:	Dry	X	Moist		Wet			
Wind:	Calm		Light		Moderate	X	Strong	
Cloud cover:	None		Slight		Cloudy		Overcast	X
Precipitation:	None	X	Slight		Moderate		Heavy	

Barometric pressure (mb): 1014 Local pressure system*: Rising Air temperature (°C): 8

Well No.	Time (s)	Flow (l/hr)	dA (PA)	O_2 (% vol. in air)	CO_2 (% vol. in air)	CH_4 (% vol. in air)	PID (ppm)	Depth to GW (mbgl)	Comments
BH1	0	<0.1	0.0	16.7	1.3	<0.1	NR	1.29	Base of borehole at 8.08mbgl
	15	<0.1	0.0	16.2	1.3	<0.1			
	30	<0.1	0.0	15.5	1.4	<0.1			
	45	<0.1	0.0	15.5	1.4	<0.1			
	60	<0.1	0.0	15.5	1.4	<0.1			
	90	<0.1	0.0	15.7	1.3	<0.1			
	120	<0.1	0.0	15.7	1.3	<0.1			
	150			15.7	1.3	<0.1			
	180			15.7	1.3	<0.1			
	240			15.7	1.3	<0.1			
	300			15.8	1.3	<0.1			
WS1	0	<0.1	0.0	19.4	0.1	<0.1	NR	1.29	Base of borehole at 1.59mbgl
	15	<0.1	0.0	19.3	0.1	<0.1			
	30	<0.1	0.0	19.3	0.1	<0.1			
	45	<0.1	0.0	19.3	0.1	<0.1			
	60	<0.1	0.0	19.2	0.2	<0.1			
	90	<0.1	0.0	19.2	0.2	<0.1			
	120	<0.1	0.0	19.2	0.3	<0.1			
	150			19.1	0.4	<0.1			
	180			19.1	0.6	<0.1			
	240			19.2	0.6	<0.1			
	300			19.2	0.5	<0.1			
WS2	0	<0.1	0.0	15.0	1.6	<0.1	NR	0.62	Base of borehole at 3.07mbgl
	15	<0.1	0.0	15.4	1.5	<0.1			
	30	<0.1	0.0	15.9	1.4	<0.1			
	45	<0.1	0.0	16.0	1.3	<0.1			
	60	<0.1	0.0	16.2	1.0	<0.1			
	90	<0.1	0.0	16.6	1.0	<0.1			
	120	<0.1	0.0	16.7	1.0	<0.1			
	150			16.7	1.0	<0.1			
	180			16.9	0.9	<0.1			
	240			17.0	0.9	<0.1			
	300			17.0	0.9	<0.1			
WS3	0	<0.1	0.0	19.4	0.5	<0.1	NR	0.62	Base of borehole at 3.07mbgl
	15	<0.1	0.0	19.5	0.6	<0.1			
	30	<0.1	0.0	19.5	0.6	<0.1			
	45	<0.1	0.0	19.5	0.6	<0.1			
	60	<0.1	0.0	19.5	0.6	<0.1			
	90	<0.1	0.0	19.5	0.6	<0.1			
	120	<0.1	0.0	19.5	0.7	<0.1			
	150			19.5	0.6	<0.1			
	180			19.5	0.6	<0.1			
	240			19.5	0.6	<0.1			
	300			19.5	0.6	<0.1			

Notes:

The measurement of hydrogen sulphide and hydrocarbon free product is undertaken on a site specific basis, if deemed necessary.
** With reference to the Met Office rolling weather archive for* Northolt *weather station.*

APPENDIX E

Chemical test results

James Morrice
Card Geotechnics Ltd
4 Godalming Business Centre
Woolsack Way
Godalming
Surrey
GU7 1XW

t: 01483 310600
f: 01483 527285
e:

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 14-61862

Project / Site name:	CLP P1 - School Site	**Samples received on:**	23/10/2014
Your job number:	CG-18067	**Samples instructed on:**	23/10/2014
Your order number:	1431	**Analysis completed by:**	28/10/2014
Report Issue Number:	1	**Report issued on:**	28/10/2014
Samples Analysed:	5 soil samples		

Signed: 

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Signed: 

