



STATION HILL, READING

FACTUAL REPORT ON GROUND INVESTIGATION

Prepared for SH READING MASTER LLP

Report Ref: 34769

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STATION HILL, READING

FACTUAL REPORT ON GROUND INVESTIGATION

Prepared for SH READING MASTER LLP

Report Ref: 34769

PROJECT: Redevelopment of Old Shopping Centre

CONSULTANT: Ramboll UK Ltd

VOLUME - VERSION	STATUS	ORIGINATOR	CHECKER	APPROVED	DATE
1 of 1 – A	INTERIM	AT	CT	-	31/01/2019
ORIGINATOR			APPROVER		
A TATNELL Senior Engineering Geologist					

The report is not to be used for contractual or engineering purposes unless this sheet is signed and the report designated "Final".

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1. INTRODUCTION

It is proposed to redevelop a former shopping centre at Station Hill, Reading. Geotechnical Engineering Limited (GEL) was instructed by Ramboll Uk Ltd (the Consultant) acting on behalf of SH Reading Master LLP (the Client) to carry out an investigation to determine the ground conditions.

The scope of works and terms and conditions of appointment were specified by the Consultant and GEL correspondence reference T28836_02 dated 15th October 2018. The investigation was carried out under direction and part-time supervision of the Consultant.

This report describes the investigation and presents the findings.

2. SITE LOCATION AND GEOLOGY

The site is situated at directly south of Garrard Street, Reading and may be located by its National Grid co-ordinates SU 713 736.

British Geological Survey (BGS) England and Wales (Sheet No. 268, 1:50,000, 2000) and the BGS online geology (1:50,000) indicate the site is underlain by superficial deposits of the Taplow Gravel Member (sand and gravel) locally overlying Alluvium (clay, silt, sand and gravel) to the north. Bedrock geology comprises the Seaford Chalk Formation and the Newhaven Chalk Formation. Made Ground was anticipated associated with road and building construction.



3. GROUND INVESTIGATION

3.1 Fieldwork

The fieldwork was carried out in general accordance with BS5930:2015 during the period 12th to the 30th November 2018 and comprised three boreholes, seventeen dynamic sample boreholes.

The exploratory hole locations were selected by the Consultant and set out by this Company and are shown on Figure 1A, 1B, 1C, 1D and 1E. The ground level and co-ordinates at boreholes BH301, BH303 and BH304 and dynamic sample boreholes WS301, WS04 and WS314 were established by this Company using GPS techniques. The remaining exploratory hole locations were not established due to being located within buildings.

The boreholes, referenced BH301, BH303 and BH304 (Appendix A), were formed using a light cable tool (shell and auger) rig utilising 200mm tools and casing. Initially, rotary coring (250mm) techniques were utilised to penetrate tarmac and concrete hardstanding. An inspection pit was then hand excavated to 1.20m to check for buried services. The boreholes were then advanced using a clay cutter and bailer. Boreholes were suspended upon Consultant instruction and 168mm diameter rotary casing was installed prior to rotary follow-on drilling.

Disturbed samples of the arisings were taken and retained in plastic bags and airtight containers.

The boreholes, referenced BH301, BH303 and BH304 (Appendix A), were subsequently extended using a track-mounted Geotechnical Pioneer Rig. Following Consultant instruction to suspend cable percussive techniques and the installation of rotary casing, the boreholes were advanced by heavy duty dynamic sampling techniques to produce a continuous



disturbed sample of 112mm nominal diameter as the borehole was advanced. The samples were recovered in semi-rigid plastic liner.

On refusal to dynamic sampling the boreholes were continued by rotary core drilling techniques utilising a water flush. A double-tube swivel core barrel with semi-rigid plastic liner was utilised to recover a continuous sample of 120mm diameter. Where appropriate, dynamic sampling techniques were carried out to recover dropped core or where rotary core drilling was not suitable.

The dynamic samples and rotary core were extracted horizontally from the sampler and core barrel respectively, the semi-rigid liner was cut to length and each end sealed to retain moisture content. All samples and core were retained in sequence in labelled, wooden coreboxes.

Standard penetration tests (SPT) were carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011. A split barrel or a solid cone was used depending upon the materials encountered and the split barrel samples retained in airtight jars. The SPT N value was taken as the number of blows to penetrate the 300mm test drive following a 150mm seating drive. Where low penetration was recorded the seating drive was terminated at 25 blows and the test drive completed after a further 50 blows. Detailed SPT results, together with the energy ratio (E_r), are presented in Appendix A and summarised as uncorrected N values on the borehole logs.

Boreholes were monitored for groundwater ingress as boring proceeded. Upon encountering water in BH301, boring was temporarily stopped to allow the level to stabilise. Water levels were also recorded at the start and finish of each day's work and on completion of the borehole and are presented on the relevant log. Groundwater was not encountered in borehole BH303 or BH304.



On completion, dual slotted standpipes and gas/water monitoring standpipes were installed in BH301 and BH304. Each standpipe consisted of a 19mm ID PVC slotted tube set in a granular filter medium and sealed above and below with a bentonite plug. Each gas/water monitoring standpipe consisted of a 50mm ID HDPE slotted tube set in a filter response zone of non-calcareous pea gravel. The installations were sealed above and below with a bentonite plug and accessed via a double valve assembly. The installations were protected at the surface by a lockable stopcock cover set in concrete. Installation details are given on the relevant borehole log.

On completion, a slotted standpipe was installed in borehole BH303. Each standpipe consisted of a 19mm ID PVC slotted tube set in a granular filter medium and sealed above and below with a bentonite plug. The installation was protected at the surface by a lockable stopcock cover set in concrete. Installation details are given on the relevant borehole log. Subsequent water level readings are tabulated in Appendix A.

Initially, sixteen dynamic sample boreholes were scheduled to be undertaken. However, dynamic sample boreholes WS306, WS308, WS309 and WS313 were cancelled by the Consultant due to time constraints. Initially, rotary coring (250mm) techniques were utilised to penetrate concrete hardstanding at these exploratory hole locations. An inspection pit was then hand excavated at borehole WS309 and WS313 to a maximum depth of 1.05m to check for buried services. Disturbed samples of the hand excavated material were taken and retained in a combination of plastic tubs, bags and glass jars.

The remaining dynamic sample boreholes, referenced WS301 to WS305, WS305A, WS307, WS310 to WS312, WS314 to WS316 (Appendix A), were formed using a Terrier 2000 rig. Initially, rotary coring (300mm) techniques were utilised to penetrate concrete hardstanding. An inspection pit was then hand excavated at each borehole location to a maximum depth of 1.20m to check for buried services. Dynamic sample borehole WS305 and WS12 were terminated due to the presence of hard strata, with WS305 relocated and renamed WS305A.



Disturbed samples were taken and retained in a combination of plastic tubs, bags and glass jars.

Dynamic sampling techniques were then employed to produce a continuous disturbed sample of 83mm diameter reducing to 70mm, 60mm and 50mm (where appropriate) as the borehole was advanced (or 97mm reducing to 83mm and 70mm in WS301). The samples were recovered in semi-rigid plastic liner.

The samples were extracted horizontally from the sampler, labelled and caps placed each end to retain moisture.

Standard penetration tests (SPT) were carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011. A split barrel or a solid cone was used depending upon the materials encountered and the split barrel samples retained in airtight jars. The SPT N value was taken as the number of blows to penetrate the 300mm test drive following a 150mm seating drive. Where low penetration was recorded the seating drive was terminated at 25 blows and the test drive completed after a further 50 blows. Detailed SPT results, together with the energy ratio (E_r), are presented in Appendix A and summarised as uncorrected N values on the borehole logs.

Boreholes were monitored for groundwater ingress as dynamic sampling proceeded. Upon encountering water in WS301 to WS304, WS311 and WS314, sampling was temporarily stopped to allow the level to stabilise. Water levels were also recorded at the start and finish of each day's work and on completion of the borehole and are presented on the relevant log.

On completion, gas/water monitoring standpipes were installed in WS301, WS304, WS310, WS311, WS314 and WS315. Each installation consisted of a 50mm ID HDPE slotted tube set in a filter response zone of non-calcareous pea gravel. The installation was sealed above and below with a bentonite plug and accessed via a valve assembly. The installations were



protected at the surface by a lockable stopcock cover set in concrete. Installation details are given on the relevant borehole log.

On completion, dynamic sample borehole WS302, WS303, WS305 to WS309, WS312, WS313 and WS316 were backfilled with bentonite pellets, arisings (where appropriate) and the concrete surface reinstated.

Samples for chemical analyses were dispatched from site directly to i2 Analytical Ltd under a Chain of Custody. The headspace of these environmental samples was monitored for Volatile Organic Compounds (VOC's) using a MiniRAE 3000 Portable Photo-Ionisation Detector (PID) with a 10.6eV gas discharge lamp. The detector uses an ultra violet light source to break down the chemicals into positive and negative ions (ionisation). The detector measures the charge of the ionised gas and converts the signal into current. The current is then amplified and displayed as "ppm"; the readings are presented on the relevant exploratory hole logs in Appendix A.

The remaining samples were brought to this Company's laboratory for testing and storage.

3.2 Logging

The logging of soils and rocks was carried out by an Engineering Geologist in general accordance with BS5930:2015 and CIRIA C574. A key to the exploratory hole logs is presented in Appendix A.

Detailed descriptions of the core and samples are given in the borehole logs, Appendix A, along with details of sampling, in situ testing, groundwater ingress, installations and relevant comments on drilling techniques.



Suitable core subsamples were selected by this Company. The core was carefully logged and prepared prior to preserving the subsample by wrapping in clingfilm and tinfoil prior to coating with at least three layers of wax. The sample was further protected by a covering of waxed cheesecloth, labelled and transported horizontally in padded, wooden coreboxes.

3.3 Post Fieldwork Monitoring

Following the main fieldwork period six monitoring visits were programmed. At the time of this report, four visits have been completed between 17th December 2018 and 21st January 2019.

The gas/water installations were monitored for gas flow and then tested for methane, carbon dioxide, oxygen, hydrogen sulphide, and carbon monoxide using a Gas Data GFM 435 gas analyser. Subsequent readings, along with water level records, are tabulated in Appendix A.

The installations were also monitored for Volatile Organic Compounds (VOC's) using a MiniRAE 2000 Portable Photo-Ionisation Detector (PID) with a 10.6eV gas discharge lamp. The readings are presented in Appendix A.

Water levels for the standpipe and gas/water installations are presented in Appendix A.

3.4 Laboratory Testing

Two schedules of laboratory tests were prepared by the Consultant the following tests being carried out in accordance with BS1377:1990, unless stated otherwise. The number in brackets refers to the test number given in that standard. The results are presented in Appendix B.



The natural water content was determined on twenty-five selected samples in accordance with BS EN ISO 17892-1:2014.

Liquid limit, plastic limit and plasticity index tests [Part 2:4.3-4.5, 5.3 and 5.4] were carried out on twenty-one selected samples. Atterberg line plots have also been presented.

The saturated moisture content [Part 2:3.3] was determined on eleven selected samples.

The bulk density was determined on five samples by the linear measurement method in accordance with BS EN ISO 17892-2:2014-5.1.

Particle densities were determined for two samples using the fluid pycnometer method in accordance with BS EN ISO 17892-3:2015.

Porosity/density using saturation and buoyancy are currently ongoing on six selected samples by Terra Tek Ltd.

Particle size distributions were determined in accordance with BS EN ISO 17892-4:2016 for twenty-two samples by wet sieving [5.2]. The fine fractions of twenty-one of these samples were further analysed by sedimentation using the pipette method [5.4]. The results are presented as grading curves.

The following tests on rock samples were carried out in accordance with ISRM (2007) unless stated otherwise. Test results are presented in Appendix B.

The natural moisture content of rock was determined on three selected cores.

Two rock cores were tested for their unconfined compressive strength.



Point load index tests were carried out on one hundred and twenty-eight selected lengths of core.

The BRE SD1 (2005) suite of tests was carried out on eleven samples by Chemtest Ltd using in-house methods.

The organic matter content was determined for six selected samples by Chemtest Ltd using in-house methods.

Selected samples were despatched to i2 Analytical Ltd, where chemical analyses were carried out to in-house methods for a suite of contaminants. The results are presented in Appendix C.

GEOTECHNICAL ENGINEERING LIMITED



4. REFERENCES

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British Standards Institution (2016): Geotechnical investigation and testing – Laboratory testing of soil. Part 3: Determination of particle density. BS EN ISO 17892-3:2015.

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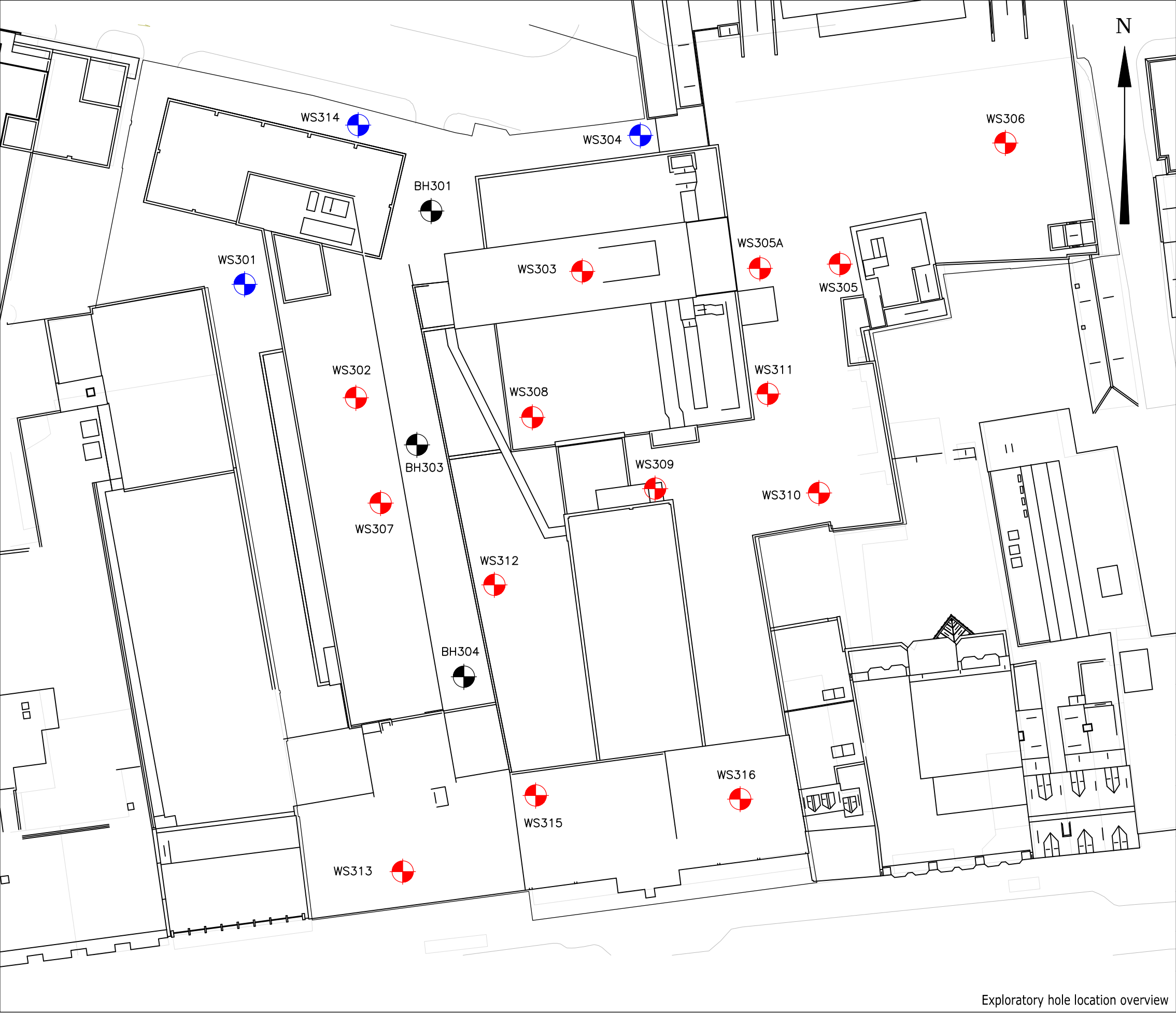
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Lord J A, Clayton C R I and Mortimore R N (2002): Engineering in Chalk. CIRIA Report No. C574.



Building Research Establishment (2005): Concrete in aggressive ground. BRE Special Digest 1. Third Edition.

International Society for Rock Mechanics (2007). The complete ISRM suggested methods for rock characterization, testing and monitoring: 1974-2006, edited by R Ulusay & J A Hudson. Ankara, Turkey: Turkish National Group of the International Society for Rock Mechanics.



Key.

Borehole Location

Dynamic Sample Location

Approximate Dynamic Sample Location

Notes:

Drawing supplied by the Consultant

geotechnical

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SH READING MASTER LLP

Consultants:

RAMBOLL

Site:

STATION HILL, READING

Title:

EXPLORATORY HOLE LOCATION PLAN

Drawn By:

AT

Checked By:

CT

Paper Size:

A3

Scale:

1:500

Date:

January 2019

Contract:

34769

Figure:

1A

Exploratory hole location overview



External exploratory hole locations

Key.



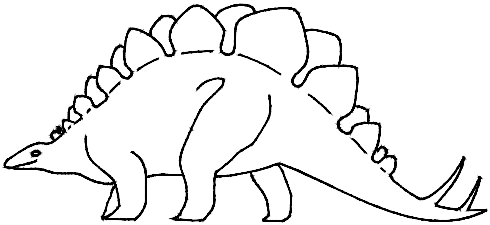
Borehole Location



Dynamic Sample Location

Notes:

Drawing supplied by the Consultant



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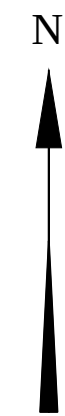
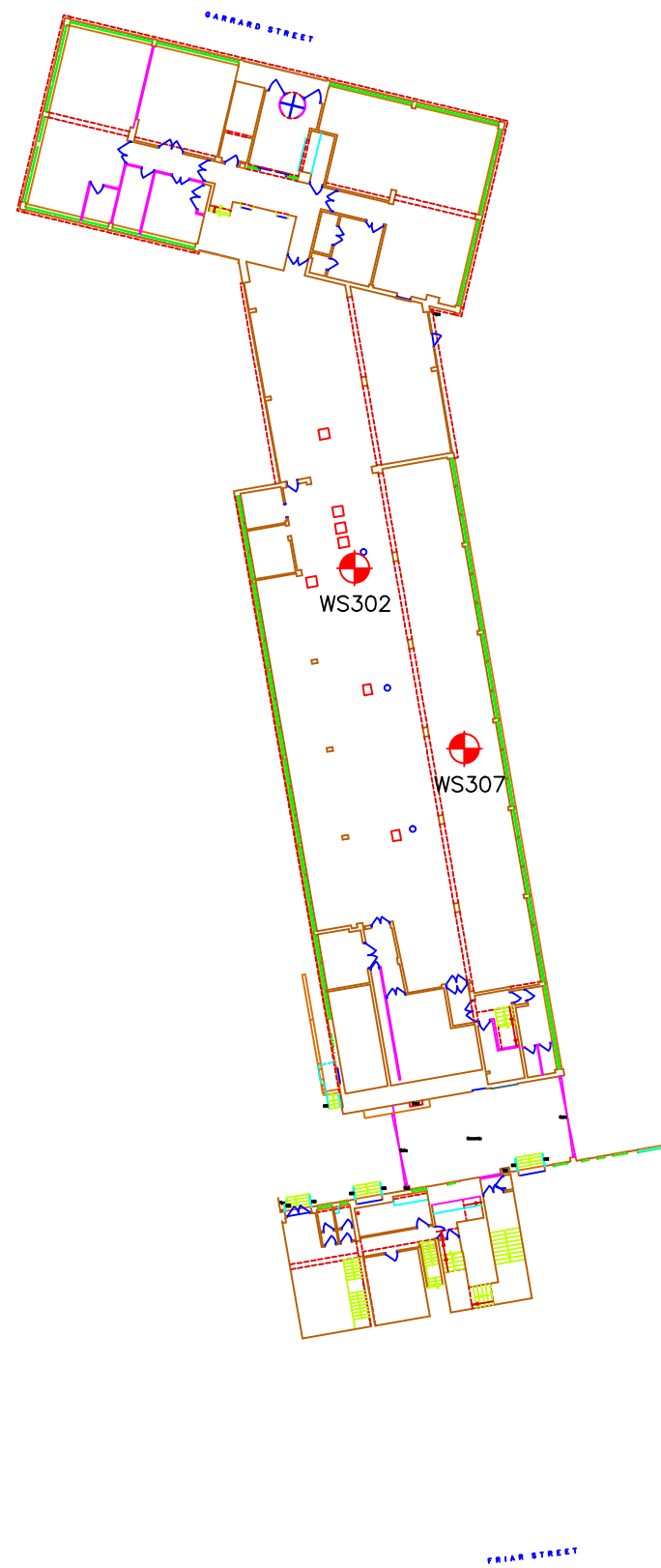
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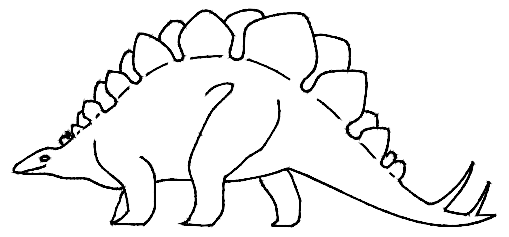
STATION HILL, READING

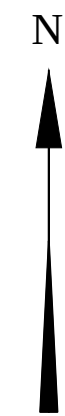
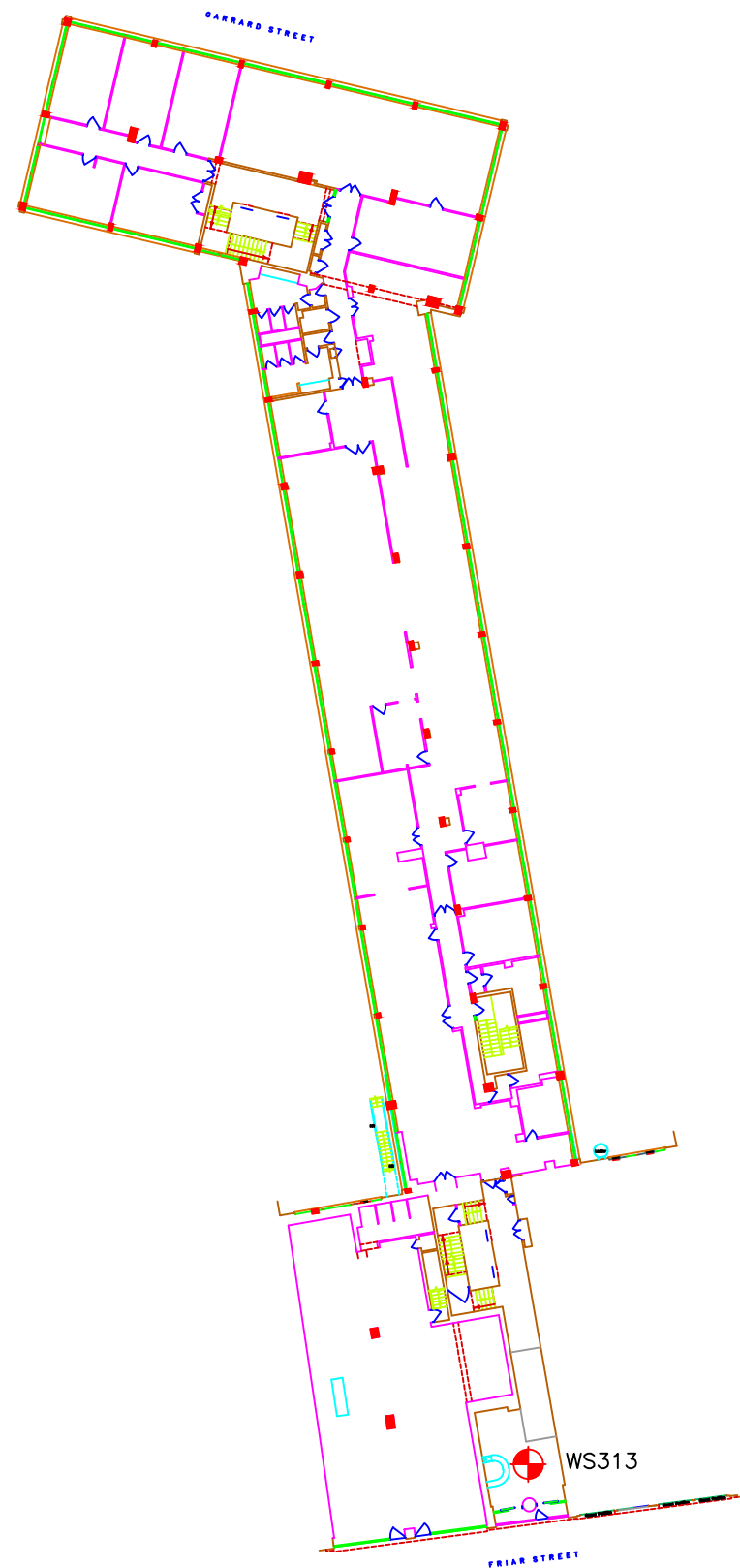
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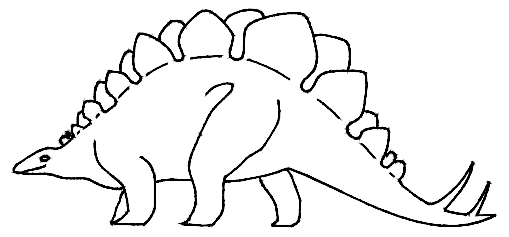
EXPLORATORY HOLE LOCATION PLAN

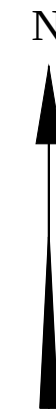
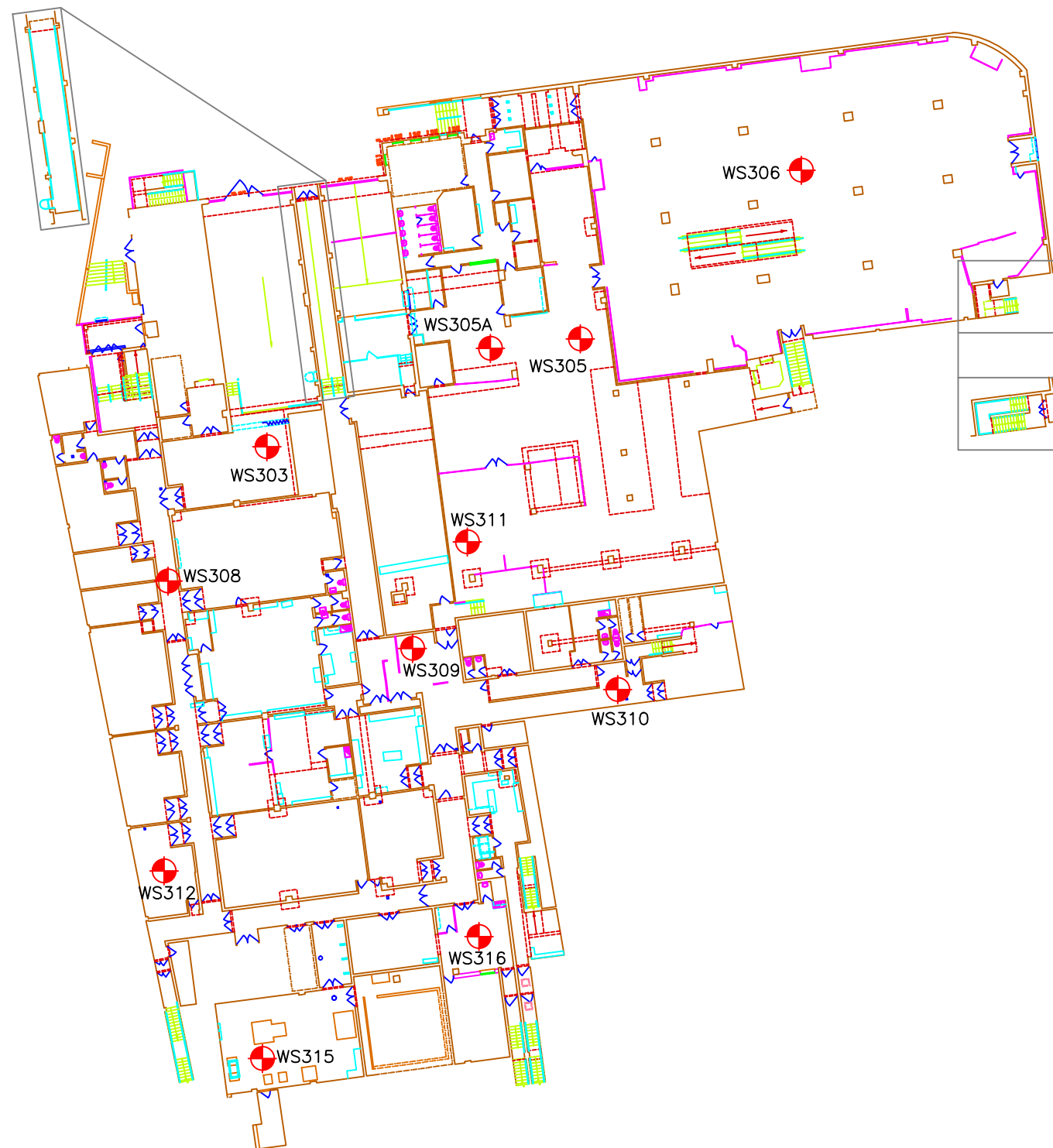
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Scale:	1:500		Date:	January 2019	
Contract:	34769			Figure:	1B



Key.  Approximate Dynamic Sample Location		
Notes: Drawing supplied by the Consultant		
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Consultants: RAMBOLL		
Site: STATION HILL, READING		
Title: EXPLORATORY HOLE LOCATION PLAN		
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Scale: 1:500	Date: January 2019	
Contract: 34769	Figure: 1C	



Key.  Approximate Dynamic Sample Location		
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Contract: 34769		Figure: 1D



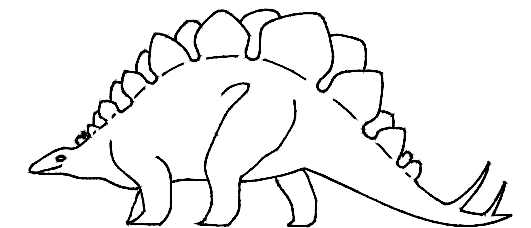
Key.



Approximate Dynamic
Sample Location

Notes:

Drawing supplied by the Consultant



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Figure:

1E

Friars Walk exploratory hole locations



APPENDIX A

FIELDWORK DATA

KEY TO EXPLORATORY HOLE LOGS



Sample type

D Small disturbed	U Undisturbed	L Dynamic	ES Environmental - soil	Cs Core subsample (prepared)
B Bulk disturbed	UT Undisturbed thin wall	C Core	EW Environmental - water	Ls Dynamic subsample (prepared)
LB Large bulk disturbed	P Piston	W Water		

Test type

S SPT - Split spoon sampler followed by uncorrected SPT 'N' Value

C SPT - Solid cone followed by uncorrected SPT 'N' Value

(*250 - Where full test drive not completed, linearly extrapolated 'N' value reported, ** - Denotes no effective penetration)

H Hand vane - direct reading in kPa - not corrected for BS1377 (1990). Re* denotes refusal

M Mackintosh probe - number of blows to achieve 100mm penetration

Mx Mexe cone - average reading of equivalent CBR value in %

PP Pocket penetrometer - direct reading in kg/sq.cm

Vo Headspace vapour reading, uncorrected peak values in ppm, using a PID (calibrated with Isobutylene, using a 10.6eV bulb)

Sample/core range/l_r

| Dynamic sample

|

■ Undisturbed sample - open drive including thin wall. Symbol length reflects recovery

x x = Total Core Recovery (TCR) as percentage of core run

y y = Solid Core Recovery (SCR) as percentage of core run. Assessment of core is based on full diameter.

z z = Rock Quality Designation (RQD). The amount of solid core greater than 100mm expressed as percentage of core run.

Where SPT has been carried out at beginning of core run, disturbed section of core excluded from SCR and RQD assessment.

l_r - fracture spacing - the modal fracture spacing (mm) over the indicated length of core. Where spacing varies significantly, the minimum, mode and maximum values are given. NI = non-intact core NA = not applicable

Instrumentation

■ Porous tip

▤ Perforated standpipe

■ Granular response zone

▤ Bentonite seal

▤ Cement/bentonite grout

▤ Soil Backfill

▤ Concrete

Stratum boundaries

----- Estimated boundary

----- Grading boundary

Logging

The logging of soils and rocks has been carried out in general accordance with BS 5930:2015.

Chalk is logged in general accordance with Lord et al (2002) CIRIA C574. Where possible, dynamic samples in chalk have been logged in accordance with CIRIA C574; descriptions and gradings (if presented) should be treated with caution given the potential for sample disturbance.

For rocks the term fracture has been used to identify a mechanical break within the core. Where possible incipient and drilling induced fractures have been excluded from the assessment of fracture state. Where doubt exists, a note has been made in the descriptions. All fractures are considered to be continuous unless otherwise reported.

Made Ground is readily identifiable when, within the material make up, man made constituents are evident. Where Made Ground appears to be reworked natural material the differentiation between in situ natural deposits and Made Ground is much more difficult to ascertain. The interpretation of Made Ground within the logs should therefore be treated with caution.

The descriptors "topsoil" and "tarmacadam" are used as generic terms and do not imply conformation to any particular standard or composition.

Rootlets are defined as being less than 2mm in diameter, roots are defined as in excess of 2mm diameter.

General Comments

The process of drilling and sampling will inevitably lead to disturbance, mixing or loss of material in some soil and rocks.

Indicated water levels are those recorded during the process of drilling or excavating exploratory holes and may not represent standing water levels.

All depths are measured along the axis of the borehole and are related to ground level at the point of entry. All inclinations are measured normal to the axis of the core.

Where provided, the stratigraphic names/geological rock units are for guidance only and may not be wholly accurate.

BOREHOLE LOG**BH301**

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 1 of 3

Start Date 12 November 2018 Easting 471329

Scale 1 : 50

End Date 29 November 2018 Northing 173674 Ground level 39.55mOD Depth 25.50 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	lf	instru -ment	description	depth (m)	reduced level (m)	legend
12/11/18 1500hrs	C	0.00 - 0.60	Nil		100			MADE GROUND comprising black TARMACADAM.	0.10	39.45	
	1B	0.20 - 0.40		Vo 0.0				Brown, red and black clayey very sandy subangular fine to coarse flint, brick, concrete and chalk GRAVEL with a low angular brick and concrete cobble content. With fragments of metal (5% up to 50mm), glass (5% up to 20mm) and tiles (5% up to 10mm). (MADE GROUND)	0.30	39.25	
	1ES	0.20							0.50	39.05	
12/11/18 1605hrs Dry	2B	0.60 - 0.80		Vo 0.0				MADE GROUND comprising poorly cemented grey CONCRETE.			
	2ES	0.70									
13/11/18 0930hrs Dry	3B	1.00 - 1.20		Vo 0.0				Brown and black slightly sandy gravelly CLAY with a low brick and concrete cobble content. Gravel is subangular fine to coarse flint, brick and chalk. With fragments of metal (5% up to 50mm), glass (5% up to 20mm) and tiles (5% up to 10mm). (MADE GROUND)	1.50	38.05	
	3ES	1.20						1.20 - 1.50m: Slightly gravelly.	1.70	37.85	
	4D	1.50 - 1.95	1.50	S 21				Soft orangish brown slightly sandy slightly gravelly silty CLAY. Gravel is subangular fine to coarse flint.	2.00	37.55	
	4ES	1.70		Vo 0.0				Medium dense off-white and orangish brown sandy very silty subangular and subrounded fine to coarse chalk and flint GRAVEL with a medium subangular chalk cobble content and with rare pockets (up to 100mm) of soft brown clay.			
	6B	2.80						Off-white CHALK recovered as sandy gravelly SILT. Gravel is angular to subrounded fine to coarse low density chalk with rare fine and medium flint gravel.			
	7D	3.00 - 3.45	3.00	S 7							
	5ES	3.50		Vo 0.0							
13/11/18 1100hrs 4.20m	8B	4.00							4.50	35.05	
29/11/18 0900hrs 3.50m	9D	4.50 - 4.95	4.50	S 10				Structureless CHALK composed of white locally stained yellowish brown slightly sandy gravelly SILT. Gravel is angular to subrounded fine and medium rarely coarse chalk, rarely angular fine and medium flint. (Probably CIRIA Grade Dm).			
	10L	4.50 - 6.00									
	6ES	5.00 - 5.20		Vo 0.0							
	11D	6.00 - 6.45	4.50	S 9					6.45	33.10	
	12C	6.00 - 7.50	6.00					Structureless CHALK composed of silty sandy subangular and subrounded fine and medium GRAVEL. Clasts are white locally stained yellowish brown chalk. Matrix is white. Rare angular to subrounded fine and medium flint gravel. (Probably CIRIA Grade Dc) 6.80 - 7.00m: Frequent flint gravel.			
	13D	7.50 - 7.95	6.00	S 18							
	14C	7.50 - 9.00									
Continued Next Page									{8.00}		

EQUIPMENT: Light cable percussive (shell and auger) rig and Geotechnical Pioneer rig.

METHOD: Rotary core drilled (250mm) 0.00-0.60m. Hand dug inspection pit 0.60-1.20m. Cable percussion (200mm) 1.20-4.50m. Dynamic sampled (128mm) 4.50-6.00m. Waterflush rotary core drilled (146mm) 6.00-25.50m.

CASING: 200mm diam to 4.50m and 168mm diam to 9.00m.

BACKFILL: On 30/11/2018, hole backfilled with bentonite pellets 25.50-6.00m. A slotted standpipe (19mm) was installed to 6.00m, granular response zone 6.00-5.00m and bentonite seal 5.00-2.00m. A second slotted standpipe (50mm) was installed to 2.00m, granular response zone 2.00-1.00m, bentonite seal 1.00-0.30m, gravel drain 0.30-0.20m, concrete and stopcock cover 0.20-0.00m.

REMARKS: Driller notes reduced flush between 6.00-25.50m (approx. 50-75% returned).

Chalk grade based CIRIA C574 (2002).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
3.60	Nil	3.50	20	


CONTRACT
34769
CHECKED

BOREHOLE LOG

CLIENT SH READING MASTER LLP

BH301

SITE STATION HILL, READING

Sheet 2 of 3

Start Date 12 November 2018 Easting 471329

Scale 1 : 50

End Date 29 November 2018 Northing 173674 Ground level 39.55mOD Depth 25.50 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	lf	instru- ment	description	depth (m)	reduced level (m)	legend
	15D 16C	9.00 - 9.45 9.00 - 10.50	9.00	S 13	100 32 7	NI 35 190		8.60 - 8.90m: Clasts have frequent black specks.	8.90	30.65	
	17D 18C	10.50 - 10.95 10.50 - 12.00	9.00	S 41	67 26 0			Very weak low density white CHALK. Fractures are subhorizontal to 10° and 50-60° very closely and closely spaced planar and undulating smooth and rough infilled (up to 3mm) with white silt, locally stained brownish yellow with rare black specks. Medium spaced bands of angular fine to coarse gravel sized flint. (CIRIA Grade B4)			
	19D 20C	12.00 - 12.24 12.00 - 13.50	9.00	S*94	81 35 13			11.60 - 12.35m: Widely spaced bands of cobble sized rimmed black nodular flint.			
	21C	13.50 - 15.00	9.00		100 72 21	NI 80 180		Extremely weak low and medium density white CHALK. Fractures are subhorizontal and 60-70° closely spaced planar and undulating smooth infilled (up to 2mm) with white silt, stained brownish yellow with frequent black specks. Widely spaced bands of subangular fine to coarse gravel sized flint. (CIRIA Grade B3)	13.20	26.35	
	22C	15.00 - 15.19 15.00 - 16.50	9.00	C*130	67 43 19	NI 160 380		Very weak locally extremely weak medium density white CHALK. Fractures are subhorizontal to 10° and 70-80° closely and medium spaced planar and undulating smooth, locally stained yellowish brown with rare black specks. Widely spaced bands of angular fine to coarse gravel sized flint. (CIRIA Grade A3)	14.60	24.95	
	23C	16.50 - 18.00	9.00		95 73 45						
	24Cs	17.25 - 17.64									
		18.00 - 18.17	9.00	C*176							
Continued Next Page									{18.00}		
water strike (m) casing (m) rose to (m) time to rise (m) remarks											CHECKED
									CONTRACT		
									34769		

BOREHOLE LOG

CLIENT SH READING MASTER LLP

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SITE STATION HILL, READING

Sheet 3 of 3

Start Date 12 November 2018 Easting 471329

Scale 1 : 50

End Date 29 November 2018 Northing 173674 Ground level 39.55mOD Depth 25.50 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	lf	instru- ment	description	depth (m)	reduced level (m)	legend
	25C	18.00 - 19.50			100 73 27						
	26C	19.50 - 21.00	9.00		100 93 47						
	27C	21.00 - 21.16 21.00 - 22.50	9.00	C*188	65 49 42						
	28C	22.50 - 24.00	9.00		5	NA		Limited recovery (5%) of cobble sized rinded dark grey FLINT, recovered non intact. Core loss presumed to be chalk, not recovered due to flint jamming in core barrel.	22.50	17.05	
	29C	24.00 - 24.18 24.00 - 25.50	9.00	C*143	88 69 42	NI 85 170		Very weak medium density white CHALK. Fractures are subhorizontal to 10° closely and medium spaced planar and undulating smooth with rare black specks. Medium spaced bands of subrounded fine to coarse gravel sized flint. (CIRIA Grade A3)	24.00	15.55	
29/11/18 1645hrs 6.89m		25.50 - 25.68	9.00	C*158					25.50	14.05	
30/11/18 0815hrs 5.21m								Borehole completed at 25.50m.			
water strike (m) casing (m) rose to (m) time to rise (m) remarks									{28.00}		
									CONTRACT		CHECKED
									34769		

BOREHOLE LOG

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SITE STATION HILL, READING

Sheet 1 of 3

Start Date 14 November 2018 Easting 471330

Scale 1 : 50

End Date 28 November 2018 Northing 173648 Ground level 40.45mOD Depth 25.50 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	lf	instru -ment	description	depth (m)	reduced level (m)	legend
14/11/18 1400hrs	C	0.00 - 1.00	Nil		100		/ /	MADE GROUND comprising black TARMACADAM.	0.10	40.35	
	1ES	0.20		Vo 0.0					0.40	40.05	
	1B	0.30						Brown, red and black clayey very gravelly fine to coarse SAND with a low angular brick and concrete cobble content. Gravel is subangular fine to coarse flint, brick, concrete and chalk. With fragments of tarmacadam (5% up to 100mm) and tiles (5% up to 10mm). (MADE GROUND)	1.00	39.45	
	2ES	1.00		Vo 0.0				MADE GROUND comprising grey CONCRETE.			
	2B	1.00									
	3D	1.50 - 1.95	1.50	S 17				White CHALK recovered as white slightly sandy gravelly SILT. Gravel is angular to subrounded fine to coarse chalk, rarely angular fine and medium flint. 1.00 - 1.20m: Rare pockets (up to 10mm) of brown silt.			
	4B	2.00									
14/11/18 1600hrs Dry	5D	3.00 - 3.45	3.00	S 15							
27/11/18 1050hrs Dry	6L	3.00 - 4.50									
	7B	3.00							3.50	36.95	
								Structureless CHALK composed of white stained yellowish brown slightly sandy slightly gravelly SILT. Gravel is subangular and subrounded fine and medium chalk. (Probably CIRIA Grade Dm)			
	8D	4.50 - 4.95	3.00	S 14							
	9L	4.50 - 6.00									
	10D	6.00 - 6.45	3.00	S 12				Structureless CHALK composed of white stained orangish yellow slightly sandy gravelly SILT. Gravel is angular to subrounded fine and medium rarely coarse chalk, rarely subrounded and rounded fine and medium flint. (Probably CIRIA Grade Dm)	5.70	34.75	
	11L	6.00 - 7.50	6.00								
	12D	7.50 - 7.95	6.00	S 38							
	13C	7.50 - 9.00	7.50			32	NA	7.50 - 9.00m: Limited recovery (32%). Core loss presumed chalk, not recovered due to flint jamming in core barrel.			
								Continued Next Page	{8.00}		

EQUIPMENT: Light cable percussive (shell and auger) rig and Geotechnical Pioneer rig.

