

DATA SHEET: SITE INVESTIGATION METHODS

The following sheet provides basic details of the site investigation methods employed in the direct investigation phase of this report. Detailed method statements may be provided if, requested, or further information may be obtained from the relevant British Standard, or Environment Agency publications. Prior to any excavation being undertaken, a surface sweep using a cable detector is undertaken, in order to avoid services. Details of the lithology encountered are generally presented on the relevant field record sheets, which also detail the type and depths of samples taken, the results of any in-situ tests, and any groundwater observations noted at the time. Other pertinent information may also be recorded.

CABLE PERCUSSIVE BOREHOLES

The cable percussive borehole drilling rig may be towed by a 4x4 pick up or similar vehicle, and is capable of obtaining disturbed and undisturbed soil samples down to approximately 40m depth. The hole may be formed at a diameter of 200mm or most typically 150mm, with samples obtained direct from the drilling tools. Undisturbed samples (U100) may be obtained, and in-situ testing may include Standard or Cone Penetration Tests (SPT/ CPT) to BSEN ISO22476-3, plus permeability testing as per BS5930:1999. Please note we report raw SPT N values rather than corrected $N_{(60)}$ values. We can report in either format if requested by our client.

The equipment requires a minimum 2m access width, and the rig itself is 6m long (11m including tow). A rough 3m x 5m base area is required for drilling, but each site should be considered on specifics.

The technique can penetrate dense made ground, rubble and concrete or weathered rock/thin bands of rock using a chisel. However, in some cases these materials can form obstructions.

Standpipes can be installed, otherwise the borehole would be backfilled with spoil, or where instructed bentonite, concrete or sand may be used. Excess spoil is either removed from site or left in a tidy heap nearby.

In wet drilling conditions, the spoil can spread over a wide area through splashing and flow of the spoil from the tools, unless precautions are taken to prevent this. Conversely, the system can be very clean for instance when drilling through dry clay soil.

WINDOW SAMPLER BOREHOLES

The window sampler system comprises a series of varying diameter (max 80mm) steel tubes of either 1m or 2m length having a slot or window cut along the side. The tubes are driven into the ground using a light percussive hammer attached to solid rods, and withdrawn by use of a jack. The hammer may be machine mounted, or for restricted access work, hand held. The soil sample is forced up into the tube during the driving, samples being obtained directly through the slot or window. The sampler generally achieves depths of around 3-5m in favourable soils. Use of a super heavy tracked rig allows samples to be retrieved in liners. Greater diameter boreholes are also achievable (<115mm).

STANDPIPE INSTALLATIONS

Window sampler boreholes may be fitted with gas/ water monitoring standpipes, which generally comprise a 38mm diameter upvc slotted and plain casing to the required depths as appropriate, and may be fitted with a gas tap bung or end cap, and lockable cover. Full details of the standpipe installations and associated backfill are given on the relevant borehole records. Other diameters and types of standpipe are available if required.

GROUNDWATER MONITORING

Groundwater monitoring is undertaken in accordance with the Specification for Ground Investigation EJBjb-10907-200212-GI Spec V10.2

GROUND GAS MONITORING

Ground gas composition and flow monitoring is undertaken in accordance with Clause 9.10X of the Specification for Ground Investigation EJBjb-10907-200212-GI Spec V10.2.



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Key to Site Investigation Records

Project: Bourne Estate, Camden

Project ID.: GL16482

Client: Tibbalds Planning and Urban Design

Engineer: Campbell Reith Hill LLP

Contractor: Harrison Group Environmental Limited

In-situ Testing & Observations

S or C	Standard Penetration Test as per BS1377:1990 'Methods of test for soils for civil engineering purposes'. Uncorrected test result shown on the log at the relevant depth. S - split spoon or C - solid cone.	
*	n100 - dynamic penetration test graphical presentation of the blows taken to drive 100mm.	
+	Equivalent SPT 'N' value. Based on standard empirical calculation after Card & Roche for sandy soils unless specified in the text.	
IV	In-situ (down hole) vane shear strength peak - p or remoulded - r	
HV	In-situ hand vane test, shear strength reported in kPa peak - p or remoulded - r	
PP	Pocket penetrometer test, shear strength reported in kPa	
K	In-situ permeability test result, expressed in m/s	
PID	In-situ screening by photo-ionisation detector, expressed as ppm Head space testing undertaken as per contract documents.	
TCR	Total Core Recovery, %	As defined in BS5930:1999. Details of flush returns etc. are given on the relevant log sheet.
SCR	Solid Core Recovery, %	
RQD	Rock Quality Designation, %	
If	Fracture spacing, mm	
▽	Groundwater strike	Level to which groundwater has risen after the specified time. (Nominal 20 mins)

Sampling



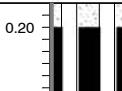

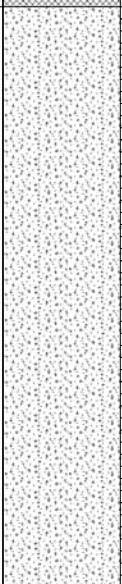
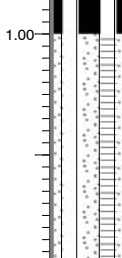
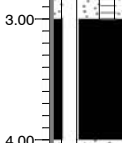
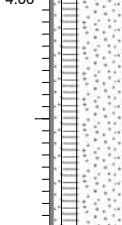
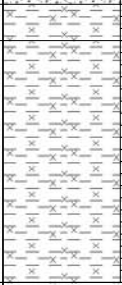
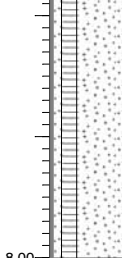
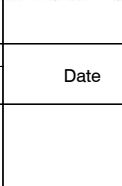
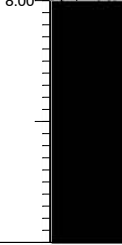
D / GD	Small / geotechnical disturbed sample, around 1kg
B / GB	Bulk / geotechnical disturbed sample, around 5Kg
LB	Large bulk disturbed sample, around 20Kg for earthworks testing
W	Water sample
ES	Environmental soil sample, in more than one container if appropriate
EW	Environmental water sample, in more than one container if appropriate
U / UT	Undisturbed / Ultra Thin undisturbed driven tube sample. Nominal 100mm diameter, 450mm length in CP boreholes, 38mm diameter, 100mm length in WS borehole. Dimension of trial pit cores to be specified on the individual records. The number of blows taken to drive the sample tube the full length is reported on the log sheet at the appropriate depth. 'NR' indicates no recovery achieved.
P	Pushed piston sampler, nominal 100mm diameter
LS / C	Liner sample, e.g. from windowless sampler / Core sample, e.g. from rotary core drilling
CBR	California Bearing Ratio (CBR) test - either mould sample taken or in situ testing. See individual record sheet for further information

General comments

1. Samples have been described in accordance with BS5930:1999 'Code of practice for site investigation' unless an alternative material specific weathering classification is considered more appropriate. This will be recorded in the report text.
2. Electronic data provided in relation to this project has been produced using the Association of Geotechnical & Geoenvironmental Specialists (AGS) data transfer format, with specific reference to their publication

Electronic Transfer of Geotechnical and Geoenvironmental Data Edition 3.1, 2004 including addendum May 2005'. All legend and backfill codes are as per this document.

Site specific comments

 harrisongroup			Percussion Borehole Record				BH B1				
			Project: Bourne Estate, Camden								
Project ID.: GL16482			Coordinates: 531163.3E 181908.3N				Ground Level: 19.53mAOD				
							Sheet 1 of 1				
Description	Legend	Depth (m)	O.D. Level (m)	Samples/ Test		Casing (Water) Depth (m)	Remarks and Test Results	Installations			
				Type	Depth (m)						
ASPHALT.		0.15	19.38	ES1	0.25	1.20	N=13 (2,2,3,3,3,4)				
MADE GROUND. Medium dense brown, dark brown and grey brown locally slightly clayey silty gravelly fine and medium occasionally coarse SAND. Gravel is angular fine to coarse brick, occasional concrete, rare wood, glass and metal fragments.				D1	0.50						
				ES2	0.50						
				ES3	1.00						
				C	1.20						
				B1	1.20-1.65						
				ES4	1.50						
				D2	1.80						
				ES5	2.00						
				C	2.50						
				B2	2.50-2.95						
Medium dense to dense yellow brown and brown silty fine to coarse SAND and subrounded to rounded fine to coarse flint GRAVEL. (HACKNEY GRAVEL).		2.90	16.63	ES6	2.50	2.50	N=23 (4,7,9,4,3,7)				
				D3	2.90						
				ES7	3.00						
				C	3.50						
				B3	3.50-3.95						
				ES8	3.50	3.50	N=26 (3,4,4,6,7,9)				
				D4	4.00						
				ES9	4.00						
				C	4.50						
				B4	4.50-4.95						
ES10	5.00	4.50	N=35 (4,6,8,8,9,10)								
D5	5.50										
C	6.00										
ES11	6.00										
B5	6.00-6.45										
Firm to stiff brown silty CLAY. (LONDON CLAY).		7.70	11.83	ES12	7.00	7.50	N=16 (3,3,4,4,4,4)				
				D6	7.00						
				C	7.50						
				B6	7.50-7.95						
				D7	7.70						
(Firm to stiff) fissured dark grey silty CLAY. Occasional light grey silt laminae and fissure infill. (LONDON CLAY).		8.00	11.53	ES13	7.70	6.00	N=33 (2,5,7,8,9,9)				
				D8	8.00						
				ES14	8.25						
				UT1	9.00-9.45						
				D9	9.45-9.55						
Borehole Complete at 10.00 m			Water Level Observations								
Hole Diameter Details			Chiselling Details			Date	Water Strike (m)	Standing Time (mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
Diameter (mm)	Depth (m)	Casing Depth (m)	From (m)	To (m)	Time (hhmm)						
150	10.00	8.00									
Client: Tibbalds Planning and Urban Design			Remarks:								
Engineer: Campbell Reith Hill LLP			1. Inspection pit excavated from GL to 1.20mbgl.								
Contractor: Harrison Group Environmental Limited			2. Groundwater was not encountered.								
Dates: 12/03/2012			3. Water added to assist drilling from 2.90mbgl to 7.70mbgl (300 litres).								
Plant: Dando 2000 Cable Percussive Rig			4. Installation details (Dual): 50mm diameter HDPE standpipe (A) installed from 8.00mbgl to GL. Slotted from 8.00mbgl to 4.00mbgl, plain from 4.00mbgl to GL. 50mm diameter HDPE standpipe (B) installed from 3.00mbgl to GL. Slotted from 3.00mbgl to 1.00mbgl, plain from 1.00mbgl to GL. Finished with gas taps, end caps and flush fitting cover. Geowrap and geosock used.								
Drilled By: K. Gorbould			5. Backfill details: Bentonite pellets from 10.00mbgl to 8.00mbgl, gravel filter packs from 8.00mbgl to 4.00mbgl, bentonite pellets from 4.00mbgl to 3.00mbgl, gravel filter packs from 3.00mbgl to 1.00mbgl, bentonite pellets from 1.00mbgl to 0.20mbgl and concrete from 0.20mbgl to GL.								
Logged By: G. Dowlen			6. Standing Time/ Dayworks: 1.0 hour filling bowser, 0.5 hour moving rig, 1.0 hour bagging spoil and cleaning the site, 0.5 hour collecting installation material on 12/03/2012.								
Checked By: J. Keay											
FM-Hn-R-3080			Print Date: 28/06/2012			Harrison Group Environmental Ltd, Unit A11, Poplar Business Park, 10 Prestons Road, London E14 9RL					



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Percussion Borehole Record

BH B2A

Project: Bourne Estate, Camden

Project ID.: GL16482

Coordinates: 531227.1E
181873.9N

Ground Level: 19.74mAOD

Sheet 1 of 3

Description	Legend	Depth (m)	O.D. Level (m)	Samples/ Test		Casing (Water) Depth (m)	Remarks and Test Results	Installations
				Type	Depth (m)			
ASPHALT.		0.20	19.54					
MADE GROUND. Light yellow brown silty fine to coarse SAND and subangular to subrounded fine to coarse sub base GRAVEL.		0.35	19.39	ES1	0.30			0.20
				ES2	0.50			
				D1	1.00			1.00
				ES3	1.00			
				C	1.50		N=8 (1,1,1,2,3,2)	
				B1	1.50-1.95			
				ES4	1.50			
				D2	2.00			
				ES5	2.00			
				C	2.50	1.50	N=15 (2,4,4,5,3,3)	
				B2	2.50-2.95			
				ES6	2.50			
				D3	3.00			
				ES7	3.00			
				C	3.50	3.00	N=12 (2,2,2,3,3,4)	
Dense yellow brown silty fine to coarse SAND and GRAVEL. Gravel is subrounded to rounded fine to coarse flint. (HACKNEY GRAVEL).				B3	3.50-3.95			
				ES8	3.50			
				D4	4.00			4.00
				ES9	4.00			
				C	4.50	3.00	N=12 (1,2,2,3,3,4)	
				ES10	4.50			
				B4	4.50-4.95			
				ES11	5.00			5.00
				D5	5.00			
				ES12	5.50			
(Firm to stiff) brown and grey brown slightt sandy slightly gravelly silty CLAY. Gravel is rounded fine to coarse flint. (REWORKED LONDON CLAY).		5.10	14.64					
				C	6.00	6.00	N=33 (3,5,7,7,9,10)	
				ES13	6.00			
				B5	6.00-6.45			
				ES14	6.50			
				ES15	7.00			
				C	7.50	6.00	N=17 (2,3,4,4,4,5)	
				ES16	7.50			
				B6	7.50-7.95			
				ES17	7.80			
Firm to stiff fissured grey silty CLAY. Occasional light grey silt laminae and fissure infill. (LONDON CLAY).		7.70	12.04					
		8.00	11.74					8.00
				D6	8.00			
				ES18	8.20			
				S	9.00	9.00	N=17 (3,4,4,4,4,5)	
				D7	9.00-9.45			

Continued next sheet

Water Level Observations

Hole Diameter Details			Chiselling Details			Date	Water Strike (m)	Standing Time (mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
Diameter (mm)	Depth (m)	Casing Depth (m)	From (m)	To (m)	Time (hhmm)						
200	18.00	9.00				08/03/12	22.50	20	20.42	18.50	
150	30.00	30.00									

Client: Tibbalds Planning and Urban Design
 Engineer: Campbell Reith Hill LLP
 Contractor: Harrison Group Environmental Limited
 Dates: 07/03/2012-09/03/2012
 Plant: Dando 2000 Cable Percussive Rig
 Drilled By: K. Gorbould
 Logged By: G. Dowlen
 Checked By: J. Keay

Remarks:

1. Inspection pit excavated from GL to 1.20mbgl.
2. Water added to assist drilling from 4.90mbgl to 7.70mbgl (250 litres).
3. Installation details: 50mm diameter HDPE standpipe installed from 8.00mbgl to GL. Slotted from 8.00mbgl to 5.00mbgl, plain from 5.00mbgl to GL. Finished with gas tap, end cap and flush fitting cover. Geowrap and geosock used.
4. Backfill details: Arisings from 30.00mbgl to 10.00mbgl, bentonite pellets from 10.00mbgl to 8.00mbgl, gravel filter packs from 8.00mbgl to 5.00mbgl, bentonite pellets from 5.00mbgl to 4.00mbgl, arisings from 4.00mbgl to 1.00mbgl, bentonite pellets from 1.00mbgl to 0.20mbgl and concrete from 0.20mbgl to GL.
5. Standing Time/ Dayworks: 3.0 hours bagging spoil and cleaning the site, 2.0 hours leaving rig set up to give access to the car park on 09/03/2012.



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Percussion Borehole Record

BH B2A

Project: Bourne Estate, Camden

Project ID.: GL16482

Coordinates: 531227.1E
181873.9N

Ground Level: 19.74mAOD

Sheet 2 of 3

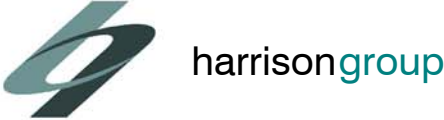
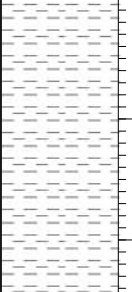


Description	Legend	Depth (m)	O.D. Level (m)	Samples/ Test		Casing (Water) Depth (m)	Remarks and Test Results	Installations
				Type	Depth (m)			
Firm to stiff fissured grey silty CLAY. Occasional light grey silt laminae and fissure infill. (LONDON CLAY).		11.00	8.74	UT1	10.50-10.95	9.00	61 blows: 90% recovery	
				D8	10.95-11.05			
				S	12.00		N=24 (3,4,5,6,6,7)	
				D9	12.00-12.45			
Stiff closely fissured grey silty CLAY. Occasional light grey silt laminae and fissure infill. Occasional sand size selenite crystals. (LONDON CLAY). At 12.00m: becomes stiff.		18.60	1.14	UT2	13.50-13.95	9.00	77 blows: 100% recovery	
				D10	13.95-14.05			
				S	15.00		N=28 (4,4,6,7,7,8)	
				D11	15.00-15.45			
				UT3	16.50-16.95		100 blows: 100% recovery	
				D12	16.95-17.05			
				S	18.00		N=27 (4,5,5,7,7,8)	
				D13	18.00-18.95			
Very stiff to hard closely fissured grey blue and brown CLAY. (LAMBETH GROUP).				D14	18.60			
				UT4	19.50-19.95		100 blows: 75% recovery	
				D15	19.95-20.05			

Water Level Observations

Hole Diameter Details			Chiselling Details			Date	Water Strike (m)	Standing Time (mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
Diameter (mm)	Depth (m)	Casing Depth (m)	From (m)	To (m)	Time (hhmm)						
200	18.00	9.00				08/03/12	22.50	20	20.42	18.50	
150	30.00	30.00									

Client: Tibbalds Planning and Urban Design
Engineer: Campbell Reith Hill LLP
Contractor: Harrison Group Environmental Limited
Dates: 07/03/2012-09/03/2012
Plant: Dando 2000 Cable Percussive Rig
Drilled By: K. Gorbould
Logged By: G. Dowlen
Checked By: J. Keay

Remarks:

			Percussion Borehole Record					BH B2A			
			Project: Bourne Estate, Camden								
Project ID.: GL16482			Coordinates: 531227.1E 181873.9N					Ground Level: 19.74mAOD			
								Sheet 3 of 3			
Description			Legend	Depth (m)	O.D. Level (m)	Samples/ Test		Casing (Water) Depth (m)	Remarks and Test Results	Installations	
Very stiff to hard closely fissured grey blue and brown CLAY. (LAMBETH GROUP).						S D16	21.00 21.00-21.45	9.00	50/230mm (8,17,20,14,15,1)		
Blue green clayey fine to coarse SAND. (LAMBETH GROUP).						W1 UT5	22.50 22.50-22.95				
Very stiff to hard closely fissured variably light blue grey, red brown and light grey slightly silty CLAY. (LAMBETH GROUP).						D17	22.95-23.05				
						S D18	24.00 24.00-24.45	(23.10) 24.00	50/200mm (7,12,16,18,16)		
						UT6	25.50-25.95		100 blows: 60% recovery		
						D19	25.95-26.05				
						S D20	27.00 27.00-27.45	(20.20) 26.00	N=48 (3,5,8,12,13,15)		
						S D21	28.50 28.50-28.95	(22.30) 30.00	50/265mm (5,7,10,13,16,11)		
Borehole Complete at 30.00 m			Water Level Observations								
Hole Diameter Details			Chiselling Details			Date	Water Strike (m)	Standing Time (mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
Diameter (mm)	Depth (m)	Casing Depth (m)	From (m)	To (m)	Time (hhmm)						
200 150	18.00 30.00	9.00 30.00				08/03/12	22.50	20	20.42	18.50	
Client: Tibbalds Planning and Urban Design Engineer: Campbell Reith Hill LLP Contractor: Harrison Group Environmental Limited Dates: 07/03/2012-09/03/2012 Plant: Dando 2000 Cable Percussive Rig Drilled By: K. Gorbould Logged By: G. Dowlen Checked By: J. Keay						Remarks:					



WS B1
Sheet 1 of 1

Ground Level: 19.55mAOD

Window Sample Complete at 1.20 m

Depth
Sealed (m)

Remarks:

1. Inspection pit excavated from GL to 1.20mbgl.
2. Groundwater was not encountered.
3. Obstruction encountered at 1.20mbgl. Window sample hole terminated.
4. Backfill details: Arisings from 1.20mbgl to GL.