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 14-61862

Project / Site name: CLP P1 - School Site

Your Order No: 1431

Lab Sample Number				384537	384538	384539	384540	384541
Sample Reference				WS3	WS3	WS1	WS1	WS2
Sample Number				101	102	103	104	107
Depth (m)				0.60	1.50	0.40	1.50	0.30
Date Sampled				21/10/2014	21/10/2014	21/10/2014	21/10/2014	21/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	28	22	14	19	26
Total mass of sample received	kg	0.001	NONE	1.2	0.89	0.93	1.1	1.3
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	-	Not-detected
General Inorganics								
pH	pH Units	N/A	MCERTS	7.6	7.5	9.1	7.2	9.4
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	100	ISO 17025	890	580	3600	420	990
Organic Matter	%	0.1	MCERTS	3.6	1.6	2.5	0.9	2.5
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.13	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	1.4	< 0.10	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.31	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	4.2	< 0.10	< 0.10
Pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	3.7	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	2.1	< 0.10	< 0.10
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	2.1	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	2.3	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	1.2	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	2.1	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.73	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.23	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.94	< 0.05	< 0.05
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Total WAC-17 PAHs	mg/kg	1.6	NONE	< 1.6	< 1.6	21	< 1.6	< 1.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	11	17	14	14
Barium (aqua regia extractable)	mg/kg	1	MCERTS	100	78	290	92	120
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.4	1.6	1.0	1.3	1.1
Boron (water soluble)	mg/kg	0.2	MCERTS	6.1	1.8	1.0	0.9	1.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.6	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	-	< 1.2	-	< 1.2	-
Chromium (III)	mg/kg	1	NONE	-	46	-	45	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	46	28	45	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	65	20	72	23	56
Lead (aqua regia extractable)	mg/kg	1	MCERTS	270	31	750	17	570
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.8	< 0.3	0.3	< 0.3	0.8
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	28	22	36	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	65	78	50	70	57
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	81	71	420	58	88

Analytical Report Number: 14-61862

Project / Site name: CLP P1 - School Site
Your Order No: 1431

Lab Sample Number				384537	384538	384539	384540	384541
Sample Reference				WS3	WS3	WS1	WS1	WS2
Sample Number				101	102	103	104	107
Depth (m)				0.60	1.50	0.40	1.50	0.30
Date Sampled				21/10/2014	21/10/2014	21/10/2014	21/10/2014	21/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	5.9	4.9
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	37	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	37	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	2.2	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	16	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	19	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	38	< 10	< 10

Analytical Report Number : 14-61862

Project / Site name: CLP P1 - School Site

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
384537	WS3	101	0.60	Grey clay and topsoil.
384538	WS3	102	1.50	Green clay.
384539	WS1	103	0.40	Brown topsoil and sand with brick and rubble.
384540	WS1	104	1.50	Light brown clay.
384541	WS2	107	0.30	Brown clay and sand with gravel and brick.

Analytical Report Number : 14-61862

Project / Site name: CLP P1 - School Site

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
chromium III in soil	In-house method by calculation from total Cr and Cr VI.	In-house method	L068-PL	D	NONE
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the sample.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	ISO 17025
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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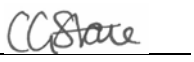
Analytical Report Number : 14-61863

Project / Site name:	CLV P1 - School Site	**Samples received on:**	23/10/2014
Your job number:	CG-18067	**Samples instructed on:**	23/10/2014
Your order number:		**Analysis completed by:**	30/10/2014
Report Issue Number:	1	**Report issued on:**	30/10/2014
Samples Analysed:	2 wac multi samples		

Signed: 

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed: 

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

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Waste Acceptance Criteria Analytical Results

