Proposed redevelopment
60-70 Shorts Gardens and 14-16 Betterton Street, London

soiltechnics
environmental and geotechnical consultants

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Light grey unreinforced CONCRETE with aggregates of flint up tp nominal 10mm. <1% air pores up to nominal 1mm. (MADE GROUND)	0.09								
Loose to medium dense orange brown sandy GRAVEL. Gravel consists of fine to coarse angular to ronded flint. (MADE GROUND)							0.36		D
TRIAL PIT TERMINATED AT 0.45m	0.45								

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes
Further concrete was encountered at >1.6m with drill probes

Groundwater observations

Title Trial pit record	**Dimensions (w x l)** m x m	
Method	**Logged by** RT	**Date(s)** 09/11/2018
Level (m OD) -	**Compiled by** RT	**Sheet number** Sheet 1 of 1
Co-ordinates -	**Checked by**	**TP03**

Report ref: STP3953A-G01 **Revision:** 0

Proposed redevelopment
60-70 Shorts Gardens and 14-16 Betterton Street, London

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STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Light grey reinforced CONCRETE with aggregates of flint up to nominal 6mm.~1% air pores up to nominal 6mm. 12mm plain rebar at 130mm depth and 6mm plain rebar at 130mm depth. (MADE GROUND)	0.19								
Medium dense dark brown GRAVEL. Gravel consists of whole brick and pottery. (MADE GROUND)	0.37						0.42		D
TRIAL PIT TERMINATED AT 0.37m									

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes
Further concrete was encountered at >2.25m with drill probes

Groundwater observations

Title Trial pit record	**Dimensions (w x l)** m x m	
Method	**Logged by** RT	**Date(s)** 09/11/2018
Level (m OD) -	**Compiled by** RT	**Sheet number** Sheet 1 of 1
Co-ordinates -	**Checked by**	**TP04**

Report ref: STP3953A-G01 **Revision:** 0

Proposed redevelopment
60-70 Shorts Gardens and 14-16 Betterton Street, London

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STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Dark grey unreinforced CONCRETE with aggregates of flint up to nominal 12mm. <1% air pores up to nominal 4mm. (MADE GROUND)	0.05								
Light grey reinforced CONCRETE with aggregates of flint up to nominal 10mm. <1% air pores up to nominal 4mm. 10mm diameter reinforcement at 95mm depth. (MADE GROUND)	0.15								
Light grey unreinforced CONCRETE with aggregates of flint and brick up to nominal 20mm. <1% air pores up to nominal 2mm. (MADE GROUND)	0.26								
Medium dark brown sandy GRAVEL. Gravel consists of fine to coarse mortar and concrete. (MADE GROUND)	0.51						0.50		D
TRIAL PIT TERMINATED AT 0.51m									

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes
Further concrete was encountered at >0.51m with drill probes

Groundwater observations

Title Trial pit record	**Dimensions (w x l)** m x m	
Method	**Logged by** RT	**Date(s)** 09/11/2018
Level (m OD) -	**Compiled by** RT	**Sheet number** Sheet 1 of 1
Co-ordinates -	**Checked by**	**TP05**

Report ref: STP3953A-G01 **Revision:** 0

Proposed redevelopment
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STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Light grey unreinforced concrete (MADE GROUND)	0.10								
Loose to medium dense dark brown sandy gravel. Gravel consists of brick and concrete. (MADE GROUND)	0.40						0.50 0.50		ES W
TRIAL PIT TERMINATED AT 0.40m									

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes

Groundwater observations
Groundwater encountered from 0.1m. Discolouration and hydrocarbon odour detected.

Title Trial pit record	**Dimensions (w x l)** m x m	
Method	**Logged by** ID	**Date(s)** 09/11/2018
Level (m OD) -	**Compiled by** ID	**Sheet number** Sheet 1 of 1
Co-ordinates -	**Checked by**	**TP06**

Report ref: STP3953A-G01 **Revision:** 0

Proposed redevelopment
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STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Light grey unreinforced CONCRETE with aggregates of flint up to nominal 15mm. ~1% air pores up to nominal 5mm. (MADE GROUND)	0.16								
Medium dense dark brown sandy GRAVEL. Gravel consists of fine cobble sized flint. (MADE GROUND)	0.36						0.35		D
TRIAL PIT TERMINATED AT 0.36m									

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes
Further concrete was encountered at >3.31m with drill probes

Groundwater observations

Title
Trial pit record

Dimensions (w x l)
m x m

Method

Logged by
RT

Date(s)
09/11/2018

Level (m OD)
-

Compiled by
RT

Sheet number
Sheet 1 of 1

Co-ordinates
-

Checked by

TP07

Report ref: STP3953A-G01

Revision: 0

Proposed redevelopment
60-70 Shorts Gardens and 14-16 Betterton Street, London

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STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Light grey unreinforced CONCRETE with aggregates of flint up to nominal 35mm. <1% air pores up to nominal 3mm. (MADE GROUND)	0.13								
Medium dense sandy GRAVEL. Gravels consist of fine to coarse angular occasionally rounded flint and concrete. (MADE GROUND)									
TRIAL PIT TERMINATED AT 0.37m	0.37						0.37		D

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes
Further concrete was encountered at >1.18m with drill probes

Groundwater observations

Title
Trial pit record

Dimensions (w x l)
m x m

Method

Logged by
RT

Date(s)
09/11/2018

Level (m OD)
-

Compiled by
RT

Sheet number
Sheet 1 of 1

Co-ordinates
-

Checked by

TP08

Report ref: STP3953A-G01

Revision: 0

Proposed redevelopment
60-70 Shorts Gardens and 14-16 Betterton Street, London

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STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Light grey unreinforced concrete. (MADE GROUND)	0.10								
Medium dense dark brown sandy gravel. Gravel consists of flint, brick and concrete. (MADE GROUND)	0.47						0.30		D

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes
Drill probing was undertaken from 0.47m below ground level to a depth of 2.25m below ground level.

Groundwater observations

Title Trial pit record	**Dimensions (w x l)** m x m	
Method	**Logged by** RT	**Date(s)** 09/11/2018
Level (m OD) -	**Compiled by** RT	**Sheet number** Sheet 1 of 1
Co-ordinates -	**Checked by**	**TP09**

Report ref: STP3953A-G01 **Revision:** 0

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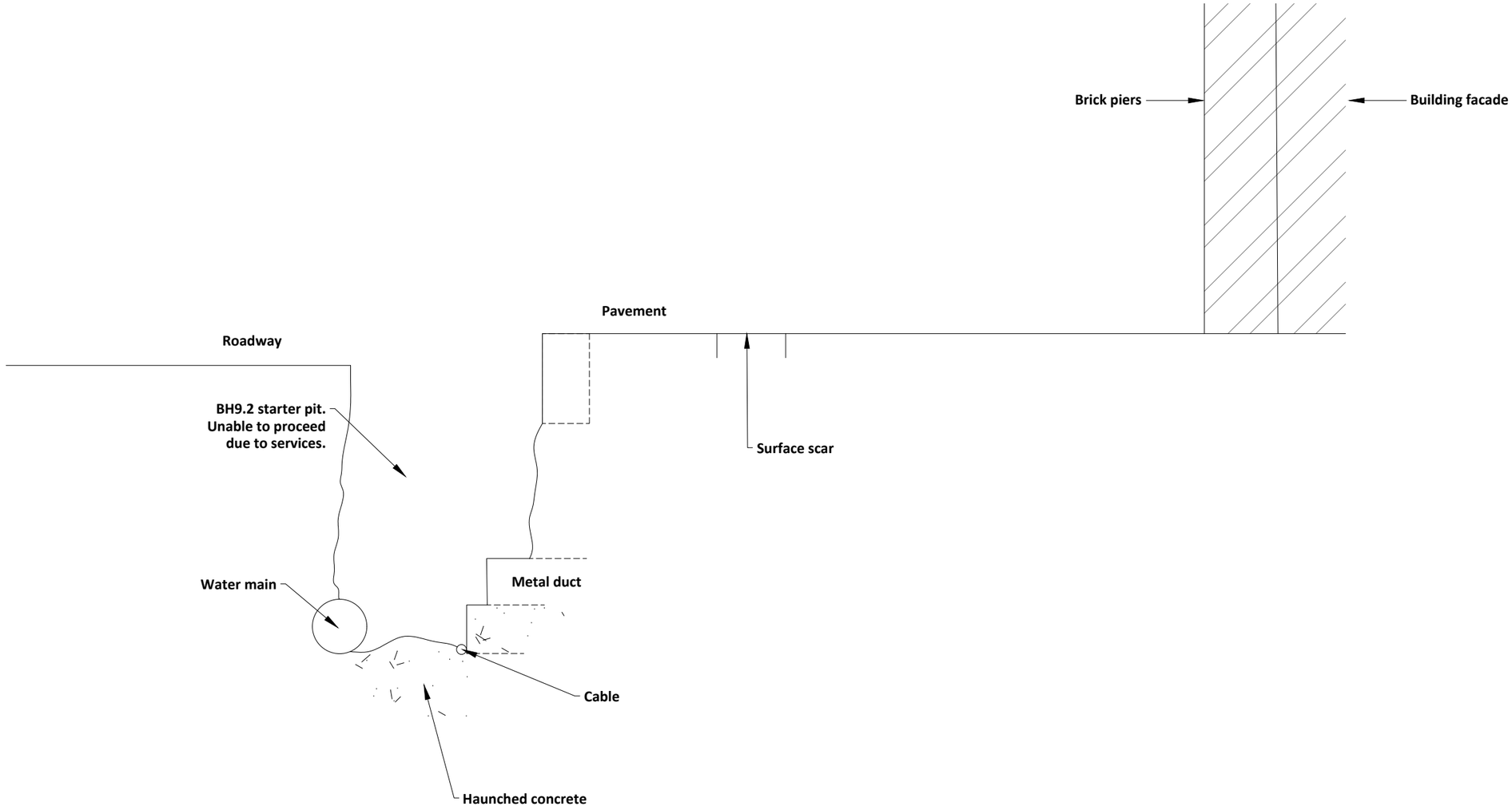

Method of excavation		Title	Location reference
Hand tools		Trial pit record	BH9.2
Dimensions		Date of works	Location plan on drawing number
As shown		07.11.2018	02
Groundwater observations		Scale	Appendix
No groundwater encountered		1:20 at A3	D1

Photographic record of the core

Depth (m)	Description
0.0 – 0.23	Light grey unreinforced CONCRETE with aggregates of flint up to nominal 10mm. <1% air pores up to nominal 3mm.
0.23 – 0.231	1mm thick dark grey metal plate.
0.231-1.931	Light grey unreinforced CONCRETE with aggregates of flint up to nominal 40mm. <1% air pores up to nominal 2mm.
1.931-2.211	Light grey unreinforced CONCRETE with aggregates of flint up to nominal 40mm. <1% air pores up to nominal 1mm.
2.211-2.431	Extracted as flint and concrete gravels. Gravels consist of fine to coarse angular to sub-rounded.
	CORE TERMINATED AT 2.431m DEPTH

Notes:

1. Drill probing at base of the core encountered further concrete until 2.8m depth and clay until 2.9m depth.

Method of excavation
Diamond tipped core barrel

Diameter
100mm

Total core thickness
2.431m

Title
Core record

Co-ordinates
N/A

Date of excavation
11 11.2018

Location plan on drawing number
02

Ground level
N/A

Core reference
CH1

Photographic record of the core

Top Bottom

Depth (m)	Description
0.0 – 2.4	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 30mm. <1% air pores up to nominal 6mm diameter.
2.4-2.5	Blue grey silty CLAY (LONDON CLAY).
	CORE TERMINATED AT 2.5m DEPTH

Method of excavation
Diamond tipped core barrel

Diameter
100mm

Total core thickness
-2.4m

Title
Core record

Co-ordinates
N/A

Date of excavation
14.11.2018

Location plan on drawing number
02

Ground level
N/A

Core reference
CH2

Photographic record of the core

Top Bottom

Depth (m)	Description
0.0 – 1.42m	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 40mm. <1% air pores up to nominal 5mm diameter.
1.42-1.52	Blue grey silty CLAY (LONDON CLAY).
	CORE TERMINATED AT 1.52m DEPTH

Method of excavation
Diamond tipped core barrel

Diameter
100mm

Total core thickness
1.42m

Title
Core record

Co-ordinates
N/A

Date of excavation
14.11.2018

Location plan on drawing number
02

Ground level
N/A

Core reference
CH3

Photographic record of the core

Bottom Top

Depth (m)	Description
0.0 – 2.19	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 60mm. <1% air pores up to nominal 5mm diameter.
2.19-2.7	Stiff blue grey silty CLAY (LONDON CLAY).
	CORE TERMINATED AT 2.7m DEPTH

Method of excavation
Diamond tipped core barrel

Diameter
100mm

Total core thickness
2.19m

Title
Core record

Co-ordinates
N/A

Date of excavation
16.11.2018

Location plan on drawing number
02

Ground level
N/A

Core reference
CH4

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Photographic record of the core

Top Bottom

Depth (m)	Description
0.0 – 0.36	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 15mm. ~1% air pores up to nominal 5mm diameter.
0.36-3.25	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 90mm. <1% air pores up to nominal 5mm diameter.
3.25-3.65	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 50mm. <1% air pores up to nominal 3mm diameter. Medium to coarse gravels also extracted.
3.65-3.8	Firm to stiff blue grey silty CLAY (LONDON CLAY).
	CORE TERMINATED AT 3.8m DEPTH

Method of excavation
Diamond tipped core barrel

Diameter
100mm

Total core thickness
3.65m

Title
Core record

Co-ordinates
N/A

Date of excavation
16.11.2018

Location plan on drawing number
02

Ground level
N/A

Core reference
CH5

Photographic record of the core

Bottom Top

Depth (m)	Description
0.0 – 0.39	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 30mm. ~1% air pores up to nominal 4mm diameter.
0.39-0.64	Concrete extracted as gravels of medium to coarse angular to sub-rounded flint.
0.64-1.04	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 40mm. ~1% air pores up to nominal 3mm diameter.
	CORE TERMINATED AT 1.04m DEPTH

Method of excavation
Diamond tipped core barrel

Diameter
100mm

Total core thickness
1.04m

Title
Core record

Co-ordinates
N/A

Date of excavation
14.12.2018

Location plan on drawing number
02

Ground level
N/A

Core reference
CH7

Photographic record of the core

Bottom Top

Depth (m)	Description
0.0 – 0.03	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 1mm. ~1% air pores up to nominal 1mm diameter.
0.03-1.65	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 4mm. ~1% air pores up to nominal 3mm diameter.
1.65-1.86	Light grey unreinforced CONCRETE comprised of aggregates of brick up to nominal 60mm. ~1% air pores up to nominal 2mm diameter.
1.86-1.88	Concrete extracted as gravels of angular to rounded flint and concrete up to nominal 5mm.
1.88-2.71	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 40mm. ~1% air pores up to nominal 4mm diameter.
2.71-2.81	Firm to stiff blue grey silty CLAY (LONDON CLAY).
	CORE TERMINATED AT 2.81m DEPTH

Method of excavation
Diamond tipped core barrel

Diameter
100mm

Total core thickness
-2.71

Title
Core record

Co-ordinates
N/A

Date of excavation
14.12.2018

Location plan on drawing number
02

Ground level
N/A

Core reference
CH8

Photographic record of the core

Bottom Top

Depth (m)	Description
0.0 – 0.18	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 40mm. <1% air pores up to nominal 2mm diameter.
0.18-0.185	Gravels extracted as fine to coarse angular to rounded flint and concrete.
0.185-0.3	Light grey reinforced CONCRETE comprised of aggregates of flint and wood up to nominal 30mm. <1% air pores up to nominal 2mm diameter. 4mm plain reinforcement bar located at 260mm depth.
0.3-0.52	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 20mm. <1% air pores up to nominal 3mm diameter.
0.52-0.59	Light grey unreinforced CONCRETE comprised of aggregates of flint and yellow brick up to nominal 70mm. <1% air pores up to nominal 5mm diameter.
0.59-0.69	Soft blue grey silty CLAY (LONDON CLAY).
	CORE TERMINATED AT 0.69m DEPTH

Method of excavation
Diamond tipped core barrel

Diameter
100mm

Total core thickness
0.59

Title
Core record

Co-ordinates
N/A

Date of excavation
14.12.2018

Location plan on drawing number
02

Ground level
N/A

Core reference
CH9

Photographic record of the core

Top Bottom

Depth (m)	Description
0.0 – 0.03	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 3mm. ~1% air pores up to nominal 3mm diameter.
0.03-2.47	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 30mm. <1% air pores up to nominal 3mm diameter.
	CORE TERMINATED AT 2.47m DEPTH

Method of excavation
Diamond tipped core barrel

Diameter
100mm

Total core thickness
2.47

Title
Core record

Co-ordinates
N/A

Date of excavation
14.12.2018

Location plan on drawing number
02

Ground level
N/A

Core reference
CH10

Photographic record of the core

Top Bottom

Depth (m)	Description
0.0 – 0.08	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 2mm. <1% air pores up to nominal 2mm diameter.
0.08-0.11	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 1mm. 1% air pores up to nominal 2mm diameter.
0.11-2.96	Light grey unreinforced CONCRETE comprised of aggregates of flint up to nominal 50mm. ~1% air pores up to nominal 4mm diameter.
	CORE TERMINATED AT 2.96m DEPTH

Method of excavation
Diamond tipped core barrel

Diameter
100mm

Total core thickness
2.96m

Title
Core record

Co-ordinates
N/A

Date of excavation
17.12.2018

Location plan on drawing number
02

Ground level
N/A

Core reference
CH11

Photographic record of the core

Depth (m)	Description
0 - 0.04	Light grey unreinforced CONCRETE with aggregates of flint up to nominal 5mm. ~1% air pores up to nominal 2mm.
0.04 - 0.09	Dark grey unreinforced CONCRETE with aggregates of flint up to nominal 5mm. ~1% air pores up to nominal 2mm.
0.09 - 0.26	Dark grey unreinforced CONCRETE with aggregates of flint up to nominal 34mm. <1% air pores up to nominal 6mm.
	CORE TERMINATED AT 0.26m DEPTH

Method of excavation
Diamond tipped core barrel

Diameter
300mm

Total core thickness
0.26m

Title
Core record

Co-ordinates
N/A

Date of excavation
11 11.2018

Location plan on drawing number
02

Ground level
N/A

Core reference
CH1

Proposed redevelopment at
62-70 Shorts Gardens

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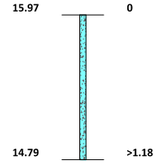
DP1



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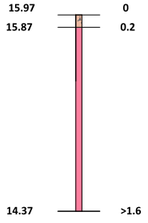

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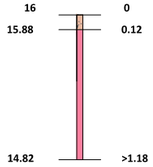

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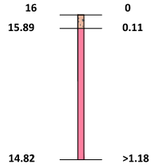

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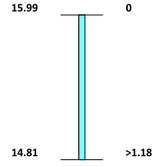

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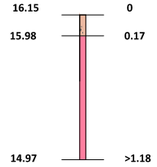

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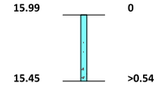

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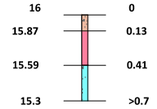

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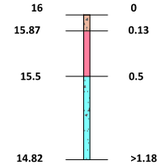

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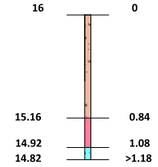

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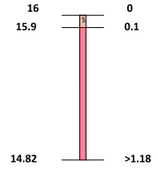

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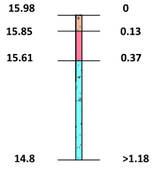

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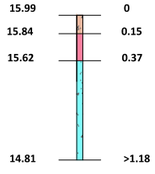

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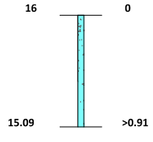

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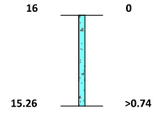
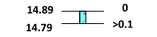
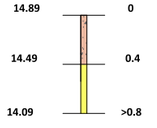


DP16(1)



Hit suspected steel base plate

DP16(3)



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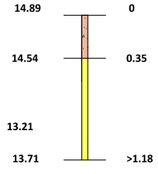

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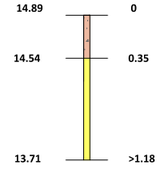

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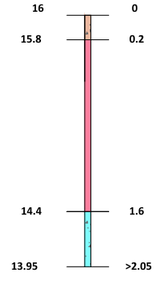

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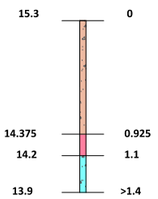

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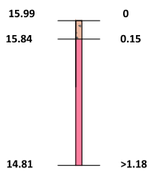

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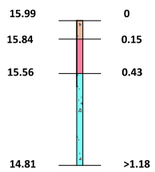

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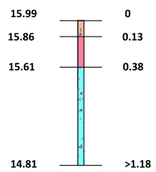

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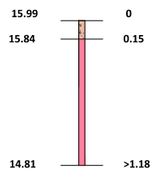

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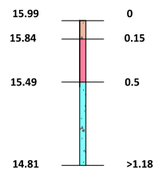

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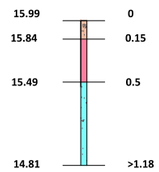

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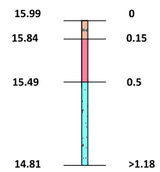

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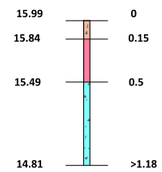

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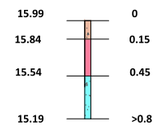

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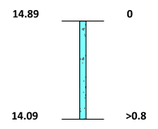

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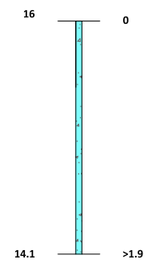

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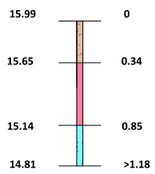

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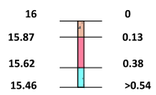

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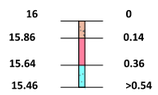

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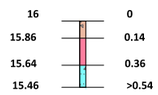

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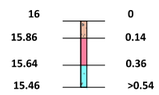

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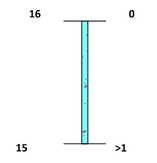

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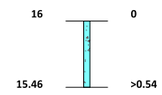

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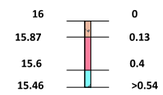


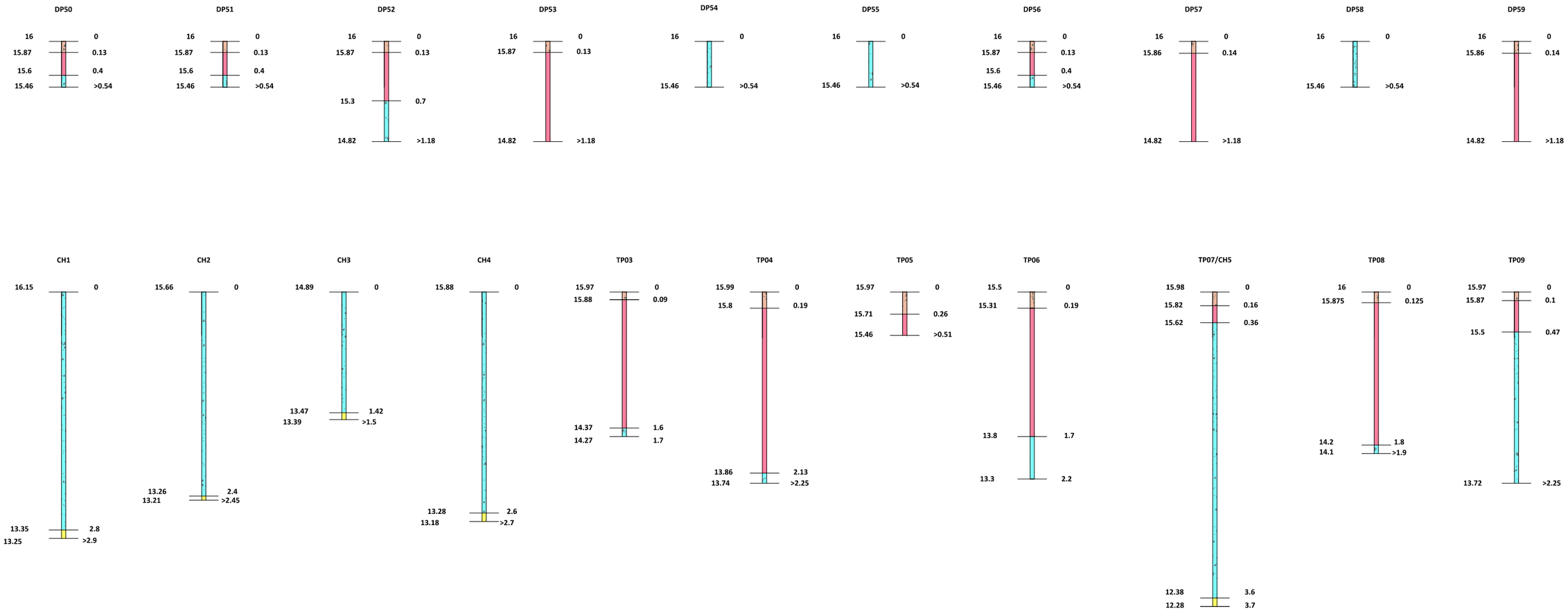
Drill probe interpretations

- Superficial slab
- Made Ground
- Foundation profile
- Brick
- London Clay

Title	Scale	Appendix
Drill probes	1:50 at A3	D3

Proposed redevelopment at
62-70 Shorts Gardens

soiltechnics
environmental and geotechnical consultants



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Drill probes	1:50 at A3	D3

Report Ref: STP3953A-G01
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Proposed redevelopment at
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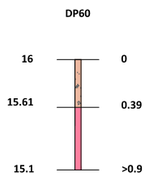

