

21311

St Andrews Park Phases 5, 6 and Rifle Range



TP927

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP928

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP929

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP930

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP931

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP932

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP933

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP934

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP935

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP936

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP937

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP938

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP939

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP940

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP941

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP942

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP943

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP944

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP945

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP946

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP947

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP948

Scale: NTS



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St Andrews Park Phases 5, 6 and Rifle Range



TP949

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP950

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP951

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP952

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP953

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP954

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP955

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP956

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP957

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP958

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP959

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP960

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP961

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP962

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP963

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP964

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP965

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP966

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP967

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP968

Scale: NTS



APPENDIX 3
LABORATORY TESTS

APPENDIX 3

GENERAL NOTES ON LABORATORY TESTS

A3.1 ACCREDITATION

A3.1.1 The geotechnical analyses were carried out as detailed below:

Test	British Standard Reference	Notes
Moisture Content	BS 1377: Part 2: Clause 3.2	For comparison with Atterberg limits (if required) the measured moisture content would have to be corrected to give the equivalent moisture content of the fraction passing the 425 micron sieve.
Atterberg Limits	BS 1377: Part 2: Clause 4.3 and Clause 5	The samples were prepared in accordance with Clause 4.2.
Bulk Density	BS 1377: Part 2: Clause 7.2	Linear method used. Samples prepared in accordance with Clause 7.2.3.
Particle Size Distribution	BS 1377: Part 2: Clause 9.2	Samples prepared in accordance with Clause 7.3 and 7.4.5.
Sedimentation	BS 1377: Part 2: Clause 9	Results were directly linked to the particle size distribution curve.
CBR (California Bearing Ratio)	BS 1377: Part 4: Clause 7.4	Using penetration test procedure, samples prepared in accordance with Clause 7.2.4.4.
Compactions 2.5kg Rammer	BS 1377: Part 4: Clause 3.3 and 3.4	Samples prepared in accordance with Clause 3.2A
Triaxial Single Stage	BS 1377: Part 7: Clause 8	Undisturbed samples prepared in accordance with Clause 8.3. Disturbed samples prepared in accordance with 7.7.5.2.
Triaxial Multi Stage	BS 1377: Part 7: Clause 9	Samples prepared in accordance with Clause 8.3.
Shear Box Testing (Small)	BS 1377: Part 7: Clause 4.1 to 4.7	Samples prepared in accordance with Clause 5.4 and 6.3
One-Dimensional Consolidation	BS 1377: Part 5: Clause 3	Samples prepared in accordance with Clause 3.3
Hand Vane	N/A	The test was carried out with Ian Farmer Associates Standard Procedure No. 102.

The results of these tests are shown in Appendix 3.

A3.1.2 Subcontracted results are presented directly on headed paper from the subcontracting laboratory.



LABORATORY REPORT



4043

Contract Number: PSL14/6002

Client's Reference: 21311

Report Date: 05 December 2014

Client Name: Ian Farmer Associates
14 Faraday Close
District 15
Pattinson North Industrial Estate
Washington
NE38 8QJ

For the attention of: Paul Bailey

Contract Title: St Andrews Park

Date Received: 17/11/2014

Date Commenced: 17/11/2014

Date Completed: 5/12/2014

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:


R Gunson
(Director)

A Watkins
(Director)

M Beastall
(Laboratory Manager)

D Lambe
(Senior Technician)

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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Depth m	Description of Sample
CP801	1	B	0.50	Dark grey very sandy clayey GRAVEL.
CP801	2	D	2.50	Brown mottld grey slightly gravelly sandy CLAY.
CP801	2	B	4.50	Brown slightly gravelly slightly sandy CLAY.
CP801	1	U	6.50	Stiff brown slightly sandy CLAY.
CP801	9	D	12.50	Brown slightly sandy CLAY.
CP801	4	B	14.50	Dark brown slightly sandy CLAY.
CP801	4	U	15.50	Very stiff grey slightly sandy CLAY.
CP801	5	U	18.50	Very stiff brown slightly sandy CLAY.
CP803	1	B	0.50	Brown very gravelly sandy CLAY.
CP803	2	B	4.50	Brown slightly gravelly slightly sandy CLAY.
CP803	3	B	9.50	Dark brown slightly gravelly slightly sandy CLAY.
CP803	2	U	9.50	Very stiff brown slightly sandy CLAY.
CP803	4	B	14.50	Brown slightly gravelly slightly sandy CLAY.
CP803	4	U	15.50	Stiff brown slightly sandy CLAY.
CP805	1	B	0.50	Brown slightly gravelly slightly sandy CLAY.
CP805	2	B	4.50	Brown slightly gravelly slightly sandy CLAY.
CP805	1	U	6.50	Brown slightly gravelly slightly sandy CLAY.
CP805	3	B	9.50	Dark brown slightly sandy CLAY.
CP805	2	U	9.50	Very stiff brown slightly sandy CLAY.

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					Client Ref:	21311

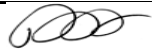
SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Depth m	Description of Sample
CP805	13	U	12.50	Stiff brown slightly sandy CLAY.
CP805	15	U	18.50	Very stiff brown slightly sandy very silty CLAY.
CP805	2	B	19.50	Dark brown slightly gravelly very sandy CLAY.
CP806	1	B	0.50	Dark brown very gravelly very sandy CLAY.
CP806	2	B	4.50	Brown slightly gravelly slightly sandy CLAY.
CP806	1	U	6.50	Stiff brown slightly sandy CLAY.
CP806	3	B	9.50	Brown slightly gravelly slightly sandy CLAY.
CP806	20	D	10.00	Brown slightly sandy CLAY.
CP806	3	U	11.00	Stiff brown slightly sandy CLAY.
CP806	4	B	14.50	Dark brown slightly sandy CLAY.
CP806	7	U	17.00	Very stiff brown slightly sandy CLAY.
CP806	9	U	20.00	Very soft grey very sandy sandy CLAY.
TP802	1	B	1.70	Brown clayey SAND & GRAVEL.
TP804	1	B	2.20	Brown gravelly slightly sandy CLAY.
TP827	1	D	2.30	Brown slightly sandy CLAY.
TP830	1	D	1.85	Brown slightly sandy CLAY.
TP832	1	B	1.50	Brown mottled grey slightly gravelly slightly sandy CLAY.
TP832	1	D	3.50	Brown mottled grey CLAY.
TP833	1	B	1.20	Brown mottled grey very gravelly very clayey SAND.

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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Depth m	Description of Sample
TP833	1	D	2.00	Brown mottled grey slightly sandy CLAY.
TP835	1	B	2.50	Brown mottled grey slightly gravelly slightly sandy CLAY.
TP835	1	D	4.00	Brown mottled grey slightly sandy CLAY.
TP836	1	B	2.50	Brown sandy clayey GRAVEL.
TP837	1	B	1.10	Brown very gravelly sandy CLAY.
TP837	1	D	3.90	Brown mottled grey CLAY.
TP838	1	D	3.50	Brown mottled grey CLAY.
TP839	1	B	1.20	Brown slightly sandy CLAY.
TP840	1	B	2.80	Brown slightly gravelly sandy CLAY.
TP841	1	B	1.20	Dark brown slightly gravelly sandy CLAY.
TP842	1	D	2.20	Brown mottled grey slightly gravelly slightly sandy CLAY.
TP843	1	B	2.00	Brown slightly gravelly sandy CLAY.
TP844	1	B	1.50	Brown very sandy CLAY.
TP845	1	B	1.50	Brown sandy clayey GRAVEL.
TP845	1	D	4.20	Brown mottled grey CLAY.
TP849	1	D	4.10	Brown mottled grey CLAY.
TP850	1	B	2.00	Brown slightly gravelly slightly sandy CLAY.
WS804	3	D	2.60	Brown mottled grey slightly sandy CLAY.
WS805	3	D	2.70	Brown CLAY.

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					Client Ref:	21311

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

[illegible]

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				Client Ref:	21311

SUMMARY OF SOIL CLASSIFICATION TESTS

(B.S. 1377 : PART 2 : 1990)

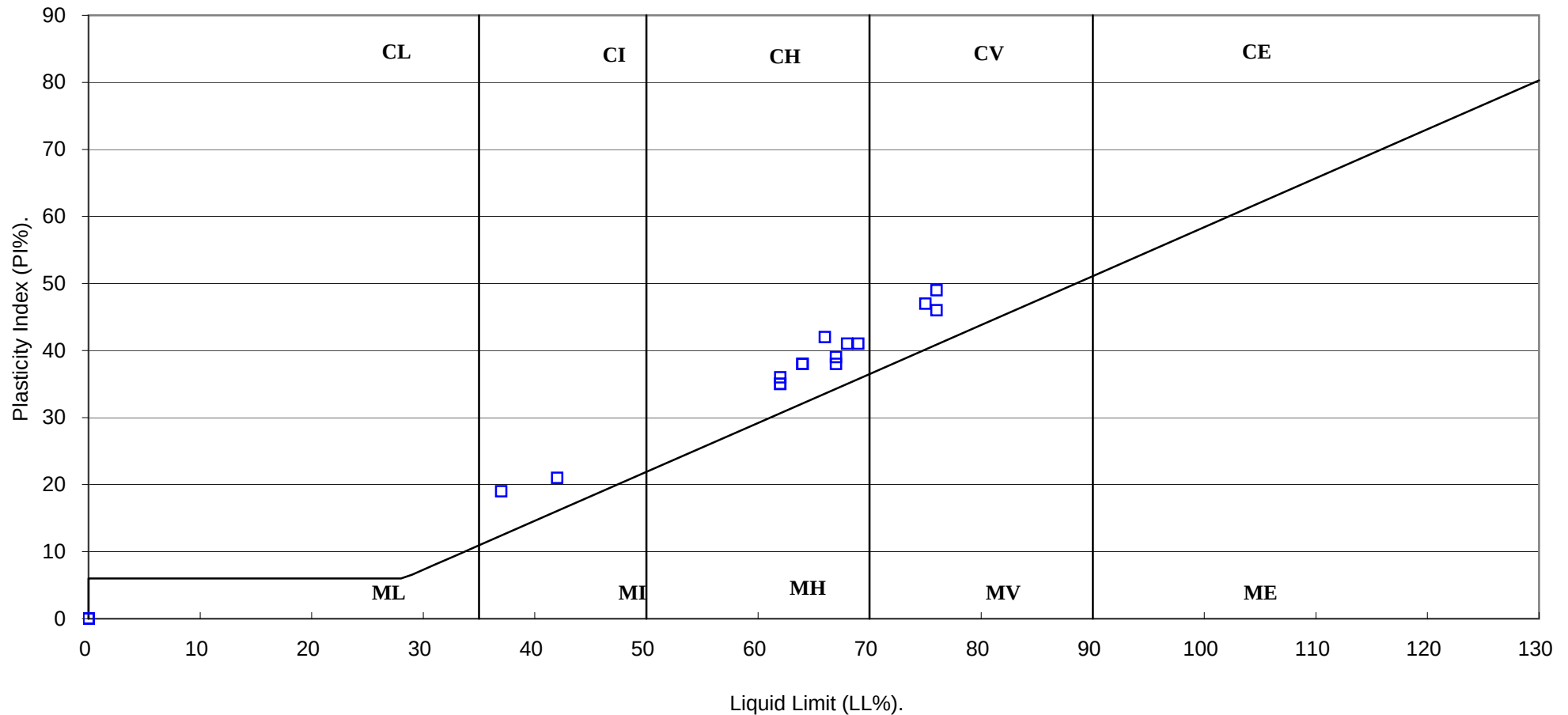
Hole Number	Sample Number	Sample Type	Depth m	Moisture Content % Clause 3.2	Bulk Density Mg/m ³ Clause 7.2	Dry Density Mg/m ³ Clause 7.2	Particle Density Mg/m ³ Clause 8.2	Liquid Limit % Clause 4.3/4.4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	% Passing .425mm	Remarks
CP801	1	B	0.50	17								
CP801	2	D	2.50	30								
CP801	1	U	6.50	25				62	27	35	100	High plasticity CH.
CP801	9	D	12.50	26				64	26	38	100	High plasticity CH.
CP801	4	B	14.50	36				75	28	47	100	Very high plasticity CV.
CP801	5	U	18.50	24				64	26	38	100	High plasticity CH.
CP803	2	B	4.50	31				68	27	41	98	High plasticity CH.
CP803	3	B	9.50	27				69	28	41	98	High plasticity CH.
CP803	4	B	14.50	29				76	30	46	97	Very high plasticity CV.
CP805	1	U	6.50	26				62	26	36	100	High plasticity CH.
CP805	3	B	9.50	27				67	28	39	99	High plasticity CH.
CP805	2	U	9.50	26								
CP805	13	U	12.50	26				67	29	38	100	High plasticity CH.
CP805	2	B	19.50	25				42	21	21	98	Intermediate plasticity CI.
CP806	2	B	4.50	30				62	27	35	99	High plasticity CH.
CP806	3	B	9.50	32				76	27	49	99	Very high plasticity CV.
CP806	20	D	10.00	31				66	24	42	100	High plasticity CH.
CP806	9	U	20.00	31				37	18	19	100	Intermediate plasticity CI.
TP802	1	B	1.70	12								