Window Sample Record

WS B2

Sheet 1 of 1

Project: Bourne Estate, Camden

Project ID: GL16482

Coordinates: 531161.4E
181877.7N

Ground Level: 19.51mAOD

Description	Legend	Depth (m)	O.D. Level (m)	Sample Test		Remarks and Test Results	Installations	
				Type	Depth (m)			
MADE GROUND. (Soft) dark brown slightly gravelly silty sandy CLAY. Gravel is angular to rounded fine and medium brick and glass fragments.		0.20	19.31	ES1	0.10	N=3 (2,2,1,1,0,1)		
MADE GROUND. (Soft to firm) dark brown and dark grey brown slightly sandy silty gravelly CLAY. Gravel is angular to rounded fine and medium occasionally coarse flint, brick and concrete. Rare brick cobbles.				ES2	0.50			
		1.10	18.41	ES3	1.00			
MADE GROUND. very loose red brown brick GRAVEL and COBBLES.		1.30	18.21	S D1 LS1	1.20 1.20-1.65 1.20-2.00	N=3 (1,0,0,1,0,2)		
MADE GROUND. (Soft to firm) black, dark grey and grey brown slightly sandy silty gravelly CLAY. Gravel is angular to rounded fine and medium occasionally coarse flint, occasional brick and charcoal. Occasional oyster shells.				ES4	1.50			
				S D2 LS2 ES5	2.00 2.00-2.45 2.00-3.00 2.00			
				ES6	2.50	N=10 (1,1,1,1,3,5)		
				S D3 ES7	3.00 3.00-3.45 3.00			

Water Level Observations

Drive Records

Diameter (mm)	From (m)	To (m)	Recovery (%)	Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
115 115	1.20 2.00	2.00 3.00	100 100						

Client: Tibbalds Planning and Urban Design
Engineer: Campbell Reith Hill LLP
Contractor: Harrison Group Environmental Limited
Date: 07/03/2012
Plant: Terrier Window Sampling Rig
Drilled By: M. Rose
Logged By: G. Dowlen
Checked By: J. Keay

Remarks:

1. Inspection pit excavated from GL to 1.20mbgl.
2. Groundwater was not encountered.
3. Installation details: 50mm diameter HDPE standpipe installed from 3.45mbgl to GL. Slotted from 3.45mbgl to 1.00mbgl, plain from 1.00mbgl to GL. Finished with gas tap, end cap and flush fitting cover. Geowrap and geosock used.
4. Backfill details: Arisings from 3.45mbgl to 3.00mbgl. gravel filter packs from 3.00mbgl to 1.00mbgl, bentonite pellets from 1.00mbgl to 0.20mbgl and concrete from 0.20mbgl to GL.



Window Sample Record

WS B3


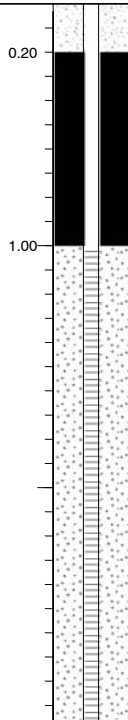

Sheet 1 of 1

Project: Bourne Estate, Camden

Project ID: GL16482

Coordinates: 531163.4E
181856.5N

Ground Level: 19.73mAOD

Description	Legend	Depth (m)	O.D. Level (m)	Sample Test		Remarks and Test Results	Installations		
				Type	Depth (m)				
Grass over TOPSOIL. Dark brown clayey sandy SILT.		0.30	19.43	ES1	0.15	N=18 (2,3,5,7,3,3)			
MADE GROUND. Medium dense becoming loose brown, grey brown and dark brown silty gravelly fine and medium occasionally coarse SAND. Gravel is angular fine and medium occasionally coarse brick and rare concrete. Occasional brick cobbles.	ES2			0.50					
	ES3			0.90					
	ES4			1.10					
	S D1 LS1			1.20 1.20-1.45 1.20-2.00					
	ES5	1.50							
MADE GROUND. Very loose dark brown and yellow brown silty gravelly fine and medium occasionally coarse SAND. Gravel is angular to rounded fine and medium occasionally coarse flint, occasional brick and charcoal fragments. Occasional oyster shells.		2.30	17.43	S D2 LS2 ES6	2.00 2.00-2.45 2.00-3.00 2.00			N=6 (1,2,2,2,1,1)	
				ES7	2.50				
				S D3 ES8	3.00 3.00-3.45 3.00				N=2 (1,0,0,1,0,1)
Window Sample Complete at 3.45 m		3.45	16.28						

Water Level Observations

Drive Records

Diameter (mm)	From (m)	To (m)	Recovery (%)	Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
115 115	1.20 2.00	2.00 3.00	100 100						

Client: Tibbalds Planning and Urban Design
Engineer: Campbell Reith Hill LLP
Contractor: Harrison Group Environmental Limited
Date: 07/03/2012
Plant: Terrier Window Sampling Rig
Drilled By: M. Rose
Logged By: G. Dowlen
Checked By: J. Keay

Remarks:

1. Inspection pit excavated from GL to 1.20mbgl.
2. Groundwater was not encountered.
3. Installation details: 50mm diameter HDPE standpipe installed from 3.45mbgl to GL. Slotted from 3.45mbgl to 1.00mbgl, plain from 1.00mbgl to GL. Finished with gas tap, end cap and flush fitting cover. Geowrap and geosock used.
4. Backfill details: Arisings from 3.45mbgl to 3.00mbgl. gravel filter packs from 3.00mbgl to 1.00mbgl, bentonite pellets from 1.00mbgl to 0.20mbgl and concrete from 0.20mbgl to GL.



Window Sample Record

WS B4

Sheet 1 of 1

Project: Bourne Estate, Camden

Project ID: GL16482

Coordinates: 531233.2E
181842.9N

Ground Level: 19.95mAOD

Description	Legend	Depth (m)	O.D. Level (m)	Sample Test		Remarks and Test Results	Installations
				Type	Depth (m)		
Grass over TOPSOIL. Dark brown organic clayey silty fine SAND.		0.15	19.80	ES1	0.10		
				ES2	0.25		
				ES3	0.50		
				ES4	1.00		
MADE GROUND. Dark brown silty gravelly fine and medium occasionally coarse SAND. Gravel is subangular fine to coarse brick and concrete. Occasional brick cobbles.		1.20	18.75	S	1.20	N=12 (2,1,2,3,3,4)	
				D1	1.20-1.65		
				LS1	1.20-2.00		
				ES5	1.50		
				S	2.00	N=12 (1,2,2,3,3,4)	
				D2	2.00-2.45		
				LS2	2.00-2.80		
				ES6	2.00		
				ES7	2.50		
At 2.80m: becomes very dense.				S	2.80	50/75mm (25,50)	
				D3	2.80-2.95		
Window Sample Complete at 2.95 m		2.95	17.00	ES8	2.80		

Water Level Observations

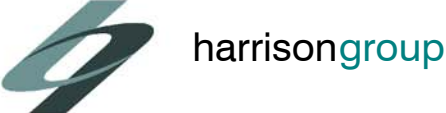


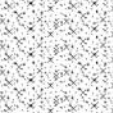
Drive Records

Diameter (mm)	From (m)	To (m)	Recovery (%)	Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
115	1.20	2.00	100						
115	2.00	2.95	100						

Client: Tibbalds Planning and Urban Design
Engineer: Campbell Reith Hill LLP
Contractor: Harrison Group Environmental Limited
Date: 07/03/2012
Plant: Terrier Window Sampling Rig
Drilled By: M. Rose
Logged By: G. Dowlen
Checked By: J. Keay

Remarks:

1. Inspection pit excavated from GL to 1.20mbgl.
2. Groundwater was not encountered.
3. Installation details: 50mm diameter HDPE standpipe installed from 2.95mbgl to GL. Slotted from 2.95mbgl to 1.00mbgl, plain from 1.00mbgl to GL. Finished with gas tap, end cap and flush fitting cover. Geowrap and geosock used.
4. Backfill details: Gravel filter packs from 2.95mbgl to 1.00mbgl, bentonite pellets from 1.00mbgl to 0.20mbgl and concrete from 0.20mbgl to GL.

				Window Sample Record		WS B5 Sheet 1 of 1			
				Project: Bourne Estate, Camden					
Project ID: GL16482				Coordinates: 531196.5E 181827.8N		Ground Level: 17.76mAOD			
Description				Legend	Depth (m)	O.D. Level (m)	Sample Test Type Depth (m)	Remarks and Test Results	Installations
Grass over TOPSOIL. Dark brown organic clayey silty fine and medium SAND.					0.15	17.61	ES1 0.00 0.10		
MADE GROUND. Brown, grey brown and grey silty gravelly fine and medium occasionally coarse SAND. Gravel is angular fine to coarse brick, rare concrete, wood and glass fragments.							ES2 0.25		
							ES3 0.50		
Yellow brown silty fine and medium occasionally coarse SAND and subrounded to rounded fine and medium occasionally coarse flint GRAVEL. (HACKNEY GRAVEL).					1.10	16.66	ES4 1.00		
							ES5 1.25		
Window Sample Complete at 1.60 m					1.60	16.16	ES6 1.60		
				Water Level Observations					
Drive Records				Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
Diameter (mm)	From (m)	To (m)	Recovery (%)						
115	1.20	1.60	100						
Client: Tibbalds Planning and Urban Design Engineer: Campbell Reith Hill LLP Contractor: Harrison Group Environmental Limited Date: 08/03/0012 Plant: Handheld Window Sampling Rig Drilled By: M. Rose Logged By: G. Dowlen Checked By: J. Keay				Remarks: 1. Inspection pit excavated from GL to 1.20mbgl. 2. Groundwater was not encountered. 3. Obstruction encountered at 1.60mbgl. Window sample hole terminated. 4. Backfill details: Arisings from 1.60mbgl to GL.					



Window Sample Record

WS B6

Sheet 1 of 1

Project: Bourne Estate, Camden

Project ID: GL16482

Coordinates: 531193.5E
181852.5N

Ground Level: 17.91mAOD

Description	Legend	Depth (m)	O.D. Level (m)	Sample Test		Remarks and Test Results	Installations
				Type	Depth (m)		
Grass over MADE GROUND. Dark brown slightly gravelly sandy SILT. Gravel is angular fine brick and rare glass fragments.		0.15	17.76	ES1	0.10		
				ES2	0.25		
MADE GROUND. Brown, grey brown and dark brown silty gravelly fine and medium occasionally coarse SAND. Gravel is angular fine and medium occasionally coarse brick, occasional glass and rare concrete fragments.				ES3	0.75		
		1.00	16.91	ES4	1.10		
MADE GROUND. (Firm) dark grey and dark grey brown slightly sandy slightly gravelly silty CLAY. Gravel is angular to rounded fine to coarse quartz, brick and rare wood fragments. Rare oyster shells.				ES5	1.50		
				ES6	2.10		
MADE GROUND. Yellow brown brick GRAVEL and COBBLES.		2.40	15.51				
Window Sample Complete at 2.50 m		2.50	15.41				


Water Level Observations


Drive Records

Diameter (mm)	From (m)	To (m)	Recovery (%)	Date	Water Strike (m)	Standing Time (Mins)	Standing Level (m)	Casing Depth (m)	Depth Sealed (m)
115 115	1.20 2.00	2.00 2.50	100 100						

Client: Tibbalds Planning and Urban Design
Engineer: Campbell Reith Hill LLP
Contractor: Harrison Group Environmental Limited
Date: 08/03/0012-08/03/2012
Plant: Handheld Window Sampling Rig
Drilled By: M. Rose
Logged By: G. Dowlen
Checked By: J. Keay

Remarks:
1. Inspection pit excavated from GL to 1.20mbgl.
2. Groundwater was not encountered.
3. Obstruction encountered at 2.50mbgl. Window sample hole terminated.
4. Backfill details: Arisings from 2.50mbgl to GL.

 harrisingroup	Falling Head Permeability Test (Borehole)		Job No: GL16482	
	Date: 12/03/2012		Borehole No./ BH B1 Test No.: 1 of 1	
Client: Tibbalds Planning and Urban Design		Location: Bourne Estate, Camden		
Description: Medium dense to dense yellow brown and brown silty SAND and GRAVEL				
Borehole depth (m): 6.00 Borehole diameter (m): 0.15 Groundwater level before test: 6.00 Depth of casing (m): 5.00 Initial driving head (m) (Ho): 6.00 Top of test zone (m): 5.00 Base of test zone(m): 6.00 Initial water level(m): 0.00 Weather: Sunny				
TIME (sec)	ELAPSED TIME (sec)	DEPTH TO WATER (mb top of casing)	DRIVING HEAD (m)	COMMENTS
0	0	0.00	6.00	
30	30	0.41	5.59	
60	60	0.82	5.18	
90	90	1.21	4.79	
120	120	1.42	4.58	
150	150	1.65	4.35	
180	180	1.89	4.11	
210	210	2.12	3.88	
240	240	2.41	3.59	
270	270	2.73	3.27	
300	300	2.94	3.06	
360	360	3.23	2.77	
420	420	3.64	2.36	
480	480	3.90	2.10	
540	540	4.08	1.92	
600	600	4.19	1.81	
1200	1200	4.23	1.77	
1800	1800	4.23	1.77	
2400	2400	4.23	1.77	
3000	3000	4.23	1.77	
3600	3600	4.23	1.77	
Remarks:				
The test has been carried out in general accordance with BS5930:1999+A2:2010. However, it should be noted that the test has been carried out above groundwater level.				
Coefficient of Permeability: 7.4E-06 m/s (Using the General Approach - method d)				

 harrisingroup	Falling Head Permeability Test (Borehole)		Job No: GL16482	
	Date: 12/03/2012		Borehole No./ BH B2A Test No.: 1 of 1	
Client: Tibbalds Planning and Urban Design		Location: Bourne Estate, Camden		
Description: Dense yellow brown silty SAND and GRAVEL				
Borehole depth (m): 8.00 Borehole diameter (m): 0.20 Groundwater level before test: 6.22 Depth of casing (m): 4.00 Initial driving head (m) (Ho): 6.22 Top of test zone (m): 4.00 Base of test zone(m): 8.00 Initial water level(m): 0.00 Weather: Sunny				
TIME (sec)	ELAPSED TIME (sec)	DEPTH TO WATER (mb top of casing)	DRIVING HEAD (m)	COMMENTS
0	0	0.00	6.22	
30	30	0.55	5.67	
60	60	0.89	5.33	
90	90	1.36	4.86	
120	120	1.52	4.70	
150	150	1.73	4.49	
180	180	1.94	4.28	
210	210	2.19	4.03	
240	240	2.59	3.63	
270	270	2.99	3.23	
300	300	3.24	2.98	
360	360	3.57	2.65	
420	420	3.96	2.26	
480	480	4.21	2.01	
540	540	4.48	1.74	
600	600	4.73	1.49	
1200	1200	5.01	1.21	
1800	1800	5.23	0.99	
2400	2400	5.65	0.57	
3000	3000	5.93	0.29	
3600	3600	6.15	0.07	
Remarks:				
The test has been carried out in general accordance with BS5930:1999+A2:2010. NB. Test carried out in standpipe post completion of borehole.				
Coefficient of Permeability: 1.4E-06 m/s (Using the General Approach - method d)				

APPENDIX C

GAS AND GROUNDWATER MONITORING RECORDS



Gas Monitoring Field Record

Project Name: Bourne Estate, Camden

Job No: GL16482

Client: Tibbalds Planning and Urban Design

Equipment

Model

Land Gas Analyser

GA2000

Serial Number

GA05814

Manufacturer's Calibration Date

19/10/2011

PID

PHOCHECK+

06-01410

10/02/2011

Weather Conditions 24hrs Prior to Monitoring

Broken cloud, 13°C, 1027hPa.

Weather Conditions During Monitoring

Broken cloud, 13°C, 1024hPa.

[illegible]

Field Engineer:	G. Pursey
-----------------	-----------

Pump Running Time (sampling): (Standard 120 sec)		
--	--	--

Pump Running Time (purge): (Standard 30 sec)

Flow Details (e.g. 5 sec average for 1 min.):

Other Remarks:

PID : Photo-Ionisation Detector

ⁱⁱⁱ "<" indicates that reading is **under** the limit range.

">" indicates that reading is **over** the limit range.