Report No:	**14-61863**						
					Client:	**CARDGEO**	
Location	**CLV P1 - School Site**						
Lab Reference (Sample Number)	384542				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	21/10/2014				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS3						
Depth (m)	0.60						
Solid Waste Analysis							
TOC (%)**	1.9				3%	5%	6%
Loss on Ignition (%) **	5.0				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg)	< 0.30				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 1.6				100	--	--
pH (units)**	7.6				--	>6	--
Acid Neutralisation Capacity (mol / kg)	1.7				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.021	< 0.010		0.11	0.5	2	25
Barium *	0.11	0.067		0.71	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0016	< 0.0010		0.0053	0.5	10	70
Copper *	0.015	0.0037		0.048	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.11	0.032		0.39	0.5	10	30
Nickel *	0.0055	0.0020		0.024	0.4	10	40
Lead *	0.054	0.0061		0.11	0.5	10	50
Antimony *	0.0054	0.0050		0.050	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.0061	< 0.0010		< 0.020	4	50	200
Chloride *	23	< 4.0		51	800	4000	25000
Fluoride	0.54	0.40		4.2	10	150	500
Sulphate *	110	79		820	1000	20000	50000
TDS	260	240		2400	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	73	23		280	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.2						
Dry Matter (%)	72						
Moisture (%)	28						
Stage 1							
Volume Eluate L2 (litres)	0.30						
Filtered Eluate VE1 (litres)	0.18						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

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Waste Acceptance Criteria Analytical Results

Report No:	**14-61863**						
					Client:	**CARDGEO**	
Location	**CLV P1 - School Site**						
Lab Reference (Sample Number)	384543				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	21/10/2014				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS1						
Depth (m)	0.40						
Solid Waste Analysis							
TOC (%)**	1.3				3%	5%	6%
Loss on Ignition (%) **	3.5				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg)	< 0.30				1	--	--
Mineral Oil (mg/kg)	48				500	--	--
Total PAH (WAC-17) (mg/kg)	21				100	--	--
pH (units)**	9.1				--	>6	--
Acid Neutralisation Capacity (mol / kg)	11				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.014	0.013		0.13	0.5	2	25
Barium *	0.11	0.048		0.56	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.032	0.017		0.19	0.5	10	70
Copper *	0.19	0.067		0.83	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.032	0.0035		0.070	0.5	10	30
Nickel *	0.012	0.0037		0.047	0.4	10	40
Lead *	0.011	< 0.0050		0.035	0.5	10	50
Antimony *	0.0059	< 0.0050		0.041	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.0045	< 0.0010		< 0.020	4	50	200
Chloride *	38	9.8		130	800	4000	25000
Fluoride	0.72	0.61		6.2	10	150	500
Sulphate *	390	94		1300	1000	20000	50000
TDS	590	210		2600	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	29	17		190	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.93						
Dry Matter (%)	86						
Moisture (%)	14						
Stage 1							
Volume Eluate L2 (litres)	0.33						
Filtered Eluate VE1 (litres)	0.22						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

Analytical Report Number : 14-61863

Project / Site name: CLV P1 - School Site

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
384542	WS3	101	0.60	Grey clay and topsoil.
384543	WS1	103	0.40	Brown topsoil and sand with brick and rubble.

Analytical Report Number : 14-61863

Project / Site name: CLV P1 - School Site

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046-PL	W	NONE
BTEX (Sum of BTEX compounds) in soil	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of chloride in leachate by Gallery discrete analyser.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L082-PL	W	ISO 17025
DOC in WAC leachate (BS EN 12457-3 Prep)	Determination of dissolved organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L037-PL	W	NONE
Fluoride in WAC leachate (BS EN 12457-3 Prep)	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L033-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in WAC leachate (BS EN 12457-3 Prep)	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
Mineral Oil in Soil	Determination of dichloromethane/hexane extractable hydrocarbons in soil by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's by GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Phenol Index in WAC leachate (BS EN 12457-3 Prep)	Determination of monohydric phenols in leachate by continuous flow analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Seciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in WAC leachate (BS EN 12457-3 Prep)	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
TDS in WAC leachate (BS EN 12457-3 Prep)	Determination of total dissolved solids in leachate by electrometric measurement.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L004-PL	W	NONE
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS

Analytical Report Number : 14-61863

Project / Site name: CLV P1 - School Site

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Analytical Report Number : 14-62879

Project / Site name:	CLV P1 - School Site	**Samples received on:**	12/11/2014
Your job number:	CG/18067	**Samples instructed on:**	12/11/2014
Your order number:	1432	**Analysis completed by:**	17/11/2014
Report Issue Number:	1	**Report issued on:**	17/11/2014
Samples Analysed:	1 soil sample		

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Analytical Report Number: 14-62879