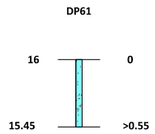

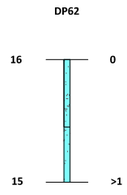

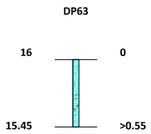

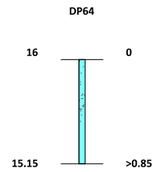

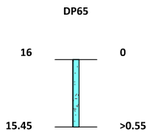

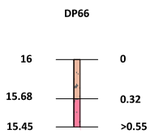

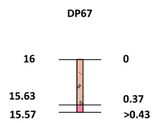

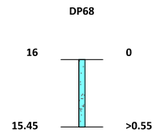

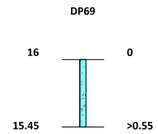

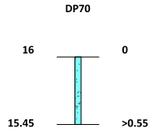

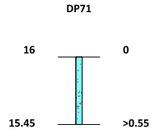

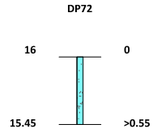

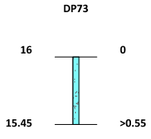

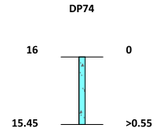

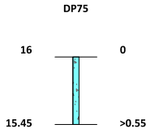

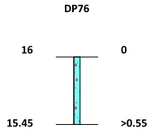

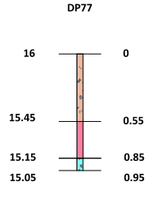

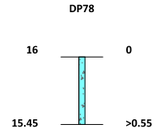

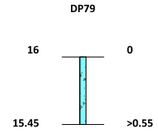

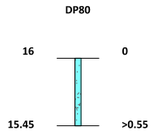

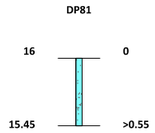

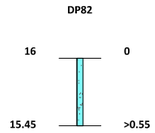

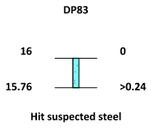

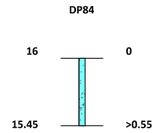

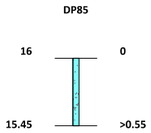

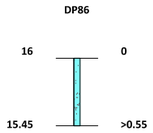

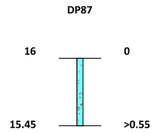

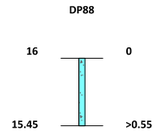

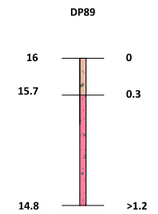

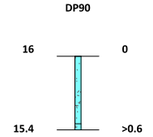

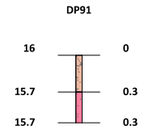

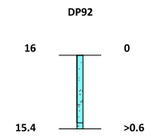

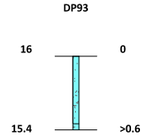

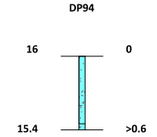

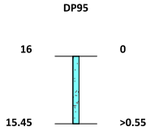

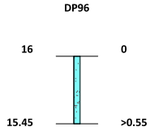

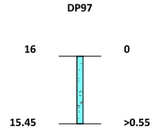

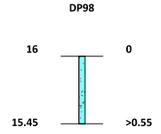

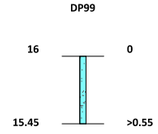

Drill probe interpretations

- Superficial slab
- Made Ground
- Foundation profile
- Brick
- London Clay

Title	Scale	Appendix
Drill probes	1:50 at A3	D3

Proposed redevelopment at
62-70 Shorts Gardens

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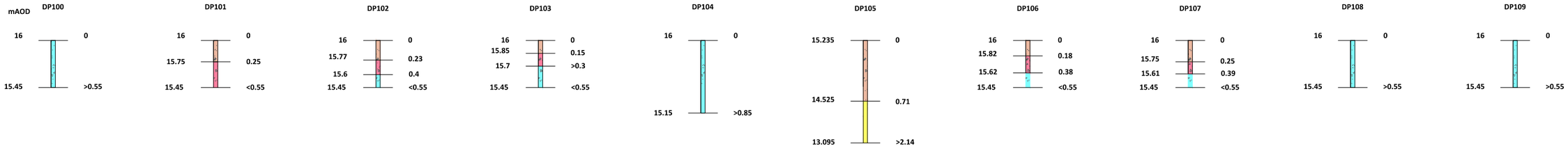

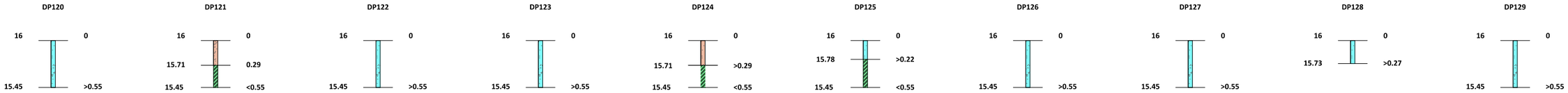

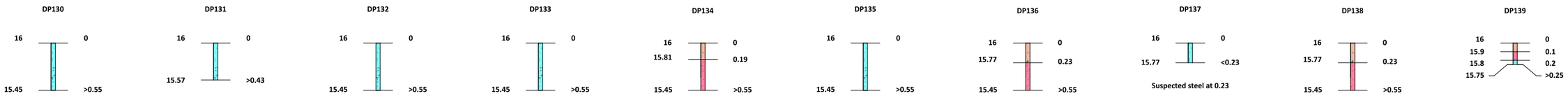

Drill probe interpretations

- Superficial slab
- Made Ground
- Foundation profile
- Brick
- London Clay

Title	Scale	Appendix
Drill probes	1:50 at A3	D3

Proposed redevelopment at
62-70 Shorts Gardens

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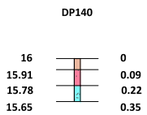

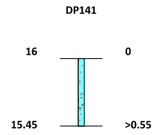

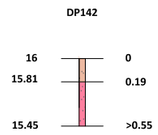

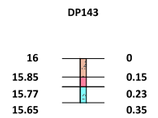

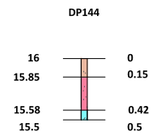

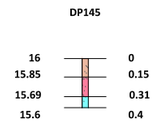

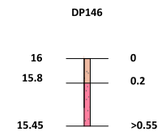

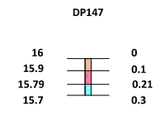

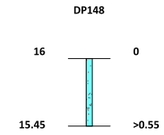

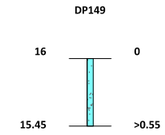

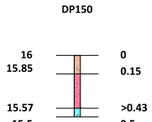

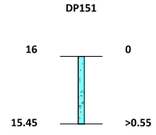

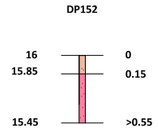

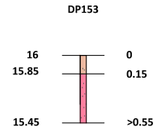

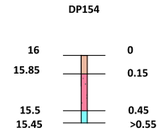

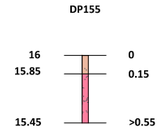

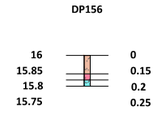

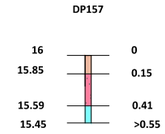

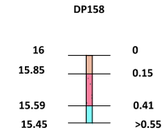

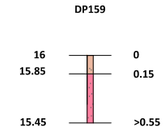

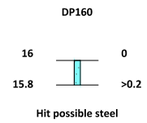

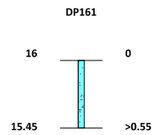

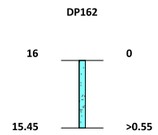

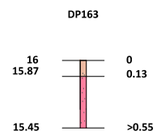

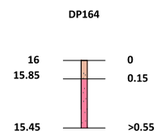

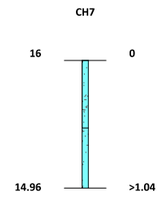

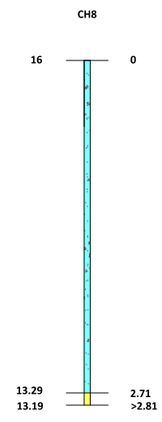

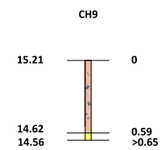

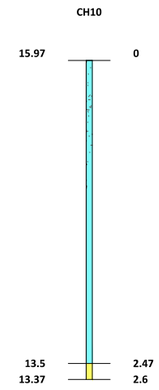

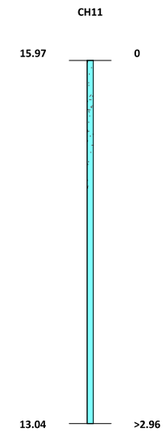

Drill probe interpretations

- Superficial slab
- Made Ground
- Foundation profile
- Brick
- London Clay

Title	Scale	Appendix
Drill probes	1:50 at A3	D3

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Key to legends

Composite materials, soils and lithology

Topsoil	Made Ground	Boulders
Chalk	Clay	Coal
Cobbles	Cobbles & Boulders	Concrete
Gravel	Limestone	Mudstone
Peat	Sand	Sand and Gravel
Sandstone	Silt	Silt / Clay
		Siltstone

Note: Composite soil types are signified by combined symbols.

Key to 'test results' and 'sampling' columns

Test result	
Depth	Records depth that the test was carried out (i.e.: at 2.10m or between 2.10m and 2.55m)
Result	PP – Pocket penetrometer result reported as an equivalent undrained shear strength (kN/m^2) SV – Hand held shear vane result reported as an undrained shear strength (kN/m^2) PP result converted to an equivalent undrained shear strength by applying a factor of 50. Where at least 3 results obtained at same depth then an average value may be reported.
	SPT – Standard Penetration Test result (N value) (uncorrected)[1,2,3] SPT(c) – Standard Penetration Test result (solid cone) (N value) (uncorrected)[1,2,3]
	UT – Undisturbed sample 100mm diameter sampler with number of blows of driving equipment required to obtain sample

Sampling		
From (m) To (m)	Records depth of sampling	
Type	D	Disturbed sample
	B	Bulk disturbed sample
	ES	Environmental sample
	W	Water sample
	UT	Undisturbed thin walled sample 100mm diameter sampler

Note [1]: Seating blows recorded in brackets.
Note [2]: Casing depth records depth of casing when SPT or SPT(c) was carried out.
Note [3]: Water depth records depth of water when SPT or SPT(c) was carried out.

Water observations

Described at foot of log and shown in the 'water strike' column.

▼ = water level observed after specified delay in drilling

▽ = water strike

Standpipe details

Gravel filter

Arisings

Bentonite

Slotted pipe

Unslotted pipe

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WELL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Light grey unreinforced CONCRETE (screed).													
	(MADE GROUND)	0.15	20.01											
	Light grey unreinforced CONCRETE with aggregates of flint up to nominal 25mm. <1% air pores up to nominal 5mm.													
	(MADE GROUND)	0.50	19.66									0.50	0.60	B
	Medium dense dark brown sandy GRAVEL. Gravel consists of brick, concrete and fine to coarse angular to rounded flint.											0.50	0.60	ES
	(MADE GROUND)	0.80	19.36									0.50	0.60	ES
	Medium dense dark brown sandy GRAVEL. Gravel consists of fine to coarse angular to rounded flint.											0.90	1.20	B
	(LYNCH HILL GRAVEL MEMBER)													
						C 1.60-2.05	(6) 27	1.60	1.40			1.60	1.80	B
												1.60	1.80	D
						C 2.25-2.70	(6) 20	2.25	1.80			2.25	2.80	B
	...hydrocarbon odour detected at the lower horizon of gravel strata.													
	Stiff orange brown and blue grey slightly silty CLAY.	2.80	17.36									2.90	0.00	D
	(LONDON CLAY FORMATION)											2.90		D
	Stiff blue grey slightly silty CLAY.	3.20	16.96							PP 3.30	PP=142	3.30		D
	(LONDON CLAY FORMATION)									PP 3.30				
											UT=45	3.80		UT
										PP 4.25	PP=150	4.25		D
												5.00		D
											UT=45	5.50		UT
	CONTINUED ON NEXT SHEET													

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes

Inspection pit excavated from 0.0m to 1.2m depth. Water added to assist drilling.

Groundwater observations

Minor water seepage encountered at 8.5m depth. Water added to assist drilling.

Chiselling details

Depth (m)	Duration (hh:mm)

Water added details

Depth (m)	Water Added (l)
1.20 - 2.60	200

Casing details

Diameter (mm)	Base depth (m)
150	3.50

Title

Borehole record

Method

Logged by
RT

Date(s)
17/12/2018

Level (m OD)
20.16

Compiled by
RT

Sheet number
Sheet 1 of 6

Co-ordinates
-

Checked by

BH02

Report ref: STP3953A-G01

Revision: 0

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WELL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Stiff blue grey slightly silty CLAY. (LONDON CLAY FORMATION)									PP 5.95	PP=150	5.95	0.00	D
												5.95		D
										PP 6.50	PP=175	6.50		D
											UT=50	7.00		UT
												7.45		D
												8.00		D
					▼						UT=55	8.50		UT
										PP 8.95	PP=175	8.95	0.00	D
												8.95		D
												9.50		D
											UT=65	10.00		UT
										PP 10.45	PP=200	10.45		D
												11.00		D
											UT=65	11.50		UT
	CONTINUED ON NEXT SHEET													

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
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Groundwater observations

Minor water seepage encountered at 8.5m depth. Water added to assist drilling.

Chiselling details

Depth (m)	Duration (hh:mm)

Water added details

Depth (m)	Water Added (l)

Casing details

Diameter (mm)	Base depth (m)

Title

Borehole record

Method	Logged by	Date(s)
	RT	17/12/2018
Level (m OD)	**Compiled by**	**Sheet number**
20.16	RT	Sheet 2 of 6
Co-ordinates	**Checked by**	**BH02**
-		

Report ref: STP3953A-G01 **Revision:** 0

Proposed redevelopment
60-70 Shorts Gardens and 14-16 Betterton Street, London

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WELL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Stiff blue grey slightly silty CLAY. (LONDON CLAY FORMATION)											11.95		D
										PP 12.50	PP=225	12.50		D
											UT=70	13.00		UT
		13.45	6.71									13.45		D
	Stiff to very stiff blue grey slightly silty CLAY. (LONDON CLAY FORMATION)											14.00		D
											UT=70	14.50		UT
										PP 14.95	PP=225	14.95	0.00	D
												14.95		D
												15.50		D
											UT=70	16.00		UT
												16.45		D
												17.00		D
	CONTINUED ON NEXT SHEET													

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

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PID Photo Ionisation Detector test

Notes
Inspection pit excavated from 0.0m to 1.2m depth. Water added to assist drilling.

Groundwater observations
Minor water seepage encountered at 8.5m depth. Water added to assist drilling.

Chiselling details

Depth (m)	Duration (hh:mm)

Water added details

Depth (m)	Water Added (l)

Casing details

Diameter (mm)	Base depth (m)

Title
Borehole record

Method

Logged by
RT

Date(s)
17/12/2018

Level (m OD)
20.16

Compiled by
RT

Sheet number
Sheet 3 of 6

Co-ordinates
-

Checked by

BH02

Report ref: STP3953A-G01

Revision: 0

soiltechnics
environmental and geotechnical consultants

WELL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Stiff to very stiff blue grey slightly silty CLAY. (LONDON CLAY FORMATION)										UT=75	17.50		UT
												17.95		D
	Weak grey CLAYSTONE. (LONDON CLAY FORMATION)	18.40	1.76							PP 18.50	PP=225	18.50		D
	Stiff to very stiff blue grey slightly silty CLAY. (LONDON CLAY FORMATION)	18.60	1.56											
											UT=80	19.00		UT
												19.45		D
												20.00		D
											UT=80	20.50		UT
												20.95		D
										PP 21.50	PP=225	21.50		D
											UT=80	22.00		UT
												22.45		D
												23.00		D
	CONTINUED ON NEXT SHEET													

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes
Inspection pit excavated from 0.0m to 1.2m depth. Water added to assist drilling.

Groundwater observations
Minor water seepage encountered at 8.5m depth. Water added to assist drilling.

Chiselling details

Depth (m)	Duration (hh:mm)

Water added details

Depth (m)	Water Added (l)

Casing details

Diameter (mm)	Base depth (m)

Title
Borehole record

Method

Logged by
RT

Date(s)
17/12/2018

Level (m OD)
20.16

Compiled by
RT

Sheet number
Sheet 4 of 6

Co-ordinates
-

Checked by

BH02

Report ref: STP3953A-G01

Revision: 0

soiltechnics
environmental and geotechnical consultants

WELL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Stiff to very stiff blue grey slightly silty CLAY. (LONDON CLAY FORMATION)										UT=85	23.50		UT
												23.95		D
										PP 24.50	PP=225	24.50		D
											UT=85	25.00		UT
												25.45		D
												26.00		D
											UT=90	26.50		UT
												26.95		D
												27.50		D
										PP 28.00	PP=225 UT=100	28.00		UT
												28.45		D
	CONTINUED ON NEXT SHEET													

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
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Notes

Inspection pit excavated from 0.0m to 1.2m depth. Water added to assist drilling.

Groundwater observations

Minor water seepage encountered at 8.5m depth. Water added to assist drilling.

Chiselling details

Depth (m)	Duration (hh:mm)

Water added details

Depth (m)	Water Added (l)

Casing details

Diameter (mm)	Base depth (m)

Title

Borehole record

Method	Logged by	Date(s)
	RT	17/12/2018
Level (m OD)	**Compiled by**	**Sheet number**
20.16	RT	Sheet 5 of 6
Co-ordinates	**Checked by**	**BH02**
-		

Report ref: STP3953A-G01 **Revision:** 0

Proposed redevelopment
60-70 Shorts Gardens and 14-16 Betterton Street, London

soiltechnics
environmental and geotechnical consultants

WELL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Stiff to very stiff blue grey slightly silty CLAY. (LONDON CLAY FORMATION)										UT=100	29.50 29.50		D UT
	BOREHOLE TERMINATED AT 30.00m	30.00	-9.84									29.95		D

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes

Inspection pit excavated from 0.0m to 1.2m depth. Water added to assist drilling.

Groundwater observations

Minor water seepage encountered at 8.5m depth. Water added to assist drilling.

Chiselling details

Depth (m)	Duration (hh:mm)

Water added details

Depth (m)	Water Added (l)

Casing details

Diameter (mm)	Base depth (m)

Title

Borehole record

Method	Logged by	Date(s)
	RT	17/12/2018
Level (m OD)	**Compiled by**	**Sheet number**
20.16	RT	Sheet 6 of 6
Co-ordinates	**Checked by**	**BH02**
-		

Report ref: STP3953A-G01 **Revision:** 0

soiltechnics
environmental and geotechnical consultants

WELL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Light grey unreinforced CONCRETE with aggregates of flint up to nominal 2mm. <1% air pores up to nominal 2mm. (MADE GROUND)	0.02	18.42											
	Dark grey unreinforced CONCRETE with aggregates of flint up to nominal 4mm. <1% air pores up to nominal 4mm. (MADE GROUND)	0.10	18.34									0.40	0.60	B
	Light grey unreinforced CONCRETE with aggregates of flint up to nominal 30mm. <1% air pores up to nominal 5mm. (LYNCH HILL GRAVEL MEMBER)	0.34	18.10									0.40	0.60	B
	Medium dense orange brown SAND and GRAVEL. Gravel consists of fine to coarse angular to rounded flint. (LYNCH HILL GRAVEL MEMBER)	0.60	17.84									0.45		D
	Soft to firm orange brown sandy gravelly CLAY. Gravel consists of fine to coarse angular to rounded flint. (LYNCH HILL GRAVEL MEMBER)	0.80	17.64									0.68		W
	...between 0.6m and 0.8m depth, minor inflow of fines associated with water seepage.											0.80	0.00	W
	Firm orange brown slightly silty slightly sandy CLAY. (LONDON CLAY FORMATION)											1.00		D
												1.00		D
												1.00		D
											UT=40	1.40	1.05	D
												1.60		U
												1.60		UT
	Stiff assumed high strength (subject to testing) blue grey silty CLAY. (LONDON CLAY FORMATION)	2.05	16.39									2.05	0.00	D
												2.05		D
											UT=50	2.50	2.95	U
												2.50		UT
												2.95		D
											UT=55	3.60	4.05	U
												3.60		UT
												4.05		D
											UT=60	4.50	4.95	U
												4.50		UT
												4.95		D
											UT=60	5.50	5.95	U
												5.50		UT
	CONTINUED ON NEXT SHEET													

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes

Minor inflow of fines associated with water seepage, but borehole sides generally remained upright and stable

Groundwater observations

Minor water seepage from 0.65m. Water level at 0.75m after 30m and 0.71m after 2hours. Drillers recorded water at 0.3m at drilling commencement but assumed to include water ingress from surface site operations. Water mesured at ~0.68m on return visit. Water sealed out at 1.5m. No water inflows within London Clay Formation.

Chiselling details

Depth (m)	Duration (hh:mm)

Water added details

Depth (m)	Water Added (l)

Casing details

Diameter (mm)	Base depth (m)

Title

Borehole record

Method	Logged by	Date(s)
	RT	07/11/2018
Level (m OD)	**Compiled by**	**Sheet number**
18.44	RT	Sheet 1 of 2
Co-ordinates	**Checked by**	**BH9.1**
-		

Report ref: STP3953A-G01 **Revision:** 0

Proposed redevelopment
60-70 Shorts Gardens and 14-16 Betterton Street, London

soiltechnics
environmental and geotechnical consultants

WELL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Stiff assumed high strength (subject to testing) blue grey silty CLAY. (LONDON CLAY FORMATION)	6.00	12.44									5.95 5.95	0.00	B D
	BOREHOLE TERMINATED AT 6.00m													

Key

D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes

Minor inflow of fines associated with water seepage, but borehole sides generally remained upright and stable

Groundwater observations

Minor water seepage from 0.65m. Water level at 0.75m after 30m and 0.71m after 2hours. Drillers recorded water at 0.3m at drilling commencement but assumed to include water ingress from surface site operations. Water mesured at ~0.68m on return visit. Water sealed out at 1.5m. No water inflows within London Clay Formation.