SYMBOLS : NP : Non Plastic

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						Client Ref: 21311

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

(B.S.5930 : 1999)



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Professional Soils Laboratory

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				Client Ref:	21311

SUMMARY OF SOIL CLASSIFICATION TESTS

(B.S. 1377 : PART 2 : 1990)

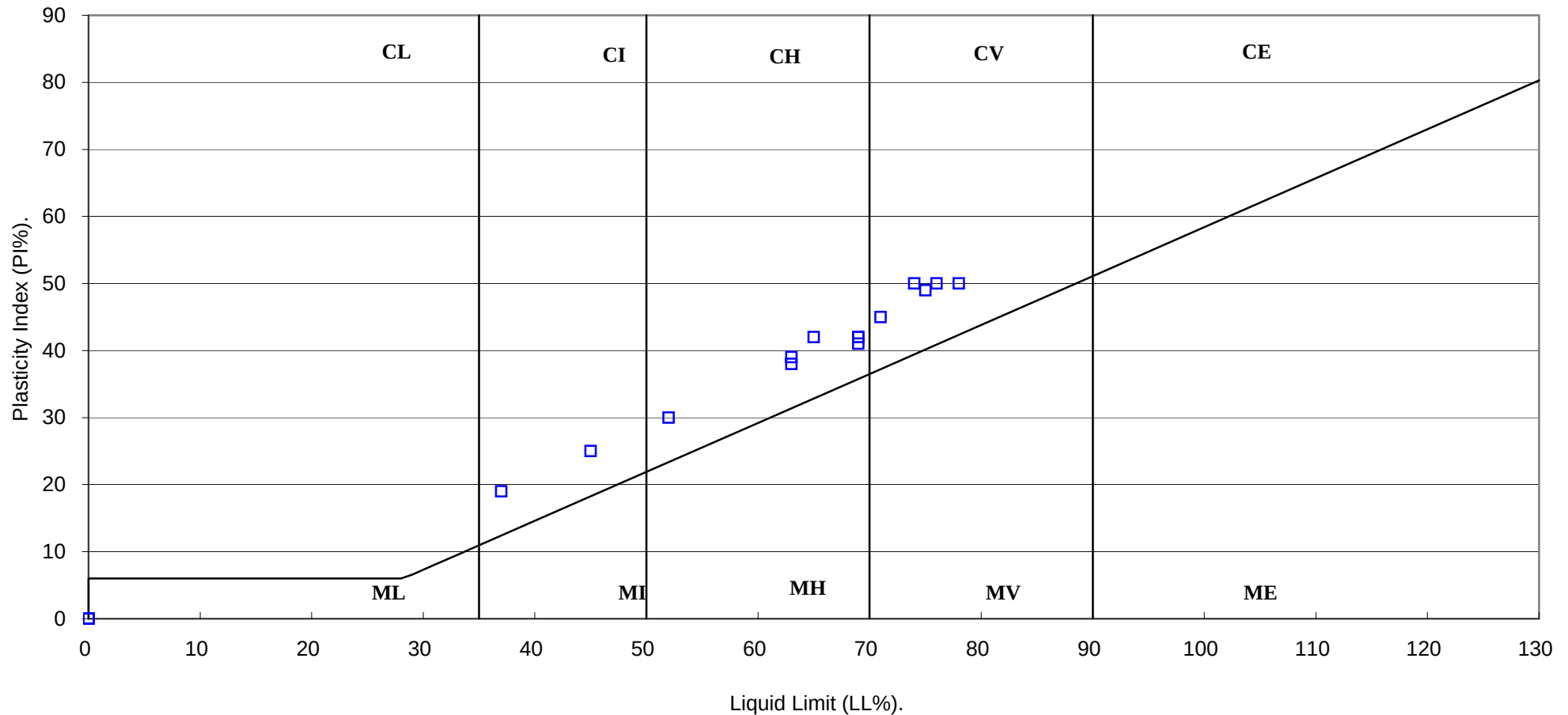
Hole Number	Sample Number	Sample Type	Depth m	Moisture Content % Clause 3.2	Bulk Density Mg/m ³ Clause 7.2	Dry Density Mg/m ³ Clause 7.2	Particle Density Mg/m ³ Clause 8.2	Liquid Limit % Clause 4.3/4.4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	% Passing .425mm	Remarks
TP804	1	B	2.20	26				76	26	50	81	Very high plasticity CV.
TP827	1	D	2.30	28				69	28	41	100	High plasticity CH.
TP830	1	D	1.85	22				69	27	42	100	High plasticity CH.
TP832	1	B	1.50	25				78	28	50	97	Very high plasticity CV.
TP832	1	D	3.50	28				71	26	45	100	Very high plasticity CV.
TP833	1	B	1.20	20								
TP833	1	D	2.00	28				63	25	38	100	High plasticity CH.
TP835	1	D	4.00	26				63	24	39	100	High plasticity CH.
TP836	1	B	2.50	9.1					NP			
TP837	1	B	1.10	26								
TP837	1	D	3.90	28				69	27	42	100	High plasticity CH.
TP838	1	D	3.50	28				74	24	50	100	Very high plasticity CV.
TP839	1	B	1.20	22				45	20	25	99	Intermediate plasticity CI.
TP840	1	B	2.80	27				52	22	30	86	High plasticity CH.
TP841	1	B	1.20	16								
TP842	1	D	2.20	28				75	26	49	97	Very high plasticity CV.
TP843	1	B	2.00	27				65	23	42	94	High plasticity CH.
TP844	1	B	1.50	22				37	18	19	97	Intermediate plasticity CI.
TP845	1	B	1.50	11								

SYMBOLS : NP : Non Plastic

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						Client Ref: 21311

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

(B.S.5930 : 1999)



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Compiled by	Date	Checked by	Date	Approved by	Date
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ST ANDREWS PARK.				Contract No:	PSL14/6002
				Client Ref:	21311

SUMMARY OF SOIL CLASSIFICATION TESTS

(B.S. 1377 : PART 2 : 1990)

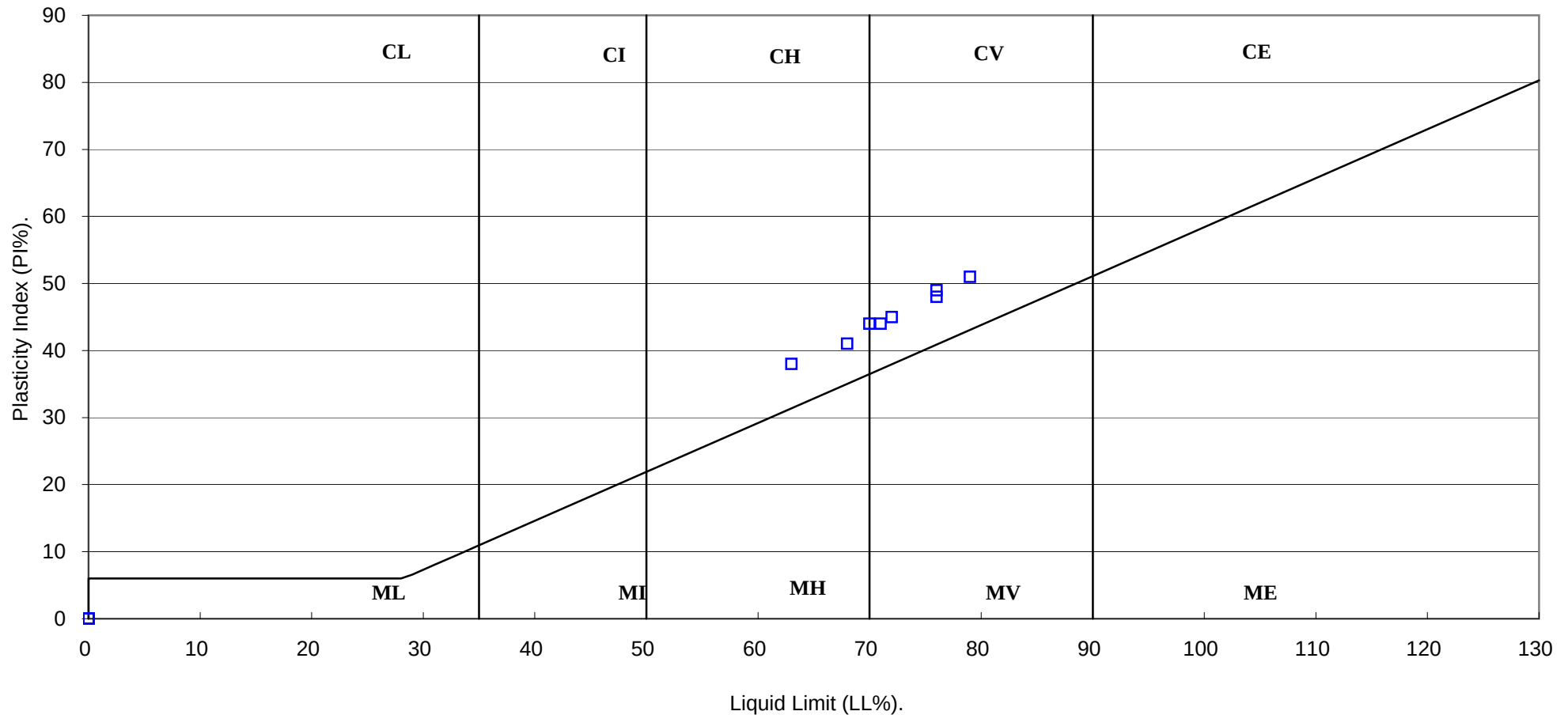
Hole Number	Sample Number	Sample Type	Depth m	Moisture Content % Clause 3.2	Bulk Density Mg/m ³ Clause 7.2	Dry Density Mg/m ³ Clause 7.2	Particle Density Mg/m ³ Clause 8.2	Liquid Limit % Clause 4.3/4.4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	% Passing .425mm	Remarks
TP845	1	B	1.50	11								
TP845	1	D	4.20	29				68	27	41	100	High plasticity CH.
TP849	1	D	4.10	28				71	27	44	100	Very high plasticity CV.
TP850	1	B	2.00	28				76	28	48	99	Very high plasticity CV.
WS804	3	D	2.60	25				63	25	38	100	High plasticity CH.
WS805	3	D	2.70	28				72	27	45	100	Very high plasticity CV.
WS807	1	D	1.00	28				79	28	51	92	Very high plasticity CV.
WS807	3	D	2.00	26								
WS807	5	D	4.00	29								
WS811	3	D	2.90	28				76	27	49	100	Very high plasticity CV.
WS812	6	D	4.80	26				70	26	44	100	High plasticity CH.

SYMBOLS : NP : Non Plastic

 Professional Soils Laboratory	Compiled by	Date	Checked by	Date	Approved by	Date	
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	ST ANDREWS PARK.					Contract No:	PSL14/6002
						Client Ref:	21311

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

(B.S.5930 : 1999)



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ST ANDREWS PARK.				Contract No:	PSL14/6002
				Client Ref:	21311