Project / Site name: CLV P1 - School Site

Your Order No: 1432

Lab Sample Number				390976				
Sample Reference				BH1				
Sample Number				None Supplied				
Depth (m)				0.30				
Date Sampled				05/11/2014				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	26				
Total mass of sample received	kg	0.001	NONE	2.0				
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected				
General Inorganics								
pH	pH Units	N/A	MCERTS	7.4				
Total Cyanide	mg/kg	1	MCERTS	< 1				
Total Sulphate as SO_4	mg/kg	50	ISO 17025	770				
Organic Matter	%	0.1	MCERTS	2.0				
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0				
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10				
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10				
Fluorene	mg/kg	0.1	MCERTS	< 0.10				
Phenanthrene	mg/kg	0.1	MCERTS	0.82				
Anthracene	mg/kg	0.1	MCERTS	0.10				
Fluoranthene	mg/kg	0.1	MCERTS	0.64				
Pyrene	mg/kg	0.1	MCERTS	0.48				
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.17				
Chrysene	mg/kg	0.05	MCERTS	0.20				
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10				
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10				
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10				
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10				
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				
Coronene	mg/kg	0.05	NONE	< 0.05				
Total PAH								
Total WAC-17 PAHs	mg/kg	1.6	NONE	2.4				
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14				
Barium (aqua regia extractable)	mg/kg	1	MCERTS	120				
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.3				
Boron (water soluble)	mg/kg	0.2	MCERTS	2.3				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	100				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	230				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.0				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0				
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	58				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	100				

Analytical Report Number: 14-62879

Project / Site name: CLV P1 - School Site

Your Order No: 1432

Lab Sample Number				390976				
Sample Reference				BH1				
Sample Number				None Supplied				
Depth (m)				0.30				
Date Sampled				05/11/2014				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-xylene	µg/kg	1	MCERTS	< 1.0				
o-xylene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				

Analytical Report Number : 14-62879

Project / Site name: CLV P1 - School Site

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
390976	BH1	None Supplied	0.30	Light brown clay.

Analytical Report Number : 14-62879

Project / Site name: CLV P1 - School Site

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the sample.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	ISO 17025
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

APPENDIX F

Geotechnical test results

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 • m (%)	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	4	1.50-1.95		Mottled dark orange and grey sandy silty CLAY. With rare fine flint gravel and black staining.	22	45	19	26	83									
BH1	7	3.00-3.45	U	Stiff orange-brown silty CLAY	33					1.94	1.46	57	140	70				
BH1	12	5.00-5.45	U	Stiff fissured brown mottled grey silty CLAY with rare gypsum	33	72	28	44	99	1.92	1.44	95	192	96				
BH1	16	8.00-8.45	U	Stiff fissured brownish grey silty CLAY	34					1.98	1.48	152	166	83				
BH1	20	11.00-11.45	U	Stiff fissured brownish grey silty CLAY	28	80	27	53	100	1.95	1.52	209	212	106				
BH1	25	14.00-14.45	U	Stiff brownish grey fine sandy silty CLAY with rare lignite	26					1.98	1.57	266	273	137				

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

Checked and Approved by

Senior Technician
26/11/2014

Project Number:

GEO / 21947

Project Name:

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QUICK UNDRAINED TRIAXIAL COMPRESSION TEST

BH/TP No	BH1
Sample Ref	7
Depth (m)	3.00-3.45
Sample Type	U

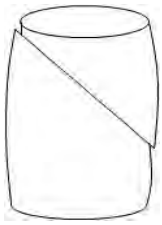
Description:

Stiff orange-brown silty CLAY

Specimen Details

Specimen conditions		Undisturbed
Length	(mm)	201.2
Diameter	(mm)	103.0
Moisture Content	(%)	33
Bulk Density	(Mg/m³)	1.94
Dry Density	(Mg/m³)	1.46
Test Details		
Latex membrane thickness	(mm)	0.30
Membrane correction	(kPa)	0.50
Axial displacement rate	(%/min)	1.99
Cell pressure	(kPa)	57
Strain at failure	(%)	7.0
Maximum Deviator Stress	(kPa)	140
Shear Stress Cu	(kPa)	70

Mode of failure



Orientation of the sample	Vertical
Distance from top of tube mm	80

Checked and Approved by:

S Burke

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QUICK UNDRAINED TRIAXIAL COMPRESSION TEST

BH/TP No	BH1
Sample Ref	12
Depth (m)	5.00-5.45
Sample Type	U

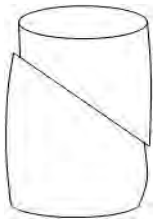
Description:

Stiff fissured brown mottled grey silty CLAY with rare gypsum

Specimen Details

Specimen conditions		Undisturbed
Length	(mm)	202.4
Diameter	(mm)	103.4
Moisture Content	(%)	33
Bulk Density	(Mg/m³)	1.92
Dry Density	(Mg/m³)	1.45
Test Details		
Latex membrane thickness	(mm)	0.30
Membrane correction	(kPa)	0.43
Axial displacement rate	(%/min)	1.98
Cell pressure	(kPa)	95
Strain at failure	(%)	5.9
Maximum Deviator Stress	(kPa)	192
Shear Stress Cu	(kPa)	96

Mode of failure



Orientation of the sample	Vertical
Distance from top of tube mm	100

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QUICK UNDRAINED TRIAXIAL COMPRESSION TEST

BH/TP No	BH1
Sample Ref	16
Depth (m)	8.00-8.45
Sample Type	U

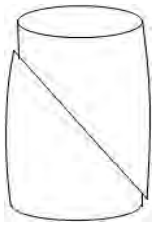
Description:

Stiff fissured brownish grey silty CLAY

Specimen Details

Specimen conditions		Undisturbed
Length	(mm)	202.7
Diameter	(mm)	101.5
Moisture Content	(%)	34
Bulk Density	(Mg/m³)	1.98
Dry Density	(Mg/m³)	1.48
Test Details		
Latex membrane thickness	(mm)	0.30
Membrane correction	(kPa)	0.26
Axial displacement rate	(%/min)	1.97
Cell pressure	(kPa)	152
Strain at failure	(%)	3.2
Maximum Deviator Stress	(kPa)	166
Shear Stress Cu	(kPa)	83

Mode of failure



Orientation of the sample	Vertical
Distance from top of tube mm	90

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QUICK UNDRAINED TRIAXIAL COMPRESSION TEST

BH/TP No	BH1
Sample Ref	20
Depth (m)	11.00-11.45
Sample Type	U

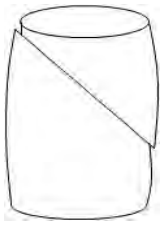
Description:

Stiff fissured brownish grey silty CLAY

Specimen Details

Specimen conditions		Undisturbed
Length	(mm)	201.6
Diameter	(mm)	103.3
Moisture Content	(%)	28
Bulk Density	(Mg/m³)	1.95
Dry Density	(Mg/m³)	1.52
Test Details		
Latex membrane thickness	(mm)	0.30
Membrane correction	(kPa)	0.25
Axial displacement rate	(%/min)	1.98
Cell pressure	(kPa)	209
Strain at failure	(%)	3.2
Maximum Deviator Stress	(kPa)	212
Shear Stress Cu	(kPa)	106

Mode of failure



Orientation of the sample	Vertical
Distance from top of tube mm	110

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QUICK UNDRAINED TRIAXIAL COMPRESSION TEST

BH/TP No	BH1
Sample Ref	25
Depth (m)	14.00-14.45
Sample Type	U

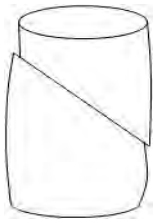
Description:

Stiff brownish grey fine sandy silty CLAY with rare lignite

Specimen Details

Specimen conditions		Undisturbed
Length	(mm)	202.8
Diameter	(mm)	104.3
Moisture Content	(%)	26
Bulk Density	(Mg/m³)	1.98
Dry Density	(Mg/m³)	1.57
Test Details		
Latex membrane thickness	(mm)	0.30
Membrane correction	(kPa)	0.43
Axial displacement rate	(%/min)	1.97
Cell pressure	(kPa)	266
Strain at failure	(%)	5.9
Maximum Deviator Stress	(kPa)	273
Shear Stress Cu	(kPa)	137

Mode of failure



Orientation of the sample	Vertical
Distance from top of tube mm	100

Checked and Approved by:

S Burke

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26/11/2014

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