*** Level to be determined



Gas Monitoring Field Record

Job No: GL16482

Client:	Tibbalds Planning and Urban Design
----------------	------------------------------------

Equipment

Model

Land Gas Analyser

GA2000

PID

PHOCHECK+

Weather Conditions 24hrs Prior to Monitoring

S Cloudy, 11c, 1023mBar

Weather Conditions During Monitoring

Scattered showers, 12c, 998mBar

[illegible]

Field Engineer:	G. Pursey
-----------------	-----------

Pump Running Time (sampling):	(Standard 120 sec)
-------------------------------	--------------------

Pump Running Time (purge): (Standard 30 sec)

Flow Details (e.g. 5 sec average for 1 min.):


Other Remarks:


PID : Photo-Ionisation Detector


"<" indicates that reading is **under** the limit range.

">" indicates that reading is **over** the limit range,

*** Level to be determined

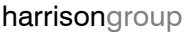
 harrisongroup		Water Monitoring Field Record	
		Date: 23/03/2012	Job No : GL16482
Client : Tibbalds Planning and Urban Design		Project : Bourne Estate, Camden	
Method: Dipmeter		Drawing No.:	
Weather (include Temperature & Pressure)		State of Ground (e.g. Dry, Wet, Snow covered.)	
Broken cloud, 13oC, 1024hPa.		Dry	
Position No.	Time (hh:mm:ss)	Water Level (m)	Comments
BH B1 (shallow)	11:23:00	-	No access due to car on cover.
BH B1 (deep)	11:23:00	-	No access due to car on cover.
BH B2A	11:30:00	6.22	Base of the pipe: 7.90m, purged dry, no sample taken.
WS B2	12:40:00	Dry	Base of the pipe: 3.00m.
WS B3	12:20:00	Dry	Base of the pipe: 3.00m.
WS B4	12:00:00	Dry	Base of the pipe: 2.94m.
Field Crew:			G. Pursey

 harrisongroup		Water Monitoring Field Record	
		Date: 05/04/2012	Job No : GL16482
Client : Tibbalds Planning and Urban Design		Project : Bourne Estate, Camden	
Method: Dipmeter		Drawing No.:	
Weather (include Temperature & Pressure)		State of Ground (e.g. Dry, Wet, Snow covered.)	
Cloudy, 6c, 1019mBar		Dry	
Position No.	Time (hh:mm:ss)	Water Level (m)	Comments
BH B1 (shallow)	14:00:00	Dry	Base 3.09m.
BH B1 (deep)	14:05:00	6.04	Base 8.00m. Sample taken after purging 10 litres to achieve a steady state. Sample orange brown
BH B2A	14:20:00	7.01	Base 7.90m. Borehole purged dry. No sample
WS B2	14:40:00	Dry	Base 3.00m.
WS B3	14:50:00	Dry	Base 3.00m.
WS B4	14:05:00	Dry	Base 2.94m.
		Field Crew: G. Pursey	

 harrisongroup		Water Monitoring Field Record	
		Date: 17/04/2012	Job No : GL16482
Client : Tibbalds Planning and Urban Design		Project : Bourne Estate, Camden	
Method: Dipmeter		Drawing No.:	
Weather (include Temperature & Pressure)		State of Ground (e.g. Dry, Wet, Snow covered.)	
Scattered showers, 12c, 998mBar		Wet	
Position No.	Time (hh:mm:ss)	Water Level (m)	Comments
BH B1 (shallow)	14:00:00	Dry	Base 3.08m.
BH B1 (deep)	14:05:00	6.04	Base 8.00m. Sample taken after purging 12 litres to achieve a steady state. Sample orange brown
BH B2A	14:20:00	7.23	Base 7.88m. Borehole purged dry. No sample
WS B2	14:40:00	Dry	Base 3.00m.
WS B3	14:50:00	Dry	Base 2.99m.
WS B4	14:05:00	Dry	Base 2.93m.
Field Crew:			G. Pursey

APPENDIX D

LABORATORY TESTING




0

Date Scheduled: 16/03/2012
Lab turn around: 2 Weeks
Results Due Date: 30/03/2012

Email Reports to: GL@harrisingroupuk.com

[illegible]

 harrisingroup					GEOTECHNICAL LABORATORY SCHEDULE															0							
Project Engineer: Campbell Reith Hill LLP Email Reports to: GL@harrisingroupuk.com					Project Name: Bourne Estate, Camden Project ID: GL16482 Project Client: Tibbalds Planning and Urban Design															Date Scheduled: 16/03/2012 Lab turn around: 2 Weeks Results Due Date: 30/03/2012							
Exploratory Hole No.	Sample				Classification						Chemical				Compaction			Strength				Additional			Remarks		
	Sample Type	Sample Ref	Depth From	Depth To	Moisture Content	Density	Atterberg Limit	Particle Density	Wet Sieve	Dry Sieve	Pipette	Organic Matter	Water soluble sulphate & pH	Initial BRE Special Digest 1 suite for "Brownfield sites"	Initial BRE Special Digest 1 suite for "Pyrite bearing ground"	2.5kg Rammer	4.5kg Rammer	Vibrating Rammer	CBR Test	Oedometer	Unconfined	Triaxial U100	Triaxial U38				
WS B2A	ES	5	2.00		X		X																				
WS B2A	ES	6	2.50											X													
WS B6	ES	4	1.10											X													
WS B6	ES	5	1.50		X		X																				
	Total Scheduled				7		6		4				9	4								6					
	Total Tested				7		6		4				9	4								6					



Harrison Testing Services

Units 1 & 2 Alston Road
Hellesdon Park Industrial Estate
Norwich NR6 5DS
Tel: +44 (0) 1603 416333
Fax +44 (0) 1603 416443

Client: Harrison Group Environmental
Poplar Business Park
10 Preston Road
London
E14 9RL

For the attention of: Jiban Bajracharya

Date of Issue: 04/05/2012
Page Number 1 of 12

TEST REPORT TRANSMITTAL

Report Form FMR3000 Rev.C Revision Date 26/11/08

Project	Bourne Estate, Camden	Samples Received	11/04/2012
Report No	GL16482	Instruction received	03/04/2012
Your Ref	GL16482	Testing commenced	20/04/2012
SUMMARY OF RESULTS ATTACHED			
Test Method and Description	Quantity	UKAS Accredited	
BS1377: Part 2: 1990:3.2 Moisture Content	7	Yes	
BS1377: Part 2: 1990:4.3/4.5 Liquid & Plastic Limits - Definitive Method	6	Yes	
BS1377: Part 2: 1990:9.3 Particle Size Distribution - Wet Sieve Method	4	Yes	
BS1377: Part 7: 1990:8.0 Unconsolidated Undrained Shear Strength - Single Stage	6	Yes	
Remarks:			
Issued by: M Willson			
Approved Signatories:			
M Willson (Laboratory Manager), G Bream (Senior Laboratory Technician)			
Unless we are notified to the contrary, samples will be disposed after a period of one month from this date			
This report should not be reproduced except in full without the written approval of the laboratory			
Only those results indicated in this report are UKAS accredited and any opinion or interpretations expressed are outside the scope of UKAS accreditation			



PROJECT NAME: Bourne Estate, Camden
PROJECT NUMBER: GL16482
CLIENT: London Borough of Camden
DATE OF ISSUE: 04/05/2012

SUMMARY OF MOISTURE CONTENT, LIQUID LIMIT (ONE POINT CONE PENETROMETER METHOD), PLASTIC LIMIT, PLASTICITY INDEX AND LIQUIDITY INDEX TO BS1377 : PART 2 : 1990

BH/TP No	Depth (m)	Sample No.	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Liquidity Index	Passing 0.425mm (%)	Soil Class	Sample Description
BH B1	8.00	D8	32	67	26	41	0.15	83	CH	Dark grey mottled orange brown slightly gravelly CLAY. Gravel is of pyrite
BH B2A	9.00	D7	25	75	26	50	-0.01	100	CV	Dark grey mottled orange brown CLAY
BH B2A	22.95	D17	19							Light grey very sandy CLAY
BH B2A	24.00	D18	24	54	23	30	0.02	100	CH	Brown mottled orange brown and blue grey CLAY
WS B2A	1.00	ES3	22	35	20	15	0.13	59	CL	MADE GROUND (Dark brown gravelly CLAY. Gravel is of flint, brick, concrete and shell fragments)
WS B2A	2.00	ES5	22	37	21	16	0.05	61	CI	MADE GROUND (Brown and dark brown slightly sandy gravelly CLAY. Gravel is of flint, brick and shell fragments)
WS B6	1.50	ES5	15	36	23	14	0.58	44	CI	MADE GROUND (Brown slightly sandy gravelly CLAY. Gravel is of flint, chalk and brick fragments)

BS1377 : Part 2 : Clause 3.2 : 1990 Determination of Moisture Content

BS1377 : Part 2 : Clause 4.4 : 1990 Determination of Liquid Limit (Single Point Cone Penetrometer Method)

BS1377 : Part 2 : Clause 5 : 1990 Determination of Plastic Limit and Plasticity Index

Harrison Geotechnical Engineering

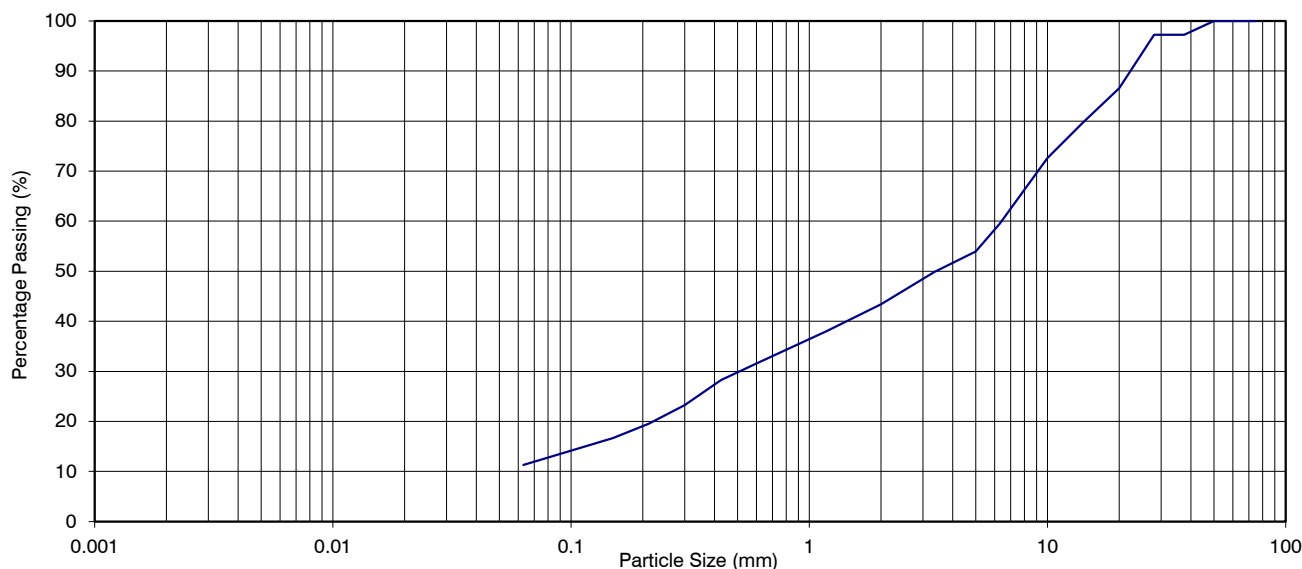
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 Fax: +44 (0)1603 416443
 email: laboratory@harrisongroupuk.com



PROJECT NAME: Bourne Estate, Camden
 PROJECT NUMBER: GL16482
 CLIENT: London Borough of Camden
 DATE OF ISSUE: 04/05/2012

BH/TP No.: BH B1
 Depth (m): 1.20
 Sample No.: B1

DETERMINATION OF PARTICLE SIZE DISTRIBUTION TO BS1377 : PART 2 : 1990 : CLAUSE 9.2 - WET SIEVING



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

Particle Size (mm)	Percentage Passing	Sample Description	
75.0	100	MADE GROUND (Brown and reddish brown clayey silty very sandy GRAVEL) Gravel is of flint, concrete, brick and slag fragments)	
63.0	100		
50.0	100		
37.5	97		
28.0	97		
20.0	87		
14.0	80		
10.0	73		
6.30	59		
5.00	54		
3.35	50		
2.00	43		
1.18	38		
0.600	32		
0.425	28		
0.300	23		
0.212	20		
0.150	17		
0.063	11		
		Sample Proportions %	
		Cobbles	0.0
		Gravel	56.6
		Sand	32.1
		Silt / Clay	11.3
		Remarks	

Harrison Geotechnical Engineering

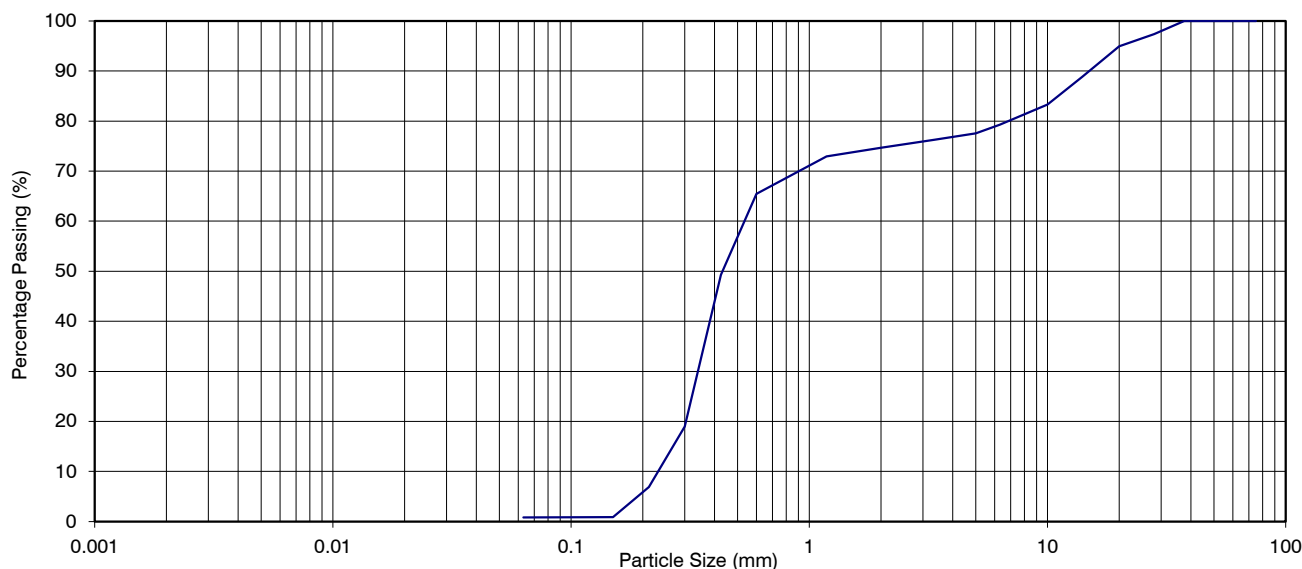
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 Norwich
 Norfolk
 NR6 5DS
 Tel: +44 (0)1603 416333
 Fax: +44 (0)1603 416443
 email: laboratory@harrisingroupuk.com



PROJECT NAME: Bourne Estate, Camden
 PROJECT NUMBER: GL16482
 CLIENT: London Borough of Camden
 DATE OF ISSUE: 04/05/2012

BH/TP No.: BH B1
 Depth (m): 4.50
 Sample No.: B4

DETERMINATION OF PARTICLE SIZE DISTRIBUTION TO BS1377 : PART 2 : 1990 : CLAUSE 9.2 - WET SIEVING



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

Particle Size (mm)	Percentage Passing	Sample Description	
75.0	100	Orange brown slightly silty very gravelly SAND. Gravel is of flint	
63.0	100		
50.0	100		
37.5	100		
28.0	97		
20.0	95		
14.0	89		
10.0	83		
6.30	79		
5.00	78		
3.35	76	Sample Proportions %	
2.00	75	Cobbles	0.0
1.18	73	Gravel	25.4
0.600	65	Sand	73.8
0.425	49	Silt / Clay	0.8
0.300	19	Remarks	
0.212	7		
0.150	1		
0.063	1		

Harrison Geotechnical Engineering

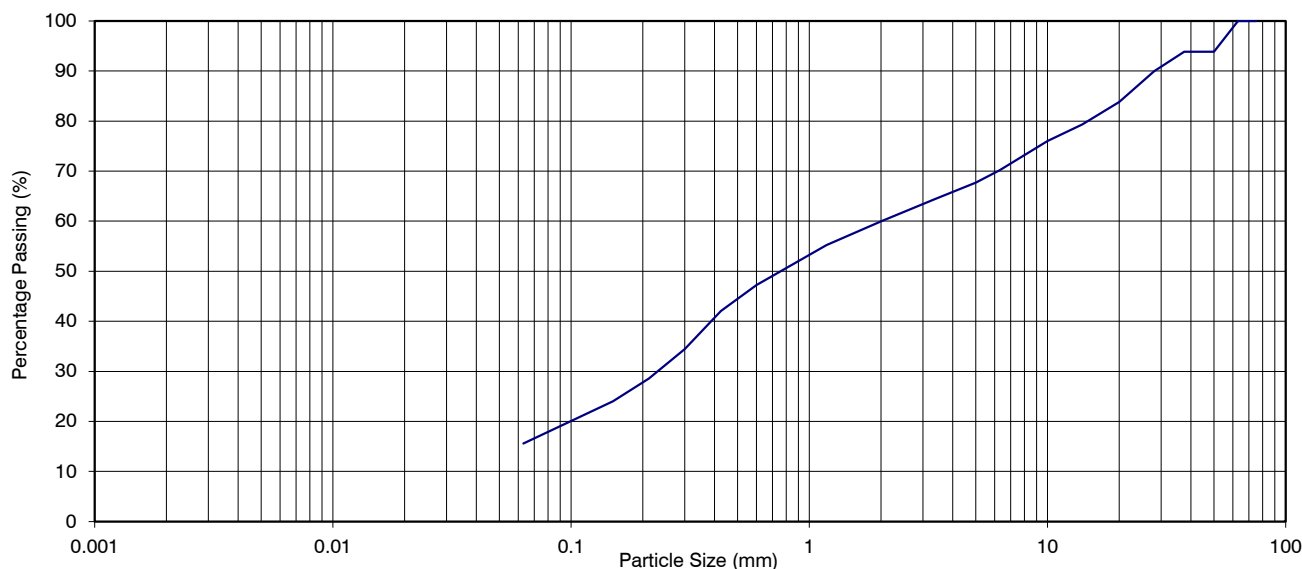
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 Norwich
 Norfolk
 NR6 5DS
 Tel: +44 (0)1603 416333
 Fax: +44 (0)1603 416443
 email: laboratory@harrisingroupuk.com