Chiselling details

Depth (m)	Duration (hh:mm)

Water added details

Depth (m)	Water Added (l)

Casing details

Diameter (mm)	Base depth (m)

Title
Borehole record

Method

Logged by
RT

Date(s)
07/11/2018

Level (m OD)
18.44

Compiled by
RT

Sheet number
Sheet 2 of 2

Co-ordinates
-

Checked by

BH9.1

Report ref: STP3953A-G01

Revision: 0

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

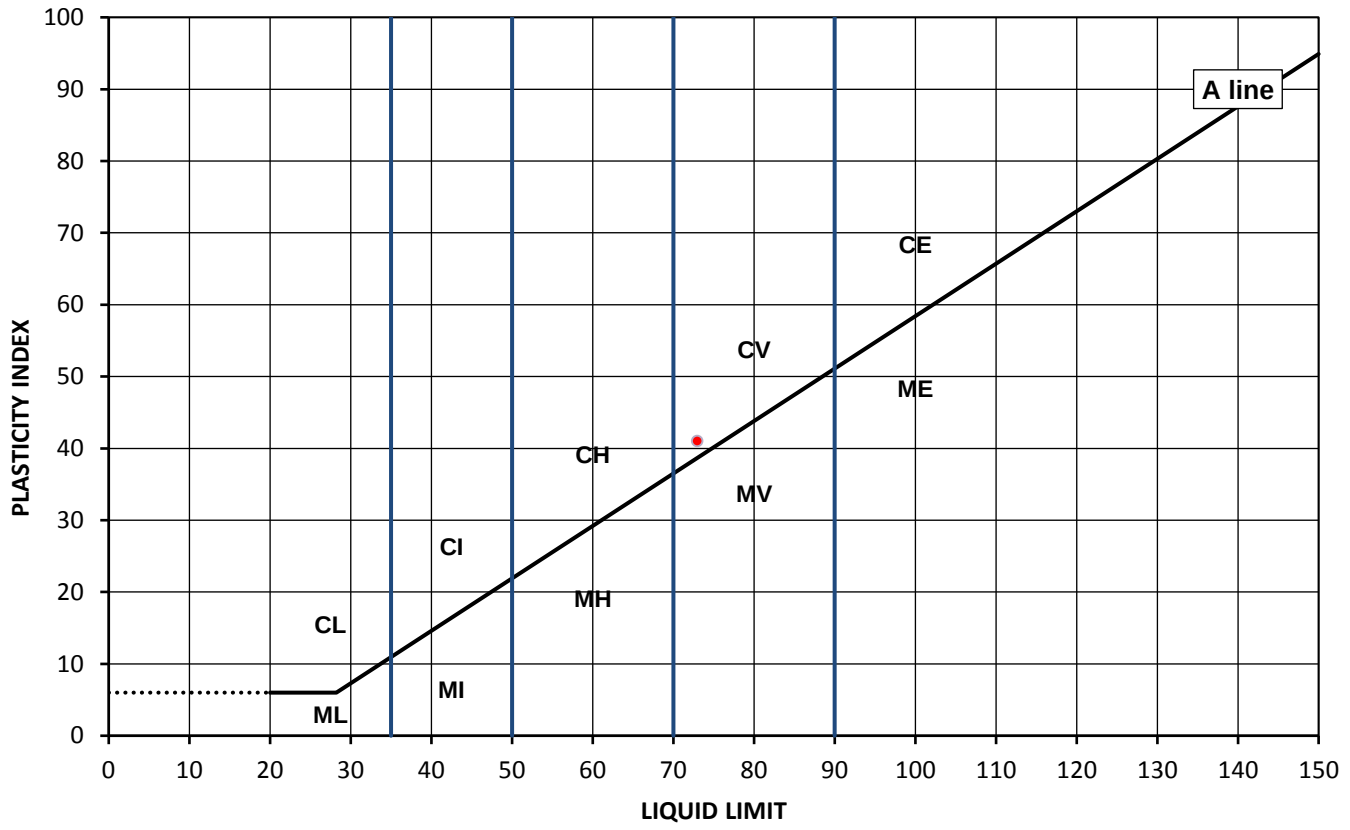
Client:	Soiltechnics Limited	Client Reference:	STP3953A
Client Address:	Cedar Barn, White Lodge, Walgrave, Northampton, NN6 9PY	Job Number:	19-23534
		Date Sampled:	17/12/2018
		Date Received:	21/12/2018
Contact:	Lauren Wenham	Date Tested:	08/01/2019
Site Name:	60-70 Shorts Gardens	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1123040	Depth Top [m]:	2.90
Hole No.:	BH02	Depth Base [m]:	Not Given
Sample Reference:	BH022.903-001	Sample Type:	D
Soil Description:	Brown slightly gravelly CLAY		

Sample Preparation: Tested after >425um removed by hand

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
44	73	32	41	98



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 15/01/2019

Signed: Maria Chandler
Geotechnical Site Manager Northampton

GF 232.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

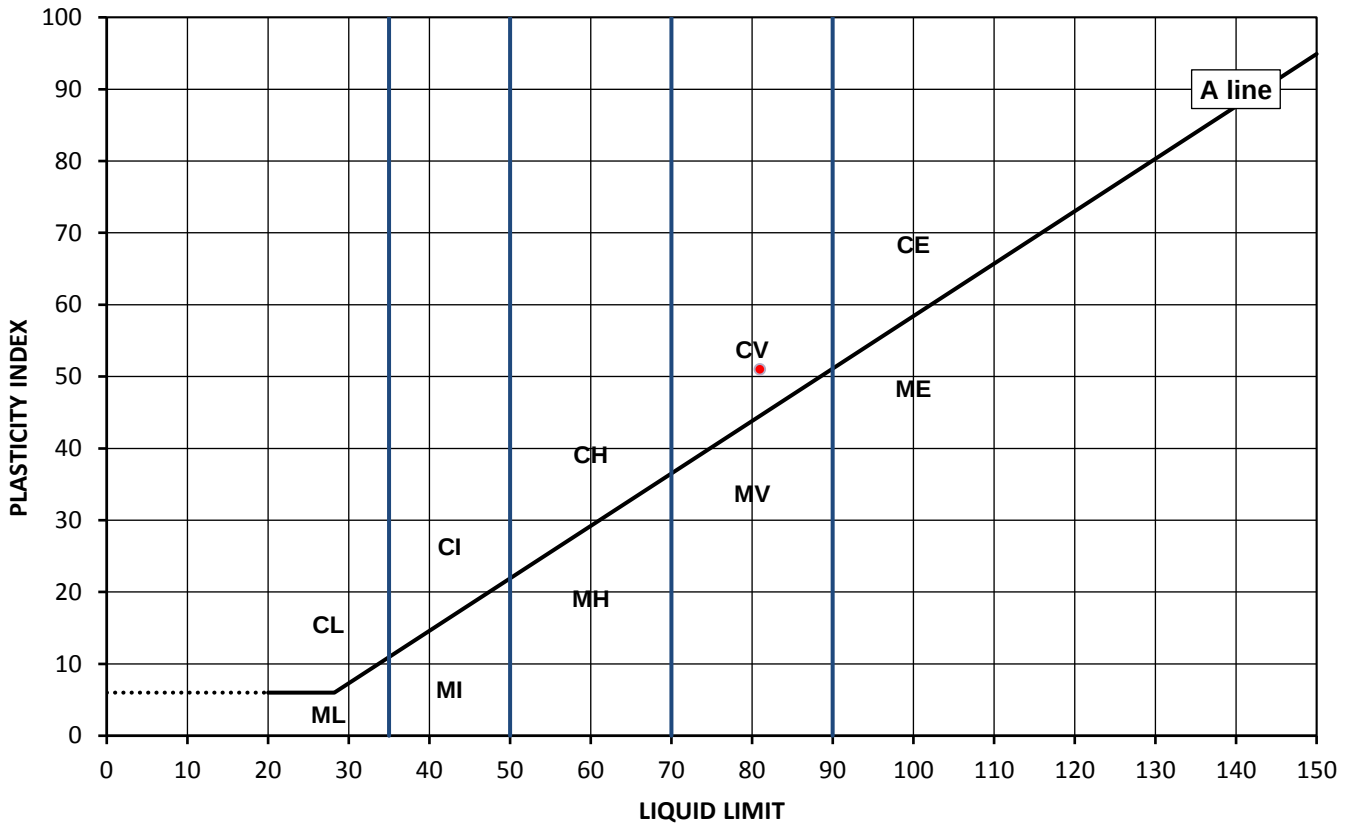
Client:	Soiltechnics Limited	Client Reference:	STP3953A
Client Address:	Cedar Barn, White Lodge, Walgrave, Northampton, NN6 9PY	Job Number:	19-23534
		Date Sampled:	17/12/2018
		Date Received:	21/12/2018
Contact:	Lauren Wenham	Date Tested:	08/01/2019
Site Name:	60-70 Shorts Gardens	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1123041	Depth Top [m]:	5.95
Hole No.:	BH02	Depth Base [m]:	Not Given
Sample Reference:	BH025.953-005	Sample Type:	D
Soil Description:	Greyish brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
30	81	30	51	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 15/01/2019

Signed: Maria Chandler
Geotechnical Site Manager Northampton

GF 232.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

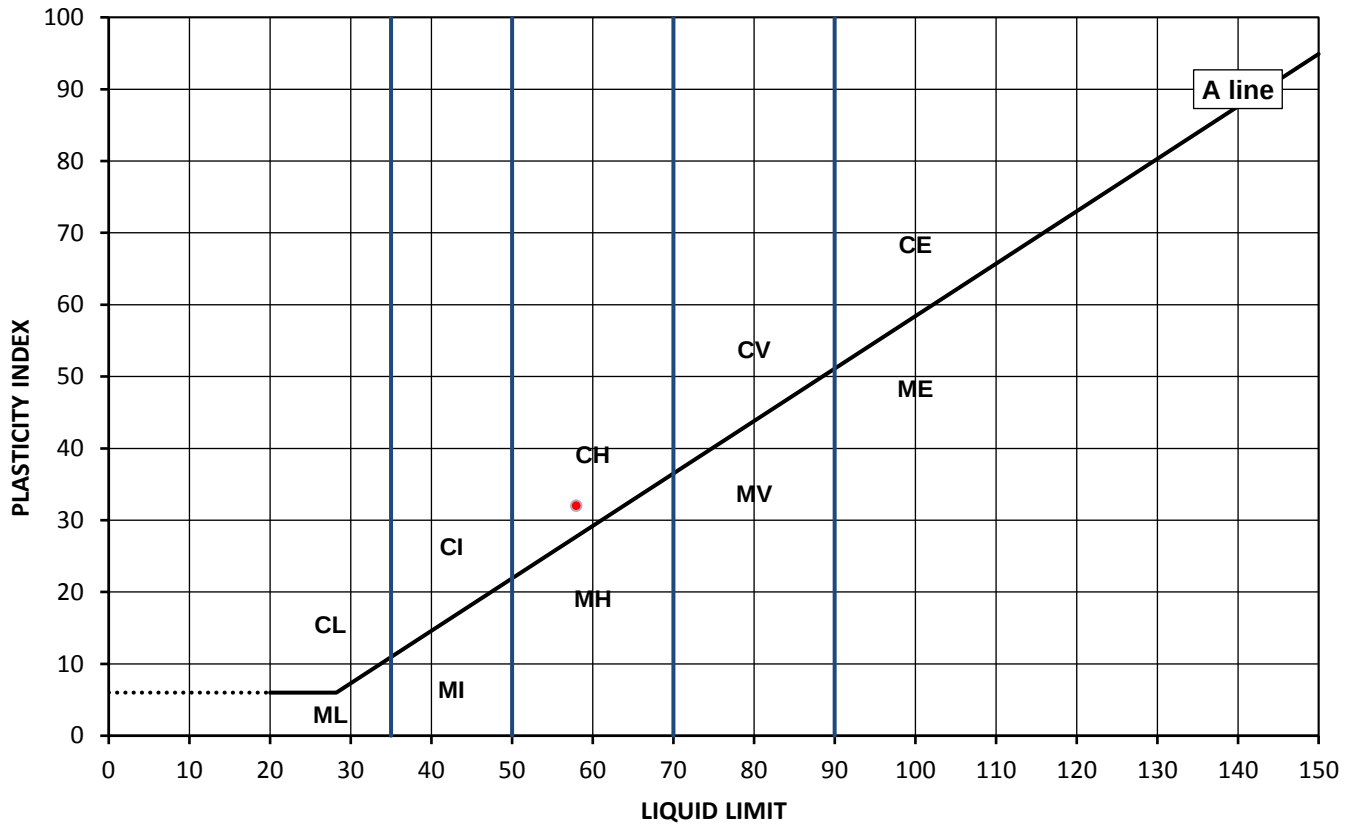
Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Soiltechnics Limited	Client Reference:	STP3953A
Client Address:	Cedar Barn, White Lodge, Walgrave, Northampton, NN6 9PY	Job Number:	19-23534
		Date Sampled:	17/12/2018
		Date Received:	21/12/2018
Contact:	Lauren Wenham	Date Tested:	08/01/2019
Site Name:	60-70 Shorts Gardens	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1123042	Depth Top [m]:	8.95
Hole No.:	BH02	Depth Base [m]:	Not Given
Sample Reference:	BH028.953-009	Sample Type:	D
Soil Description:	Greyish brown slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
24	58	26	32	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 15/01/2019

Signed: Maria Chandler
Geotechnical Site Manager Northampton

GF 232.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

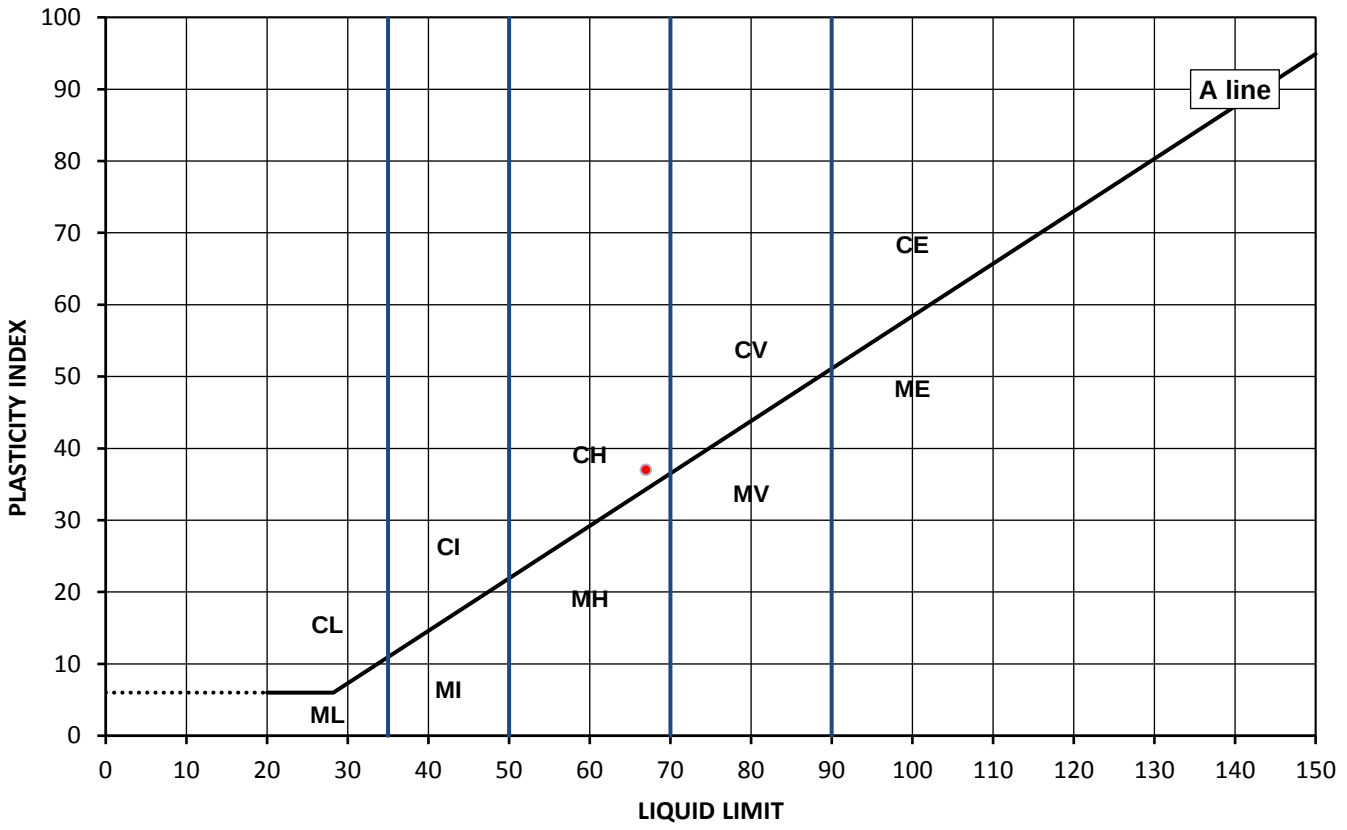
Client:	Soiltechnics Limited	Client Reference:	STP3953A
Client Address:	Cedar Barn, White Lodge, Walgrave, Northampton, NN6 9PY	Job Number:	19-23534
		Date Sampled:	17/12/2018
		Date Received:	21/12/2018
Contact:	Lauren Wenham	Date Tested:	08/01/2019
Site Name:	60-70 Shorts Gardens	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1123043	Depth Top [m]:	14.95
Hole No.:	BH02	Depth Base [m]:	Not Given
Sample Reference:	BH0214.953-039	Sample Type:	D
Soil Description:	Greyish brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
26	67	30	37	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 15/01/2019

Signed: Maria Chandler
Geotechnical Site Manager Northampton

GF 232.3

for and on behalf of i2 Analytical Ltd

SUMMARY REPORT

Summary of Classification Test Results

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

UKAS TESTING 4041

Environmental Science

Tested in Accordance with:

MC by BS 1377-2: 1990: Clause 3.2; Atterberg by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: Soiltechnics Limited

Client Address: Cedar Barn, White Lodge, Walgrave, Northampton, NN6 9PY

Contact: Lauren Wenham

Site Name: 60-70 Shorts Gardens

Site Address: Not Given

Client Reference: STP3953A

Job Number: 19-23534

Date Sampled: 17/12/2018

Date Received: 21/12/2018

Date Tested: 08/01/2019

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	MC#	Atterberg#				Density		Total Porosity				
		Reference	Depth Top	Depth Base	Type				% Passing 425um	LL	PL	PI	bulk	PD					
			m	m				%	%	%	%	%	Mg/m3	Mg/m3	%				
1123040	BH02	BH022.903-001	2.90	Not Given	D	Brown slightly gravelly CLAY	Atterberg 1 Point	44	98	73	32	41							
1123041	BH02	BH025.953-005	5.95	Not Given	D	Greyish brown CLAY	Atterberg 1 Point	30	100	81	30	51							
1123042	BH02	BH028.953-009	8.95	Not Given	D	Greyish brown slightly sandy CLAY	Atterberg 1 Point	24	100	58	26	32							
1123043	BH02	BH0214.953-039	14.95	Not Given	D	Greyish brown CLAY	Atterberg 1 Point	26	100	67	30	37							

Note: # UKAS accredited; NP - Non plastic

Comments:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 15/01/2019

Signed: Maria Chandler
Geotechnical Site Manager Northampton

GF 234.5

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

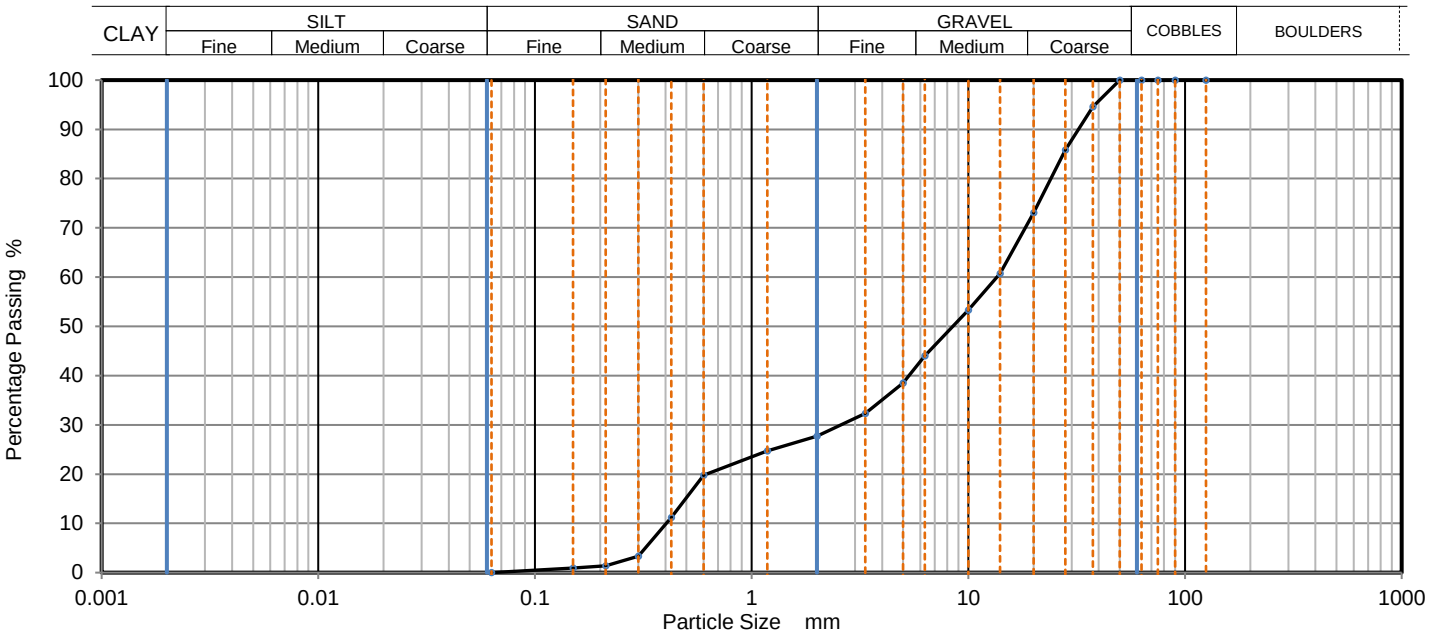
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

4041

Client:	Soiltechnics Limited	Client Reference:	STP3953A
Client Address:	Cedar Barn, White Lodge, Walgrave, Northampton, NN6 9PY	Job Number:	19-23534
		Date Sampled:	17/12/2018
		Date Received:	21/12/2018
Contact:	Lauren Wenham	Date Tested:	08/01/2019
Site Name:	60-70 Shorts Gardens	Sampled By:	Not Given
Site Address:	Not Given		

Test Results:

Laboratory Reference:	1123039	Depth Top [m]:	1.60
Hole No.:	BH02	Depth Base [m]:	1.80
Sample Reference:	BH021.603-014	Sample Type:	D
Sample Description:	Yellowish brown very sandy GRAVEL		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	95		
28	86		
20	73		
14	61		
10	53		
6.3	44		
5	39		
3.35	32		
2	28		
1.18	25		
0.6	20		
0.425	11		
0.3	3		
0.212	1		
0.15	1		
0.063	1		

Dry Mass of sample [g]: 6573

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	72.30
Sand	27.10
Fines <0.063mm	0.70

Grading Analysis		
D100	mm	50
D60	mm	13.5
D30	mm	2.59
D10	mm	0.402
Uniformity Coefficient		34
Curvature Coefficient		1.2

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 15/01/2019

Signed: Maria Chandler
Geotechnical Site Manager Northampton

GF 100.10

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

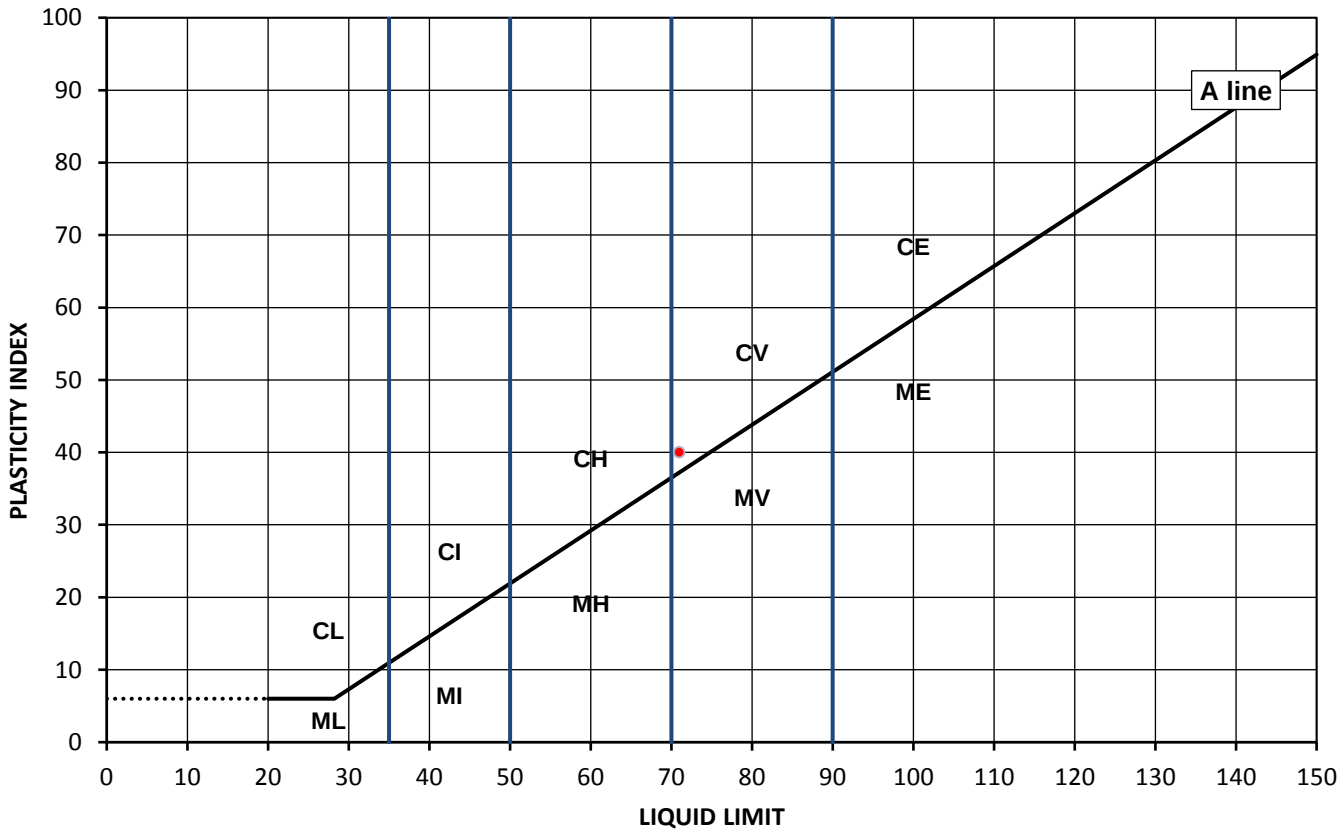
Client:	Soiltechnics Limited	Client Reference:	STP3953A
Client Address:	Cedar Barn White Lodge Walgrave, Northampton, NN6 9PY	Job Number:	18-19140
		Date Sampled:	07/11/2018
		Date Received:	20/11/2018
Contact:	Alexa Band	Date Tested:	26/11/2018
Site Name:	60-70 Shorts Gardens	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1095259	Depth Top [m]:	1.00
Hole No.:	BH9.1	Depth Base [m]:	Not Given
Sample Reference:	BH11.002-015	Sample Type:	D
Soil Description:	Yellowish brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
30	71	31	40	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 06/12/2018