METHOD: Rotary core drilled (250mm) 0.00-1.00m. Hand dug inspection pit 1.00-1.20m. Cable percussion (200mm) 1.20-3.00m. Dynamic sampled (128mm) 3.00-7.50m. Waterflush rotary core drilled (146mm) 7.50-25.50m.

CASING: 200mm diam to 3.00m and 168mm diam to 7.50m.

BACKFILL: On completion, hole backfilled with bentonite pellets 25.50-7.50m. A slotted standpipe (19mm) was installed to 7.50m, granular response zone 7.50-6.50m, bentonite seal 6.50-0.30m, concrete and stopcock cover 0.30-0.00m.

REMARKS: Driller notes flush returns reduced between 7.50- 16.50m (approx. 10-50% returned) and loss of flush from 16.50-25.50m.

Chalk grade based on CIRIA C574 (2002).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered prior to use of water flush.



CONTRACT

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BOREHOLE LOG

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BH303

SITE STATION HILL, READING

Sheet 2 of 3

Start Date 14 November 2018 Easting 471330

Scale 1 : 50

End Date 28 November 2018 Northing 173648 Ground level 40.45mOD Depth 25.50 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	lf	instru- ment	description	depth (m)	reduced level (m)	legend
27/11/18 1630hrs 5.89m 28/11/18 0830hrs 5.01m	14C	9.00 - 10.50	7.50		68 53 0			Extremely weak locally very weak low density white CHALK. Fractures are randomly orientated extremely closely spaced planar smooth infilled (up to 3mm) with white silt. Medium spaced bands (up to 10mm) of subangular and subrounded fine to coarse flint gravel. (CIRIA Grade B5)	9.60	30.85	
	15D 16C	10.50 - 10.95 10.50 - 12.00	7.50	S 42	100 45 0				11.05	29.40	
	17D 18C	12.00 - 12.44 12.00 - 13.50	7.50	S*53	83 49 0			Very weak low density white CHALK. Fractures are subhorizontal to 10° and 50-60° very closely and closely spaced planar smooth locally stained brownish yellow. (CIRIA Grade A4)			
	19C	13.50 - 15.00	7.50		65 21 0						
								14.20 - 15.50m: Recovered non intact as silty sandy subangular fine to coarse gravel (possibly drilling disturbed).			
	20C	15.00 - 15.17 15.00 - 16.50	7.50	C*176	90 59 15			Extremely weak and very weak low density white CHALK. Fractures are subhorizontal to 10° and 70-80° closely and medium spaced planar smooth infilled (up to 2mm) with white silt locally stained orangish yellow. Widely spaced bands (up to 15mm) of angular and subangular fine to coarse flint gravel. (CIRIA Grade (B3)	15.50	24.95	
	21C	16.50 - 18.00	7.50		100 89 26						
		18.00 - 18.18	7.50	C*158							
								Continued Next Page	{18.00}		
water strike (m) casing (m) rose to (m) time to rise (m) remarks									CONTRACT 34769		
Groundwater not encountered prior to use of water flush.									CHECKED		

BOREHOLE LOG**BH303**

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 3 of 3

Start Date 14 November 2018 Easting 471330

Scale 1 : 50

End Date 28 November 2018 Northing 173648 Ground level 40.45mOD

Depth 25.50 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	lf	instru- ment	description	depth (m)	reduced level (m)	legend
	22C	18.00 - 19.50			67 33 0			19.00 - 19.50m: Assumed zone of core loss.			
	23C	19.50 - 21.00	7.50		99 91 43	NI 140 450		Very weak medium locally high density white CHALK. Fractures are subhorizontal to 10° closely and medium spaced planar and undulating smooth locally stained off-white with frequent black specks. Widely spaced bands (up to 15mm) of angular fine and medium flint gravel. (CIRIA Grade A3)	19.60	20.85	
	24C	21.00 - 21.14 21.00 - 22.50	7.50	C*250	93 70 57			21.00 - 21.80m: 70° planar smooth fracture.			
	25C	22.50 - 24.00	7.50		80 60 60			22.30m: Cobble sized rinded black nodular flint.			
	26C	24.00 - 24.23 24.00 - 25.50	7.50	C*143	100 68 55			24.95 - 25.10m: Subvertical planar smooth fracture.			
	27Cs	24.36 - 24.81									
28/11/18 1230hrs 4.03m		25.50 - 25.71	7.50	C*130				Borehole completed at 25.50m.	25.50	14.95	
									{28.00}		
water strike (m) casing (m) rose to (m) time to rise (m) remarks Groundwater not encountered prior to use of water flush.									CONTRACT 34769		CHECKED

BOREHOLE LOG**BH304**

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 1 of 3

Start Date 12 November 2018 Easting 471335

Scale 1 : 50

End Date 26 November 2018 Northing 173616 Ground level 41.60mOD Depth 24.60 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	lf	instru -ment	description	depth (m)	reduced level (m)	legend
12/11/18 1215hrs	C	0.00 - 0.40	Nil		100			MADE GROUND comprising black TARMACADAM.	0.06	41.54	
	1B	0.30						Dark grey very sandy subangular fine to coarse flint, brick, concrete and chalk GRAVEL. (MADE GROUND)	0.14	41.46	
13/11/18 1330hrs Dry	1ES	0.50		Vo 0.0				MADE GROUND comprising poorly cemented grey CONCRETE.	0.41	41.19	
	2B	0.70									
	2ES	1.00		Vo 0.0				Brown, red and grey clayey very gravelly fine to coarse SAND with a low angular brick and concrete cobble content. Gravel is subangular fine to coarse flint, brick, concrete and chalk. With fragments of tiles (5% up to 10mm). (MADE GROUND)	1.40	40.20	
	3B	1.40									
	3ES	1.50 - 1.95	1.50	C 23 Vo 0.0				1.00 - 1.20m: Concrete boulder.	1.80	39.80	
	4B	2.00						Medium dense orangish brown gravelly very clayey fine to coarse SAND. Gravel is subangular fine to coarse flint and chalk. (MADE GROUND?)			
13/11/18 1500hrs Dry								White CHALK recovered as white slightly sandy gravelly SILT with a low very weak medium density chalk cobble content. Gravel is angular to subangular fine to coarse extremely weak low density chalk with rare angular fine to coarse flint.			
22/11/18 1230hrs Dry	5D	3.00 - 3.45	3.00	S 18				1.80 - 2.00m: Rare pockets (up to 15mm) of brown silt.	3.50	38.10	
	6B	3.00						3.45 - 3.50m: No recovery.			
	7L	3.00 - 4.00						Structureless CHALK composed of white slightly gravelly SILT. Gravel is subangular and subrounded fine to coarse very weak medium density white with frequent black specks chalk. (Probably CIRIA Grade Dm).	4.00	37.60	
	8D	4.00 - 4.45	4.00	S 18				Structureless CHALK composed of white slightly gravelly SILT. Gravel is angular to subrounded fine to coarse very weak medium density white with frequent black specks chalk, rarely angular fine to coarse flint. (Probably CIRIA Grade Dm).			
	9L	4.00 - 5.50						4.20m: Flint cobble recovered as angular fine to coarse gravel.			
	10D	5.50 - 5.95	5.00	S 18				4.70 - 5.20m: White slightly sandy silty angular to subrounded fine to coarse medium dense chalk gravel with frequent black specks and yellowish orange staining.	5.50	36.10	
	11C	5.50 - 7.00	5.30		67			5.30 - 5.50m: Assessed zone of core loss.			
								Structureless CHALK composed of white slightly gravelly SILT. Gravel is angular to subrounded fine to coarse very weak low and medium density white with frequent black specks chalk, rarely angular medium and coarse flint. (Probably CIRIA Grade Dm).			
	12D	7.00 - 7.45						5.70m: Cobble sized rinded black nodular flint.			
	13C	7.00 - 8.50			7			6.30m: Very weak medium density white chalk cobble with black specks and yellowish orange staining.			
								6.50 - 7.00m: Assessed zone of core loss. Possibly due to flint cobble scrubbing sample barrel.			
								7.00 - 7.10m: Recovered non intact as angular fine and medium flint gravel.			
								Continued Next Page	{8.00}		

EQUIPMENT: Light cable percussive (shell and auger) rig and Geotechnical Pioneer rig.

METHOD: Rotary core drilled (250mm) 0.00-0.40m. Hand dug inspection pit 0.40-1.20m. Cable percussion (200mm) 1.20-3.00m. Dynamic sampled (128mm) 3.00-5.50m. Waterflush rotary core drilled (146mm) 5.50-24.60m.

CASING: 200mm diam to 3.00m and 168mm diam to 5.30m.

BACKFILL: On 27/11/2018, hole backfilled with bentonite pellets 24.60-8.00m. A slotted standpipe (19mm) was installed to 8.00m, granular response zone 8.00-2.50m and bentonite seal 2.50-1.80m. A second slotted standpipe (50mm) was installed to 1.80m, granular response zone 1.80-1.00m, bentonite seal 1.00-0.30m, gravel 0.30-0.20m, concrete and stopcock cover 0.20-0.00m.

REMARKS: Flush returns reduced between 17.10-20.10m (approx. 30% returned). Flush returns lost from 20.10-24.60m. Dynamic sampling carried out to recover dropped core. 8.70-9.60m recovered 0.60m. Chalk grade based on CIRIA C574 (2002).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks	AGS	CONTRACT	CHECKED
				Groundwater not encountered prior to use of water flush.		34769	

BOREHOLE LOG

CLIENT SH READING MASTER LLP

BH304

SITE STATION HILL, READING

Sheet 2 of 3

Start Date 12 November 2018 Easting 471335

Scale 1 : 50

End Date 26 November 2018 Northing 173616 Ground level 41.60mOD

Depth 24.60 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	lf	instru- ment	description	depth (m)	reduced level (m)	legend
22/11/18 1600hrs 2.00m	14D	8.50 - 8.95	5.30	S 21	50			7.10 - 8.50m: Assessed zone of core loss. Core loss presumed chalk, not recovered due to flint jamming in core barrel.			
	15C	8.50 - 8.70			0						
	C	8.70 - 9.60	5.30					8.70 - 9.60m: Assessed zone of core loss. Recovered as sand cuttings. Probably due to flint jamming in core barrel.			
	16D	9.60 - 10.05	5.30	S 50	97						
23/11/18 0900hrs 5.60m	17C	9.60 - 11.10			30						
					0						
						NI		Very weak medium density white stained yellowish orange with frequent black specks CHALK. Fractures are subhorizontal to 30° and 70° to subvertical extremely closely spaced planar smooth infilled (up to 5mm) with silt locally stained brownish orange. (CIRIA grade C5).	10.30	31.30	
	18D	11.10 - 11.45	5.30	S*77	100						
	19C	11.10 - 12.60			23			Very weak medium density white CHALK with frequent black specks and yellowish orange staining. Fractures are 30° to subvertical extremely closely to closely spaced planar smooth. (CIRIA grade A5).	11.10	30.50	
					10						
	20D	12.60 - 13.02	5.30	S*56	97						
	21C	12.60 - 14.10			36	NI		Very weak low density white with rare locally frequent black specks CHALK. Fractures are subhorizontal and 45-50° closely spaced planar smooth infilled (up to 1mm) with white silt locally stained brownish orange. (CIRIA Grade B3)	12.60	29.00	
					13	80					
	22D	14.10 - 14.40	5.30	S*73	100						
	23C	14.10 - 15.60			43						
					29						
	24D	15.60 - 15.97	5.30	S*70	96			15.40 - 15.45m: Cobble sized rinded black nodular flint.			
	25C	15.60 - 17.10			61			15.55m: Thin bed of angular fine and medium flint gravel.			
					29						
						NI		Very weak low and medium density white with rare black specks CHALK. Fractures are subhorizontal and 20° closely and medium spaced planar smooth stained greyish brown and brownish yellow with frequent black specks. (CIRIA Grade A3)	15.90	25.70	
23/11/18 1500hrs 4.20m						310		16.25 - 16.30m: Cobble sized rinded black nodular flint.			
	26D	17.10 - 17.43	5.30	S*86	91						
	27C	17.10 - 18.60			53						
					42						
26/11/18 1100hrs 4.87m								17.65 - 17.85m: 70° fracture stained off-white.			
								Continued Next Page	{18.00}		
water strike (m) casing (m) rose to (m) time to rise (m) remarks Groundwater not encountered prior to use of water flush. AGS CONTRACT 34769 CHECKED											



BH304

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 3 of 3

Start Date	12 November 2018	Easting	471335
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Scale 1 : 50

End Date	26 November 2018	Northing	173616	Ground level	41.60mOD	Depth	24.60 m
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progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	If	instru -ment	description	depth (m)	reduced level (m)	legend
26/11/18 1400hrs 6.39m 27/11/18 0900hrs 5.17m	28Cs	18.15 - 18.47						17.85m: Angular coarse flint clast.			
	29D 30C	18.60 - 18.87 18.60 - 20.10	5.30	S*94	81 43 7						
									19.60	22.00	
	31C	20.10 - 20.34 20.10 - 21.60	5.30	C*130	77 58 35			Extremely weak medium density white CHALK. Fractures are 80° to subvertical extremely closely and very closely spaced planar smooth infilled (up to 2mm) with white silt, rarely stained off-white with frequent black specks. (CIRIA Grade B5)			
	32Cs	21.05 - 21.38							20.50	21.10	
								Very weak locally weak medium density white CHALK. Fractures are subhorizontal to 10° closely and medium spaced planar and undulating smooth locally stained orangish yellow with rare black specks. Medium spaced bands (up to 20mm) of subangular to rounded fine and medium flint gravel. (CIRIA Grade A3)			
	33C	21.60 - 21.83 21.60 - 23.10	5.30	C*136	80 68 35			21.20 - 21.60m: Assessed zone of core loss. 21.40 - 21.60m: 70° planar smooth fracture.			
	34C	23.10 - 23.28 23.10 - 24.60	5.30	C*143	92 76 15			Very weak low and medium density white CHALK. Fractures are subhorizontal to 20° and 70° closely spaced planar smooth infilled (up to 3mm) with white silt. Closely spaced bands (up to 10mm) of angular to subangular fine and medium flint gravel. (CIRIA Grade B3)	23.10	18.50	
		24.60 - 24.76	5.30	C*158					24.60	17.00	
								Borehole completed at 24.60m.			
									{28.00}		
water strike (m) casing (m) rose to (m) time to rise (m) remarks											
Groundwater not encountered prior to use of water flush.											
									CONTRACT		CHECKED
									34769		

Geotechnical Engineering Limited

STANDARD PENETRATION TEST



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole no.	borehole depth (m)	s.w.p (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive		test drive		test type	N	energy ratio (%)
						blows	pen (mm)	blows	pen (mm)			
BH301	1.50		1.95	1.50	Dry	1 3	75 75	4 5 5 7	75 75 75 75	S	21	63
BH301	3.00		3.45	3.00	Dry	1 1	75 75	3 2 1 1	75 75 75 75	S	7	63
BH301	4.50		4.95	4.50	Dry	1 2	75 75	2 3 2 3	75 75 75 75	S	10	63
BH301	6.00		6.45	4.50	4.89	4 2	75 75	2 2 2 3	75 75 75 75	S	9	74
BH301	7.50		7.95	6.00	2.80	3 4	75 75	4 5 5 4	75 75 75 75	S	18	74
BH301	9.00		9.45	9.00	Dry	3 2	75 75	2 3 4 4	75 75 75 75	S	13	74
BH301	10.50		10.95	9.00	4.87	4 5	75 75	7 8 8 18	75 75 75 75	S	41	74
BH301	12.00		12.24	9.00	4.12	22 3	75 5	20 22 8	75 75 10	S	94	74
BH301	15.00		15.19	9.00	4.29	25	75	31 19	75 40	C	130	74
BH301	18.00		18.17	9.00	4.07	17 8	75 10	35 15	75 10	C	176	74
BH301	21.00		21.16	9.00	5.01	19 6	75 5	41 9	75 5	C	188	74
BH301	24.00		24.18	9.00	5.29	25	70	29 21	75 30	C	143	74
BH301	25.50		25.68	9.00	5.79	21 4	75 5	33 17	75 20	C	158	74
BH303	1.50		1.95	1.50	Dry	1 2	75 75	4 4 4 5	75 75 75 75	S	17	63
BH303	3.00		3.45	3.00	Dry	3 3	75 75	3 4 4 4	75 75 75 75	S	15	63
BH303	4.50		4.95	3.00	Dry	4 3	75 75	3 4 3 4	75 75 75 75	S	14	74
BH303	6.00		6.45	3.00	Dry	1 3	75 75	2 3 3 4	75 75 75 75	S	12	74
BH303	7.50		7.95	6.00	1.27	4 6	75 75	10 11 9 8	75 75 75 75	S	38	74
BH303	10.50		10.95	7.50	4.29	6 6	75 75	8 10 12 12	75 75 75 75	S	42	74
BH303	12.00		12.44	7.50	4.63	6 8	75 75	8 11 14 17	75 75 75 60	S	53	74
BH303	15.00		15.17	7.50	4.93	17 8	75 5	41 9	75 10	C	176	74
BH303	18.00		18.18	7.50	4.97	18 7	75 10	34 16	75 20	C	158	74
BH303	21.00		21.14	7.50	5.39	25	75	50	60	C	250	74
BH303	24.00		24.23	7.50	5.13	10 15	75 50	26 24	75 30	C	143	74

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. s.w.p = self weight penetration.
3. N values have not been subjected to any correction.
4. Test carried out using split spoon S, solid cone C.
5. Where full test drive not completed, linearly extrapolated N value reported.
6. ** Denotes no effective penetration.

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STANDARD PENETRATION TEST

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borehole no.	borehole depth (m)	s.w.p (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive		test drive		test type	N	energy ratio (%)
						blows	pen (mm)	blows	pen (mm)			
BH303	25.50		25.71	7.50	4.03	16 9	75 20	23 27	75 40	C	130	74
BH304	1.50		1.95	1.50	Dry	1 2	75 75	7 6 5 5	75 75 75 75	C	23	63
BH304	3.00		3.45	3.00	Dry	1 3	75 75	4 3 5 6	75 75 75 75	S	18	63
BH304	4.00		4.45	4.00	2.70	8 6	75 75	5 4 3 6	75 75 75 75	S	18	74
BH304	5.50		5.95	5.00	2.70	3 3	75 75	3 4 5 6	75 75 75 75	S	18	74
BH304	8.50		8.95	5.30	2.00	2 5	75 75	5 5 5 6	75 75 75 75	S	21	74
BH304	9.60		10.05	5.30	5.70	4 8	75 75	12 14 12 12	75 75 75 75	S	50	74
BH304	11.10		11.45	5.30	5.70	5 8	75 75	10 15 25	75 75 45	S	77	74
BH304	12.60		13.02	5.30	3.40	4 13	75 75	11 9 20 10	75 75 75 45	S	56	74
BH304	14.10		14.40	5.30	4.00	10 15	75 10	17 20 15	75 75 65	S	73	74
BH304	15.60		15.97	5.30	4.20	2 7	75 75	12 19 19	75 75 65	S	70	74
BH304	17.10		17.43	5.30	4.20	8 13	75 75	18 20 12	75 75 25	S	86	74
BH304	18.60		18.87	5.30	3.93	13 12	75 30	23 22 5	75 75 10	S	94	74
BH304	20.10		20.34	5.30	3.89	10 15	75 50	25 25	75 40	C	130	74
BH304	21.60		21.83	5.30	5.09	11 14	75 40	29 21	75 35	C	136	74
BH304	23.10		23.28	5.30	4.53	25	75	27 23	75 30	C	143	74
BH304	24.60		24.76	5.30	5.91	25	60	31 19	75 20	C	158	74

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. s.w.p = self weight penetration.
3. N values have not been subjected to any correction.
4. Test carried out using split spoon S, solid cone C.
5. Where full test drive not completed, linearly extrapolated N value reported.
6. ** Denotes no effective penetration.

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BOREHOLE LOG**WS301**

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SITE STATION HILL, READING

Sheet 1 of 1

Start Date 12 November 2018 Easting 471309

Scale 1 : 50

End Date 22 November 2018 Northing 173662 Ground level 40.05mOD Depth 6.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
12/11/18 1130hrs	C	0.00 - 0.09	Nil		100		MADE GROUND comprising light grey CONCRETE.	0.09	39.96	
22/11/18 1415hrs Dry	1B	0.20 - 0.30					Dark bluish grey sandy angular medium and coarse crystalline GRAVEL. (MADE GROUND)	0.10	39.95	
	1ES	0.20 - 0.30		Vo 0.1				0.30	39.75	
	2B	0.30 - 0.40						0.65	39.40	
	2ES	0.30 - 0.40		Vo 0.0			Dark grey slightly silty sandy angular to rounded fine to coarse concrete, crystalline, slag and rare chalk and flint GRAVEL with a low concrete cobble content. Frequent fragments of orange ceramic pipe (up to 30mm). (MADE GROUND)			
	3L	0.70 - 1.00	Nil							
	4B	0.70 - 1.20								
	3ES	0.70 - 1.20		Vo 0.0			Light brown slightly silty sandy subangular to rounded fine and medium brick, concrete, flint and chalk GRAVEL. (MADE GROUND)	1.60	38.45	
	5D	1.00 - 1.45	Nil	S 29			0.60m: Flint cobble (160x150x120mm).			
	6L	1.00 - 2.00					Structureless CHALK composed of cream slightly gravelly clayey SILT. Gravel is subangular and subrounded fine and medium weak low and medium density white chalk, rarely subangular medium flint. (CIRIA Grade Dm)			
	7D	1.70 - 1.80								
	4ES	1.85 - 2.00		Vo 0.0			Structureless CHALK composed of very silty angular to subrounded fine to coarse GRAVEL. Clasts are weak low density white with frequent black specks and black staining chalk. Matrix is cream with rare orange staining. Medium spaced bands of subrounded coarse gravel to cobble sized flint. (Probably CIRIA Grade Dc)			
	8D	2.00 - 2.45	Nil	S 18						
	9L	2.00 - 3.00								
	10D	2.70 - 2.80								
	11D	3.00 - 3.45	Nil	S 18						
	12L	3.00 - 4.00								
	13D	3.60 - 3.70								
	14D	4.00 - 4.45	Nil	S 9						
	15L	4.00 - 5.00								
	16D	4.70 - 4.80						4.60	35.45	
	5ES	4.85 - 5.00		Vo 0.0			Structureless CHALK composed of silty angular to subangular fine to coarse GRAVEL. Clasts are weak low and medium density white with rare black staining chalk. Matrix is cream with frequent orange staining. Rare subangular medium flint gravel. (Probably CIRIA Grade Dc)			
	17D	5.00 - 5.45	Nil	S 15						
	18L	5.00 - 6.00								
22/11/18 1605hrs 4.00m	19D	5.80 - 5.90						6.00	34.05	
							Borehole completed at 6.00m.			
								{8.00}		

EQUIPMENT: Hand Held Coring unit and Geotechnical Terrier 2000 rig.

METHOD: Rotary core drilled (250mm) 0.00-0.09m. Hand dug inspection pit 0.09-0.70m. Dynamic sampled (113mm) 0.70-3.00m, (98mm) 3.00-5.00m and (84mm) 5.00-6.00m.

CASING: None used.

BACKFILL: On completion, hole backfilled with bentonite pellets 6.00-1.00m. A slotted standpipe (50mm) was installed to 1.00m, granular response zone 1.00-0.10m, concrete and stopcock cover 0.10-0.00m.

REMARKS: Chalk grade based on CIRIA C574 (2002).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
5.10	Nil	4.00	20	Encountered during SPT 5.00-5.45m.


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SITE STATION HILL, READING

Sheet 1 of 1

Start Date 12 November 2018

Scale 1 : 50

End Date 21 November 2018

Depth 6.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru-ment	description	depth (m)	reduced level (m)	legend
12/11/18 1100hrs	C	0.00 - 0.50	Nil		100		MADE GROUND comprising light grey CONCRETE.			
	1B	0.50 - 0.70		Vo 0.0				0.50		
	1ES	0.50 - 0.70								
20/11/18 1600hrs Dry	2B	1.00 - 1.10		Vo 0.1			Light brown slightly clayey gravelly fine to coarse SAND. Gravel is subangular to rounded fine to coarse flint, chalk and rare quartzite.			
	2ES	1.00 - 1.10		Vo 0.2				1.20		
	3ES	1.20 - 1.35	Nil	C*57						
21/11/18 0930hrs Dry	3L	1.28 - 2.00					Firm light brown mottled off-white slightly sandy gravelly CLAY. Gravel is subangular and subrounded medium and coarse flint and chalk.	1.75		
	4D	1.80 - 1.90								
	4ES	1.85 - 2.00	Nil	Vo 0.0			Structureless CHALK composed of silty subangular to subrounded fine to coarse GRAVEL. Clasts are weak medium density white with frequent black specks and black staining chalk. Matrix is off-white with frequent black specks and rare orangish brown and yellowish brown staining. (Probably CIRIA Grade Dc)			
	5D	2.00 - 2.45		S 25						
	6L	2.00 - 3.00								
	7D	2.70 - 2.80								
	8D	3.00 - 3.45	Nil	S 28						
	9L	3.00 - 4.00								
								3.40		
							Structureless CHALK composed of silty subangular to subrounded fine to coarse GRAVEL. Clasts are weak medium density white with rare black staining chalk. Matrix is cream mottled off-white with rare orangish yellow staining. Frequent subangular and subrounded flint. (Probably CIRIA Grade Dc)			
	10D	4.00 - 4.45	Nil	S 19			3.40 - 4.00m: Limited recovery.			
	11L	4.00 - 5.00								
	12D	4.60 - 4.70								
	5ES	4.85 - 5.00		Vo 0.0						
	13D	5.00 - 5.45	Nil	S 17						
	14L	5.00 - 6.00								
	15D	5.55 - 5.65								
21/11/18 1330hrs 4.20m	16D	6.00 - 6.45	Nil	S 28				6.45		
							Borehole completed at 6.45m.			

EQUIPMENT: Hand Held Coring unit and Geotechnical Terrier 2000 rig.

METHOD: Rotary core drilled (250mm) 0.00-0.50m. Hand dug inspection pit 0.50-1.00m. Dynamic sampled using Hand Held Percussive Sampler (98mm) 1.00-1.15m, (84mm) 1.15-1.25m and (64mm) 1.25-1.35m. Dynamic sampled using Geotechnical Terrier 2000 rig (84mm) 1.28-3.00m and (74mm) 3.00-6.00m.
CASING: None used.

BACKFILL: On completion, hole backfilled with bentonite pellets 6.45-0.50m and concrete 0.50-0.00m.

REMARKS: Hand Held Percussive Sampler yielded limited penetration prior to hole collapse between 1.35-1.28m. Hole advanced with Geotechnical Terrier 2000 rig. CPT at 1.28m performed on collapsed material, treat result with caution.

Hand Held Liners 1.00-1.15m, 1.15-1.25m and 1.25-1.38m retained in plastic bags, tubs and glass jars.

Chalk grade based on CIRIA C574 (2002).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks		CONTRACT 34769	CHECKED
4.20	Nil	4.20	20	Encountered during run 4.00-5.00m.			

BOREHOLE LOG**WS303**

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SITE STATION HILL, READING

Sheet 1 of 1

Start Date 19 November 2018

Scale 1 : 50

End Date 23 November 2018

Depth 6.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
19/11/18 1200hrs	C	0.00 - 0.50	Nil		100		MADE GROUND comprising strongly cemented grey CONCRETE.	0.50		
23/11/18 1010hrs Dry	1B	0.60 - 0.80		Vo 0.0			Dark brown slightly sandy gravelly SILT. Gravel is angular to subrounded fine and medium flint and brick. (MADE GROUND) 0.75 - 1.30m: Rare animal bone fragments (up to 50mm).			
	1ES	0.60 - 0.80		Vo 0.0						
	2B	0.80 - 1.00		Vo 0.0						
	2ES	0.80 - 1.00		Vo 0.0						
	3B	1.00 - 1.20		S 15			Medium dense dark brown sandy angular to rounded fine and medium flint GRAVEL. 1.40 - 1.50m: Rare inclusions of white subangular fine and medium chalk gravel.	1.40		
	3ES	1.00 - 1.20		S 15						
	4D	1.20 - 1.65	Nil	S 15						
	5L	1.20 - 2.00	1.20	S 15						
	6D	2.00 - 2.45	2.00	S 20			Structureless CHALK composed of white slightly gravelly SILT. Gravel is angular to subrounded fine to coarse white with frequent black specs and yellowish staining chalk, rarely angular medium and coarse flint. (Probably CIRIA Grade Dm).	2.70		
	7L	2.00 - 3.00		Vo 0.0						
	4ES	2.00 - 2.20		Vo 0.0						
	8D	3.00 - 3.45	3.00	S 15						
	9L	3.00 - 4.00		S 15						
	10D	4.00 - 4.45	3.00	S 20						
	11L	4.00 - 5.00		S 20						
	12D	5.00 - 5.45	3.00	S 10						
	12L	5.00 - 6.00		S 10						
	5ES	5.50 - 5.80		Vo 0.0						
	13D	6.00 - 6.45	3.00	S 21				6.45		
23/11/18 1245hrs 5.30m							Borehole completed at 6.45m.			
								{8.00}		

EQUIPMENT: Hand Held Coring unit and Geotechnical Terrier 2000 rig.

METHOD: Rotary core drilled (250mm) 0.00-0.50m. Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-3.00m, (84mm) 3.00-4.00m and (76mm) 4.00-6.00m.

CASING: 113mm diam to 3.00m.

BACKFILL: On completion, hole backfilled with bentonite pellets 6.45-0.50m and concrete 0.50-0.00m.

REMARKS: Chalk grade based on CIRIA C574 (2002).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
5.30	3.00	5.30	20	Encountered during run 5.00-6.00m.


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BOREHOLE LOG**WS304**

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SITE STATION HILL, READING

Sheet 1 of 1

Start Date 19 November 2018 Easting 471359

Scale 1 : 50

End Date 22 November 2018 Northing 173685 Ground level 39.15mOD Depth 6.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
19/11/18 1015hrs	C	0.00 - 0.30	Nil		100		MADE GROUND comprising light grey CONCRETE.	0.30	38.85	
22/11/18 0930hrs Dry	1B 1ES	0.40 - 0.50 0.40 - 0.50		Vo 1.6			Soft brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse brick, chalk and rare flint and slag. (MADE GROUND)			
	2B 2ES	1.00 - 1.20 1.00 - 1.20		Vo 0.6 S 16			1.20m: Stiff.	1.60	37.55	
	3D 4L	1.20 - 1.65 1.20 - 2.00	Nil 1.20							
	5D 3ES	1.70 - 1.80 1.80 - 2.00		Vo 1.6			Orangish brown clayey sandy subangular and subrounded fine to coarse flint and rare chalk GRAVEL.	2.00	37.15	
	6D 7L	2.00 - 2.45 2.00 - 3.00	2.00	S 20			Stiff light brown slightly sandy gravelly silty CLAY. Gravel is subangular to rounded fine to coarse flint and chalk.	2.35	36.80	
	8D 4ES	2.50 - 2.60 2.90 - 3.00		Vo 2.3 S 8			Structureless CHALK composed of silty subangular to subrounded fine to coarse GRAVEL. Clasts are very weak low density white with frequent black staining chalk. Matrix is cream and white with frequent orangish yellow staining. (Probably CIRIA Grade Dc)			
	9D 10L	3.00 - 3.45 3.00 - 4.00	3.00				2.90 - 3.95m: Abundant dark grey and grey staining with frequent pockets of greenish brown staining (possible contamination). Strong hydrocarbon odour.			
	5ES 11D	3.30 - 3.40 3.50 - 3.60		Vo 6.4						
	12D 13L	4.00 - 4.45 4.00 - 5.00	4.00	S 5			Structureless CHALK composed of silty subangular to subrounded fine to coarse GRAVEL with a low subangular cobble content. Clasts are extremely weak low density white with rare black staining chalk. Matrix is cream with abundant orangish yellow staining. (Probably CIRIA Grade Dc)	3.95	35.20	
	14D 6ES 15D 16L	4.60 - 4.70 4.85 - 5.00 5.00 - 5.45 5.00 - 6.00	5.00	Vo 1.6 S 7			4.20 - 4.30m: Subrounded medium and coarse flint gravel. 5.00 - 6.00m: Limited recovery (30%).			
22/11/18 1120hrs 3.40m	17D 18D	5.80 - 5.90 6.00 - 6.45	6.00	S 7				6.45	32.70	
							Borehole completed at 6.45m.			
								{8.00}		

EQUIPMENT: Hand Held Coring unit and Geotechnical Terrier 2000 rig.

METHOD: Rotary core drilled (250mm) 0.00-0.30m. Hand dug inspection pit 0.30-1.20m. Dynamic sampled (98mm) 1.20-6.00m.

CASING: 113mm diam to 6.00m.

BACKFILL: On completion, hole backfilled with bentonite pellets 6.45-2.00m. A slotted standpipe (50mm) was installed to 2.00m, granular response zone 2.00-1.00m, bentonite seal 1.00-0.50m, concrete and stopcock cover 0.50-0.00m.

REMARKS: Chalk grade based on CIRIA C574 (2002).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
5.20	5.00	3.40	20	Encountered during run 5.00-6.00m.


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BOREHOLE LOG**WS305**

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SITE STATION HILL, READING

Sheet 1 of 1

Start Date 19 November 2018

Scale 1 : 50

End Date 19 November 2018

Depth 0.31 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
19/11/18 1400hrs	C	0.00 - 0.18	Nil		100		MADE GROUND comprising strongly cemented light grey CONCRETE.	0.06		XXXX
19/11/18 1415hrs Dry							MADE GROUND comprising dark grey and grey BRICKWORK.	0.18		
							VOID.	0.31		
							0.31m: Grey concrete across pit. Borehole completed at 0.31m.			
									{8.00}	

EQUIPMENT: Hand Held Coring unit.

METHOD: Rotary core drilled (250mm) 0.00-0.31m.

CASING: None used.

BACKFILL: On completion, hole backfilled with concrete.

REMARKS: Hole terminated on Consultant's instruction due to encountering void. Hole reattempted as WS305A approximately 10.00m to the west.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.

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BOREHOLE LOG**WS305A**

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 1 of 1

Start Date 19 November 2018

Scale 1 : 50

End Date 29 November 2018

Depth 1.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
19/11/18 1400hrs	C	0.00 - 0.42	Nil		100		MADE GROUND comprising strongly cemented grey CONCRETE.	0.06		
29/11/18 1145hrs Dry	1B 1ES	0.50 - 0.80 0.50 - 0.80		Vo 0.3			MADE GROUND comprising strongly cemented brownish grey CONCRETE.	0.42		
29/11/18 1420hrs Dry	2D	1.00 - 1.45	Nil	S 50			Brown silty sandy angular to subrounded fine to coarse flint, concrete and brick GRAVEL with a low subangular concrete cobble content. (MADE GROUND)	1.05		
							MADE GROUND comprising poorly cemented greyish brown CONCRETE.	1.45		
							Borehole completed at 1.45m.			
									{8.00}	

EQUIPMENT: Hand Held Coring unit and Geotechnical Terrier 2000 rig.

METHOD: Rotary core drilled (250mm) 0.00-0.42m. Hand dug inspection pit 0.42-1.00m.

CASING: None used.

BACKFILL: On completion, hole backfilled with bentonite pellets 1.45-0.42m and concrete 0.42-0.00m.

REMARKS: Hole terminated due to encountering concrete within SPT 1.00-1.45m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.



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BOREHOLE LOG**WS306**

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 1 of 1

Start Date 15 November 2018

Scale 1 : 50

End Date 15 November 2018

Depth 0.80 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
15/11/18 1400hrs	C	0.00 - 0.80	Nil		100		MADE GROUND comprising strongly cemented light grey CONCRETE.	0.80		
15/11/18 1430hrs Dry							Borehole completed at 0.80m.			

EQUIPMENT: Hand Held Coring unit.
 METHOD: Rotary core drilled (250mm) 0.00-0.80m.
 CASING: None used.
 BACKFILL: On completion, hole backfilled with concrete.
 REMARKS: Hole cancelled on Consultant's instruction due to time constraints.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.


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SITE	STATION HILL. READING
1	100
2	100
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	100
19	100
20	100
21	100
22	100
23	100
24	100
25	100
26	100
27	100
28	100
29	100
30	100
31	100
32	100
33	100
34	100
35	100
36	100
37	100
38	100
39	100
40	100
41	100
42	100
43	100
44	100
45	100
46	100
47	100
48	100
49	100
50	100
51	100
52	100
53	100
54	100
55	100
56	100
57	100
58	100
59	100
60	100
61	100
62	100
63	100
64	100
65	100
66	100
67	100
68	100
69	100
70	100
71	100
72	100
73	100
74	100
75	100
76	100
77	100
78	100
79	100
80	100
81	100
82	100
83	100
84	100
85	100
86	100
87	100
88	100
89	100
90	100
91	100
92	100
93	100
94	100
95	100
96	100
97	100
98	100
99	100
100	100

Sheet 1 of 1

Start Date 12 November 2018

Scale 1 : 50

End Date 21 November 2018

Depth 6.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
12/11/18 1330hrs	C	0.00 - 0.35	Nil		100		MADE GROUND comprising light grey CONCRETE. 0.05m: 20mm diam steel reinforcement bar.	0.35		
21/11/18 1450hrs 0.00m	1B 1ES 2B 2ES 3L	0.40 - 0.50 0.40 - 0.50 0.60 - 0.70 0.60 - 0.70 1.00 - 1.22 1.00 - 2.00		Vo 0.1 Vo 0.1 C*117			Light brown slightly sandy subrounded medium and coarse flint GRAVEL with a medium subrounded flint cobble content.	0.50		
	4D 3ES 5D 6L	1.60 - 1.70 1.85 - 2.00 2.00 - 2.45 2.00 - 3.00	Nil	Vo 0.0 S 44			Structureless CHALK composed of silty subangular to subrounded fine and medium GRAVEL. Clasts are white with rare black staining chalk. Matrix is cream and off-white with rare black specks and rare orange staining. Rare subrounded medium and coarse flint. (Probably CIRIA Grade Dc)	1.15		
	7D 8D 9L	2.70 - 2.80 3.00 - 3.45 3.00 - 4.00	Nil	S 37				3.40		
	10D 11D 12L	3.70 - 3.80 4.00 - 4.45 4.00 - 5.00	Nil	S 13			Structureless CHALK composed of clayey subangular to subrounded fine to coarse GRAVEL. Clasts are weak medium density white with frequent black specks and rare black staining chalk. Matrix is off-white with rare orange staining. (Probably CIRIA Grade Dc)	5.00		
	13D 4ES 14D 15L	4.50 - 4.70 4.85 - 5.00 5.00 - 5.45 5.00 - 6.00	Nil	Vo 0.0 S 13						
	16D	5.70 - 5.90					Structureless CHALK composed of silty subangular to subrounded fine and medium GRAVEL. Clasts are white with rare black specks and rare black staining chalk. Matrix is cream with rare orange staining. (Probably CIRIA Grade Dc)			
21/11/18 1715hrs Dry	17D	6.00 - 6.45	Nil	S 17				6.45		
							Borehole completed at 6.45m.			

EQUIPMENT: Hand Held Coring unit and Geotechnical Terrier 2000 rig.

METHOD: Rotary core drilled (250mm) 0.00-0.35m. Hand dug inspection pit 0.35-1.00m. Dynamic sampled (98mm) 1.00-2.00m, (84mm) 2.00-3.00m, (76mm) 3.00-4.00m and (66mm) 4.00-6.00m.

CASING: None used.

BACKFILL: On completion, hole backfilled with bentonite pellets 6.45-0.35m and concrete.

REMARKS: Chalk grade based on CIRIA C574 (2002).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
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Groundwater not encountered



CONTRACT

34769

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BOREHOLE LOG



WS308

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 1 of 1

Start Date 15 November 2018

Scale 1 : 50

End Date 15 November 2018

Depth 0.30 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range		instru- ment	description	depth (m)	reduced level (m)	legend
15/11/18 1030hrs	C	0.00 - 0.30	Nil		100			MADE GROUND comprising strongly cemented light grey CONCRETE.	0.06		
15/11/18 1045hrs Dry								MADE GROUND comprising strongly cemented brownish grey CONCRETE.	0.30		
Borehole completed at 0.30m.											

EQUIPMENT: Hand Held Coring unit.
METHOD: Rotary core drilled (250mm) 0.00-0.30m.
CASING: None used.
BACKFILL: On completion, hole backfilled with concrete.
REMARKS: Hole cancelled on Consultant's instruction due to time constraints.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
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Groundwater not encountered.



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BOREHOLE LOG

CLIENT SH READING MASTER LLP

WS309

SITE STATION HILL, READING

Sheet 1 of 1

Start Date 15 November 2018

Scale 1 : 50

End Date 27 November 2018

Depth 0.90 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
15/11/18 1430hrs	C	0.00 - 0.41	Nil		100		MADE GROUND comprising strongly cemented light grey CONCRETE.	0.06		
27/11/18 0830hrs Dry	1B 1ES	0.50 - 0.80 0.50 - 0.80		Vo 0.0			MADE GROUND comprising strongly cemented brownish grey CONCRETE.	0.41		
27/11/18 0915hrs Dry							Brown sandy locally very sandy subangular to rounded fine to coarse flint, quartzite rarely brick GRAVEL with a low rounded flint cobble content. (MADE GROUND) Borehole completed at 0.90m.	0.90		
									{8.00}	

EQUIPMENT: Hand Held Coring unit.

METHOD: Rotary core drilled (250mm) 0.00-0.41m. Hand dug inspection pit 0.41-0.90m.

CASING: None used.

BACKFILL: On completion, hole backfilled with arisings 0.90-0.41m and concrete 0.41-0.00m.

REMARKS: Hole cancelled on Consultant's instruction due to time constraints.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.

CONTRACT
34769

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BOREHOLE LOG**WS310**

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 1 of 1

Start Date 19 November 2018

Scale 1 : 50

End Date 28 November 2018

Depth 6.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
19/11/18 1245hrs	C	0.00 - 0.40	Nil		100	/	MADE GROUND comprising strongly cemented brownish grey CONCRETE.	0.40		
28/11/18 0800hrs Dry	1B 1ES	0.50 - 0.80 0.50 - 0.80		Vo 0.0			Brown clayey very sandy subangular to rounded fine to coarse flint rarely brick and chalk GRAVEL with a low subrounded flint cobble content. (MADE GROUND)	1.10		
	2D 3L	1.20 - 1.65 1.20 - 2.00	Nil 1.20	S 24			Structureless CHALK composed of white slightly sandy slightly gravelly SILT. Gravel is subangular to subrounded fine and medium chalk. (Probably CIRIA Grade Dm)			
	2ES 4D 5L	1.80 - 2.00 2.00 - 2.45 2.00 - 3.00		Vo 0.0 S 24			1.90 - 2.40m: Stained light brownish yellow.			
	6D 7L	3.00 - 3.45 3.00 - 4.00	2.00	S 14						
	8D 9L	4.00 - 4.45 4.00 - 5.00	2.00	S 16						
	3ES 10D 11L	4.70 - 5.00 5.00 - 5.45 5.00 - 6.00	2.00	Vo 0.0 S 20			4.30 - 4.40m: Rounded fine and medium flint gravel. 4.90 - 5.50m: Gravel has rare black specks. 5.10 - 6.00m: No recovery.			
28/11/18 1045hrs Dry	12D	6.00 - 6.45	2.00	S 18				6.45		
							Borehole completed at 6.45m.			
								{8.00}		

EQUIPMENT: Hand Held Coring unit and Geotechnical Terrier 2000 rig.