PROJECT NAME: Bourne Estate, Camden
 PROJECT NUMBER: GL16482
 CLIENT: London Borough of Camden
 DATE OF ISSUE: 04/05/2012

BH/TP No.: BH B2A
 Depth (m): 2.50
 Sample No.: B2

DETERMINATION OF PARTICLE SIZE DISTRIBUTION TO BS1377 : PART 2 : 1990 : CLAUSE 9.2 - WET SIEVING



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

Particle Size (mm)	Percentage Passing	Sample Description	
75.0	100	MADE GROUND (Brown and reddish brown clayey silty SAND / GRAVEL. Gravel is of flint, brick, concrete and occasional shell fragments)	
63.0	100		
50.0	94		
37.5	94		
28.0	90		
20.0	84		
14.0	79		
10.0	76		
6.30	70		
5.00	68		
3.35	64		
2.00	60		
1.18	55		
0.600	47		
0.425	42		
0.300	34	Sample Proportions %	
0.212	29	Cobbles	0.0
0.150	24	Gravel	40.0
0.063	16	Sand	44.3
		Silt / Clay	15.6
		Remarks	

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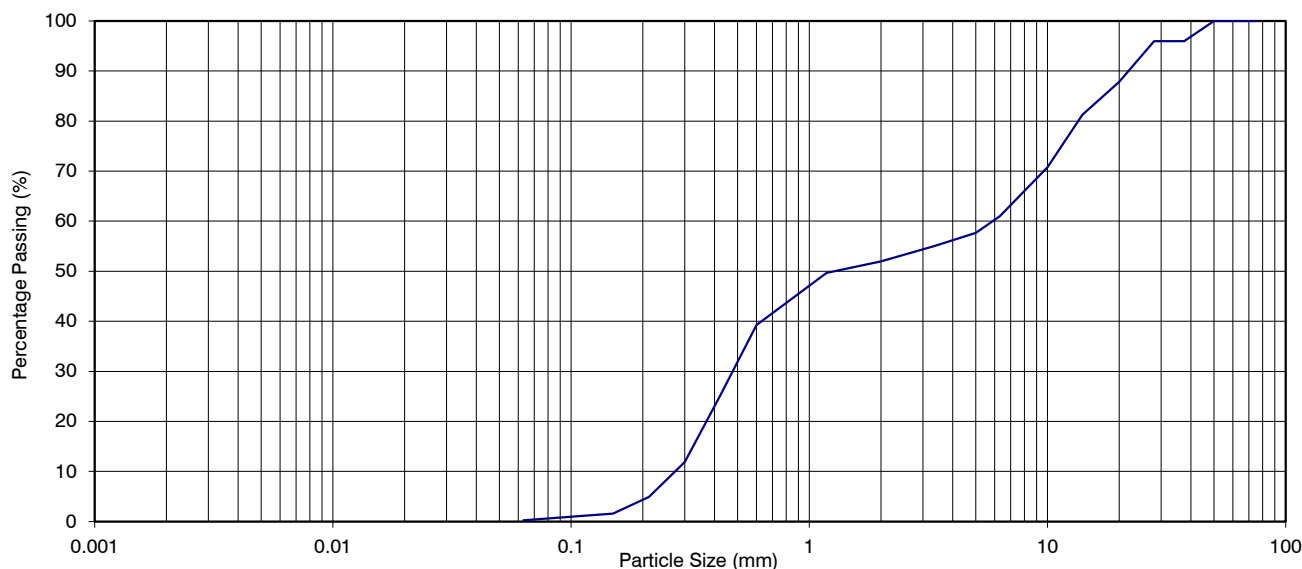
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PROJECT NAME: Bourne Estate, Camden
 PROJECT NUMBER: GL16482
 CLIENT: London Borough of Camden
 DATE OF ISSUE: 04/05/2012

BH/TP No.: BH B2A
 Depth (m): 6.00
 Sample No.: B5

DETERMINATION OF PARTICLE SIZE DISTRIBUTION TO BS1377 : PART 2 : 1990 : CLAUSE 9.2 - WET SIEVING



CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	COBBLES
	SILT			SAND			GRAVEL			

Particle Size (mm)	Percentage Passing	Sample Description	
75.0	100	Orange brown SAND / GRAVEL. Gravel is of flint and quartzite	
63.0	100		
50.0	100		
37.5	96		
28.0	96		
20.0	88		
14.0	81		
10.0	71		
6.30	61		
5.00	58		
3.35	55	Sample Proportions %	
2.00	52	Cobbles	0.0
1.18	50	Gravel	48.0
0.600	39	Sand	51.7
0.425	25	Silt / Clay	0.2
0.300	12	Remarks	
0.212	5		
0.150	2		
0.063	0		

Harrison Geotechnical Engineering

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PROJECT NAME: Bourne Estate, Camden
 PROJECT NUMBER: GL16482
 CLIENT: London Borough of Camden
 DATE OF ISSUE: 04/05/2012

BH/TP No.: BH B1
 Depth (m): 9.00
 Sample No.: U1

DETERMINATION OF UNCONSOLIDATED UNDRAINED SINGLE STAGE SHEAR STRENGTH TO BS1377 : PART 7 : 1990 : CLAUSE 8

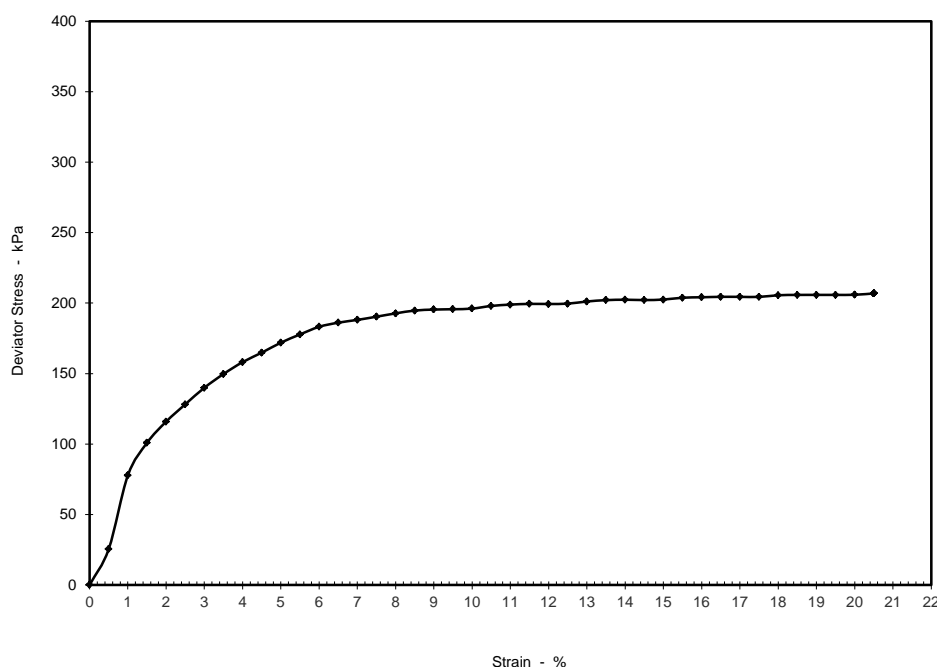
Sample Details				
Sample Condition		Undisturbed		
Height	mm	200.0		
Diameter	mm	101.5		
Moisture Content	%	27		
Bulk Density	Mg/m ³	2.04		
Dry Density	Mg/m ³	1.60		
Test Details				
Membrane Thickness	mm	0.25		
Membrane Correction	kPa	0.95		
Rate of Axial Displacement	%/min	2.00		
Cell Pressure	kPa	360		
Strain at Failure	%	20.5		
Maximum Deviator Stress	kPa	207		
Shear Strength	kPa	103		
Mode of Failure		Compound		
Sample Description	High strength dark grey brown and occasional orange brown CLAY			

Mode of failure



Shear Strength
Parameters

Cu 103 kPa
 Phi N/A °



REMARKS (Including any abnormalities or departures from procedure)

Harrison Geotechnical Engineering

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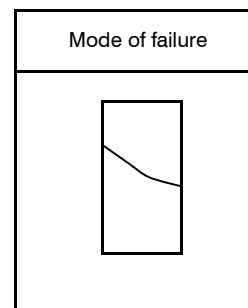


PROJECT NAME: Bourne Estate, Camden
 PROJECT NUMBER: GL16482
 CLIENT: London Borough of Camden
 DATE OF ISSUE: 04/05/2012

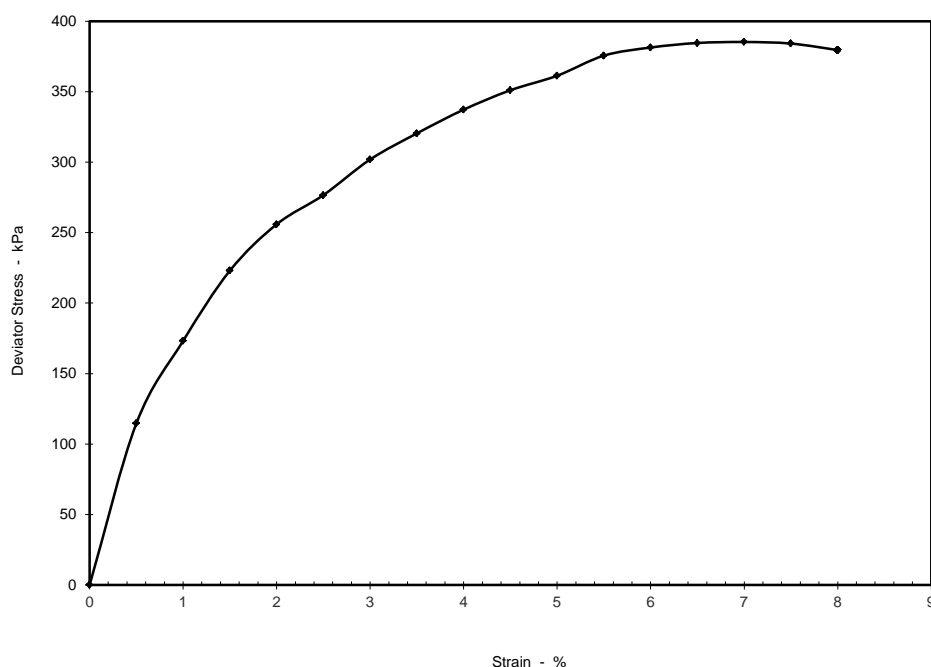
BH/TP No.: BH B2A
 Depth (m): 10.50
 Sample No.: U1

**DETERMINATION OF UNCONSOLIDATED UNDRAINED SINGLE STAGE SHEAR STRENGTH TO BS1377 : PART 7 : 1990 :
 CLAUSE 8**

Sample Details				
Sample Condition		Undisturbed		
Height	mm	200.0		
Diameter	mm	103.1		
Moisture Content	%	25		
Bulk Density	Mg/m ³	1.98		
Dry Density	Mg/m ³	1.59		
Test Details				
Membrane Thickness	mm	0.25		
Membrane Correction	kPa	0.41		
Rate of Axial Displacement	%/min	2.00		
Cell Pressure	kPa	420		
Strain at Failure	%	7.0		
Maximum Deviator Stress	kPa	385		
Shear Strength	kPa	193		
Mode of Failure		Brittle		
Sample Description	Very high strength dark grey brown and occasional orange brown CLAY			



Shear Strength Parameters	
Cu	193 kPa
Phi	N/A °



REMARKS (Including any abnormalities or departures from procedure)

Harrison Geotechnical Engineering

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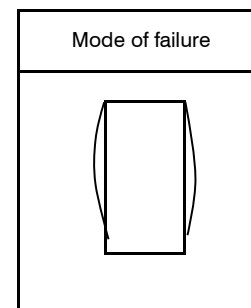


PROJECT NAME: Bourne Estate, Camden
 PROJECT NUMBER: GL16482
 CLIENT: London Borough of Camden
 DATE OF ISSUE: 04/05/2012

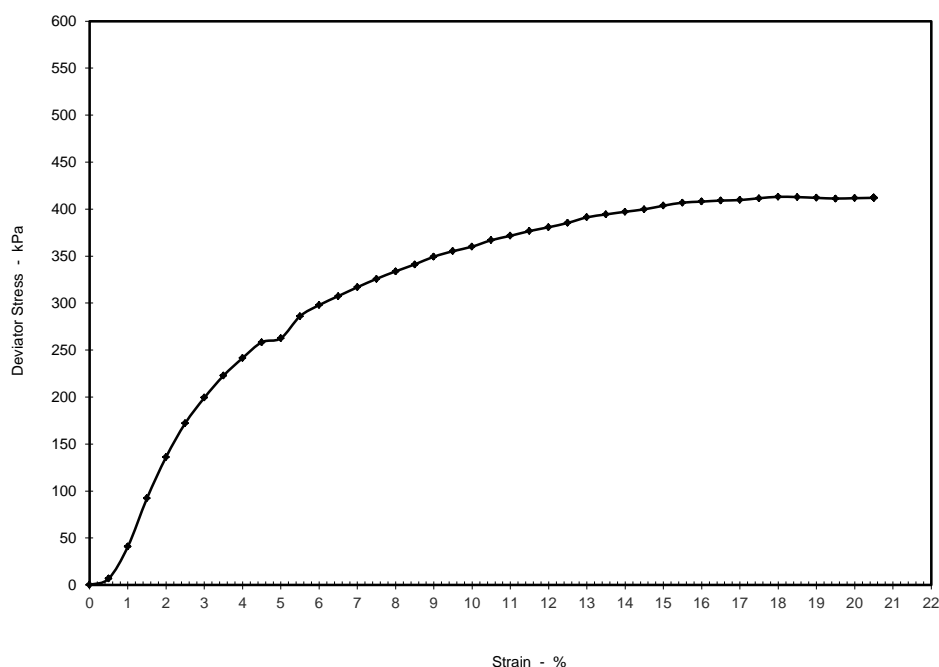
BH/TP No.: BH B2A
 Depth (m): 13.50
 Sample No.: U2

**DETERMINATION OF UNCONSOLIDATED UNDRAINED SINGLE STAGE SHEAR STRENGTH TO BS1377 : PART 7 : 1990 :
 CLAUSE 8**

Sample Details				
Sample Condition		Undisturbed		
Height	mm	200.0		
Diameter	mm	103.1		
Moisture Content	%	22		
Bulk Density	Mg/m ³	2.02		
Dry Density	Mg/m ³	1.65		
Test Details				
Membrane Thickness	mm	0.25		
Membrane Correction	kPa	0.86		
Rate of Axial Displacement	%/min	2.00		
Cell Pressure	kPa	540		
Strain at Failure	%	18.0		
Maximum Deviator Stress	kPa	413		
Shear Strength	kPa	207		
Mode of Failure		Plastic		
Sample Description		Very high strength dark grey brown CLAY		



Shear Strength Parameters	
Cu	207 kPa
Phi	N/A °



REMARKS (Including any abnormalities or departures from procedure)

Harrison Geotechnical Engineering

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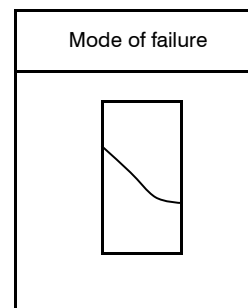


PROJECT NAME: Bourne Estate, Camden
 PROJECT NUMBER: GL16482
 CLIENT: London Borough of Camden
 DATE OF ISSUE: 04/05/2012

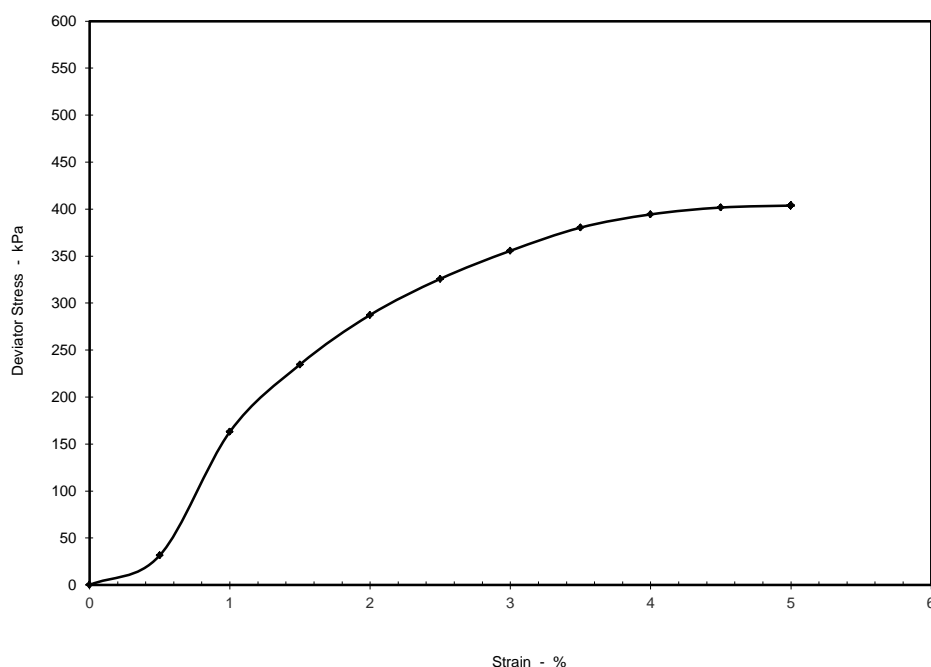
BH/TP No.: BH B2A
 Depth (m): 16.50
 Sample No.: U3

**DETERMINATION OF UNCONSOLIDATED UNDRAINED SINGLE STAGE SHEAR STRENGTH TO BS1377 : PART 7 : 1990 :
 CLAUSE 8**

Sample Details				
Sample Condition		Undisturbed		
Height	mm	200.0		
Diameter	mm	101.8		
Moisture Content	%	24		
Bulk Density	Mg/m ³	2.06		
Dry Density	Mg/m ³	1.66		
Test Details				
Membrane Thickness	mm	0.25		
Membrane Correction	kPa	0.32		
Rate of Axial Displacement	%/min	2.00		
Cell Pressure	kPa	660		
Strain at Failure	%	5.0		
Maximum Deviator Stress	kPa	404		
Shear Strength	kPa	202		
Mode of Failure		Brittle		
Sample Description		Very high strength dark grey brown CLAY		



Shear Strength Parameters	
Cu	202 kPa
Phi	N/A °



REMARKS (Including any abnormalities or departures from procedure)