Particle Size Distribution Test

BS1377 : Part 2 : 1990

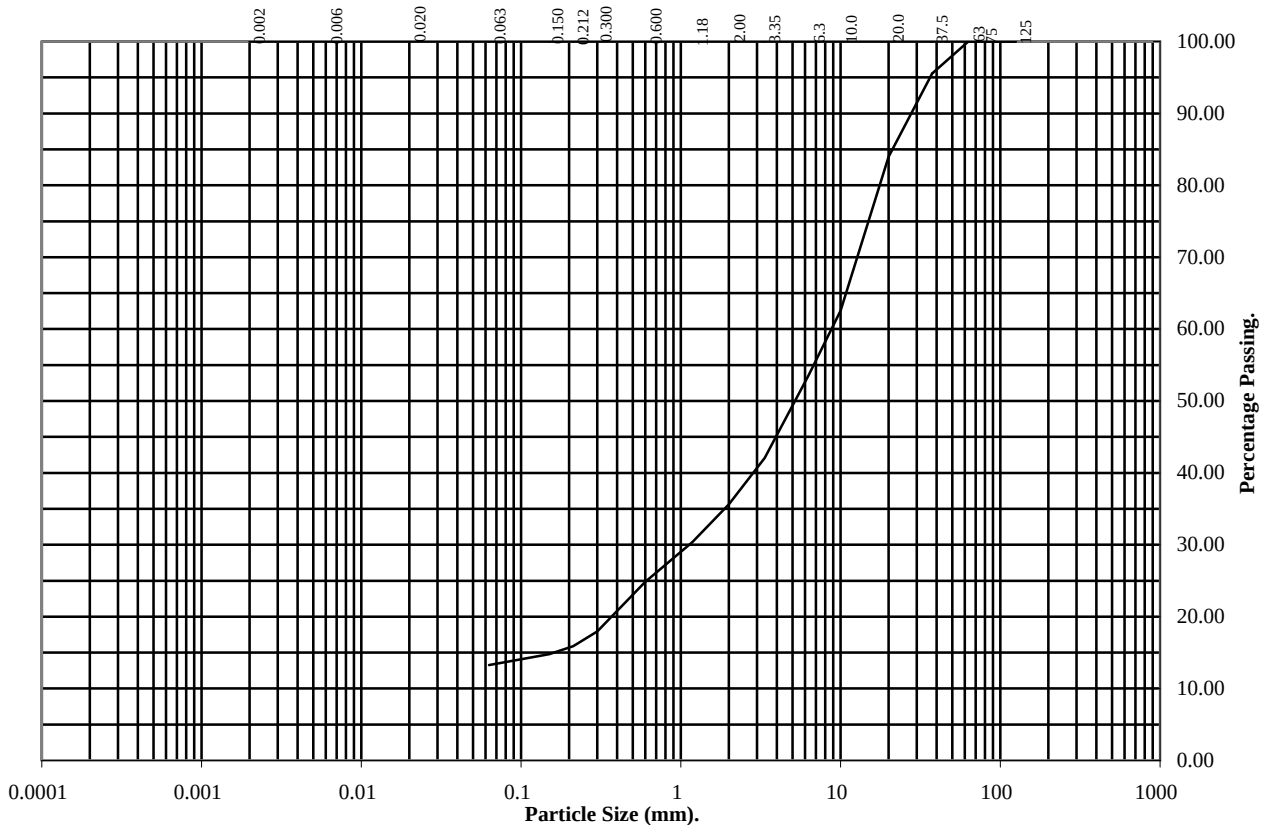
Wet Sieve, Clause 9.2

Hole Number: CP801

Depth (m): 0.50

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	96
20	84
10	63
6.3	54
3.35	42
2	36
1.18	30
0.6	25
0.3	18
0.212	16
0.15	15
0.063	13

Soil Fraction	Total Percentage
Cobbles	0
Gravel	64
Sand	23
Silt / Clay	13

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>RE</i>	04/12/14	<i>RE</i>	04/12/14

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ST ANDREWS PARK.

Contract No.:
PSL14/6002

Particle Size Distribution Test

BS1377 : Part 2 : 1990

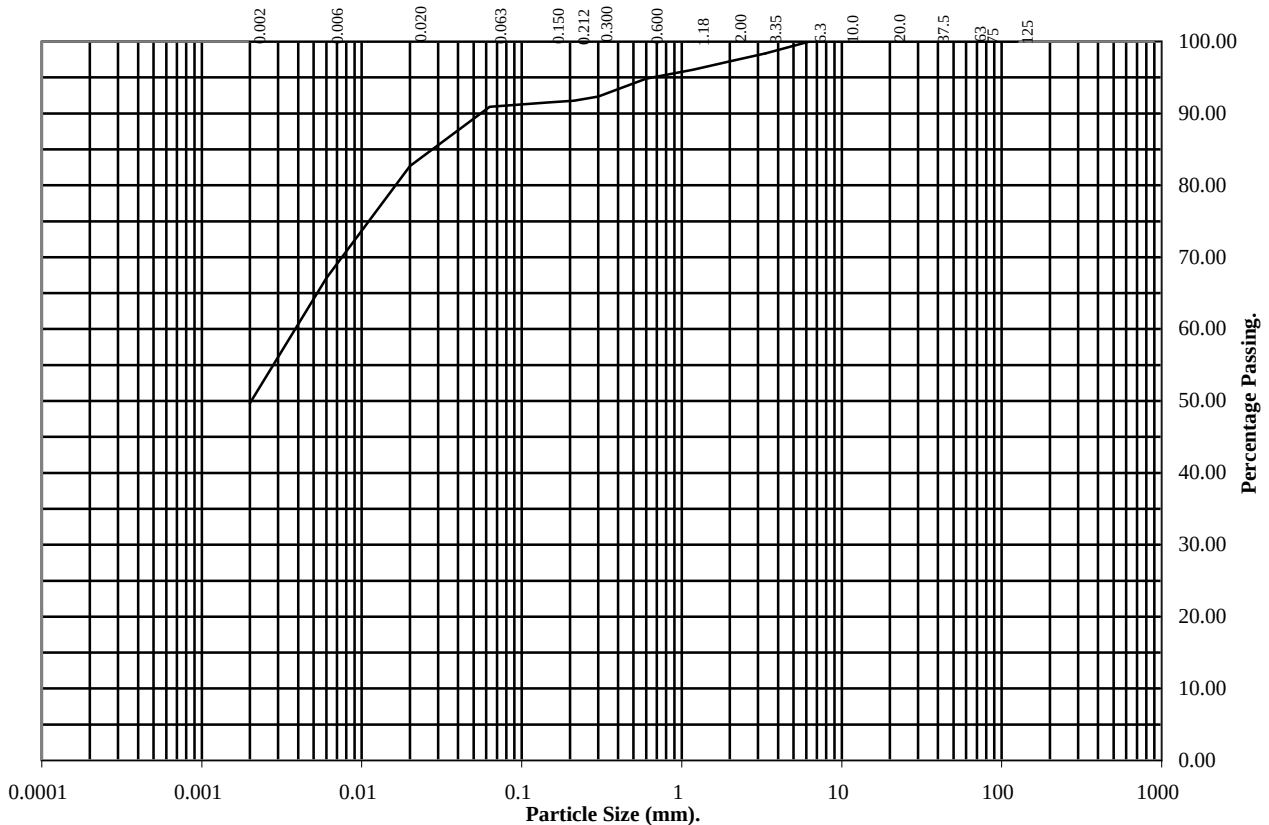
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP801

Depth (m): 4.50

Sample Number: 2

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	98
2	97
1.18	96
0.6	95
0.3	92
0.212	92
0.15	92
0.063	91

Particle Diameter	Percentage Passing
0.02	83
0.006	67
0.002	50

Soil Fraction	Total Percentage
Cobbles	0
Gravel	3
Sand	6
Silt	41
Clay	50

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>RE</i>	04/12/14	<i>RE</i>	04/12/14

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Professional Soils Laboratory

ST ANDREWS PARK.

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PSL14/6002

Particle Size Distribution Test

BS1377 : Part 2 : 1990

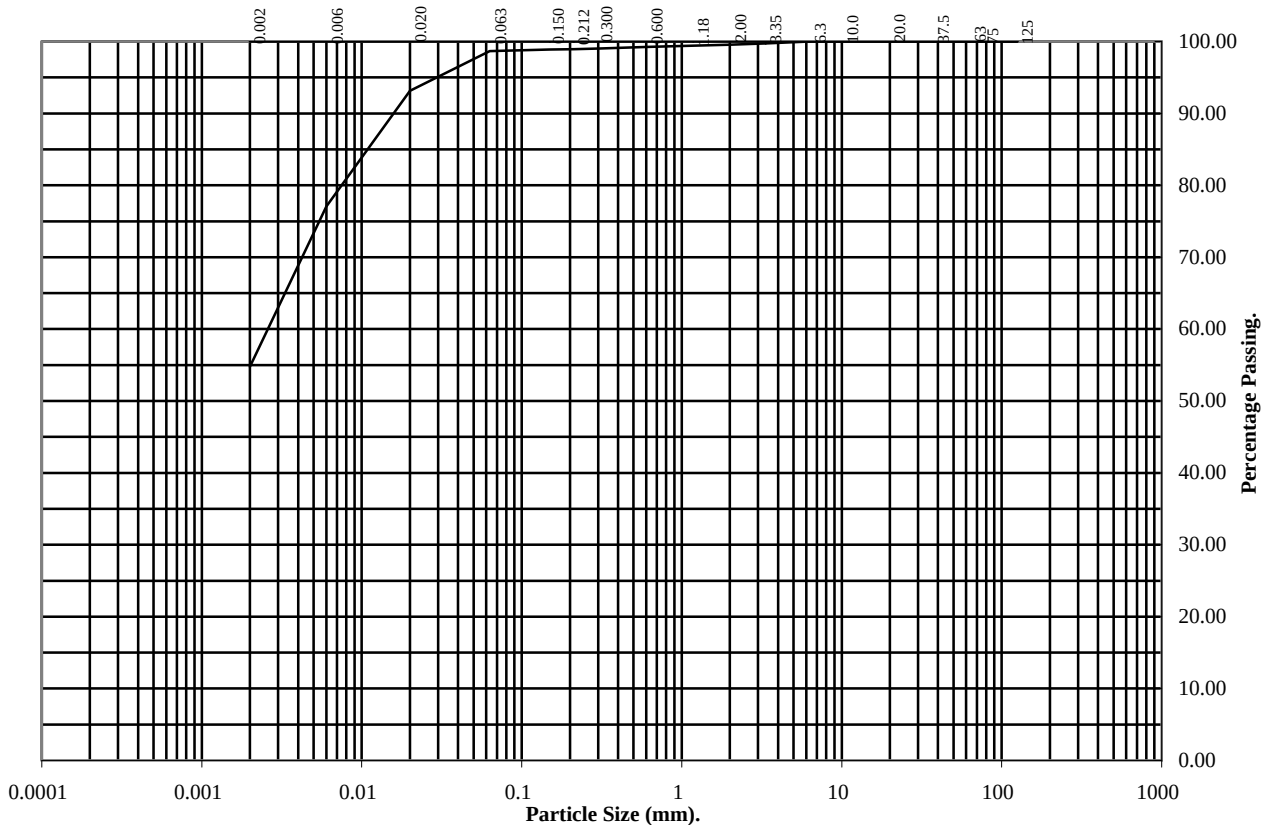
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP801

Depth (m): 14.50

Sample Number: 4

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	100
2	100
1.18	99
0.6	99
0.3	99
0.212	99
0.15	99
0.063	99

Particle Diameter	Percentage Passing
0.02	93
0.006	77
0.002	55

Soil Fraction	Total Percentage
Cobbles	0
Gravel	0
Sand	1
Silt	44
Clay	55

Remarks:
See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

Particle Size Distribution Test

BS1377 : Part 2 : 1990

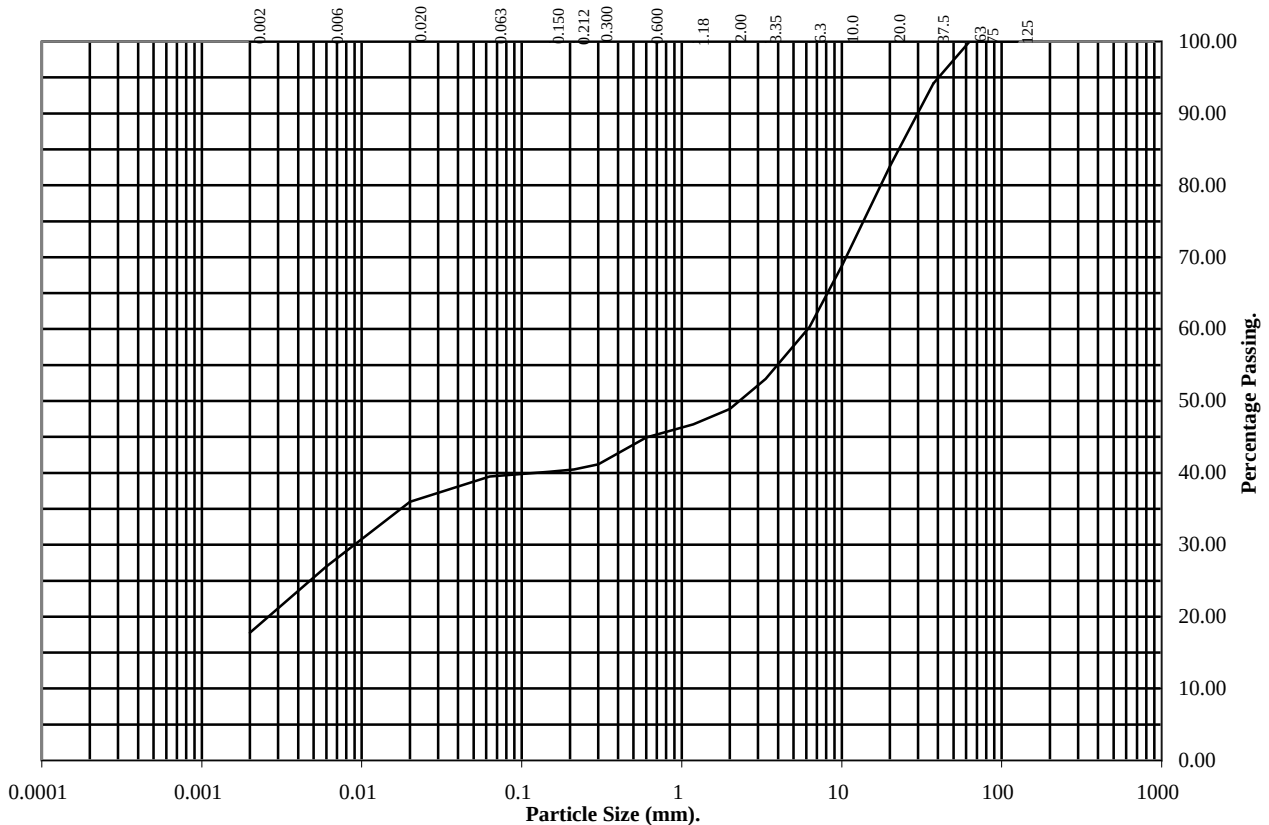
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP803