METHOD: Rotary core drilled (250mm) 0.00-0.40m. Hand dug inspection pit 0.40-1.20m. Dynamic sampled (98mm) 1.20-2.00m, (84mm) 2.00-4.00m and (76mm) 4.00-6.00m.

CASING: 113mm diam to 2.00m.

BACKFILL: On completion, hole backfilled with bentonite pellets 6.45-1.00m. A slotted standpipe (50mm) was installed to 1.00m, granular response zone 1.00-0.50m, bentonite seal 0.50-0.20m, concrete and stopcock cover 0.20-0.00m.

REMARKS: Chalk grade based on CIRIA C574 (2002).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.



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BOREHOLE LOG**WS311**

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 1 of 1

Start Date 12 November 2018

Scale 1 : 50

End Date 28 November 2018

Depth 6.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
12/11/18 1130hrs	C	0.00 - 0.40	Nil		100	/	MADE GROUND comprising strongly cemented grey CONCRETE.	0.12		
27/11/18 1600hrs Dry	1B 1ES	0.50 - 0.80 0.50 - 0.80		Vo 0.2			MADE GROUND comprising strongly cemented brownish grey CONCRETE. 0.35m: 5mm diam steel reinforcement.	0.40 0.50		
28/11/18 1355hrs Dry	2D 3L	1.20 - 1.46 1.20 - 2.00	Nil	S*81			Brown silty sandy angular and subangular fine to coarse flint and brick rarely sandstone GRAVEL. (MADE GROUND)	1.50		
	2ES 4D 5L	1.90 - 2.00 2.00 - 2.45 2.00 - 3.00		Vo 0.0 S 18			Brown and light brown clayey sandy angular to subrounded fine and medium rarely coarse flint rarely chalk GRAVEL. 1.20m: Very dense.			
	6D 7L	3.00 - 3.45 3.00 - 4.00	Nil	S 24			Structureless CHALK composed of white locally stained brownish yellow slightly sandy slightly gravelly SILT. Gravel is subangular and subrounded fine and medium chalk, rarely angular fine and medium flint. (Probably CIRIA Grade Dm)			
	8D 9L	4.00 - 4.45 4.00 - 5.00	Nil	S 22			3.70 - 3.90m: Frequent subangular coarse gravel of extremely weak low density chalk.			
	3ES 10D 11L	4.30 - 4.60 5.00 - 5.45 5.00 - 6.00		Vo 0.0 S 23			4.60 - 5.00m: No recovery.			
28/11/18 1530hrs 4.60m	12D	6.00 - 6.45	Nil	S 8				6.45		
							Borehole completed at 6.45m.			
								{8.00}		

EQUIPMENT: Hand Held Coring unit and Geotechnical Terrier 2000 rig.

METHOD: Rotary core drilled (250mm) 0.00-0.40m. Hand dug inspection pit 0.40-1.20m. Dynamic sampled (98mm) 1.20-3.00m, (84mm) 3.00-5.00m and (76mm) 5.00-6.00m.

CASING: None used.

BACKFILL: On completion, hole backfilled with bentonite pellets 6.45-1.40m. A slotted standpipe (50mm) was installed to 1.40m, granular response zone 1.40-0.40m, bentonite seal 0.40-0.20m, concrete and stopcock cover 0.20-0.00m.

REMARKS: Chalk grade based on CIRIA C574 (2002).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
5.00	Nil	4.60	20	Encountered during SPT 5.00-5.45m.


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BOREHOLE LOG**WS312**

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 1 of 1

Start Date 15 November 2018

Scale 1 : 50

End Date 26 November 2018

Depth 0.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
15/11/18 1115hrs	C	0.00 - 0.30	Nil		100		MADE GROUND comprising strongly cemented grey CONCRETE.	0.06		
	1B	0.30 - 0.45						0.30		
26/11/08 1600hrs Dry	2ES	0.30 - 0.45		Vo 0.0			MADE GROUND comprising strongly cemented brownish grey CONCRETE.	0.45		
Brown silty gravelly fine and medium SAND. Gravel is angular and subangular fine to coarse flint and concrete. (MADE GROUND) 0.45m: Grey concrete across pit. Borehole completed at 0.45m.										
									{8.00}	

EQUIPMENT: Hand Held Coring unit.

METHOD: Rotary core drilled (250mm) 0.00-0.30m. Hand dug inspection pit 0.30-0.45m.

CASING: None used.

BACKFILL: On completion, hole backfilled with arisings 0.45-0.30m and concrete 0.30-0.00m.

REMARKS: Hole terminated due to concrete obstruction.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.



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BOREHOLE LOG**WS313**

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 1 of 1

Start Date 19 November 2018

Scale 1 : 50

End Date 30 November 2018

Depth 1.05 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
19/11/18 1600hrs	C	0.00 - 0.24	Nil		100		MADE GROUND comprising strongly cemented light grey CONCRETE.	0.03		
30/11/18 0855hrs Dry	1B 1ES	0.40 - 0.60 0.40 - 0.60		Vo 0.5			MADE GROUND comprising strongly cemented brownish grey CONCRETE.	0.24 0.35 0.60		
	2B 2ES	0.80 - 1.00 0.80 - 1.00		Vo 0.0			Dark bluish grey subangular to rounded fine to coarse flint GRAVEL. (MADE GROUND)	1.05		
30/11/18 0950hrs Dry							Light brown sandy angular and subangular fine to coarse flint and brick GRAVEL. (MADE GROUND)			
							Brown clayey sandy angular to subrounded fine to coarse flint and brick rarely chalk GRAVEL with a low subangular brick cobble content. (MADE GROUND)			
							Borehole completed at 1.05m.			
								{8.00}		

EQUIPMENT: Hand Held Coring unit.

METHOD: Rotary core drilled (250mm) 0.00-0.24m. Hand dug inspection pit 0.24-1.05m.

CASING: None used.

BACKFILL: On completion, hole backfilled with arisings 1.05-0.24m and concrete 0.24-0.00m.

REMARKS: Hole terminated due to hard strata on Consultant's instruction.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.

CONTRACT
34769

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BOREHOLE LOG**WS314**

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 1 of 1

Start Date 19 November 2018 Easting 471322

Scale 1 : 50

End Date 20 November 2018 Northing 173685 Ground level 39.20mOD Depth 6.45 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
19/11/18 1000hrs	C	0.00 - 0.10	Nil		100		MADE GROUND comprising light grey CONCRETE.	0.10	39.10	
	1B	0.20 - 0.30						0.30	38.90	
20/11/18 1225hrs Dry	1ES	0.20 - 0.30		Vo 0.1			Dark brown and brown slightly clayey sandy angular to rounded fine to coarse flint, brick, concrete and slag GRAVEL with rare fragments of metal (up to 50mm). (MADE GROUND)	0.70	38.50	
	2B	0.40 - 0.50								
	2ES	0.40 - 0.50		Vo 0.0						
	3B	0.80 - 0.90								
	3ES	0.80 - 0.90		Vo 0.0			Soft dark brown mottled brown sandy gravelly CLAY. Gravel is subangular and subrounded fine to coarse flint, brick, concrete, chalk and rare slag. (MADE GROUND)			
	4D	1.20 - 1.65	Nil	S 4						
	5L	1.20 - 2.00	1.20							
	6D	1.70 - 1.80					Very soft to soft brown slightly gravelly sandy CLAY. Gravel is subangular to rounded fine and medium flint, brick, chalk and rare slag. (MADE GROUND)	1.85	37.35	
	7D	2.00 - 2.45	2.00	S 15						
	8L	2.00 - 3.00					Firm to stiff brown mottled orangish brown sandy gravelly CLAY. Gravel is subangular to rounded fine to coarse flint and rare chalk.			
	4ES	2.25 - 2.35		Vo 0.1				2.65	36.55	
	9D	2.50 - 2.60								
	10D	3.00 - 3.45	3.00	S 8			Structureless CHALK composed of silty subrounded to rounded fine to coarse GRAVEL. Clasts are very weak low density white chalk. Matrix is light brown and cream. Frequent subangular coarse flint. (Probably CIRIA Grade Dc)			
	11L	3.00 - 4.00								
	12D	3.50 - 3.60								
	13D	4.00 - 4.45	4.00	S 4				4.00	35.20	
	14L	4.00 - 5.00					Structureless CHALK composed of silty subrounded fine to coarse GRAVEL. Clasts are very weak medium density white with rare orangish brown staining chalk. Matrix is off-white. (Probably CIRIA Grade Dc)			
	15D	4.50 - 4.60					4.55m: Rare subrounded coarse flint.			
	5ES	4.90 - 5.00		Vo 0.0						
	16D	5.00 - 5.45	5.00	S 7						
	17L	5.00 - 6.00					5.45 - 6.00m: No recovery.			
20/11/18 1500hrs 4.63m	18D	6.00 - 6.45	6.00	S 7				6.45	32.75	
							Borehole completed at 6.45m.			
								{8.00}		

EQUIPMENT: Hand Held Coring unit and Geotechnical Terrier 2000 rig.

METHOD: Rotary core drilled (250mm) 0.00-0.10m. Hand dug inspection pit 0.10-1.20m. Dynamic sampled (98mm) 1.20-6.00m.

CASING: 113mm diam to 6.00m.

BACKFILL: On completion, hole backfilled with bentonite pellets 6.45-1.85m. A slotted standpipe (50mm) was installed to 1.85m, granular response zone 1.85-1.00m, bentonite seal 1.00-0.50m, concrete and stopcock cover 0.50-0.00m.

REMARKS: Chalk grade based on CIRIA C574 (2002).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
4.63	4.00	4.63	20	Encountered during run 4.00-5.00m.


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BOREHOLE LOG**WS315**

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 1 of 1

Start Date 15 November 2018

Scale 1 : 50

End Date 27 November 2018

Depth 6.00 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
15/11/18 1230hrs	C	0.00 - 0.38	Nil		100	/	MADE GROUND comprising strongly cemented brownish grey CONCRETE.	0.38		
23/11/18 1435hrs Dry	1B 1ES 2B 2ES	0.50 - 0.80 0.50 - 0.80 0.80 - 0.95 0.80 - 0.95 1.20 - 1.60		Vo 0.0 Vo 0.0 C*60			Brown sandy angular and subangular fine to coarse brick and flint GRAVEL. (MADE GROUND)	0.50		
							Brown silty very sandy angular to subrounded fine to coarse flint rarely chalk GRAVEL with a low subrounded flint cobble content.	0.80		
27/11/18 1220hrs Dry	3L	1.20 - 2.00	1.20				Structureless CHALK composed of white stained light brown slightly sandy slightly gravelly SILT. Gravel is subangular and subrounded fine and medium chalk, rarely angular fine and medium flint. (Probably CIRIA Grade Dm).	1.40		
	3ES 4D 5L	1.90 - 2.00 2.00 - 2.45 2.00 - 3.00	2.00	Vo 0.0 S 36			Structureless CHALK composed of white slightly sandy slightly gravelly SILT. Gravel is subrounded and rounded fine and medium chalk. 2.50 - 2.70m: Stained light orangish yellow.			
	6D 7L	3.00 - 3.45 3.00 - 4.00	3.00	S 26			3.50 - 3.55m: Stained light orangish yellow. 3.70 - 3.85m: Gravelly.			
	8D 9L	4.00 - 4.45 4.00 - 5.00	3.00	S 19						
	4ES 10D 11L	4.80 - 5.00 5.00 - 5.45 5.00 - 6.00	3.00	Vo 0.0 S 29			4.80 - 4.90m: Rare medium and coarse flint gravel. 4.85m: Subhorizontal thin laminae stained brownish yellow. Possible relict fracture. 4.95 - 5.00m: Stained light brownish yellow.	5.60		
27/11/18 1400hrs Dry		6.00 - 6.45	3.00	S 48			Structureless CHALK composed of white slightly sandy gravelly SILT. Gravel is subangular to rounded fine and medium rarely coarse extremely weak low density chalk. (Probably CIRIA Grade Dm). Borehole completed at 6.00m.	6.00		
								{8.00}		

EQUIPMENT: Hand Held Coring unit and Geotechnical Terrier 2000 rig.

METHOD: Rotary core drilled (250mm) 0.00-0.38m. Hand dug inspection pit 0.38-1.20m. Dynamic sampled (98mm) 1.20-3.00m, (84mm) 3.00-5.00m and (76mm) 5.00-6.00m.

CASING: 113mm diam to 3.00m.

BACKFILL: On completion, hole backfilled with bentonite pellets 6.45-0.50m. A slotted standpipe (50mm) was installed to 0.50m, granular response zone 0.50-0.40m, bentonite seal 0.40-0.20m, concrete and stopcock cover 0.20-0.00m.

REMARKS: Chalk grade based on CIRIA C574 (2002).

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.



CONTRACT

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BOREHOLE LOG**WS316**

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

Sheet 1 of 1

Start Date 15 November 2018

Scale 1 : 50

End Date 27 November 2018

Depth 1.08 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	instru- ment	description	depth (m)	reduced level (m)	legend
15/11/18 1500hrs	C	0.00 - 0.50	Nil		100		MADE GROUND comprising strongly cemented brownish grey CONCRETE.	0.50		
27/11/18 1145hrs Dry	1B 1ES	0.60 - 0.90 0.60 - 0.90		Vo 0.1			Brown very sandy angular to subrounded fine to coarse flint, brick and concrete rarely chalk GRAVEL with a low subangular flint cobble content. (MADE GROUND)	1.05		
27/11/18 1225hrs Dry		1.00 - 1.08	Nil	C**			MADE GROUND comprising strongly cemented brownish grey CONCRETE. Borehole completed at 1.08m.	1.08		
									{8.00}	

EQUIPMENT: Hand Held Coring unit and Geotechnical Terrier 2000 rig.

METHOD: Rotary core drilled (250mm) 0.00-0.50m. Hand dug inspection pit 0.50-1.00m.

CASING: None used.

BACKFILL: On completion, hole backfilled with arisings 1.00-0.50m and concrete 0.50-0.00m.

REMARKS: Hole terminated due to concrete obstruction.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.



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Geotechnical Engineering Limited

STANDARD PENETRATION TEST



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole no.	borehole depth (m)	s.w.p (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive		test drive		test type	N	energy ratio (%)
						blows	pen (mm)	blows	pen (mm)			
WS301	1.00		1.45	Nil	Dry	5 11	75 75	9 7 7 6	75 75 75 75	S	29	80
WS301	2.00		2.45	Nil	Dry	3 6	75 75	4 5 5 4	75 75 75 75	S	18	80
WS301	3.00		3.45	Nil	Dry	7 5	75 75	4 5 4 5	75 75 75 75	S	18	80
WS301	4.00		4.45	Nil	Dry	1 1	75 75	1 2 3 3	75 75 75 75	S	9	80
WS301	5.00		5.45	Nil	Damp	2 2	75 75	3 2 3 7	75 75 75 75	S	15	80
WS302	1.28		1.62	Nil	Dry	23 2	75 3	15 13 15 7	75 75 75 40	C	57	80
WS302	2.00		2.45	Nil	Dry	7 7	75 75	7 6 5 7	75 75 75 75	S	25	80
WS302	3.00		3.45	Nil	Dry	6 7	75 75	7 7 7 7	75 75 75 75	S	28	80
WS302	4.00		4.45	Nil	Dry	7 9	75 75	5 5 5 4	75 75 75 75	S	19	80
WS302	5.00		5.45	Nil	4.20	3 2	75 75	3 4 4 6	75 75 75 75	S	17	80
WS302	6.00		6.45	Nil	4.20	4 4	75 75	6 6 8 8	75 75 75 75	S	28	80
WS303	1.20		1.65	Nil	Dry	1 1	75 75	2 3 4 6	75 75 75 75	S	15	80
WS303	2.00		2.45	2.00	Dry	4 4	75 75	5 5 4 6	75 75 75 75	S	20	80
WS303	3.00		3.45	3.00	Dry	3 3	75 75	3 3 4 5	75 75 75 75	S	15	80
WS303	4.00		4.45	3.00	Dry	4 5	75 75	6 5 4 5	75 75 75 75	S	20	80
WS303	5.00		5.45	3.00	Dry	2 2	75 75	2 3 3 2	75 75 75 75	S	10	80
WS303	6.00		6.45	3.00	5.30	4 6	75 75	6 5 4 6	75 75 75 75	S	21	80
WS304	1.20		1.65	1.20	Dry	2 3	75 75	3 4 5 4	75 75 75 75	S	16	80
WS304	2.00		2.45	2.00	Dry	3 6	75 75	6 5 4 5	75 75 75 75	S	20	80
WS304	3.00		3.45	3.00	Dry	3 2	75 75	2 2 2 2	75 75 75 75	S	8	80
WS304	4.00		4.45	4.00	Dry	1 1	75 75	1 1 1 2	75 75 75 75	S	5	80
WS304	5.00		5.45	5.00	Damp	1 1	75 75	1 2 2 2	75 75 75 75	S	7	80
WS304	6.00		6.45	6.00	3.40	1 1	75 75	1 1 3 2	75 75 75 75	S	7	80
WS305A	1.00		1.45	Nil	Dry	2 5	75 75	8 10 12 20	75 75 75 75	S	50	80

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. s.w.p = self weight penetration.
3. N values have not been subjected to any correction.
4. Test carried out using split spoon S, solid cone C.
5. Where full test drive not completed, linearly extrapolated N value reported.
6. ** Denotes no effective penetration.

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Geotechnical Engineering Limited

STANDARD PENETRATION TEST



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole no.	borehole depth (m)	s.w.p (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive		test drive		test type	N	energy ratio (%)
						blows	pen (mm)	blows	pen (mm)			
WS307	1.00		1.22	Nil	Dry	8 17	75 75	28	72	C	117	80
WS307	2.00		2.45	Nil	Dry	12 12	75 75	10 12 10 12	75 75 75 75	S	44	80
WS307	3.00		3.45	Nil	Dry	6 7	75 75	6 11 10 10	75 75 75 75	S	37	80
WS307	4.00		4.45	Nil	Dry	6 4	75 75	2 3 4 4	75 75 75 75	S	13	80
WS307	5.00		5.45	Nil	Dry	4 3	75 75	4 3 2 4	75 75 75 75	S	13	80
WS307	6.00		6.45	Nil	Dry	4 5	75 75	5 4 4 4	75 75 75 75	S	17	80
WS310	1.20		1.65	Nil	Dry	4 6	75 75	7 6 5 6	75 75 75 75	S	24	80
WS310	2.00		2.45	2.00	Dry	5 5	75 75	6 5 6 7	75 75 75 75	S	24	80
WS310	3.00		3.45	2.00	Dry	3 5	75 75	4 3 4 3	75 75 75 75	S	14	80
WS310	4.00		4.45	2.00	Dry	3 3	75 75	4 4 3 5	75 75 75 75	S	16	80
WS310	5.00		5.45	2.00	Dry	3 2	75 75	3 7 6 4	75 75 75 75	S	20	80
WS310	6.00		6.45	2.00	Dry	3 3	75 75	4 3 5 6	75 75 75 75	S	18	80
WS311	1.20		1.46	Nil	Dry	22 3	75 3	17 22 11	75 75 35	S	81	80
WS311	2.00		2.45	Nil	Dry	3 5	75 75	5 3 4 6	75 75 75 75	S	18	80
WS311	3.00		3.45	Nil	Dry	4 7	75 75	6 6 5 7	75 75 75 75	S	24	80
WS311	4.00		4.45	Nil	Dry	4 4	75 75	5 8 6 3	75 75 75 75	S	22	80
WS311	5.00		5.45	Nil	4.60	2 3	75 75	6 5 5 7	75 75 75 75	S	23	80
WS311	6.00		6.45	Nil	4.60	3 3	75 75	2 2 2 2	75 75 75 75	S	8	80
WS314	1.20		1.65	Nil	Dry	1 1	75 75	1 1 1 1	75 75 75 75	S	4	80
WS314	2.00		2.45	2.00	Dry	3 4	75 75	4 3 4 4	75 75 75 75	S	15	80
WS314	3.00		3.45	3.00	Dry	3 2	75 75	2 2 2 2	75 75 75 75	S	8	80
WS314	4.00		4.45	4.00	Dry	1 1	75 75	1 1 1 1	75 75 75 75	S	4	80
WS314	5.00		5.45	5.00	4.63	2 1	75 75	1 2 2 2	75 75 75 75	S	7	80
WS314	6.00		6.45	6.00	4.63	1 2	75 75	2 1 1 3	75 75 75 75	S	7	80

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. s.w.p = self weight penetration.
3. N values have not been subjected to any correction.
4. Test carried out using split spoon S, solid cone C.
5. Where full test drive not completed, linearly extrapolated N value reported.
6. ** Denotes no effective penetration.

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STANDARD PENETRATION TEST

CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole no.	borehole depth (m)	s.w.p (m)	bottom depth (m)	casing depth (m)	water level (m)	seating drive		test drive		test type	N	energy ratio (%)
						blows	pen (mm)	blows	pen (mm)			
WS315	1.20		1.60	Nil	Dry	11 14	75 75	15 14 16 5	75 75 75 25	C	60	80
WS315	2.00		2.45	2.00	Dry	6 10	75 75	9 8 9 10	75 75 75 75	S	36	80
WS315	3.00		3.45	3.00	Dry	5 5	75 75	6 6 8 6	75 75 75 75	S	26	80
WS315	4.00		4.45	3.00	Dry	5 6	75 75	4 4 6 5	75 75 75 75	S	19	80
WS315	5.00		5.45	3.00	Dry	4 5	75 75	6 6 8 9	75 75 75 75	S	29	80
WS315	6.00		6.45	3.00	Dry	5 9	75 75	10 10 14 14	75 75 75 75	S	48	80
WS316	1.00		1.08	Nil	Dry	20 5	75 5	50	0	C	**	80

notes:

1. Test carried out in general accordance with BS EN ISO 22476-3:2005 + A1:2011
2. s.w.p = self weight penetration.
3. N values have not been subjected to any correction.
4. Test carried out using split spoon S, solid cone C.
5. Where full test drive not completed, linearly extrapolated N value reported.
6. ** Denotes no effective penetration.

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GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH301	Shallow	10/12/18 09:55:00	1021	0.00								0.0	7		
BH301	Shallow	10/12/18 09:56:00										0.0			
BH301	Shallow	10/12/18 09:57:00										0.0			
BH301	Shallow	10/12/18 09:58:00										0.0			
BH301	Shallow	10/12/18 09:59:00										0.0			
BH301	Shallow	10/12/18 10:00:00			0.3	0.0	18.7	0.0	0	10	0.0				
BH301	Shallow	10/12/18 10:01:00			0.3	0.0	18.7	0.0	0	10	0.0				
BH301	Shallow	10/12/18 10:02:00			0.3	0.0	18.6	0.0	0	10	0.0				
BH301	Shallow	10/12/18 10:03:00			0.3	0.0	18.6	0.0	0	10	0.0				
BH301	Shallow	10/12/18 10:04:00			0.3	0.0	18.6	0.0	0	10	0.0				
BH301	Shallow	10/12/18 10:05:00			0.3	0.0	18.6	0.0	0	10	0.0				
BH301	Shallow	10/12/18 10:06:00			0.3	0.0	18.6	0.0	0	10	0.0				
BH301	Shallow	10/12/18 10:07:00			0.3	0.0	18.5	0.0	0	10	0.0				
BH301	Shallow	10/12/18 10:08:00			0.3	0.0	18.5	0.0	0	10	0.0				
BH301	Shallow	10/12/18 10:09:00			0.3	0.0	18.5	0.0	0	10	0.0				
BH301	Shallow	10/12/18 10:10:00												Dry	
BH301	Shallow	17/12/18 09:55:00	1009	0.00								0.0	2		
BH301	Shallow	17/12/18 09:56:00										0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH301	Shallow	17/12/18 09:57:00										0.0			
BH301	Shallow	17/12/18 09:58:00										0.0			
BH301	Shallow	17/12/18 09:59:00										0.0			
BH301	Shallow	17/12/18 10:00:00			0.3	0.0	19.2	0.0	0	0	0.0				
BH301	Shallow	17/12/18 10:01:00			0.3	0.0	19.2	0.0	0	0	0.0				
BH301	Shallow	17/12/18 10:02:00			0.3	0.0	19.2	0.0	0	0	0.0				
BH301	Shallow	17/12/18 10:03:00			0.3	0.0	19.2	0.0	0	0	0.0				
BH301	Shallow	17/12/18 10:04:00			0.2	0.0	19.2	0.0	0	0	0.0				
BH301	Shallow	17/12/18 10:05:00			0.2	0.0	19.2	0.0	0	0	0.0				
BH301	Shallow	17/12/18 10:06:00			0.2	0.0	19.2	0.0	0	0	0.0				
BH301	Shallow	17/12/18 10:07:00			0.2	0.0	19.2	0.0	0	0	0.0				
BH301	Shallow	17/12/18 10:08:00			0.2	0.0	19.2	0.0	0	0	0.0				
BH301	Shallow	17/12/18 10:09:00			0.2	0.0	19.2	0.0	0	0	0.0				
BH301	Shallow	17/12/18 10:10:00												Dry	
BH301	Shallow	10/01/19 12:00:00	1032	-0.41								0.0	5		
BH301	Shallow	10/01/19 12:01:00										0.0			
BH301	Shallow	10/01/19 12:02:00										0.0			
BH301	Shallow	10/01/19 12:03:00										0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH301	Shallow	10/01/19 12:04:00	1012	0								0.0	4	Dry	
BH301	Shallow	10/01/19 12:05:00			0.2	0.0	20.7	0.0	0	0	0.0				
BH301	Shallow	10/01/19 12:06:00			0.2	0.0	20.7	0.0	0	0	0.0				
BH301	Shallow	10/01/19 12:07:00			0.2	0.0	20.7	0.0	0	0	0.0				
BH301	Shallow	10/01/19 12:08:00			0.2	0.0	20.7	0.0	0	0	0.0				
BH301	Shallow	10/01/19 12:09:00			0.1	0.0	20.8	0.0	0	0	0.0				
BH301	Shallow	10/01/19 12:10:00			0.1	0.0	20.8	0.0	0	0	0.0				
BH301	Shallow	10/01/19 12:11:00			0.1	0.0	20.8	0.0	0	0	0.0				
BH301	Shallow	10/01/19 12:12:00			0.1	0.0	20.8	0.0	0	0	0.0				
BH301	Shallow	10/01/19 12:13:00			0.1	0.0	20.8	0.0	0	0	0.0				
BH301	Shallow	10/01/19 12:14:00			0.1	0.0	20.8	0.0	0	0	0.0				
BH301	Shallow	10/01/19 12:15:00													
BH301	Shallow	21/01/19 15:17:00										0.0			
BH301	Shallow	21/01/19 15:18:00										0.0			
BH301	Shallow	21/01/19 15:19:00										0.0			
BH301	Shallow	21/01/19 15:20:00										0.0			
BH301	Shallow	21/01/19 15:21:00										0.0			
BH301	Shallow	21/01/19 15:22:00										0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH301	Shallow	21/01/19 15:23:00										0.0			
BH301	Shallow	21/01/19 15:24:00										0.0			
BH301	Shallow	21/01/19 15:25:00										0.0			
BH301	Shallow	21/01/19 15:26:00										0.0			
BH301	Shallow	21/01/19 15:27:00			0.1	0.0	20.3	0.0	0	0	0.0				
BH301	Shallow	21/01/19 15:28:00			0.1	0.0	20.1	0.0	0	0	0.0				
BH301	Shallow	21/01/19 15:29:00			0.1	0.0	20.0	0.0	0	0	0.0				
BH301	Shallow	21/01/19 15:30:00			0.1	0.0	19.9	0.0	0	0	0.0				
BH301	Shallow	21/01/19 15:31:00			0.1	0.0	19.9	0.0	0	0	0.0				
BH301	Shallow	21/01/19 15:32:00			0.1	0.0	20.0	0.0	0	0	0.0				
BH301	Shallow	21/01/19 15:33:00			0.1	0.0	19.9	0.0	0	0	0.0				
BH301	Shallow	21/01/19 15:34:00			0.1	0.0	20.0	0.0	0	0	0.0				
BH301	Shallow	21/01/19 15:35:00			0.1	0.0	20.0	0.0	0	0	0.0				
BH301	Shallow	21/01/19 15:36:00												Dry	
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks	
BH301	Deep	10/12/18 10:30:00												3.50	Unable to take water sample due to bend in pipe	
BH301	Deep	17/12/18 10:25:00												3.35		
BH301	Deep	10/01/19 12:16:00												3.44		
BH301	Deep	21/01/19 15:37:00												3.40		
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769		CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks	
BH303	Single	17/12/18 11:35:00												4.26	Unable to take water sample due to bend in pipe	
BH303	Single	10/01/19 11:55:00												4.31		
BH303	Single	21/01/19 15:00:00												4.30		
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769		CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH304	Shallow	17/12/18 11:40:00	1012	0.00								0.0	5		
BH304	Shallow	17/12/18 11:41:00										0.0			
BH304	Shallow	17/12/18 11:42:00										0.0			
BH304	Shallow	17/12/18 11:43:00										0.0			
BH304	Shallow	17/12/18 11:44:00										0.0			
BH304	Shallow	17/12/18 11:45:00			0.0	0.0	19.1	0.0	0	0	0.0				
BH304	Shallow	17/12/18 11:46:00			0.0	0.0	19.1	0.0	0	0	0.0				
BH304	Shallow	17/12/18 11:47:00			0.0	0.0	19.1	0.0	0	0	0.0				
BH304	Shallow	17/12/18 11:48:00			0.0	0.0	19.1	0.0	0	0	0.0				
BH304	Shallow	17/12/18 11:49:00			0.0	0.0	19.1	0.0	0	0	0.0				
BH304	Shallow	17/12/18 11:50:00			0.0	0.0	19.1	0.0	0	0	0.0				
BH304	Shallow	17/12/18 11:51:00			0.0	0.0	19.1	0.0	0	0	0.0				
BH304	Shallow	17/12/18 11:52:00			0.0	0.0	19.1	0.0	0	0	0.0				
BH304	Shallow	17/12/18 11:53:00			0.0	0.0	19.1	0.0	0	0	0.0				
BH304	Shallow	17/12/18 11:54:00			0.0	0.0	19.1	0.0	0	0	0.0				
BH304	Shallow	17/12/18 11:55:00													
BH304	Shallow	10/01/19 11:30:00	1032	-0.28								-0.1	5		
BH304	Shallow	10/01/19 11:31:00										0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH304	Shallow	10/01/19 11:32:00										0.0			
BH304	Shallow	10/01/19 11:33:00										0.0			
BH304	Shallow	10/01/19 11:34:00										0.0			
BH304	Shallow	10/01/19 11:35:00			0.0	0.0	21.0	0.0	0	0	0.0				
BH304	Shallow	10/01/19 11:36:00			0.0	0.0	21.0	0.0	0	0	0.0				
BH304	Shallow	10/01/19 11:37:00			0.0	0.0	21.0	0.0	0	0	0.0				
BH304	Shallow	10/01/19 11:38:00			0.0	0.0	21.0	0.0	0	0	0.0				
BH304	Shallow	10/01/19 11:39:00			0.0	0.0	21.0	0.0	0	0	0.0				
BH304	Shallow	10/01/19 11:40:00			0.0	0.0	21.0	0.0	0	0	0.0				
BH304	Shallow	10/01/19 11:41:00			0.0	0.0	21.0	0.0	0	0	0.0				
BH304	Shallow	10/01/19 11:42:00			0.0	0.0	21.0	0.0	0	0	0.0				
BH304	Shallow	10/01/19 11:43:00			0.0	0.0	21.0	0.0	0	0	0.0				
BH304	Shallow	10/01/19 11:44:00			0.0	0.0	21.0	0.0	0	0	0.0				
BH304	Shallow	10/01/19 11:45:00												Dry	
BH304	Shallow	21/01/19 13:37:00	1018	0								0.0	4		
BH304	Shallow	21/01/19 13:38:00										0.0			
BH304	Shallow	21/01/19 13:39:00										0.0			
BH304	Shallow	21/01/19 13:40:00										0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH304	Shallow	21/01/19 13:41:00										0.0			
BH304	Shallow	21/01/19 13:42:00										0.0			
BH304	Shallow	21/01/19 13:43:00										0.0			
BH304	Shallow	21/01/19 13:44:00										0.0			
BH304	Shallow	21/01/19 13:45:00										0.0			
BH304	Shallow	21/01/19 13:46:00										0.0			
BH304	Shallow	21/01/19 13:47:00			0.0	0.0	20.2	0.0	0	0	0.0				
BH304	Shallow	21/01/19 13:48:00			0.0	0.0	20.1	0.0	0	0	0.0				
BH304	Shallow	21/01/19 13:49:00			0.0	0.0	20.1	0.0	0	0	0.0				
BH304	Shallow	21/01/19 13:50:00			0.0	0.0	20.1	0.0	0	0	0.0				
BH304	Shallow	21/01/19 13:51:00			0.0	0.0	20.1	0.0	0	0	0.0				
BH304	Shallow	21/01/19 13:52:00			0.0	0.0	20.0	0.0	0	0	0.0				
BH304	Shallow	21/01/19 13:53:00			0.0	0.0	20.1	0.0	0	0	0.0				
BH304	Shallow	21/01/19 13:54:00			0.0	0.0	20.1	0.0	0	0	0.0				
BH304	Shallow	21/01/19 13:55:00			0.0	0.0	20.1	0.0	0	0	0.0				
BH304	Shallow	21/01/19 13:56:00			0.0	0.0	20.2	0.0	0	0	0.0				
BH304	Shallow	21/01/19 13:57:00												Dry	
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks	
BH304	Deep	17/12/18 12:10:00												5.33	Unable to take water sample due to bend in pipe	
BH304	Deep	10/01/19 11:46:00												5.45		
BH304	Deep	21/01/19 13:57:00												5.38		
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769		CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS301	Single	10/12/18 09:55:00	1025	0									9		
WS301	Single	10/12/18 09:56:00		0								0.0			
WS301	Single	10/12/18 09:57:00		0								0.0			
WS301	Single	10/12/18 09:58:00		0								0.0			
WS301	Single	10/12/18 09:59:00		0								0.0			
WS301	Single	10/12/18 10:00:00		0								0.0			
WS301	Single	10/12/18 10:01:00			0.5	0.0	19.5	0.0	0	0	0.4				
WS301	Single	10/12/18 10:02:00			0.5	0.0	19.4	0.0	0	0	0.6				
WS301	Single	10/12/18 10:03:00			0.5	0.0	19.4	0.0	0	0	0.6				
WS301	Single	10/12/18 10:04:00			0.5	0.0	19.4	0.0	0	0	0.4				
WS301	Single	10/12/18 10:05:00			0.5	0.0	19.4	0.0	0	0	0.1				
WS301	Single	10/12/18 10:06:00			0.5	0.0	19.4	0.0	0	0	0.0				
WS301	Single	10/12/18 10:07:00			0.5	0.0	19.4	0.0	0	0	0.0				
WS301	Single	10/12/18 10:08:00			0.5	0.0	19.4	0.0	0	0	0.0				
WS301	Single	10/12/18 10:09:00			0.5	0.0	19.4	0.0	0	0	0.0				
WS301	Single	10/12/18 10:10:00			0.5	0.0	19.4	0.0	0	0	0.0				
WS301	Single	10/12/18 10:11:00												Dry	
WS301	Single	17/12/18 12:35:00	1013	0.00								0.0	5		
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS301	Single	17/12/18 12:36:00		0.00								0.0			
WS301	Single	17/12/18 12:37:00		0.00								0.0			
WS301	Single	17/12/18 12:38:00		0.00								0.0			
WS301	Single	17/12/18 12:39:00		0.00								0.0			
WS301	Single	17/12/18 12:40:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS301	Single	17/12/18 12:41:00			0.0	0.0	20.0	0.0	0	0	0.0				
WS301	Single	17/12/18 12:42:00			0.0	0.0	20.0	0.0	0	0	0.0				
WS301	Single	17/12/18 12:43:00			0.0	0.0	20.1	0.0	0	0	0.0				
WS301	Single	17/12/18 12:44:00			0.0	0.0	20.1	0.0	0	0	0.0				
WS301	Single	17/12/18 12:45:00			0.0	0.0	20.1	0.0	0	0	0.0				
WS301	Single	17/12/18 12:46:00			0.0	0.0	20.1	0.0	0	0	0.0				
WS301	Single	17/12/18 12:47:00			0.0	0.0	20.1	0.0	0	0	0.0				
WS301	Single	17/12/18 12:48:00			0.0	0.0	20.1	0.0	0	0	0.0				
WS301	Single	17/12/18 12:49:00			0.0	0.0	20.1	0.0	0	0	0.0				
WS301	Single	17/12/18 12:50:00												Dry	
WS301	Single	10/01/19 11:10:00	1032	10.25								0.0	5		
WS301	Single	10/01/19 11:11:00										0.0			
WS301	Single	10/01/19 11:12:00										0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS301	Single	10/01/19 11:13:00										0.0			
WS301	Single	10/01/19 11:14:00										0.0			
WS301	Single	10/01/19 11:15:00			0.0	0.0	21.0	0.0	0	0	0.0				
WS301	Single	10/01/19 11:16:00			0.0	0.0	21.0	0.0	0	0	0.0				
WS301	Single	10/01/19 11:17:00			0.0	0.0	21.0	0.0	0	0	0.0				
WS301	Single	10/01/19 11:18:00			0.0	0.0	21.0	0.0	0	0	0.0				
WS301	Single	10/01/19 11:19:00			0.0	0.0	21.0	0.0	0	0	0.0				
WS301	Single	10/01/19 11:20:00			0.0	0.0	21.0	0.0	0	0	0.0				
WS301	Single	10/01/19 11:21:00			0.0	0.0	21.0	0.0	0	0	0.0				
WS301	Single	10/01/19 11:22:00			0.0	0.0	21.0	0.0	0	0	0.0				
WS301	Single	10/01/19 11:23:00			0.0	0.0	21.0	0.0	0	0	0.0				
WS301	Single	10/01/19 11:24:00			0.0	0.0	21.0	0.0	0	0	0.0				
WS301	Single	10/01/19 11:25:00													
WS301	Single	21/01/19 14:27:00	1015	0								0.0	4		
WS301	Single	21/01/19 14:28:00		0								0.0			
WS301	Single	21/01/19 14:29:00		0								0.0			
WS301	Single	21/01/19 14:30:00		0								0.0			
WS301	Single	21/01/19 14:31:00		0								0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS301	Single	21/01/19 14:32:00		-2								-0.6			
WS301	Single	21/01/19 14:33:00		0								0.0			
WS301	Single	21/01/19 14:34:00		0								0.0			
WS301	Single	21/01/19 14:35:00		0								0.0			
WS301	Single	21/01/19 14:36:00		0								0.0			
WS301	Single	21/01/19 14:37:00		0								0.0			
WS301	Single	21/01/19 14:38:00		0								0.0			
WS301	Single	21/01/19 14:39:00			0.0	0.0	20.6	0.0	0	0	0.0				
WS301	Single	21/01/19 14:40:00			0.0	0.0	20.6	0.0	0	0	0.0				
WS301	Single	21/01/19 14:41:00			0.0	0.0	20.6	0.0	0	0	0.0				
WS301	Single	21/01/19 14:42:00			0.0	0.0	20.6	0.0	0	0	0.0				
WS301	Single	21/01/19 14:43:00			0.0	0.0	20.6	0.0	0	0	0.0				
WS301	Single	21/01/19 14:44:00			0.0	0.0	20.6	0.0	0	0	0.0				
WS301	Single	21/01/19 14:45:00			0.0	0.0	20.6	0.0	0	0	0.0				
WS301	Single	21/01/19 14:46:00			0.0	0.0	20.6	0.0	0	0	0.0				
WS301	Single	21/01/19 14:47:00			0.0	0.0	20.6	0.0	0	0	0.0				
WS301	Single	21/01/19 14:48:00			0.0	0.0	20.6	0.0	0	0	0.0				
WS301	Single	21/01/19 14:49:00												Dry	
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS304	Single	10/12/18 10:15:00	1025	0									9		
WS304	Single	10/12/18 10:16:00										0.0			
WS304	Single	10/12/18 10:17:00										0.0			
WS304	Single	10/12/18 10:18:00										0.0			
WS304	Single	10/12/18 10:19:00										0.0			
WS304	Single	10/12/18 10:20:00										0.0			
WS304	Single	10/12/18 10:21:00			0.2	0.0	20.4	0.0	0	0	1.0				
WS304	Single	10/12/18 10:22:00			0.2	0.0	20.4	0.0	0	0	1.1				
WS304	Single	10/12/18 10:23:00			0.2	0.0	20.4	0.0	0	0	1.0				
WS304	Single	10/12/18 10:24:00			0.2	0.0	20.4	0.0	0	0	0.8				
WS304	Single	10/12/18 10:25:00			0.2	0.0	20.4	0.0	0	0	0.7				
WS304	Single	10/12/18 10:26:00			0.2	0.0	20.4	0.0	0	0	0.5				
WS304	Single	10/12/18 10:27:00			0.2	0.0	20.4	0.0	0	0	0.3				
WS304	Single	10/12/18 10:28:00			0.2	0.0	20.4	0.0	0	0	0.0				
WS304	Single	10/12/18 10:29:00			0.1	0.0	20.5	0.0	0	0	0.0				
WS304	Single	10/12/18 10:30:00			0.1	0.0	20.5	0.0	0	0	0.0				
WS304	Single	10/12/18 10:31:00												Dry	
WS304	Single	17/12/18 09:35:00	1009	0.00								0.0	2		
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS304	Single	17/12/18 09:36:00	1032	-0.15								0.0			
WS304	Single	17/12/18 09:37:00										0.0			
WS304	Single	17/12/18 09:38:00										0.0			
WS304	Single	17/12/18 09:39:00										0.0			
WS304	Single	17/12/18 09:40:00			0.2	0.0	20.1	0.0	0	0	0.0				
WS304	Single	17/12/18 09:41:00			0.2	0.0	20.0	0.0	0	0	0.0				
WS304	Single	17/12/18 09:42:00			0.2	0.0	20.0	0.0	0	0	0.0				
WS304	Single	17/12/18 09:43:00			0.2	0.0	20.0	0.0	0	0	0.0				
WS304	Single	17/12/18 09:44:00			0.2	0.0	20.0	0.0	0	0	0.0				
WS304	Single	17/12/18 09:45:00			0.2	0.0	20.0	0.0	0	0	0.0				
WS304	Single	17/12/18 09:46:00			0.2	0.0	20.0	0.0	0	0	0.0				
WS304	Single	17/12/18 09:47:00			0.2	0.0	20.0	0.0	0	0	0.0				
WS304	Single	17/12/18 09:48:00			0.2	0.0	20.0	0.0	0	0	0.0				
WS304	Single	17/12/18 09:49:00			0.2	0.0	20.0	0.0	0	0	0.0				
WS304	Single	17/12/18 09:50:00												Dry	
WS304	Single	10/01/19 10:45:00	1032	-0.15								0.0	5		
WS304	Single	10/01/19 10:46:00										0.0			
WS304	Single	10/01/19 10:47:00										0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS304	Single	10/01/19 10:48:00										0.0			
WS304	Single	10/01/19 10:49:00										0.0			
WS304	Single	10/01/19 10:50:00			0.2	0.0	20.8	0.0	0	0	0.0				
WS304	Single	10/01/19 10:51:00			0.2	0.0	20.8	0.0	0	0	0.0				
WS304	Single	10/01/19 10:52:00			0.2	0.0	20.9	0.0	0	0	0.0				
WS304	Single	10/01/19 10:53:00			0.2	0.1	20.9	1.0	0	0	0.0				
WS304	Single	10/01/19 10:54:00			0.2	0.1	20.9	1.0	0	0	0.0				
WS304	Single	10/01/19 10:55:00			0.2	0.1	21.0	1.0	0	0	0.0				
WS304	Single	10/01/19 10:56:00			0.2	0.1	21.0	1.0	0	0	0.0				
WS304	Single	10/01/19 10:57:00			0.2	0.1	21.0	1.0	0	0	0.0				
WS304	Single	10/01/19 10:58:00			0.2	0.1	21.0	1.0	0	0	0.0				
WS304	Single	10/01/19 10:59:00			0.2	0.1	21.0	1.0	0	0	0.0				
WS304	Single	10/01/19 11:00:00												Dry	
WS304	Single	21/01/19 15:50:00	1012	0								0.0	4		
WS304	Single	21/01/19 15:51:00										0.0			
WS304	Single	21/01/19 15:52:00										0.0			
WS304	Single	21/01/19 15:53:00										0.0			
WS304	Single	21/01/19 15:54:00										0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS304	Single	21/01/19 15:55:00										0.0			
WS304	Single	21/01/19 15:56:00										0.0			
WS304	Single	21/01/19 15:57:00										0.0			
WS304	Single	21/01/19 15:58:00										0.0			
WS304	Single	21/01/19 15:59:00										0.0			
WS304	Single	21/01/19 16:00:00										0.0			
WS304	Single	21/01/19 16:01:00										0.0			
WS304	Single	21/01/19 16:02:00			0.0	0.0	20.3	0.0	0	0	0.0				
WS304	Single	21/01/19 16:03:00			0.0	0.0	20.3	0.0	0	0	0.0				
WS304	Single	21/01/19 16:04:00			0.0	0.0	20.3	0.0	0	0	0.0				
WS304	Single	21/01/19 16:05:00			0.0	0.0	20.3	0.0	0	0	0.0				
WS304	Single	21/01/19 16:06:00			0.0	0.0	20.3	0.0	0	0	0.0				
WS304	Single	21/01/19 16:07:00			0.0	0.0	20.4	0.0	0	0	0.0				
WS304	Single	21/01/19 16:08:00			0.0	0.0	20.3	0.0	0	0	0.0				
WS304	Single	21/01/19 16:09:00			0.0	0.0	20.4	0.0	0	0	0.0				
WS304	Single	21/01/19 16:10:00			0.0	0.0	20.4	0.0	0	0	0.0				
WS304	Single	21/01/19 16:11:00			0.0	0.0	20.3	0.0	0	0	0.0				
WS304	Single	21/01/19 16:12:00			0.0	0.0	20.3	0.0	0	0	0.0			Dry	
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS310	Single	17/12/18 13:45:00	1012	0.00								0.0	5		
WS310	Single	17/12/18 13:46:00		0.00								0.0			
WS310	Single	17/12/18 13:47:00		0.00								0.0			
WS310	Single	17/12/18 13:48:00		0.00								0.0			
WS310	Single	17/12/18 13:49:00		0.00								0.0			
WS310	Single	17/12/18 13:50:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS310	Single	17/12/18 13:51:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS310	Single	17/12/18 13:52:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS310	Single	17/12/18 13:53:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS310	Single	17/12/18 13:54:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS310	Single	17/12/18 13:55:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS310	Single	17/12/18 13:56:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS310	Single	17/12/18 13:57:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS310	Single	17/12/18 13:58:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS310	Single	17/12/18 13:59:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS310	Single	17/12/18 14:00:00												Dry	
WS310	Single	10/01/19 10:20:00	1032	-0.14								0.0	3		
WS310	Single	10/01/19 10:21:00										0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS310	Single	10/01/19 10:22:00										0.0			
WS310	Single	10/01/19 10:23:00										0.0			
WS310	Single	10/01/19 10:24:00										0.0			
WS310	Single	10/01/19 10:25:00			0.0	0.0	20.7	0.0	0	0	0.0				
WS310	Single	10/01/19 10:26:00			0.0	0.0	20.7	0.0	0	0	0.0				
WS310	Single	10/01/19 10:27:00			0.0	0.0	20.7	0.0	0	0	0.0				
WS310	Single	10/01/19 10:28:00			0.0	0.0	20.7	0.0	0	0	0.0				
WS310	Single	10/01/19 10:29:00			0.0	0.0	20.7	0.0	0	0	0.0				
WS310	Single	10/01/19 10:30:00			0.0	0.0	20.7	0.0	0	0	0.0				
WS310	Single	10/01/19 10:31:00			0.0	0.0	20.7	0.0	0	0	0.0				
WS310	Single	10/01/19 10:32:00			0.0	0.0	20.7	0.0	0	0	0.0				
WS310	Single	10/01/19 10:33:00			0.0	0.0	20.7	0.0	0	0	0.0				
WS310	Single	10/01/19 10:34:00			0.0	0.0	20.7	0.0	0	0	0.0				
WS310	Single	10/01/19 10:35:00												Dry	
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS311	Single	17/12/18 13:30:00	1012	0.00								0.0	5		
WS311	Single	17/12/18 13:31:00		0.00								0.0			
WS311	Single	17/12/18 13:32:00		0.00								0.0			
WS311	Single	17/12/18 13:33:00		0.00								0.0			
WS311	Single	17/12/18 13:34:00		0.00								0.0			
WS311	Single	17/12/18 13:35:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS311	Single	17/12/18 13:36:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS311	Single	17/12/18 13:37:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS311	Single	17/12/18 13:38:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS311	Single	17/12/18 13:39:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS311	Single	17/12/18 13:40:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS311	Single	17/12/18 13:41:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS311	Single	17/12/18 13:42:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS311	Single	17/12/18 13:43:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS311	Single	17/12/18 13:44:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS311	Single	17/12/18 13:45:00													
WS311	Single	10/01/19 10:00:00	1033	-0.38								-0.1	3	Dry	
WS311	Single	10/01/19 10:01:00										0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS311	Single	10/01/19 10:02:00										0.0			
WS311	Single	10/01/19 10:03:00										0.0			
WS311	Single	10/01/19 10:04:00										0.0			
WS311	Single	10/01/19 10:05:00			0.0	0.1	20.8	1.0	0	0	0.0				
WS311	Single	10/01/19 10:06:00			0.0	0.1	20.8	1.0	0	0	0.0				
WS311	Single	10/01/19 10:07:00			0.1	0.1	20.8	1.0	0	0	0.0				
WS311	Single	10/01/19 10:08:00			0.1	0.1	20.8	1.0	0	0	0.0				
WS311	Single	10/01/19 10:09:00			0.1	0.1	20.8	1.0	0	0	0.0				
WS311	Single	10/01/19 10:10:00			0.1	0.1	20.8	1.0	0	0	0.0				
WS311	Single	10/01/19 10:11:00			0.1	0.1	20.8	1.0	0	0	0.0				
WS311	Single	10/01/19 10:12:00			0.1	0.1	20.8	1.0	0	0	0.0				
WS311	Single	10/01/19 10:13:00			0.1	0.1	20.8	1.0	0	0	0.0				
WS311	Single	10/01/19 10:14:00			0.1	0.1	20.8	1.0	0	0	0.0				
WS311	Single	10/01/19 10:15:00												Dry	
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks	
WS314	Single	17/12/18 09:20:00	1011	0.00								0.0	2			
WS314	Single	17/12/18 09:21:00		0.00								0.0				
WS314	Single	17/12/18 09:22:00		0.00								0.0				
WS314	Single	17/12/18 09:23:00		0.00								0.0				
WS314	Single	17/12/18 09:24:00		0.00								0.0				
WS314	Single	17/12/18 09:25:00			0.3	0.0	19.8	0.0	0	0	0.0					
WS314	Single	17/12/18 09:26:00			0.3	0.0	19.8	0.0	0	0	0.0					
WS314	Single	17/12/18 09:27:00			0.3	0.0	19.8	0.0	0	0	0.0					
WS314	Single	17/12/18 09:28:00			0.3	0.0	19.8	0.0	0	0	0.0					
WS314	Single	17/12/18 09:29:00			0.3	0.0	19.8	0.0	0	0	0.0					
WS314	Single	17/12/18 09:30:00			0.3	0.0	19.8	0.0	0	0	0.0					
WS314	Single	17/12/18 09:31:00			0.3	0.0	19.8	0.0	0	0	0.0					
WS314	Single	17/12/18 09:32:00			0.3	0.0	19.8	0.0	0	0	0.0					
WS314	Single	17/12/18 09:33:00			0.3	0.0	19.8	0.0	0	0	0.0					
WS314	Single	17/12/18 09:34:00			0.3	0.0	19.8	0.0	0	0	0.0					
WS314	Single	17/12/18 09:35:00											Dry			
WS314	Single	10/01/19 12:25:00	1032	-0.22								0.0	5			
WS314	Single	10/01/19 12:26:00														0.0
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769		CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS314	Single	10/01/19 12:27:00										0.0			
WS314	Single	10/01/19 12:28:00										0.0			
WS314	Single	10/01/19 12:29:00										0.0			
WS314	Single	10/01/19 12:30:00			0.2	0.0	21.0	0.0	0	0	0.0				
WS314	Single	10/01/19 12:31:00			0.2	0.0	21.0	0.0	0	0	0.0				
WS314	Single	10/01/19 12:32:00			0.2	0.0	21.0	0.0	0	0	0.0				
WS314	Single	10/01/19 12:33:00			0.2	0.0	21.0	0.0	0	0	0.0				
WS314	Single	10/01/19 12:34:00			0.2	0.0	21.0	0.0	0	0	0.0				
WS314	Single	10/01/19 12:35:00			0.2	0.0	21.0	0.0	0	0	0.0				
WS314	Single	10/01/19 12:36:00			0.2	0.0	21.0	0.0	0	0	0.0				
WS314	Single	10/01/19 12:37:00			0.2	0.0	21.0	0.0	0	0	0.0				
WS314	Single	10/01/19 12:38:00			0.2	0.0	21.0	0.0	0	0	0.0				
WS314	Single	10/01/19 12:39:00			0.2	0.0	21.0	0.0	0	0	0.0				
WS314	Single	10/01/19 12:40:00												Dry	
WS314	Single	21/01/19 16:17:00	1013	0								0.0	4		
WS314	Single	21/01/19 16:18:00	1013	0								0.0			
WS314	Single	21/01/19 16:19:00	1013	0								0.0			
WS314	Single	21/01/19 16:20:00	1013	0								0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS314	Single	21/01/19 16:21:00	1013	0								0.0			
WS314	Single	21/01/19 16:22:00	1013	0								0.0			
WS314	Single	21/01/19 16:23:00	1012	0								0.0			
WS314	Single	21/01/19 16:24:00	1012	0								0.0			
WS314	Single	21/01/19 16:25:00	1012	0								0.0			
WS314	Single	21/01/19 16:26:00	1012	0								0.0			
WS314	Single	21/01/19 16:27:00			0.4	0.0	19.8								
WS314	Single	21/01/19 16:28:00			0.4	0.0	19.8								
WS314	Single	21/01/19 16:29:00			0.4	0.0	19.7	0.0	0	0	0.0				
WS314	Single	21/01/19 16:30:00			0.4	0.0	19.7	0.0	0	0	0.0				
WS314	Single	21/01/19 16:31:00			0.4	0.0	19.7	0.0	0	0	0.0				
WS314	Single	21/01/19 16:32:00			0.4	0.0	19.7	0.0	0	0	0.0				
WS314	Single	21/01/19 16:33:00			0.4	0.0	19.7	0.0	0	0	0.0				
WS314	Single	21/01/19 16:34:00			0.4	0.0	19.7	0.0	0	0	0.0				
WS314	Single	21/01/19 16:35:00			0.4	0.0	19.7	0.0	0	0	0.0				
WS314	Single	21/01/19 16:36:00			0.4	0.0	19.7	0.0	0	0	0.0				
WS314	Single	21/01/19 16:37:00			0.4	0.0	19.7	0.0	0	0	0.0			Dry	
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS315	Single	17/12/18 13:05:00	1012	0.00								0.0	5		
WS315	Single	17/12/18 13:06:00		0.00								0.0			
WS315	Single	17/12/18 13:07:00		0.00								0.0			
WS315	Single	17/12/18 13:08:00		0.00								0.0			
WS315	Single	17/12/18 13:09:00		0.00								0.0			
WS315	Single	17/12/18 13:10:00			0.0	0.0	20.0	0.0	0	0	0.0				
WS315	Single	17/12/18 13:11:00			0.0	0.0	19.9	0.0	0	0	0.0				
WS315	Single	17/12/18 13:12:00			0.0	0.0	20.0	0.0	0	0	0.0				
WS315	Single	17/12/18 13:13:00			0.0	0.0	20.0	0.0	0	0	0.0				
WS315	Single	17/12/18 13:14:00			0.0	0.0	20.0	0.0	0	0	0.0				
WS315	Single	17/12/18 13:15:00			0.0	0.0	20.0	0.0	0	0	0.0				
WS315	Single	17/12/18 13:16:00			0.0	0.0	20.0	0.0	0	0	0.0				
WS315	Single	17/12/18 13:17:00			0.0	0.0	20.0	0.0	0	0	0.0				
WS315	Single	17/12/18 13:18:00			0.0	0.0	20.0	0.0	0	0	0.0				
WS315	Single	17/12/18 13:19:00			0.0	0.0	20.0	0.0	0	0	0.0				
WS315	Single	17/12/18 13:20:00												Dry	
WS315	Single	10/01/19 10:45:00	1032	-0.21								0.0	3		
WS315	Single	10/01/19 10:46:00										0.0			
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED

GAS AND GROUNDWATER LEVELS

CLIENT: SH READING MASTER LLP

SITE: STATION HILL, READING

Borehole /trial pit no.	install	date and time	barometric pressure (mb)	pressure differentiation (mm H ₂ O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	carbon monoxide (ppm)	VOC (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
WS315	Single	10/01/19 10:47:00										0.0			
WS315	Single	10/01/19 10:48:00										0.0			
WS315	Single	10/01/19 10:49:00										0.0			
WS315	Single	10/01/19 10:50:00			0.0	0.0	20.8	0.0	0	0	0.0				
WS315	Single	10/01/19 10:51:00			0.0	0.0	20.8	0.0	0	0	0.0				
WS315	Single	10/01/19 10:52:00			0.0	0.1	20.8	1.0	0	0	0.0				
WS315	Single	10/01/19 10:53:00			0.0	0.1	20.8	1.0	0	0	0.0				
WS315	Single	10/01/19 10:54:00			0.0	0.1	20.8	1.0	0	0	0.0				
WS315	Single	10/01/19 10:55:00			0.0	0.0	20.8	0.0	0	0	0.0				
WS315	Single	10/01/19 10:56:00			0.0	0.0	20.8	0.0	0	0	0.0				
WS315	Single	10/01/19 10:57:00			0.0	0.0	20.8	0.0	0	0	0.0				
WS315	Single	10/01/19 10:58:00			0.0	0.0	20.8	0.0	0	0	0.0				
WS315	Single	10/01/19 10:59:00			0.0	0.0	20.8	0.0	0	0	0.0				
WS315	Single	10/01/19 11:00:00												Dry	
remarks # denotes result exceeding capacity of gas monitoring equipment Equipment used - Gas Data GFM 435 Gas Analyser														CONTRACT 34769	CHECKED



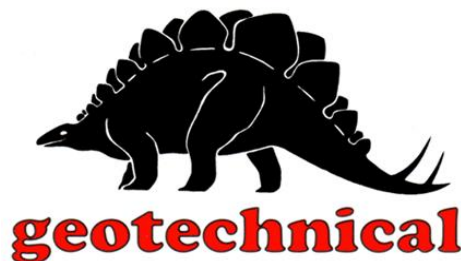
APPENDIX B

LABORATORY TESTING



2718

GEOTECHNICAL ENGINEERING LIMITED



For the attention of Dave Owen/Andrew Tatnell

Version No. 2

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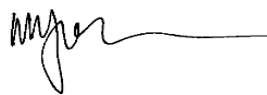
Date of Issue 31/01/2019

TEST REPORT

PROJECT/SITE	STATION HILL, READING	Samples received	10/12/2018
GEL REPORT NUMBER	34769	Schedule received	10/12/2018
Your ref/PO:		Testing commenced	13/12/2018
Test report refers to	Schedule A	Status	Incomplete

SUMMARY OF RESULTS ATTACHED

TEST METHOD & DESCRIPTION	QUANTITY	ACCREDITED TEST
BS EN ISO 17892-1: 2014:5. Water Content	13	YES
BS1377: Part 2: 1990:4.2-4.4&5.2-5.4, Liquid & Plastic Limits	8	YES
BS1377: Part 2: 1990:4.5-4.6&5.2-5.4, Liquid (Casagrande Method) & Plastic Limits	1	NO
BS1377: Part 2: 1990:3.3, Saturation Moisture Content	10	YES
BS EN ISO 17892-2: 2014:5.1 Density - Linear Measurement	2	YES
BS EN ISO 17892-3: 2015:5, Particle Density - Pycnometer	2	YES
BS EN ISO 17892-4: 2016: 5.2, Particle Size Distribution - Wet Sieve	13	YES
BS EN ISO 17892-4: 2016: 5.4, Particle Size Distribution - Pipette	12	YES
ISRM: Suggested Methods: Water Content of Rock	3	NO
ISRM: Suggested Methods: 1981: Uniaxial Compressive Strength of Rock	2	YES
ISRM: 2007: Point Load Strength Test	128	YES
BRE SD1 Suite (Subcontracted)	8	YES/NO
Organic Matter Content (subcontracted)	3	YES

Remarks This report may not be partially reproduced without written permission from this laboratory.	Approved Signatories: W Jones (Lab Manager) E Crimp (Senior Engineer) W Jones (Technical Support) J Hanson (Director) N Parry (Director) 
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Doc TR01 Rev No. 20 Revision date 09/10/17 DC:JH

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Sort code: 16-22-11 Bank account: 11125135

LIQUID AND PLASTIC LIMITS

BS.1377 : PART 2 : 1990 : 4 and 5



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SITE STATION HILL, READING

borehole /trial pit no.	sample		specimen depth (m)	natural water content (%)	specimen preparation and test method	fraction >0.425 mm (%)	liquid limit (%)	plastic limit (%)	plasticity index (%)	description and remarks	
	no./type	depth (m)									
BH301	6B	2.80	2.80	26.8	BXE	49	31	25	6	Off white slightly sandy gravelly SILT (chalk)	
BH301	8B	4.00	4.00	21.5	BXE	43	32	25	7	Off white slightly sandy gravelly SILT (chalk)	
BH301	9D	4.50	4.50	30.1	E					Off white slightly sandy slightly gravelly SILT (chalk)	
BH301	11D	6.00	6.00	28.9	E					Off white slightly sandy slightly gravelly SILT (chalk)	
BH303	2B	1.00	1.00	18.3	BYE	62	34	25	9	Off white mottled brown slightly sandy gravelly SILT (chalk)	
BH303	4B	2.00	2.00	25.9	BZE	40	31	26	5	Off white slightly sandy slightly gravelly SILT (chalk)	
BH303	6L	3.00	3.80	24.9	BXE	59	30	22	8	Off white slightly sandy gravelly SILT (chalk)	
BH303	7B	3.00	3.00	27.1	BXE	51	30	23	7	Off white slightly sandy gravelly SILT (chalk)	
BH303	8D	4.50	4.50	25.8	E					Off white slightly sandy slightly gravelly SILT (chalk)	
BH304	4B	2.00	2.00	19.7	BYE	52	29	21	8	Off white mottled brown slightly sandy gravelly SILT (chalk)	
BH304	6B	3.00	3.00	21.3	BXE	45	28	22	6	Off white slightly sandy gravelly SILT (chalk)	
BH304	7L	3.00	3.80	24.8	BYE	50	30	23	7	Off white slightly sandy grvaelly SILT (chalk)	
BH304	20D	12.60	12.60	22.9	E					Off white slightly sandy slightly gravelly SILT (chalk)	
general remarks natural water content determined in accordance with BS EN ISO 17892 - 1 : 2014 (unless specified) NP denotes non plastic # denotes sample tested is smaller than that which is recommended in accordance with BS1377 or BS EN ISO 17892											
specimen preparation A - as received B - washed on 0.425mm sieve C - air dried							test method X - cone penetrometer (test 4.3) Y - cone penetrometer (test 4.4) Z - casagrande apparatus (test 4.5)			CONTRACT 34769	CHECKED TB

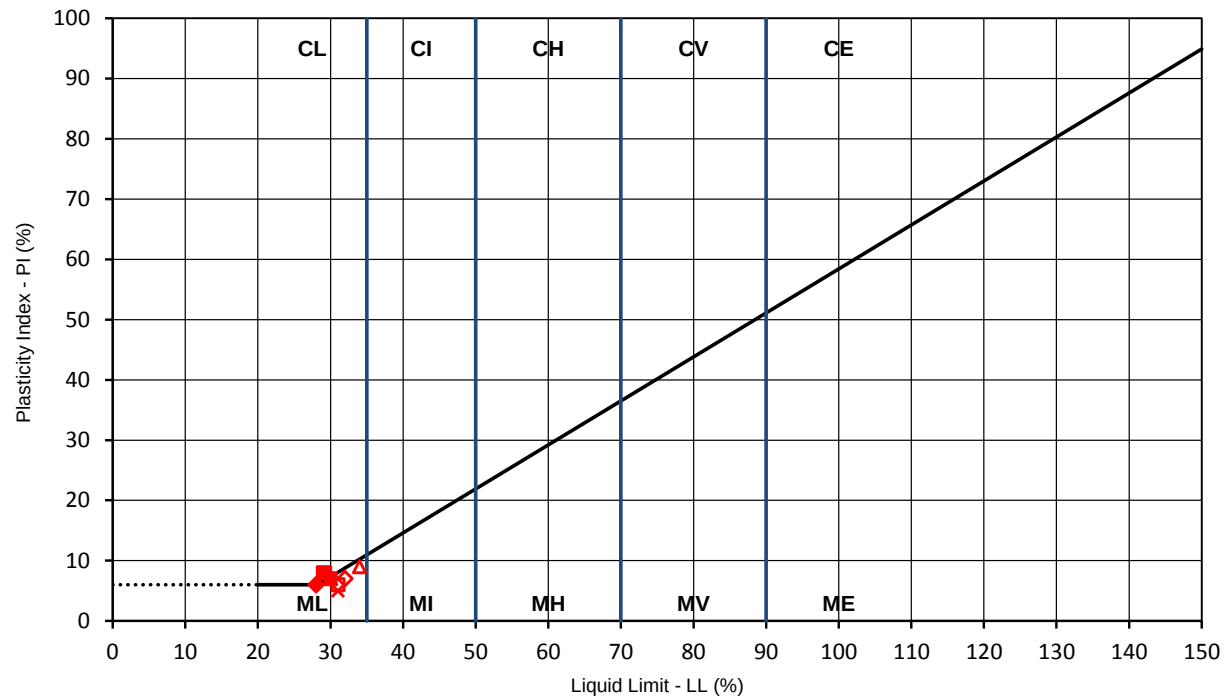
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ATTERBERG LINE PLOT



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SITE STATION HILL, READING



BH/TP No.		depth (m)	LL	PL	PI	remarks
□	BH301	2.80	31	25	6	
◇	BH301	4.00	32	25	7	
△	BH303	1.00	34	25	9	
×	BH303	2.00	31	26	5	
+	BH303	3.80	30	22	8	
○	BH303	3.00	30	23	7	
■	BH304	2.00	29	21	8	
◆	BH304	3.00	28	22	6	
▲	BH304	3.80	30	23	7	

CONTRACT	CHECKED
34769	TB

SATURATION MOISTURE CONTENT OF CHALK

BS.1377 : PART 2 : 1990 : 3.3



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole /trial pit no.	sample		specimen depth (m)	natural moisture content (%)	bulk density (Mg/m ³)	dry density (Mg/m ³)	saturation moisture content (%)	porosity (%)	description and remarks
	no./type	depth (m)							
BH301	10L	4.50	5.50	23.70	1.95	1.58	26	42	White CHALK #
BH301	14C	7.50	8.90	25.50	1.95	1.55	27	42	White CHALK
BH301	16C	9.00	9.50	25.90	1.95	1.55	28	43	White CHALK
BH301	18C	10.50	11.80	25.40	1.93	1.54	28	43	White CHALK #
BH303	7B	3.00	3.00	21.70	1.99	1.64	24	39	White CHALK #
BH303	14C	9.00	10.15	25.50	1.94	1.54	28	43	White CHALK
BH304	11C	5.50	6.30	25.00	1.92	1.54	28	43	White CHALK #
BH304	27C	17.10	18.40	25.70	1.97	1.56	27	42	White CHALK
BH304	31C	20.10	20.40	23.70	1.99	1.61	25	40	White CHALK
BH304	33C	21.60	22.00	22.20	2.03	1.66	23	39	White CHALK
general remarks natural moisture content determined in accordance with BS1377 : Part 2 : 1990 : 3.2 (unless specified) # denotes sample tested is smaller than that which is recommended in accordance with BS1377									
test method immersion in water (test 3.3)								CONTRACT 34769	CHECKED TB

DENSITY (LINEAR MEASUREMENT METHOD)

BS EN ISO 17892 - 2 : 2014 Clause 5.1



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole /trial pit no.	sample		specimen depth (m)	test method	natural water content (%)	bulk density (Mg/m3)	dry density (Mg/m3)	description and remarks
	no./type	depth (m)						
BH304	10D	5.50	5.50	A	28	1.92	1.50	White slightly sandy slightly gravelly SILT (chalk)
BH304	12D	7.00	7.00	A	27.2	1.90	1.49	White slightly sandy slightly gravelly SILT (chalk)
general remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN ISO 17892 - 2 : 2014								
test method A - linear measurement (5.1) B - immersion in fluid (5.2) C - fluid displacement (5.3)							CONTRACT 34769	CHECKED TB

PARTICLE DENSITY - PYCNOMETER METHOD

BS EN ISO 17892 - 3 : 2015 : 5



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole /trial pit no.	sample		specimen depth (m)	test method	mean particle density Mg/m3	description and remarks
	no./type	depth (m)				
BH303	10D	6.00	6.00	SP	2.72	Off white mottled brown slightly sandy slightly gravelly SILT (chalk)
BH304	11C	5.50	5.80	SP	2.73	Off white slightly sandy slightly gravelly SILT (chalk)
general remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN ISO 17892						
test method SP - small pycnometer ~ 50ml (test 5.1) LP - large pycnometer ~ 100ml (test 5.1)					CONTRACT 34769	CHECKED TB

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892 - 4 : 2016 : 5



CLIENT SH READING MASTER LLP

BH/TP No.

BH301

SITE STATION HILL, READING

SAMPLE No./TYPE

5B

DESCRIPTION Off white and brown sandy very silty GRAVEL with medium cobble content

SAMPLE DEPTH (m)

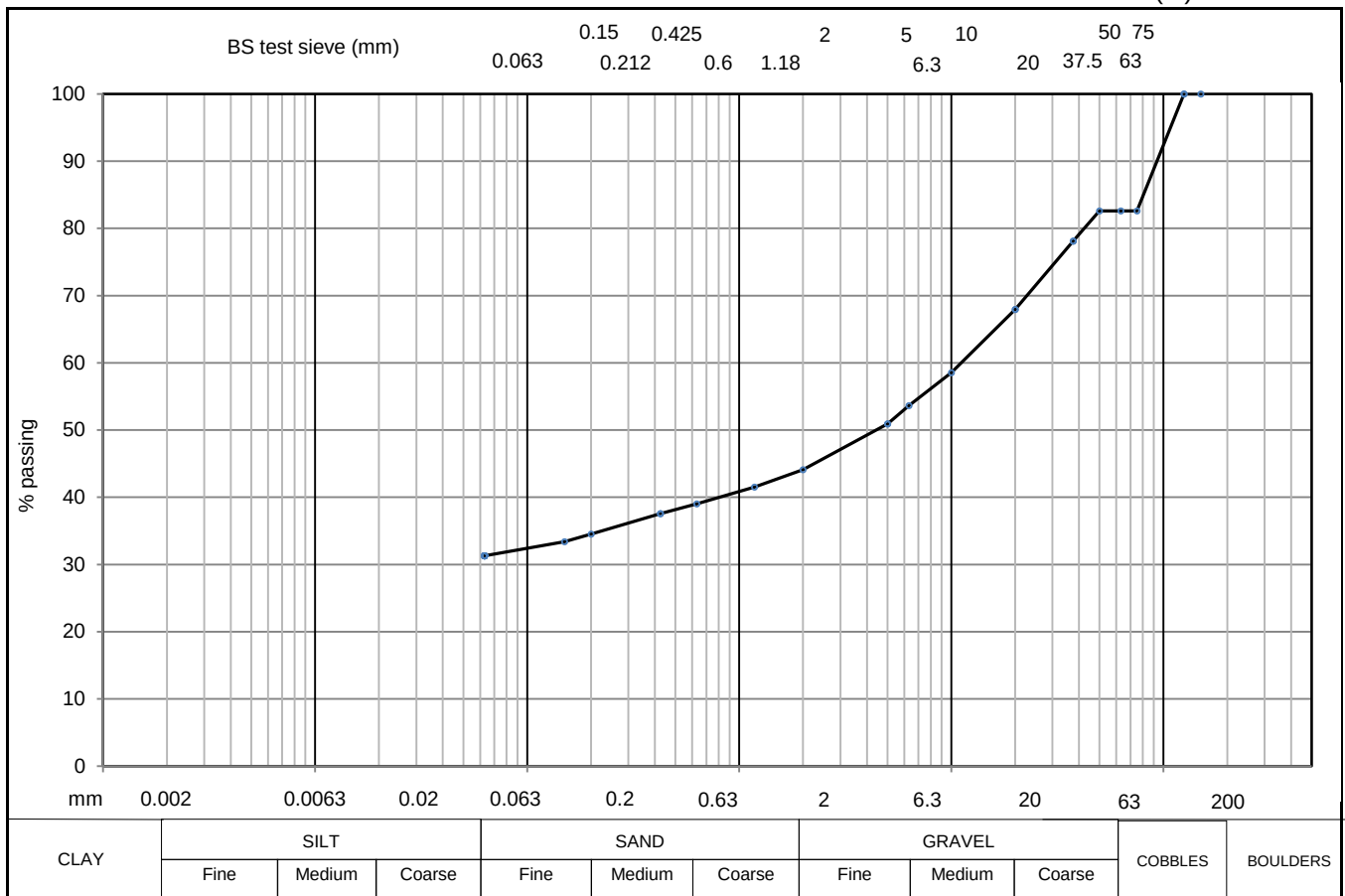
1.80

SPECIMEN TOP (m)

1.80

SPECIMEN BASE (m)

N/A



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY							
SILT		150	100	5	51	20	
SILT & CLAY	31						
SAND	13	75	83	2	44	6	
GRAVEL	38						
COBBLE & BOULDER	17	63	83	1.18	42	2	
test method(s)	5.2#	50	83	0.63	39		
test method		37.5	78	0.425	38		
5.2 - sieving		20	68	0.2	35		
5.3 - sedimentation by hydrometer		10	59	0.15	33		
5.4 - sedimentation by pipette		6.3	54	0.063	31		
remarks	# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3					CONTRACT	CHECKED
						34769	TB



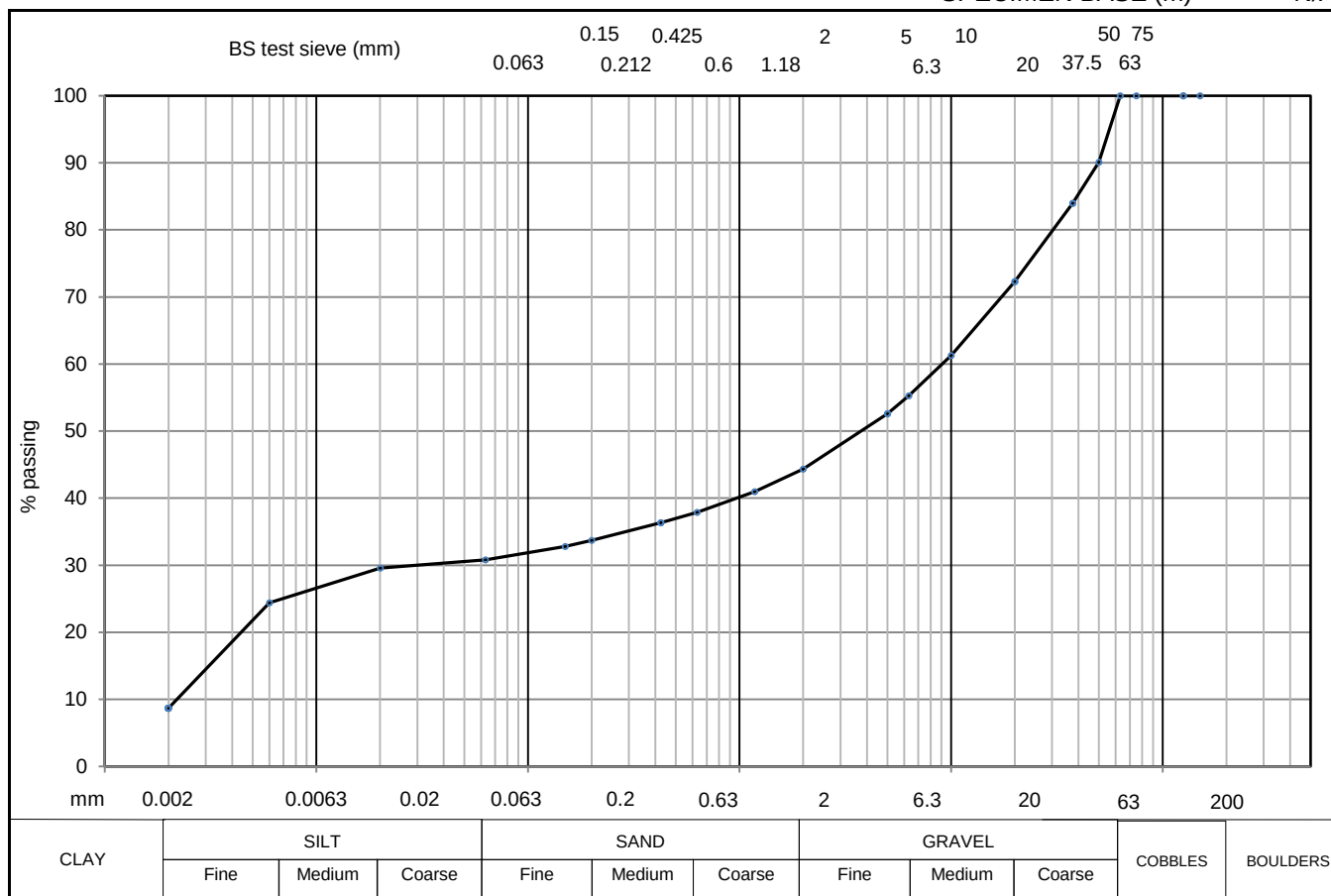
BH/TP No. BH301

SAMPLE No./TYPE 6B

SAMPLE DEPTH (m) 2.80

SPECIMEN TOP (m) 2.80

SPECIMEN BASE (m)	N/A
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soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	9	150	100	5	53	20	30
SILT	22						
SILT & CLAY	31						
SAND	14						
GRAVEL	56						
COBBLE & BOULDER	0						
test method(s)	5.2 & 5.4	63	90	1.18	41	2	9
test method		50	90	0.63	38		
5.2 - sieving		37.5	84	0.425	36		
5.3 - sedimentation by hydrometer		20	72	0.2	34		
5.4 - sedimentation by pipette		10	61	0.15	33		
		6.3	55	0.063	31		
remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3					CONTRACT 34769		CHECKED TB

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892 - 4 : 2016 : 5



CLIENT SH READING MASTER LLP

BH/TP No.

BH301

SITE STATION HILL, READING

SAMPLE No./TYPE

8B

DESCRIPTION Off white sandy very silty GRAVEL with medium cobble content (chalk)

SAMPLE DEPTH (m)

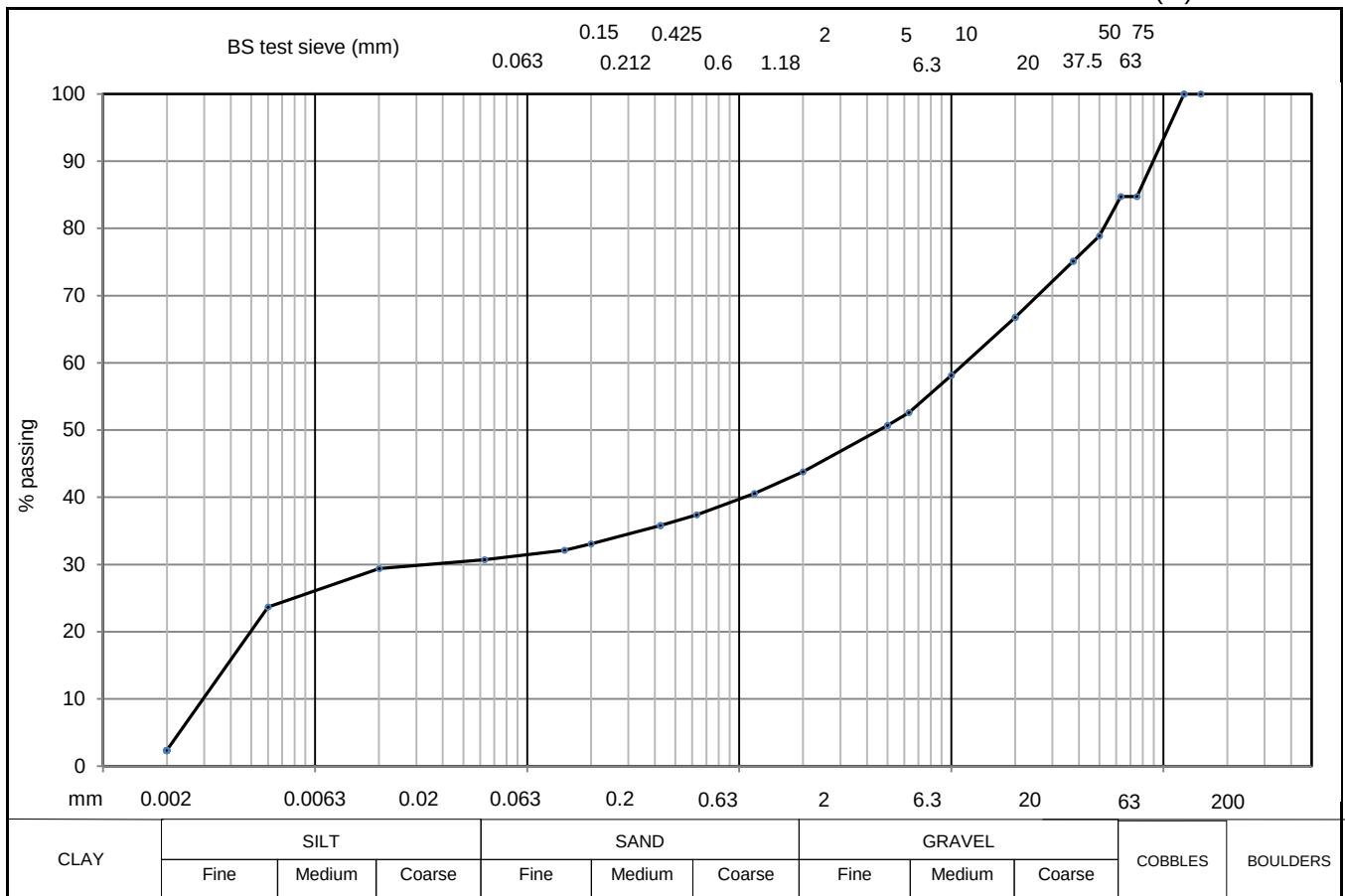
4.00

SPECIMEN TOP (m)

4.00

SPECIMEN BASE (m)

N/A



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	2						
SILT	28	150	100	5	51	20	29
SILT & CLAY	31						
SAND	13	75	85	2	44	6	24
GRAVEL	41						
COBBLE & BOULDER	15	63	85	1.18	41	2	2
test method(s)	5.2# & 5.4	50	79	0.63	37		
test method		37.5	75	0.425	36		
5.2 - sieving		20	67	0.2	33		
5.3 - sedimentation by hydrometer		10	58	0.15	32		
5.4 - sedimentation by pipette		6.3	53	0.063	31		
remarks	# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3					CONTRACT	CHECKED
						34769	TB



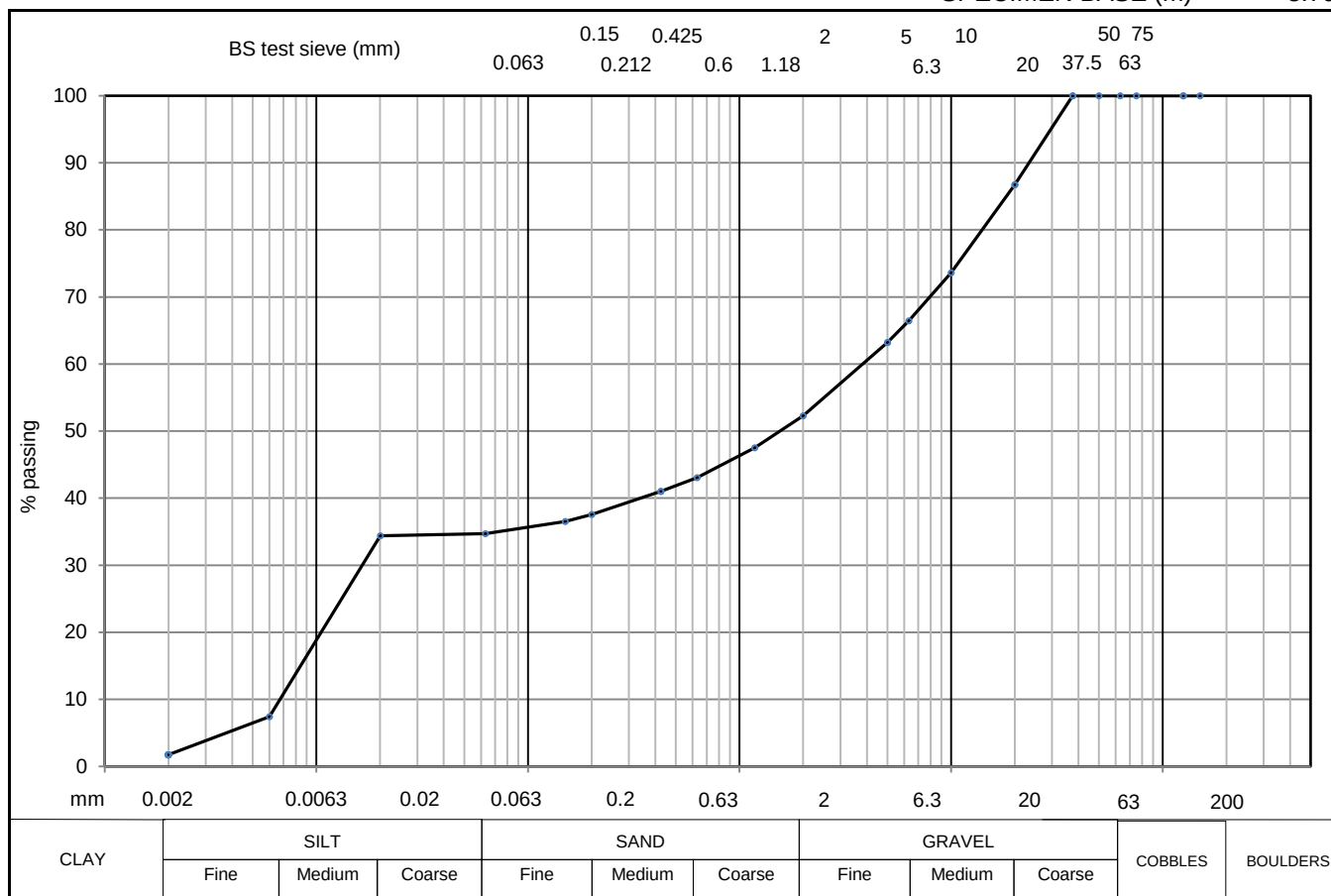
BH/TP No. BH303

SAMPLE No./TYPE 6L

SAMPLE DEPTH (m) 3.00

SPECIMEN TOP (m) 3.60

SPECIMEN BASE (m) 3.70



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	2	150		5	63	20	34
SILT	33						
SILT & CLAY	35						
SAND	18						
GRAVEL	48						
COBBLE & BOULDER	0	63	100	1.18	48	2	2
test method(s)	5.2 & 5.4	50		0.63	43		
test method		37.5		0.425	41		
5.2 - sieving		20		0.2	38		
5.3 - sedimentation by hydrometer		10		0.15	37		
5.4 - sedimentation by pipette		6.3	66	0.063	35		
remarks					CONTRACT		CHECKED
# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892					34769		TB
Particle density assigned an assumed value of 2.70 Mg/m3							

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892 - 4 : 2016 : 5



CLIENT SH READING MASTER LLP

BH/TP No.