Harrison Geotechnical Engineering

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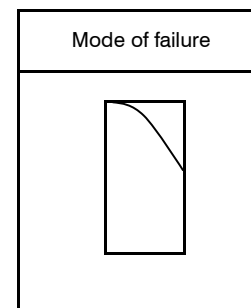


PROJECT NAME: Bourne Estate, Camden
 PROJECT NUMBER: GL16482
 CLIENT: London Borough of Camden
 DATE OF ISSUE: 04/05/2012

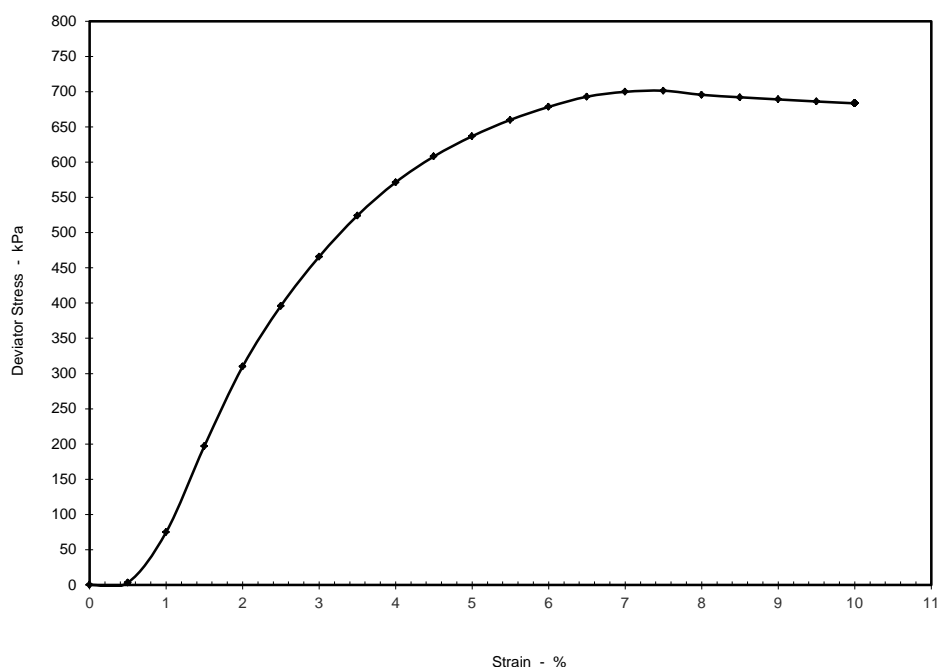
BH/TP No.: BH B2A
 Depth (m): 19.50
 Sample No.: U4

**DETERMINATION OF UNCONSOLIDATED UNDRAINED SINGLE STAGE SHEAR STRENGTH TO BS1377 : PART 7 : 1990 :
 CLAUSE 8**

Sample Details				
Sample Condition		Undisturbed		
Height	mm	200.0		
Diameter	mm	102.8		
Moisture Content	%	17		
Bulk Density	Mg/m ³	2.13		
Dry Density	Mg/m ³	1.81		
Test Details				
Membrane Thickness	mm	0.25		
Membrane Correction	kPa	0.44		
Rate of Axial Displacement	%/min	2.00		
Cell Pressure	kPa	780		
Strain at Failure	%	7.5		
Maximum Deviator Stress	kPa	701		
Shear Strength	kPa	351		
Mode of Failure		Brittle		
Sample Description	Extremely high orange brown mottled blue grey CLAY			



Shear Strength Parameters	
Cu	351 kPa
Phi	N/A °



REMARKS (Including any abnormalities or departures from procedure)

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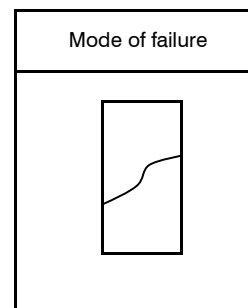


PROJECT NAME: Bourne Estate, Camden
 PROJECT NUMBER: GL16482
 CLIENT: London Borough of Camden
 DATE OF ISSUE: 04/05/2012

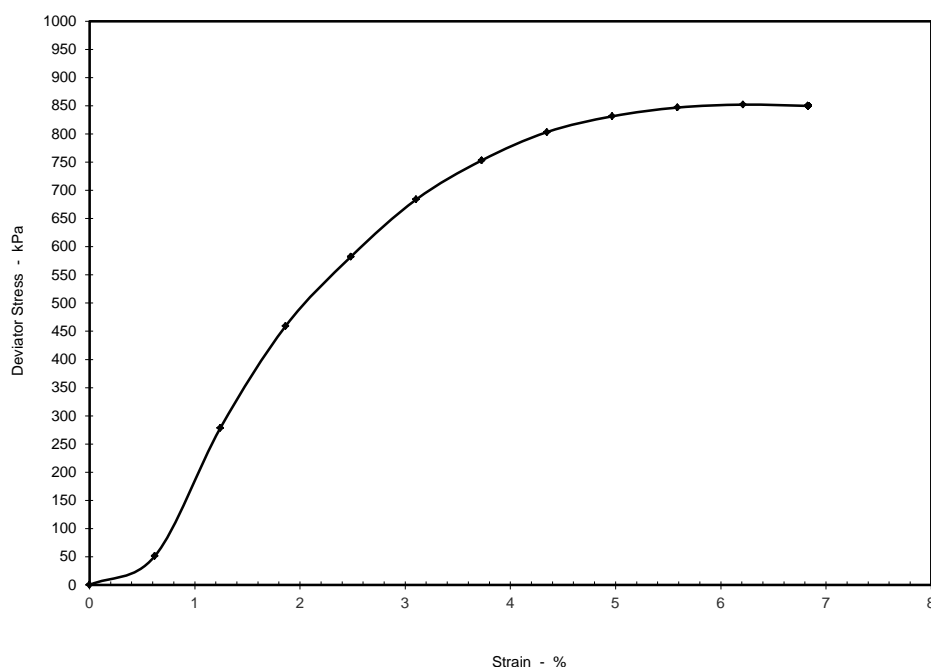
BH/TP No.: BH B2A
 Depth (m): 25.50
 Sample No.: U6

**DETERMINATION OF UNCONSOLIDATED UNDRAINED SINGLE STAGE SHEAR STRENGTH TO BS1377 : PART 7 : 1990 :
 CLAUSE 8**

Sample Details				
Sample Condition		Undisturbed		
Height	mm	161.0		
Diameter	mm	102.6		
Moisture Content	%	19		
Bulk Density	Mg/m ³	2.16		
Dry Density	Mg/m ³	1.82		
Test Details				
Membrane Thickness	mm	0.25		
Membrane Correction	kPa	0.38		
Rate of Axial Displacement	%/min	2.48		
Cell Pressure	kPa	1020		
Strain at Failure	%	6.2		
Maximum Deviator Stress	kPa	852		
Shear Strength	kPa	426		
Mode of Failure		Brittle		
Sample Description	Extremely high orange brown mottled blue grey CLAY			



Shear Strength Parameters	
Cu	426 kPa
Phi	N/A °



REMARKS (Including any abnormalities or departures from procedure)

Harrison Geotechnical Engineering

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GEOTRACE - ANALYSIS REQUEST FORM AND SAMPLE CUSTODY SHEET																																								
Lab address:					Sent from: Harrison Group Environmental Ltd. Address: Unit A11, Poplar Business Park 10 Prestons Road, London, E14 9RL Tel. No.: 020 7537 9233 Project/Site Name: Bourne Estate, Camden										Contact Name: Jiban Bajracharya Email: GL@harrisingroupuk.com Fax. No.: 020 7987 0361					Date Samples Scheduled: Project Code: GL16482 Sampler ID: Quote Reference: GL16482 Turnaround Time:					Sheet: 1 of 1 One project per sheet please															
Sampling Date (dd/mm/yr)	Borehole / Trial Pit No.	Sample Type	Sample Number	Sample Depth in Metres (Top)	Sample Depth in Metres (Bottom)	Chain of Custody Reference	Soil or (W)water or (G)gas (specify if other)	Suite Name (from Contract Rates or Quotation)	Metals	Cyanide (free) and (total)	PAH by GC/MS	Phenol	SOM	Asbestos Identification	pH	TPH Screen	Individual Determinants (SOIL)	1.25 Asbestos screen	1.26 Asbestos screen and microscopy ID	1.32 Fraction Organic Carbon	1.36 TPH - CMG (CS-35) based on TNRCC method 1006	Individual Determinants (GAS)	1.57 C1-C7 (As listed below)	1.58 VOCs inc BTEX, 10ppm	Individual Determinants (WATER and LEACHATE)	1.60 PAH (Total)	1.61 PAH (Total of USEPA 16)	1.62 PAH (16 specified) (Modified EPA 8100)	1.63 TPH - CMG (CS-35) based on TNRCC method 1006	1.64 Petrol Range Organics/ BTEX MTBE	1.65 BTEX by GC-MS (Modified US EPA 8150)	1.66 SVOCs target list (one extraction only) (Modified US EPA 8270)	1.67 SVOCs scan (up to 10 peaks, > 80% fit)	1.68 VOCs target list only (Modified US EPA 8260)	1.69 VOCs target list plus TICs (top 10 peaks to 0.01mg/l only) (Modified US EPA 8260)	1.70 Phenols (Total by HPLC)	1.71 Phenols (Speciated)	1.72 Glycol Suite (See below)		
07/03/2012	BH B2A	ES	3	1.00	1.00		S		X	X	X	X	X	X	X	X																								
07/03/2012	BH B2A	ES	9	4.00	4.00		S		X	X	X	X	X	X	X	X																								
07/03/2012	BH B2A	ES	18	8.20	8.20		S		X	X						X																								
07/03/2012	WS B1	ES	1	0.10	0.10		S		X	X	X	X	X	X	X	X																								
07/03/2012	WS B1	ES	2	0.50	0.50		S		X	X	X	X	X	X	X	X																								
07/03/2012	WS B2	ES	1	0.10	0.10		S		X	X	X	X	X	X	X	X																								
07/03/2012	WS B2	ES	2	0.50	0.50		S		X	X	X	X	X	X	X	X																								
07/03/2012	WS B2	ES	4	1.50	1.50		S		X	X	X	X	X	X	X	X																								
07/03/2012	WS B2	ES	7	3.00	3.00		S		X	X	X	X	X	X	X	X																								
07/03/2012	WS B3	ES	1	0.15	0.15		S		X	X	X	X	X	X	X	X																								
07/03/2012	WS B3	ES	3	0.90	0.90		S		X	X	X	X	X	X	X	X																								
07/03/2012	WS B3	ES	7	2.50	2.50		S		X	X	X	X	X	X	X	X																								
07/03/2012	WS B4	ES	1	0.10	0.10		S		X	X	X	X	X	X	X	X																								
07/03/2012	WS B4	ES	3	0.50	0.50		S		X	X	X	X	X	X	X	X																								
07/03/2012	WS B4	ES	5	1.50	1.50		S		X	X	X	X	X	X	X	X																								
07/03/2012	WS B4	ES	8	2.80	2.80		S		X	X	X	X	X	X	X	X																								
08/07/2012	WS B5	ES	1	0.10	0.10		S		X	X	X	X	X	X	X	X																								
08/07/2012	WS B5	ES	3	0.50	0.50		S		X	X	X	X	X	X	X	X																								
08/07/2012	WS B5	ES	4	1.00	1.00		S		X	X	X	X	X	X	X	X																								
08/07/2012	WS B6	ES	1	0.10	0.10		S		X	X	X	X	X	X	X	X																								
08/07/2012	WS B6	ES	3	0.75	0.75		S		X	X	X	X	X	X	X	X																								
08/07/2012	WS B6	ES	6	2.10	2.10		S		X	X	X	X	X	X	X	X																								
Total Scheduled								22	21	22	21	21	21	21	21	22																								
Total Tested								22	21	22	21	21	21	21	21	22																								

COMMENTS: data required in AGS format (V3.1).

1.71 Speciated Phenol Suite: 2-methylphenol (o-cresol); 4-methylphenol (p-cresol); 2, 4-Dimethylphenol; Naphthols; 3-methylphenol (m-cresol).

1.72 Glycol Suite: Monoethylene glycol, Propylene glycol, Diethylene glycol, Triethylene glycol.

PCB (WHO 12) Congener: 77, 81, 105, 114, 118, 123, 126, 156, 157, 167, 169, 189.

Special Instructions / Known Hazards:

Intended Use of Results:

Required for Environment Agency? Y / (N) (Please Circle as Applicable)

Date Received: Time: Signature: Report No.



Campbell Reith Hill
Somerset House
47-49 London Road
Redhill
Surrey
RH1 1LV

Attention: Rhyadd Watkins

CERTIFICATE OF ANALYSIS

Date: 31 May 2012
Customer: H_CAMREITH_REH
Sample Delivery Group (SDG): 120317-4
Your Reference:
Location: Redhill - Bourne Estate
Report No: 183005

We received 36 samples on Thursday March 15, 2012 and 17 of these samples were scheduled for analysis which was completed on Thursday May 31, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager





SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5333440	BHB2	ES1	0.25	08/03/2012
5333441	BHB2	ES2	0.50	08/03/2012
5333442	BHB2	ES3	1.00	08/03/2012
5333443	BHB2	ES4	1.50	08/03/2012
5333445	BHB2	ES5	2.00	08/03/2012
5333446	BHB2	ES6	2.50	08/03/2012
5333447	BHB2	ES7	3.00	08/03/2012
5333448	BHB2	ES8	3.50	08/03/2012
5333449	BHB2	ES9	4.00	08/03/2012
5333450	BHB2	ES10	5.00	08/03/2012
5333451	BHB2	ES11	6.00	08/03/2012
5333452	BHB2	ES12	7.00	08/03/2012
5333453	BHB2	ES13	7.90	08/03/2012
5333454	BHB2	ES14	8.25	08/03/2012
5334285	WSB1	ES1	0.10	08/03/2012
5334286	WSB1	ES2	0.50	08/03/2012
5334287	WSB1	ES3	1.00	08/03/2012
5333017	WSB2	ES1	0.10	08/03/2012
5333018	WSB2	ES2	0.50	08/03/2012
5333019	WSB2	ES3	1.00	08/03/2012
5333020	WSB2	ES4	1.50	08/03/2012
5333021	WSB2	ES5	2.00	08/03/2012
5333022	WSB2	ES6	2.50	08/03/2012
5333024	WSB2	ES7	3.00	08/03/2012
5334288	WSB5	ES4	0.10	09/03/2012
5334289	WSB5	ES5	0.25	09/03/2012
5334290	WSB5	ES6	0.50	09/03/2012
5334291	WSB5	ES7	1.00	09/03/2012
5334292	WSB5	ES8	1.25	09/03/2012
5334293	WSB5	ES9	1.60	09/03/2012
5334294	WSB6	ES10	0.10	09/03/2012
5334295	WSB6	ES11	0.25	09/03/2012
5333254	WSB6	ES8	0.75	09/03/2012
5333255	WSB6	ES9	1.10	09/03/2012
5333256	WSB6	ES10	1.50	09/03/2012
5333257	WSB6	ES11	2.10	09/03/2012

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

SOLID Results Legend <div><div>X</div> Test</div> <div><div>N</div> No Determination Possible</div>	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	5334285		WSB1		ES1		0.10		250g Amber Jar (AL 1kg TUB)	
	5334286		WSB1		ES2		0.50		250g Amber Jar (AL 1kg TUB)	
	5334442		BHB2		ES3		1.00		400g Tub (ALE214)	
	5334454		BHB2		ES14		8.25		250g Amber Jar (AL 1kg TUB)	
Anions by Kone (soil)	All	NDPs: 0 Tests: 2								
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 13								
Asbestos Quant. - Waste Limit*	All	NDPs: 0 Tests: 3								
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 13								
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 2								
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 2								
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2								
Magnesium (BRE)	All	NDPs: 0 Tests: 2								
Metals by iCap-OES (Soil)	Arsenic	NDPs: 0 Tests: 15								
	Cadmium	NDPs: 0 Tests: 15								
	Chromium	NDPs: 0 Tests: 15								
	Copper	NDPs: 0 Tests: 15								
	Lead	NDPs: 0 Tests: 15								
	Mercury	NDPs: 0 Tests: 15								
	Nickel	NDPs: 0 Tests: 15								



CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

SOLID Results Legend <div><div>X</div> Test</div> <div><div>N</div> No Determination Possible</div>	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	5334285		WSB1		ES1		0.10		250g Amber Jar (AL 1kg TUB	
	5334286		WSB1		ES2		0.50		250g Amber Jar (AL 1kg TUB	
	5333442		BHB2		ES3		1.00		400g Tub (ALE214)	
	5333449		BHB2		ES14		8.25		250g Amber Jar (AL 1kg TUB	
Metals by iCap-OES (Soil)	Selenium	NDPs: 0 Tests: 15								
	Zinc	NDPs: 0 Tests: 15								
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2								
PAH by GCMS	All	NDPs: 0 Tests: 15								
pH	All	NDPs: 0 Tests: 15								
Phenols by HPLC (S)	All	NDPs: 0 Tests: 13								
Sample description	All	NDPs: 0 Tests: 17								
Total Organic Carbon	All	NDPs: 3 Tests: 10								
Total Organic Carbon (Asb)	All	NDPs: 0 Tests: 3								
TPH c6-40 Value of soil	All	NDPs: 0 Tests: 15								
TPH CWG GC (S)	All	NDPs: 0 Tests: 2								



CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
5333442	BHB2	1.00	Dark Brown	Sand	0.063 - 0.1 mm	Stones	Brick
5333449	BHB2	4.00	Light Brown	Sand	0.1 - 2 mm	Stones	N/A
5333454	BHB2	8.25	Dark Brown	Silty Clay Loam	<0.063 mm	None	None
5334285	WSB1	0.10	Light Brown	Loamy Sand	0.1 - 2 mm	Stones	None
5334286	WSB1	0.50	Dark Brown	Sandy Loam	0.1 - 2 mm	Stones	Vegetation
5333017	WSB2	0.10	Dark Brown	Silt Loam	0.063 - 0.1 mm	Glass & Stones	Vegetation
5333018	WSB2	0.50	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	Stones	Vegetation
5333020	WSB2	1.50	Dark Brown	Silt Loam	0.063 - 0.1 mm	Stones	Brick
5333022	WSB2	2.50	Dark Brown	Silty Clay	0.063 - 0.1 mm	None	None
5333024	WSB2	3.00	Light Brown	Sandy Clay	0.063 - 0.1 mm	Stones	Vegetation
5334288	WSB5	0.10	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	Stones	Vegetation
5334290	WSB5	0.50	Dark Brown	Sandy Silt Loam	0.063 - 0.1 mm	Stones	Vegetation
5334291	WSB5	1.00	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	Stones	Vegetation
5333254	WSB6	0.75	Dark Brown	Loamy Sand	0.063 - 0.1 mm	Brick	Stones
5333255	WSB6	1.10	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Stones	None
5333257	WSB6	2.10	Dark Brown	Loamy Sand	0.063 - 0.1 mm	Brick	Stones
5334294	WSB6	0.10	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Order Number:
Report Number: 183005
Superseded Report:

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CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

[illegible]

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhvadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

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CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

PAH by GCMS

[illegible]

PAH by GCMS

Order Number:
Report Number: 183005
Superseded Report:

16:49:16 31/05/2012

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhvadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

[illegible]



CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample R	BHB2	WSB1			
#	ISO17025 accredited.						
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.00 Soil/Solid 08/03/2012 . 15/03/2012 120317-4 5333442 ES3	0.10 Soil/Solid 08/03/2012 . 15/03/2012 120317-4 5334285 ES1			
\$	Deviating sample.						
aq	Aqueous / settled sample.						
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted test.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	38	74			
GRO >C5-C12	<44 µg/kg	TM089	92.3	<44			
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5			
Benzene	<10 µg/kg	TM089	<10	<10			
Toluene	<2 µg/kg	TM089	5.7	<2			
Ethylbenzene	<3 µg/kg	TM089	4.56	<3			
m,p-Xylene	<6 µg/kg	TM089	12.5	<6			
o-Xylene	<3 µg/kg	TM089	6.84	<3			
sum of detected mpo xylene by GC	<9 µg/kg	TM089	19.3	<9			
sum of detected BTEX by GC	<24 µg/kg	TM089	29.6	<24			
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10			
Aliphatics >C6-C8	<10 µg/kg	TM089	10.3	<10			
Aliphatics >C8-C10	<10 µg/kg	TM089	16	<10			
Aliphatics >C10-C12	<10 µg/kg	TM089	12.5	<10			
Aliphatics >C12-C16	<100 µg/kg	TM173	7040	2760			
Aliphatics >C16-C21	<100 µg/kg	TM173	5070	1220			
Aliphatics >C21-C35	<100 µg/kg	TM173	31800	7480			
Aliphatics >C35-C44	<100 µg/kg	TM173	35600	5340			
Total Aliphatics >C12-C44	<100 µg/kg	TM173	79600	16800			
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10			
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10			
Aromatics >EC8-EC10	<10 µg/kg	TM089	35.3	<10			
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10			
Aromatics >EC12-EC16	<100 µg/kg	TM173	4820	5040			
Aromatics >EC16-EC21	<100 µg/kg	TM173	4690	3340			
Aromatics >EC21-EC35	<100 µg/kg	TM173	61500	15900			
Aromatics >EC35-EC44	<100 µg/kg	TM173	96000	23200			
Aromatics >EC40-EC44	<100 µg/kg	TM173	50300	11900			
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	167000	47500			
Total Aliphatics >C5-35	<100 µg/kg	TM173	44000	11500			
Total Aromatics >C5-35	<100 µg/kg	TM173	71100	24300			
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	115000	35700			
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	247000	64300			



SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BHB2 ES 3 1.00 SOLID 08/03/2012 00:00:00 120317-4 5333442 TM048	05/04/12	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB1 ES 1 0.10 SOLID 08/03/2012 00:00:00 120317-4 5334285 TM048	04/05/12	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB1 ES 2 0.50 SOLID 08/03/2012 00:00:00 120317-4 5334286 TM048	04/05/12	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB2 ES 1 0.10 SOLID 08/03/2012 00:00:00 120317-4 5333017 TM048	05/04/12	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB2 ES 2 0.50 SOLID 08/03/2012 00:00:00 120317-4 5333018 TM048	04/04/12	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected



CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB2 ES 4 1.50 SOLID 08/03/2012 00:00:00 120317-4 5333020 TM048	05/04/12	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB2 ES 7 3.00 SOLID 08/03/2012 00:00:00 120317-4 5333024 TM048	04/04/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB5 ES 4 0.10 SOLID 09/03/2012 00:00:00 120317-4 5334288 TM048	04/05/12	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB5 ES 6 0.50 SOLID 09/03/2012 00:00:00 120317-4 5334290 TM048	04/05/12	Tomasz Pawlikowski	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB5 ES 7 1.00 SOLID 09/03/2012 00:00:00 120317-4 5334291 TM048	04/05/12	Lauren Sargeant	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB6 ES 10 0.10 SOLID 09/03/2012 00:00:00 120317-4 5334294 TM048	05/04/12	Tomasz Pawlikowski	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected



CERTIFICATE OF ANALYSIS

SDG:
Job:
Client Reference:

120317-4
H_CAMREITH_REH-5

Location:
Customer:
Attention:

Redhill - Bourne Estate
Campbell Reith Hill
Rhyadd Watkins

Order Number:
Report Number:
Superseded Report:

183005

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB6 ES 11 2.10 SOLID 09/03/2012 00:00:00 120317-4 5333257 TM048	05/04/12	Martin Cotterell	Loose fibres in soil.	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB6 ES 8 0.75 SOLID 09/03/2012 00:00:00 120317-4 5333254 TM048	05/04/12	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5397077	WSB5 ES6	0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5397077	WSB5 ES6	0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5397098	WSB5 ES6	0.50	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5397163	WSB5 ES4	0.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5397163	WSB5 ES4	0.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5397249	WSB5 ES4	0.10	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5397527	WSB1 ES2	0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5397527	WSB1 ES2	0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5397567	WSB1 ES2	0.50	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5400875	WSB2 ES1	0.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5400875	WSB2 ES1	0.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5400886	WSB2 ES1	0.10	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Acenaphthene-d10 % recovery**	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Chrysene-d12 % recovery**	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Naphthalene-d8 % recovery**	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	PAH, Total Detected USEPA 16	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Perylene-d12 % recovery**	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Phenanthrene-d10 % recovery**	Sample holding time exceeded
5400950	WSB2 ES7	3.00	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5401062	WSB6 ES10	0.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5401062	WSB6 ES10	0.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5401064	WSB6 ES10	0.10	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Acenaphthene-d10 % recovery**	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Chrysene-d12 % recovery**	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Naphthalene-d8 % recovery**	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	PAH, Total Detected USEPA 16	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Perylene-d12 % recovery**	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Phenanthrene-d10 % recovery**	Sample holding time exceeded
5401074	WSB1 ES2	0.50	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded



CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Acenaphthene-d10 % recovery**	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Chrysene-d12 % recovery**	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Naphthalene-d8 % recovery**	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	PAH, Total Detected USEPA 16	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Perylene-d12 % recovery**	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Phenanthrene-d10 % recovery**	Sample holding time exceeded
5401098	WSB1 ES1	0.10	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5401409	WSB1 ES1	0.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5401409	WSB1 ES1	0.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5401443	WSB1 ES1	0.10	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5401462	WSB5 ES7	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5401462	WSB5 ES7	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5401486	WSB5 ES7	1.00	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5402407	WSB2 ES7	3.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5402407	WSB2 ES7	3.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5402434	WSB2 ES7	3.00	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5402638	WSB6 ES11	2.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5402638	WSB6 ES11	2.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5402663	WSB6 ES11	2.10	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5402823	WSB6 ES8	0.75	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5402823	WSB6 ES8	0.75	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5402855	WSB6 ES8	0.75	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5403679	WSB2 ES4	1.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5403679	WSB2 ES4	1.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5403725	WSB2 ES4	1.50	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5403774	WSB2 ES2	0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5403774	WSB2 ES2	0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5403815	WSB2 ES2	0.50	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5404905	BHB2 ES14	8.25	SOLID	TPH c6-40 Value of soil	TPH >C6-C40	Sample holding time exceeded
5410146	BHB2 ES9	4.00	SOLID	TPH c6-40 Value of soil	TPH >C6-C40	Sample holding time exceeded
5413362	BHB2 ES3	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5413362	BHB2 ES3	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5413370	BHB2 ES3	1.00	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded



CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5414757	BHB2 ES9	4.00	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5414776	BHB2 ES14	8.25	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5418768	WSB2 ES7	3.00	SOLID	TPH c6-40 Value of soil	TPH >C6-C40	Sample holding time exceeded
5418783	WSB2 ES2	0.50	SOLID	TPH c6-40 Value of soil	TPH >C6-C40	Sample holding time exceeded
5418813	WSB1 ES1	0.10	SOLID	TPH c6-40 Value of soil	TPH >C6-C40	Sample holding time exceeded
5418825	WSB1 ES2	0.50	SOLID	TPH c6-40 Value of soil	TPH >C6-C40	Sample holding time exceeded
5419061	WSB6 ES10	0.10	SOLID	TPH c6-40 Value of soil	TPH >C6-C40	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Acenaphthene-d10 % recovery**	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Chrysene-d12 % recovery**	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Naphthalene-d8 % recovery**	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	PAH, Total Detected USEPA 16	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Perylene-d12 % recovery**	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Phenanthrene-d10 % recovery**	Sample holding time exceeded
5419326	WSB2 ES1	0.10	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5419347	WSB2 ES1	0.10	SOLID	TPH c6-40 Value of soil	TPH >C6-C40	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Acenaphthene-d10 % recovery**	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Chrysene-d12 % recovery**	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded



CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5419371	WSB2 ES4	1.50	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Acenaphthene-d10 % recovery**	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Chrysene-d12 % recovery**	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Naphthalene-d8 % recovery**	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	PAH, Total Detected USEPA 16	Sample holding time exceeded
5419707	WSB5 ES6	0.50	SOLID	PAH by GCMS	Perylene-d12 % recovery**	Sample holding time exceeded
5419768	WSB5 ES7	1.00	SOLID	TPH c6-40 Value of soil	TPH >C6-C40	Sample holding time exceeded
5429882	BHB2 ES3	1.00	SOLID	TPH c6-40 Value of soil	TPH >C6-C40	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5430074	BHB2 ES3	1.00	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5430448	WSB6 ES8	0.75	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5660343	WSB2 ES6	2.50	SOLID	pH	pH	Sample holding time exceeded
5661245	WSB6 ES9	1.10	SOLID	pH	pH	Sample holding time exceeded
5667203	WSB6	1.10	SOLID	Anions by Kone (soil)	Chloride 2:1 water/soil extract BRE	Sample holding time exceeded
5667203	WSB6	1.10	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded
5667210	WSB2	2.50	SOLID	Anions by Kone (soil)	Chloride 2:1 water/soil extract BRE	Sample holding time exceeded



CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5667210	WSB2	2.50	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	Aliphatics >C10-C12	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	Aliphatics >C5-C6	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	Aliphatics >C6-C8	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	Aliphatics >C8-C10	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	Aromatics >EC10-EC12	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	Aromatics >EC5-EC7	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	Aromatics >EC7-EC8	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	Aromatics >EC8-EC10	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	Benzene	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	Ethylbenzene	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	GRO >C5-C12	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	GRO Surrogate % recovery**	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	m,p-Xylene	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	Methyl tertiary butyl ether (MTBE)	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	o-Xylene	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	sum of detected BTEX by GC	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	sum of detected mpo xylene by GC	Volatile container not received
5506717	BHB2 ES3	1.00	SOLID	GRO by GC-FID (S)	Toluene	Volatile container not received

Note : Test results may be compromised



SDG:	120317-4	Location:	Redhill - Bourne Estate	Order Number:	
Job:	H_CAMREITH_REH-5	Customer:	Campbell Reith Hill	Report Number:	183005
Client Reference:		Attention:	Rhyadd Watkins	Superseded Report:	

Notification of NDPs (No determination possible)

Date Received : 17/03/2012 08:25:04

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
5333257	WSB6 ES11	2.10	Total Organic Carbon	Test unsuitable for analysis - Asbestos
5333257	WSB6 ES11	2.10	Total Organic Carbon	Test unsuitable for analysis - Asbestos
5333257	WSB6 ES11	2.10	Total Organic Carbon	Test unsuitable for analysis - Asbestos
5334290	WSB5 ES6	0.50	Total Organic Carbon	Test unsuitable for analysis - Asbestos
5334290	WSB5 ES6	0.50	Total Organic Carbon	Test unsuitable for analysis - Asbestos
5334290	WSB5 ES6	0.50	Total Organic Carbon	Test unsuitable for analysis - Asbestos
5334291	WSB5 ES7	1.00	Total Organic Carbon	Test unsuitable for analysis - Asbestos
5334291	WSB5 ES7	1.00	Total Organic Carbon	Test unsuitable for analysis - Asbestos
5334291	WSB5 ES7	1.00	Total Organic Carbon	Test unsuitable for analysis - Asbestos



SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
SUB (ASB)				
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM154	In - house Method	Determination of Petroleum Hydrocarbons by EZ Flash GC-FID in the Carbon range C6- C40		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM243		Mixed Anions In Soils By Kone		
TM282		Extraction of Magnesium by BRE Method		
TM321		Organic matter Content of Soil By Titration		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



CERTIFICATE OF ANALYSIS

SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

Test Completion Dates

Lab Sample No(s)	5333442	5333449	5333454	5334285	5334286	5333017	5333018	5333020	5333022	5333024
Customer Sample Ref.	BHB2	BHB2	BHB2	WSB1	WSB1	WSB2	WSB2	WSB2	WSB2	WSB2
AGS Ref.	ES3	ES9	ES14	ES1	ES2	ES1	ES2	ES4	ES6	ES7
Depth	1.00	4.00	8.25	0.10	0.50	0.10	0.50	1.50	2.50	3.00
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Anions by Kone (soil)									31-May-2012	
Asbestos Identification (Soil)	05-Apr-2012			04-Apr-2012	04-Apr-2012	05-Apr-2012	04-Apr-2012	05-Apr-2012		04-Apr-2012
Cyanide Comp/Free/Total/Thiocyanate	11-Apr-2012			05-Apr-2012	04-Apr-2012	04-Apr-2012	05-Apr-2012	05-Apr-2012		05-Apr-2012
EPH CWG (Aliphatic) GC (S)	25-Apr-2012			25-Apr-2012						
EPH CWG (Aromatic) GC (S)	25-Apr-2012			25-Apr-2012						
GRO by GC-FID (S)	28-Apr-2012			26-Apr-2012						
Magnesium (BRE)									31-May-2012	
Metals by iCap-OES (Soil)	11-Apr-2012	06-Apr-2012	06-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012		05-Apr-2012
NO3, NO2 and TON by KONE (s)									31-May-2012	
PAH by GCMS	12-Apr-2012	12-Apr-2012	11-Apr-2012	05-Apr-2012	05-Apr-2012	08-Apr-2012	08-Apr-2012	08-Apr-2012		05-Apr-2012
pH	10-Apr-2012			05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	30-May-2012	05-Apr-2012
Phenols by HPLC (S)	11-Apr-2012			05-Apr-2012	04-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012
Sample description	05-Apr-2012	04-Apr-2012	03-Apr-2012	02-Apr-2012	02-Apr-2012	02-Apr-2012	02-Apr-2012	02-Apr-2012	30-May-2012	02-Apr-2012
Total Organic Carbon	11-Apr-2012			11-Apr-2012	11-Apr-2012	11-Apr-2012	10-Apr-2012	11-Apr-2012		11-Apr-2012
TPH c6-40 Value of soil	11-Apr-2012	11-Apr-2012	11-Apr-2012	11-Apr-2012	25-Apr-2012	11-Apr-2012	25-Apr-2012	25-Apr-2012		11-Apr-2012
TPH CWG GC (S)	28-Apr-2012			26-Apr-2012						

Lab Sample No(s)	5334288	5334290	5334291	5333254	5333255	5333257	5334294
Customer Sample Ref.	WSB5	WSB5	WSB5	WSB6	WSB6	WSB6	WSB6
AGS Ref.	ES4	ES6	ES7	ES8	ES9	ES11	ES10
Depth	0.10	0.50	1.00	0.75	1.10	2.10	0.10
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Anions by Kone (soil)					31-May-2012		
Asbestos Identification (Soil)	04-Apr-2012	04-Apr-2012	04-Apr-2012	05-Apr-2012		05-Apr-2012	05-Apr-2012
Asbestos Quant. - Waste Limit*		04-May-2012	04-May-2012			04-May-2012	
Cyanide Comp/Free/Total/Thiocyanate	04-Apr-2012	04-Apr-2012	05-Apr-2012	05-Apr-2012		05-Apr-2012	04-Apr-2012
Magnesium (BRE)					31-May-2012		
Metals by iCap-OES (Soil)	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012		05-Apr-2012	05-Apr-2012
NO3, NO2 and TON by KONE (s)					31-May-2012		
PAH by GCMS	08-Apr-2012	08-Apr-2012	08-Apr-2012	12-Apr-2012		08-Apr-2012	08-Apr-2012
pH	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	30-May-2012	05-Apr-2012	05-Apr-2012
Phenols by HPLC (S)	04-Apr-2012	04-Apr-2012	05-Apr-2012	05-Apr-2012		05-Apr-2012	05-Apr-2012
Sample description	02-Apr-2012	02-Apr-2012	02-Apr-2012	02-Apr-2012	30-May-2012	02-Apr-2012	02-Apr-2012
Total Organic Carbon	11-Apr-2012			10-Apr-2012			11-Apr-2012
Total Organic Carbon (Asb)		10-Apr-2012	10-Apr-2012			10-Apr-2012	
TPH c6-40 Value of soil	25-Apr-2012	26-Apr-2012	26-Apr-2012	25-Apr-2012		05-Apr-2012	25-Apr-2012

QUALITY FORM				QF.5.10.1	
ALCONTROL LABORATORIES				SHEET 1 OF 1	
Title of Form				ISSUE NO: 2	
Notification of No Determination Possible				ISSUED BY: J Howard	
				ISSUE DATE: 22/04/10	
				APPROVED BY: Vicky Muir	
SDG Number :		120317-4	ISSUED BY:		
Client :		H_CAMREITH_REH	LAB AREA :		RASPA
Sample Type :		Solid	ANALYST :		
			DATE :		25/04/2012
SDG no	Sample No.	Depth	Sample ID.	Analyte(s)	Reason
120317-4	5332872	0.5	FTP4	TPH_C6-C40_S	Sample sent back to client.
120317-4	5332872	0.5	FTP4	Moisture	Sample sent back to client.
120317-4	5332872	0.5	FTP4	Description	Sample sent back to client.