Depth (m): 0.50

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	94
20	83
10	69
6.3	60
3.35	53
2	49
1.18	47
0.6	45
0.3	41
0.212	40
0.15	40
0.063	39

Particle Diameter	Percentage Passing
0.02	36
0.006	27
0.002	18

Soil Fraction	Total Percentage
Cobbles	0
Gravel	51
Sand	10
Silt	21
Clay	18

Remarks:
See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

Particle Size Distribution Test

BS1377 : Part 2 : 1990

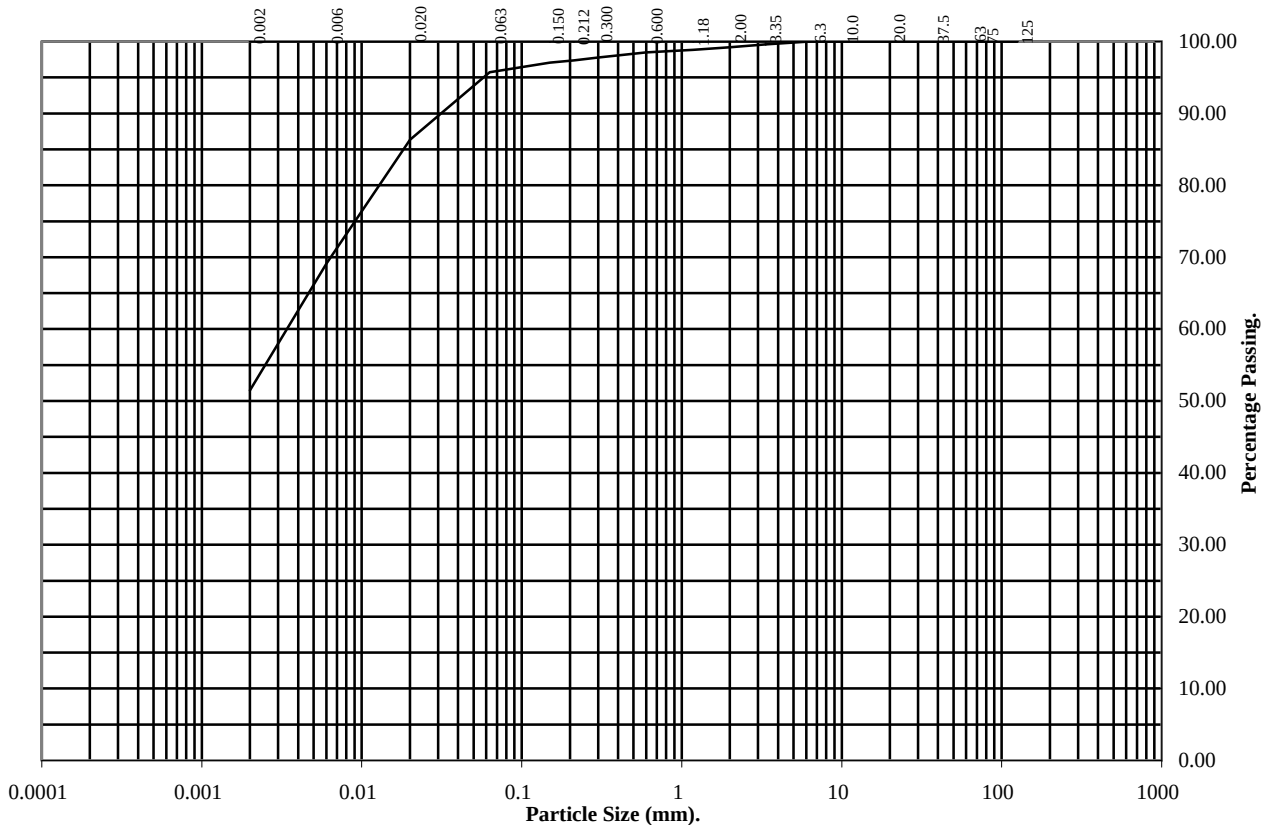
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP803

Depth (m): 4.50

Sample Number: 2

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	100
2	99
1.18	99
0.6	99
0.3	98
0.212	97
0.15	97
0.063	96

Particle Diameter	Percentage Passing
0.02	86
0.006	69
0.002	51

Soil Fraction	Total Percentage
Cobbles	0
Gravel	1
Sand	3
Silt	45
Clay	51

Remarks:
See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

Particle Size Distribution Test

BS1377 : Part 2 : 1990

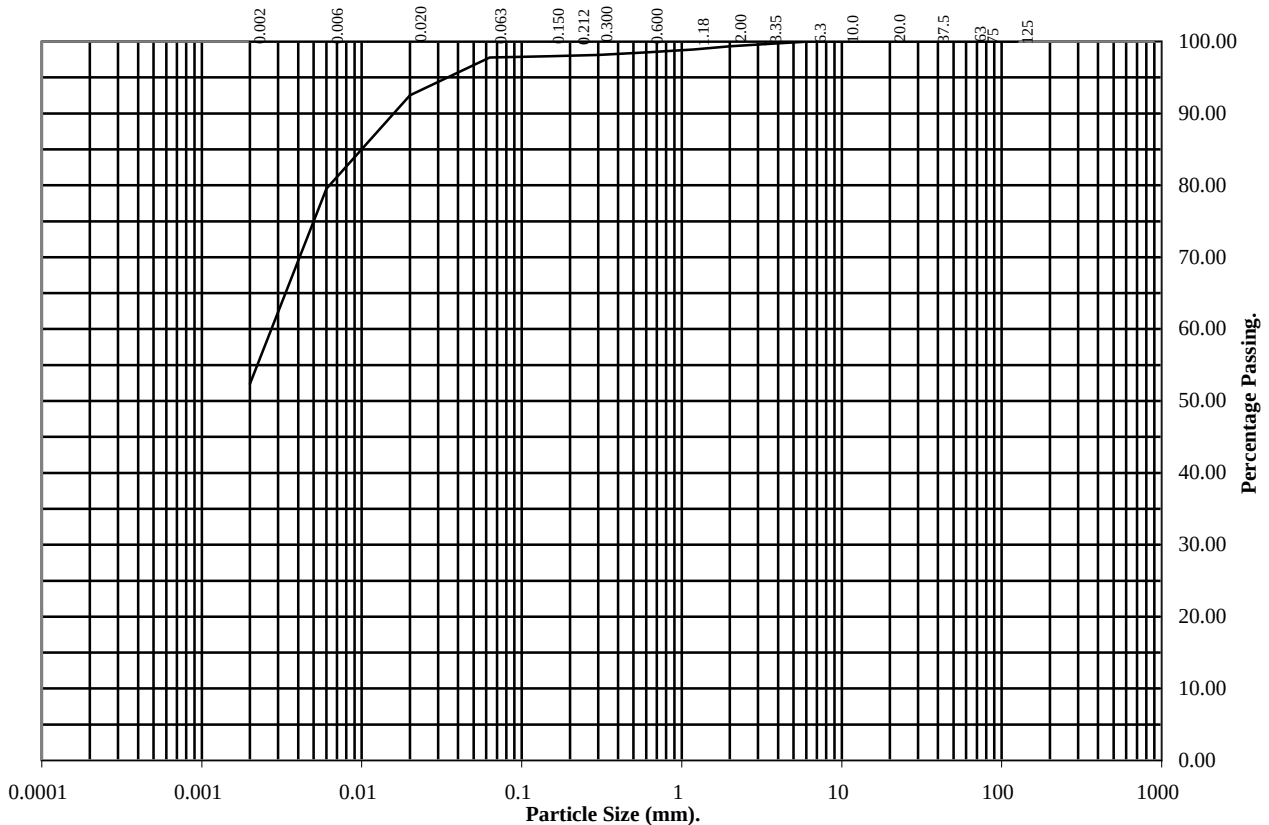
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP803

Depth (m): 9.50

Sample Number: 3

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	100
2	99
1.18	99
0.6	98
0.3	98
0.212	98
0.15	98
0.063	98

Particle Diameter	Percentage Passing
0.02	93
0.006	79
0.002	52

Soil Fraction	Total Percentage
Cobbles	0
Gravel	1
Sand	1
Silt	46
Clay	52

Remarks:
See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

Particle Size Distribution Test

BS1377 : Part 2 : 1990

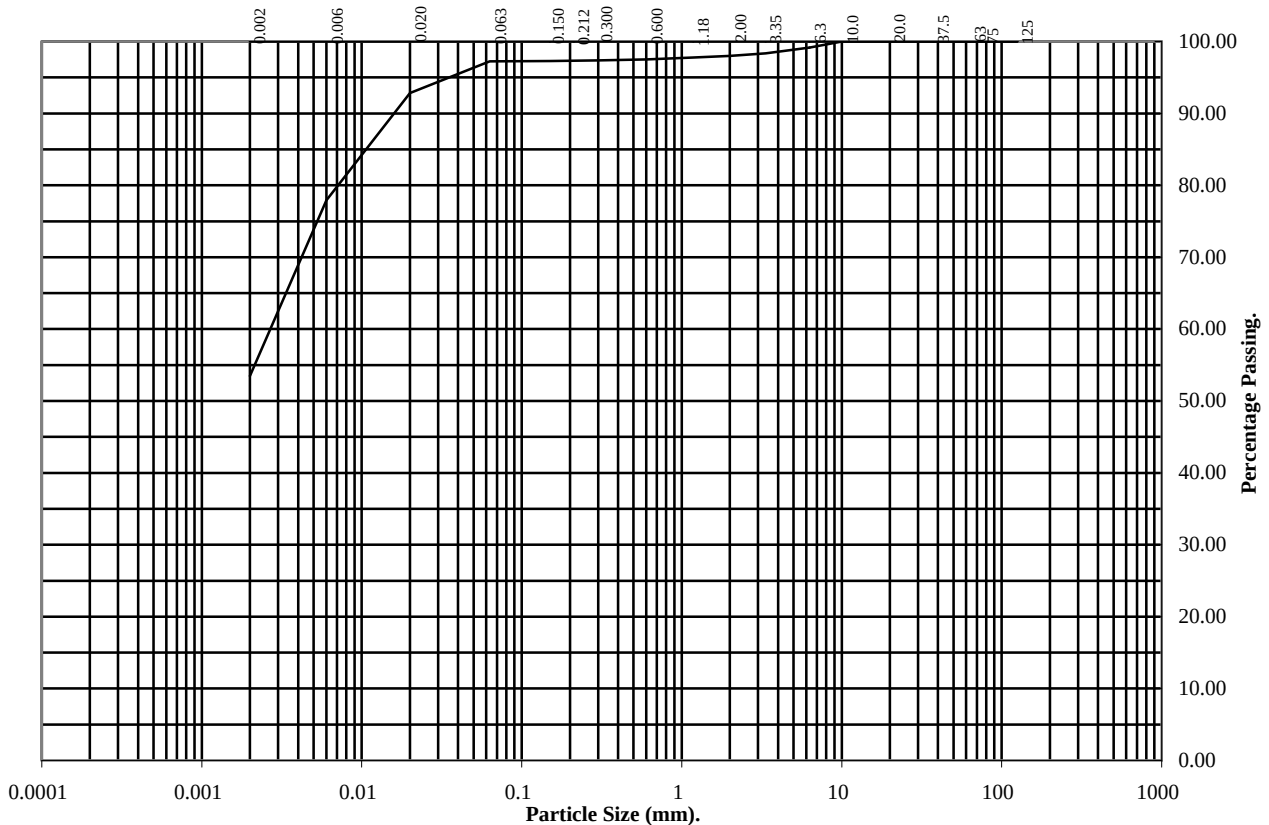
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP803

Depth (m): 14.50

Sample Number: 4

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	99
3.35	98
2	98
1.18	98
0.6	98
0.3	97
0.212	97
0.15	97
0.063	97

Particle Diameter	Percentage Passing
0.02	93
0.006	78
0.002	53

Soil Fraction	Total Percentage
Cobbles	0
Gravel	2
Sand	1
Silt	44
Clay	53

Remarks:
See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>RE</i>	04/12/14	<i>RE</i>	04/12/14