Signed: Darren Berrill
Geotechnical General Manager

GF 232.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

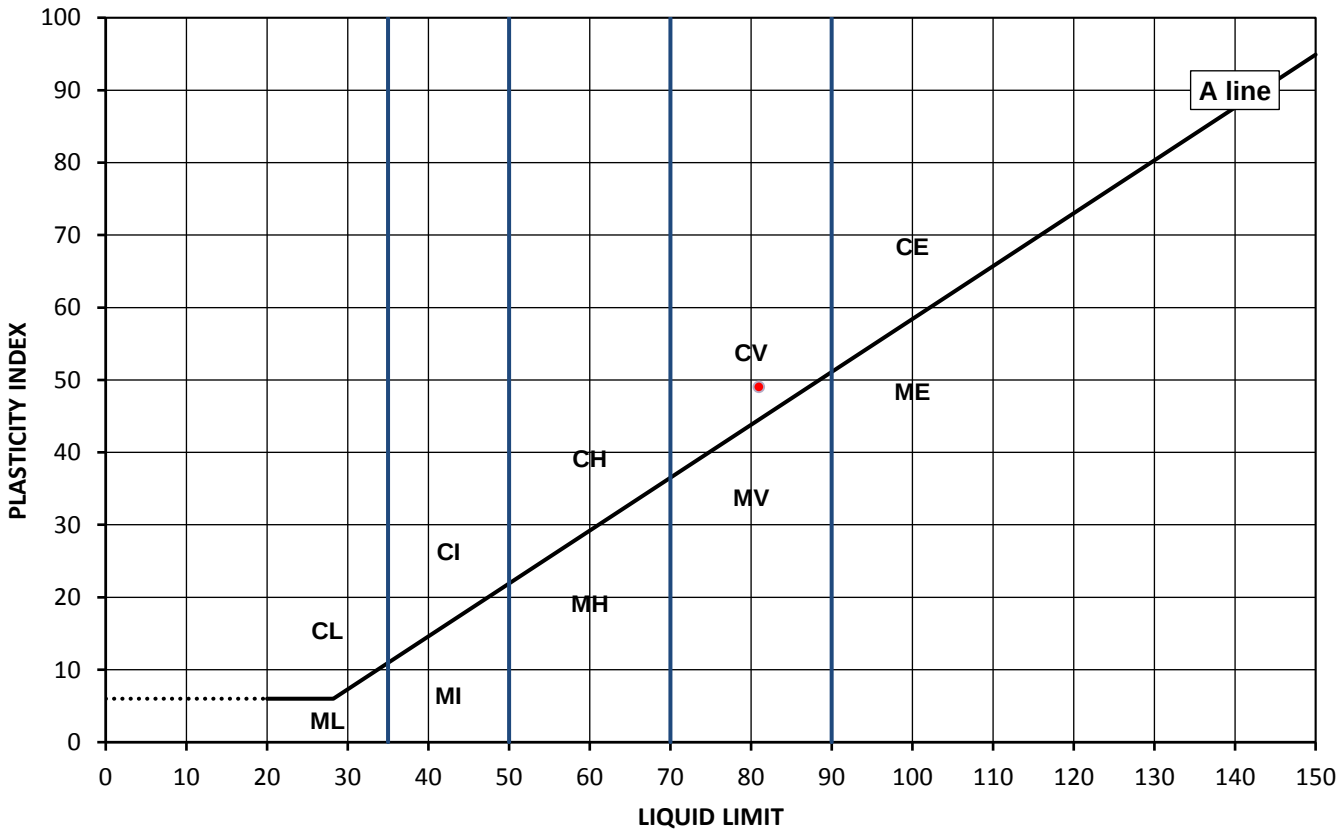
Client:	Soiltechnics Limited	Client Reference:	STP3953A
Client Address:	Cedar Barn White Lodge Walgrave, Northampton, NN6 9PY	Job Number:	18-19140
		Date Sampled:	07/11/2018
		Date Received:	20/11/2018
Contact:	Alexa Band	Date Tested:	26/11/2018
Site Name:	60-70 Shorts Gardens	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1095260	Depth Top [m]:	2.05
Hole No.:	BH9.1	Depth Base [m]:	Not Given
Sample Reference:	BH9.12.052-017	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
29	81	32	49	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 06/12/2018

Signed: Darren Berrill
Geotechnical General Manager

GF 232.3

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

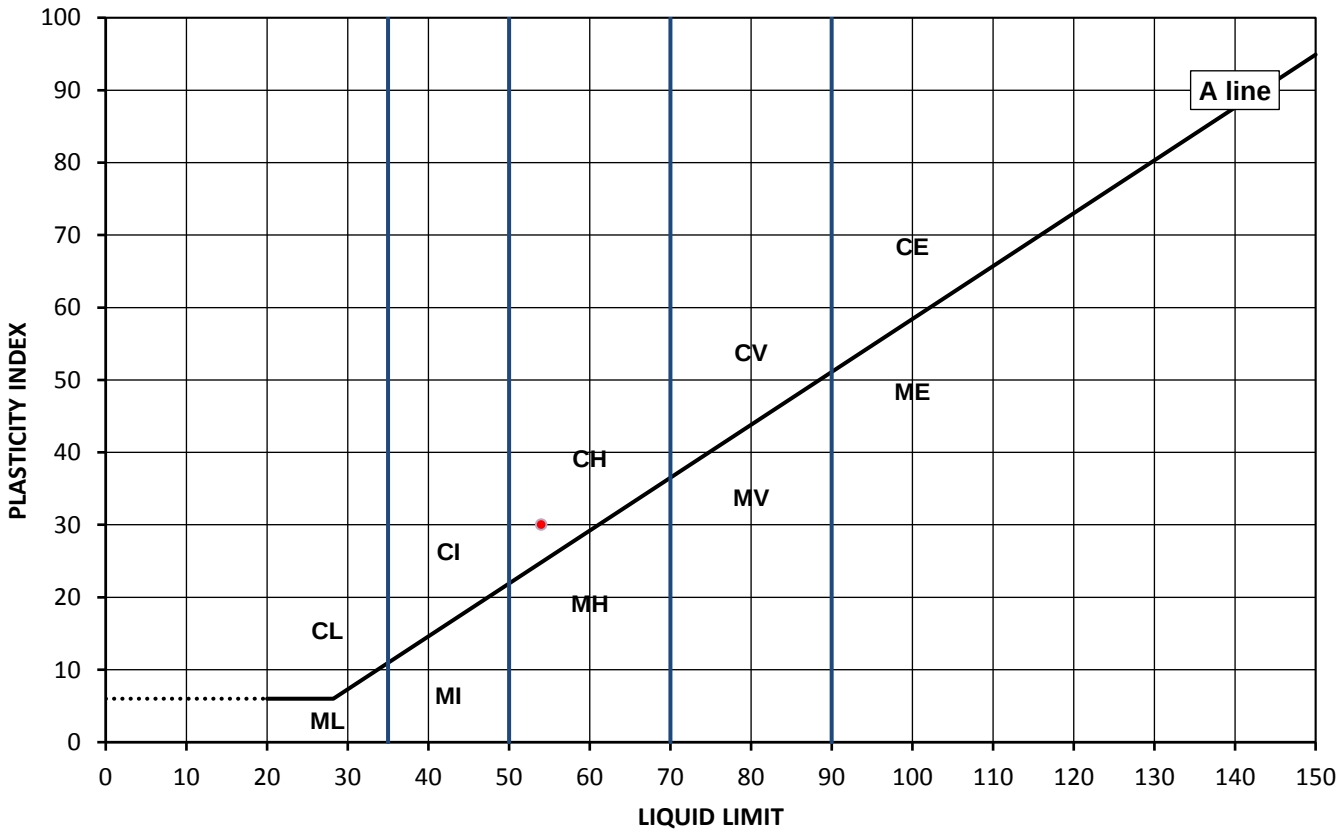
Client:	Soiltechnics Limited	Client Reference:	STP3953A
Client Address:	Cedar Barn White Lodge Walgrave, Northampton, NN6 9PY	Job Number:	18-19140
		Date Sampled:	07/11/2018
		Date Received:	20/11/2018
Contact:	Alexa Band	Date Tested:	26/11/2018
Site Name:	60-70 Shorts Gardens	Sampled By:	Not Given
Site Address:	Not Given		

Test Results

Laboratory Reference:	1095261	Depth Top [m]:	5.95
Hole No.:	BH9.1	Depth Base [m]:	Not Given
Sample Reference:	BH9.15.953-021	Sample Type:	B
Soil Description:	Grey slightly sandy CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
24	54	24	30	100



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 06/12/2018

Signed: Darren Berrill
Geotechnical General Manager

GF 232.3

for and on behalf of i2 Analytical Ltd

SUMMARY REPORT

Summary of Classification Test Results

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

UKAS TESTING 4041

Environmental Science

Tested in Accordance with:

MC by BS 1377-2: 1990: Clause 3.2; Atterberg by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: Soiltechnics Limited

Client Address: Cedar Barn
White Lodge
Walgrave, Northampton, NN6 9PY

Contact: Alexa Band

Site Name: 60-70 Shorts Gardens

Site Address: Not Given

Client Reference: STP3953A

Job Number: 18-19140

Date Sampled: 07/11/2018

Date Received: 20/11/2018

Date Tested: 26/11/2018

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	MC#	Atterberg#				Density		Total Porosity				
		Reference	Depth Top	Depth Base	Type				% Passing 425um	LL	PL	PI	bulk	PD					
			m	m				%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3				
1095259	BH9.1	BH11.002-015	1.00	Not Given	D	Yellowish brown CLAY	Atterberg 1 Point	30	100	71	31	40							
1095260	BH9.1	BH9.12.052-017	2.05	Not Given	D	Brown CLAY	Atterberg 1 Point	29	100	81	32	49							
1095261	BH9.1	BH9.15.953-021	5.95	Not Given	B	Grey slightly sandy CLAY	Atterberg 1 Point	24	100	54	24	30							

Note: # UKAS accredited; NP - Non plastic

Comments:

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 06/12/2018

Signed: Darren Berrill
Geotechnical General Manager

GF 234.4

for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

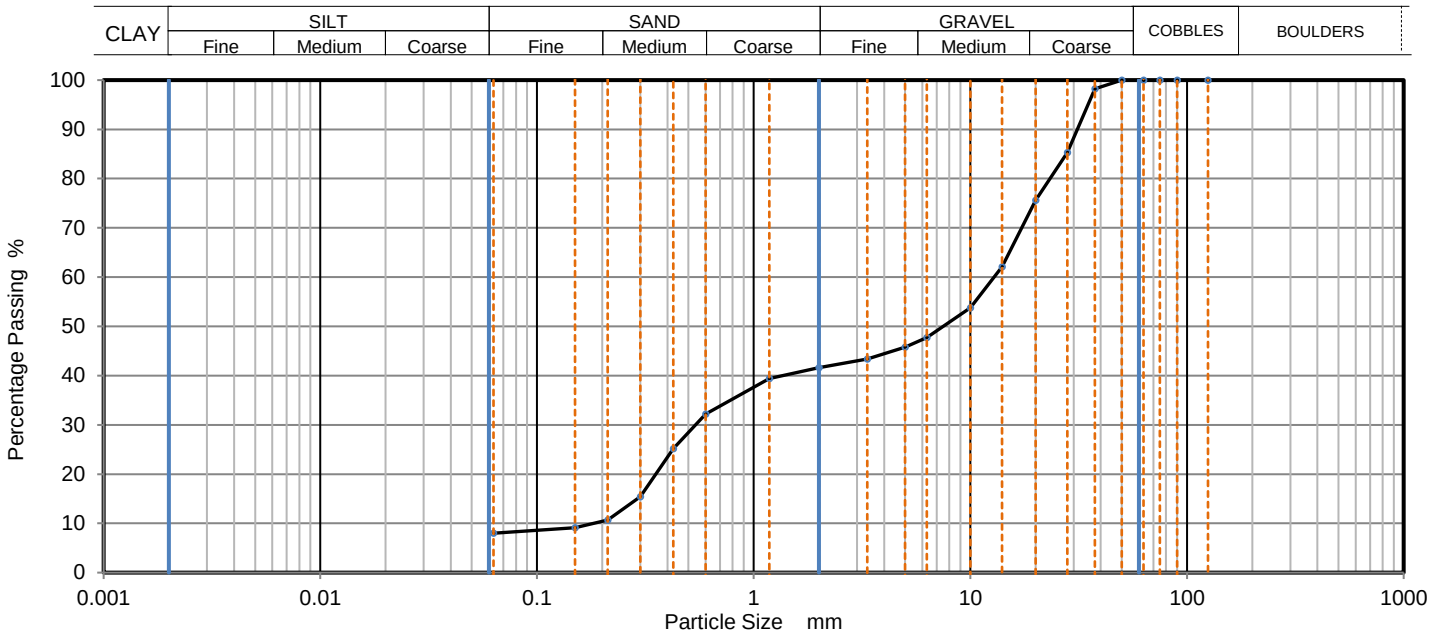
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

4041

Client:	Soiltechnics Limited	Client Reference:	STP3953A
Client Address:	Cedar Barn White Lodge Walgrave, Northampton, NN6 9PY	Job Number:	18-19140
		Date Sampled:	16/11/2018
		Date Received:	20/11/2018
Contact:	Alexa Band	Date Tested:	26/11/2018
Site Name:	60-70 Shorts Gardens	Sampled By:	Not Given
Site Address:	Not Given		

Test Results:

Laboratory Reference:	1095258	Depth Top [m]:	0.40
Hole No.:	BH9.1	Depth Base [m]:	0.60
Sample Reference:	BH9.10.402-005	Sample Type:	B
Sample Description:	Yellowish brown very sandy slightly clayey GRAVEL		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	98		
28	85		
20	76		
14	62		
10	54		
6.3	48		
5	46		
3.35	43		
2	42		
1.18	39		
0.6	32		
0.425	25		
0.3	15		
0.212	11		
0.15	9		
0.063	9		

Dry Mass of sample [g]: 4231

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	58.40
Sand	33.10
Fines <0.063mm	8.50

Grading Analysis		
D100	mm	50
D60	mm	12.9
D30	mm	0.538
D10	mm	0.183
Uniformity Coefficient		70
Curvature Coefficient		0.12

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Approved: Dariusz Piotrowski
PL Geotechnical Laboratory Manager
Date Reported: 06/12/2018

Signed: Darren Berrill
Geotechnical General Manager

GF 100.10

for and on behalf of i2 Analytical Ltd

2718

Soiltechnics Ltd
Cedar Barn
White Lodge
Walgrave
Northamptonshire
NN6 9PY

For the attention of Angus Wilson

Version No. 1
Page No. 1 of 9
Date of Issue 14/12/2018

TEST REPORT

PROJECT/SITE	Shorts Gardens	Samples received	21/11/2018
GEL REPORT NUMBER	34832	Schedule received	21/11/2018
Your ref/PO:	POR004256	Testing commenced	22/11/2018
Test report refers to	Schedule 1	Status	Final

SUMMARY OF RESULTS ATTACHED

TEST METHOD & DESCRIPTION	QUANTITY	ACCREDITED TEST
BS EN ISO 17892-5: 2017, Oedometer	2	YES
BS1377: Part 7: 1990:8&9, Undrained Triaxial Compression	3	YES
BS1377: Part 8: 1990: Effective Stress Testing	1	YES

Remarks

Approved Signatories:

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

J Hanson (Director) N Parry (Director)

Geotechnical Engineering Ltd
Centurion House
Olympus Park, Quedgeley
Gloucester GL2 4NF

www.geoeng.co.uk
geotech@geoeng.co.uk
TEL: 01452 527743
Fax: 01452 729314

Registered number: 00700739
VAT Number: 682 5857 89

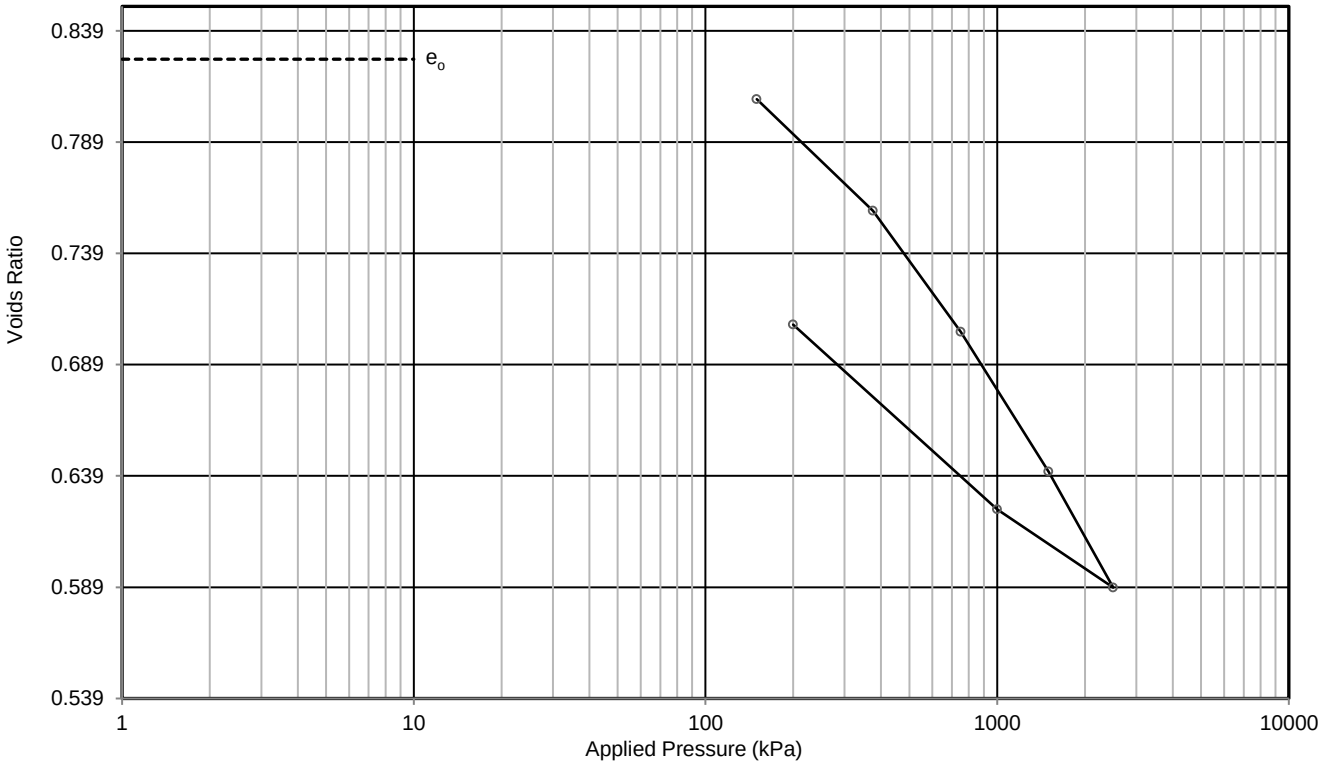
Payments: Geotechnical Engineering Limited
Sort code: 16-22-11 **Bank account**: 11125135

Geotechnical Engineering Limited

DETERMINATION OF ONE-DIMENSIONAL CONSOLIDATION PROPERTIES

BS EN ISO 17892 - 5 : 2017 : 6

CLIENT	SOILTECHNICS LTD	BH/TP No.	BH9.1
SITE	SHORTS GARDENS	SAMPLE No./TYPE	U2U
DESCRIPTION	Brown silty CLAY	SAMPLE DEPTH (m)	2.50
		SPECIMEN DEPTH (m)	2.65



test and sample details			test results			
			pressure stage (kPa)	voids ratio	laboratory coefficients of compressibility mv (m2/MN)	laboratory coefficients of consolidation Cv (m2/yr)
specimen diameter	mm	63.58				
specimen height	mm	17.77				
initial moisture content	%	31.3				
final moisture content	%	28.0				
initial bulk density	Mg/m3	1.94	150	0.808		
initial dry density	Mg/m3	1.48	375	0.758	0.12	0.28
initial voids ratio		0.826	750	0.704	0.082	0.25
initial degree of saturation	%	102	1500	0.641	0.049	0.3
particle density	Mg/m3	#2.70	2500	0.589	0.032	0.26
swelling pressure	kPa	N/A	1000	0.624	0.015	
			200	0.707	0.064	
P'o to P'o +100 kPa		-				
laboratory temperature	oC	20 ± 2				
method of time fitting		root time				

remarks # denotes particle density has been assigned an assumed value

Swelled on 150kPa, continued with scheduled sequence as requested.

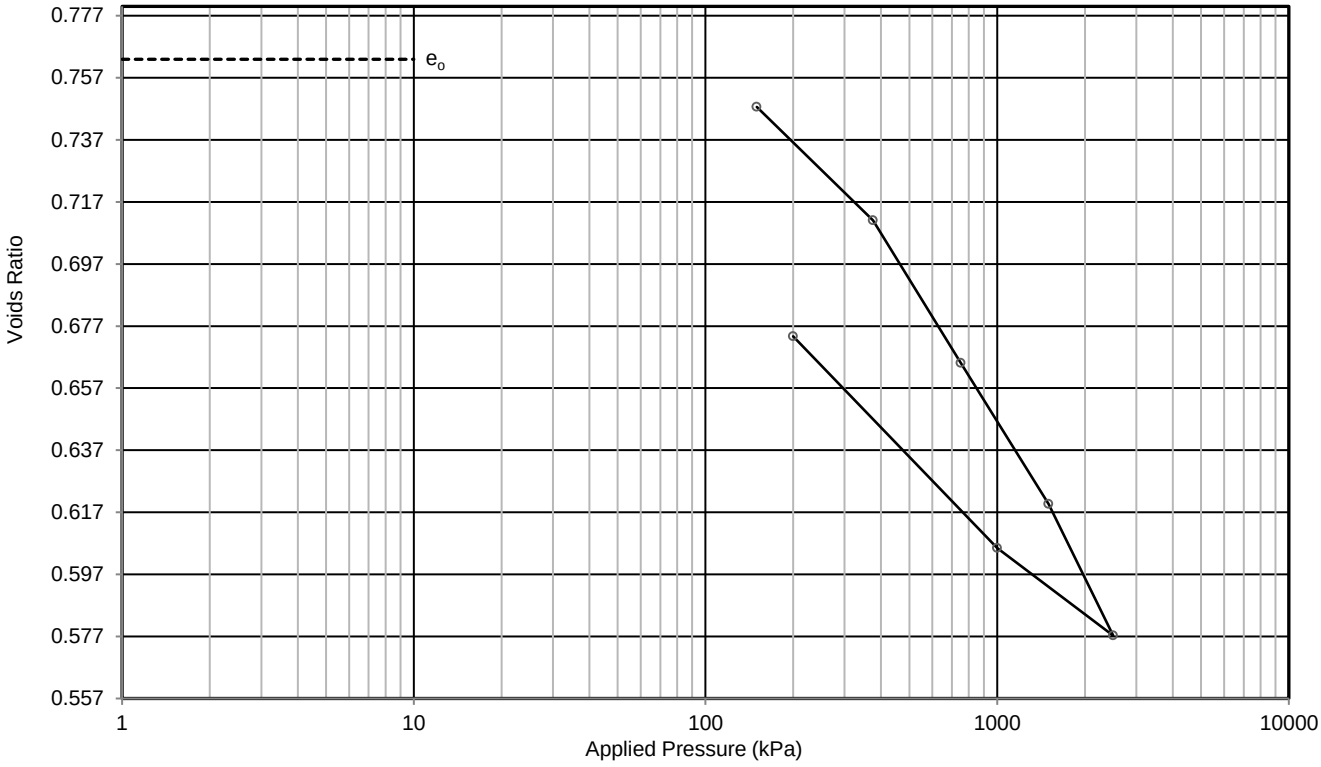
CONTRACT	CHECKED
34832	**WJ**

Geotechnical Engineering Limited

DETERMINATION OF ONE-DIMENSIONAL CONSOLIDATION PROPERTIES

BS EN ISO 17892 - 5 : 2017 : 6

CLIENT	SOILTECHNICS LTD	BH/TP No.	BH9.1
SITE	SHORTS GARDENS	SAMPLE No./TYPE	U4U
DESCRIPTION	Brown silty CLAY	SAMPLE DEPTH (m)	4.50
		SPECIMEN DEPTH (m)	4.62



test and sample details			test results			
			pressure stage (kPa)	voids ratio	laboratory coefficients of compressibility mv (m2/MN)	consolidation Cv (m2/yr)
specimen diameter	mm	63.54				
specimen height	mm	18.93				
initial moisture content	%	28.4				
final moisture content	%	26.2				
initial bulk density	Mg/m3	1.97	150	0.748		
initial dry density	Mg/m3	1.53	375	0.711	0.093	0.69
initial voids ratio		0.763	750	0.665	0.072	0.37
initial degree of saturation	%	101	1500	0.620	0.036	0.25
particle density	Mg/m3	#2.70	2500	0.577	0.026	0.24
swelling pressure	kPa	N/A	1000	0.605	0.012	
			200	0.674	0.053	
P'o to P'o +100 kPa		-				
laboratory temperature	oC	20 ± 2				
method of time fitting		root time				

remarks # denotes particle density has been assigned an assumed value

Swelled on 150kPa, continued with scheduled sequence as requested.