BH303

SITE STATION HILL, READING

SAMPLE No./TYPE

7B

DESCRIPTION Off white sandy very silty GRAVEL (chalk)

SAMPLE DEPTH (m)

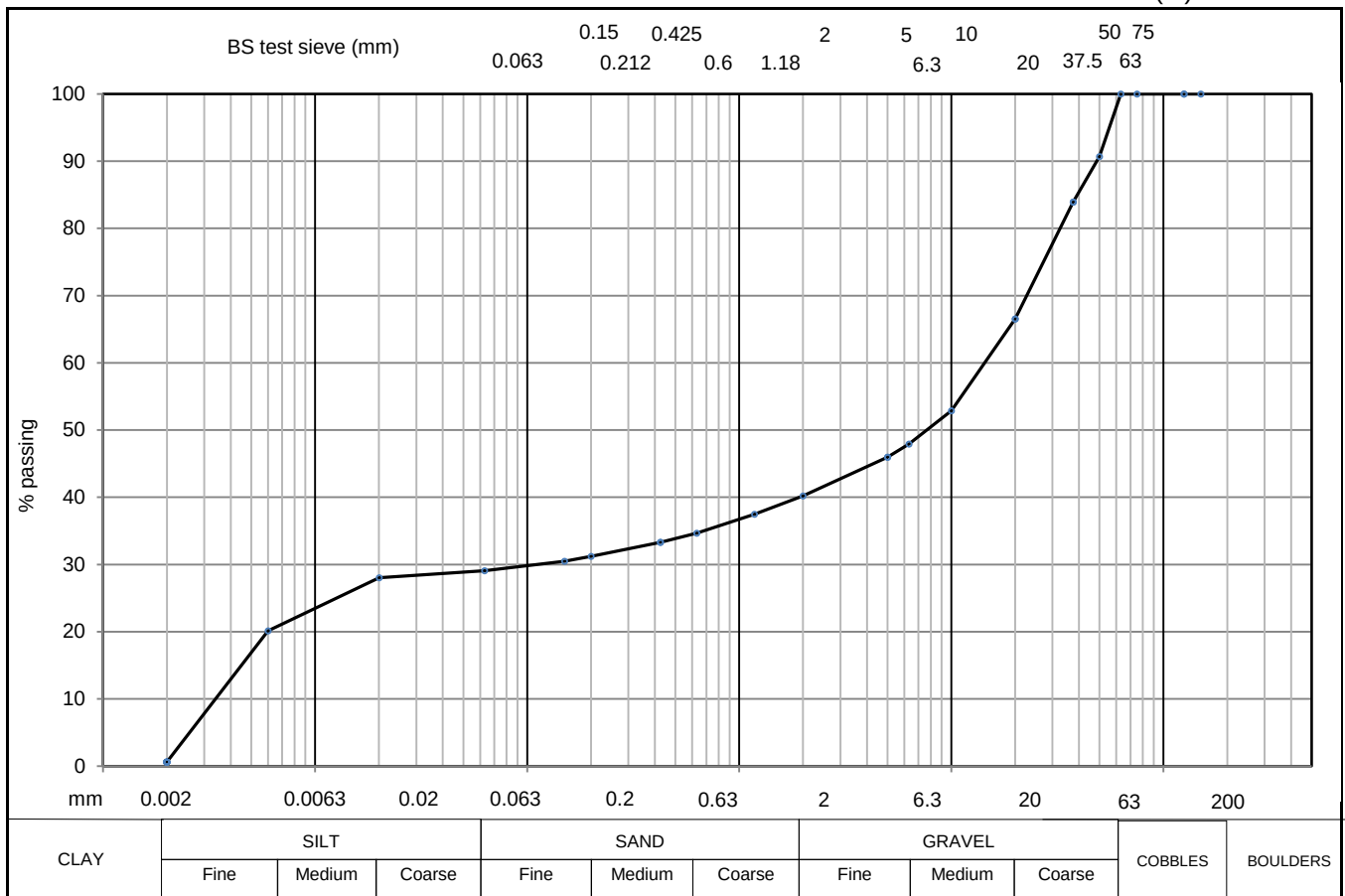
3.00

SPECIMEN TOP (m)

3.00

SPECIMEN BASE (m)

N/A



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	1						
SILT	29	150		5	46	20	28
SILT & CLAY	29						
SAND	11	75		2	40	6	20
GRAVEL	60						
COBBLE & BOULDER	0	63	100	1.18	37	2	1
test method(s)	5.2 & 5.4	50	91	0.63	35		
test method		37.5	84	0.425	33		
5.2 - sieving		20	67	0.2	31		
5.3 - sedimentation by hydrometer		10	53	0.15	30		
5.4 - sedimentation by pipette		6.3	48	0.063	29		
remarks	# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3					CONTRACT	CHECKED
						34769	TB



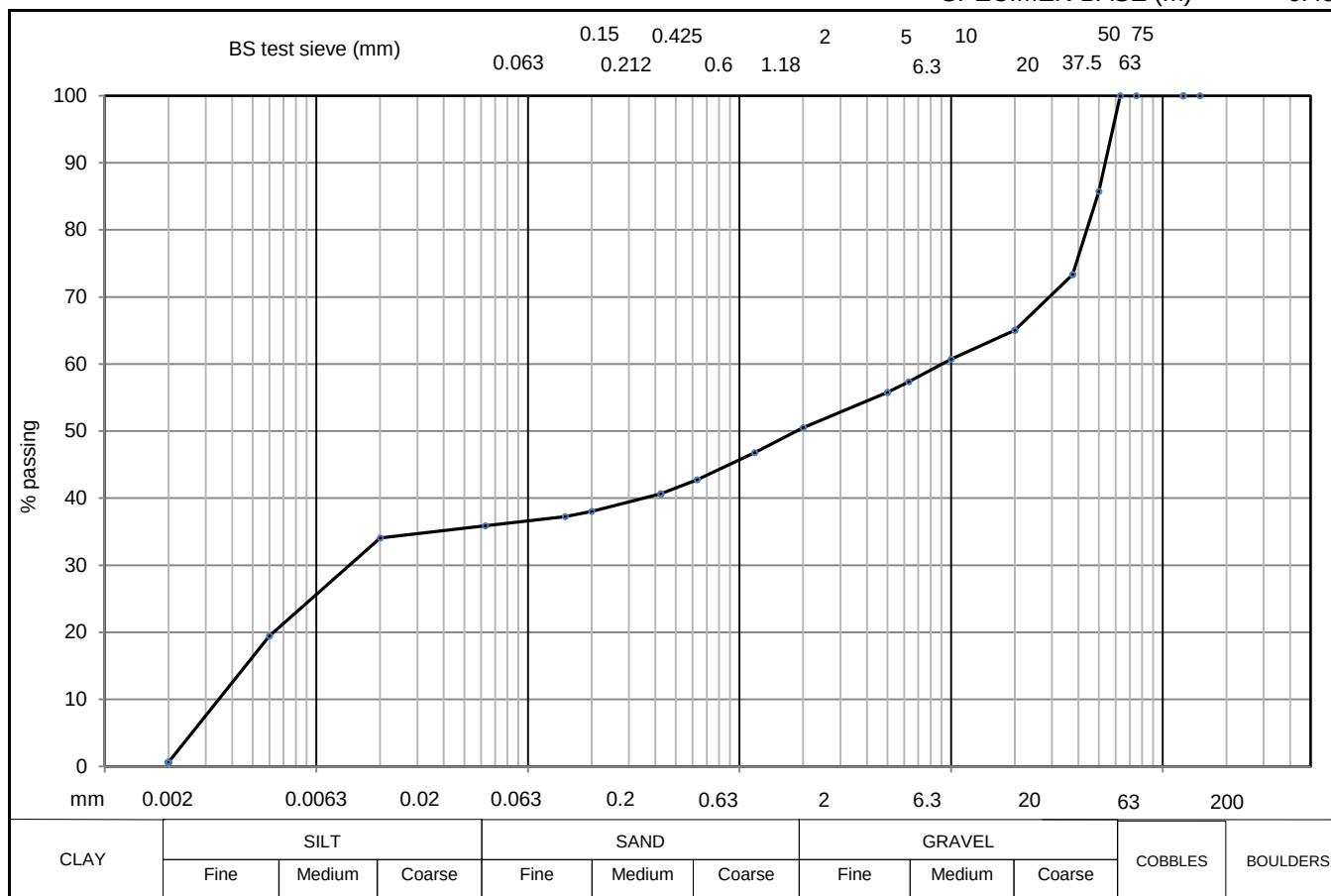
BH/TP No. BH303

SAMPLE No./TYPE 11L

SAMPLE DEPTH (m) 6.00

SPECIMEN TOP (m) 6.35

SPECIMEN BASE (m) 6.45



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	1	150	100	5	56	20	34
SILT	35						
SILT & CLAY	36						
SAND	15						
GRAVEL	49						
COBBLE & BOULDER	0						
test method(s)	5.2# & 5.4	63	86	1.18	47	2	1
test method		50	86	0.63	43		
5.2 - sieving		37.5	73	0.425	41		
5.3 - sedimentation by hydrometer		20	65	0.2	38		
5.4 - sedimentation by pipette		10	61	0.15	37		
		6.3	57	0.063	36		
remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3						CONTRACT 34769	CHECKED TB

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892 - 4 : 2016 : 5



CLIENT SH READING MASTER LLP

BH/TP No.

BH303

SITE STATION HILL, READING

SAMPLE No./TYPE

13C

DESCRIPTION Off white sandy very silty GRAVEL (chalk)

SAMPLE DEPTH (m)

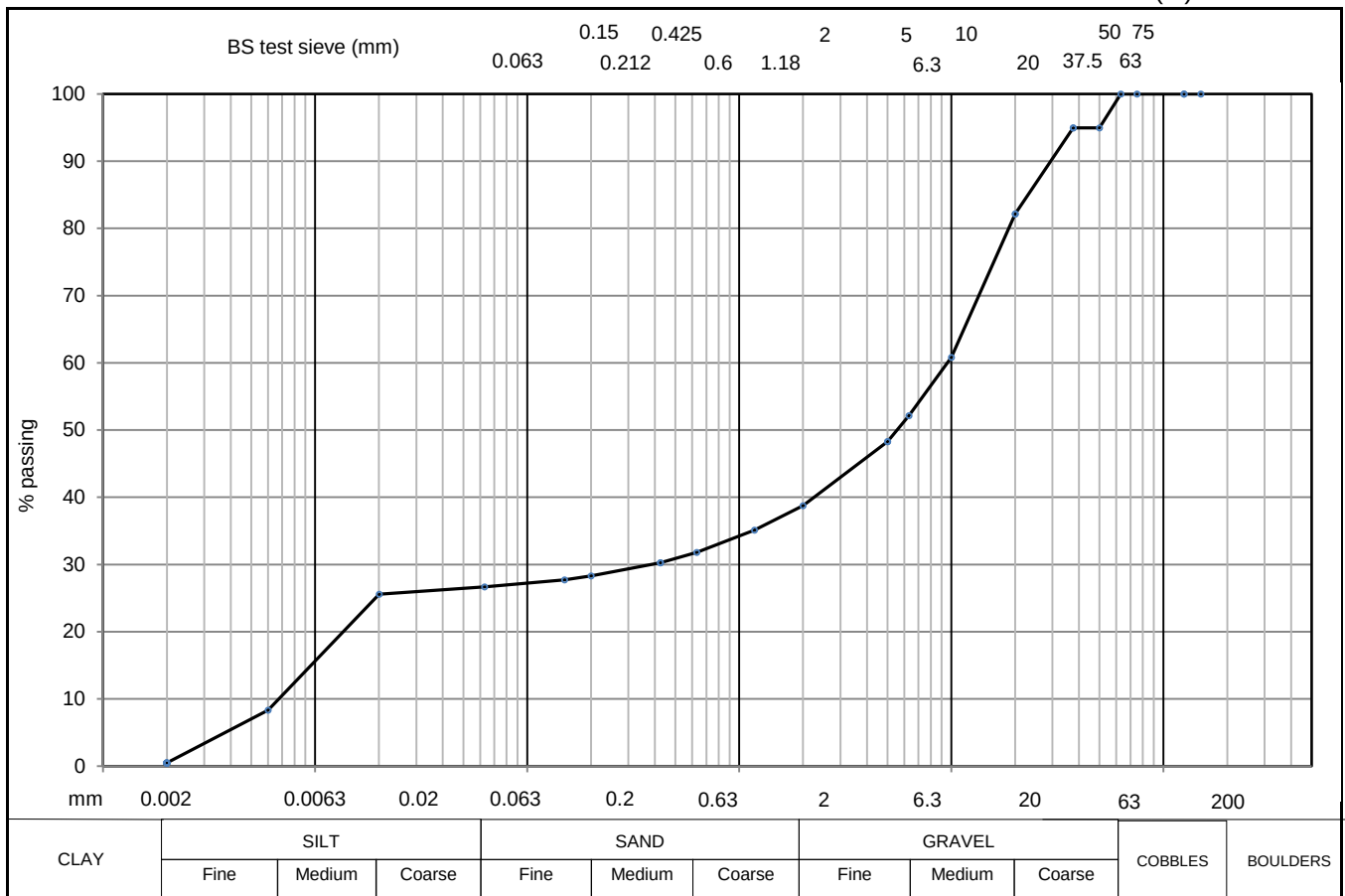
7.50

SPECIMEN TOP (m)

7.50

SPECIMEN BASE (m)

8.85



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	1						
SILT	26	150		5	48	20	26
SILT & CLAY	27						
SAND	12	75		2	39	6	8
GRAVEL	61						
COBBLE & BOULDER	0	63	100	1.18	35	2	0
test method(s)	5.2 & 5.4	50	95	0.63	32		
test method		37.5	95	0.425	30		
5.2 - sieving		20	82	0.2	28		
5.3 - sedimentation by hydrometer		10	61	0.15	28		
5.4 - sedimentation by pipette		6.3	52	0.063	27		
remarks	# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3					CONTRACT	CHECKED
						34769	TB



CLIENT SH READING MASTER LLP

BH/TP No. BH303

SITE STATION HILL, READING

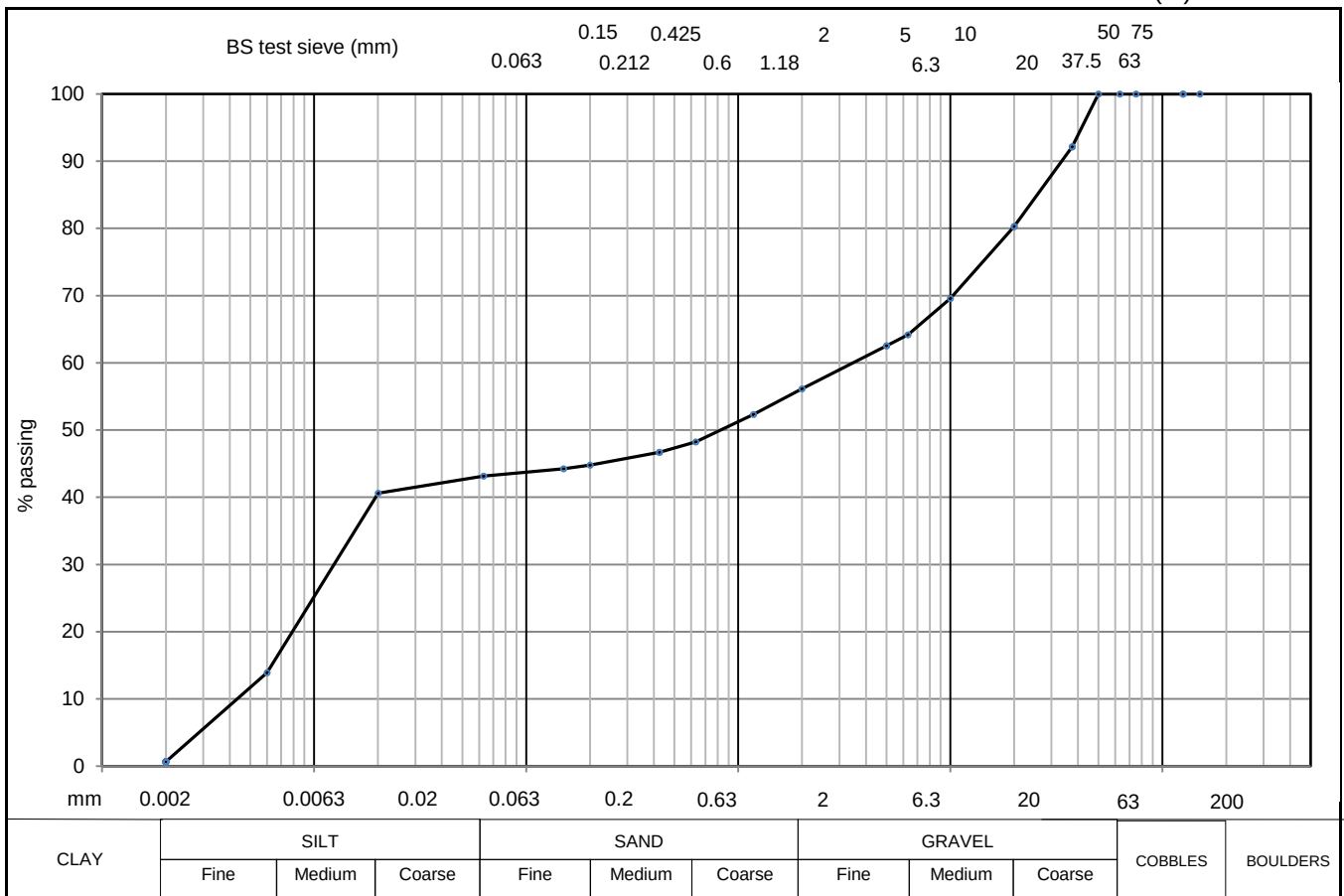
SAMPLE No./TYPE 14C

DESCRIPTION Off white slightly sandy gravelly SILT (chalk)

SAMPLE DEPTH (m) 9.00

SPECIMEN TOP (m) 9.00

SPECIMEN BASE (m)	9.65
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soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	1	150		5	63	20	41
SILT	43						
SILT & CLAY	43						
SAND	13						
GRAVEL	44						
COBBLE & BOULDER	0	63		1.18	52	2	1
test method(s)	5.2# & 5.4	50	100	0.63	48		
test method		37.5	92	0.425	47		
5.2 - sieving		20	80	0.2	45		
5.3 - sedimentation by hydrometer		10	70	0.15	44		
5.4 - sedimentation by pipette		6.3	64	0.063	43		
remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3						CONTRACT	CHECKED
						34769	TB

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892 - 4 : 2016 : 5



CLIENT SH READING MASTER LLP

BH/TP No.

BH303

SITE STATION HILL, READING

SAMPLE No./TYPE

19C

DESCRIPTION Off white sandy silty GRAVEL (chalk)

SAMPLE DEPTH (m)

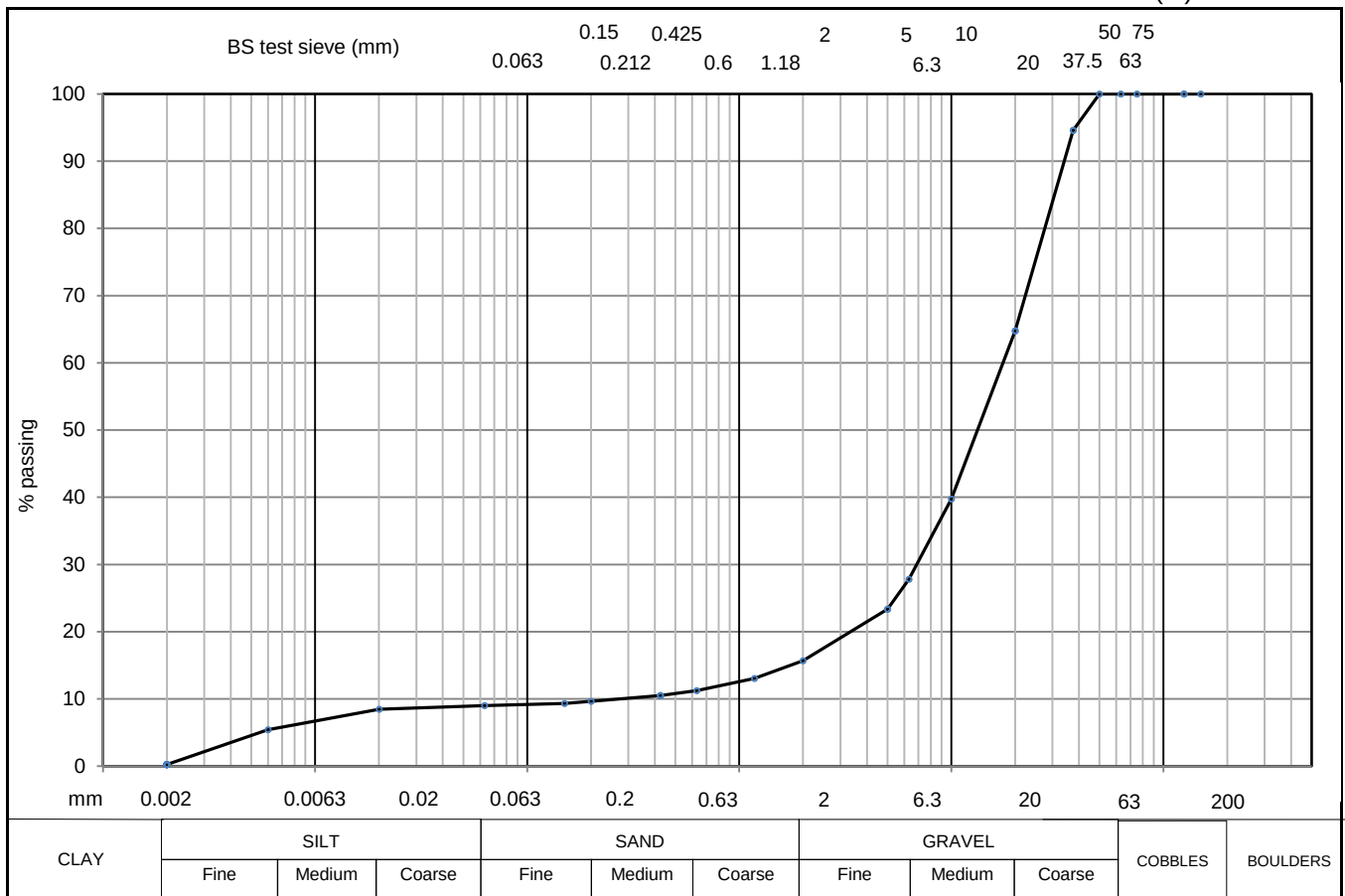
13.50

SPECIMEN TOP (m)

14.50

SPECIMEN BASE (m)

14.80



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	0						
SILT	9	150		5	23	20	8
SILT & CLAY	9						
SAND	7	75		2	16	6	5
GRAVEL	84						
COBBLE & BOULDER	0	63		1.18	13	2	0
test method(s)	5.2# & 5.4	50	100	0.63	11		
test method		37.5	95	0.425	11		
5.2 - sieving		20	65	0.2	10		
5.3 - sedimentation by hydrometer		10	40	0.15	9		
5.4 - sedimentation by pipette		6.3	28	0.063	9		
remarks	# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3					CONTRACT	CHECKED
						34769	TB

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892 - 4 : 2016 : 5



CLIENT SH READING MASTER LLP

BH/TP No.

BH304

SITE STATION HILL, READING

SAMPLE No./TYPE

6B

DESCRIPTION Off white slightly sandy gravelly clayey SILT (chalk)

SAMPLE DEPTH (m)

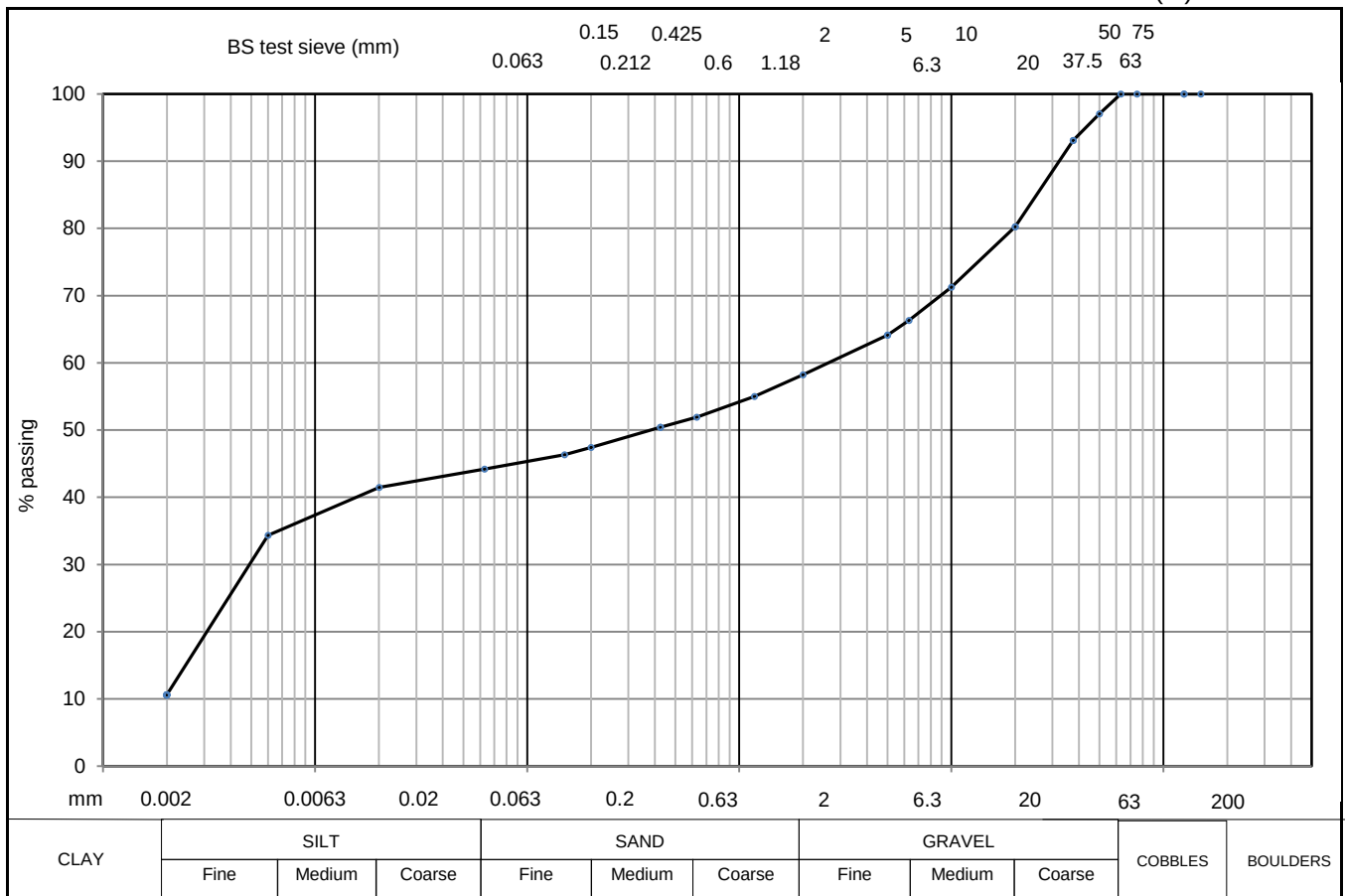
3.00

SPECIMEN TOP (m)

3.00

SPECIMEN BASE (m)

N/A



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	11						
SILT	34	150		5	64	20	41
SILT & CLAY	44						
SAND	14	75		2	58	6	34
GRAVEL	42						
COBBLE & BOULDER	0	63	100	1.18	55	2	11
test method(s)	5.2# & 5.4	50	97	0.63	52		
test method		37.5	93	0.425	50		
5.2 - sieving		20	80	0.2	47		
5.3 - sedimentation by hydrometer		10	71	0.15	46		
5.4 - sedimentation by pipette		6.3	66	0.063	44		
remarks	# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3					CONTRACT	CHECKED
						34769	TB



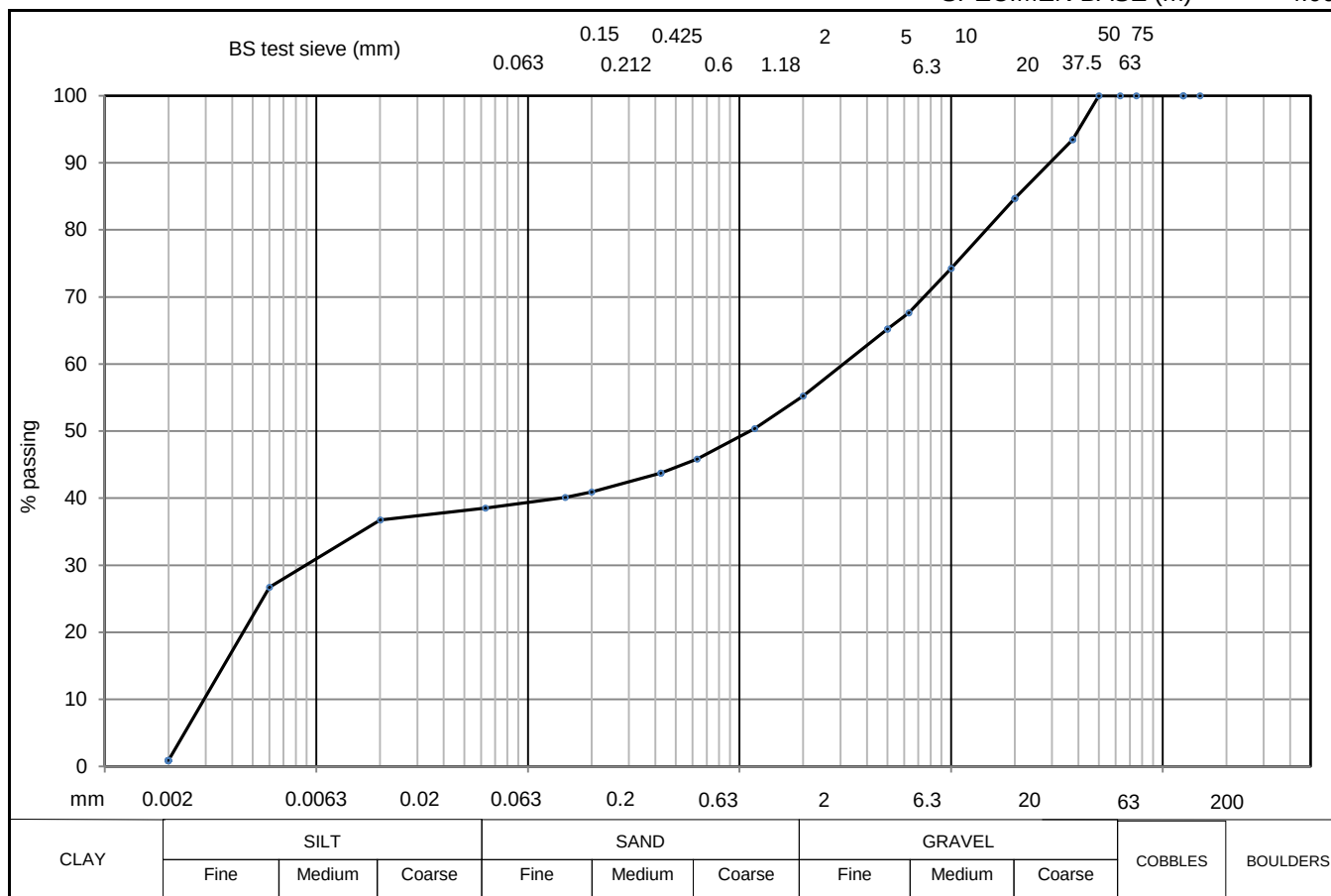
BH/TP No. BH304

SAMPLE No./TYPE 7L

SAMPLE DEPTH (m) 3.00

SPECIMEN TOP (m) 3.80

SPECIMEN BASE (m) 4.00



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	1	150		5	65	20	37
SILT	38						
SILT & CLAY	39						
SAND	17						
GRAVEL	45						
COBBLE & BOULDER	0	75		2	55	6	27
		63		1.18	50	2	1
test method(s)	5.2# & 5.4	50	100	0.63	46		
test method							
5.2 - sieving							
5.3 - sedimentation by hydrometer							
5.4 - sedimentation by pipette							
		37.5	93	0.425	44		
		20	85	0.2	41		
		10	74	0.15	40		
		6.3	68	0.063	39		
remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3						CONTRACT 34769	CHECKED TB



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BH/TP No. BH304

SITE STATION HILL, READING

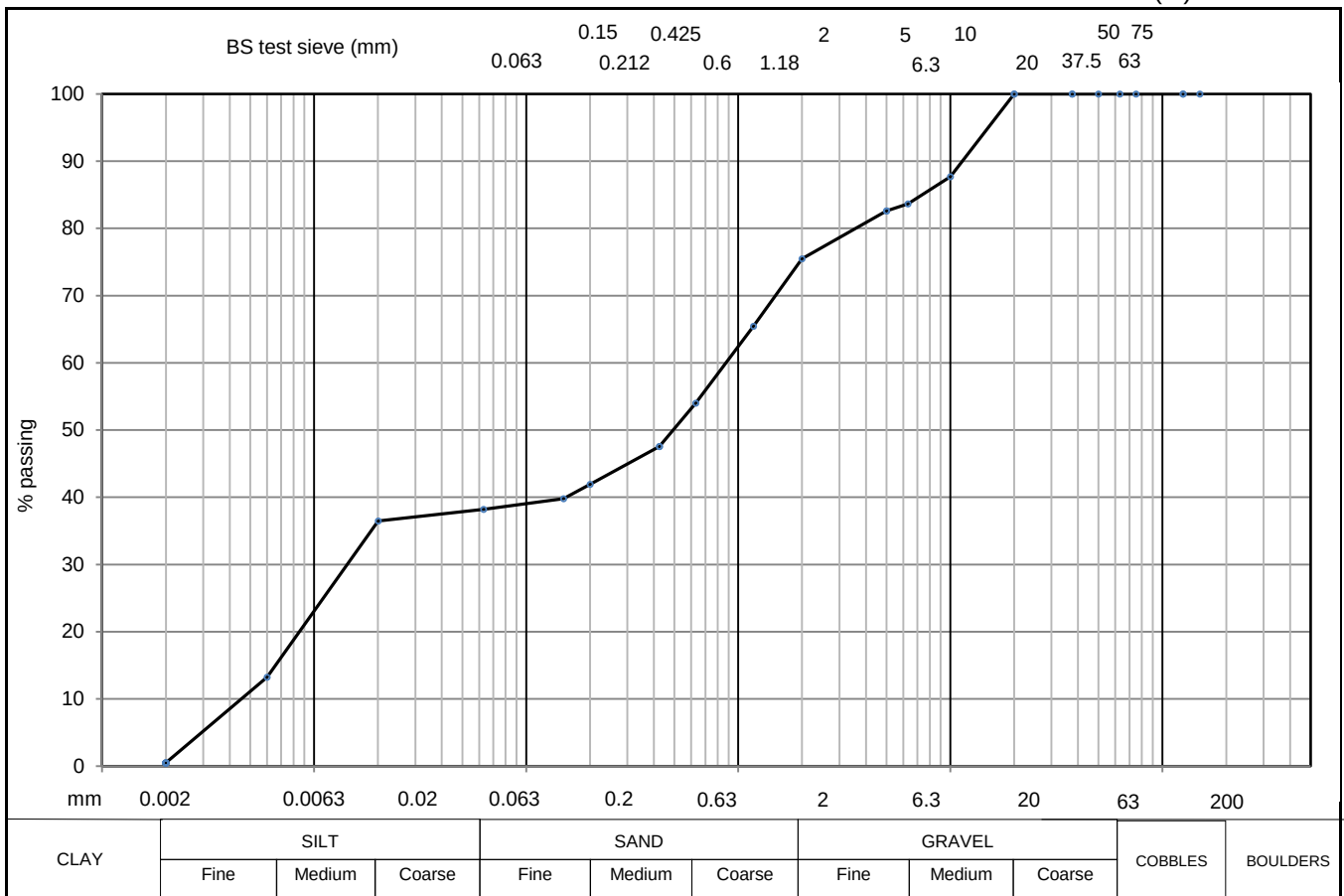
SAMPLE No./TYPE 12D

DESCRIPTION Off white slightly gravelly sandy SILT (chalk)

SAMPLE DEPTH (m) 7.00

SPECIMEN TOP (m) 7.00

SPECIMEN BASE (m) 7.45



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	1	150		5	83	20	36
SILT	38						
SILT & CLAY	38						
SAND	37						
GRAVEL	25						
COBBLE & BOULDER	0	63	100	1.18	65	2	0
test method(s)	5.2# & 5.4	50		0.63	54		
test method		37.5		0.425	48		
5.2 - sieving		20		0.2	42		
5.3 - sedimentation by hydrometer		10		0.15	40		
5.4 - sedimentation by pipette		6.3	0.063	38			
remarks						CONTRACT	CHECKED
# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892						34769	TB
Particle density assigned an assumed value of 2.70 Mg/m3							



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BH/TP No. BH304

SITE STATION HILL, READING

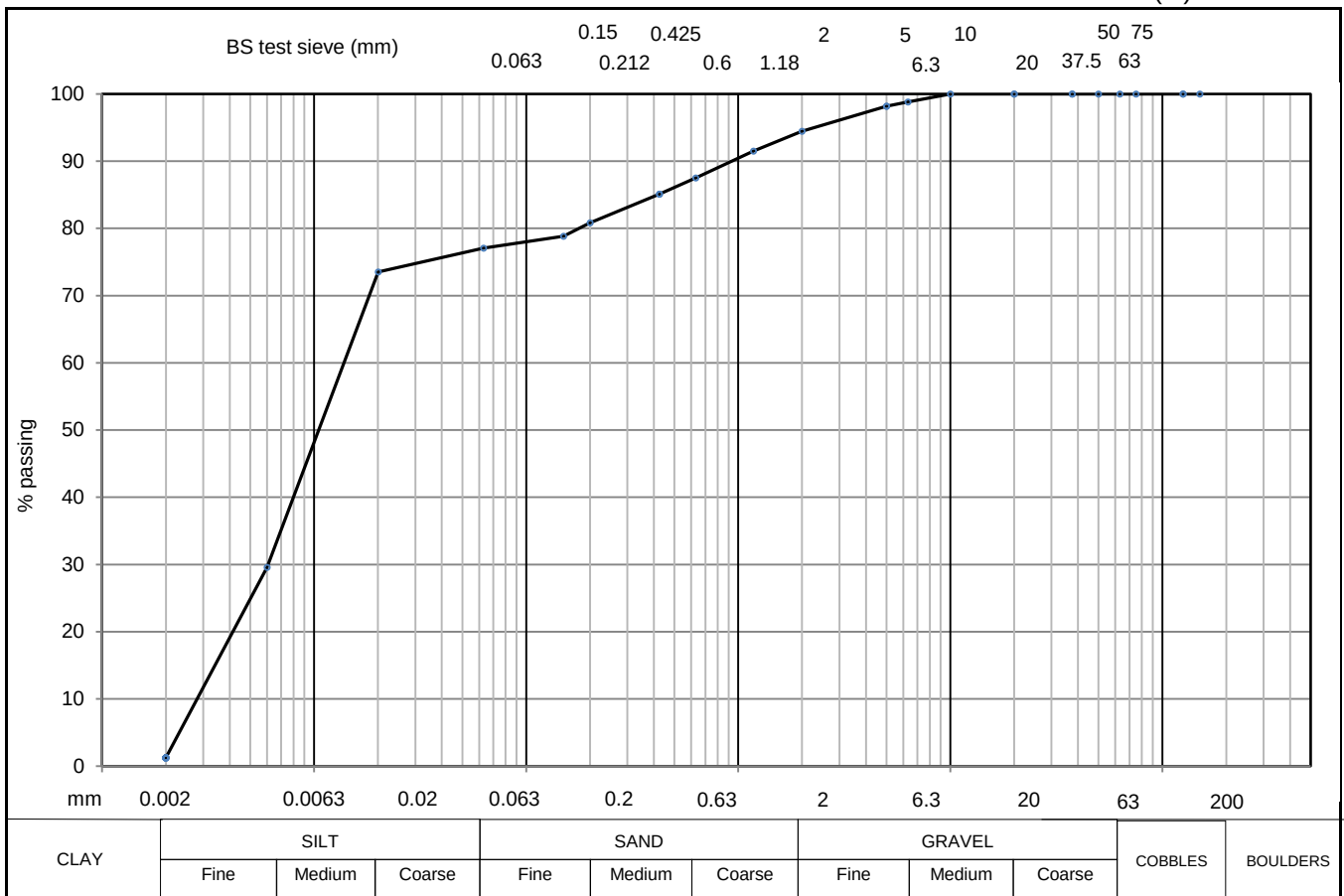
SAMPLE No./TYPE 14D

DESCRIPTION Off white slightly gravelly silghtly sandy SILT (chalk)

SAMPLE DEPTH (m) 8.50

SPECIMEN TOP (m) 8.50

SPECIMEN BASE (m)	8.95
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soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	1	150		5	98	20	74
SILT	76						
SILT & CLAY	77						
SAND	17						
GRAVEL	6						
COBBLE & BOULDER	0	63	100	1.18	92	2	1
test method(s)	5.2 & 5.4	50		0.63	87		
test method 5.2 - sieving 5.3 - sedimentation by hydrometer 5.4 - sedimentation by pipette		37.5		0.425	85		
		20		0.2	81		
		10		0.15	79		
		6.3	0.063	77			
remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3					CONTRACT 34769		CHECKED TB