Particle Size Distribution Test

BS1377 : Part 2 : 1990

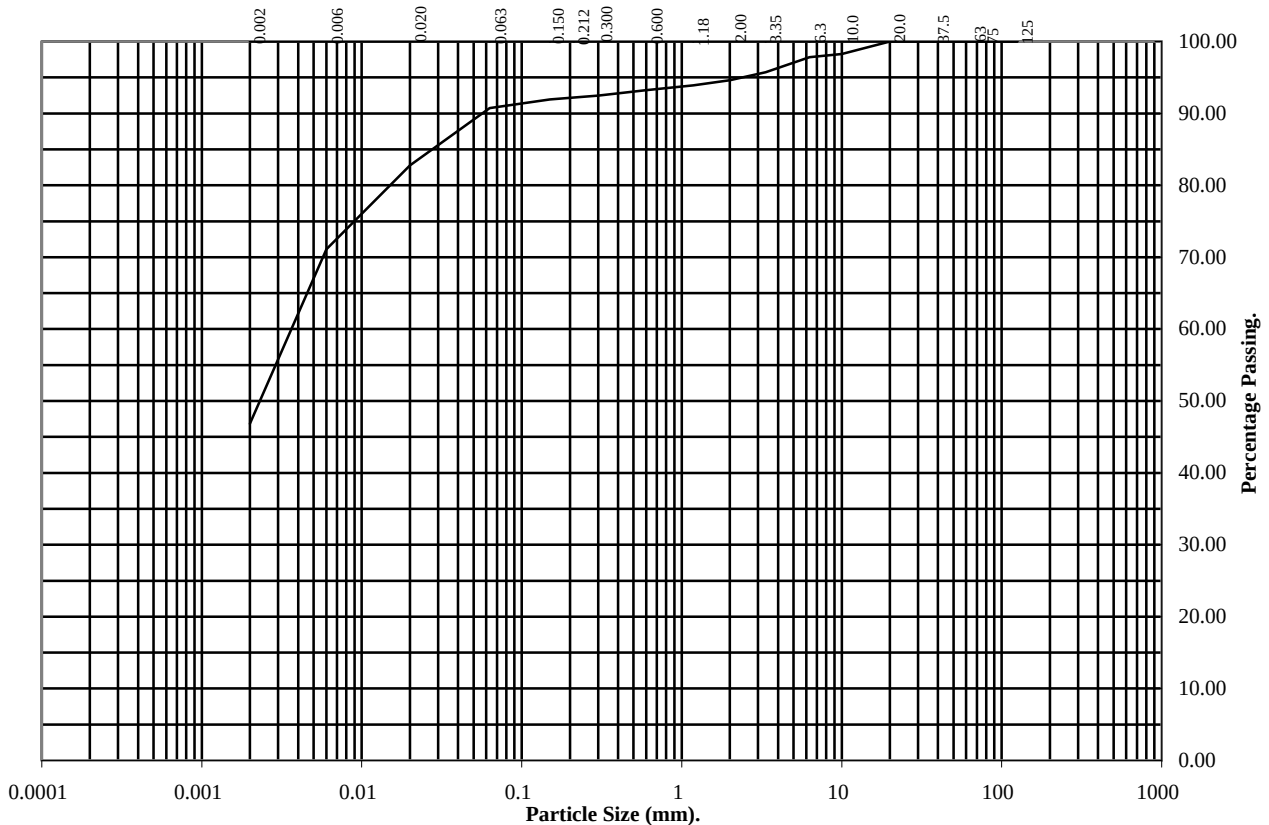
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP805

Depth (m): 0.50

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	98
6.3	98
3.35	96
2	95
1.18	94
0.6	93
0.3	92
0.212	92
0.15	92
0.063	91

Particle Diameter	Percentage Passing
0.02	83
0.006	71
0.002	47

Soil Fraction	Total Percentage
Cobbles	0
Gravel	5
Sand	4
Silt	44
Clay	47

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
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Professional Soils Laboratory

ST ANDREWS PARK.

Contract No.:
PSL14/6002

Particle Size Distribution Test

BS1377 : Part 2 : 1990

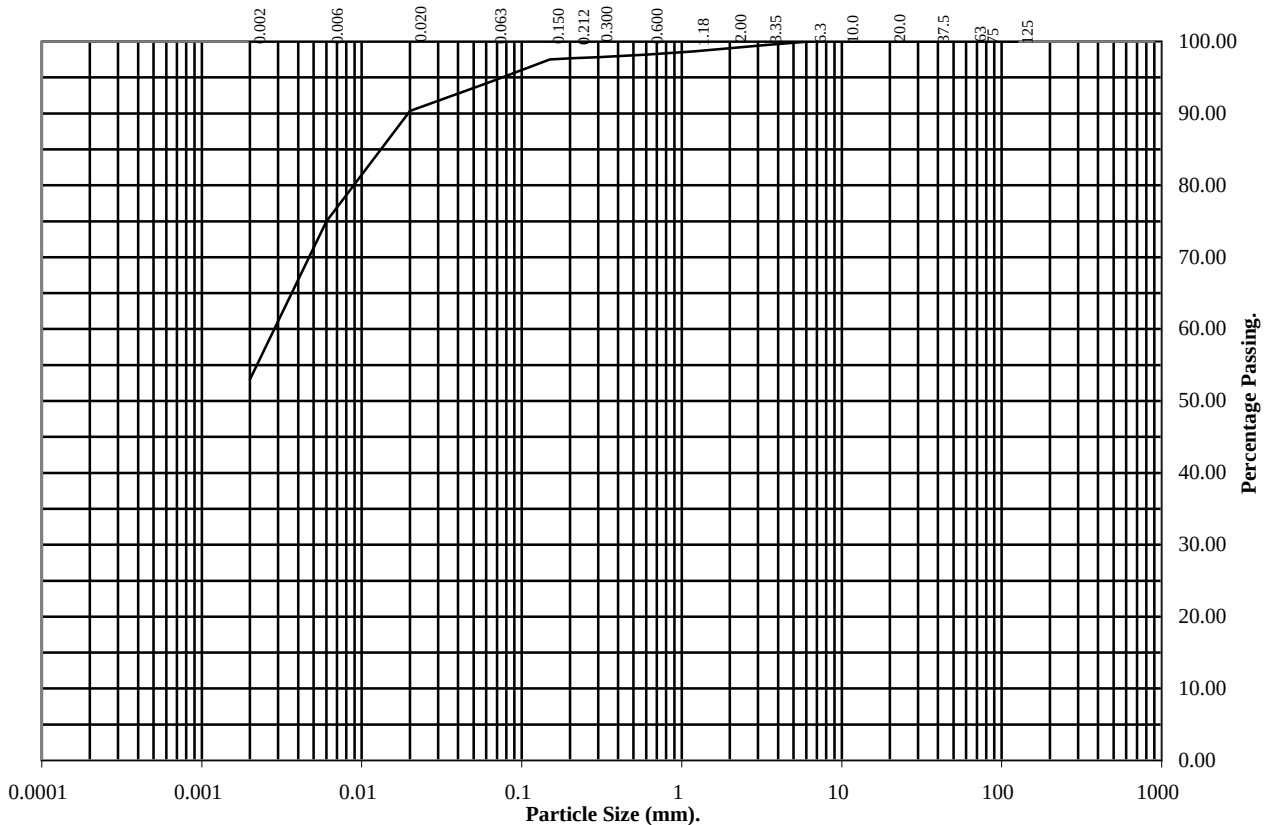
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP805

Depth (m): 4.50

Sample Number: 2

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	100
2	99
1.18	99
0.6	98
0.3	98
0.212	98
0.15	98
0.063	94

Particle Diameter	Percentage Passing
0.02	90
0.006	75
0.002	53

Soil Fraction	Total Percentage
Cobbles	0
Gravel	1
Sand	5
Silt	41
Clay	53

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

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Particle Size Distribution Test

BS1377 : Part 2 : 1990

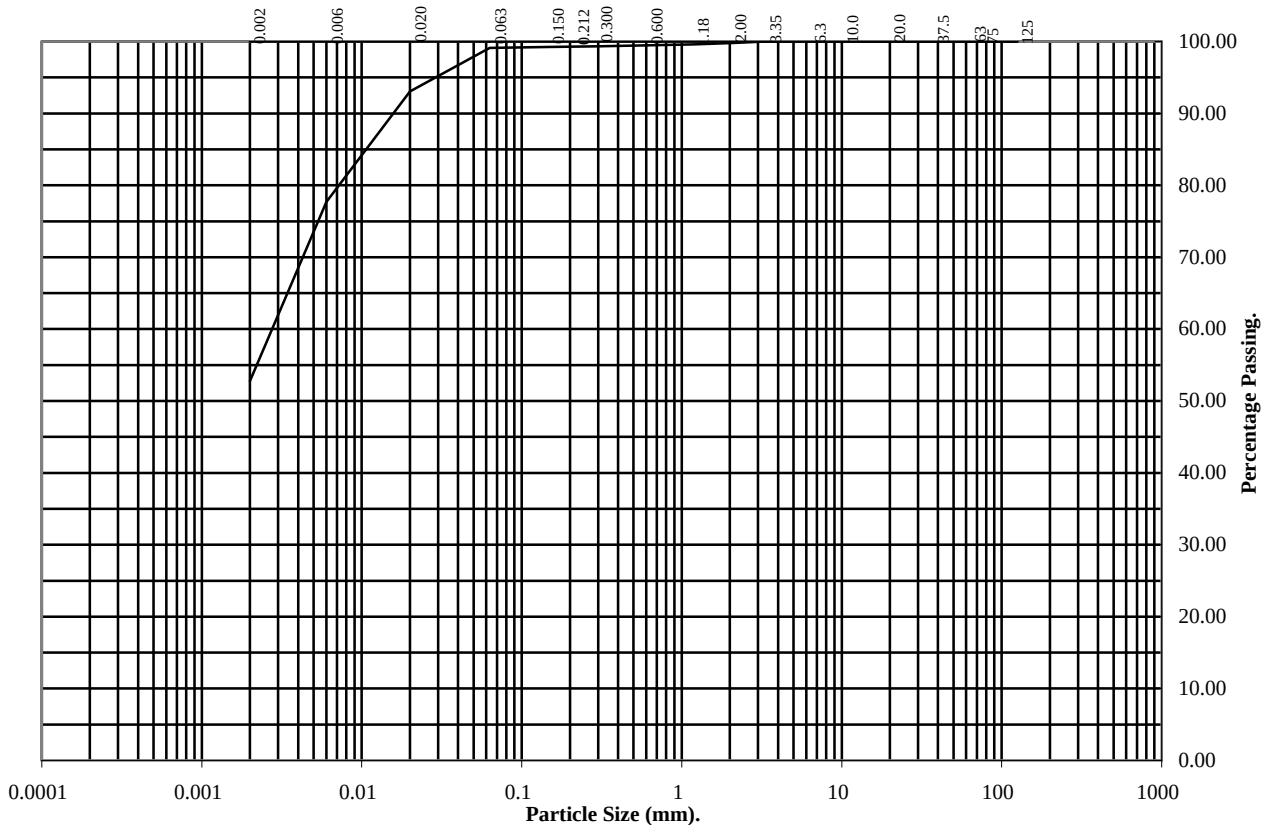
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP805

Depth (m): 9.50

Sample Number: 3

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	100
2	100
1.18	100
0.6	99
0.3	99
0.212	99
0.15	99
0.063	99

Particle Diameter	Percentage Passing
0.02	93
0.006	78
0.002	53

Soil Fraction	Total Percentage
Cobbles	0
Gravel	0
Sand	1
Silt	46
Clay	53

Remarks:
See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

Particle Size Distribution Test

BS1377 : Part 2 : 1990

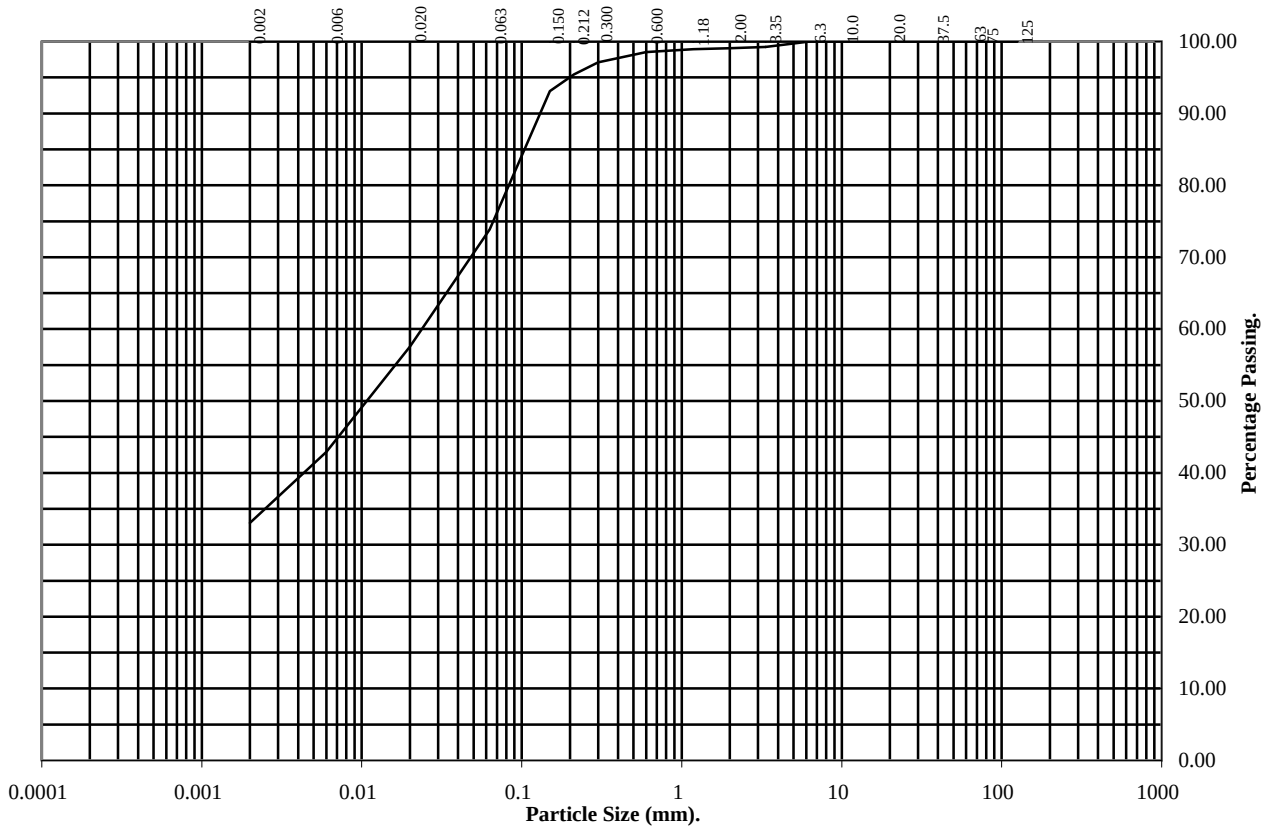
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP805