CONTRACT	CHECKED
34832	**WJ**

Geotechnical Engineering Limited

UNDRAINED TRIAXIAL COMPRESSION

BS.1377 : PART 7 : 1990 : 9

CLIENT SOILTECHNICS LTD

SITE SHORTS GARDENS

borehole /trial pit no.	sample		specimen depth	code	moisture content		dimensions		density		cell pressure	rate of strain	deviator stress	failure strain	failure mode	shear strength*	description and remarks
	no./type	depth (m)	(m)		initial (%)	final (%)	length (mm)	diameter (mm)	bulk (Mg/m3)	dry (Mg/m3)	(kPa)	(%/min)	(kPa)	(%)		(kPa)	
BH9.1	U1U	1.60	1.72	UUM100	25.3	28.1	159	104	1.96	1.56	110 220 440	3.2	196 256 268	3.1 7.5 8.8	S	98 128 134	Brown silty CLAY
BH9.1	U2U	2.50	2.63	UUM100	28.8	28.9	206	104	1.95	1.51	120 240 480	4.1	220 247 269	2.9 4.4 5.8	S	110 123 134	Brown silty CLAY
BH9.1	U4U	4.50	4.65	UUM100	26.5	26.1	200	104	1.97	1.55	140 280 560	4.0	206 278 299	2.5 5.5 7.0	S	103 139 150	Brown silty CLAY

general remarks:

* shear strength taken as half deviator stress at failure for each stage
membrane correction applied
sample taken vertically (unless otherwise specified)
strain rate 2%/min (unless otherwise specified)

code:

UU - unconsolidated undrained
M - multi stage
S - set of three
R - remoulded

failure mode:

B - barrel (plastic failure)
S - shear (brittle failure)
I - intermediate
O - other (see remarks)

membrane type/thickness:

latex membrane used (unless otherwise specified)
38 - 0.2mm
70 - 0.4mm
100 - 0.4mm

CONTRACT **34832**

CHECKED **WJ**

Geotechnical Engineering Limited

CONSOLIDATED DRAINED TRIAXIAL with VOLUME CHANGE MEASUREMENT

BS1377 : Part 8 : 1990 and "Manual of Soil Laboratory Testing", Volume 3, K.H. Head

CLIENT	SOILTECHNICS LTD	BH/TP No.	BH9.1
SITE	SHORTS GARDENS	SAMPLE No./TYPE	U5
		SAMPLE DEPTH (m)	5.50-5.95
DESCRIPTION	Dark brown slightly sandy silty CLAY	SPECIMEN DEPTH (m)	5.54-5.72

TYPE OF SPECIMEN **Undisturbed / Vertical**
TYPE OF TEST **Single Specimen Single Stage**
SIDE DRAINS FITTED **Yes**
DRAINAGE CONDITIONS **One end and radial boundary**

			SPECIMEN 1
INITIAL CONDITIONS	Length	mm	175.1
	Diameter	mm	103.42
	Moisture Content	%	24
	Bulk Density	Mg/m^3	2.00
	Dry Density	Mg/m^3	1.61
FINAL CONDITIONS	Moisture Content	%	24
	Bulk Density	Mg/m^3	2.04
	Dry Density	Mg/m^3	1.65
SATURATION (by cell pressure and back pressure increments)	Initial PWP	kPa	-2
	Saturated PWP	kPa	279
	Final Cell Pressure	kPa	300
	B Value		0.96
CONSOLIDATION	Cell Pressure	kPa	600
	Back Pressure	kPa	300
	Initial PWP	kPa	569
	Final PWP	kPa	306
COMPRESSION	Cell Pressure	kPa	600
	Back Pressure	kPa	300
	σ_3'	kPa	300
	Rate of Strain	%/hr	0.341
FAILURE CONDITIONS (based on maximum deviator stress)	Axial Strain (ε)	%	4.2
	Volumetric Strain (ε_v)	%	0.66
	$\sigma_3'_f$	kPa	300
	$\sigma_1'_f - \sigma_3'_f$	kPa	343

Membrane correction of 0.1kPa/% strain applied to deviator stress.

Side drain correction of 3.5kPa applied to deviator stress (100mm diameter)

FAILURE MODE (see photo)	SHEAR	**EFFECTIVE STRESS PARAMETERS**	c_d kPa :	ϕ_d deg :
remarks			CONTRACT **34832**	CHECKED **NP**

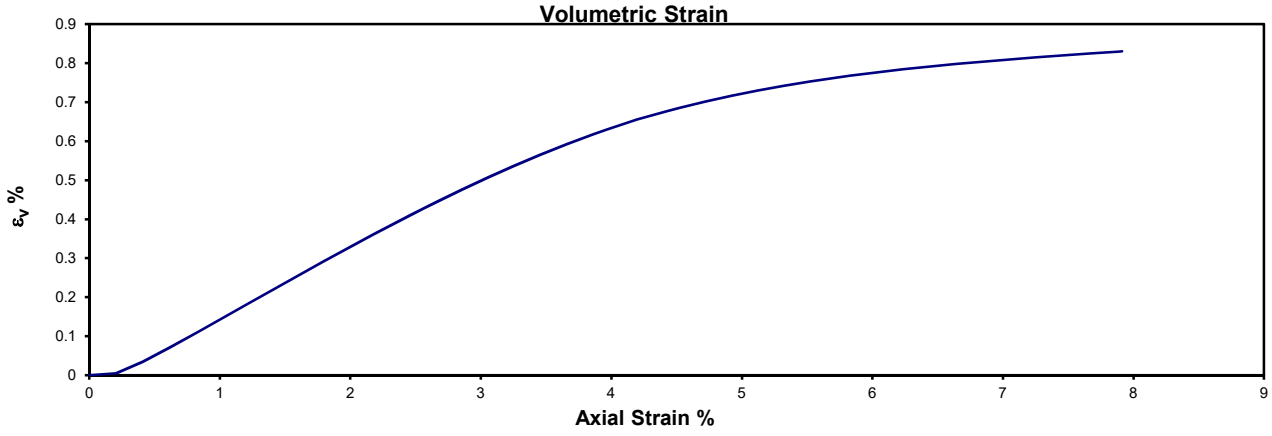
Geotechnical Engineering Ltd. Centurion House, Olympus Park, Quedgeley, Gloucester, GL2 4NF. Tel - 01452 527743

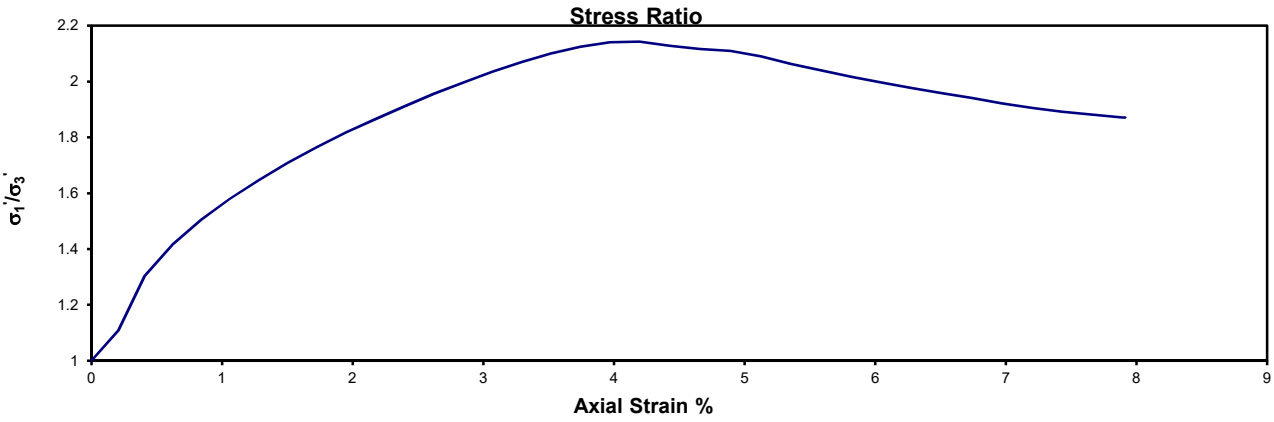
Geotechnical Engineering Limited

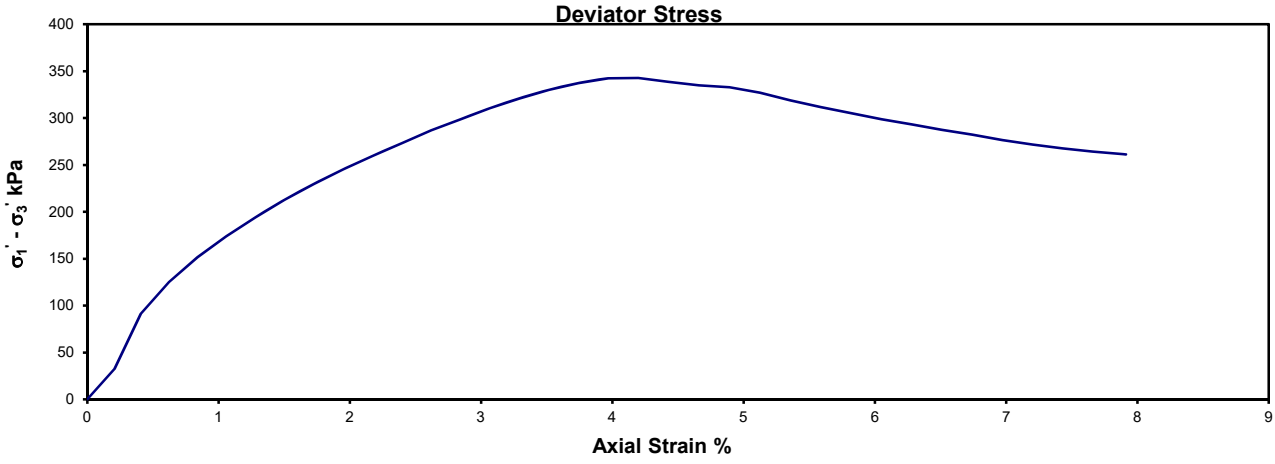
CONSOLIDATED DRAINED TRIAXIAL with VOLUME CHANGE MEASUREMENT

BS1377 : Part 8 : 1990 and "Manual of Soil Laboratory Testing", Volume 3, K.H. Head

CLIENT	SOILTECHNICS LTD	BH/TP No.	BH9.1
SITE	SHORTS GARDENS	SAMPLE No./TYPE	U5
		SAMPLE DEPTH (m)	5.50-5.95
		SPECIMEN DEPTH (m)	5.54-5.72







remarks	CONTRACT	CHECKED
	34832	**NP**

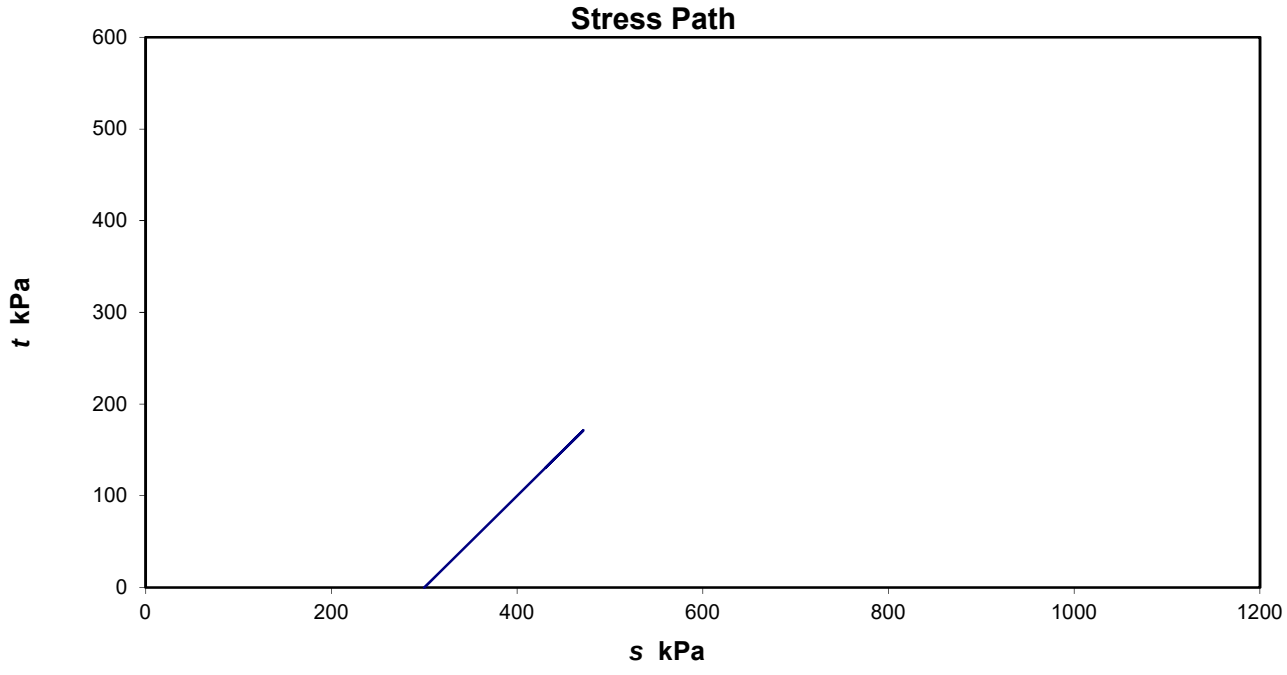
Geotechnical Engineering Ltd. Centurion House, Olympus Park, Quedgeley, Gloucester, GL2 4NF. Tel - 01452 527743

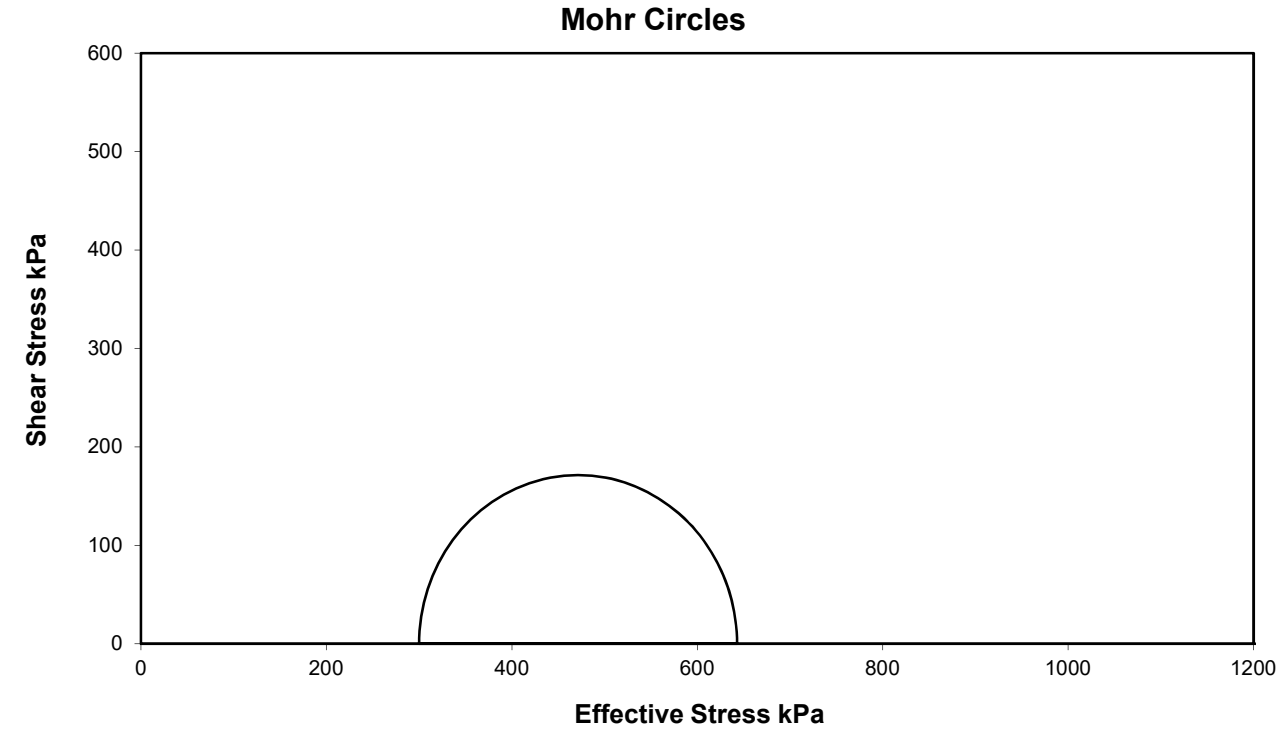
Geotechnical Engineering Limited

CONSOLIDATED DRAINED TRIAXIAL with VOLUME CHANGE MEASUREMENT

BS1377 : Part 8 : 1990 and "Manual of Soil Laboratory Testing", Volume 3, K.H. Head

CLIENT	SOILTECHNICS LTD	BH/TP No.	BH9.1
SITE	SHORTS GARDENS	SAMPLE No./TYPE	U5
		SAMPLE DEPTH (m)	5.50-5.95
		SPECIMEN DEPTH (m)	5.54-5.72





remarks	CONTRACT	CHECKED
	34832	**NP**

Geotechnical Engineering Ltd. Centurion House, Olympus Park, Quedgeley, Gloucester, GL2 4NF. Tel - 01452 527743

Geotechnical Engineering Limited

CONSOLIDATED DRAINED TRIAXIAL with VOLUME CHANGE MEASUREMENT

BS1377 : Part 8 : 1990 and "Manual of Soil Laboratory Testing", Volume 3, K.H. Head

CLIENT	SOILTECHNICS LTD	BH/TP No.	BH9.1
SITE	SHORTS GARDENS	SAMPLE No./TYPE	U5
		SAMPLE DEPTH (m)	5.50-5.95
		SPECIMEN DEPTH (m)	5.54-5.72

Failure Mode SHEAR

remarks	CONTRACT	CHECKED
Please note the photos are intended to show the mode of failure only.	**34832**	**NP**

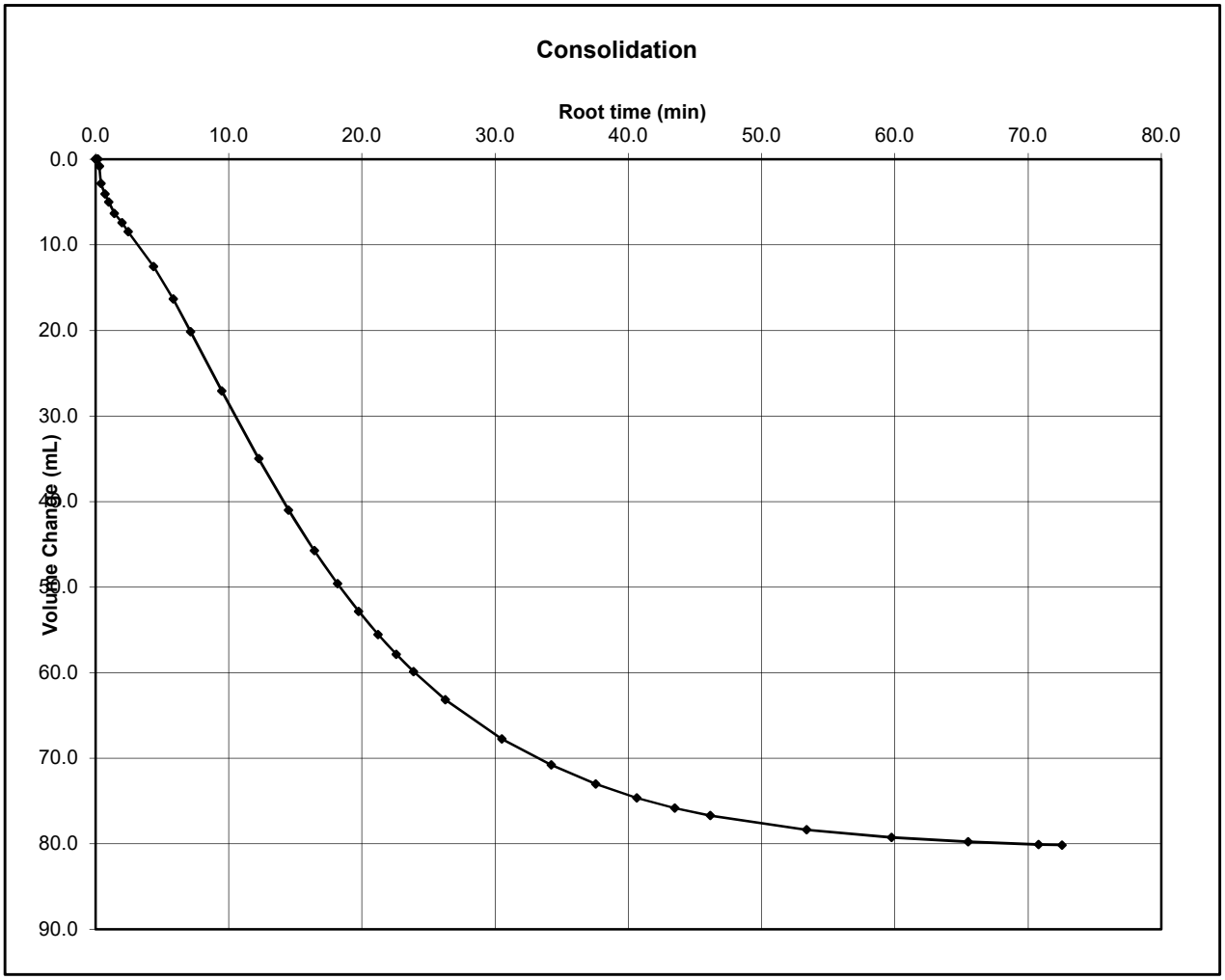
Geotechnical Engineering Ltd. Centurion House, Olympus Park, Quedgeley, Gloucester, GL2 4NF. Tel - 01452 527743

Geotechnical Engineering Limited

CONSOLIDATED DRAINED TRIAXIAL with VOLUME CHANGE MEASUREMENT

BS1377 : Part 8 : 1990 and "Manual of Soil Laboratory Testing", Volume 3, K.H. Head

CLIENT	SOILTECHNICS LTD	BH/TP No.	BH9.1
SITE	SHORTS GARDENS	SAMPLE No./TYPE	U5
		SAMPLE DEPTH (m)	5.50-5.95
		SPECIMEN DEPTH (m)	5.54-5.72



Stage 1

Cell pressure	kPa	600
Back pressure	kPa	300
Effective pressure	kPa	300
Initial PWP	kPa	569
Final PWP	kPa	306
PWP Dissipation	%	97.77
Volume Change	mL	80.2
	t100	781.57

remarks	CONTRACT	CHECKED
Please note the photos are intended to show the mode of failure only.	**34832**	**NP**

Chemtest
The right chemistry to deliver results
Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	19-00005-1
Initial Date of Issue:	08-Jan-2019
Client	Soiltechnics Limited
Client Address:	Cedar Barn White Lodge Walgrave Northampton Northamptonshire NN6 9PY
Contact(s):	Alexa Band Lauren Wenham
Project	STP3953A 60-70 Shorts Gardens & 14-16B

Quotation No.:		**Date Received:**	24-Dec-2018
Order No.:	POR004459	**Date Instructed:**	28-Dec-2018
No. of Samples:	3		
Turnaround (Wkdays):	5	**Results Due:**	04-Jan-2019
Date Approved:	08-Jan-2019		

Approved By:

Details: Glynn Harvey, Laboratory Manager

Chemtest
The right chemistry to deliver results

Results - Soil

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		19-00005	19-00005	19-00005
Quotation No.:			**Chemtest Sample ID.:**		748573	748574	748575
Order No.: POR004459			Client Sample Ref.:		3-101	3-102	3-004
			Client Sample ID.:		BH020.503-101	BH020.503-102	BH025.003-004
			Sample Location:		BH02	BH02	BH02
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.50	0.50	5.00
			Bottom Depth (m):		0.60	0.60	
			Date Sampled:		20-Dec-2018	20-Dec-2018	17-Dec-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Moisture	N	2030	%	0.020	32	6.4	21
Soil Colour	N	2040		N/A	Brown		Brown
Other Material	N	2040		N/A	Stones		NONE
Soil Texture	N	2040		N/A	Sand		Clay
pH	M	2010		N/A	8.0	8.1	8.4
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40		1.2	
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.80	1.1	0.33
Total Sulphur	M	2175	%	0.010	0.12		0.25
Nitrate (Water Soluble)	N	2220	g/l	0.010		< 0.010	
Cyanide (Complex)	M	2300	mg/kg	0.50		< 0.50	
Cyanide (Free)	M	2300	mg/kg	0.50		< 0.50	
Cyanide (Total)	M	2300	mg/kg	0.50		< 0.50	
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50		34	
Sulphate (Acid Soluble)	M	2430	%	0.010	0.32		0.14
Arsenic	M	2450	mg/kg	1.0		10	
Beryllium	U	2450	mg/kg	1.0		< 1.0	
Cadmium	M	2450	mg/kg	0.10		0.12	
Chromium	M	2450	mg/kg	1.0		15	
Copper	M	2450	mg/kg	0.50		90	
Mercury	M	2450	mg/kg	0.10		1.5	
Nickel	M	2450	mg/kg	0.50		55	
Lead	M	2450	mg/kg	0.50		260	
Selenium	M	2450	mg/kg	0.20		0.27	
Vanadium	U	2450	mg/kg	5.0		20	
Zinc	M	2450	mg/kg	0.50		47	
Chromium (Hexavalent)	N	2490	mg/kg	0.50		< 0.50	
Organic Matter	M	2625	%	0.40		1.2	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0		[C] < 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0		[C] < 1.0	
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0		[C] < 1.0	
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0		[C] < 1.0	
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0		[C] < 1.0	
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0		[C] < 1.0	
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0		[C] < 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0		[C] < 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0		[C] < 5.0	

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Results - Soil

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		19-00005	19-00005	19-00005
Quotation No.:			**Chemtest Sample ID.:**		748573	748574	748575
Order No.: POR004459			Client Sample Ref.:		3-101	3-102	3-004
			Client Sample ID.:		BH020.503-101	BH020.503-102	BH025.003-004
			Sample Location:		BH02	BH02	BH02
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.50	0.50	5.00
			Bottom Depth (m):		0.60	0.60	
			Date Sampled:		20-Dec-2018	20-Dec-2018	17-Dec-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0		[C] < 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0		[C] < 1.0	
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0		[C] < 1.0	
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0		[C] < 1.0	
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0		[C] < 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0		[C] < 1.0	
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0		[C] < 1.0	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		[C] < 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		[C] < 5.0	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		[C] < 10	
Dichlorodifluoromethane	U	2760	µg/kg	1.0		[C] < 1.0	
Chloromethane	M	2760	µg/kg	1.0		[C] < 1.0	
Vinyl Chloride	M	2760	µg/kg	1.0		[C] < 1.0	
Bromomethane	M	2760	µg/kg	20		[C] < 20	
Chloroethane	U	2760	µg/kg	2.0		[C] < 2.0	
Trichlorofluoromethane	M	2760	µg/kg	1.0		[C] < 1.0	
1,1-Dichloroethene	M	2760	µg/kg	1.0		[C] < 1.0	
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0		[C] < 1.0	
1,1-Dichloroethane	M	2760	µg/kg	1.0		[C] < 1.0	
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0		[C] < 1.0	
Bromochloromethane	U	2760	µg/kg	5.0		[C] < 5.0	
Trichloromethane	M	2760	µg/kg	1.0		[C] < 1.0	
1,1,1-Trichloroethane	M	2760	µg/kg	1.0		[C] < 1.0	
Tetrachloromethane	M	2760	µg/kg	1.0		[C] < 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0		[C] < 1.0	
Benzene	M	2760	µg/kg	1.0		[C] < 1.0	
1,2-Dichloroethane	M	2760	µg/kg	2.0		[C] < 2.0	
Trichloroethene	N	2760	µg/kg	1.0		[C] < 1.0	
1,2-Dichloropropane	M	2760	µg/kg	1.0		[C] < 1.0	
Dibromomethane	M	2760	µg/kg	1.0		[C] < 1.0	
Bromodichloromethane	M	2760	µg/kg	5.0		[C] < 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10		[C] < 10	
Toluene	M	2760	µg/kg	1.0		[C] < 1.0	
Trans-1,3-Dichloropropene	N	2760	µg/kg	10		[C] < 10	
1,1,2-Trichloroethane	M	2760	µg/kg	10		[C] < 10	
Tetrachloroethene	M	2760	µg/kg	1.0		[C] < 1.0	