ROCK WATER CONTENT

I.S.R.M. Suggested Methods : 2007 Edition



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SITE STATION HILL, READING

borehole /trial pit no.	sample		specimen depth (m)	natural water content (%)	description and remarks
	no./type	depth (m)			
BH301	26C	19.50	19.50	25	White CHALK
BH303	21C	16.50	17.80	25	White CHALK
BH303	24C	21.00	21.30	24	White CHALK
general remarks natural water content determined unless otherwise specified					
test method samples oven dried at 105°C				CONTRACT 34769	CHECKED TB

SITE STATION HILL, READING

borehole /trial pit no.	sample		specimen depth (m)	diameter D (mm)	height H (mm)	H/D	moisture content (%)	bulk density (Mg/m3)	loading rate (kN/min)	time to failure (min:sec)	UCS (MPa)	description, codes and remarks
	no./type	depth (m)										
BH301	24Cs	17.25	17.25	113.5	304.3	2.68	24.1	1.91	3	09:21	2.85	White CHALK, N, Ax
BH304	32Cs	21.05	21.05	114.0	285.4	2.50	26.2	2.00	3	07:04	2.08	Off white CHALK, N, AxCa

POINT LOAD STRENGTH TEST

I.S.R.M. Suggested Methods : 2007 Edition



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole /trial pit no.	sample depth (m)	test type	test orien- tation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. diam. De (mm)	Is (MPa)	size factor	Is(50) (MPa)	description and remarks
BH301	5.90	D	Y	P		40	90	0.29	90.00	0.04	1.30	0.05	White CHALK
BH301	5.90	A	X	P	90		35	0.36	63.33	0.09	1.11	0.10	White CHALK
BH301	6.10	I	U	P	50	50	40	0.41	50.46	0.16	1.00	0.16	White CHALK
BH301	7.15	I	U	P	70	90	70	0.59	78.99	0.09	1.23	0.12	White CHALK
BH301	7.75	I	U	P	70	90	35	0.35	55.85	0.11	1.05	0.12	White CHALK
BH301	8.15	I	U	P	40	50	40	0.46	45.14	0.23	0.95	0.22	White CHALK
BH301	8.20	I	U	P	40	40	40	0.32	45.14	0.16	0.95	0.15	White CHALK
BH301	8.35	I	U	P	50	50	40	0.19	50.46	0.07	1.00	0.07	White CHALK
BH301	8.50	I	U	P	40	50	40	0.22	45.14	0.11	0.95	0.10	White CHALK
BH301	8.57	I	U	P	50	70	40	0.43	50.46	0.17	1.00	0.17	White CHALK
BH301	8.60	I	U	P	50	60	40	0.31	50.46	0.12	1.00	0.12	White CHALK
BH301	8.85	I	U	P	60	60	30	0.17	47.87	0.07	0.98	0.07	White CHALK
BH301	11.20	I	U	P	80	110	50	0.41	71.36	0.08	1.17	0.09	White CHALK
BH301	11.40	I	U	P	80	110	45	0.38	67.70	0.08	1.15	0.10	White CHALK
BH301	11.44	I	U	P	50	70	30	0.11	43.70	0.06	0.94	0.05	White CHALK
BH301	11.70	I	U	P	80	90	35	0.52	59.71	0.15	1.08	0.16	White CHALK
BH301	11.88	I	U	P	55	60	40	0.49	52.93	0.17	1.03	0.18	White CHALK
BH301	11.90	I	U	P	60	100	30	0.19	47.87	0.08	0.98	0.08	White CHALK
BH301	11.95	I	U	P	50	50	40	0.51	50.46	0.20	1.00	0.20	White CHALK
general remarks tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength test machine PLM02													
test type		test orientation relative to discontinuities				moisture condition				CONTRACT		CHECKED	
A - axial		X - perpendicular				N - natural moisture content				34769		TB	
D - diametral		Y - parallel				P - partially air dried							
I - irregular lump		Z - oblique				S - soaked							

POINT LOAD STRENGTH TEST

I.S.R.M. Suggested Methods : 2007 Edition



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole /trial pit no.	sample depth (m)	test type	test orien- tation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. diam. De (mm)	Is (MPa)	size factor	Is(50) (MPa)	description and remarks
BH301	15.00	I	U	P	70	90	60	0.56	73.13	0.10	1.19	0.12	White CHALK
BH301	15.30	I	U	P	70	70	50	0.06	66.76	0.01	1.14	0.02	White CHALK
BH301	15.40	I	U	P	90	140	45	0.78	71.81	0.15	1.18	0.18	White CHALK
BH301	15.60	I	U	P	60	90	60	0.42	67.70	0.09	1.15	0.11	White CHALK
BH301	15.65	D	Y	P		70	110	0.76	110.00	0.06	1.43	0.09	White CHALK
BH301	15.65	A	X	P	110		60	0.31	91.67	0.04	1.31	0.05	White CHALK
BH301	15.85	I	U	P	60	90	20	0.16	39.09	0.10	0.90	0.09	White CHALK
BH301	15.87	I	U	P	50	90	40	0.41	50.46	0.16	1.00	0.16	White CHALK
BH301	15.95	I	U	P	90	90	60	0.84	82.92	0.12	1.26	0.15	White CHALK
BH301	16.10	I	U	P	90	100	60	0.41	82.92	0.06	1.26	0.07	White CHALK
BH301	16.18	I	U	P	110	120	60	0.62	91.67	0.07	1.31	0.10	White CHALK
BH301	16.50	I	U	P	100	120	50	0.66	79.79	0.10	1.23	0.13	White CHALK
BH301	16.60	I	U	P	90	110	80	1.01	95.75	0.11	1.34	0.15	White CHALK
BH301	16.68	D	Y	P		50	120	0.45	120.00	0.03	1.48	0.05	White CHALK
BH301	16.68	A	X	P	120		50	0.59	87.40	0.08	1.29	0.10	White CHALK
BH301	16.72	D	Y	P		50	110	0.77	110.00	0.06	1.43	0.09	White CHALK
BH301	16.72	A	X	P	110		45	0.49	79.39	0.08	1.23	0.10	White CHALK
BH301	16.76	D	Y	P		60	110	0.36	110.00	0.03	1.43	0.04	White CHALK
BH301	16.76	A	X	P	110		50	0.59	83.68	0.08	1.26	0.11	White CHALK
general remarks tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength test machine PLM02													
test type		test orientation relative to discontinuities				moisture condition				CONTRACT		CHECKED	
A - axial		X - perpendicular				N - natural moisture content				34769		TB	
D - diametral		Y - parallel				P - partially air dried							
I - irregular lump		Z - oblique				S - soaked							

POINT LOAD STRENGTH TEST

I.S.R.M. Suggested Methods : 2007 Edition



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole /trial pit no.	sample depth (m)	test type	test orien- tation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. diam. De (mm)	Is (MPa)	size factor	Is(50) (MPa)	description and remarks
BH301	16.83	I	U	P	80	110	60	0.51	78.18	0.08	1.22	0.10	White CHALK
BH301	17.10	A	X	P	110		35	0.46	70.01	0.09	1.16	0.11	White CHALK
BH301	17.15	D	Y	P		40	110	0.64	110.00	0.05	1.43	0.08	White CHALK
BH301	17.15	A	X	P	110		50	0.73	83.68	0.10	1.26	0.13	White CHALK
BH301	17.70	I	U	P	90	110	40	0.89	67.70	0.19	1.15	0.22	White CHALK
BH301	17.80	I	U	P	70	80	45	0.36	63.33	0.09	1.11	0.10	White CHALK
BH301	19.50	D	Y	P		60	120	0.70	120.00	0.05	1.48	0.07	White CHALK
BH301	19.50	A	X	P	120		50	0.72	87.40	0.09	1.29	0.12	White CHALK
BH301	19.65	I	U	P	40	60	25	0.27	35.68	0.21	0.86	0.18	White CHALK
BH301	19.78	D	Y	P		50	110	0.67	110.00	0.06	1.43	0.08	White CHALK
BH301	19.78	A	X	P	110		40	0.84	74.85	0.15	1.20	0.18	White CHALK
BH301	20.10	D	Y	P		50	110	0.43	110.00	0.04	1.43	0.05	White CHALK
BH301	20.10	A	X	P	110		50	0.69	83.68	0.10	1.26	0.12	White CHALK
BH301	20.35	D	Y	P		40	110	0.29	110.00	0.02	1.43	0.03	White CHALK
BH301	20.35	A	X	P	110		40	0.61	74.85	0.11	1.20	0.13	White CHALK
BH301	20.40	I	U	P	60	100	30	0.42	47.87	0.18	0.98	0.18	White CHALK
BH301	20.55	I	U	P	100	120	50	0.31	79.79	0.05	1.23	0.06	White CHALK
BH301	20.60	I	U	P	100	150	50	0.77	79.79	0.12	1.23	0.15	White CHALK
BH301	20.75	D	Y	P		50	120	0.26	120.00	0.02	1.48	0.03	White CHALK
general remarks tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength test machine PLM02													
test type		test orientation relative to discontinuities				moisture condition				CONTRACT		CHECKED	
A - axial		X - perpendicular				N - natural moisture content				34769		TB	
D - diametral		Y - parallel				P - partially air dried							
I - irregular lump		Z - oblique				S - soaked							

POINT LOAD STRENGTH TEST

I.S.R.M. Suggested Methods : 2007 Edition



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole /trial pit no.	sample depth (m)	test type	test orien- tation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. diam. De (mm)	Is (MPa)	size factor	Is(50) (MPa)	description and remarks
BH301	20.75	A	X	P	120		50	0.41	87.40	0.05	1.29	0.07	White CHALK
BH301	20.85	D	Y	P		40	120	0.69	120.00	0.05	1.48	0.07	White CHALK
BH301	20.85	A	X	P	120		45	0.53	82.92	0.08	1.26	0.10	White CHALK
BH303	5.10	I	U	P	40	50	50	0.37	50.46	0.15	1.00	0.15	White CHALK
BH303	9.70	I	U	P	50	70	30	0.10	43.70	0.05	0.94	0.05	White CHALK
BH303	9.80	I	U	P	70	70	45	0.16	63.33	0.04	1.11	0.04	White CHALK
BH303	10.10	I	U	P	40	50	35	0.13	42.22	0.07	0.93	0.07	White CHALK
BH303	10.30	I	U	P	50	80	45	0.39	53.52	0.14	1.03	0.14	White CHALK
BH303	10.35	I	U	P	45	50	35	0.51	44.78	0.25	0.95	0.24	White CHALK
BH303	10.40	I	U	P	40	50	40	0.24	45.14	0.12	0.95	0.11	White CHALK
BH303	11.00	I	U	P	60	80	45	0.27	58.63	0.08	1.07	0.08	White CHALK
BH303	11.07	I	U	P	50	70	30	0.09	43.70	0.05	0.94	0.04	White CHALK
BH303	11.25	I	U	P	80	140	60	0.71	78.18	0.12	1.22	0.14	White CHALK
BH303	11.32	I	U	P	55	90	30	0.16	45.83	0.08	0.96	0.07	White CHALK
BH303	11.50	I	U	P	60	80	50	0.89	61.80	0.23	1.10	0.26	White CHALK
BH303	11.70	I	U	P	75	80	50	0.79	69.10	0.17	1.16	0.19	White CHALK
BH303	11.88	I	U	P	50	60	30	0.54	43.70	0.28	0.94	0.27	White CHALK
BH303	11.90	I	U	P	90	100	50	0.36	75.69	0.06	1.21	0.08	White CHALK
BH303	11.95	I	U	P	80	90	60	0.46	78.18	0.08	1.22	0.09	White CHALK
general remarks tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength test machine PLM02													
test type		test orientation relative to discontinuities				moisture condition				CONTRACT		CHECKED	
A - axial		X - perpendicular				N - natural moisture content				34769		TB	
D - diametral		Y - parallel				P - partially air dried							
I - irregular lump		Z - oblique				S - soaked							

POINT LOAD STRENGTH TEST

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SITE STATION HILL, READING

borehole /trial pit no.	sample depth (m)	test type	test orien- tation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. diam. De (mm)	Is (MPa)	size factor	Is(50) (MPa)	description and remarks
BH303	15.40	I	U	P	50	50	40	0.14	50.46	0.05	1.00	0.06	White CHALK
BH303	15.45	I	U	P	90	120	90	0.81	101.55	0.08	1.38	0.11	White CHALK
BH303	15.56	I	U	P	50	50	40	0.21	50.46	0.08	1.00	0.08	White CHALK
BH303	15.80	I	U	P	50	70	50	0.07	56.42	0.02	1.06	0.02	White CHALK
BH303	15.90	I	U	P	40	50	40	0.11	45.14	0.05	0.95	0.05	White CHALK
BH303	16.00	I	U	P	40	60	40	0.21	45.14	0.10	0.95	0.10	White CHALK
BH303	15.70	I	U	P	50	50	35	0.13	47.20	0.06	0.97	0.06	White CHALK
BH303	16.15	I	U	P	60	80	50	0.46	61.80	0.12	1.10	0.13	White CHALK
BH303	16.30	I	U	P	90	110	60	0.71	82.92	0.10	1.26	0.13	White CHALK
BH303	16.45	I	U	P	60	90	50	0.56	61.80	0.15	1.10	0.16	White CHALK
BH303	16.60	I	U	P	70	120	40	0.39	59.71	0.11	1.08	0.12	White CHALK
BH303	16.90	I	U	P	40	60	60	0.39	55.28	0.13	1.05	0.13	White CHALK
BH303	17.10	I	U	P	70	120	70	0.26	78.99	0.04	1.23	0.05	White CHALK
BH303	17.20	I	U	P	100	140	60	0.51	87.40	0.07	1.29	0.09	White CHALK
BH303	17.40	I	U	P	60	90	50	0.39	61.80	0.10	1.10	0.11	White CHALK
BH303	17.50	I	U	P	70	80	50	0.08	66.76	0.02	1.14	0.02	White CHALK
BH303	17.60	I	U	P	60	90	40	0.21	55.28	0.07	1.05	0.07	White CHALK
BH303	17.65	D	Y	P		50	120	0.51	120.00	0.04	1.48	0.05	White CHALK
BH303	17.65	A	X	P	120		50	0.66	87.40	0.09	1.29	0.11	White CHALK
general remarks tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength test machine PLM02													
test type		test orientation relative to discontinuities				moisture condition				CONTRACT		CHECKED	
A - axial		X - perpendicular				N - natural moisture content				34769		TB	
D - diametral		Y - parallel				P - partially air dried							
I - irregular lump		Z - oblique				S - soaked							

POINT LOAD STRENGTH TEST

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SITE STATION HILL, READING

borehole /trial pit no.	sample depth (m)	test type	test orien- tation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. diam. De (mm)	Is (MPa)	size factor	Is(50) (MPa)	description and remarks
BH303	17.80	D	Y	P		30	100	0.43	100.00	0.04	1.37	0.06	White CHALK
BH303	17.80	A	X	P	100		35	0.60	66.76	0.13	1.14	0.15	White CHALK
BH303	17.90	D	Y	P		20	120	0.58	120.00	0.04	1.48	0.06	White CHALK
BH303	17.90	A	X	P	120		30	0.51	67.70	0.11	1.15	0.13	White CHALK
BH303	21.30	D	Y	P		50	110	0.46	110.00	0.04	1.43	0.05	White CHALK
BH303	21.30	A	X	P	110		60	0.71	91.67	0.08	1.31	0.11	White CHALK
BH303	21.40	I	U	P	70	110	50	0.56	66.76	0.13	1.14	0.14	White CHALK
BH303	21.50	D	Y	P		60	120	0.49	120.00	0.03	1.48	0.05	White CHALK
BH303	21.50	A	X	P	120		60	0.77	95.75	0.08	1.34	0.11	White CHALK
BH303	21.65	D	Y	P		40	110	0.41	110.00	0.03	1.43	0.05	White CHALK
BH303	21.65	A	X	P	110		35	0.60	70.01	0.12	1.16	0.14	White CHALK
BH303	21.75	I	U	P	90	90	60	0.32	82.92	0.05	1.26	0.06	White CHALK
BH303	21.85	D	Y	P		50	120	0.68	120.00	0.05	1.48	0.07	White CHALK
BH303	21.85	A	X	P	120		50	0.49	87.40	0.06	1.29	0.08	White CHALK
BH303	22.00	I	U	P	60	100	60	0.60	67.70	0.13	1.15	0.15	White CHALK
BH303	22.10	D	Y	P		30	120	0.31	120.00	0.02	1.48	0.03	White CHALK
BH303	22.10	A	X	P	120		25	0.18	61.80	0.05	1.10	0.05	White CHALK
BH303	22.35	D	Y	P		40	120	0.48	120.00	0.03	1.48	0.05	White CHALK
BH303	22.35	A	X	P	120		40	0.61	78.18	0.10	1.22	0.12	White CHALK
general remarks tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength test machine PLM02													
test type		test orientation relative to discontinuities				moisture condition				CONTRACT		CHECKED	
A - axial		X - perpendicular				N - natural moisture content				34769		TB	
D - diametral		Y - parallel				P - partially air dried							
I - irregular lump		Z - oblique				S - soaked							

POINT LOAD STRENGTH TEST

I.S.R.M. Suggested Methods : 2007 Edition



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SITE STATION HILL, READING

borehole /trial pit no.	sample depth (m)	test type	test orien- tation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. diam. De (mm)	Is (MPa)	size factor	Is(50) (MPa)	description and remarks
BH303	22.40	I	U	P	90	110	50	0.89	75.69	0.16	1.21	0.19	White CHALK
BH304	6.40	I	U	P	60	90	50	0.59	61.80	0.15	1.10	0.17	White CHALK
BH304	6.43	I	U	P	45	80	35	0.31	44.78	0.15	0.95	0.15	White CHALK
BH304	6.80	I	U	P	65	78	40	0.49	57.54	0.15	1.07	0.16	White CHALK
BH304	6.95	I	U	P	40	80	30	0.36	39.09	0.24	0.90	0.21	White CHALK
BH304	10.10	I	U	P	30	40	30	0.11	33.85	0.10	0.84	0.08	White CHALK
BH304	10.23	I	U	P	40	50	25	0.02	35.68	0.02	0.86	0.01	White CHALK
BH304	10.28	I	U	P	70	70	40	0.31	59.71	0.09	1.08	0.09	White CHALK
BH304	10.40	I	U	P	90	95	80	0.46	95.75	0.05	1.34	0.07	White CHALK
BH304	10.55	I	U	P	100	150	60	0.76	87.40	0.10	1.29	0.13	White CHALK
BH304	10.70	I	U	P	40	40	20	0.19	31.92	0.19	0.82	0.15	White CHALK
BH304	10.80	I	U	P	50	70	40	0.31	50.46	0.12	1.00	0.12	White CHALK
BH304	11.90	I	U	P	60	65	45	0.46	58.63	0.13	1.07	0.14	White CHALK
BH304	12.10	I	U	P	30	60	25	0.10	30.90	0.10	0.81	0.08	White CHALK
BH304	12.30	I	U	P	70	110	50	0.31	66.76	0.07	1.14	0.08	White CHALK
BH304	12.55	I	U	P	100	100	30	0.43	61.80	0.11	1.10	0.12	White CHALK
BH304	13.20	I	U	P	70	80	50	0.86	66.76	0.19	1.14	0.22	White CHALK
BH304	13.35	I	U	P	70	70	50	0.79	66.76	0.18	1.14	0.20	White CHALK
BH304	13.40	I	U	P	120	150	60	0.31	95.75	0.03	1.34	0.05	White CHALK
general remarks tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength test machine PLM02													
test type		test orientation relative to discontinuities				moisture condition				CONTRACT		CHECKED	
A - axial		X - perpendicular				N - natural moisture content				34769		TB	
D - diametral		Y - parallel				P - partially air dried							
I - irregular lump		Z - oblique				S - soaked							

POINT LOAD STRENGTH TEST

I.S.R.M. Suggested Methods : 2007 Edition



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole /trial pit no.	sample depth (m)	test type	test orien- tation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. diam. De (mm)	Is (MPa)	size factor	Is(50) (MPa)	description and remarks
BH304	13.45	I	U	P	110	150	50	0.62	83.68	0.09	1.26	0.11	White CHALK
BH304	13.85	I	U	P	95	120	60	0.57	85.19	0.08	1.27	0.10	White CHALK
BH304	13.95	I	U	P	70	90	50	0.47	66.76	0.11	1.14	0.12	White CHALK
BH304	14.00	I	U	P	100	110	60	0.84	87.40	0.11	1.29	0.14	White CHALK
BH304	14.05	I	U	P	90	110	50	0.44	75.69	0.08	1.21	0.09	White CHALK
BH304	17.65	I	U	P	80	90	50	0.76	71.36	0.15	1.17	0.18	White CHALK
BH304	17.90	I	U	P	80	90	45	0.69	67.70	0.15	1.15	0.17	White CHALK
BH304	18.10	I	U	P	80	110	30	0.23	55.28	0.08	1.05	0.08	White CHALK
BH304	18.50	D	Y	P		40	120	0.69	120.00	0.05	1.48	0.07	White CHALK
BH304	18.50	A	X	P	120		50	0.61	87.40	0.08	1.29	0.10	White CHALK
BH304	17.60	I	U	P	70	110	30	0.57	51.71	0.21	1.02	0.22	White CHALK
BH304	18.80	I	U	P	70	110	50	0.76	66.76	0.17	1.14	0.19	White CHALK
BH304	18.95	I	U	P	70	100	40	0.54	59.71	0.15	1.08	0.16	White CHALK
BH304	19.25	I	U	P	100	120	30	0.24	61.80	0.06	1.10	0.07	White CHALK
BH304	19.30	I	U	P	90	100	50	0.82	75.69	0.14	1.21	0.17	White CHALK
BH304	19.40	I	U	P	110	110	40	0.36	74.85	0.06	1.20	0.08	White CHALK
BH304	19.50	I	U	P	70	110	50	0.77	66.76	0.17	1.14	0.20	White CHALK
general remarks tests carried out in accordance with I.S.R.M.(2007): Suggested Methods for Determining Point Load Strength test machine PLM02													
test type		test orientation relative to discontinuities				moisture condition				CONTRACT		CHECKED	
A - axial		X - perpendicular				N - natural moisture content				34769		TB	
D - diametral		Y - parallel				P - partially air dried							
I - irregular lump		Z - oblique				S - soaked							



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Final Report

Report No.: 18-39601-1

Initial Date of Issue: 19-Dec-2018

Client Geotechnical Engineering Ltd

Client Address: Centurion House
Olympus Park
Quedgeley
Gloucester
Gloucestershire
GL2 4NF

Contact(s): GEL
Wendy Jones

Project 34769 Station Hill, Reading

Quotation No.: **Date Received:** 17-Dec-2018

Order No.: 34769/WJ **Date Instructed:** 17-Dec-2018

No. of Samples: 9

Turnaround (Wkdays): 3 **Results Due:** 19-Dec-2018

Date Approved: 19-Dec-2018

Approved By:



Details: Martin Dyer, Laboratory Manager

Results - Soil

Project: 34769 Station Hill, Reading

Client: Geotechnical Engineering Ltd	Chemtest Job No.:				18-39601	18-39601	18-39601	18-39601	18-39601	18-39601	18-39601	18-39601
Quotation No.:	Chemtest Sample ID.:				742934	742935	742936	742937	742938	742939	742940	742941
	Client Sample ID.:				6B	8B	2B	4B	5L	6D	4B	5B
	Sample Location:				BH301	BH301	BH303	BH303	BH303	BH303	BH304	BH304
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				2.80	4.00	1.00	2.00	3.00	3.00	2.00	3.00
	Bottom Depth (m):								4.50	3.45		
	Date Sampled:				12-Dec-2018	12-Dec-2018	12-Dec-2018	13-Dec-2018	13-Dec-2018	12-Dec-2018	13-Dec-2018	13-Dec-2018
Determinand	Accred.	SOP	Units	LOD								
Moisture	N	2030	%	0.020	21	22	15	20	17	19	15	17
pH	U	2010		N/A	8.9	8.8	10.9	9.6		9.3	10.3	9.2
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010		< 0.010	< 0.010	< 0.010
Sulphate (2:1 Water Soluble) as SO ₄	U	2120	g/l	0.010	< 0.010	< 0.010	0.20	< 0.010		< 0.010	0.075	< 0.010
Total Sulphur	U	2175	%	0.010	< 0.010	0.016	0.053	< 0.010		< 0.010	0.023	0.015
Chloride (Water Soluble)	U	2220	g/l	0.010	< 0.010	0.017	< 0.010	< 0.010		< 0.010	< 0.010	< 0.010
Nitrate (Water Soluble)	N	2220	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010		< 0.010	< 0.010	< 0.010
Sulphate (Acid Soluble)	U	2430	%	0.010	0.025	0.019	0.090	0.019		0.015	0.045	0.024
Organic Matter	U	2625	%	0.40	< 0.40				< 0.40			< 0.40

Project: 34769 Station Hill, Reading

Client: Geotechnical Engineering Ltd	Chemtest Job No.:				18-39601
Quotation No.:	Chemtest Sample ID.:				742942
	Client Sample ID.:				7L
	Sample Location:				BH304
	Sample Type:				SOIL
	Top Depth (m):				3.00
	Bottom Depth (m):				4.00
	Date Sampled:				13-Dec-2018
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.020	17
pH	U	2010		N/A	10.1
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010
Sulphate (2:1 Water Soluble) as SO ₄	U	2120	g/l	0.010	0.054
Total Sulphur	U	2175	%	0.010	0.011
Chloride (Water Soluble)	U	2220	g/l	0.010	< 0.010
Nitrate (Water Soluble)	N	2220	g/l	0.010	< 0.010
Sulphate (Acid Soluble)	U	2430	%	0.010	0.040
Organic Matter	U	2625	%	0.40	

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

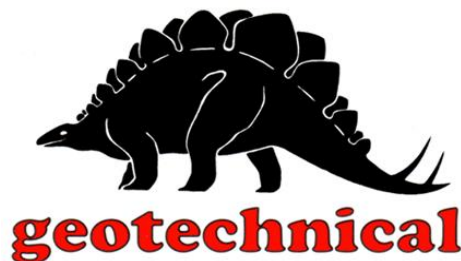
If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



2718

GEOTECHNICAL ENGINEERING LIMITED



For the attention of Dave Owen/Andrew Tatnell

Version No. 1

Page No. 1 of 18

Date of Issue 31/01/2019

TEST REPORT

PROJECT/SITE	STATION HILL, READING	Samples received	19/12/2018
GEL REPORT NUMBER	34769	Schedule received	19/12/2018
Your ref/PO:		Testing commenced	11/01/2019
Test report refers to	Schedule B	Status	Final

SUMMARY OF RESULTS ATTACHED

TEST METHOD & DESCRIPTION	QUANTITY	ACCREDITED TEST
BS EN ISO 17892-1: 2014:5. Water Content	12	YES
BS1377: Part 2: 1990:4.2-4.4&5.2-5.4, Liquid & Plastic Limits	10	YES
BS1377: Part 2: 1990:4.5-4.6&5.2-5.4, Liquid (Casagrande Method) & Plastic Limits	2	NO
BS1377: Part 2: 1990:3.3, Saturation Moisture Content	1	YES
BS EN ISO 17892-2: 2014:5.1 Density - Linear Measurement	3	YES
BS EN ISO 17892-4: 2016: 5.2, Particle Size Distribution - Wet Sieve	9	YES
BS EN ISO 17892-4: 2016: 5.4, Particle Size Distribution - Pipette	9	YES
BRE SD1 Suite (Subcontracted)	3	YES/NO
Organic Matter Content (subcontracted)	3	YES

Remarks

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Approved Signatories:

W Jones (Lab Manager) E Crimp (Senior Engineer)

J Hanson (Director) N Parry (Director)

Doc TR01 Rev No. 20 Revision date 09/10/17 DC:JH

Geotechnical Engineering Ltd

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Olympus Park, Quedgeley
Gloucester GL2 4NF

www.geoeng.co.ukgeotech@geoeng.co.uk

TEL: 01452 527743

Fax: 01452 729314

Registered number: 00700739**VAT Number:** 682 5857 89**Payments:** Geotechnical Engineering Limited**Sort code:** 16-22-11 **Bank account:** 11125135

LIQUID AND PLASTIC LIMITS

BS.1377 : PART 2 : 1990 : 4 and 5



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole /trial pit no.	sample		specimen depth (m)	natural water content (%)	specimen preparation and test method	fraction >0.425 mm (%)	liquid limit (%)	plastic limit (%)	plasticity index (%)	description and remarks	
	no./type	depth (m)									
WS301	6L	1.00	1.20	23.6	BXE	38	29	23	6	Off white slightly sandy slightly gravelly SILT (chalk)	
WS301	12L	3.00	3.70	23.3	BYE	56	29	22	7	Off white slightly sandy slightly gravelly SILT (chalk)	
WS304	5D	1.70	1.70	7.2	BXE	79	33	16	17	Orangish brown sandy clayey GRAVEL	
WS304	6D	2.00	2.00	9.8	BZE	56	24	17	7	Off white slightly sandy gravelly SILT (chalk)	
WS310	1B	0.50	0.50	6	BZE	84	30	17	13	Brown clayey very sandy GRAVEL	
WS310	5L	2.00	2.00	21.7	BXE	27	28	21	7	Off white slightly sandy slightly gravelly clayey SILT (chalk)	
WS311	3L	1.20	1.70	23	BXE	25	29	23	6	Off white slightly sandy slightly gravelly clayey SILT (chalk)	
WS311	7L	3.00	3.50	22.5	BXE	38	28	22	6	Off white slightly sandy slightly gravelly clayey SILT (chalk)	
WS311	9L	4.00	4.00	21.4	BXE	36	27	21	6	Off white slightly sandy slightly gravelly clayey SILT (chalk)	
WS315	1B	0.50	0.50	5.2	BYE	81	20	NP		Brown silty very sandy GRAVEL	
WS315	3L	1.20	1.20	19.6	BXE	10	27	21	6	Off white slightly sandy slightly gravelly SILT (chalk)	
WS315	7L	3.00	3.00	22.9	BXE	14	30	23	7	Off white slightly sandy slightly gravelly SILT (chalk)	
general remarks natural water content determined in accordance with BS EN ISO 17892 - 1 : 2014 (unless specified) NP denotes non plastic # denotes sample tested is smaller than that which is recommended in accordance with BS1377 or BS EN ISO 17892											
specimen preparation A - as received B - washed on 0.425mm sieve C - air dried						test method X - cone penetrometer (test 4.3) Y - cone penetrometer (test 4.4) Z - casa grande apparatus (test 4.5)				CONTRACT 34769	CHECKED TB

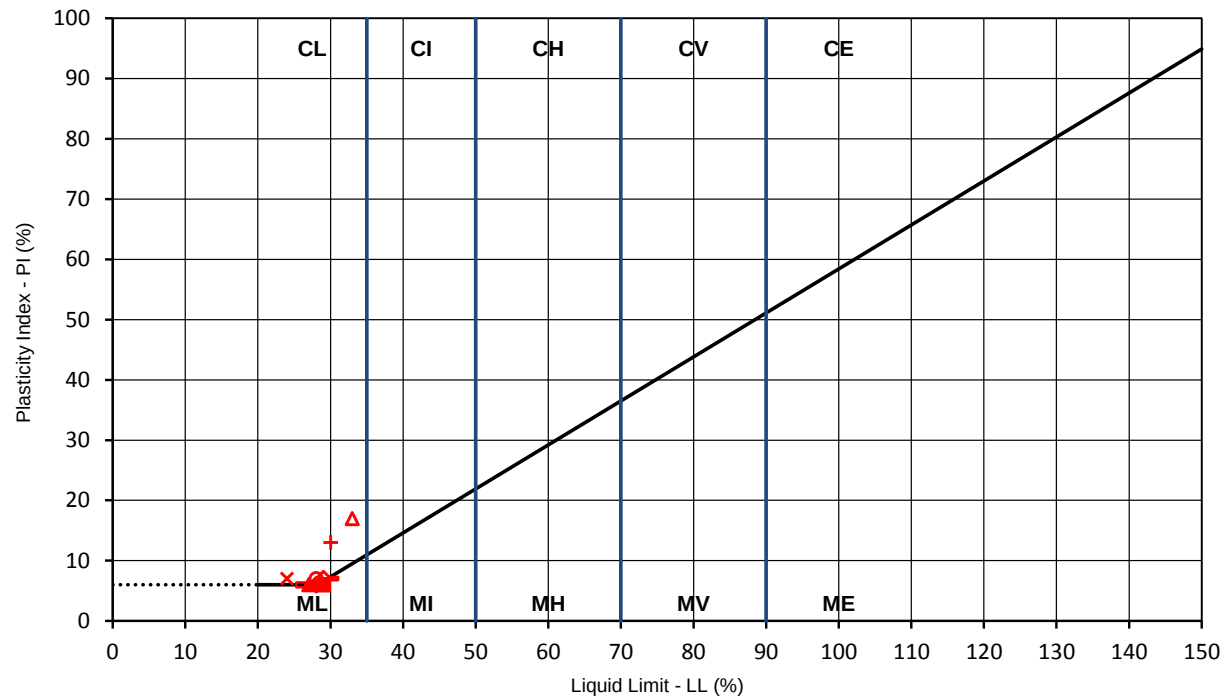
Geotechnical Engineering Limited

ATTERBERG LINE PLOT



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING



	BH/TP No.	depth (m)	LL	PL	PI	remarks
□	WS301	1.20	29	23	6	
◇	WS301	3.70	29	22	7	
△	WS304	1.70	33	16	17	
×	WS304	2.00	24	17	7	
+	WS310	0.50	30	17	13	
○	WS310	2.00	28	21	7	
■	WS311	1.70	29	23	6	
◆	WS311	3.50	28	22	6	
▲	WS311	4.00	27	21	6	
	WS315	0.50	20	NP		
□	WS315	1.20	27	21	6	
■	WS315	3.00	30	23	7	

CONTRACT	CHECKED
34769	TB



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole /trial pit no.	sample		specimen depth (m)	natural moisture content (%)	bulk density (Mg/m3)	dry density (Mg/m3)	saturation moisture content (%)	porosity (%)	description and remarks
	no./type	depth (m)							
WS301	9L	2.00	2.70	26.40	1.97	1.56	27	42	White CHALK #
general remarks natural moisture content determined in accordance with BS1377 : Part 2 : 1990 : 3.2 (unless specified) # denotes sample tested is smaller than that which is recommended in accordance with BS1377									
test method immersion in water (test 3.3)								CONTRACT 34769	CHECKED TB

DENSITY (LINEAR MEASUREMENT METHOD)

BS EN ISO 17892 - 2 : 2014 Clause 5.1



CLIENT SH READING MASTER LLP

SITE STATION HILL, READING

borehole /trial pit no.	sample		specimen depth (m)	test method	natural water content (%)	bulk density (Mg/m3)	dry density (Mg/m3)	description and remarks
	no./type	depth (m)						
WS310	5L	2.00	2.30	A	21.4	1.96	1.61	Off white slightly sandy slightly gravelly SILT (chalk)
WS315	3L	1.20	1.35	A	19.7	2.02	1.69	Off white slightly sandy slightly gravelly SILT (chalk)
WS315	7L	3.00	3.10	A	23.6	1.92	1.56	Off white slightly sandy slightly gravelly SILT (chalk)
general remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN ISO 17892 - 2 : 2014								
test method A - linear measurement (5.1) B - immersion in fluid (5.2) C - fluid displacement (5.3)							CONTRACT 34769	CHECKED TB

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892 - 4 : 2016 : 5



CLIENT SH READING MASTER LLP

BH/TP No.

WS301

SITE STATION HILL, READING

SAMPLE No./TYPE

6L

DESCRIPTION Off white slightly sandy slightly gravelly SILT (chalk)

SAMPLE DEPTH (m)

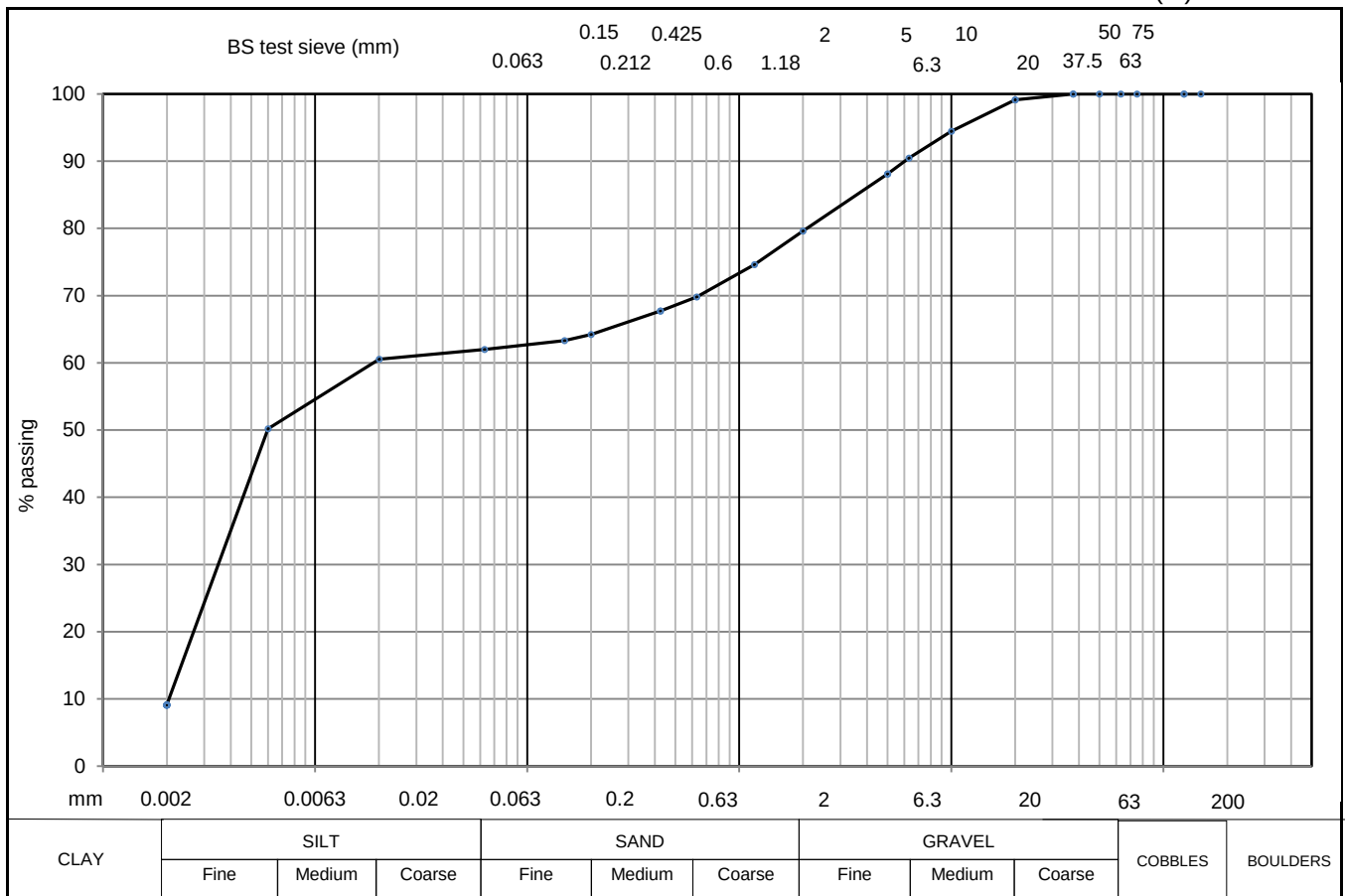
1.00

SPECIMEN TOP (m)

1.50

SPECIMEN BASE (m)

1.70



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	9						
SILT	53	150		5	88	20	61
SILT & CLAY	62						
SAND	18	75		2	80	6	50
GRAVEL	20						
COBBLE & BOULDER	0	63		1.18	75	2	9
test method(s)	5.2 & 5.4	50		0.63	70		
test method		37.5	100	0.425	68		
5.2 - sieving		20	99	0.2	64		
5.3 - sedimentation by hydrometer		10	94	0.15	63		
5.4 - sedimentation by pipette		6.3	90	0.063	62		
remarks	# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3					CONTRACT	CHECKED
						34769	TB



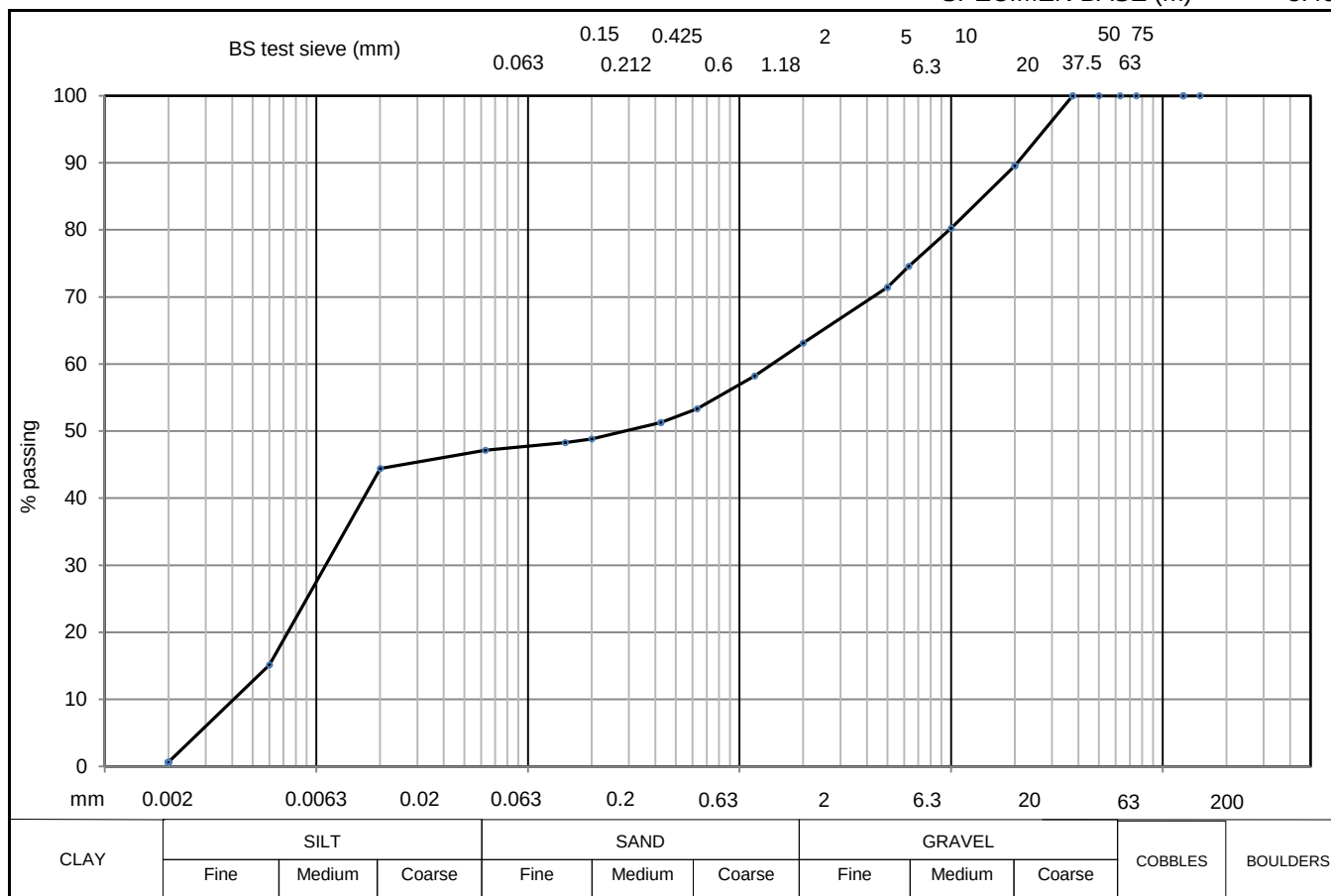
BH/TP No. WS301

SAMPLE No./TYPE 12L

SAMPLE DEPTH (m) 3.00

SPECIMEN TOP (m) 3.00

SPECIMEN BASE (m) 3.40



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	1	150		5	71	20	44
SILT	47						
SILT & CLAY	47						
SAND	16						
GRAVEL	37						
COBBLE & BOULDER	0	75		2	63	6	15
		63		1.18	58	2	1
test method(s)	5.2# & 5.4	50	100	0.63	53		
test method							
5.2 - sieving							
5.3 - sedimentation by hydrometer							
5.4 - sedimentation by pipette							
		37.5		0.425	51		
		20	90	0.2	49		
		10	80	0.15	48		
		6.3	75	0.063	47		
remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3						CONTRACT 34769	CHECKED TB