Depth (m): 19.50

Sample Number: 2

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	99
2	99
1.18	99
0.6	99
0.3	97
0.212	95
0.15	93
0.063	74

Particle Diameter	Percentage Passing
0.02	58
0.006	43
0.002	33

Soil Fraction	Total Percentage
Cobbles	0
Gravel	1
Sand	25
Silt	41
Clay	33

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>RE</i>	04/12/14	<i>RE</i>	04/12/14

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Particle Size Distribution Test

BS1377 : Part 2 : 1990

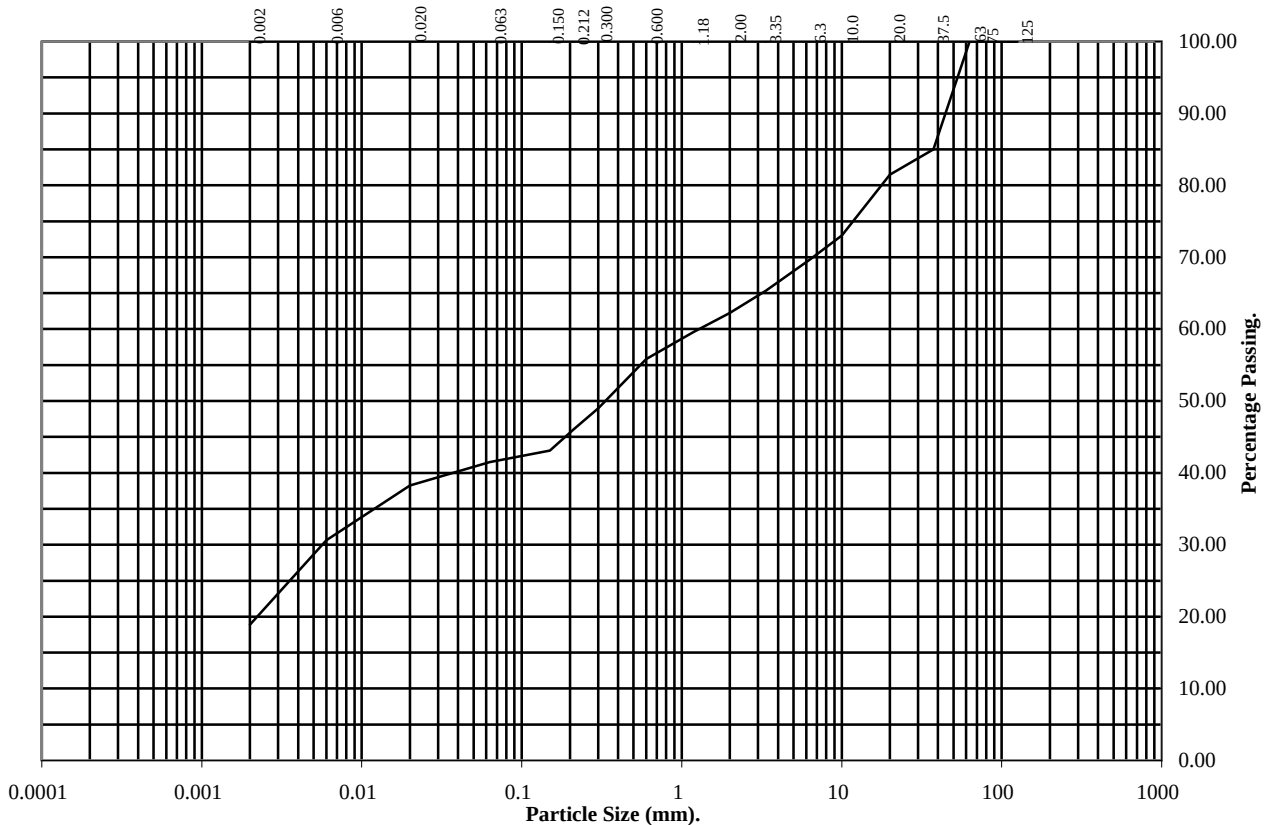
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP806

Depth (m): 0.50

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	85
20	81
10	73
6.3	70
3.35	65
2	62
1.18	60
0.6	56
0.3	49
0.212	46
0.15	43
0.063	42

Particle Diameter	Percentage Passing
0.02	38
0.006	31
0.002	19

Soil Fraction	Total Percentage
Cobbles	0
Gravel	38
Sand	20
Silt	23
Clay	19

Remarks:

See summary of soil descriptions.

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Particle Size Distribution Test

BS1377 : Part 2 : 1990

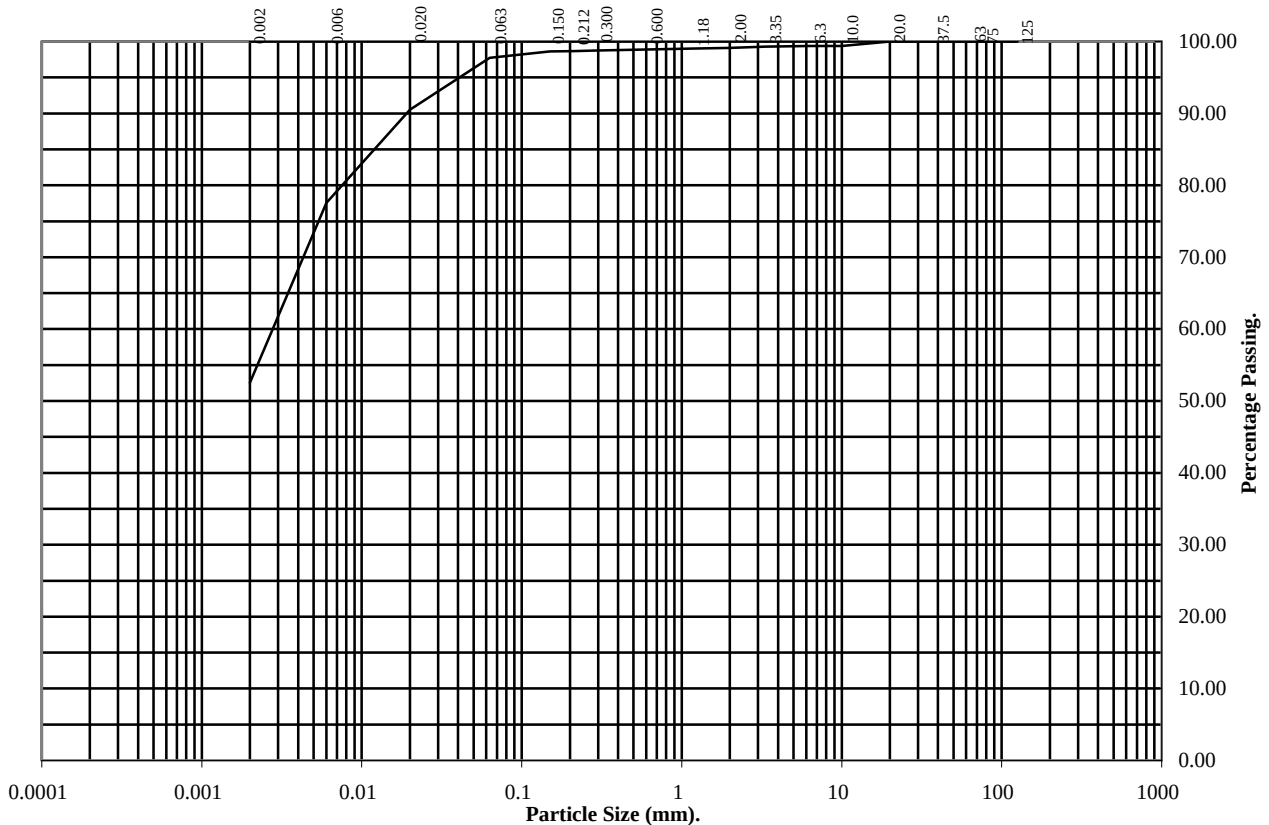
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP806

Depth (m): 4.50

Sample Number: 2

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	99
6.3	99
3.35	99
2	99
1.18	99
0.6	99
0.3	99
0.212	99
0.15	99
0.063	98

Particle Diameter	Percentage Passing
0.02	91
0.006	78
0.002	53

Soil Fraction	Total Percentage
Cobbles	0
Gravel	1
Sand	1
Silt	45
Clay	53

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

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Contract No.:
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Particle Size Distribution Test

BS1377 : Part 2 : 1990

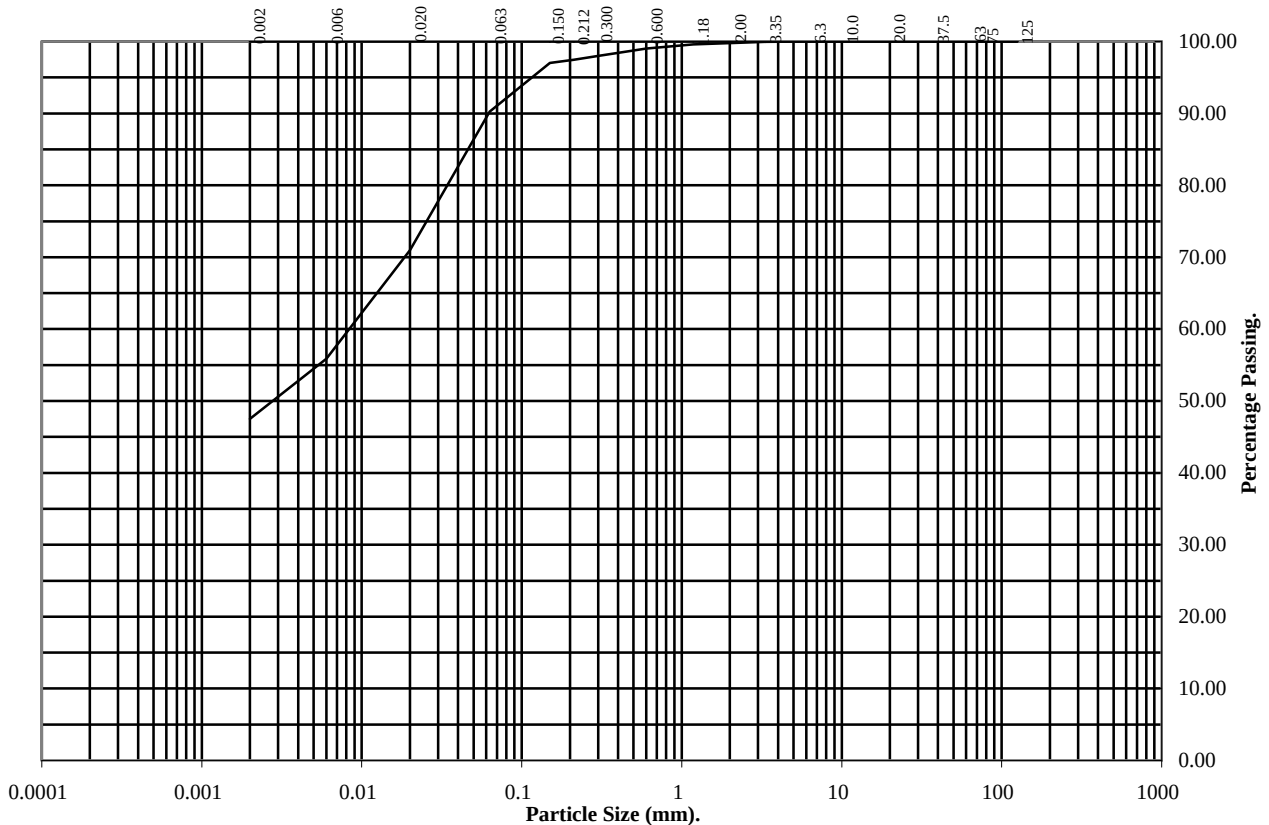
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: CP806

Depth (m): 14.50

Sample Number: 4

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	100
2	100
1.18	100
0.6	99
0.3	98
0.212	97
0.15	97
0.063	90

Particle Diameter	Percentage Passing
0.02	71
0.006	56
0.002	48

Soil Fraction	Total Percentage
Cobbles	0
Gravel	0
Sand	10
Silt	42
Clay	48

Remarks:
See summary of soil descriptions.