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Results - Soil

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		19-00005	19-00005	19-00005
Quotation No.:			**Chemtest Sample ID.:**		748573	748574	748575
Order No.: POR004459			Client Sample Ref.:		3-101	3-102	3-004
			Client Sample ID.:		BH020.503-101	BH020.503-102	BH025.003-004
			Sample Location:		BH02	BH02	BH02
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.50	0.50	5.00
			Bottom Depth (m):		0.60	0.60	
			Date Sampled:		20-Dec-2018	20-Dec-2018	17-Dec-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
1,3-Dichloropropane	U	2760	µg/kg	2.0		[C] < 2.0	
Dibromochloromethane	U	2760	µg/kg	10		[C] < 10	
1,2-Dibromoethane	M	2760	µg/kg	5.0		[C] < 5.0	
Chlorobenzene	M	2760	µg/kg	1.0		[C] < 1.0	
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0		[C] < 2.0	
Ethylbenzene	M	2760	µg/kg	1.0		[C] < 1.0	
m & p-Xylene	M	2760	µg/kg	1.0		[C] < 1.0	
o-Xylene	M	2760	µg/kg	1.0		[C] < 1.0	
Styrene	M	2760	µg/kg	1.0		[C] < 1.0	
Tribromomethane	U	2760	µg/kg	1.0		[C] < 1.0	
Isopropylbenzene	M	2760	µg/kg	1.0		[C] < 1.0	
Bromobenzene	M	2760	µg/kg	1.0		[C] < 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50		[C] < 50	
N-Propylbenzene	U	2760	µg/kg	1.0		[C] < 1.0	
2-Chlorotoluene	M	2760	µg/kg	1.0		[C] < 1.0	
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0		[C] < 1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0		[C] < 1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0		[C] < 1.0	
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0		[C] < 1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0		[C] < 1.0	
1,3-Dichlorobenzene	M	2760	µg/kg	1.0		[C] < 1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0		[C] < 1.0	
1,4-Dichlorobenzene	M	2760	µg/kg	1.0		[C] < 1.0	
N-Butylbenzene	U	2760	µg/kg	1.0		[C] < 1.0	
1,2-Dichlorobenzene	M	2760	µg/kg	1.0		[C] < 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50		[C] < 50	
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0		[C] < 1.0	
Hexachlorobutadiene	U	2760	µg/kg	1.0		[C] < 1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0		[C] < 2.0	
Carbon Disulphide	N	2760	µg/kg	50		[C] < 50	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0		[C] < 1.0	
N-Nitrosodimethylamine	N	2790	mg/kg	0.050		[C] < 0.050	
Phenol	N	2790	mg/kg	0.050		[C] < 0.050	
2-Chlorophenol	N	2790	mg/kg	0.050		[C] < 0.050	
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050		[C] < 0.050	
1,3-Dichlorobenzene	N	2790	mg/kg	0.050		[C] < 0.050	

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Results - Soil

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited					**Chemtest Job No.:**	19-00005	19-00005	19-00005
Quotation No.:					**Chemtest Sample ID.:**	748573	748574	748575
Order No.: POR004459					Client Sample Ref.:	3-101	3-102	3-004
					Client Sample ID.:	BH020.503-101	BH020.503-102	BH025.003-004
					Sample Location:	BH02	BH02	BH02
					Sample Type:	SOIL	SOIL	SOIL
					Top Depth (m):	0.50	0.50	5.00
					Bottom Depth (m):	0.60	0.60	
					Date Sampled:	20-Dec-2018	20-Dec-2018	17-Dec-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
1,4-Dichlorobenzene	N	2790	mg/kg	0.050			[C] < 0.050	
1,2-Dichlorobenzene	N	2790	mg/kg	0.050			[C] < 0.050	
2-Methylphenol	N	2790	mg/kg	0.050			[C] < 0.050	
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050			[C] < 0.050	
Hexachloroethane	N	2790	mg/kg	0.050			[C] < 0.050	
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050			[C] < 0.050	
4-Methylphenol	N	2790	mg/kg	0.050			[C] < 0.050	
Nitrobenzene	N	2790	mg/kg	0.050			[C] < 0.050	
Isophorone	N	2790	mg/kg	0.050			[C] < 0.050	
2-Nitrophenol	N	2790	mg/kg	0.050			[C] < 0.050	
2,4-Dimethylphenol	N	2790	mg/kg	0.050			[C] < 0.050	
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050			[C] < 0.050	
2,4-Dichlorophenol	N	2790	mg/kg	0.050			[C] < 0.050	
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050			[C] < 0.050	
Naphthalene	N	2790	mg/kg	0.050			[C] < 0.050	
4-Chloroaniline	N	2790	mg/kg	0.050			[C] < 0.050	
Hexachlorobutadiene	N	2790	mg/kg	0.050			[C] < 0.050	
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050			[C] < 0.050	
2-Methylnaphthalene	N	2790	mg/kg	0.050			[C] < 0.050	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050			[C] < 0.050	
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050			[C] < 0.050	
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050			[C] < 0.050	
2-Chloronaphthalene	N	2790	mg/kg	0.050			[C] < 0.050	
2-Nitroaniline	N	2790	mg/kg	0.050			[C] < 0.050	
Acenaphthylene	N	2790	mg/kg	0.050			[C] 0.053	
Dimethylphthalate	N	2790	mg/kg	0.050			[C] < 0.050	
2,6-Dinitrotoluene	N	2790	mg/kg	0.050			[C] < 0.050	
Acenaphthene	N	2790	mg/kg	0.050			[C] 0.053	
3-Nitroaniline	N	2790	mg/kg	0.050			[C] < 0.050	
Dibenzofuran	N	2790	mg/kg	0.050			[C] < 0.050	
4-Chlorophenylphenylether	N	2790	mg/kg	0.050			[C] < 0.050	
2,4-Dinitrotoluene	N	2790	mg/kg	0.050			[C] < 0.050	
Fluorene	N	2790	mg/kg	0.050			[C] < 0.050	
Diethyl Phthalate	N	2790	mg/kg	0.050			[C] < 0.050	
4-Nitroaniline	N	2790	mg/kg	0.050			[C] < 0.050	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050			[C] < 0.050	

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Results - Soil

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		19-00005	19-00005	19-00005
Quotation No.:			**Chemtest Sample ID.:**		748573	748574	748575
Order No.: POR004459			Client Sample Ref.:		3-101	3-102	3-004
			Client Sample ID.:		BH020.503-101	BH020.503-102	BH025.003-004
			Sample Location:		BH02	BH02	BH02
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.50	0.50	5.00
			Bottom Depth (m):		0.60	0.60	
			Date Sampled:		20-Dec-2018	20-Dec-2018	17-Dec-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Azobenzene	N	2790	mg/kg	0.050		[C] < 0.050	
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050		[C] < 0.050	
Hexachlorobenzene	N	2790	mg/kg	0.050		[C] < 0.050	
Pentachlorophenol	N	2790	mg/kg	0.050		[C] < 0.050	
Phenanthrene	N	2790	mg/kg	0.050		[C] 0.56	
Anthracene	N	2790	mg/kg	0.050		[C] 0.15	
Carbazole	N	2790	mg/kg	0.050		[C] 0.053	
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050		[C] < 0.050	
Fluoranthene	N	2790	mg/kg	0.050		[C] 0.79	
Pyrene	N	2790	mg/kg	0.050		[C] 0.73	
Butylbenzyl Phthalate	N	2790	mg/kg	0.050		[C] < 0.050	
Benzo[a]anthracene	N	2790	mg/kg	0.050		[C] 0.45	
Chrysene	N	2790	mg/kg	0.050		[C] 0.43	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050		[C] 0.16	
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050		[C] < 0.050	
Benzo[b]fluoranthene	N	2790	mg/kg	0.050		[C] 0.42	
Benzo[k]fluoranthene	N	2790	mg/kg	0.050		[C] 0.18	
Benzo[a]pyrene	N	2790	mg/kg	0.050		[C] 0.34	
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050		[C] 0.21	
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050		[C] 0.12	
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050		[C] 0.27	
4-Nitrophenol	N	2790	mg/kg	0.050		[C] < 0.050	
Total Phenols	M	2920	mg/kg	0.30		< 0.30	
VOC TIC	N	2760	µg/kg	N/A		None Detected	

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
748574	3-102	BH020.503-102	BH02	20-Dec-2018	C	Plastic Tub 500g

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Test Methods

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.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
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 measurememt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

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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

Chemtest
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Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	18-36493-1
Initial Date of Issue:	28-Nov-2018
Client	Soiltechnics Limited
Client Address:	Cedar Barn White Lodge Walgrave Northampton Northamptonshire NN6 9PY
Contact(s):	Alexa Band Lauren Wenham
Project	STP3953A 60-70 Shorts Gardens & 14-16B

Quotation No.:		**Date Received:**	21-Nov-2018
Order No.:	POR004252	**Date Instructed:**	21-Nov-2018
No. of Samples:	7		
Turnaround (Wkdays):	5	**Results Due:**	27-Nov-2018
Date Approved:	28-Nov-2018		

Approved By:

Details: Robert Monk, Technical Manager

Chemtest
The right chemistry to deliver results

Results - Soil

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited					**Chemtest Job No.:**	18-36493	18-36493	18-36493	18-36493	18-36493	18-36493
Quotation No.:					**Chemtest Sample ID.:**	728423	728424	728425	728426	728428	728429
Order No.: POR004252					Client Sample Ref.:	2-002	2-018	2-006	2-010	2-014	2-001
					Client Sample ID.:	BH9.10.452-002	BH9.12.952-018	TP020.582-006	TP060.502-010	TP090.302-014	WAC010.002-001
					Sample Location:	BH9.1	BH9.1	TP02	TP06	TP09	WAC01
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.45	2.95	0.58	0.50	0.30	0.00
					Date Sampled:	16-Nov-2018	07-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
					Asbestos Lab:	COVENTRY		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type	U	2192		N/A		-		-	-	-	-
Asbestos Identification	U	2192	%	0.001		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020		6.2	21	7.0	22	5.0	6.1
Soil Colour	N	2040		N/A		Brown	Brown		Brown		Brown
Other Material	N	2040		N/A		Stones	NONE		Stones		Stones,
Soil Texture	N	2040		N/A		Sand	Clay		Sand		Sand
pH	M	2010		N/A		8.8	8.6	9.4	11.3	11.5	10.7
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40		0.41		1.3	0.79	0.78	
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010			0.15	0.39	0.64	0.57	0.32
Total Sulphur	M	2175	%	0.010			0.18		1.2		0.062
Nitrate (Water Soluble)	N	2220	g/l	0.010				< 0.010	< 0.010	< 0.010	
Cyanide (Complex)	M	2300	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50	
Cyanide (Free)	M	2300	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50	
Cyanide (Total)	M	2300	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50	
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50				< 0.50	2.3	1.2	
Sulphate (Acid Soluble)	M	2430	%	0.010			0.051		0.51		0.19
Arsenic	M	2450	mg/kg	1.0		7.7		13	19	14	
Beryllium	U	2450	mg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0	
Cadmium	M	2450	mg/kg	0.10		< 0.10		< 0.10	0.27	< 0.10	
Chromium	M	2450	mg/kg	1.0		14		18	23	16	
Copper	M	2450	mg/kg	0.50		8.1		40	140	370	
Mercury	M	2450	mg/kg	0.10		< 0.10		1.1	0.35	0.15	
Nickel	M	2450	mg/kg	0.50		16		75	27	21	
Lead	M	2450	mg/kg	0.50		8.0		45	240	430	
Selenium	M	2450	mg/kg	0.20		< 0.20		< 0.20	< 0.20	< 0.20	
Vanadium	U	2450	mg/kg	5.0		16		29	21	23	
Zinc	M	2450	mg/kg	0.50		33		52	420	98	
Chromium (Hexavalent)	N	2490	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50	
Organic Matter	M	2625	%	0.40		< 0.40		1.7	7.9	0.66	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0				[C] < 1.0	< 1.0	[C] < 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0				[C] < 1.0	< 1.0	[C] < 1.0	
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0				[C] < 1.0	< 1.0	[C] < 1.0	
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0				[C] < 1.0	< 1.0	[C] < 1.0	
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0				[C] 21	19	[C] 39	
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0				[C] 420	980	[C] 230	

Chemtest
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Results - Soil

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36493	18-36493	18-36493	18-36493	18-36493	18-36493
Quotation No.:			**Chemtest Sample ID.:**		728423	728424	728425	728426	728428	728429
Order No.: POR004252			Client Sample Ref.:		2-002	2-018	2-006	2-010	2-014	2-001
			Client Sample ID.:		BH9.10.452-002	BH9.12.952-018	TP020.582-006	TP060.502-010	TP090.302-014	WAC010.002-001
			Sample Location:		BH9.1	BH9.1	TP02	TP06	TP09	WAC01
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.45	2.95	0.58	0.50	0.30	0.00
			Date Sampled:		16-Nov-2018	07-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
			Asbestos Lab:		COVENTRY		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0			[C] 1500	6800	[C] 870	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0			[C] < 1.0	130	[C] 39	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0			[C] 2000	7900	[C] 1200	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0			[C] 69	16	[C] 4.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0			[C] 180	160	[C] 6.0	
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0			[C] 1200	2500	[C] 140	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0			[C] < 1.0	430	[C] < 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0			[C] 1500	3100	[C] 150	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0			[C] 3400	11000	[C] 1300	
Dichlorodifluoromethane	N	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Chloromethane	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Vinyl Chloride	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Bromomethane	M	2760	µg/kg	20			[C] < 20	< 20	[C] < 20	
Chloroethane	N	2760	µg/kg	2.0			[C] < 2.0	< 2.0	[C] < 2.0	
Trichlorofluoromethane	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,1-Dichloroethene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,1-Dichloroethane	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Bromochloromethane	N	2760	µg/kg	5.0			[C] < 5.0	< 5.0	[C] < 5.0	
Trichloromethane	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,1,1-Trichloroethane	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Tetrachloromethane	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,1-Dichloropropene	N	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Benzene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,2-Dichloroethane	M	2760	µg/kg	2.0			[C] < 2.0	< 2.0	[C] < 2.0	
Trichloroethene	N	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,2-Dichloropropane	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Dibromomethane	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Bromodichloromethane	M	2760	µg/kg	5.0			[C] < 5.0	< 5.0	[C] < 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10			[C] < 10	< 10	[C] < 10	
Toluene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	

Chemtest
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Results - Soil

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36493	18-36493	18-36493	18-36493	18-36493	18-36493
Quotation No.:			**Chemtest Sample ID.:**		728423	728424	728425	728426	728428	728429
Order No.: POR004252			Client Sample Ref.:		2-002	2-018	2-006	2-010	2-014	2-001
			Client Sample ID.:		BH9.10.452-002	BH9.12.952-018	TP020.582-006	TP060.502-010	TP090.302-014	WAC010.002-001
			Sample Location:		BH9.1	BH9.1	TP02	TP06	TP09	WAC01
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.45	2.95	0.58	0.50	0.30	0.00
			Date Sampled:		16-Nov-2018	07-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
			Asbestos Lab:		COVENTRY		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Trans-1,3-Dichloropropene	N	2760	µg/kg	10			[C] < 10	< 10	[C] < 10	
1,1,2-Trichloroethane	M	2760	µg/kg	10			[C] < 10	< 10	[C] < 10	
Tetrachloroethene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,3-Dichloropropane	N	2760	µg/kg	2.0			[C] < 2.0	< 2.0	[C] < 2.0	
Dibromochloromethane	N	2760	µg/kg	10			[C] < 10	< 10	[C] < 10	
1,2-Dibromoethane	M	2760	µg/kg	5.0			[C] < 5.0	< 5.0	[C] < 5.0	
Chlorobenzene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0			[C] < 2.0	< 2.0	[C] < 2.0	
Ethylbenzene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
m & p-Xylene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
o-Xylene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Styrene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Tribromomethane	N	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Isopropylbenzene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Bromobenzene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50			[C] < 50	< 50	[C] < 50	
N-Propylbenzene	N	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
2-Chlorotoluene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
4-Chlorotoluene	N	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Tert-Butylbenzene	N	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Sec-Butylbenzene	N	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,3-Dichlorobenzene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
4-Isopropyltoluene	N	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,4-Dichlorobenzene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
N-Butylbenzene	N	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,2-Dichlorobenzene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,2-Dibromo-3-Chloropropane	N	2760	µg/kg	50			[C] < 50	< 50	[C] < 50	
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
Hexachlorobutadiene	N	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
1,2,3-Trichlorobenzene	N	2760	µg/kg	2.0			[C] < 2.0	< 2.0	[C] < 2.0	
Carbon Disulphide	N	2760	µg/kg	50			[C] < 50	< 50	[C] < 50	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0			[C] < 1.0	< 1.0	[C] < 1.0	
N-Nitrosodimethylamine	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Phenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	

Chemtest
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Results - Soil

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36493	18-36493	18-36493	18-36493	18-36493	18-36493
Quotation No.:			**Chemtest Sample ID.:**		728423	728424	728425	728426	728428	728429
Order No.: POR004252			Client Sample Ref.:		2-002	2-018	2-006	2-010	2-014	2-001
			Client Sample ID.:		BH9.10.452-002	BH9.12.952-018	TP020.582-006	TP060.502-010	TP090.302-014	WAC010.002-001
			Sample Location:		BH9.1	BH9.1	TP02	TP06	TP09	WAC01
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.45	2.95	0.58	0.50	0.30	0.00
			Date Sampled:		16-Nov-2018	07-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
			Asbestos Lab:		COVENTRY		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
2-Chlorophenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
1,3-Dichlorobenzene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
1,4-Dichlorobenzene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
1,2-Dichlorobenzene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
2-Methylphenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Hexachloroethane	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
4-Methylphenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Nitrobenzene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Isophorone	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
2-Nitrophenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
2,4-Dimethylphenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
2,4-Dichlorophenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Naphthalene	N	2790	mg/kg	0.050			[C] 0.36	< 0.050	[C] < 0.050	
4-Chloroaniline	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Hexachlorobutadiene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
2-Methylnaphthalene	N	2790	mg/kg	0.050			[C] 0.25	< 0.050	[C] < 0.050	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
2-Chloronaphthalene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
2-Nitroaniline	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Acenaphthylene	N	2790	mg/kg	0.050			[C] 4.4	0.22	[C] 0.084	
Dimethylphthalate	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
2,6-Dinitrotoluene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Acenaphthene	N	2790	mg/kg	0.050			[C] 0.48	0.064	[C] < 0.050	
3-Nitroaniline	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Dibenzofuran	N	2790	mg/kg	0.050			[C] 0.33	< 0.050	[C] < 0.050	
4-Chlorophenylphenylether	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
2,4-Dinitrotoluene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Fluorene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	

Chemtest
The right chemistry to deliver results

Results - Soil

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36493	18-36493	18-36493	18-36493	18-36493	18-36493
Quotation No.:			**Chemtest Sample ID.:**		728423	728424	728425	728426	728428	728429
Order No.: POR004252			Client Sample Ref.:		2-002	2-018	2-006	2-010	2-014	2-001
			Client Sample ID.:		BH9.10.452-002	BH9.12.952-018	TP020.582-006	TP060.502-010	TP090.302-014	WAC010.002-001
			Sample Location:		BH9.1	BH9.1	TP02	TP06	TP09	WAC01
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.45	2.95	0.58	0.50	0.30	0.00
			Date Sampled:		16-Nov-2018	07-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
			Asbestos Lab:		COVENTRY		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Diethyl Phthalate	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
4-Nitroaniline	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Azobenzene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Hexachlorobenzene	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Pentachlorophenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Phenanthrene	N	2790	mg/kg	0.050			[C] 5.7	1.5	[C] 0.51	
Anthracene	N	2790	mg/kg	0.050			[C] 3.9	0.30	[C] 0.084	
Carbazole	N	2790	mg/kg	0.050			[C] < 0.050	0.22	[C] < 0.050	
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Fluoranthene	N	2790	mg/kg	0.050			[C] 4.9	2.6	[C] 0.42	
Pyrene	N	2790	mg/kg	0.050			[C] 5.5	2.4	[C] 0.48	
Butylbenzyl Phthalate	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Benzo[a]anthracene	N	2790	mg/kg	0.050			[C] 3.4	1.4	[C] 0.25	
Chrysene	N	2790	mg/kg	0.050			[C] 3.5	1.4	[C] 0.32	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Benzo[b]fluoranthene	N	2790	mg/kg	0.050			[C] 3.9	1.4	[C] < 0.050	
Benzo[k]fluoranthene	N	2790	mg/kg	0.050			[C] 1.3	0.40	[C] < 0.050	
Benzo[a]pyrene	N	2790	mg/kg	0.050			[C] 3.0	0.94	[C] < 0.050	
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050			[C] 2.4	< 0.050	[C] < 0.050	
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050			[C] 2.2	< 0.050	[C] < 0.050	
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050			[C] 5.2	< 0.050	[C] < 0.050	
4-Nitrophenol	N	2790	mg/kg	0.050			[C] < 0.050	< 0.050	[C] < 0.050	
Naphthalene	M	2800	mg/kg	0.10	< 0.10					
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10					
Acenaphthene	M	2800	mg/kg	0.10	< 0.10					
Fluorene	M	2800	mg/kg	0.10	< 0.10					
Phenanthrene	M	2800	mg/kg	0.10	< 0.10					
Anthracene	M	2800	mg/kg	0.10	< 0.10					
Fluoranthene	M	2800	mg/kg	0.10	< 0.10					
Pyrene	M	2800	mg/kg	0.10	< 0.10					
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10					
Chrysene	M	2800	mg/kg	0.10	< 0.10					
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10					

Chemtest
The right chemistry to deliver results

Results - Soil

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36493	18-36493	18-36493	18-36493	18-36493	18-36493
Quotation No.:			**Chemtest Sample ID.:**		728423	728424	728425	728426	728428	728429
Order No.: POR004252			Client Sample Ref.:		2-002	2-018	2-006	2-010	2-014	2-001
			Client Sample ID.:		BH9.10.452-002	BH9.12.952-018	TP020.582-006	TP060.502-010	TP090.302-014	WAC010.002-001
			Sample Location:		BH9.1	BH9.1	TP02	TP06	TP09	WAC01
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.45	2.95	0.58	0.50	0.30	0.00
			Date Sampled:		16-Nov-2018	07-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018	16-Nov-2018
			Asbestos Lab:		COVENTRY		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10					
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10					
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10					
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10					
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10					
Total Of 16 PAH's	N	2800	mg/kg	2.0	< 2.0					
PCB 81	N	2815	mg/kg	0.010				< 0.010		
PCB 77	N	2815	mg/kg	0.010				< 0.010		
PCB 105	N	2815	mg/kg	0.010				< 0.010		
PCB 114	N	2815	mg/kg	0.010				< 0.010		
PCB 118	N	2815	mg/kg	0.010				< 0.010		
PCB 123	N	2815	mg/kg	0.010				< 0.010		
PCB 126	N	2815	mg/kg	0.010				< 0.010		
PCB 156	N	2815	mg/kg	0.010				< 0.010		
PCB 157	N	2815	mg/kg	0.010				< 0.010		
PCB 167	N	2815	mg/kg	0.010				< 0.010		
PCB 169	N	2815	mg/kg	0.010				< 0.010		
PCB 189	N	2815	mg/kg	0.010				< 0.010		
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12				< 0.12		
Total Phenols	M	2920	mg/kg	0.30	< 0.30		< 0.30	< 0.30	< 0.30	
VOC TIC	N	2760	µg/kg	N/A			None Detected	None Detected	None Detected	

Chemtest
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Results - Water

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36493
Quotation No.:			**Chemtest Sample ID.:**		728427
Order No.: POR004252			Client Sample Ref.:		2-011
			Client Sample ID.:		TP060.502-011
			Sample Location:		TP06
			Sample Type:		WATER
			Top Depth (m):		0.50
			Date Sampled:		16-Nov-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
pH	U	1010		N/A	8.6
Nitrate	U	1220	mg/l	0.50	< 0.50
Sulphate	U	1220	mg/l	1.0	94
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Cyanide (Complex)	U	1300	mg/l	0.050	< 0.050
Sulphide	U	1325	mg/l	0.050	[B] < 0.050
Arsenic (Dissolved)	U	1450	µg/l	1.0	4.8
Boron (Dissolved)	U	1450	µg/l	20	95
Beryllium (Dissolved)	U	1450	µg/l	1.0	< 1.0
Cadmium (Dissolved)	U	1450	µg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	µg/l	1.0	2.1
Copper (Dissolved)	U	1450	µg/l	1.0	19
Mercury (Dissolved)	U	1450	µg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	µg/l	1.0	2.7
Lead (Dissolved)	U	1450	µg/l	1.0	25
Selenium (Dissolved)	U	1450	µg/l	1.0	< 1.0
Vanadium (Dissolved)	U	1450	µg/l	1.0	3.4
Zinc (Dissolved)	U	1450	µg/l	1.0	51
Chromium (Hexavalent)	U	1490	µg/l	20	< 20
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10