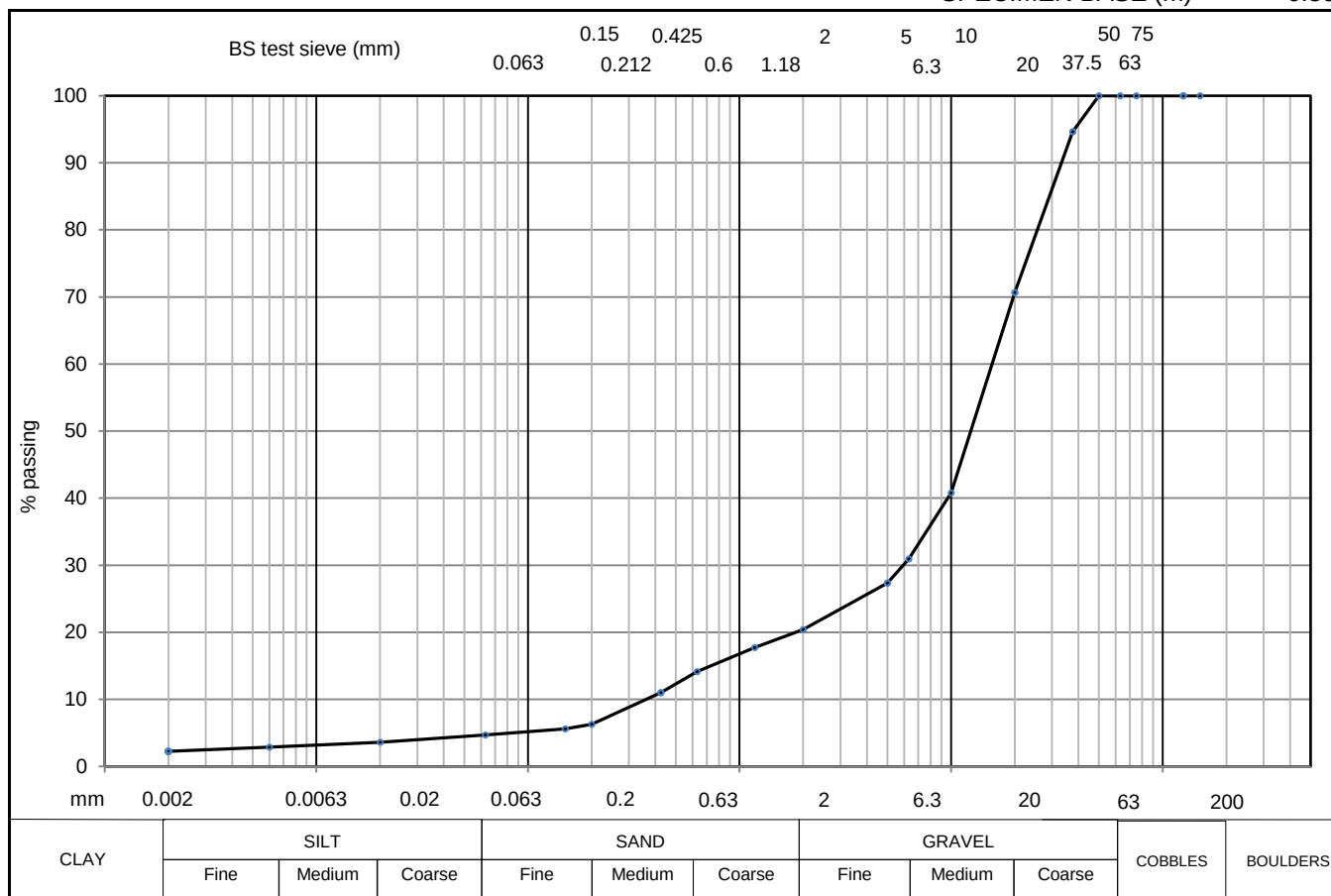
BH/TP No. WS310

SAMPLE No./TYPE 1B

SAMPLE DEPTH (m) 0.50

SPECIMEN TOP (m) 0.50

SPECIMEN BASE (m) 0.80



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	2	150	100	5	27	20	4
SILT	2						
SILT & CLAY	5						
SAND	16						
GRAVEL	80						
COBBLE & BOULDER	0						
test method(s)	5.2# & 5.4	63		1.18	18	2	2
test method		50	100	0.63	14		
5.2 - sieving		37.5	95	0.425	11		
5.3 - sedimentation by hydrometer		20	71	0.2	6		
5.4 - sedimentation by pipette		10	41	0.15	6		
		6.3	31	0.063	5		
remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3						CONTRACT 34769	CHECKED TB



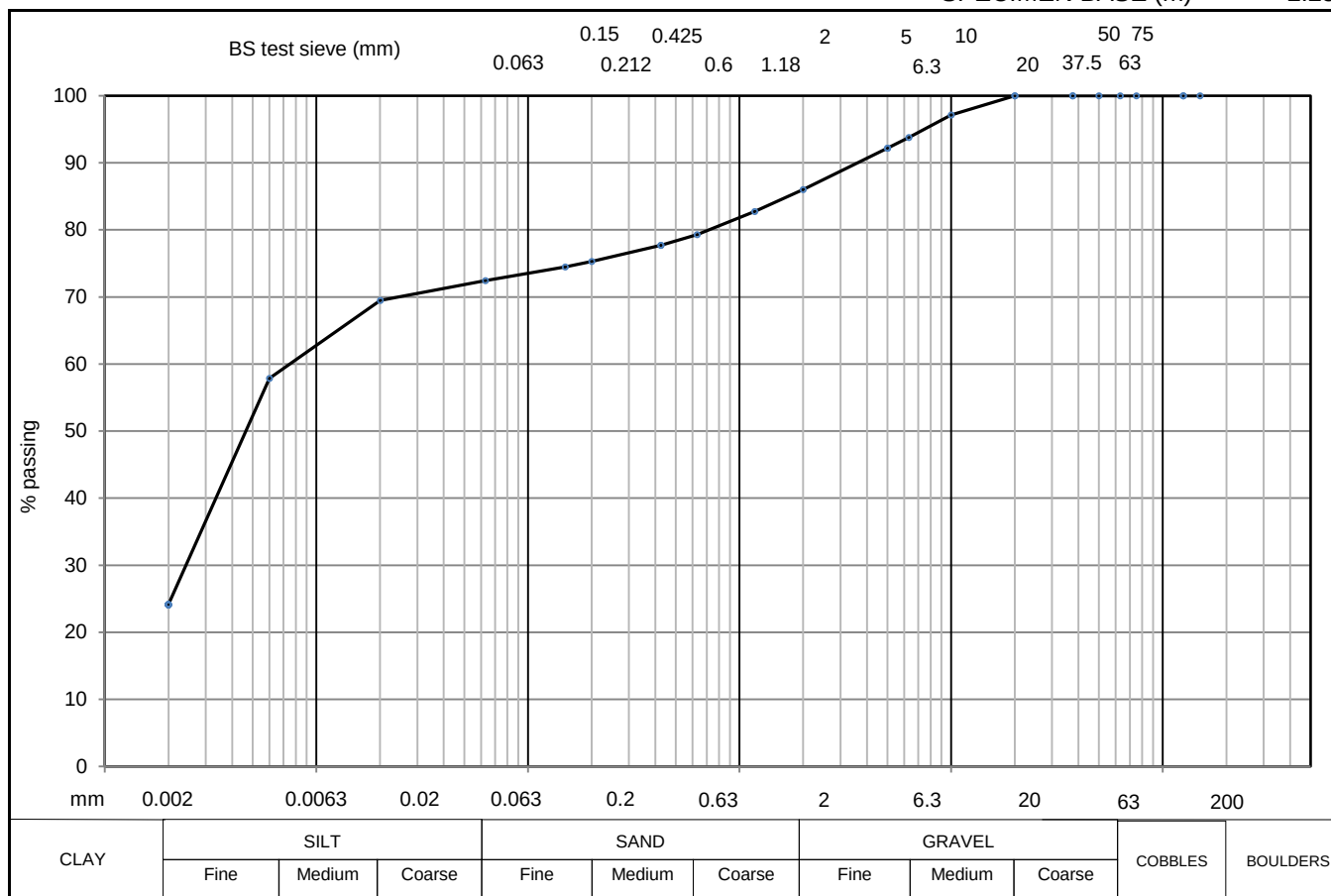
BH/TP No. WS310

SAMPLE No./TYPE 5L

SAMPLE DEPTH (m) 2.00

SPECIMEN TOP (m) 2.15

SPECIMEN BASE (m) 2.25



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	24	150		5	92	20	69
SILT	48						
SILT & CLAY	72						
SAND	14						
GRAVEL	14						
COBBLE & BOULDER	0						
test method(s)	5.2 & 5.4	50		0.63	79		
test method							
5.2 - sieving							
5.3 - sedimentation by hydrometer							
5.4 - sedimentation by pipette							
remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3					CONTRACT 34769		CHECKED TB



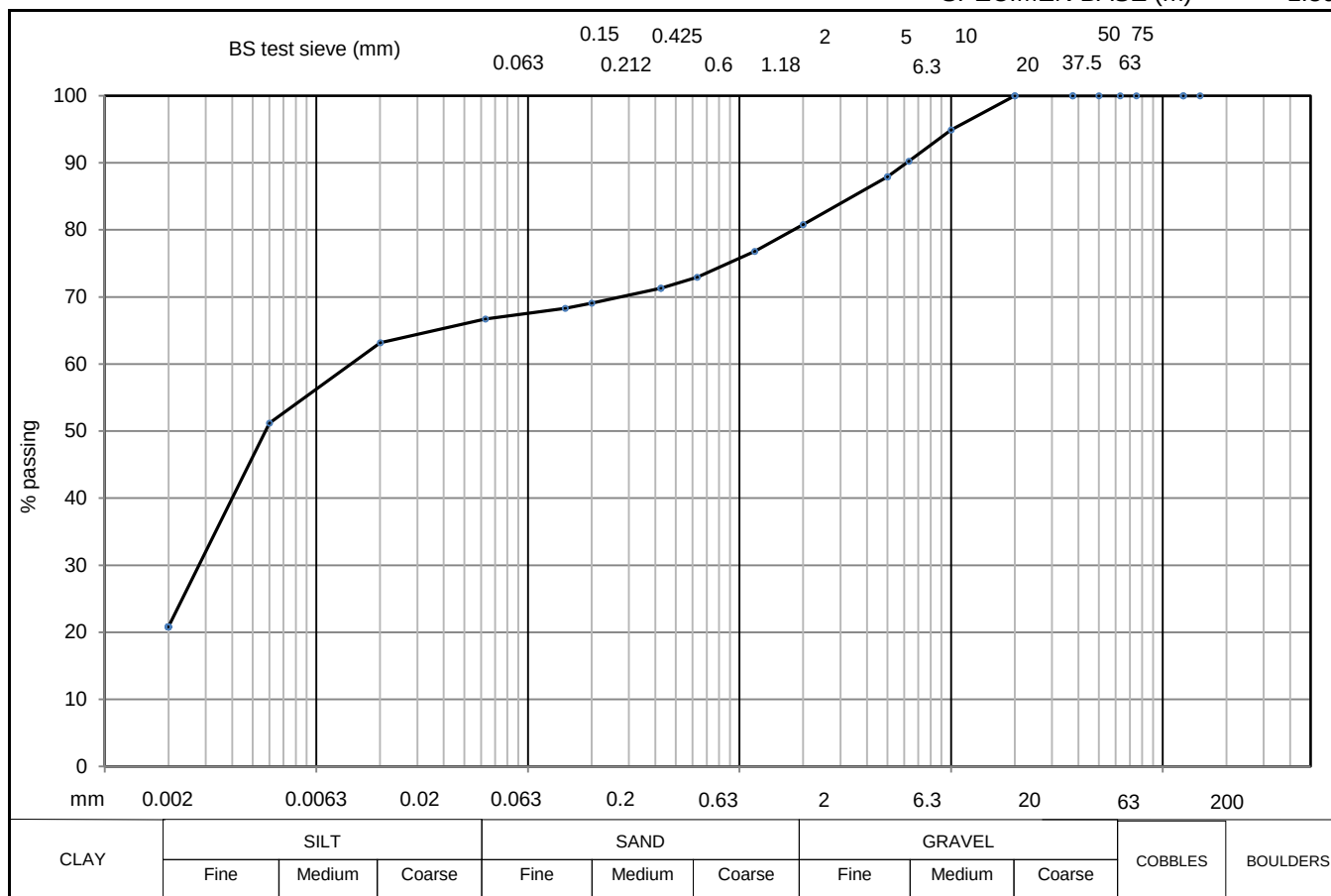
BH/TP No. WS311

SAMPLE No./TYPE 3L

SAMPLE DEPTH (m) 1.20

SPECIMEN TOP (m) 1.75

SPECIMEN BASE (m) 1.80



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	21	150		5	88	20	63
SILT	46						
SILT & CLAY	67						
SAND	14						
GRAVEL	19						
COBBLE & BOULDER	0						
test method(s)	5.2 & 5.4	50	100	0.63	73		
test method							
5.2 - sieving							
5.3 - sedimentation by hydrometer							
5.4 - sedimentation by pipette							
remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3					CONTRACT 34769		CHECKED TB

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892 - 4 : 2016 : 5



CLIENT SH READING MASTER LLP

BH/TP No.

WS311

SITE STATION HILL, READING

SAMPLE No./TYPE

7L

DESCRIPTION Off white slightly gravelly slightly sandy clayey SILT (chalk)

SAMPLE DEPTH (m)

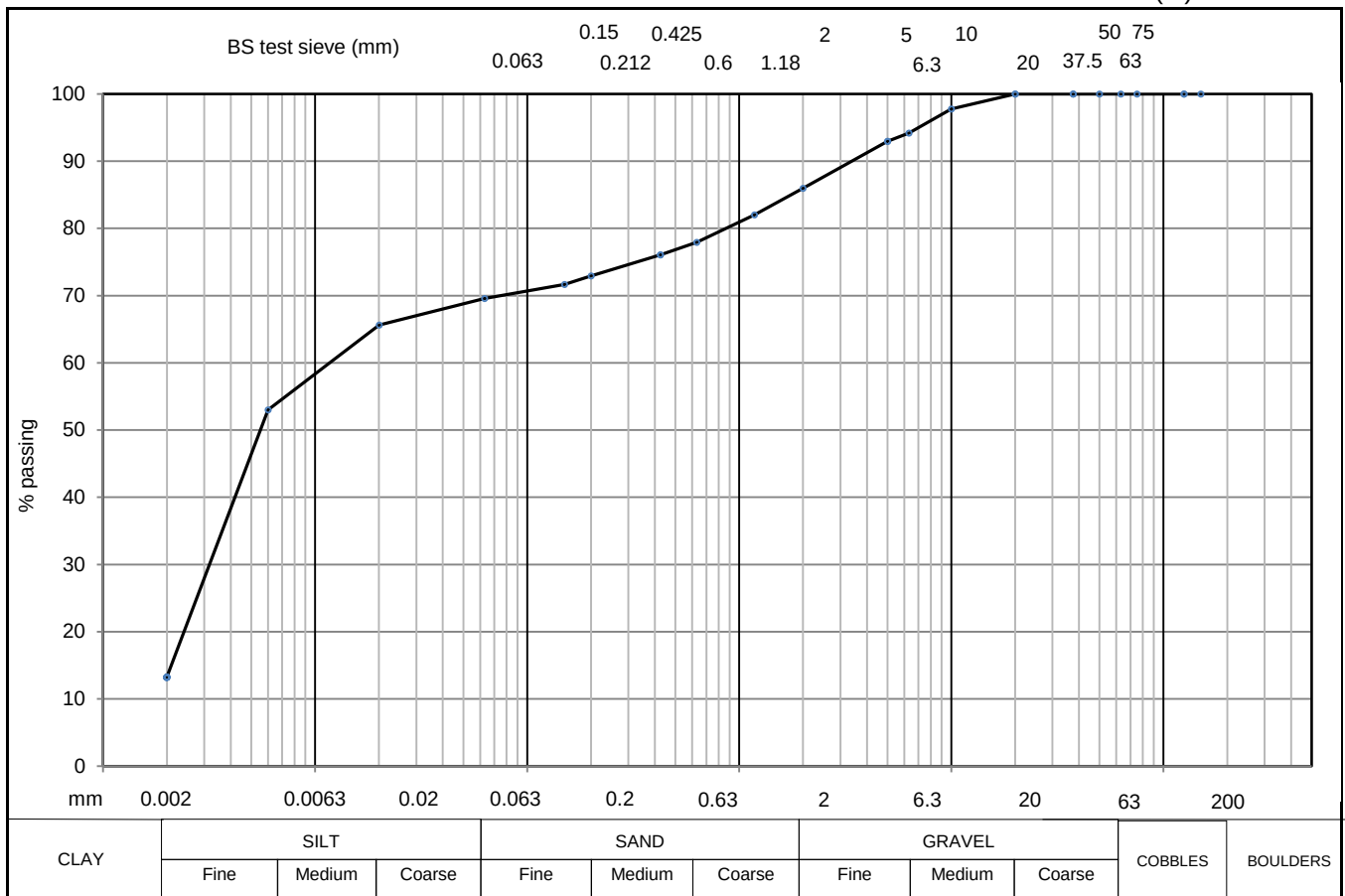
3.00

SPECIMEN TOP (m)

3.55

SPECIMEN BASE (m)

3.60



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	13						
SILT	56	150		5	93	20	66
SILT & CLAY	70						
SAND	16	75		2	86	6	53
GRAVEL	14						
COBBLE & BOULDER	0	63		1.18	82	2	13
test method(s)	5.2 & 5.4	50		0.63	78		
test method		37.5		0.425	76		
5.2 - sieving		20	100	0.2	73		
5.3 - sedimentation by hydrometer		10	98	0.15	72		
5.4 - sedimentation by pipette		6.3	94	0.063	70		
remarks	# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m ³					CONTRACT	CHECKED
						34769	TB



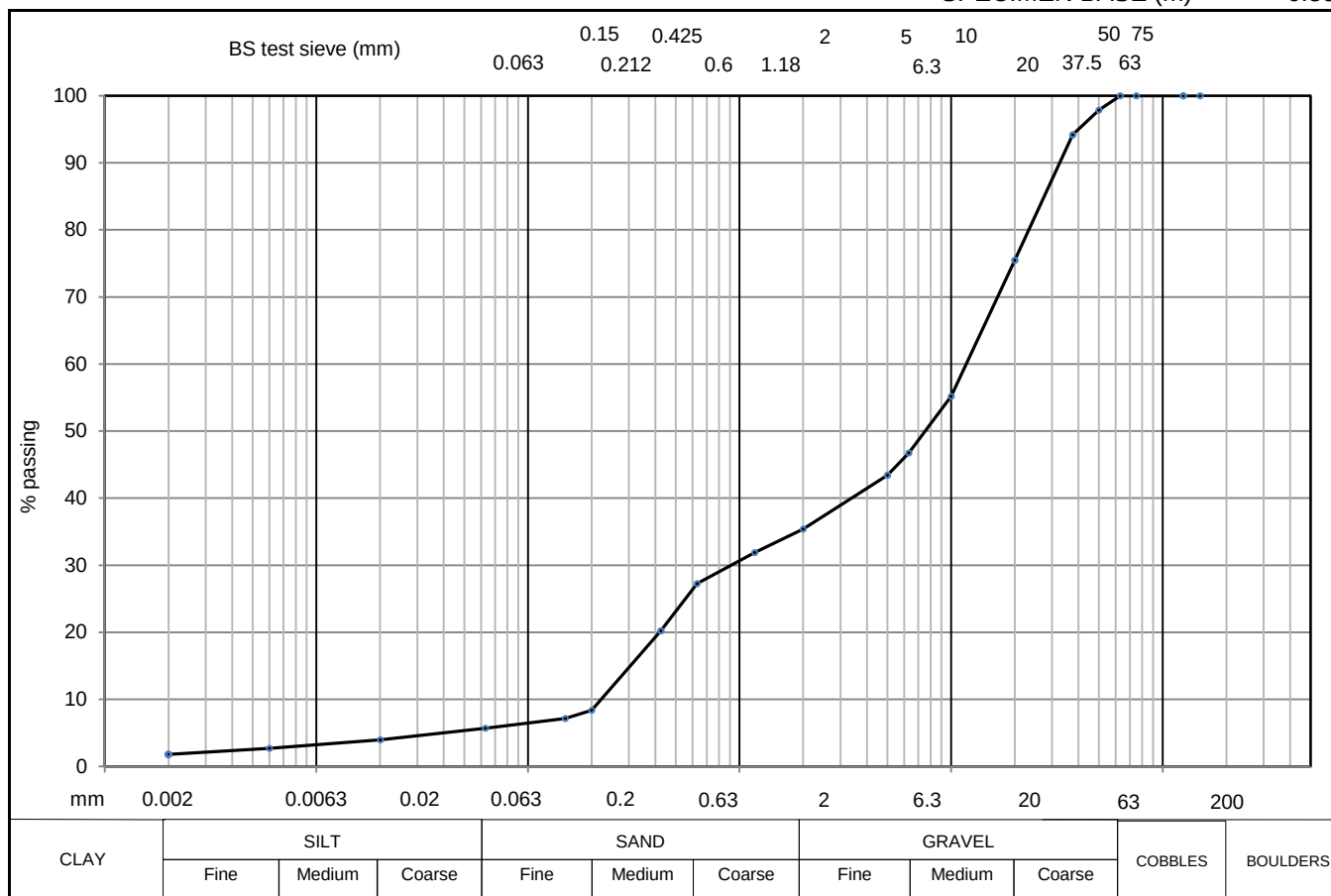
BH/TP No. WS315

SAMPLE No./TYPE 1B

SAMPLE DEPTH (m) 0.50

SPECIMEN TOP (m) 0.50

SPECIMEN BASE (m) 0.80



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	2	150	100	5	43	20	4
SILT	4						
SILT & CLAY	6						
SAND	30						
GRAVEL	65						
COBBLE & BOULDER	0						
test method(s)	5.2# & 5.4	63	100	1.18	32	2	2
test method		50	98	0.63	27		
5.2 - sieving		37.5	94	0.425	20		
5.3 - sedimentation by hydrometer		20	75	0.2	8		
5.4 - sedimentation by pipette		10	55	0.15	7		
		6.3	47	0.063	6		
remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3					CONTRACT 34769		CHECKED TB



CLIENT SH READING MASTER LLP

BH/TP No. WS315

SITE STATION HILL, READING

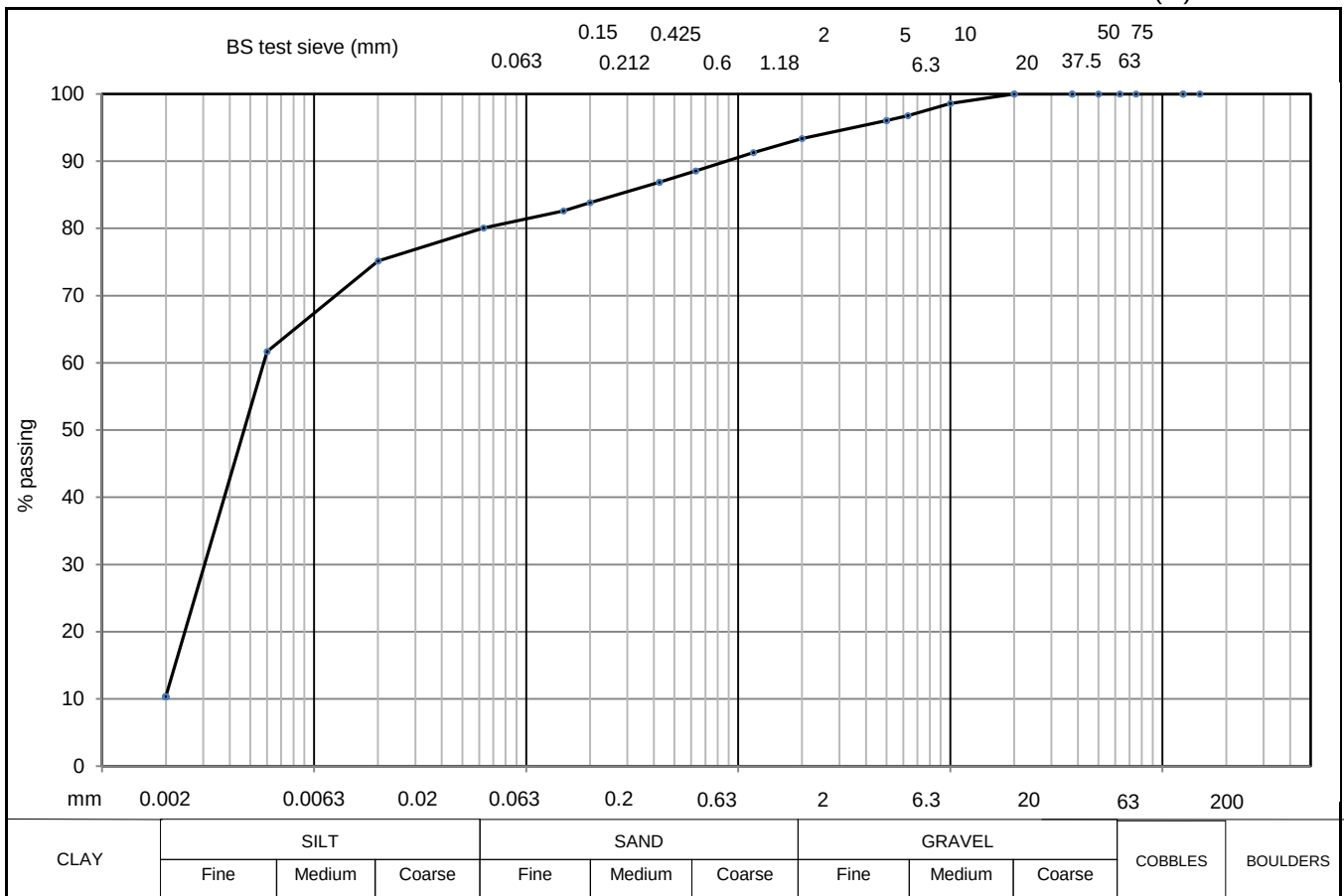
SAMPLE No./TYPE	3L
-----------------	----

DESCRIPTION Off white slightly gravelly slightly sandy SILT (chalk)

SAMPLE DEPTH (m) 1.20

SPECIMEN TOP (m) 1.30

SPECIMEN BASE (m)	1.35
-------------------	------



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	10	150		5	96	20	75
SILT	70						
SILT & CLAY	80						
SAND	13						
GRAVEL	7						
COBBLE & BOULDER	0	63	100	1.18	91	2	10
test method(s)	5.2 & 5.4	50		0.63	89		
test method		37.5		0.425	87		
5.2 - sieving		20		0.2	84		
5.3 - sedimentation by hydrometer		10		0.15	83		
5.4 - sedimentation by pipette		6.3	97	0.063	80		
remarks						CONTRACT	CHECKED
# denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892						34769	TB
Particle density assigned an assumed value of 2.70 Mg/m3							



CLIENT SH READING MASTER LLP

BH/TP No. WS315

SITE STATION HILL, READING

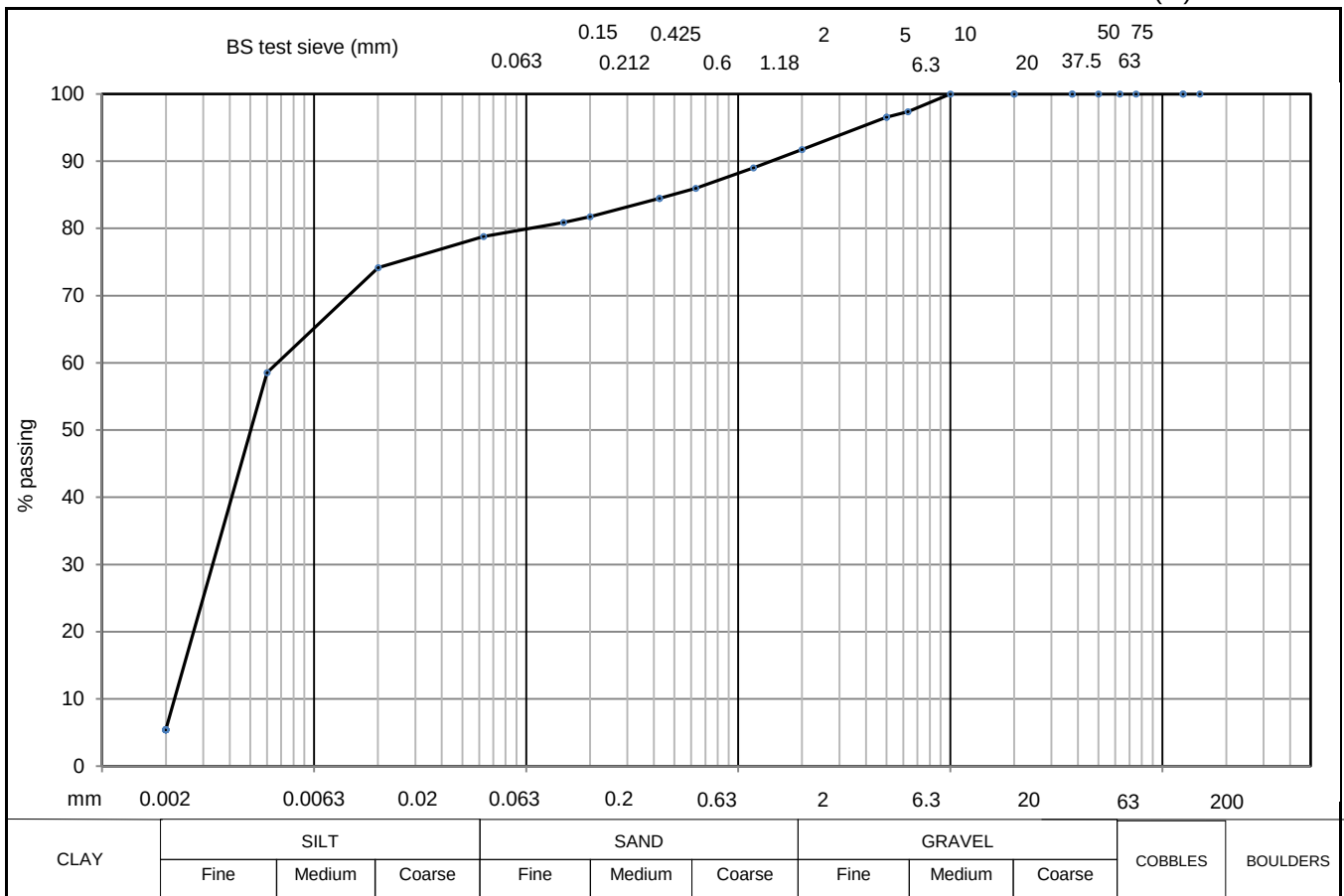
SAMPLE No./TYPE 7L

DESCRIPTION Off white slightly gravelly slightly sandy SILT (chalk)

SAMPLE DEPTH (m) 3.00

SPECIMEN TOP (m) 3.05

SPECIMEN BASE (m) 3.10



soil type	% fraction	BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	BS test sieve (µm)	% finer
CLAY	5	150		5	97	20	74
SILT	73						
SILT & CLAY	79						
SAND	13						
GRAVEL	8						
COBBLE & BOULDER	0						
test method(s)	5.2 & 5.4	50		0.63	86		
test method		37.5		0.425	84		
5.2 - sieving		20		0.2	82		
5.3 - sedimentation by hydrometer		10	100	0.15	81		
5.4 - sedimentation by pipette		6.3	97	0.063	79		
remarks # denotes sample tested is smaller than that which is recommended in accordance with BS EN 17892 Particle density assigned an assumed value of 2.70 Mg/m3						CONTRACT	CHECKED
						34769	TB



2183

Final Report

Report No.: 19-00938-1

Initial Date of Issue: 16-Jan-2019

Client Geotechnical Engineering Ltd

Client Address: Centurion House
Olympus Park
Quedgeley
Gloucester
Gloucestershire
GL2 4NF

Contact(s): GEL
Wendy Jones

Project 34769 Station Hill, Reading

Quotation No.: **Date Received:** 14-Jan-2019

Order No.: 34769B/WJ **Date Instructed:** 14-Jan-2019

No. of Samples: 4

Turnaround (Wkdays): 3 **Results Due:** 16-Jan-2019

Date Approved: 16-Jan-2019

Approved By:



Details: Robert Monk, Technical Manager

Results - Soil

Project: 34769 Station Hill, Reading

Client: Geotechnical Engineering Ltd	Chemtest Job No.:				19-00938	19-00938	19-00938	19-00938
Quotation No.:	Chemtest Sample ID.:				752318	752319	752320	752321
	Client Sample ID.:				6L	5D	6D	5L
	Sample Location:				WS301	WS304	WS304	WS310
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				1.00	1.70	2.00	2.00
	Bottom Depth (m):				2.00	1.80	2.45	3.00
	Date Sampled:				11-Jan-2019	11-Jan-2019	11-Jan-2019	11-Jan-2019
Determinand	Accred.	SOP	Units	LOD				
Moisture	N	2030	%	0.020	19	5.1	6.2	18
pH	U	2010		N/A	8.3	8.3	8.7	
Magnesium (Water Soluble)	N	2120	g/l	0.010	0.013	< 0.010	< 0.010	
Sulphate (2:1 Water Soluble) as SO ₄	U	2120	g/l	0.010	0.19	0.051	< 0.010	
Total Sulphur	U	2175	%	0.010	0.10	0.021	0.021	
Chloride (Water Soluble)	U	2220	g/l	0.010	< 0.010	< 0.010	< 0.010	
Nitrate (Water Soluble)	N	2220	g/l	0.010	< 0.010	< 0.010	< 0.010	
Sulphate (Acid Soluble)	U	2430	%	0.010	0.10	0.019	0.038	
Organic Matter	U	2625	%	0.40		< 0.40	< 0.40	0.59

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



APPENDIX C

CHEMICAL ANALYSES

**Andrew Tatnell**

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Analytical Report Number : 18-21818

Replaces Analytical Report Number : 18-21818, issue no. 1

Project / Site name:	Station Hill, Reading	Samples received on:	30/12/2018
Your job number:	34769	Samples instructed on:	11/12/2018
Your order number:		Analysis completed by:	16/01/2019
Report Issue Number:	2	Report issued on:	16/01/2019
Samples Analysed:	6 soil samples		

Signed

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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

Analytical Report Number: 18-21818

Project / Site name: Station Hill, Reading

Lab Sample Number	1111356	1111357	1111358	1111359	1111360
Sample Reference	BH301	BH301	BH304	BH304	BH303
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	1.20	0.50	1.50	0.20
Date Sampled	12/11/2018	12/11/2018	13/11/2018	13/11/2018	14/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	15
Total mass of sample received	kg	0.001	NONE	2.0	2.0

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	-	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	< 0.001

General Inorganics

Total Cyanide	mg/kg	1	MCERTS	-	< 1	-	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.28	0.34	0.52	< 0.05	0.26
Acenaphthylene	mg/kg	0.05	MCERTS	1.2	0.29	1.0	< 0.05	0.60
Acenaphthene	mg/kg	0.05	MCERTS	1.3	1.0	6.6	< 0.05	0.93
Fluorene	mg/kg	0.05	MCERTS	1.2	1.3	6.9	< 0.05	0.67
Phenanthrene	mg/kg	0.05	MCERTS	11	11	37	0.70	7.0
Anthracene	mg/kg	0.05	MCERTS	4.4	2.3	13	0.30	2.8
Fluoranthene	mg/kg	0.05	MCERTS	29	12	51	1.3	20
Pyrene	mg/kg	0.05	MCERTS	28	9.9	42	1.0	18
Benzo(a)anthracene	mg/kg	0.05	MCERTS	17	5.0	22	0.53	9.3
Chrysene	mg/kg	0.05	MCERTS	12	3.6	15	0.47	7.5
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	16	4.3	17	0.45	9.5
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	11	1.6	8.0	0.29	4.4
Benzo(a)pyrene	mg/kg	0.05	MCERTS	17	3.9	16	0.41	9.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	11	2.2	9.0	0.29	5.6
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	3.5	0.69	3.0	< 0.05	1.8
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	12	2.3	9.7	0.33	6.2

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	175	61.7	257	6.08	103
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	30	29	12	9.0	14
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	1.3	1.6	1.1	1.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	0.3
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	40	33	19	24	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	61	25	240	30	55
Lead (aqua regia extractable)	mg/kg	1	MCERTS	180	300	44	33	140
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	16	33	25	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.6	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	130	140	92	53	110

Analytical Report Number: 18-21818

Project / Site name: Station Hill, Reading

Lab Sample Number	1111356	1111357	1111358	1111359	1111360
Sample Reference	BH301	BH301	BH304	BH304	BH303
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	1.20	0.50	1.50	0.20
Date Sampled	12/11/2018	12/11/2018	13/11/2018	13/11/2018	14/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	3.1	< 1.0	2.0	< 1.0	1.8
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	40	< 2.0	31	< 2.0	13
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	72	< 8.0	54	< 8.0	21
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	400	29	150	< 8.0	74
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	510	37	230	< 10	110

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	5.1	5.4	15	< 1.0	1.2
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	61	20	120	4.4	19
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	610	96	630	19	180
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	2500	160	1300	44	560
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	3200	280	2100	68	750



Analytical Report Number: 18-21818

Project / Site name: Station Hill, Reading

Lab Sample Number	1111356	1111357	1111358	1111359	1111360
Sample Reference	BH301	BH301	BH304	BH304	BH303
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	1.20	0.50	1.50	0.20
Date Sampled	12/11/2018	12/11/2018	13/11/2018	13/11/2018	14/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

VOCs

Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Iss No 18-21818-2 Station Hill, Reading 34769

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The results included within the report are representative of the samples submitted for analysis.