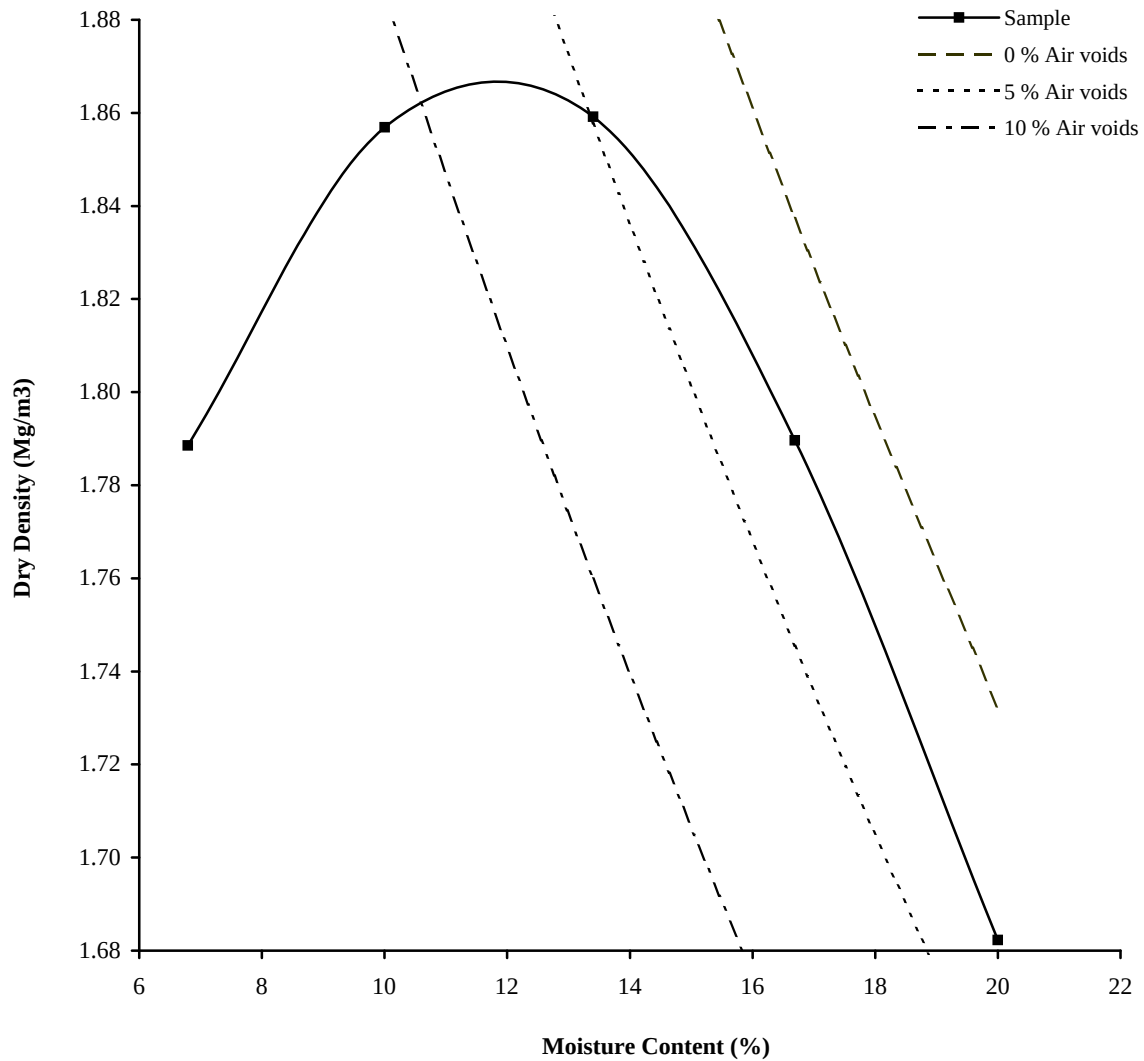
Checked By	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

Dry Density/Moisture Content Relationship Test

BS 1377 : Part 4 : 1990

Hole Number: CP801 Depth (m) : 0.50

Sample Number: 1 Sample Type: B



Initial Moisture Content:	17	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	4
Maximum Dry Density (Mg/m3):	1.86		Material Retained on 20.0 mm Test Sieve (%):	12
Optimum Moisture Content (%):	12			
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>RL</i>	04/12/14	<i>RL</i>	04/12/14

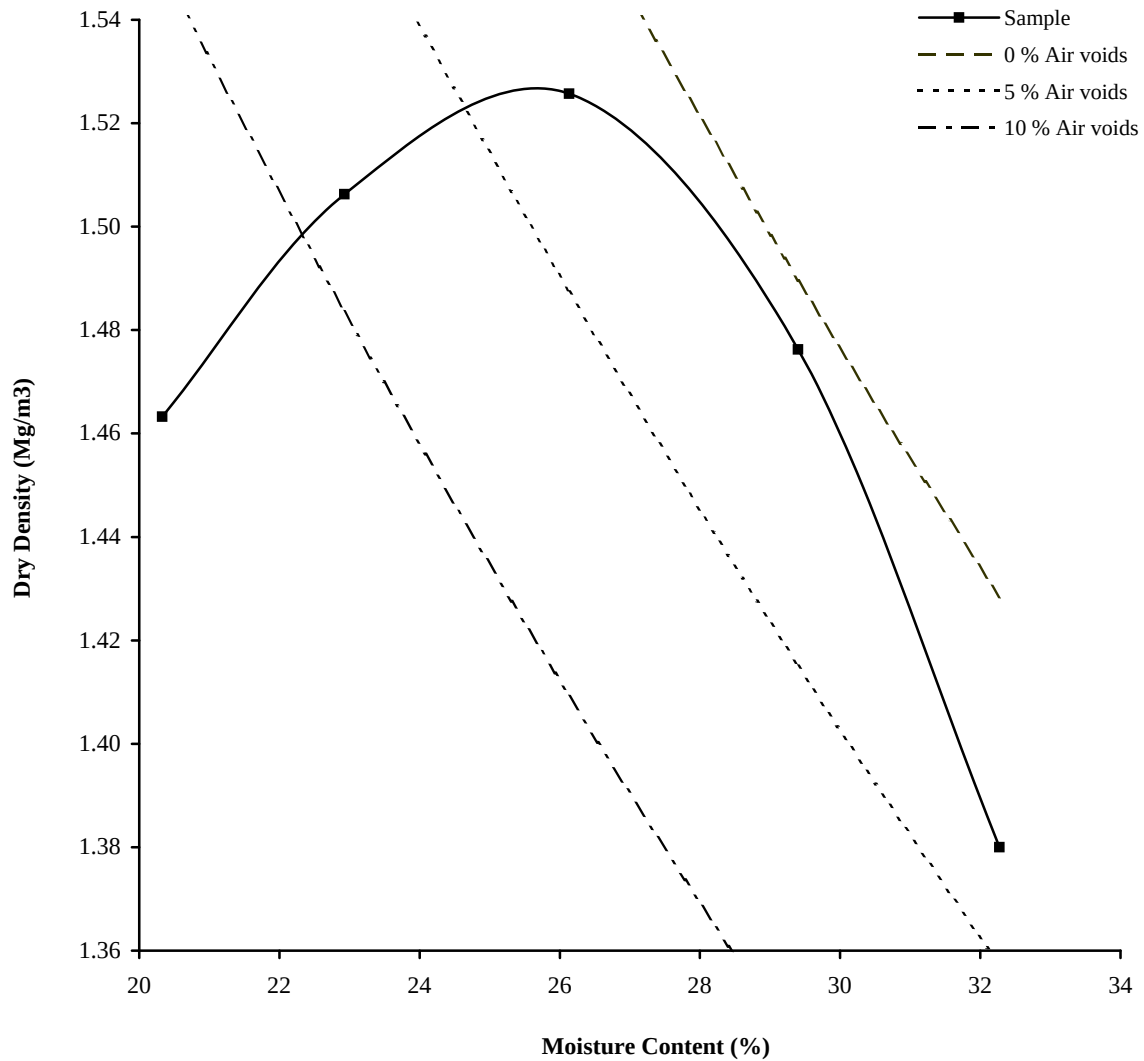
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

Dry Density/Moisture Content Relationship Test

BS 1377 : Part 4 : 1990

Hole Number: CP801 Depth (m) : 4.50

Sample Number: 2 Sample Type: B



Initial Moisture Content:	32	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):		1.53	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):		26		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>RL</i>	04/12/14	<i>RL</i>	04/12/14

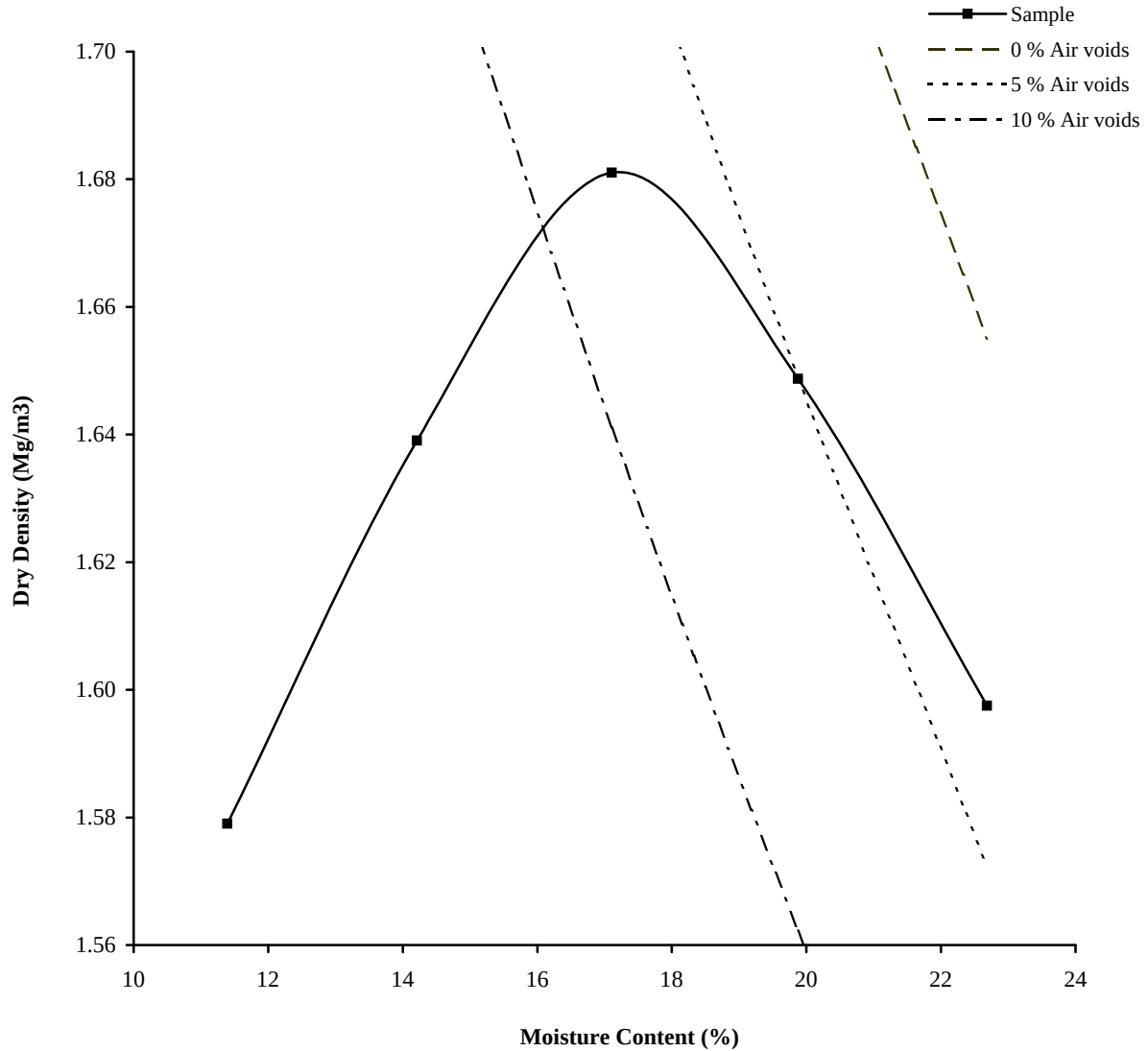
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