2139

Certificate of Analysis

Date: 30/04/2012

Certificate Number: 12-61870

Client: Alcontrol Laboratories
Units 7 & 8
Hawarden Business Park
Manor Road
Hawarden
Deeside
CH5 3US

Our Reference: 12-61870

Client Reference: SDG 120317-4

Contract Title: SDG 120317-4

Description: 8 soil samples

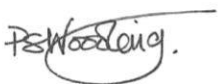
Date Received: 18 April 2012

Date Started: 18 April 2012

Date Completed: 30 April 2012

Test Procedures: Asbestos Analysis (DETS 082)

Notes: Observations and interpretations are outside the scope of UKAS accreditation

Approved By: 
Paul Woodbridge, Senior Operations Manager

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Information in Support of the Analytical Results

Analysis

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425um sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample.

Key

- * Denotes test not included in laboratory scope of accreditation
- # Denotes test that holds MCERTS accreditation, however, MCERTS accreditation is only implied if the report carries the MCERTS logo
- \$ Denotes tests completed by an approved subcontractor
- I/S Denotes insufficient sample to carry out test
- U/S Denotes that the sample is not suitable for testing

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month

Liquids - 2 weeks

Asbestos (test portion) - 6 months

Summary of Asbestos Analysis

Soil Samples

Our Ref: 12-61870
Client Ref: SDG 120317-4
Contract Title: SDG 120317-4

Lab No	Sample Ref	Material Type*	Result	Comment	Analyst
404298	5461988	Soil	Chrysotile	Contains Small Clumps & Loose Fibre Bundles	Jeff Cruddas
404299	5462026	Soil	Chrysotile Amosite	Contains Bundles of Unbound Asbestos Fibres	Jeff Cruddas
404300	5462042	Soil	Chrysotile	Contains Bundle of Unbound Asbestos Fibres	Jeff Cruddas
404301	5462067	Soil	Chrysotile	Contains Bundle of Unbound Asbestos Fibres	Jeff Cruddas
404302	5462097	Soil	Chrysotile Amosite	Contains Bundles of Unbound Asbestos Fibres	Jeff Cruddas
404303	5462111	Soil	Chrysotile	Contains Bundle of Unbound Asbestos Fibres	Jeff Cruddas
404304	5462120	Soil	Chrysotile	Contains Bundles of Unbound Asbestos Fibres	Jeff Cruddas
404305	5462130	Soil	Chrysotile	Contains Bundles of Unbound Asbestos Fibres	Jeff Cruddas

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. NAD = No Asbestos Detected. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETS 082 using polarised light microscopy in accordance with HSG248 and documented in-house methods. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'.

Summary of Asbestos Analysis Soil Samples

Our Ref: 12-61870
Client Ref: SDG 120317-4
Contract Title: SDG 120317-4

		Lab No.	404298	404299	404300	404301
		Sample Ref	5461988	5462026	5462042	5462067
		Depth				
		Other Ref				
		Sample Type	Soil	Soil	Soil	Soil
Test	Units	DETSxx				
Asbestos ID		DETS 082	Chrysotile	Amosite, Chrysotile	Chrysotile	Chrysotile
Total Mass% Asbestos (i+ii)	Mass %		<0.001	<0.001	<0.001	<0.001
Quantification by Phase Contrast Optical Microscopy (i)	Mass %	DETSC 1102	<0.001	<0.001	<0.001	<0.001
Gravimetric Quantification (ii)	Mass %	DETSC 1102	na	na	na	na
Breakdown of Gravimetric Analysis						
Mass of Sample	g		589.98	351.28	507.13	405.54
ACMs present*						
Mass of ACM in sample	g					
% ACM by mass	%					
% asbestos in ACM	%					
% asbestos in sample	%					
Potentially Respirable Fibres	Fibres/g	DETSC 1102	na	na	na	na

* Denotes test or material description outside of UKAS accreditation.

% asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.

Recommended sample size for quantification is approximately 1kg

denotes deviating sample

Summary of Asbestos Analysis Soil Samples

Our Ref: 12-61870
Client Ref: SDG 120317-4
Contract Title: SDG 120317-4

		Lab No.	404302	404303	404304	404305
		Sample Ref	5462097	5462111	5462120	5462130
		Depth				
		Other Ref				
		Sample Type	Soil	Soil	Soil	Soil
Test	Units	DETSxx	Amosite, Chrysotile	Chrysotile	Chrysotile	Chrysotile
Asbestos ID		DETS 082				
Total Mass% Asbestos (i+ii)	Mass %		<0.001	<0.001	0.005	0.002
Quantification by Phase Contrast Optical Microscopy (i)	Mass %	DETSC 1102	<0.001	<0.001	0.005	0.002
Gravimetric Quantification (ii)	Mass %	DETSC 1102	na	na	na	na
Breakdown of Gravimetric Analysis						
Mass of Sample	g		754.75	361.18	117.23	164.45
ACMs present*						
Mass of ACM in sample	g					
% ACM by mass	%					
% asbestos in ACM	%					
% asbestos in sample	%					
Potentially Respirable Fibres	Fibres/g	DETSC 1102	na	na	na	na

* Denotes test or material description outside of UKAS accreditation.

% asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.

Recommended sample size for quantification is approximately 1kg

denotes deviating sample



2139

Certificate of Analysis

Date: 03/05/2012

Certificate Number: 12-62276

Client: Alcontrol Laboratories
Units 7 & 8
Hawarden Business Park
Manor Road
Hawarden
Deeside
CH5 3US

Our Reference: 12-62276

Client Reference: SDG 120317-4

Contract Title: SDG 120317-4

Description: 1 soil sample

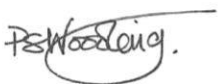
Date Received: 27 April 2012

Date Started: 27 April 2012

Date Completed: 03 May 2012

Test Procedures: Asbestos Analysis (DETS 082)

Notes: Observations and interpretations are outside the scope of UKAS accreditation

Approved By: 
Paul Woodbridge, Senior Operations Manager

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Information in Support of the Analytical Results

Analysis

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425um sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample.

Key

- * Denotes test not included in laboratory scope of accreditation
- # Denotes test that holds MCERTS accreditation, however, MCERTS accreditation is only implied if the report carries the MCERTS logo
- \$ Denotes tests completed by an approved subcontractor
- I/S Denotes insufficient sample to carry out test
- U/S Denotes that the sample is not suitable for testing

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month

Liquids - 2 weeks

Asbestos (test portion) - 6 months

Summary of Asbestos Analysis

Soil Samples

Our Ref: 12-62276
Client Ref: SDG 120317-4
Contract Title: SDG 120317-4

Lab No	Sample Ref	Material Type*	Result	Comment	Analyst
406778	5502714	Soil	Chrysotile	Contains Bundle of Unbound Asbestos Fibres	Jeff Cruddas

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. NAD = No Asbestos Detected. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETS 082 using polarised light microscopy in accordance with HSG248 and documented in-house methods. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'.

Summary of Asbestos Analysis Soil Samples

Our Ref: 12-62276
Client Ref: SDG 120317-4
Contract Title: SDG 120317-4

		Lab No.	406778
		Sample Ref	5502714
		Depth	
		Other Ref	
		Sample Type	Soil
Test	Units	DETSxx	
Asbestos ID		DETS 082	Chrysotile
Total Mass% Asbestos (i+ii)	Mass %		<0.001
Quantification by Phase Contrast Optical Microscopy (i)	Mass %	DETSC 1102	<0.001
Gravimetric Quantification (ii)	Mass %	DETSC 1102	na
Breakdown of Gravimetric Analysis			
Mass of Sample	g		290.69
ACMs present*			
Mass of ACM in sample	g		
% ACM by mass	%		
% asbestos in ACM	%		
% asbestos in sample	%		
Potentially Respirable Fibres	Fibres/g	DETSC 1102	na

* Denotes test or material description outside of UKAS accreditation.

% asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.

Recommended sample size for quantification is approximately 1kg

denotes deviating sample



SDG: 120317-4
Job: H_CAMREITH_REH-5
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 183005
Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DCM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DCM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DCM	SOX THERM	GC-MS
HERBICIDES	D&C	HEXANE/ACETONE	SOX THERM	GC-MS
PESTICIDES	D&C	HEXANE/ACETONE	SOX THERM	GC-MS
EPH (DFO)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH (MIN OIL)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH (CLEANED UP)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH CWGBY GC	D&C	HEXANE/ACETONE	END OVER END	GC-FID
PCBAROCLOR 1254/PCB CON	D&C	HEXANE/ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE/ACETONE	MICROWAVE TM218.	GC-MS
>C6-C40	WET	HEXANE/ACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE/ACETONE	SHAKER	GC-FID
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-FID
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC-MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTICIDOPP	DCM	LIQUID/LIQUID SHAKE	GC-MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC-MS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GC-MS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL by IR	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC-FID

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Campbell Reith Hill
Somerset House
47-49 London Road
Redhill
Surrey
RH1 1LV

Attention: Rhyadd Watkins

CERTIFICATE OF ANALYSIS

Date: 22 May 2012
Customer: H_CAMREITH_REH
Sample Delivery Group (SDG): 120312-4
Your Reference:
Location: Redhill - Bourne Estate
Report No: 181857

We received 45 samples on Saturday March 10, 2012 and 20 of these samples were scheduled for analysis which was completed on Tuesday May 22, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

SDG: 120312-4
Job: H_CAMREITH_REH-4
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 181857
Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
5308454	BH2A	ES4	4.50	08/03/2012
5490776	BHB1	D2	1.80	12/03/2012
5490783	BHB1	D4	4.00	12/03/2012
5490773	BHB1	D9	9.44 - 9.55	12/03/2012
5308512	BHB2A	ES	0.30	08/03/2012
5308513	BHB2A	ES	0.50	08/03/2012
5308514	BHB2A	ES	1.00	08/03/2012
5308515	BHB2A	ES	1.50	08/03/2012
5490789	BHB2A	D9	12.00 - 12.45	08/03/2012
5490791	BHB2A	D12	16.95 - 17.05	08/03/2012
5308516	BHB2A	ES	2.00	08/03/2012
5490779	BHB2A	D2	2.00	07/03/2012
5308517	BHB2A	ES	2.50	08/03/2012
5490784	BHB2A	D16	21.00 - 21.45	08/03/2012
5490787	BHB2A	D19	25.95 - 26.05	08/03/2012
5308518	BHB2A	ES	3.00	08/03/2012
5308520	BHB2A	ES	3.50	08/03/2012
5308521	BHB2A	ES	4.00	08/03/2012
5308994	BHB2A	ES	5.00	08/03/2012
5308999	BHB2A	ES	5.50	08/03/2012
5309000	BHB2A	ES	6.00	08/03/2012
5309003	BHB2A	ES	6.50	08/03/2012
5309004	BHB2A	ES	7.00	08/03/2012
5309005	BHB2A	ES	7.50	08/03/2012
5309007	BHB2A	ES	7.80	08/03/2012
5490781	BHB2A	D6	8.00	08/03/2012
5309008	BHB2A	ES	8.20	08/03/2012
5308501	WS B3	ES	0.15	08/03/2012
5308502	WS B3	ES	0.50	08/03/2012
5308503	WS B3	ES	0.90	08/03/2012
5308504	WS B3	ES	1.10	08/03/2012
5308505	WS B3	ES	1.50	08/03/2012
5308508	WS B3	ES	2.00	08/03/2012
5308509	WS B3	ES	2.50	08/03/2012
5308510	WS B3	ES	3.00	08/03/2012
5308486	WS B4	ES1	0.10	08/03/2012
5308487	WS B4	ES2	0.25	08/03/2012
5308492	WS B4	ES3	0.50	08/03/2012
5308493	WS B4	ES4	1.00	08/03/2012
5308495	WS B4	ES5	1.50	08/03/2012
5308496	WS B4	ES6	2.00	08/03/2012
5308497	WS B4	ES7	2.50	08/03/2012
5308499	WS B4	ES8	2.80	08/03/2012
5490793	WSB3	D1	1.20 - 1.65	
5490792	WSB4	D1	1.20 - 1.65	

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

SDG: 120312-4
Job: H_CAMREITH_REH-4
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 181857
Superseded Report:

SOLID Results Legend <div><div>X</div> Test</div> <div><div>N</div> No Determination Possible</div>	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container
	5490792 5308499	WSB4 WS B4	D1 ES8	1.20 - 1.65 2.80	1kg TUB 400g Tub (ALE214)
	5308495	WS B4	ES5	1.50	250g Amber Jar (AL)
	5308492	WS B4	ES3	0.50	400g Tub (ALE214)
	5308486	WS B4	ES1	0.10	250g Amber Jar (AL)
	5490793 5308509 5308503	WSB3 WS B3 WS B3	D1 ES ES	1.20 - 1.65 2.50 0.90	400g Tub (ALE214) 400g Tub (ALE214) 250g Amber Jar (AL)
5308501	WS B3	ES	0.15	400g Tub (ALE214)	
5490791 5490789 5490787 5490784 5490781 5490779 5308521	BHB2A BHB2A BHB2A BHB2A BHB2A BHB2A BHB2A	D12 D9 D19 D16 D6 D2 ES	16.95 - 17.05 12.00 - 12.45 25.95 - 26.05 21.00 - 21.45 8.00 2.00 4.00	250g Amber Jar (AL) BAG BAG BAG BAG BAG 400g Tub (ALE214)	
5308514	BHB2A	ES	1.00	250g Amber Jar (AL)	
5490783 5490776 5490773	BHB1 BHB1 BHB1	D4 D2 D9	4.00 1.80 9.44 - 9.55	BAG BAG BAG	
Anions by Kone (soil)	All	NDPs: 0 Tests: 11	X X X X X X X X X X X X		
Asbestos Identification (Soil)	All	NDPs: 0 Tests: 13	X X X X X X X X X X X X X X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 9	X X X X X X X X X X		
Magnesium (BRE)	All	NDPs: 0 Tests: 2	X X X X X X X X X X		
Metals by iCap-OES (Soil)	Arsenic	NDPs: 0 Tests: 9	X X X X X X X X X X		
	Cadmium	NDPs: 0 Tests: 9	X X X X X X X X X X		
	Chromium	NDPs: 0 Tests: 9	X X X X X X X X X X		
	Copper	NDPs: 0 Tests: 9	X X X X X X X X X X		
	Lead	NDPs: 0 Tests: 9	X X X X X X X X X X		
	Mercury	NDPs: 0 Tests: 9	X X X X X X X X X X		
	Nickel	NDPs: 0 Tests: 9	X X X X X X X X X X		
	Selenium	NDPs: 0 Tests: 9	X X X X X X X X X X		
	Zinc	NDPs: 0 Tests: 9	X X X X X X X X X X		
	NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X X X X X X X X X X	
PAH by GCMS	All	NDPs: 0 Tests: 9	X X X X X X X X X X		

SOLID

Lab Sample No(s)

Test

No Determination Possible

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Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

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Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
5490773	BHB1	9.44 - 9.55	Dark Brown	Clay	<0.063 mm	None	None
5490776	BHB1	1.80	Dark Brown	Loamy Sand	0.063 - 0.1 mm	Crushed Brick	Stones
5490783	BHB1	4.00	Light Brown	Sand	0.1 - 2 mm	Stones	None
5308514	BHB2A	1.00	Dark Brown	Sandy Loam	0.063 - 0.1 mm	Stones	Brick
5308521	BHB2A	4.00	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Brick	Stones
5490779	BHB2A	2.00	Dark Brown	Sand	0.1 - 2 mm	Brick	Stones
5490781	BHB2A	8.00	Dark Brown	Clay	<0.063 mm	N/A	N/A
5490784	BHB2A	21.00 - 21.45	Grey	Clay	<0.063 mm	Stones	None
5490787	BHB2A	25.95 - 26.05	Dark Brown	Clay	<0.063 mm	None	None
5490789	BHB2A	12.00 - 12.45	Dark Brown	Clay	<0.063 mm	None	None
5490791	BHB2A	16.95 - 17.05	Dark Brown	Clay	<0.063 mm	None	None
5308501	WS B3	0.15	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Stones	Vegetation
5308503	WS B3	0.90	Dark Brown	Sandy Clay Loam	0.063 - 0.1 mm	Stones	None
5308509	WS B3	2.50	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones	N/A
5308486	WS B4	0.10	Dark Brown	Sandy Clay Loam	0.063 - 0.1 mm	Stones	None
5308492	WS B4	0.50	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Brick	Stones
5308495	WS B4	1.50	Light Brown	Sand	0.1 - 2 mm	Stones	None
5308499	WS B4	2.80	Beige	Sand	0.1 - 2 mm	Stones	None
5490793	WSB3	1.20 - 1.65	Dark Brown	Top Soil	0.063 - 0.1 mm	Brick	Stones
5490792	WSB4	1.20 - 1.65	Yellow	Sand	0.1 - 2 mm	Crushed Brick	Ash/Soot

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

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Location: Redhill - Bourne Estate
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Attention: Rhyadd Watkins

Order Number:
Report Number: 181857
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Results Legend		Customer Sample R	BHB1	BHB1	BHB1	BHB2A	BHB2A	BHB2A
#	ISO17025 accredited.		1.80	4.00	9.44 - 9.55	1.00	12.00 - 12.45	16.95 - 17.05
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
\$	Deviating sample.		12/03/2012	12/03/2012	12/03/2012	08/03/2012	08/03/2012	08/03/2012
aq	Aqueous / settled sample.	
diss.filt	Dissolved / filtered sample.		10/03/2012	10/03/2012	10/03/2012	10/03/2012	10/03/2012	10/03/2012
tot.unfilt	Total / unfiltered sample.		120312-4	120312-4	120312-4	120312-4	120312-4	120312-4
*	Subcontracted test.		5490776	5490783	5490773	5308514	5490789	5490791
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		D2	D4	D9	ES	D9	D12
(F)	Trigger breach confirmed		AGS Reference					
Component		LOD/Units	Method					
Phenol		<0.01 mg/kg	TM062 (S)			<0.01 \$ M		
Soil Organic Matter (SOM)		<0.35 %	TM132			7.53 #		
pH		1 pH Units	TM133	10.8 \$ M	8.77 \$ M	4.42 \$ M	8.22 M	7.15 \$ M
Cyanide, Total		<1 mg/kg	TM153				<1 \$ M	
Cyanide, Free		<1 mg/kg	TM153				<1 \$ M	
TPH >C6-C40		<10 mg/kg	TM154				<10 #	
Arsenic		<0.6 mg/kg	TM181				14.5 M	
Cadmium		<0.02 mg/kg	TM181				0.341 M	
Chromium		<0.9 mg/kg	TM181				14.7 M	
Copper		<1.4 mg/kg	TM181				163 M	
Lead		<0.7 mg/kg	TM181				323 M	
Mercury		<0.14 mg/kg	TM181				2.8 M	
Nickel		<0.2 mg/kg	TM181				18.4 M	
Selenium		<1 mg/kg	TM181				<1 #	
Zinc		<1.9 mg/kg	TM181				106 M	
Soluble Sulphate 2:1 extract as SO4 BRE		<0.003 g/l	TM243	0.316 \$ M	0.009 \$ M	1.73 \$ M		0.592 \$ M
Chloride 2:1 water/soil extract BRE		<0.001 g/l	TM243			0.0315 \$ M		
Nitrate as NO3, 2:1 water soluble (BRE)		<0.0003 g/l	TM243			<0.0003		
Magnesium (BRE)		<0.008 g/l	TM282			0.0441		