Chemtest
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Results - Water

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36493
Quotation No.:			**Chemtest Sample ID.:**		728427
Order No.: POR004252			Client Sample Ref.:		2-011
			Client Sample ID.:		TP060.502-011
			Sample Location:		TP06
			Sample Type:		WATER
			Top Depth (m):		0.50
			Date Sampled:		16-Nov-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	U	1760	µg/l	1.0	< 1.0
Chloromethane	U	1760	µg/l	1.0	< 1.0
Vinyl Chloride	N	1760	µg/l	1.0	< 1.0
Bromomethane	U	1760	µg/l	5.0	< 5.0
Chloroethane	U	1760	µg/l	2.0	< 2.0
Trichlorofluoromethane	U	1760	µg/l	1.0	< 1.0
1,1-Dichloroethene	U	1760	µg/l	1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0
1,1-Dichloroethane	U	1760	µg/l	1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	µg/l	1.0	< 1.0
Bromochloromethane	U	1760	µg/l	5.0	< 5.0
Trichloromethane	U	1760	µg/l	1.0	< 1.0
1,1,1-Trichloroethane	U	1760	µg/l	1.0	< 1.0
Tetrachloromethane	U	1760	µg/l	1.0	< 1.0
1,1-Dichloropropene	U	1760	µg/l	1.0	< 1.0
Benzene	U	1760	µg/l	1.0	< 1.0
1,2-Dichloroethane	U	1760	µg/l	2.0	< 2.0
Trichloroethene	N	1760	µg/l	1.0	< 1.0
1,2-Dichloropropane	U	1760	µg/l	1.0	< 1.0
Dibromomethane	U	1760	µg/l	10	< 10
Bromodichloromethane	U	1760	µg/l	5.0	< 5.0
cis-1,3-Dichloropropene	N	1760	µg/l	10	< 10
Toluene	U	1760	µg/l	1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	µg/l	10	< 10
1,1,2-Trichloroethane	U	1760	µg/l	10	< 10
Tetrachloroethene	U	1760	µg/l	1.0	< 1.0
1,3-Dichloropropane	U	1760	µg/l	2.0	< 2.0
Dibromochloromethane	U	1760	µg/l	10	< 10
1,2-Dibromoethane	U	1760	µg/l	5.0	< 5.0
Chlorobenzene	N	1760	µg/l	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	µg/l	2.0	< 2.0
Ethylbenzene	U	1760	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0	< 1.0
Styrene	U	1760	µg/l	1.0	< 1.0

Chemtest
The right chemistry to deliver results

Results - Water

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36493
Quotation No.:			**Chemtest Sample ID.:**		728427
Order No.: POR004252			Client Sample Ref.:		2-011
			Client Sample ID.:		TP060.502-011
			Sample Location:		TP06
			Sample Type:		WATER
			Top Depth (m):		0.50
			Date Sampled:		16-Nov-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Tribromomethane	U	1760	µg/l	1.0	< 1.0
Isopropylbenzene	U	1760	µg/l	1.0	< 1.0
Bromobenzene	U	1760	µg/l	1.0	< 1.0
1,2,3-Trichloropropane	N	1760	µg/l	50	< 50
N-Propylbenzene	U	1760	µg/l	1.0	< 1.0
2-Chlorotoluene	U	1760	µg/l	1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0
4-Chlorotoluene	U	1760	µg/l	1.0	< 1.0
Tert-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	µg/l	1.0	< 1.0
Sec-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,3-Dichlorobenzene	N	1760	µg/l	1.0	< 1.0
4-Isopropyltoluene	U	1760	µg/l	1.0	< 1.0
1,4-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0
N-Butylbenzene	U	1760	µg/l	1.0	< 1.0
1,2-Dichlorobenzene	U	1760	µg/l	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	µg/l	50	< 50
1,2,4-Trichlorobenzene	U	1760	µg/l	1.0	< 1.0
Hexachlorobutadiene	U	1760	µg/l	1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	µg/l	2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloro 1,2,2 Trifluoroethane	N	1760	µg/l	2.0	< 2.0
Bromoform	N	1760	µg/l	10	< 10
Carbon Tetrachloride	N	1760	µg/l	10	< 10
Chloroform	N	1760	µg/l	10	< 10
2,2-Dichloropropane	N	1760	µg/l	10	< 10
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50

Chemtest
The right chemistry to deliver results

Results - Water

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36493
Quotation No.:			**Chemtest Sample ID.:**		728427
Order No.: POR004252			Client Sample Ref.:		2-011
			Client Sample ID.:		TP060.502-011
			Sample Location:		TP06
			Sample Type:		WATER
			Top Depth (m):		0.50
			Date Sampled:		16-Nov-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	3.3
Anthracene	N	1790	µg/l	0.50	1.7
Carbazole	N	1790	µg/l	0.50	< 0.50

Chemtest
The right chemistry to deliver results

Results - Water

Project: STP3953A 60-70 Shorts Gardens & 14-16B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36493
Quotation No.:			**Chemtest Sample ID.:**		728427
Order No.: POR004252			Client Sample Ref.:		2-011
			Client Sample ID.:		TP060.502-011
			Sample Location:		TP06
			Sample Type:		WATER
			Top Depth (m):		0.50
			Date Sampled:		16-Nov-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	2.0
Pyrene	N	1790	µg/l	0.50	1.6
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Total Phenols	U	1920	mg/l	0.030	< 0.030

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
728425	2-006	TP020.582-006	TP02	16-Nov-2018	C	Plastic Tub 500g
728427	2-011	TP060.502-011	TP06	16-Nov-2018	B	Coloured Winchester 1000ml
728427	2-011	TP060.502-011	TP06	16-Nov-2018	B	EPA Vial 40ml
728428	2-014	TP090.302-014	TP09	16-Nov-2018	C	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
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.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
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.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurememrnt by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

Test Methods

SOP	Title	Parameters included	Method summary
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

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

Chemtest
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Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Final Report

Report No.:	18-36929-1
Initial Date of Issue:	03-Dec-2018
Client	Soiltechnics Limited
Client Address:	Cedar Barn White Lodge Walgrave Northampton Northamptonshire NN6 9PY
Contact(s):	Alexa Band Lauren Wenham
Project	STP3953A 60-70 Shorts Gardens & 14016 B

Quotation No.:		**Date Received:**	23-Nov-2018
Order No.:	POR004267	**Date Instructed:**	23-Nov-2018
No. of Samples:	1		
Turnaround (Wkdays):	5	**Results Due:**	29-Nov-2018
Date Approved:	03-Dec-2018		

Approved By:

Details: Robert Monk, Technical Manager

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Results - Water

Project: STP3953A 60-70 Shorts Gardens & 14016 B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36929
Quotation No.:			**Chemtest Sample ID.:**		730082
Order No.: POR004267			Client Sample Ref.:		2-022
			Client Sample ID.:		BH9.10.682-022
			Sample Location:		BH9.1
			Sample Type:		WATER
			Top Depth (m):		0.68
			Date Sampled:		21-Nov-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
pH	U	1010		N/A	8.2
Nitrate	U	1220	mg/l	0.50	96
Sulphate	U	1220	mg/l	1.0	210
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Cyanide (Complex)	U	1300	mg/l	0.050	< 0.050
Sulphide	U	1325	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	µg/l	1.0	1.8
Boron (Dissolved)	U	1450	µg/l	20	110
Beryllium (Dissolved)	U	1450	µg/l	1.0	< 1.0
Cadmium (Dissolved)	U	1450	µg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	µg/l	1.0	7.5
Copper (Dissolved)	U	1450	µg/l	1.0	4.6
Mercury (Dissolved)	U	1450	µg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	µg/l	1.0	5.0
Lead (Dissolved)	U	1450	µg/l	1.0	< 1.0
Selenium (Dissolved)	U	1450	µg/l	1.0	4.3
Vanadium (Dissolved)	U	1450	µg/l	1.0	< 1.0
Zinc (Dissolved)	U	1450	µg/l	1.0	6.8
Chromium (Hexavalent)	U	1490	µg/l	20	< 20
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10

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Results - Water

Project: STP3953A 60-70 Shorts Gardens & 14016 B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36929
Quotation No.:			**Chemtest Sample ID.:**		730082
Order No.: POR004267			Client Sample Ref.:		2-022
			Client Sample ID.:		BH9.10.682-022
			Sample Location:		BH9.1
			Sample Type:		WATER
			Top Depth (m):		0.68
			Date Sampled:		21-Nov-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	U	1760	µg/l	1.0	[C] < 1.0
Chloromethane	U	1760	µg/l	1.0	[C] < 1.0
Vinyl Chloride	N	1760	µg/l	1.0	[C] < 1.0
Bromomethane	U	1760	µg/l	5.0	[C] < 5.0
Chloroethane	U	1760	µg/l	2.0	[C] < 2.0
Trichlorofluoromethane	U	1760	µg/l	1.0	[C] < 1.0
1,1-Dichloroethene	U	1760	µg/l	1.0	[C] < 1.0
Trans 1,2-Dichloroethene	U	1760	µg/l	1.0	[C] < 1.0
1,1-Dichloroethane	U	1760	µg/l	1.0	[C] < 1.0
cis 1,2-Dichloroethene	U	1760	µg/l	1.0	[C] < 1.0
Bromochloromethane	U	1760	µg/l	5.0	[C] < 5.0
Trichloromethane	U	1760	µg/l	1.0	[C] < 1.0
1,1,1-Trichloroethane	U	1760	µg/l	1.0	[C] < 1.0
Tetrachloromethane	U	1760	µg/l	1.0	[C] < 1.0
1,1-Dichloropropene	U	1760	µg/l	1.0	[C] < 1.0
Benzene	U	1760	µg/l	1.0	[C] < 1.0
1,2-Dichloroethane	U	1760	µg/l	2.0	[C] < 2.0
Trichloroethene	N	1760	µg/l	1.0	[C] < 1.0
1,2-Dichloropropane	U	1760	µg/l	1.0	[C] < 1.0
Dibromomethane	U	1760	µg/l	10	[C] < 10
Bromodichloromethane	U	1760	µg/l	5.0	[C] < 5.0
cis-1,3-Dichloropropene	N	1760	µg/l	10	[C] < 10
Toluene	U	1760	µg/l	1.0	[C] < 1.0
Trans-1,3-Dichloropropene	N	1760	µg/l	10	[C] < 10
1,1,2-Trichloroethane	U	1760	µg/l	10	[C] < 10
Tetrachloroethene	U	1760	µg/l	1.0	[C] < 1.0
1,3-Dichloropropane	U	1760	µg/l	2.0	[C] < 2.0
Dibromochloromethane	U	1760	µg/l	10	[C] < 10
1,2-Dibromoethane	U	1760	µg/l	5.0	[C] < 5.0
Chlorobenzene	N	1760	µg/l	1.0	[C] < 1.0
1,1,1,2-Tetrachloroethane	U	1760	µg/l	2.0	[C] < 2.0
Ethylbenzene	U	1760	µg/l	1.0	[C] < 1.0
m & p-Xylene	U	1760	µg/l	1.0	[C] < 1.0
o-Xylene	U	1760	µg/l	1.0	[C] < 1.0
Styrene	U	1760	µg/l	1.0	[C] < 1.0

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Results - Water

Project: STP3953A 60-70 Shorts Gardens & 14016 B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36929
Quotation No.:			**Chemtest Sample ID.:**		730082
Order No.: POR004267			Client Sample Ref.:		2-022
			Client Sample ID.:		BH9.10.682-022
			Sample Location:		BH9.1
			Sample Type:		WATER
			Top Depth (m):		0.68
			Date Sampled:		21-Nov-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Tribromomethane	U	1760	µg/l	1.0	[C] < 1.0
Isopropylbenzene	U	1760	µg/l	1.0	[C] < 1.0
Bromobenzene	U	1760	µg/l	1.0	[C] < 1.0
1,2,3-Trichloropropane	N	1760	µg/l	50	[C] < 50
N-Propylbenzene	U	1760	µg/l	1.0	[C] < 1.0
2-Chlorotoluene	U	1760	µg/l	1.0	[C] < 1.0
1,3,5-Trimethylbenzene	U	1760	µg/l	1.0	[C] < 1.0
4-Chlorotoluene	U	1760	µg/l	1.0	[C] < 1.0
Tert-Butylbenzene	U	1760	µg/l	1.0	[C] < 1.0
1,2,4-Trimethylbenzene	U	1760	µg/l	1.0	[C] < 1.0
Sec-Butylbenzene	U	1760	µg/l	1.0	[C] < 1.0
1,3-Dichlorobenzene	N	1760	µg/l	1.0	[C] < 1.0
4-Isopropyltoluene	U	1760	µg/l	1.0	[C] < 1.0
1,4-Dichlorobenzene	U	1760	µg/l	1.0	[C] < 1.0
N-Butylbenzene	U	1760	µg/l	1.0	[C] < 1.0
1,2-Dichlorobenzene	U	1760	µg/l	1.0	[C] < 1.0
1,2-Dibromo-3-Chloropropane	U	1760	µg/l	50	[C] < 50
1,2,4-Trichlorobenzene	U	1760	µg/l	1.0	[C] < 1.0
Hexachlorobutadiene	U	1760	µg/l	1.0	[C] < 1.0
1,2,3-Trichlorobenzene	U	1760	µg/l	2.0	[C] < 2.0
Methyl Tert-Butyl Ether	N	1760	µg/l	1.0	[C] < 1.0
1,1,2-Trichloro 1,2,2 Trifluoroethane	N	1760	µg/l	2.0	< 2.0
Bromoform	N	1760	µg/l	10	< 10
Carbon Tetrachloride	N	1760	µg/l	10	< 10
Chloroform	N	1760	µg/l	10	< 10
2,2-Dichloropropane	N	1760	µg/l	10	< 10
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50

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Results - Water

Project: STP3953A 60-70 Shorts Gardens & 14016 B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36929
Quotation No.:			**Chemtest Sample ID.:**		730082
Order No.: POR004267			Client Sample Ref.:		2-022
			Client Sample ID.:		BH9.10.682-022
			Sample Location:		BH9.1
			Sample Type:		WATER
			Top Depth (m):		0.68
			Date Sampled:		21-Nov-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50

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Results - Water

Project: STP3953A 60-70 Shorts Gardens & 14016 B

Client: Soiltechnics Limited			**Chemtest Job No.:**		18-36929
Quotation No.:			**Chemtest Sample ID.:**		730082
Order No.: POR004267			Client Sample Ref.:		2-022
			Client Sample ID.:		BH9.10.682-022
			Sample Location:		BH9.1
			Sample Type:		WATER
			Top Depth (m):		0.68
			Date Sampled:		21-Nov-2018
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Total Phenols	U	1920	mg/l	0.030	< 0.030

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
730082	2-022	BH9.10.682-022	BH9.1	21-Nov-2018	C	Coloured Winchester 1000ml

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1325	Sulphide in Waters	Sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N–dimethyl-pphenylenediamine.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

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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

Chemtest
The right chemistry to deliver results
Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
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Final Report

Report No.:	18-36486-1
Initial Date of Issue:	29-Nov-2018
Client	Soiltechnics Limited
Client Address:	Cedar Barn White Lodge Walgrave Northampton Northamptonshire NN6 9PY
Contact(s):	Alexa Band Lauren Wenham
Project	STP3953A 60-70 Shorts Gardens 14-16 B

Quotation No.:		**Date Received:**	21-Nov-2018
Order No.:	POR004242	**Date Instructed:**	21-Nov-2018
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	29-Nov-2018
Date Approved:	29-Nov-2018		

Approved By:

Details: Robert Monk, Technical Manager

Results - 2 Stage WAC

Project: STP3953A 60-70 Shorts Gardens 14-16 B

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	18-36486								
Chemtest Sample ID:	728388								
Sample Ref:	2-001								
Sample ID:	WAC010.002-001								
Sample Location:	WAC01								
Top Depth(m):	0.00								
Bottom Depth(m):									
Sampling Date:	16-Nov-2018								
Determinand	**SOP**	**Accred.**	**Units**				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	U	%			0.72	3	5	6
Loss On Ignition	2610	U	%			2.6	--	--	10
Total BTEX	2760	U	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			1600	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			2.8	100	--	--
pH	2010	U				11.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.091	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1450	U	0.0018	0.0013	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.016	0.011	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.014	0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0090	0.0030	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0046	< 0.0010	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	0.0011	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	< 0.0010	< 0.50	< 0.50	4	50	200
Chloride	1220	U	22	3.6	44	65	800	15000	25000
Fluoride	1220	U	0.21	0.17	< 1.0	1.8	10	150	500
Sulphate	1220	U	74	14	150	230	1000	20000	50000
Total Dissolved Solids	1020	N	330	160	660	1900	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	26	14	52	160	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	5.7

Leachate Test Information	
Leachant volume 1st extract/l	0.339
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.276

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
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.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
640	Characterisation of Waste (Leaching)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

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customerservices@chemtest.com

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Analysis of test data in relation to concentrations of inorganic chemical contaminants

Adopted Model: Industrial/Commercial
Receptor: Current & proposed site users; construction operatives

Test procedure			Summary of test data					Initial comparison	Outlier test					Normality test			UCL	
Contaminant	Guideline source	Guideline value mg/kg	No. of tests	Min. mg/kg	Max. mg/kg	Mean mg/kg	No. of tests above guideline value	Initial screening	Pass outlier test?	Number of outliers	Location of outlier	Depth	Concentration mg/kg	Shapiro-Wilk Normality test	Probability plot test	Data normally distributed?	95% UCL of mean mg/kg	Contaminant
Arsenic	S4UL	640	5	7.7	19.0	12.7	0	Mean value below guideline	y					normal	normal	y	16.8	**Arsenic**
Beryllium	S4UL	12	5	1.0	1.0	1.0	0	Mean value below guideline	y					not normal	not normal	n	1.0	**Beryllium**
Boron	S4UL	240000	5	0.4	1.3	0.9	0	Mean value below guideline	y					normal	not normal	n	1.6	**Boron**
Cadmium	S4UL	190	5	0.1	0.3	0.1	0	Mean value below guideline	n					not normal	not normal	n	0.3	**Cadmium**
Chromium (III)	S4UL	8600	5	14.0	23.0	17.2	0	Mean value below guideline	y					normal	normal	y	20.6	**Chromium (III)**
Copper	S4UL	68000	5	8.1	370.0	129.6	0	Mean value below guideline	n					normal	normal	y	266.3	**Copper**
Cyanide (total)	ATK	34	5	0.5	0.5	0.5	0	Mean value below guideline	y					not normal	not normal	n	0.5	**Cyanide (total)**
Lead	C4SL (l)	1100	5	8.0	430.0	196.6	0	Mean value below guideline	y					normal	normal	y	361.0	**Lead**
Mercury#	S4UL	58	5	0.1	1.5	0.6	0	Mean value below guideline	y					normal	normal	y	1.2	**Mercury#**
Nickel	S4UL	980	5	16.0	75.0	38.8	0	Mean value below guideline	y					normal	normal	y	62.9	**Nickel**
Selenium	S4UL	12000	5	0.2	0.3	0.2	0	Mean value below guideline	n					not normal	not normal	n	0.3	**Selenium**
Vanadium	S4UL	9000	5	16.0	29.0	21.8	0	Mean value below guideline	y					normal	normal	y	26.3	**Vanadium**
Zinc	S4UL	730000	5	33.0	420.0	130.0	0	Mean value below guideline	n					not normal	not normal	n	449.7	**Zinc**

S4UL	Suitable for Use Level as published by LQM/CIEH
C4SL	Category 4 Screening Level
C4SL (lower) (upper)	Category 4 Screening Level for Lead at lower or upper bound of range
ATK	Soil Screening Value derived by Atkins
BPG5	Guideline from BPG Note 5 as published by Forest Research
#	Assumed to be elemental mercury as initial screening value

Title	Table number
Analysis of test data in relation to concentrations of inorganic chemical contaminants.	1

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environmental and geotechnical consultants

Analysis of test data in relation to concentrations of organic chemical contaminants

Adopted model: Industrial/Commercial
Receptor: Current & proposed site user; construction operatives

Test procedure			Summary of test data					Initial Screening	Outlier test					Normality test			UCL	
Contaminant	Guideline source	Guideline value* mg/kg	No. of tests	Min. mg/kg	Max. mg/kg	Mean mg/kg	No. of tests above guideline value	Initial screening	Pass outlier test?	Number of outliers	Location of outlier	Depth	Concentration mg/kg	Shapiro-Wilk Normality test	Probability plot test	Data normally distributed?	95% UCL of mean mg/kg	Contaminant
Acenaphthene	S4UL	84000	5	0.1	0.5	0.1	0	Mean value below guideline	n					not normal	not normal	n	0.5	**Acenaphthene**
Acenaphthylene	S4UL	83000	5	0.1	4.4	1.0	0	Mean value below guideline	n					not normal	not normal	n	4.7	**Acenaphthylene**
Anthracene	S4UL	520000	5	0.1	3.9	0.9	0	Mean value below guideline	n					not normal	not normal	n	4.2	**Anthracene**
Benzo(a)anthracene	S4UL	170	5	0.1	3.4	1.1	0	Mean value below guideline	y					normal	not normal	n	3.8	**Benzo(a)anthracene**
Benzo(a)pyrene	S4UL	35	5	0.1	3.0	0.9	0	Mean value below guideline	n					normal	not normal	n	3.3	**Benzo(a)pyrene**
Benzo(b)fluoranthene	S4UL	44	5	0.1	3.9	1.2	0	Mean value below guideline	n					normal	not normal	n	4.3	**Benzo(b)fluoranthene**
Benzo(g,h,i)perylene	S4UL	3900	5	0.1	5.2	1.1	0	Mean value below guideline	n					not normal	not normal	n	5.6	**Benzo(g,h,i)perylene**
Benzo(k)fluoranthene	S4UL	1200	5	0.1	1.3	0.4	0	Mean value below guideline	n					normal	not normal	n	1.4	**Benzo(k)fluoranthene**
Chrysene	S4UL	350	5	0.1	3.5	1.2	0	Mean value below guideline	n					normal	not normal	n	3.9	**Chrysene**
Dibenzo(a,h)anthracene	S4UL	3.5	5	0.1	2.2	0.5	0	Mean value below guideline	n					not normal	not normal	n	2.4	**Dibenzo(a,h)anthracene**
Fluoranthene	S4UL	23000	5	0.1	4.9	1.8	0	Mean value below guideline	y					normal	not normal	n	5.7	**Fluoranthene**
Fluorene	S4UL	63000	5	0.1	0.1	0.1	0	Mean value below guideline	n					not normal	not normal	n	0.1	**Fluorene**
Indeno(1,2,3-cd)pyrene	S4UL	500	5	0.1	2.4	0.6	0	Mean value below guideline	n					not normal	not normal	n	2.6	**Indeno(1,2,3-cd)pyrene**
Naphthalene	S4UL	190	5	0.1	0.4	0.1	0	Mean value below guideline	n					not normal	not normal	n	0.4	**Naphthalene**
Phenanthrene	S4UL	22000	5	0.1	5.7	1.7	0	Mean value below guideline	n					not normal	not normal	n	6.2	**Phenanthrene**
Phenols	S4UL	760	5	0.3	0.3	0.3	0	Mean value below guideline	y					not normal	not normal	n	0.3	**Phenols**
Pyrene	S4UL	54000	5	0.1	5.5	1.8	0	Mean value below guideline	y					normal	not normal	n	6.2	**Pyrene**

Notes

S4UL	Suitable for Use Level as published by LQM/CIEH
C4SL	Category 4 Screening Level
SGV	Soil Guideline Value as published by the Environment Agency 2009
SSV	Soil Screening Value as derived by Soiltechnics
ATK	Soil Screening Value derived by Atkins
*	Assuming a SOM of 1%

Title
Analysis of test data in relation to concentrations of organic chemical contaminants.

Table number
2

Summary of petroleum hydrocarbon test results

Model: **Industrial/Commercial**

BTEX (Red highlights indicate exceedance of guideline value)

Indicator	unit	S4UL (mg/kg)	Concentration BH02 0.50	TP02 0.58	TP06 0.50	TP09 0.30
Benzene	mg/kg	27	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/kg	56000	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/kg	5700	< 0.001	< 0.001	< 0.001	< 0.001
o-Xylene	mg/kg	6600	< 0.001	< 0.001	< 0.001	< 0.001
m,p-Xylene	mg/kg	5900	< 0.001	< 0.001	< 0.001	< 0.001

Hydrocarbon banding (Red highlights indicate exceedance of guideline value)

Fraction	unit	S4UL (mg/kg)	Concentration BH02 0.50	TP02 0.58	TP06 0.50	TP09 0.30
Aliphatic						
EC 5 - 6	mg/kg	3200	< 1.0	< 1.0	< 1.0	< 1.0
EC >6 - 8	mg/kg	7800	< 1.0	< 1.0	< 1.0	< 1.0
EC >8 - 10	mg/kg	2000	< 1.0	< 1.0	< 1.0	< 1.0
EC >10 - 12	mg/kg	9700	< 1.0	< 1.0	< 1.0	< 1.0
EC >12 - 16	mg/kg	59000	< 1.0	21	19	39
EC >16 - 35	mg/kg	1600000	< 1.0	1920	7780	1100
EC >35 - 44	mg/kg	1600000	< 1.0	< 1.0	130	39
Aromatic						
EC 5 - 7 (benzene)	mg/kg	26000	< 1.0	< 1.0	< 1.0	< 1.0
EC >7 - 8 (toluene)	mg/kg	56000	< 1.0	< 1.0	< 1.0	< 1.0
EC >8 - 10	mg/kg	3500	< 1.0	< 1.0	< 1.0	< 1.0
EC >10 - 12	mg/kg	16000	< 1.0	< 1.0	< 1.0	< 1.0
EC >12 - 16	mg/kg	36000	< 1.0	69	16	4
EC >16 - 21	mg/kg	28000	< 1.0	180	160	6
EC >21 - 35	mg/kg	28000	< 1.0	1200	2500	140
EC >35 - 44	mg/kg	28000	< 1.0	< 1.0	430	< 1.0

Title
Comparison of measured concentrations of petroleum hydrocarbons with guideline values.