Page 4 of 15



Analytical Report Number: 18-21818

Project / Site name: Station Hill, Reading

Lab Sample Number	1111356	1111357	1111358	1111359	1111360
Sample Reference	BH301	BH301	BH304	BH304	BH303
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	1.20	0.50	1.50	0.20
Date Sampled	12/11/2018	12/11/2018	13/11/2018	13/11/2018	14/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

SVOCs					
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	0.28	0.34
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	0.6
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	1.2	0.29
Acenaphthene	mg/kg	0.05	MCERTS	1.3	1.0
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	0.7
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	1.2	1.3
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	11	11
Anthracene	mg/kg	0.05	MCERTS	4.4	2.3
Carbazole	mg/kg	0.3	MCERTS	1.2	1.0
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	29	12
Pyrene	mg/kg	0.05	MCERTS	28	9.9
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	17	5.0
Chrysene	mg/kg	0.05	MCERTS	12	3.6
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	16	4.3
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	11	1.6
Benzo(a)pyrene	mg/kg	0.05	MCERTS	17	3.9
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	11	2.2
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	3.5	0.69
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	12	2.3

Analytical Report Number: 18-21818

Project / Site name: Station Hill, Reading

Lab Sample Number	1111356	1111357	1111358	1111359	1111360
Sample Reference	BH301	BH301	BH304	BH304	BH303
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	1.20	0.50	1.50	0.20
Date Sampled	12/11/2018	12/11/2018	13/11/2018	13/11/2018	14/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	< 0.001	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	< 0.001	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	< 0.001	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	< 0.001	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	< 0.001	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	< 0.001	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	< 0.001	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	< 0.007	-	-	-
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Analytical Report Number: 18-21818

Project / Site name: Station Hill, Reading

Lab Sample Number				1111361				
Sample Reference				BH303				
Sample Number				None Supplied				
Depth (m)				1.00				
Date Sampled				14/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	19				
Total mass of sample received	kg	0.001	NONE	1.8				

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-				
Asbestos in Soil	Type	N/A	ISO 17025	-				
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-				
Asbestos Quantification Total	%	0.001	ISO 17025	-				

General Inorganics

Total Cyanide	mg/kg	1	MCERTS	< 1				
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05				
Fluorene	mg/kg	0.05	MCERTS	< 0.05				
Phenanthrene	mg/kg	0.05	MCERTS	0.27				
Anthracene	mg/kg	0.05	MCERTS	0.10				
Fluoranthene	mg/kg	0.05	MCERTS	0.69				
Pyrene	mg/kg	0.05	MCERTS	0.51				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.23				
Chrysene	mg/kg	0.05	MCERTS	0.21				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.21				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.13				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.17				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	2.52				
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	2.0				
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	3.3				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	5.5				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	2.9				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	6.2				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	7.5				

Analytical Report Number: 18-21818

Project / Site name: Station Hill, Reading

Lab Sample Number				1111361				
Sample Reference				BH303				
Sample Number				None Supplied				
Depth (m)				1.00				
Date Sampled				14/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	ug/kg	1	MCERTS	< 1.0				
Toluene	ug/kg	1	MCERTS	< 1.0				
Ethylbenzene	ug/kg	1	MCERTS	< 1.0				
p & m-xylene	ug/kg	1	MCERTS	< 1.0				
o-xylene	ug/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0				

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	12				

Analytical Report Number: 18-21818

Project / Site name: Station Hill, Reading

Lab Sample Number				1111361				
Sample Reference				BH303				
Sample Number				None Supplied				
Depth (m)				1.00				
Date Sampled				14/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0				
Chloroethane	µg/kg	1	NONE	< 1.0				
Bromomethane	µg/kg	1	ISO 17025	< 1.0				
Vinyl Chloride	µg/kg	1	NONE	< 1.0				
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0				
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0				
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0				
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloromethane	µg/kg	1	MCERTS	< 1.0				
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0				
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0				
Benzene	µg/kg	1	MCERTS	< 1.0				
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloroethene	µg/kg	1	MCERTS	< 1.0				
Dibromomethane	µg/kg	1	MCERTS	< 1.0				
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0				
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0				
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0				
Tetrachloroethene	µg/kg	1	NONE	< 1.0				
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0				
Chlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-Xylene	µg/kg	1	MCERTS	< 1.0				
Styrene	µg/kg	1	MCERTS	< 1.0				
Tribromomethane	µg/kg	1	NONE	< 1.0				
o-Xylene	µg/kg	1	MCERTS	< 1.0				
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0				
Bromobenzene	µg/kg	1	MCERTS	< 1.0				
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0				
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0				
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0				
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0				
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0				
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0				
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0				
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0				

Analytical Report Number: 18-21818

Project / Site name: Station Hill, Reading

Lab Sample Number				1111361				
Sample Reference				BH303				
Sample Number				None Supplied				
Depth (m)				1.00				
Date Sampled				14/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1				
Phenol	mg/kg	0.2	ISO 17025	< 0.2				
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1				
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2				
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1				
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1				
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3				
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05				
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3				
4-Methylphenol	mg/kg	0.2	NONE	< 0.2				
Isophorone	mg/kg	0.2	MCERTS	< 0.2				
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3				
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3				
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3				
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3				
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2				
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1				
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1				
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05				
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2				
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3				
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2				
Fluorene	mg/kg	0.05	MCERTS	< 0.05				
Azobenzene	mg/kg	0.3	MCERTS	< 0.3				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2				
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Phenanthrene	mg/kg	0.05	MCERTS	0.27				
Anthracene	mg/kg	0.05	MCERTS	0.10				
Carbazole	mg/kg	0.3	MCERTS	< 0.3				
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3				
Fluoranthene	mg/kg	0.05	MCERTS	0.69				
Pyrene	mg/kg	0.05	MCERTS	0.51				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.23				
Chrysene	mg/kg	0.05	MCERTS	0.21				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.21				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.13				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.17				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				

Analytical Report Number: 18-21818

Project / Site name: Station Hill, Reading

Lab Sample Number				1111361				
Sample Reference				BH303				
Sample Number				None Supplied				
Depth (m)				1.00				
Date Sampled				14/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001				
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001				
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001				
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001				
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001				
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001				
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001				
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	< 0.007				



Analytical Report Number: 18-21818
Project / Site name: Station Hill, Reading
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
1111360	BH303	0.20	154	Loose Fibres	Chrysotile	< 0.001	< 0.001

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



Analytical Report Number : 18-21818

Project / Site name: Station Hill, Reading

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1111356	BH301	None Supplied	0.20	Brown sand with rubble and brick.
1111357	BH301	None Supplied	1.20	Brown sand with brick and gravel
1111358	BH304	None Supplied	0.50	Brown loam and clay with vegetation and gravel
1111359	BH304	None Supplied	1.50	Brown loam and clay with gravel and brick.
1111360	BH303	None Supplied	0.20	Brown loam and clay with gravel and brick.
1111361	BH303	None Supplied	1.00	Beige chalk. **

** Non MCERTS matrix.

Analytical Report Number : 18-21818

Project / Site name: Station Hill, Reading

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
BH301		S	18-21818	1111356	c	Hexavalent chromium in soil	L080-PL	c
BH301		S	18-21818	1111356	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH301		S	18-21818	1111356	c	Semi-volatile organic compounds in soil	L064-PL	c
BH301		S	18-21818	1111356	c	Speciated EPA-16 PAHs in soil	L064-PL	c
BH301		S	18-21818	1111356	c	TPHCWG (Soil)	L088/76-PL	c
BH301		S	18-21818	1111356	c	Volatile organic compounds in soil	L073B-PL	c
BH301		S	18-21818	1111357	c	Hexavalent chromium in soil	L080-PL	c
BH301		S	18-21818	1111357	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH301		S	18-21818	1111357	c	PCB's By GC-MS in soil	L027-PL	c
BH301		S	18-21818	1111357	c	Semi-volatile organic compounds in soil	L064-PL	c
BH301		S	18-21818	1111357	c	Speciated EPA-16 PAHs in soil	L064-PL	c
BH301		S	18-21818	1111357	c	TPHCWG (Soil)	L088/76-PL	c
BH301		S	18-21818	1111357	c	Total cyanide in soil	L080-PL	c
BH301		S	18-21818	1111357	c	Volatile organic compounds in soil	L073B-PL	c
BH303		S	18-21818	1111360	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH303		S	18-21818	1111360	c	Semi-volatile organic compounds in soil	L064-PL	c
BH303		S	18-21818	1111360	c	Speciated EPA-16 PAHs in soil	L064-PL	c
BH303		S	18-21818	1111360	c	TPHCWG (Soil)	L088/76-PL	c
BH303		S	18-21818	1111360	c	Volatile organic compounds in soil	L073B-PL	c
BH303		S	18-21818	1111361	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH303		S	18-21818	1111361	c	PCB's By GC-MS in soil	L027-PL	c
BH303		S	18-21818	1111361	c	Semi-volatile organic compounds in soil	L064-PL	c
BH303		S	18-21818	1111361	c	Speciated EPA-16 PAHs in soil	L064-PL	c
BH303		S	18-21818	1111361	c	TPHCWG (Soil)	L088/76-PL	c
BH303		S	18-21818	1111361	c	Total cyanide in soil	L080-PL	c
BH303		S	18-21818	1111361	c	Volatile organic compounds in soil	L073B-PL	c
BH304		S	18-21818	1111358	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH304		S	18-21818	1111358	c	Semi-volatile organic compounds in soil	L064-PL	c
BH304		S	18-21818	1111358	c	Speciated EPA-16 PAHs in soil	L064-PL	c
BH304		S	18-21818	1111358	c	TPHCWG (Soil)	L088/76-PL	c
BH304		S	18-21818	1111358	c	Volatile organic compounds in soil	L073B-PL	c
BH304		S	18-21818	1111359	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
BH304		S	18-21818	1111359	c	Semi-volatile organic compounds in soil	L064-PL	c
BH304		S	18-21818	1111359	c	Speciated EPA-16 PAHs in soil	L064-PL	c
BH304		S	18-21818	1111359	c	TPHCWG (Soil)	L088/76-PL	c
BH304		S	18-21818	1111359	c	Volatile organic compounds in soil	L073B-PL	c

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Analytical Report Number : 18-21821

Project / Site name:	Station Hill, Reading	Samples received on:	30/12/2018
Your job number:	34769	Samples instructed on:	11/12/2018
Your order number:		Analysis completed by:	17/12/2018
Report Issue Number:	1	Report issued on:	17/12/2018
Samples Analysed:	4 soil samples		

Signed

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-21821

Project / Site name: Station Hill, Reading

Lab Sample Number	1111364	1111365	1111366	1111367	
Sample Reference	WS314	WS314	WS302	WS302	
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)	0.40-0.50	2.25-2.35	0.50-0.70	1.00-1.10	
Date Sampled	20/11/2018	20/11/2018	20/11/2018	20/11/2018	
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	11	6.0
Total mass of sample received	kg	0.001	NONE	2.0	1.6

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	-
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General Inorganics

Total Cyanide	mg/kg	1	MCERTS	< 1	-	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.34	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.29	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	29	20	11
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	0.7	0.7	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	33	18	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	31	18	26	8.8
Lead (aqua regia extractable)	mg/kg	1	MCERTS	91	13	8.7	7.4
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	28	45	44	38
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	61	62	64	44

Analytical Report Number: 18-21821

Project / Site name: Station Hill, Reading

Lab Sample Number	1111364	1111365	1111366	1111367	
Sample Reference	WS314	WS314	WS302	WS302	
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)	0.40-0.50	2.25-2.35	0.50-0.70	1.00-1.10	
Date Sampled	20/11/2018	20/11/2018	20/11/2018	20/11/2018	
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Toluene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Ethylbenzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
p & m-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
o-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	1.9	< 1.0	< 1.0	
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	4.9	< 2.0	< 2.0	
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	8.8	< 8.0	< 8.0	
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	43	< 8.0	< 8.0	
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	59	< 10	< 10	

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	



Analytical Report Number: 18-21821

Project / Site name: Station Hill, Reading

Lab Sample Number				1111364	1111365	1111366	1111367
Sample Reference				WS314	WS314	WS302	WS302
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40-0.50	2.25-2.35	0.50-0.70	1.00-1.10
Date Sampled				20/11/2018	20/11/2018	20/11/2018	20/11/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status	

VOCs

Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 18-21821

Project / Site name: Station Hill, Reading

Lab Sample Number	1111364	1111365	1111366	1111367
Sample Reference	WS314	WS314	WS302	WS302
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40-0.50	2.25-2.35	0.50-0.70	1.00-1.10
Date Sampled	20/11/2018	20/11/2018	20/11/2018	20/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	

SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3	
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Fluoranthene	mg/kg	0.05	MCERTS	0.34	< 0.05	< 0.05	< 0.05	
Pyrene	mg/kg	0.05	MCERTS	0.29	< 0.05	< 0.05	< 0.05	
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3	
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	

Analytical Report Number: 18-21821

Project / Site name: Station Hill, Reading

Lab Sample Number	1111364	1111365	1111366	1111367	
Sample Reference	WS314	WS314	WS302	WS302	
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)	0.40-0.50	2.25-2.35	0.50-0.70	1.00-1.10	
Date Sampled	20/11/2018	20/11/2018	20/11/2018	20/11/2018	
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	-	-	-	
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	-	-	-	
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	-	-	-	
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	-	-	-	
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	-	-	-	
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	-	-	-	
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	-	-	-	

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	< 0.007	-	-	-	
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Analytical Report Number : 18-21821

Project / Site name: Station Hill, Reading

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1111364	WS314	None Supplied	0.40-0.50	Brown loam and clay with gravel.
1111365	WS314	None Supplied	2.25-2.35	Brown loam and clay with gravel.
1111366	WS302	None Supplied	0.50-0.70	Light brown sandy gravel with stones. **
1111367	WS302	None Supplied	1.00-1.10	Light brown gravelly sand with stones.

** Non MCERTS matrix.

Analytical Report Number : 18-21821

Project / Site name: Station Hill, Reading

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Sample ID	Other ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
WS302		S	18-21821	1111366	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS302		S	18-21821	1111366	c	Volatile organic compounds in soil	L073B-PL	c
WS302		S	18-21821	1111367	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS302		S	18-21821	1111367	c	Volatile organic compounds in soil	L073B-PL	c
WS314		S	18-21821	1111364	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS314		S	18-21821	1111364	c	Total cyanide in soil	L080-PL	c
WS314		S	18-21821	1111364	c	Volatile organic compounds in soil	L073B-PL	c
WS314		S	18-21821	1111365	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS314		S	18-21821	1111365	c	Volatile organic compounds in soil	L073B-PL	c



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Analytical Report Number : 18-21822

Project / Site name:	Station Hill, Reading	Samples received on:	30/11/2018
Your job number:	34769	Samples instructed on:	11/12/2018
Your order number:		Analysis completed by:	17/12/2018
Report Issue Number:	1	Report issued on:	17/12/2018
Samples Analysed:	3 soil samples		

Signed

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-21822

Project / Site name: Station Hill, Reading

Lab Sample Number				1111368	1111369	1111370		
Sample Reference				WS302	WS307	WS307		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				4.85-5.00	0.60-0.70	1.85-2.00		
Date Sampled				21/11/2018	21/11/2018	21/11/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	23	< 0.1		
Moisture Content	%	N/A	NONE	23	5.9	19		
Total mass of sample received	kg	0.001	NONE	1.2	2.0	1.5		

Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-		
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Speciated PAHs

Naphthalene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Acenaphthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Fluorene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Phenanthrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Benzo(a)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Chrysene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Benzo(b)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Benzo(k)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Benzo(a)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	< 0.80	< 0.80	< 0.80		
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	NONE	< 1.0	15	< 1.0		
Boron (water soluble)	mg/kg	0.2	NONE	0.3	0.5	0.3		
Cadmium (aqua regia extractable)	mg/kg	0.2	NONE	< 0.2	< 0.2	0.4		
Chromium (hexavalent)	mg/kg	4	NONE	< 4.0	< 4.0	< 4.0		
Chromium (aqua regia extractable)	mg/kg	1	NONE	1.5	14	< 1.0		
Copper (aqua regia extractable)	mg/kg	1	NONE	3.7	54	4.3		
Lead (aqua regia extractable)	mg/kg	1	NONE	2.8	5.9	2.9		
Mercury (aqua regia extractable)	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
Nickel (aqua regia extractable)	mg/kg	1	NONE	2.9	31	9.1		
Selenium (aqua regia extractable)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Zinc (aqua regia extractable)	mg/kg	1	NONE	7.3	57	9.3		



Analytical Report Number: 18-21822

Project / Site name: Station Hill, Reading

Lab Sample Number				1111368	1111369	1111370		
Sample Reference				WS302	WS307	WS307		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				4.85-5.00	0.60-0.70	1.85-2.00		
Date Sampled				21/11/2018	21/11/2018	21/11/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	ug/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Toluene	ug/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Ethylbenzene	ug/kg	1	NONE	< 1.0	< 1.0	< 1.0		
p & m-xylene	ug/kg	1	NONE	< 1.0	< 1.0	< 1.0		
o-xylene	ug/kg	1	NONE	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	NONE	< 1.0	< 1.0	< 1.0		

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	NONE	< 2.0	3.8	< 2.0		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	NONE	< 8.0	9.4	< 8.0		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	NONE	< 8.0	25	< 8.0		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	NONE	< 10	38	< 10		

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	NONE	< 10	11	< 10		



Analytical Report Number: 18-21822

Project / Site name: Station Hill, Reading

Lab Sample Number				1111368	1111369	1111370		
Sample Reference				WS302	WS307	WS307		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				4.85-5.00	0.60-0.70	1.85-2.00		
Date Sampled				21/11/2018	21/11/2018	21/11/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

VOCs

Chloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Bromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Cis-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
2,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Trichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,1,1-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,2-Dichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,1-Dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Benzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Tetrachloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,2-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Trichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Dibromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Bromodichloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Cis-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Trans-1,3-dichloropropene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Toluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,3-Dichloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Dibromochloromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,2-Dibromoethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Chlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
p & m-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Styrene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
o-Xylene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,1,2,2-Tetrachloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Isopropylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Bromobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
n-Propylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
2-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,3,5-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
tert-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,2,4-Trimethylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
sec-Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,3-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
p-Isopropyltoluene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,2-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,4-Dichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Butylbenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,2,4-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Hexachlorobutadiene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		



Analytical Report Number: 18-21822

Project / Site name: Station Hill, Reading

Lab Sample Number				1111368	1111369	1111370		
Sample Reference				WS302	WS307	WS307		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				4.85-5.00	0.60-0.70	1.85-2.00		
Date Sampled				21/11/2018	21/11/2018	21/11/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
Phenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
1,3-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
1,2-Dichlorobenzene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
1,4-Dichlorobenzene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
2-Methylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
Hexachloroethane	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Nitrobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
Isophorone	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
Naphthalene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
Hexachlorobutadiene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
2-Chloronaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
Dimethylphthalate	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Acenaphthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
Dibenzofuran	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
4-Chlorophenyl phenyl ether	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
Diethyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
Fluorene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
Bromophenyl phenyl ether	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
Hexachlorobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
Phenanthrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Carbazole	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2		
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
Fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3		
Benzo(a)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Chrysene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Benzo(b)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Benzo(k)fluoranthene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Benzo(a)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05		



Analytical Report Number : 18-21822

Project / Site name: Station Hill, Reading

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1111368	WS302	None Supplied	4.85-5.00	Beige chalk. **
1111369	WS307	None Supplied	0.60-0.70	Brown sandy gravel with stones. **
1111370	WS307	None Supplied	1.85-2.00	Beige chalk. **

** Non MCERTS matrix.



Analytical Report Number : 18-21822

Project / Site name: Station Hill, Reading

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Sample ID	Other ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
WS302		S	18-21822	1111368	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS302		S	18-21822	1111368	c	Volatile organic compounds in soil	L073B-PL	c
WS307		S	18-21822	1111369	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS307		S	18-21822	1111369	c	Volatile organic compounds in soil	L073B-PL	c
WS307		S	18-21822	1111370	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS307		S	18-21822	1111370	c	Volatile organic compounds in soil	L073B-PL	c

**Andrew Tatnell**

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Analytical Report Number : 18-21823

Project / Site name:	Station Hill, Reading	Samples received on:	30/11/2018
Your job number:	34769	Samples instructed on:	11/12/2018
Your order number:		Analysis completed by:	17/12/2018
Report Issue Number:	1	Report issued on:	17/12/2018
Samples Analysed:	6 soil samples		

Signed

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-21823

Project / Site name: Station Hill, Reading

Lab Sample Number				1111371	1111372	1111373	1111374	1111375
Sample Reference				WS304	WS304	WS304	WS301	WS301
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.80	3.30	0.20	1.85
Date Sampled				22/11/2018	22/11/2018	22/11/2018	22/11/2018	22/11/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	16	< 0.1
Moisture Content	%	N/A	NONE	15	8.1	20	8.0	19
Total mass of sample received	kg	0.001	NONE	2.0	1.9	1.7	2.0	1.8

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	Not-detected	-
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General Inorganics

Total Cyanide	mg/kg	1	MCERTS	-	-	< 1	< 1	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.1	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.3	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.87	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	8.6	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	4.9	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	49	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	43	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	30	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	22	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	34	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	18	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	32	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	16	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	5.2	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	18	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	282	< 0.80
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	33	1.1	13	2.0
Boron (water soluble)	mg/kg	0.2	MCERTS	2.1	0.6	< 0.2	1.5	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.3	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	32	3.6	21	< 1.0
Copper (aqua regia extractable)	mg/kg	1	MCERTS	95	14	6.7	53	2.4
Lead (aqua regia extractable)	mg/kg	1	MCERTS	120	13	2.5	18	2.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21	49	4.3	23	1.5
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	65	63	11	37	4.5

Analytical Report Number: 18-21823

Project / Site name: Station Hill, Reading

Lab Sample Number	1111371	1111372	1111373	1111374	1111375
Sample Reference	WS304	WS304	WS304	WS301	WS301
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40	1.80	3.30	0.20	1.85
Date Sampled	22/11/2018	22/11/2018	22/11/2018	22/11/2018	22/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	7.7	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	42	48	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	13	< 8.0	88	58	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	9.9	270	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	19	< 10	140	380	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	1.8	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	40	62	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	96	610	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	19	2600	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	11	< 10	160	3300	< 10



Analytical Report Number: 18-21823

Project / Site name: Station Hill, Reading

Lab Sample Number	1111371	1111372	1111373	1111374	1111375
Sample Reference	WS304	WS304	WS304	WS301	WS301
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40	1.80	3.30	0.20	1.85
Date Sampled	22/11/2018	22/11/2018	22/11/2018	22/11/2018	22/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

VOCs

Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Analytical Report Number: 18-21823

Project / Site name: Station Hill, Reading

Lab Sample Number	1111371	1111372	1111373	1111374	1111375
Sample Reference	WS304	WS304	WS304	WS301	WS301
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40	1.80	3.30	0.20	1.85
Date Sampled	22/11/2018	22/11/2018	22/11/2018	22/11/2018	22/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.1	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.3	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.3	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.87	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	8.6	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	4.9	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	0.9	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	49	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	43	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	30	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	22	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	34	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	18	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	32	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	16	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	5.2	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	18	< 0.05

Analytical Report Number: 18-21823

Project / Site name: Station Hill, Reading

Lab Sample Number	1111371	1111372	1111373	1111374	1111375
Sample Reference	WS304	WS304	WS304	WS301	WS301
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40	1.80	3.30	0.20	1.85
Date Sampled	22/11/2018	22/11/2018	22/11/2018	22/11/2018	22/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	-	< 0.007	< 0.007	-
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Analytical Report Number: 18-21823

Project / Site name: Station Hill, Reading

Lab Sample Number				1111376				
Sample Reference				WS307				
Sample Number				None Supplied				
Depth (m)				4.85				
Date Sampled				22/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	20				
Total mass of sample received	kg	0.001	NONE	0.39				

Asbestos in Soil	Type	N/A	ISO 17025	-				
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General Inorganics

Total Cyanide	mg/kg	1	MCERTS	-				
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05				
Fluorene	mg/kg	0.05	MCERTS	< 0.05				
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Pyrene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80				
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	1.6				
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	3.3				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	4.1				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	2.1				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	1.9				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	9.8				

Analytical Report Number: 18-21823

Project / Site name: Station Hill, Reading

Lab Sample Number				1111376				
Sample Reference				WS307				
Sample Number				None Supplied				
Depth (m)				4.85				
Date Sampled				22/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0				
Toluene	ug/kg	1	MCERTS	< 1.0				
Ethylbenzene	ug/kg	1	MCERTS	< 1.0				
p & m-xylene	ug/kg	1	MCERTS	< 1.0				
o-xylene	ug/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0				

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				

Analytical Report Number: 18-21823

Project / Site name: Station Hill, Reading

Lab Sample Number				1111376				
Sample Reference				WS307				
Sample Number				None Supplied				
Depth (m)				4.85				
Date Sampled				22/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0				
Chloroethane	µg/kg	1	NONE	< 1.0				
Bromomethane	µg/kg	1	ISO 17025	< 1.0				
Vinyl Chloride	µg/kg	1	NONE	< 1.0				
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0				
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0				
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0				
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloromethane	µg/kg	1	MCERTS	< 1.0				
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0				
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0				
Benzene	µg/kg	1	MCERTS	< 1.0				
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloroethene	µg/kg	1	MCERTS	< 1.0				
Dibromomethane	µg/kg	1	MCERTS	< 1.0				
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0				
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0				
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0				
Tetrachloroethene	µg/kg	1	NONE	< 1.0				
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0				
Chlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-Xylene	µg/kg	1	MCERTS	< 1.0				
Styrene	µg/kg	1	MCERTS	< 1.0				
Tribromomethane	µg/kg	1	NONE	< 1.0				
o-Xylene	µg/kg	1	MCERTS	< 1.0				
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0				
Bromobenzene	µg/kg	1	MCERTS	< 1.0				
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0				
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0				
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0				
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0				
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0				
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0				
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0				
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0				

Analytical Report Number: 18-21823

Project / Site name: Station Hill, Reading

Lab Sample Number				1111376				
Sample Reference				WS307				
Sample Number				None Supplied				
Depth (m)				4.85				
Date Sampled				22/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1				
Phenol	mg/kg	0.2	ISO 17025	< 0.2				
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1				
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2				
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1				
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1				
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3				
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05				
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3				
4-Methylphenol	mg/kg	0.2	NONE	< 0.2				
Isophorone	mg/kg	0.2	MCERTS	< 0.2				
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3				
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3				
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3				
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3				
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2				
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1				
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1				
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05				
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2				
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3				
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2				
Fluorene	mg/kg	0.05	MCERTS	< 0.05				
Azobenzene	mg/kg	0.3	MCERTS	< 0.3				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2				
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Carbazole	mg/kg	0.3	MCERTS	< 0.3				
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Pyrene	mg/kg	0.05	MCERTS	< 0.05				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				



Analytical Report Number: 18-21823

Project / Site name: Station Hill, Reading

Lab Sample Number				1111376				
Sample Reference				WS307				
Sample Number				None Supplied				
Depth (m)				4.85				
Date Sampled				22/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-				
PCB Congener 52	mg/kg	0.001	MCERTS	-				
PCB Congener 101	mg/kg	0.001	MCERTS	-				
PCB Congener 118	mg/kg	0.001	MCERTS	-				
PCB Congener 138	mg/kg	0.001	MCERTS	-				
PCB Congener 153	mg/kg	0.001	MCERTS	-				
PCB Congener 180	mg/kg	0.001	MCERTS	-				
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	-				



Analytical Report Number : 18-21823

Project / Site name: Station Hill, Reading

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1111371	WS304	None Supplied	0.40	Brown loam and clay with gravel and stones.
1111372	WS304	None Supplied	1.80	Brown clay and loam with gravel.
1111373	WS304	None Supplied	3.30	Beige chalk. **
1111374	WS301	None Supplied	0.20	Brown gravelly sand with stones.
1111375	WS301	None Supplied	1.85	Beige chalk. **
1111376	WS307	None Supplied	4.85	Beige chalk. **

** Non MCERTS matrix.

Analytical Report Number : 18-21823

Project / Site name: Station Hill, Reading

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample ID	Other ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
WS301		S	18-21823	1111374	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS301		S	18-21823	1111374	c	Total cyanide in soil	L080-PL	c
WS301		S	18-21823	1111374	c	Volatile organic compounds in soil	L073B-PL	c
WS301		S	18-21823	1111375	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS301		S	18-21823	1111375	c	Volatile organic compounds in soil	L073B-PL	c
WS304		S	18-21823	1111371	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS304		S	18-21823	1111371	c	Volatile organic compounds in soil	L073B-PL	c
WS304		S	18-21823	1111372	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS304		S	18-21823	1111372	c	Volatile organic compounds in soil	L073B-PL	c
WS304		S	18-21823	1111373	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS304		S	18-21823	1111373	c	Total cyanide in soil	L080-PL	c
WS304		S	18-21823	1111373	c	Volatile organic compounds in soil	L073B-PL	c
WS307		S	18-21823	1111376	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS307		S	18-21823	1111376	c	Volatile organic compounds in soil	L073B-PL	c

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Analytical Report Number : 18-21824

Project / Site name:	Station Hill, Reading	Samples received on:	30/11/2018
Your job number:	34769	Samples instructed on:	11/12/2018
Your order number:		Analysis completed by:	17/12/2018
Report Issue Number:	1	Report issued on:	17/12/2018
Samples Analysed:	3 soil samples		

Signed

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-21824

Project / Site name: Station Hill, Reading

Lab Sample Number				1111377	1111378	1111379		
Sample Reference				WS316	WS315	WS315		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.60	0.50	0.80		
Date Sampled				27/11/2018	24/11/2018	24/11/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	31	12	20		
Moisture Content	%	N/A	NONE	4.6	4.5	10		
Total mass of sample received	kg	0.001	NONE	2.0	2.0	1.8		

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-		
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General Inorganics

Total Cyanide	mg/kg	1	MCERTS	-	< 1	< 1		
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80		
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	19	17	7.4		
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	0.8	0.4		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.2		
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	16	6.4		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	11	20	11		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	38	14	4.6		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	26	13		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	33	55	29		

Analytical Report Number: 18-21824

Project / Site name: Station Hill, Reading

Lab Sample Number	1111377	1111378	1111379		
Sample Reference	WS316	WS315	WS315		
Sample Number	None Supplied	None Supplied	None Supplied		
Depth (m)	0.60	0.50	0.80		
Date Sampled	27/11/2018	24/11/2018	24/11/2018		
Time Taken	None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Toluene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Ethylbenzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
p & m-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
o-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10		

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10		



Analytical Report Number: 18-21824

Project / Site name: Station Hill, Reading

Lab Sample Number				1111377	1111378	1111379		
Sample Reference				WS316	WS315	WS315		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.60	0.50	0.80		
Date Sampled				27/11/2018	24/11/2018	24/11/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

VOCs

Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0		

Analytical Report Number: 18-21824

Project / Site name: Station Hill, Reading

Lab Sample Number	1111377	1111378	1111379		
Sample Reference	WS316	WS315	WS315		
Sample Number	None Supplied	None Supplied	None Supplied		
Depth (m)	0.60	0.50	0.80		
Date Sampled	27/11/2018	24/11/2018	24/11/2018		
Time Taken	None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

SVOCs					
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05



Analytical Report Number: 18-21824

Project / Site name: Station Hill, Reading

Lab Sample Number				1111377	1111378	1111379		
Sample Reference				WS316	WS315	WS315		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.60	0.50	0.80		
Date Sampled				27/11/2018	24/11/2018	24/11/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	< 0.001		
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	< 0.001		
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	< 0.001		
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	< 0.001		
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	< 0.001		
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	< 0.001		
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	< 0.001		

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	-	< 0.007		
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Analytical Report Number : 18-21824

Project / Site name: Station Hill, Reading

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1111377	WS316	None Supplied	0.60	Brown sand with gravel and stones.
1111378	WS315	None Supplied	0.50	Brown sand with gravel and stones.
1111379	WS315	None Supplied	0.80	Beige gravelly sand with stones.

Analytical Report Number : 18-21824

Project / Site name: Station Hill, Reading

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Sample ID	Other ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
WS315		S	18-21824	1111378	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS315		S	18-21824	1111378	c	Total cyanide in soil	L080-PL	c
WS315		S	18-21824	1111378	c	Volatile organic compounds in soil	L073B-PL	c
WS315		S	18-21824	1111379	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS315		S	18-21824	1111379	c	Total cyanide in soil	L080-PL	c
WS315		S	18-21824	1111379	c	Volatile organic compounds in soil	L073B-PL	c

**Andrew Tatnell**

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Analytical Report Number : 18-21826

Project / Site name:	Station Hill, Reading	Samples received on:	30/11/2018
Your job number:	34769	Samples instructed on:	11/12/2018
Your order number:		Analysis completed by:	17/12/2018
Report Issue Number:	1	Report issued on:	17/12/2018
Samples Analysed:	6 soil samples		

Signed

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-21826

Project / Site name: Station Hill, Reading

Lab Sample Number				1111386	1111387	1111388	1111389	1111390
Sample Reference				WS312	WS309	WS310	WS310	WS311
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.50	0.50	1.80	0.50
Date Sampled				28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	17	15	36	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	4.3	2.7	3.4	16	10
Total mass of sample received	kg	0.001	NONE	2.0	2.0	2.0	1.9	2.0

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	Not-detected
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General Inorganics

Total Cyanide	mg/kg	1	MCERTS	< 1	-	< 1	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.32	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.5	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.40	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	3.3	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	2.6	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.8	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	1.0	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.1	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.79	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.1	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.60	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.26	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.59	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	15.3	< 0.80	< 0.80	< 0.80	< 0.80
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	25	16	< 1.0	16
Boron (water soluble)	mg/kg	0.2	MCERTS	1.4	0.4	0.7	0.2	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.4	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	17	17	15	3.6	22
Copper (aqua regia extractable)	mg/kg	1	MCERTS	74	9.2	14	4.3	26
Lead (aqua regia extractable)	mg/kg	1	MCERTS	29	7.3	13	2.5	8.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	28	22	4.5	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	62	32	38	14	31

Analytical Report Number: 18-21826

Project / Site name: Station Hill, Reading

Lab Sample Number	1111386	1111387	1111388	1111389	1111390
Sample Reference	WS312	WS309	WS310	WS310	WS311
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.30	0.50	0.50	1.80	0.50
Date Sampled	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	2.2	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	42	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	65	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	47	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	160	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	15	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	79	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	84	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	180	< 10	< 10	< 10	< 10



Analytical Report Number: 18-21826

Project / Site name: Station Hill, Reading

Lab Sample Number	1111386	1111387	1111388	1111389	1111390
Sample Reference	WS312	WS309	WS310	WS310	WS311
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.30	0.50	0.50	1.80	0.50
Date Sampled	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

VOCs

Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Analytical Report Number: 18-21826

Project / Site name: Station Hill, Reading

Lab Sample Number	1111386	1111387	1111388	1111389	1111390
Sample Reference	WS312	WS309	WS310	WS310	WS311
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.30	0.50	0.50	1.80	0.50
Date Sampled	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	0.32	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	1.5	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.40	< 0.05	< 0.05	< 0.05	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	3.3	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	2.6	< 0.05	< 0.05	< 0.05	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.8	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	1.0	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.1	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.79	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.1	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.60	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.26	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.59	< 0.05	< 0.05	< 0.05	< 0.05

Analytical Report Number: 18-21826

Project / Site name: Station Hill, Reading

Lab Sample Number	1111386	1111387	1111388	1111389	1111390
Sample Reference	WS312	WS309	WS310	WS310	WS311
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.30	0.50	0.50	1.80	0.50
Date Sampled	28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	< 0.007	-	< 0.007	-	-
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Analytical Report Number: 18-21826

Project / Site name: Station Hill, Reading

Lab Sample Number				1111391				
Sample Reference				WS311				
Sample Number				None Supplied				
Depth (m)				1.80				
Date Sampled				28/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	19				
Total mass of sample received	kg	0.001	NONE	1.8				

Asbestos in Soil	Type	N/A	ISO 17025	-				
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General Inorganics

Total Cyanide	mg/kg	1	MCERTS	< 1				
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05				
Fluorene	mg/kg	0.05	MCERTS	< 0.05				
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Pyrene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80				
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0				
Boron (water soluble)	mg/kg	0.2	MCERTS	0.2				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	5.6				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	3.8				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	2.6				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	2.6				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	8.9				

Analytical Report Number: 18-21826

Project / Site name: Station Hill, Reading

Lab Sample Number				1111391				
Sample Reference				WS311				
Sample Number				None Supplied				
Depth (m)				1.80				
Date Sampled				28/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0				
Toluene	ug/kg	1	MCERTS	< 1.0				
Ethylbenzene	ug/kg	1	MCERTS	< 1.0				
p & m-xylene	ug/kg	1	MCERTS	< 1.0				
o-xylene	ug/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0				

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				

Analytical Report Number: 18-21826

Project / Site name: Station Hill, Reading

Lab Sample Number				1111391				
Sample Reference				WS311				
Sample Number				None Supplied				
Depth (m)				1.80				
Date Sampled				28/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0				
Chloroethane	µg/kg	1	NONE	< 1.0				
Bromomethane	µg/kg	1	ISO 17025	< 1.0				
Vinyl Chloride	µg/kg	1	NONE	< 1.0				
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0				
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0				
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0				
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloromethane	µg/kg	1	MCERTS	< 1.0				
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0				
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0				
Benzene	µg/kg	1	MCERTS	< 1.0				
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloroethene	µg/kg	1	MCERTS	< 1.0				
Dibromomethane	µg/kg	1	MCERTS	< 1.0				
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0				
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0				
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0				
Tetrachloroethene	µg/kg	1	NONE	< 1.0				
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0				
Chlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-Xylene	µg/kg	1	MCERTS	< 1.0				
Styrene	µg/kg	1	MCERTS	< 1.0				
Tribromomethane	µg/kg	1	NONE	< 1.0				
o-Xylene	µg/kg	1	MCERTS	< 1.0				
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0				
Bromobenzene	µg/kg	1	MCERTS	< 1.0				
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0				
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0				
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0				
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0				
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0				
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0				
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0				
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0				

Analytical Report Number: 18-21826

Project / Site name: Station Hill, Reading

Lab Sample Number				1111391				
Sample Reference				WS311				
Sample Number				None Supplied				
Depth (m)				1.80				
Date Sampled				28/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1				
Phenol	mg/kg	0.2	ISO 17025	< 0.2				
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1				
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2				
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1				
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1				
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3				
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05				
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3				
4-Methylphenol	mg/kg	0.2	NONE	< 0.2				
Isophorone	mg/kg	0.2	MCERTS	< 0.2				
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3				
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3				
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3				
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3				
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2				
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1				
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1				
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05				
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2				
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3				
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2				
Fluorene	mg/kg	0.05	MCERTS	< 0.05				
Azobenzene	mg/kg	0.3	MCERTS	< 0.3				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2				
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Carbazole	mg/kg	0.3	MCERTS	< 0.3				
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Pyrene	mg/kg	0.05	MCERTS	< 0.05				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				

Analytical Report Number: 18-21826

Project / Site name: Station Hill, Reading

Lab Sample Number				1111391				
Sample Reference				WS311				
Sample Number				None Supplied				
Depth (m)				1.80				
Date Sampled				28/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001				
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001				
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001				
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001				
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001				
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001				
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001				
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	< 0.007				



Analytical Report Number : 18-21826

Project / Site name: Station Hill, Reading

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1111386	WS312	None Supplied	0.30	Brown sand with stones and gravel
1111387	WS309	None Supplied	0.50	Brown sand with stones and gravel
1111388	WS310	None Supplied	0.50	Brown sand with stones and gravel
1111389	WS310	None Supplied	1.80	Beige clay with chalk.
1111390	WS311	None Supplied	0.50	Light brown clay with gravel and chalk.
1111391	WS311	None Supplied	1.80	White clay with chalk.

Analytical Report Number : 18-21826

Project / Site name: Station Hill, Reading

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Sample ID	Other ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
WS310		S	18-21826	1111388	c	Total cyanide in soil	L080-PL	c
WS311		S	18-21826	1111391	c	Total cyanide in soil	L080-PL	c
WS312		S	18-21826	1111386	c	Total cyanide in soil	L080-PL	c

**Andrew Tatnell**

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Analytical Report Number : 18-21829

Project / Site name:	Station Hill, Reading	Samples received on:	30/11/2018
Your job number:	34769	Samples instructed on:	11/12/2018
Your order number:		Analysis completed by:	17/12/2018
Report Issue Number:	1	Report issued on:	17/12/2018
Samples Analysed:	6 soil samples		

Signed

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-21829

Project / Site name: Station Hill, Reading

Lab Sample Number				1111395	1111396	1111397	1111398	1111399
Sample Reference				WS305A	WS313	WS313	WS303	WS303
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.40-0.60	0.80	0.60	0.80-1.00
Date Sampled				29/11/2018	29/11/2018	29/11/2018	23/11/2018	23/11/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	18	30	17	12	21
Moisture Content	%	N/A	NONE	3.2	8.5	7.1	6.1	7.7
Total mass of sample received	kg	0.001	NONE	2.0	2.0	2.0	2.0	2.0

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	-
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General Inorganics

Total Cyanide	mg/kg	1	MCERTS	< 1	-	-	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.4	14	16	19	11
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.8	1.4	0.8	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	6.7	12	20	22	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	10	17	20	19	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	22	17	34	20	9.9
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.3	14	24	23	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	29	51	55	51

Analytical Report Number: 18-21829

Project / Site name: Station Hill, Reading

Lab Sample Number	1111395	1111396	1111397	1111398	1111399
Sample Reference	WS305A	WS313	WS313	WS303	WS303
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.40-0.60	0.80	0.60	0.80-1.00
Date Sampled	29/11/2018	29/11/2018	29/11/2018	23/11/2018	23/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	19	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	26	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10



Analytical Report Number: 18-21829

Project / Site name: Station Hill, Reading

Lab Sample Number				1111395	1111396	1111397	1111398	1111399
Sample Reference				WS305A	WS313	WS313	WS303	WS303
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.40-0.60	0.80	0.60	0.80-1.00
Date Sampled				29/11/2018	29/11/2018	29/11/2018	23/11/2018	23/11/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

VOCs

Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number: 18-21829

Project / Site name: Station Hill, Reading

Lab Sample Number	1111395	1111396	1111397	1111398	1111399
Sample Reference	WS305A	WS313	WS313	WS303	WS303
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.40-0.60	0.80	0.60	0.80-1.00
Date Sampled	29/11/2018	29/11/2018	29/11/2018	23/11/2018	23/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Analytical Report Number: 18-21829

Project / Site name: Station Hill, Reading

Lab Sample Number	1111395	1111396	1111397	1111398	1111399
Sample Reference	WS305A	WS313	WS313	WS303	WS303
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.40-0.60	0.80	0.60	0.80-1.00
Date Sampled	29/11/2018	29/11/2018	29/11/2018	23/11/2018	23/11/2018
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	-	-	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	< 0.007	-	-	-	-
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Analytical Report Number: 18-21829

Project / Site name: Station Hill, Reading

Lab Sample Number				1111400				
Sample Reference				WS303				
Sample Number				None Supplied				
Depth (m)				2.00				
Date Sampled				23/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	6.3				
Total mass of sample received	kg	0.001	NONE	2.0				

Asbestos in Soil	Type	N/A	ISO 17025	-				
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General Inorganics

Total Cyanide	mg/kg	1	MCERTS	-				
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05				
Fluorene	mg/kg	0.05	MCERTS	< 0.05				
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Pyrene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80				
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18				
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	6.1				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	30				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	46				

Analytical Report Number: 18-21829

Project / Site name: Station Hill, Reading

Lab Sample Number				1111400				
Sample Reference				WS303				
Sample Number				None Supplied				
Depth (m)				2.00				
Date Sampled				23/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0				
Toluene	ug/kg	1	MCERTS	< 1.0				
Ethylbenzene	ug/kg	1	MCERTS	< 1.0				
p & m-xylene	ug/kg	1	MCERTS	< 1.0				
o-xylene	ug/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0				

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10				

Analytical Report Number: 18-21829

Project / Site name: Station Hill, Reading

Lab Sample Number				1111400				
Sample Reference				WS303				
Sample Number				None Supplied				
Depth (m)				2.00				
Date Sampled				23/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0				
Chloroethane	µg/kg	1	NONE	< 1.0				
Bromomethane	µg/kg	1	ISO 17025	< 1.0				
Vinyl Chloride	µg/kg	1	NONE	< 1.0				
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0				
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0				
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0				
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloromethane	µg/kg	1	MCERTS	< 1.0				
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0				
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0				
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0				
Benzene	µg/kg	1	MCERTS	< 1.0				
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0				
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0				
Trichloroethene	µg/kg	1	MCERTS	< 1.0				
Dibromomethane	µg/kg	1	MCERTS	< 1.0				
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0				
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0				
Toluene	µg/kg	1	MCERTS	< 1.0				
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0				
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0				
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0				
Tetrachloroethene	µg/kg	1	NONE	< 1.0				
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0				
Chlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Ethylbenzene	µg/kg	1	MCERTS	< 1.0				
p & m-Xylene	µg/kg	1	MCERTS	< 1.0				
Styrene	µg/kg	1	MCERTS	< 1.0				
Tribromomethane	µg/kg	1	NONE	< 1.0				
o-Xylene	µg/kg	1	MCERTS	< 1.0				
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0				
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0				
Bromobenzene	µg/kg	1	MCERTS	< 1.0				
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0				
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0				
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0				
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0				
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0				
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0				
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Butylbenzene	µg/kg	1	MCERTS	< 1.0				
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0				
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0				
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0				
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0				

Analytical Report Number: 18-21829

Project / Site name: Station Hill, Reading

Lab Sample Number				1111400				
Sample Reference				WS303				
Sample Number				None Supplied				
Depth (m)				2.00				
Date Sampled				23/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1				
Phenol	mg/kg	0.2	ISO 17025	< 0.2				
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1				
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2				
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1				
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2				
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1				
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3				
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05				
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3				
4-Methylphenol	mg/kg	0.2	NONE	< 0.2				
Isophorone	mg/kg	0.2	MCERTS	< 0.2				
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3				
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3				
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3				
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Naphthalene	mg/kg	0.05	MCERTS	< 0.05				
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3				
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1				
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1				
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1				
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1				
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2				
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1				
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1				
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1				
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1				
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05				
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05				
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2				
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2				
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3				
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2				
Fluorene	mg/kg	0.05	MCERTS	< 0.05				
Azobenzene	mg/kg	0.3	MCERTS	< 0.3				
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2				
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3				
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05				
Anthracene	mg/kg	0.05	MCERTS	< 0.05				
Carbazole	mg/kg	0.3	MCERTS	< 0.3				
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2				
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Pyrene	mg/kg	0.05	MCERTS	< 0.05				
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3				
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Chrysene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05				
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05				



Analytical Report Number: 18-21829

Project / Site name: Station Hill, Reading

Lab Sample Number				1111400				
Sample Reference				WS303				
Sample Number				None Supplied				
Depth (m)				2.00				
Date Sampled				23/11/2018				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-				
PCB Congener 52	mg/kg	0.001	MCERTS	-				
PCB Congener 101	mg/kg	0.001	MCERTS	-				
PCB Congener 118	mg/kg	0.001	MCERTS	-				
PCB Congener 138	mg/kg	0.001	MCERTS	-				
PCB Congener 153	mg/kg	0.001	MCERTS	-				
PCB Congener 180	mg/kg	0.001	MCERTS	-				
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	-				



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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1111395	WS305A	None Supplied	0.50	Brown gravelly sand with stones.
1111396	WS313	None Supplied	0.40-0.60	Light brown clay and sand with stones and chalk.
1111397	WS313	None Supplied	0.80	Light brown clay and sand with stones and brick.
1111398	WS303	None Supplied	0.60	Light brown clay and sand with gravel and stones.
1111399	WS303	None Supplied	0.80-1.00	Light brown clay and sand with gravel and stones.
1111400	WS303	None Supplied	2.00	Light brown gravelly clay.

Analytical Report Number : 18-21829

Project / Site name: Station Hill, Reading

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
WS303		S	18-21829	1111398	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS303		S	18-21829	1111398	c	Volatile organic compounds in soil	L073B-PL	c
WS303		S	18-21829	1111399	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS303		S	18-21829	1111399	c	Volatile organic compounds in soil	L073B-PL	c
WS303		S	18-21829	1111400	c	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	c
WS303		S	18-21829	1111400	c	Volatile organic compounds in soil	L073B-PL	c
WS305A		S	18-21829	1111395	c	Total cyanide in soil	L080-PL	c