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[illegible]

SDG: 120312-4
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Customer: Campbell Reith Hill
Attention: Rhvadd Watkins

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Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number		03/04/12	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BHB1 D 2 1.80 SOLID 12/03/2012 00:00:00 120312-4 5490776 TM048	27/04/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BHB2A D 2 2.00 SOLID 07/03/2012 00:00:00 120312-4 5490779 TM048	26/04/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BHB2A ES 1.00 SOLID 08/03/2012 00:00:00 120312-4 5308514 TM048	03/04/12	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BHB2A ES 4.00 SOLID 08/03/2012 00:00:00 120312-4 5308521 TM048	03/04/12	Martin Cotterell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



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Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 181857
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		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS B4 ES 1 0.10 SOLID 08/03/2012 00:00:00 120312-4 5308486 TM048	03/04/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS B4 ES 3 0.50 SOLID 08/03/2012 00:00:00 120312-4 5308492 TM048	03/04/12	Martin Cottrell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS B4 ES 5 1.50 SOLID 08/03/2012 00:00:00 120312-4 5308495 TM048	03/04/12	Martin Cottrell	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS B4 ES 8 2.80 SOLID 08/03/2012 00:00:00 120312-4 5308499 TM048	03/04/12	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB3 D 1 1.20 - 1.65 SOLID 120312-4 5490793 TM048	27/04/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WSB4 D 1 1.20 - 1.65 SOLID 120312-4 5490792 TM048	26/04/12	Kevin Bowron	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

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Attention: Rhyadd Watkins

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Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5388493	WS B4 ES5	1.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5388493	WS B4 ES5	1.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5388515	WS B4 ES5	1.50	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5388534	WS B4 ES3	0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5388534	WS B4 ES3	0.50	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5388554	WS B4 ES3	0.50	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Acenaphthene-d10 % recovery**	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Chrysene-d12 % recovery**	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Naphthalene-d8 % recovery**	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	PAH, Total Detected USEPA 16	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Perylene-d12 % recovery**	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Phenanthrene-d10 % recovery**	Sample holding time exceeded
5393228	WS B4 ES1	0.10	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5393342	WS B4 ES1	0.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5393342	WS B4 ES1	0.10	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5393356	WS B4 ES1	0.10	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5393360	WS B3 ES	0.90	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5393360	WS B3 ES	0.90	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5393363	WS B3 ES	0.90	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Acenaphthene-d10 % recovery**	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Chrysene-d12 % recovery**	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Naphthalene-d8 % recovery**	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	PAH, Total Detected USEPA 16	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Perylene-d12 % recovery**	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Phenanthrene-d10 % recovery**	Sample holding time exceeded
5393509	WS B4 ES3	0.50	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Acenaphthene-d10 % recovery**	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded



CERTIFICATE OF ANALYSIS

SDG: 120312-4
Job: H_CAMREITH_REH-4
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 181857
Superseded Report:

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Chrysene-d12 % recovery**	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Naphthalene-d8 % recovery**	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	PAH, Total Detected USEPA 16	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Perylene-d12 % recovery**	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Phenanthrene-d10 % recovery**	Sample holding time exceeded
5393523	WS B3 ES	0.15	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5393613	WS B3 ES	2.50	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5393623	WS B4 ES8	2.80	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5393623	WS B4 ES8	2.80	SOLID	PAH by GCMS	Acenaphthene-d10 % recovery**	Sample holding time exceeded
5393623	WS B4 ES8	2.80	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5393623	WS B4 ES8	2.80	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5393623	WS B4 ES8	2.80	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5393623	WS B4 ES8	2.80	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5393623	WS B4 ES8	2.80	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5393623	WS B4 ES8	2.80	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5393623	WS B4 ES8	2.80	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5393623	WS B4 ES8	2.80	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5393623	WS B4 ES8	2.80	SOLID	PAH by GCMS	Chrysene-d12 % recovery**	Sample holding time exceeded
5393639	WS B3 ES	0.15	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5393667	WS B4 ES8	2.80	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5393667	WS B4 ES8	2.80	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5393671	WS B4 ES8	2.80	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5393675	BHB2A ESZ	4.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5393675	BHB2A ESZ	4.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5393680	BHB2A ESZ	4.00	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5393720	BHB2A ESZ	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Free	Sample holding time exceeded
5393720	BHB2A ESZ	1.00	SOLID	yanide Comp/Free/Total/Thiocyanat	Cyanide, Total	Sample holding time exceeded
5393724	BHB2A ESZ	1.00	SOLID	Phenols by HPLC (S)	Phenol	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Acenaphthene-d10 % recovery**	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Chrysene-d12 % recovery**	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Naphthalene-d8 % recovery**	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	PAH, Total Detected USEPA 16	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Perylene-d12 % recovery**	Sample holding time exceeded



CERTIFICATE OF ANALYSIS

SDG: 120312-4
Job: H_CAMREITH_REH-4
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 181857
Superseded Report:

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Phenanthrene-d10 % recovery**	Sample holding time exceeded
5417701	WS B3 ES	0.90	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Acenaphthene-d10 % recovery**	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Chrysene-d12 % recovery**	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Naphthalene-d8 % recovery**	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	PAH, Total Detected USEPA 16	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Perylene-d12 % recovery**	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Phenanthrene-d10 % recovery**	Sample holding time exceeded
5418261	WS B4 ES5	1.50	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Acenaphthene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Acenaphthylene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Anthracene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Benz(a)anthracene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Benzo(a)pyrene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Benzo(b)fluoranthene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Benzo(g,h,i)perylene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Benzo(k)fluoranthene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Chrysene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Dibenzo(a,h)anthracene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Fluoranthene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Fluorene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Indeno(1,2,3-cd)pyrene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Naphthalene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Phenanthrene	Sample holding time exceeded
5422074	WS B3 ES	2.50	SOLID	PAH by GCMS	Pyrene	Sample holding time exceeded
5498508	BHB2A D6	8.00	SOLID	pH	pH	Sample holding time exceeded
5498528	BHB1 D4	4.00	SOLID	pH	pH	Sample holding time exceeded
5498579	BHB2A D9	12.00 - 12.45	SOLID	pH	pH	Sample holding time exceeded
5498620	BHB2A D19	25.95 - 26.05	SOLID	pH	pH	Sample holding time exceeded
5498726	BHB2A D12	16.95 - 17.05	SOLID	pH	pH	Sample holding time exceeded
5498837	BHB1 D9	9.44 - 9.55	SOLID	pH	pH	Sample holding time exceeded
5498872	BHB2A D16	21.00 - 21.45	SOLID	pH	pH	Sample holding time exceeded
5500460	WSB4 D1	1.20 - 1.65	SOLID	pH	pH	Sample holding time exceeded
5500592	BHB2A D2	2.00	SOLID	pH	pH	Sample holding time exceeded
5500734	BHB1 D2	1.80	SOLID	pH	pH	Sample holding time exceeded
5500738	WSB3 D1	1.20 - 1.65	SOLID	pH	pH	Sample holding time exceeded
5505169	BHB2A	8.00	SOLID	Anions by Kone (soil)	Chloride 2:1 water/soil extract BRE	Sample holding time exceeded
5505169	BHB2A	8.00	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded
5505907	BHB2A	16.95 - 17.05	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded
5505924	BHB2A	21.00 - 21.45	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded
5505935	BHB2A	25.95 - 26.05	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded



CERTIFICATE OF ANALYSIS

SDG: 120312-4
Job: H_CAMREITH_REH-4
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 181857
Superseded Report:

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
5505948	BHB2A	12.00 - 12.45	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded
5505966	BHB1	4.00	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded
5520550	BHB1	9.44 - 9.55	SOLID	Anions by Kone (soil)	Chloride 2:1 water/soil extract BRE	Sample holding time exceeded
5520550	BHB1	9.44 - 9.55	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded
5520844	WSB4	1.20 - 1.65	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded
5520883	BHB1	1.80	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded
5520899	BHB2A	2.00	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded
5520921	WSB3	1.20 - 1.65	SOLID	Anions by Kone (soil)	Soluble Sulphate 2:1 extract as SO4 BRE	Sample holding time exceeded

Note : Test results may be compromised



SDG: 120312-4
Job: H_CAMREITH_REH-4
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Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM154	In - house Method	Determination of Petroleum Hydrocarbons by EZ Flash GC-FID in the Carbon range C6- C40		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM243		Mixed Anions In Soils By Kone		
TM282		Extraction of Magnesium by BRE Method		
TM321		Organic matter Content of Soil By Titration		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



CERTIFICATE OF ANALYSIS

SDG: 120312-4
Job: H_CAMREITH_REH-4
Client Reference:

Location: Redhill - Bourne Estate
Customer: Campbell Reith Hill
Attention: Rhyadd Watkins

Order Number:
Report Number: 181857
Superseded Report:

Test Completion Dates

Lab Sample No(s)	5490773	5490776	5490783	5308514	5308521	5490779	5490781	5490784	5490787	5490789
Customer Sample Ref.	BHB1	BHB1	BHB1	BHB2A	BHB2A	BHB2A	BHB2A	BHB2A	BHB2A	BHB2A
AGS Ref.	D9	D2	D4	ES	ES	D2	D6	D16	D19	D9
Depth	9.44 - 9.55	1.80	4.00	1.00	4.00	2.00	8.00	21.00 - 21.45	25.95 - 26.05	12.00 - 12.45
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Anions by Kone (soil)	01-May-2012	01-May-2012	30-Apr-2012			01-May-2012	30-Apr-2012	30-Apr-2012	30-Apr-2012	30-Apr-2012
Asbestos Identification (Soil)		27-Apr-2012		03-Apr-2012	03-Apr-2012	26-Apr-2012				
Cyanide Comp/Free/Total/Thiocyanate				04-Apr-2012	04-Apr-2012					
Magnesium (BRE)	27-Apr-2012						01-May-2012			
Metals by iCap-OES (Soil)				05-Apr-2012	05-Apr-2012					
NO3, NO2 and TON by KONE (s)	01-May-2012						01-May-2012			
PAH by GCMS				05-Apr-2012	08-Apr-2012					
pH	27-Apr-2012	30-Apr-2012	27-Apr-2012	05-Apr-2012	05-Apr-2012	27-Apr-2012	27-Apr-2012	27-Apr-2012	27-Apr-2012	27-Apr-2012
Phenols by HPLC (S)				05-Apr-2012	05-Apr-2012					
Sample description	25-Apr-2012	25-Apr-2012	25-Apr-2012	03-Apr-2012	01-Apr-2012	25-Apr-2012	25-Apr-2012	25-Apr-2012	25-Apr-2012	25-Apr-2012
Total Organic Carbon				05-Apr-2012	04-Apr-2012					
TPH c6-40 Value of soil				05-Apr-2012	05-Apr-2012					

Lab Sample No(s)	5490791	5308501	5308503	5308509	5308486	5308492	5308495	5308499	5490793	5490792
Customer Sample Ref.	BHB2A	WS B3	WS B3	WS B3	WS B4	WS B4	WS B4	WS B4	WSB3	WSB4
AGS Ref.	D12	ES	ES	ES	ES1	ES3	ES5	ES8	D1	D1
Depth	16.95 - 17.05	0.15	0.90	2.50	0.10	0.50	1.50	2.80	1.20 - 1.65	1.20 - 1.65
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Anions by Kone (soil)	30-Apr-2012								01-May-2012	01-May-2012
Asbestos Identification (Soil)		03-Apr-2012	03-Apr-2012	03-Apr-2012	03-Apr-2012	03-Apr-2012	03-Apr-2012	03-Apr-2012	27-Apr-2012	26-Apr-2012
Cyanide Comp/Free/Total/Thiocyanate		05-Apr-2012	04-Apr-2012	05-Apr-2012	04-Apr-2012	04-Apr-2012	04-Apr-2012	04-Apr-2012		
Metals by iCap-OES (Soil)		05-Apr-2012	05-Apr-2012	04-Apr-2012	04-Apr-2012	04-Apr-2012	04-Apr-2012	04-Apr-2012		
PAH by GCMS		05-Apr-2012	10-Apr-2012	11-Apr-2012	05-Apr-2012	05-Apr-2012	10-Apr-2012	05-Apr-2012		
pH	27-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	30-Apr-2012	27-Apr-2012
Phenols by HPLC (S)		05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	04-Apr-2012	04-Apr-2012		
Sample description	25-Apr-2012	01-Apr-2012	01-Apr-2012	01-Apr-2012	01-Apr-2012	01-Apr-2012	01-Apr-2012	01-Apr-2012	25-Apr-2012	25-Apr-2012
Total Organic Carbon		05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012		
TPH c6-40 Value of soil		05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012	05-Apr-2012		



CERTIFICATE OF ANALYSIS

SDG:	120312-4	Location:	Redhill - Bourne Estate	Order Number:	
Job:	H_CAMREITH_REH-4	Customer:	Campbell Reith Hill	Report Number:	181857
Client Reference:		Attention:	Rhyadd Watkins	Superseded Report:	

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

SOLID MATRICES EXTRACTION SUMMARY				
ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DCM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DCM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DCM	SOX THERM	GC-MS
HERBICIDES	D&C	HEXANE/ACETONE	SOX THERM	GC-MS
PESTICIDES	D&C	HEXANE/ACETONE	SOX THERM	GC-MS
EPH (DFO)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH (MIN OIL)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH (CLEANED UP)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH CWGBY GC	D&C	HEXANE/ACETONE	END OVER END	GC-FID
PCBAROCLOR 1254/PCBCON	D&C	HEXANE/ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE/ACETONE	MICROWAVE TM218.	GC-MS
>C6-C40	WET	HEXANE/ACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE/ACETONE	SHAKER	GC-FID
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY			
ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-FID
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC-MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC-MS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOCPOPP	DCM	LIQUID/LIQUID SHAKE	GC-MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC-MS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GC-MS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL by IR	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC-FID

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

[illegible]



Harrison Group Ltd
Unit C14
Poplar Business Park
10 Prestons Road
London
E14 9RL

Attention: Jiban Bajracharya

CERTIFICATE OF ANALYSIS

Date:	25 April 2012
Customer:	H_HARRIS_LON
Sample Delivery Group (SDG):	120423-4
Your Reference:	GL16482
Location:	Bourne Estate
Report No:	178963

We received 1 sample on Saturday April 21, 2012 and 1 of these samples were scheduled for analysis which was completed on Wednesday April 25, 2012. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

SDG:	120423-4	Location:	Bourne Estate	Order Number:	
Job:	H_HARRIS_LON-73	Customer:	Harrison Group Ltd	Report Number:	178963
Client Reference:	GL16482	Attention:	Jiban Bajracharya	Superseded Report:	

LIQUID

Results Legend



Test



No Determination
Possible

Lab Sample No(s)

5487511

Customer
Sample Reference

BHB1(d)

AGS Reference

Depth (m)

Container

1l green glass bottle

Anions by Kone (w)

All

NDPs: 0
Tests: 1

X

pH Value

All

NDPs: 0
Tests: 1

X

Order Number:
Report Number: 178963
Superseded Report:

Page 3 of 6



SDG:	120423-4	Location:	Bourne Estate	Order Number:	
Job:	H_HARRIS_LON-73	Customer:	Harrison Group Ltd	Report Number:	178963
Client Reference:	GL16482	Attention:	Jiban Bajracharya	Superseded Report:	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



SDG:	120423-4	Location:	Bourne Estate	Order Number:	
Job:	H_HARRIS_LON-73	Customer:	Harrison Group Ltd	Report Number:	178963
Client Reference:	GL16482	Attention:	Jiban Bajracharya	Superseded Report:	

Test Completion Dates

Lab Sample No(s)	5487511
Customer Sample Ref.	BHB1(d)
AGS Ref.	
Depth	
Type	LIQUID
Anions by Kone (w)	25-Apr-2012
pH Value	24-Apr-2012



CERTIFICATE OF ANALYSIS

SDG:	120423-4	Location:	Bourne Estate	Order Number:	
Job:	H_HARRIS_LON-73	Customer:	Harrison Group Ltd	Report Number:	178963
Client Reference:	GL16482	Attention:	Jiban Bajracharya	Superseded Report:	

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

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SOLID MATRICES EXTRACTION SUMMARY				
ANALYSIS	D&C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DCM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DCM	SOX THERM	HPLC
PHENOLS BY GCMS	WET	DCM	SOX THERM	GC-MS
HERBICIDES	D&C	HEXANE/ACETONE	SOX THERM	GC-MS
PESTICIDES	D&C	HEXANE/ACETONE	SOX THERM	GC-MS
EPH (DFO)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH (MIN OIL)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH (CLEANED UP)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH CWGBY GC	D&C	HEXANE/ACETONE	END OVER END	GC-FID
PCBAROCLOR 1254/PCB CON	D&C	HEXANE/ACETONE	END OVER END	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE/ACETONE	MICRO WAVE TM218.	GC-MS
>C6-C40	WET	HEXANE/ACETONE	SHAKER	GC-FID
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE/ACETONE	SHAKER	GC-FID
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY			
ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCBAROCLOR 1254	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTICLOPP	DCM	LIQUID/LIQUID SHAKE	GC MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC MS
PHENOLS MS	ACETONE	SOLID PHASE EXTRACTION	GC MS
TPH by INFRARED (IR)	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
MINERAL OIL by IR	TCE	STIRRED EXTRACTION (STIR-BAR)	IR
GLYCOLS	NONE	DIRECT INJECTION	GC FID

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Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



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