Table number
3

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Summary of groundwater test results

Receptor	**Groundwater**		
Water type	**Freshwater**		
Fish type	**Salmonid**		
Water hardness	**>250**	**mg/l**	**(recorded at a concentration of 275mg/l on the Thames Water website)**

Contaminant	Guideline value (µg/l)	Guideline source	Location	TP06	BH9.1
			Depth (m)	0.5	0.68
Inorganics (µg/l)					
Arsenic	50	EQS (f)		5	2
Boron	2000	EQS (f)		95	110
Cadmium	5	EQS (f)		< 0.080	< 0.080
Chromium	50	EQS (f)		2	8
Copper	28	EQS (f)		19	5
Lead	20	EQS (f)		25	< 1.0
Mercury	1	EQS (f)		< 0.50	< 0.50
Nickel	200	EQS (f)		3	5
Selenium[1]	10	UKDWS		< 1.0	4
Vanadium[2]	60	EQS (f)		3	< 1.0
Zinc	125	EQS (f)		51	7
Free Cyanide[1]	50	UKDWS		< 0.050	< 0.050
Nitrate as N	50000	UKDWS		<500	96000
Sulphate as SO4	400000	EQS(f)		94000	210000
PAH (µg/l)					
Benzo(a)pyrene[1,4]	0.01	UKDWS		< 0.50	< 0.50
Naphthalene[2]	10	EQS (f)		< 0.50	< 0.50
Sum of 4 PAH[1]	0.1	UKDWS		<0.10*	<0.10*
TPH (µg/l)					
Hydrocarbons[1]	10	UKDWS		<10*	<10*
Benzene	30	EQS (f)		< 1.0	< 1.0
Toluene[2]	50	EQS (f)		< 1.0	< 1.0
Ethyl benzene[3]	300	WHO		< 1.0	< 1.0
Xylene[2]	30	EQS (f)		< 1.0	< 1.0

Notes

1 EQS values not available
2 UKDWS not available
3 Lower detectable limit above UKDWS. Concentrations below detectable limits are not considered further.
* Taken as lower detection limit
# Taken as lower detection limit of a single compound

UKDWS UK Drinking Water Standard Guideline taken from "The Water Supply (Water Quality) Regulations 2000"
EQS (f) Environmental Quality Standard for freshwater published by the Environment Agency
EQS (s) Environmental Quality Standard for saltwater published by the Environment Agency

Title
Comparison of measured concentrations with guideline values for water receptors.

Table number
04

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Initial Conceptual Model

Current site use commercial/industrial
Proposed site use commercial/industrial

Source	Pathway										Receptor		Risk assessment to CIRIA C552	
	Humans						Vegetation	Water					Consequence of risk occurring via most likely pathway	Risk
	Ingestion of air-borne dusts	Ingestion of soil	Ingestion of vegetables and soil attached to vegetables	Inhalation of air-borne dusts	Inhalation of vapours	Dermal contact with soil and dust	Root uptake, deposition to shoots and foliage contact	Percolation of water through contaminated soils	Near-surface water run-off through contaminated	Saturation of contaminated soils by flood waters				
Soils														
Made Ground	Unlikely	Unlikely	Unlikely	Unlikely	Likely	Unlikely	-	-	-	-	Current and proposed site users	Adult	Mild	Low/moderate
	Likely	Likely	Unlikely	Likely	Likely	Likely	-	-	-	-	Construction operatives	Adult	Minor	Low
	-	-	-	-	-	-	Unlikely	-	-	-	Vegetation (current & proposed)	-	Minor	Very low
	-	-	-	-	-	-	-	Unlikely	Unlikely	Unlikely	Water (current and proposed)	-	Minor	Very low
Substation	Likely	Unlikely	Unlikely	Likely	Likely	Likely	-	-	-	-	Current and proposed site users	Adult	Medium	Moderate
	Likely	Likely	Unlikely	Likely	Likely	Likely	-	-	-	-	Construction operatives	Adult	Minor	Moderate
	-	-	-	-	-	-	Unlikely	-	-	-	Vegetation (current & proposed)	-	Minor	Very low
	-	-	-	-	-	-	-	Unlikely	Unlikely	Unlikely	Water (current and proposed)	-	Medium	Very low

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Table comparing cumulative compound concentrations with hazardous waste threshold values

Category of danger		Irritant	Harmful	Toxic		Carcinogenic		Corrosive		Toxic for reproduction		Mutagenic		Ecotoxic		
														∑N : R50-53/0.25 +∑N : R51-53/2.5 +∑N : R52-53/25	∑N : 50-53 +∑N : R50	∑N : 50-53 +∑N : 51-53 +∑N : 52-53 +∑N : R53
Risk Phrase		Xi	Xn	T+	T	Carc Cat 1 or 2	Carc Cat 3	C R34	C R35	Repr Cat 1 or 2	Repr Cat 3	Muta Cat 2	Muta Cat 3			
Contaminant	Highest concentration	H4 (%)	H5 (%)	H6 (%)	H6 (%)	H7 (%)	H7 (%)	H8 (%)	H8 (%)	H10 (%)	H10 (%)	H11 (%)	H11 (%)	H14	H14	H14
Metals																
Arsenic	10.00			0.0013	0.0015	0.0015								0.3841	0.0015	0.0015
Beryllium	0.00	0.0000		0.0000	0.0000	0.0000										0.0000
Copper	90.00	0.0225	0.0225												0.0225	0.0225
Cadmium	0.12		0.0000		0.0000	0.0000										
Chromium	15.00					0.0024									0.0024	0.0024
Lead	260.00		0.0280							0.0280	0.0280				0.0280	0.0280
Mercury	1.50			0.0002											0.0002	0.0002
Nickel	55.00		0.0070				0.0070				0.0070				0.0070	0.0070
Selenium	0.27				0.0000										0.0000	0.0000
Zinc	47.00	0.0341	0.0341			0.0130		0.0098					0.0221		0.0341	0.0341
Vanadium	20.00	0.0029			0.0029						0.0029		0.0029			0.0029
PAH																
Naphthalene	0.00		0.0000												0.0000	0.0000
Benzo(a)anthracene	0.45				0.0000	0.0000									0.0000	0.0000
Chrysene	0.43				0.0000	0.0000							0.0000		0.0000	0.0000
Benzo(b)fluoranthene	0.42				0.0000	0.0000									0.0000	0.0000
Benzo(k)fluoranthene	0.18				0.0000	0.0000									0.0000	0.0000
Benzo(a)pyrene	0.34					0.0000				0.0000		0.0000			0.0000	0.0000
Dibenzo(a,h)anthracene	0.12				0.0000	0.0000									0.0000	0.0000
Total (or greatest)		0.0595	0.0916	0.0015	0.0047	(0.0000)	(0.007)	0.0098	0.0000	(0.0000)	(0.028)	(0.0000)	(0.0221)	0.3841	0.0959	0.0989
Threshold		1%	1%	0.10%	3%	0.10%	1%	5%	1%	0.50%	3%	0.10%	1%	1	25%	25%
Exceeded Y/N		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Title	Table number
Hazard assessment spreadsheet	1 of 2

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Table comparing cumulative compound concentrations with hazardous waste threshold values

Category of danger		Irritant	Harmful	Toxic		Carcinogenic		Corrosive		Toxic for reproduction		Mutagenic		Ecotoxic		
														∑N : R50-53/0.25	∑N : 50-53	∑N : 50-53
														+∑N : R51-53/2.5	+∑N : R50	+∑N : 51-53
						Carc Cat 1				Repr Cat 1 or				+∑N : R52-53/25		+∑N : 52-53
Risk Phrase		Xi	Xn	T+	T	or 2	Carc Cat 3	C R34	C R35	2	Repr Cat 3	Muta Cat 2	Muta Cat 3			+∑N : R53
Contaminant	Highest concentration	H4 (%)	H5 (%)	H6 (%)	H6 (%)	H7 (%)	H7 (%)	H8 (%)	H8 (%)	H10 (%)	H10 (%)	H11 (%)	H11 (%)	H14	H14	H14
Metals																
Arsenic	19.00			0.0025	0.0029	0.0029								2.2857	0.0029	0.0029
Beryllium	0.00	0.0000		0.0000	0.0000	0.0000										0.0000
Copper	370.00	0.0925	0.0925												0.0925	0.0925
Cadmium	0.27		0.0000		0.0000	0.0000										
Chromium	23.00					0.0037									0.0037	0.0037
Lead	430.00		0.0464							0.0464	0.0464				0.0464	0.0464
Mercury	1.10			0.0001											0.0001	0.0001
Nickel	75.00		0.0095				0.0095				0.0095				0.0095	0.0095
Selenium	0.00				0.0000										0.0000	0.0000
Zinc	420.00	0.3045	0.3045			0.1163		0.0876					0.1974		0.3045	0.3045
Vanadium	29.00	0.0043			0.0043						0.0043		0.0043			0.0043
PAH																
Naphthalene	0.36		0.0000												0.0000	0.0000
Benzo(a)anthracene	3.40				0.0003	0.0003									0.0003	0.0003
Chrysene	3.50				0.0004	0.0004							0.0004		0.0004	0.0004
Benzo(b)fluoranthene	3.90				0.0004	0.0004									0.0004	0.0004
Benzo(k)fluoranthene	1.30				0.0001	0.0001									0.0001	0.0001
Benzo(a)pyrene	3.00					0.0003				0.0003		0.0003			0.0003	0.0003
Dibenzo(a,h)anthracene	2.20				0.0002	0.0002									0.0002	0.0002
TPH																
Benzene	0.00				0.0000	0.0000										
1,2,4-trimethylbenzene	0.00	0.0000	0.0000													0.0000
Hydrocarbon (C6 to C35)	11000.00		1.1000			1.1000					0.0000	1.1000				1.1000
Total (or greatest)		0.4013	1.5530	0.0026	0.0086	(1.1)	(0.0095)	0.0876	0.0000	(0.0464)	(0.0464)	(1.1)	(0.1974)	2.2857	0.4614	1.5657
Threshold		1%	1%	0.10%	3%	0.10%	1%	5%	1%	0.50%	3%	0.10%	1%	1	25%	25%
Exceeded Y/N		N	Y	N	N	Y	N	N	N	N	N	Y	N	Y	N	N

Title	Table number
Hazard assessment spreadsheet	1 of 1

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Landfill Waste Acceptance Criteria				Laboratory test data
Parameter	**Inert waste landfill**	**Stable non-reactive hazardous waste in non-hazardous landfill**	**Hazardous waste landfill**	**WAC01**
Parameters determined on the waste				
Total organic carbon (w/w %)	3%	5%	6%*	0.72
Loss on ignition			10%*	2.6
BTEX (mg kg^{-1})	6			< 0.010
PCBs (7 congeners) (mg kg^{-1})	1			< 0.10
Mineral oil C_{10} - C_{40} (mg kg^{-1})	500			1600
PAH (17 congeners)	100			2.8
pH		>6		11.2
Acid neutralisation capacity pH 6 (mol kg^{-1})		To be evaluated	To be evaluated	
Acid neutralisation capacity pH 4 (mol kg^{-1})		To be evaluated	To be evaluated	
Limit values (mg kg^{-1}) for compliance test using BN 12457-3 at L/S 10 l kg^{-1}				
As (arsenic)	0.5	2	25	< 0.050
Ba (barium)	20	100	300	< 0.50
Cd (cadmium)	0.04	1	5	< 0.010
Cr (chromium (total))	0.5	10	70	< 0.050
Cu (Copper)	2	50	100	< 0.050
Hg (mercury)	0.01	0.2	2	< 0.0050
Mo (molybdenum)	0.5	10	30	< 0.050
Ni (nickel)	0.4	10	40	< 0.050
Pb (lead)	0.5	10	50	< 0.010
Sb (antimony)	0.06	0.7	5	< 0.010
Se (selenium)	0.1	0.5	7	< 0.010
Zn (zinc)	4	50	200	< 0.50
Cl (chloride)	800	15,000	25,000	65
F (fluoride)	10	150	500	1.8
SO_4 (sulphate)	1000#	20,000	50,000	230
Total Dissolved Solids (TDS)+	4,000	60,000	100,000	1900
Phenol index	1			< 0.50
Dissolved organic carbon at own pH or pH 7.5-8.0@	500	800	1000	160

Notes

* Either TOC or LOI must be used for hazardous waste
\# If an inert waste does not meet the SO4 L/S10 limit, alternative limit values of 1500 mg l-1 SO4 at Co (initial eluate from the percolation test (prCEN/TS 14405:2003)) AND 6000 mg kg-1 SO4 at L/S10 (either from the percolation test or batch test BS EN 12457-3), can be used to demonstrate compliance with the acceptable criteria for inert wastes.
\+ The value for TDS can be used instead of the values for Cl and SO4
@ DOC at pH 7.5-8.0 abd L/S10 can be determined or eluate derived from a modified version of the pH dependence Test, prEN 14429, if the limit value at own pH (BS EN 12457 eluate) is not met.

PRIMARY CLASSIFICATION	HAZARDOUS
SECONDARY CLASSIFICATION	STABLE NON-REACTIVE HAZARDOUS WASTE IN NON-HAZARDOUS LANDFILL

Title

Comparison of test data to landfill waste acceptance criteria (table 5.1) (Secondary classification)

Table number

1 of 1

Basic categorisation schedule for Made Ground – type 1 soils

Produced following the requirements of The Landfill (England and Wales) (Amendment) Regulations 2004 Part 2 (5)

(a)	*Source and origin of waste*	**Proposed development at 60-70 Shorts Gardens and 14-16 Betterton Street, London**
(b)	*Process producing the waste*	**Foundation and basement excavation**
(c)	*Statement on waste treatment*	**Refer to pre-treatment confirmation form**
(d)	*Composition of the waste*	**Dark brown gravel of brick, concrete and flint.**
(e)	*Appearance of the waste*	**As above**
(f)	*European waste catalogue code*	**17-05-04** (*for non-hazardous waste*)
(g)	*Hazardous waste properties*	**None**
(h)	*Is the waste prohibited under regulation 9?*	**No**
(i)	*Landfill class*	**Non-hazardous (can potentially be reduced to inert should further testing be undertaken)**
(j)	*Additional precautions required at landfill*	**None**
(k)	*Can waste be recycled or recovered?*	**Yes**
(l)	*Name of waste producer*	**To be confirmed**
(m)	*Name and address of consultant*	**Soiltechnics Limited, Cedar Barn, White Lodge, Walgrave, Northampton. NN6 9PY.** **Tel: (01604) 781877** **E-mail: mail@soiltechnics.net** **Fax: (01604) 781007** **Website: www.soiltechnics.net**

Schedule Date:

January 2019

Soiltechnics reference:

STP3953A-G01

signed

Ian Dunkley
Geo-environmental Engineer, Soiltechnics Limited

Basic categorisation schedule for Made Ground – type 2 soils

Produced following the requirements of The Landfill (England and Wales) (Amendment) Regulations 2004 Part 2 (5)

(a) *Source and origin of waste*

Proposed development at 60-70 Shorts Gardens and 14-16 Betterton Street, London

(b) *Process producing the waste*

Foundation and basement excavation

(c) *Statement on waste treatment*

Refer to pre-treatment confirmation form

(d) *Composition of the waste*

Loose to medium dense sandy gravel, with gravels comprising brick and concrete

(e) *Appearance of the waste*

As above

(f) *European waste catalogue code*

17-05-03* (*for hazardous waste*)

(g) *Hazardous waste properties*

Combined metals and total petroleum hydrocarbons

(h) *Is the waste prohibited under regulation 9?*

No

(i) *Landfill class*

Stable non-reactive hazardous waste in non-hazardous landfill

(j) *Additional precautions required at landfill*

None

(k) *Can waste be recycled or recovered?*

Yes

(l) *Name of waste producer*

To be confirmed

(m) *Name and address of consultant*

Soiltechnics Limited, Cedar Barn, White Lodge, Walgrave, Northampton. NN6 9PY.
Tel: (01604) 781877 **E-mail: mail@soiltechnics.net**
Fax: (01604) 781007 **Website: www.soiltechnics.net**

Schedule Date:

January 2019

Soiltechnics reference:

STP3953A-G01

signed

Ian Dunkley
Geo-environmental Engineer, Soiltechnics Limited

Basic categorisation schedule for Lynch Hill Gravels

Produced following the requirements of The Landfill (England and Wales) (Amendment) Regulations 2004 Part 2 (5)

(a) *Source and origin of waste*

Proposed development at 60-70 Shorts Gardens and 14-16 Betterton Street, London

(b) *Process producing the waste*

Foundation and basement excavation

(c) *Statement on waste treatment*

Refer to pre-treatment confirmation form

(d) *Composition of the waste*

(e) *Appearance of the waste*

As above

(f) *European waste catalogue code*

17-05-04

(g) *Hazardous waste properties*

None

(h) *Is the waste prohibited under regulation 9?*

No

(i) *Landfill class*

Inert by virtue of being natural in origin and unaffected by anthropogenic contamination

(j) *Additional precautions required at landfill*

None

(k) *Can waste be recycled or recovered?*

Yes

(l) *Name of waste producer*

To be confirmed

(m) *Name and address of consultant*

Soiltechnics Limited, Cedar Barn, White Lodge, Walgrave, Northampton. NN6 9PY.
Tel: (01604) 781877 **E-mail: mail@soiltechnics.net**
Fax: (01604) 781007 **Website: www.soiltechnics.net**

Schedule Date:

January 2019

Soiltechnics reference:

STP3953A-G01

signed

Ian Dunkley
Geo-environmental Engineer, Soiltechnics Limited

Basic categorisation schedule for London Clay Formation

Produced following the requirements of The Landfill (England and Wales) (Amendment) Regulations 2004 Part 2 (5)

(a) *Source and origin of waste*

Proposed development at 60-70 Shorts Gardens and 14-16 Betterton Street, London

(b) *Process producing the waste*

Foundation and basement excavation

(c) *Statement on waste treatment*

Refer to pre-treatment confirmation form

(d) *Composition of the waste*

(e) *Appearance of the waste*

As above

(f) *European waste catalogue code*

17-05-04

(g) *Hazardous waste properties*

None

(h) *Is the waste prohibited under regulation 9?*

No

(i) *Landfill class*

Inert by virtue of being natural in origin and unaffected by anthropogenic contamination

(j) *Additional precautions required at landfill*

None

(k) *Can waste be recycled or recovered?*

Yes

(l) *Name of waste producer*

To be confirmed

(m) *Name and address of consultant*

Soiltechnics Limited, Cedar Barn, White Lodge, Walgrave, Northampton. NN6 9PY.
Tel: (01604) 781877 **E-mail: mail@soiltechnics.net**
Fax: (01604) 781007 **Website: www.soiltechnics.net**

Schedule Date:

January 2019

Soiltechnics reference:

STP3953A-G01

signed

Ian Dunkley
Geo-environmental Engineer, Soiltechnics Limited

Miss Emma Jeffries
Soiltechnics
Cedar Barn White Lodge
Walgrave Northamptonshire
NN6 9PY

Zayo Plant Protection Centre
c/o JSM Group Ltd
Plant Protection Department
Sterling House
Mutton Lane
Potters Bar
Herts, EN6 3AR

Date: 10/03/2017

Our Reference: 10044200
Your Reference: STP3953A

Dear Miss Emma Jeffries,

ZAYO GROUP UK LTD NOT AFFECTED C2 PRELIMINARY PLANT ENQUIRY

We acknowledge with thanks your request dated 10/03/2017 03:23:46 PM for information on the location of our services.

Having examined our records, we can confirm that ZAYO GROUP UK LTD has no owned apparatus within the search area of your enquiry detailed in the reference/location provided.

Please do not hesitate to contact us for further assistance.

Regards,

Zayo Group UK Ltd c/o JSM Group Ltd
JSM Plant Protection Department
T: 01992 655 919
zayoplantenquiries@jsmgroup.com

Ms. Emma Jeffries
Soil Technics
Ivy Mill Bussiness Park
Crown Street
Manchester
NN6 9PY

Our Ref: 2017/2249439
Your Ref: Shorts Gardens
17/03/2017

Dear Sir/Madam

Shorts Gardens

Thank you for your letter of 10/03/2017 in which you asked if there are any electric lines and/or electrical plant belonging to UK Power Networks (LPN) plc ("UK Power Networks") within the land identified by your enquiry.

I enclose a copy of UK Power Networks record of its electric lines and/or electrical plant at the site identified by your enquiry. If the records provided do not relate to the land to which you had intended to refer please resubmit your enquiry.

Should your excavation affect any of our Extra High Voltage equipment (6.6 KV, 22 KV, 33 KV or 132 KV), please contact us to obtain a copy of the primary route drawings and associated cross sections.

This information is made available to you on the terms set out below.

1. **UK Power Networks does not warrant that the information provided to you is correct. You rely upon it at your own risk.**

2. UK Power Networks does not exclude or limit its liability if it causes the death of any person or causes personal injury to a person where such death or personal injury is caused by its negligence.

3. **Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise how for any loss, damage, costs, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.**

4. The information about UK Power Networks electrical plant and/or electric lines provided to you belongs to and remains the property of UK Power Networks. You must not alter it in any respect.

5. **The information provided to you about the electrical plant and/or electric lines depicted on the plans may NOT be a complete record of such apparatus belonging to UK Power Networks. The information provided relates to electric lines and/or electrical plant belonging to UK Power Networks that it believes to be present but the plans are NOT definitive: other electric lines and/or electrical plant may be present and that may or may not belong to UK Power Networks.**

6. **Other apparatus not belonging to UK Power Networks is not shown on the plan. It is your responsibility to make your own enquiries elsewhere to discover whether apparatus belonging to others is present. It would be prudent to assume that other apparatus is present.**

7. You are responsible for ensuring that the information made available to you is passed to those acting on your behalf and that all such persons are made aware of the contents of this letter.

8. Because the information provided to you may **NOT** be accurate, you are recommended to ascertain the presence of UK Power Networks electric lines and/or electrical plant by the digging of trial holes. **Trial holes should be dug by hand only**.

Excavations must be carried out in line with the Health and Safety Executive guidance document HSG 47. We will not undertake this work. A copy of HSG 47 can be obtained from the Health an Safety Executives website.

All electric lines discovered must be considered LIVE and DANGEROUS at all times and must not be cut, resited, suspended, bent or interfered with unless specially authorised by UK Power Networks.

The electric line and electrical plant belonging to UK Power Networks remains so even when made dead and abandoned and any such electric line and/or electrical plant exposed shall be reported to UK Power Networks.

Where your works are likely to affect our electric lines and/or electrical plant an estimate of the price of any protective /diversionary works can be prepared by UK Power Networks Branch at Metropolitan House, Darkes Lane, Potters Bar, Herts. , EN6 1AG, telephone no. 0845 2340040

9 **Any work near to any overhead electric lines must be carried out by you in accordance with the Health and Safety Executive guidance document GS6 and the Electricity at Work Regulations**.

The GS6 Recommendations may be purchased from HSE Books or downloaded from the Energy Networks Association's website.

If given a reasonable period of prior notice UK Power Networks will attend on site without charge to advise how and where "goal posts" should be erected. If you wish to avail yourself of this service, in the first instance please telephone: 0845 6014516 between 08:30 and 17:00 Monday to Friday, Public and bank holidays excepted.

10. You are responsible for the security of the information provided to you. It must not be given, sold or made available upon payment of a fee to a third party.

11. If in carrying out work on land in, on, under or over which is installed an electric line and/or electrical plant that belongs to UK Power Networks you and/or anyone working on your behalf damages (however slightly) that apparatus you must inform immediately UK Power Networks by telephone at the number below providing:

- your name, address and telephone number; and
- the date, time and place at which such damage was caused; and
- a description of the electric line and/or electrical plant to which damage was caused; and
- the name of the person whom it appears to you is responsible for that damage; and
- the nature of the damage

In the East of England or London 0800 780078 (24 Hours).

12. The expression "UK Power Networks" includes UK Power Networks (EPN) plc, UK Power Networks (LPN) plc, UK Power Networks (SEPN) plc, UK Power Networks and any of their successors and predecessors in title.

IF YOU DO **NOT** ACCEPT AND/OR **DO NOT** UNDERSTAND THE TERMS OF USE SET OUT IN PARAGRAPHS 1 TO 12 INCLUSIVE ABOVE YOU MUST NOT USE THE PLANS AND RETURN THEM TO ME.

I would remind you that work adjacent to electric lines and/or electrical plant represents a serious risk to health and safety and as such should feature amongst the items you have assessed in your workplace risk assessment and method statement.

I shall be pleased to supply you with further assistance if you require it.

Yours sincerely

Tracy Gilbert - Telephone: 0800 0565 866
Plan Provision