Dry Density/Moisture Content Relationship Test

BS 1377 : Part 4 : 1990

Hole Number: CP803 Depth (m) : 0.50

Sample Number: 1 Sample Type: B



Initial Moisture Content:	20	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	6
Maximum Dry Density (Mg/m3):		1.69	Material Retained on 20.0 mm Test Sieve (%):	11
Optimum Moisture Content (%):		17		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>RL</i>	04/12/14	<i>RL</i>	04/12/14

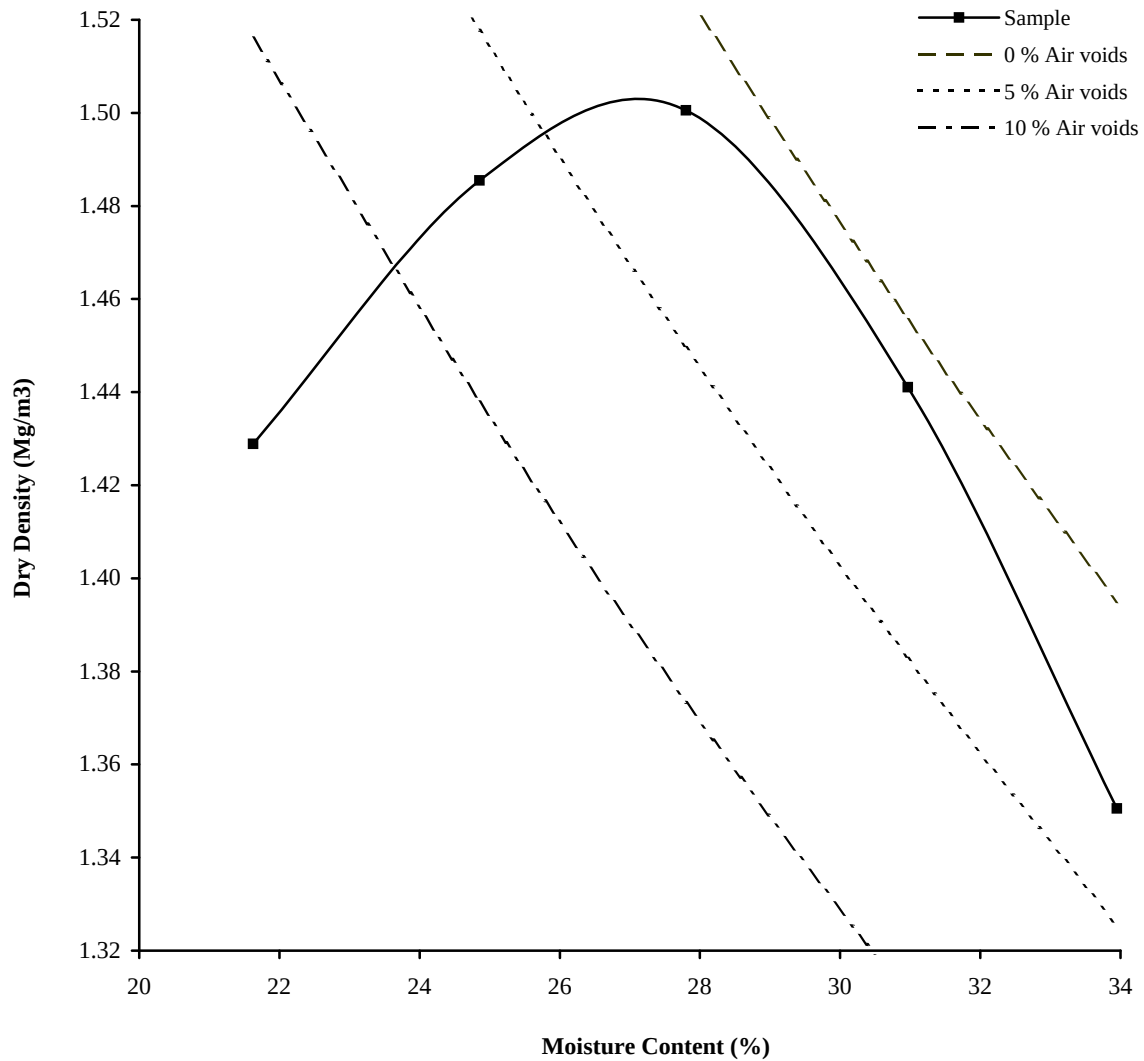
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

Dry Density/Moisture Content Relationship Test

BS 1377 : Part 4 : 1990

Hole Number: CP803 Depth (m) : 4.50

Sample Number: 2 Sample Type: B



Initial Moisture Content:	31	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):		1.50	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):		27		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

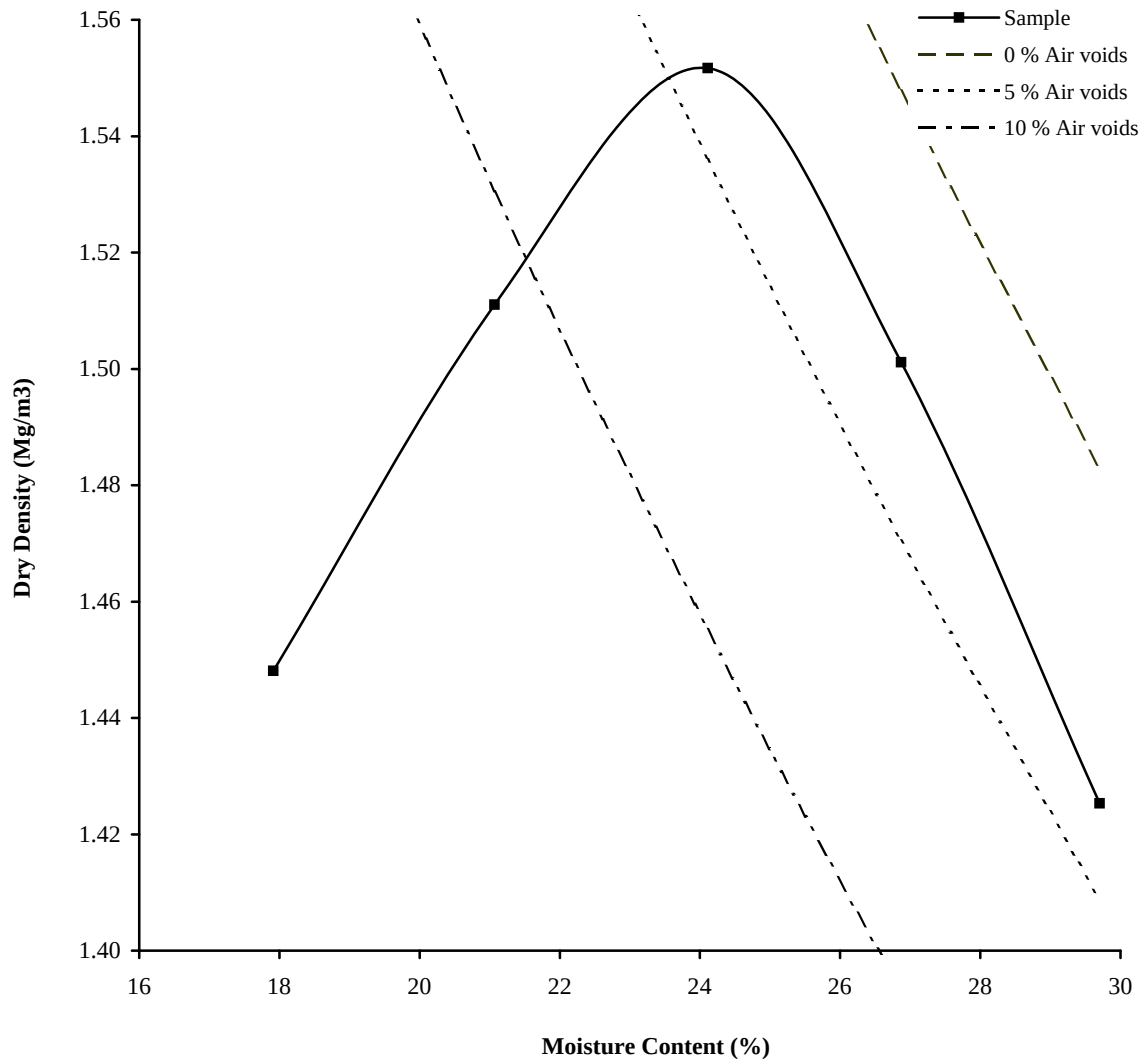
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

Dry Density/Moisture Content Relationship Test

BS 1377 : Part 4 : 1990

Hole Number: CP805 Depth (m) : 0.50

Sample Number: 1 Sample Type: B



Initial Moisture Content:	27	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):		1.55	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):		24		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

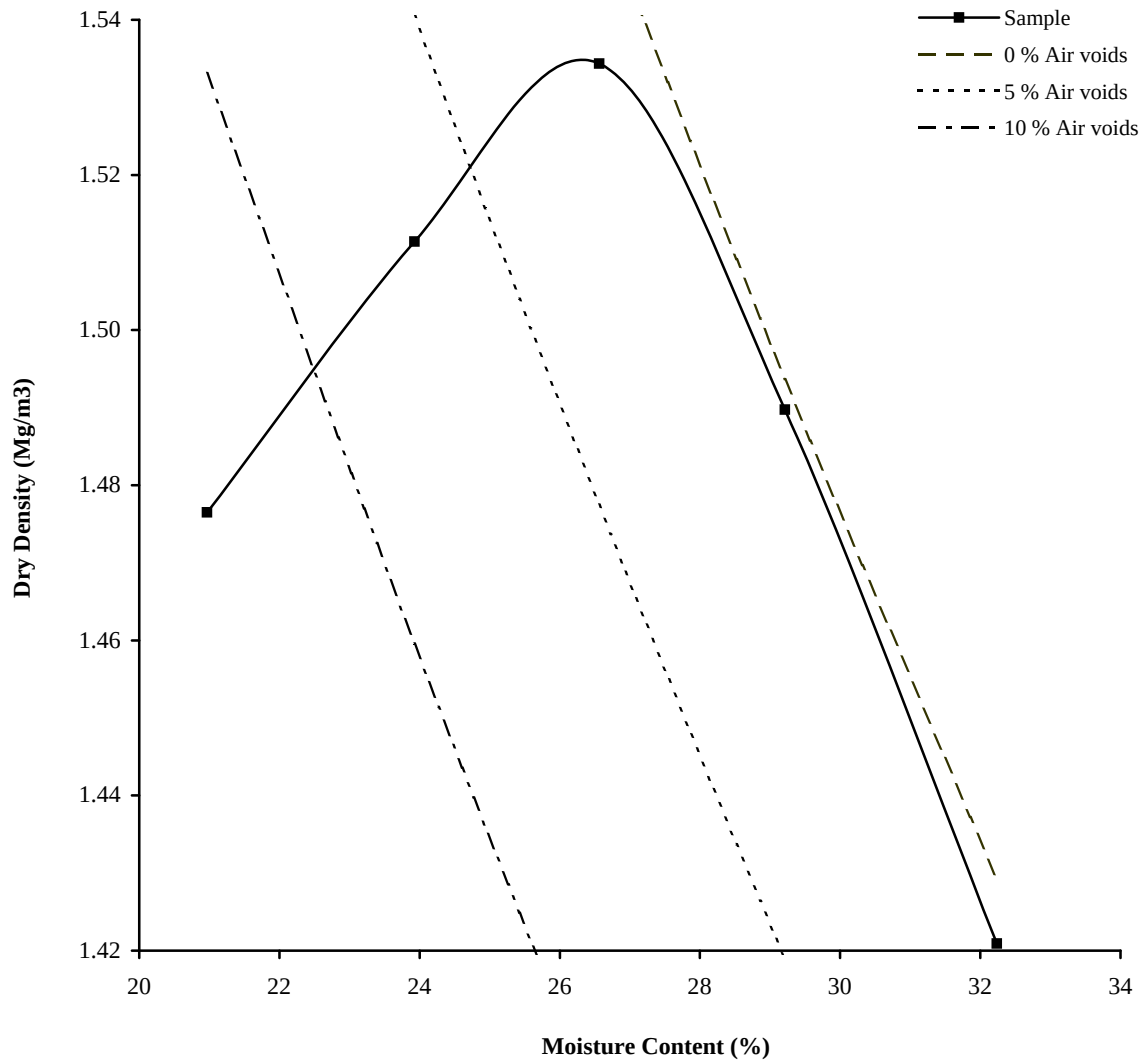
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

Dry Density/Moisture Content Relationship Test

BS 1377 : Part 4 : 1990

Hole Number: CP805 Depth (m) : 4.50

Sample Number: 2 Sample Type: B



Initial Moisture Content:	29	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):		1.53	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):		26		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>RL</i>	04/12/14	<i>RL</i>	04/12/14

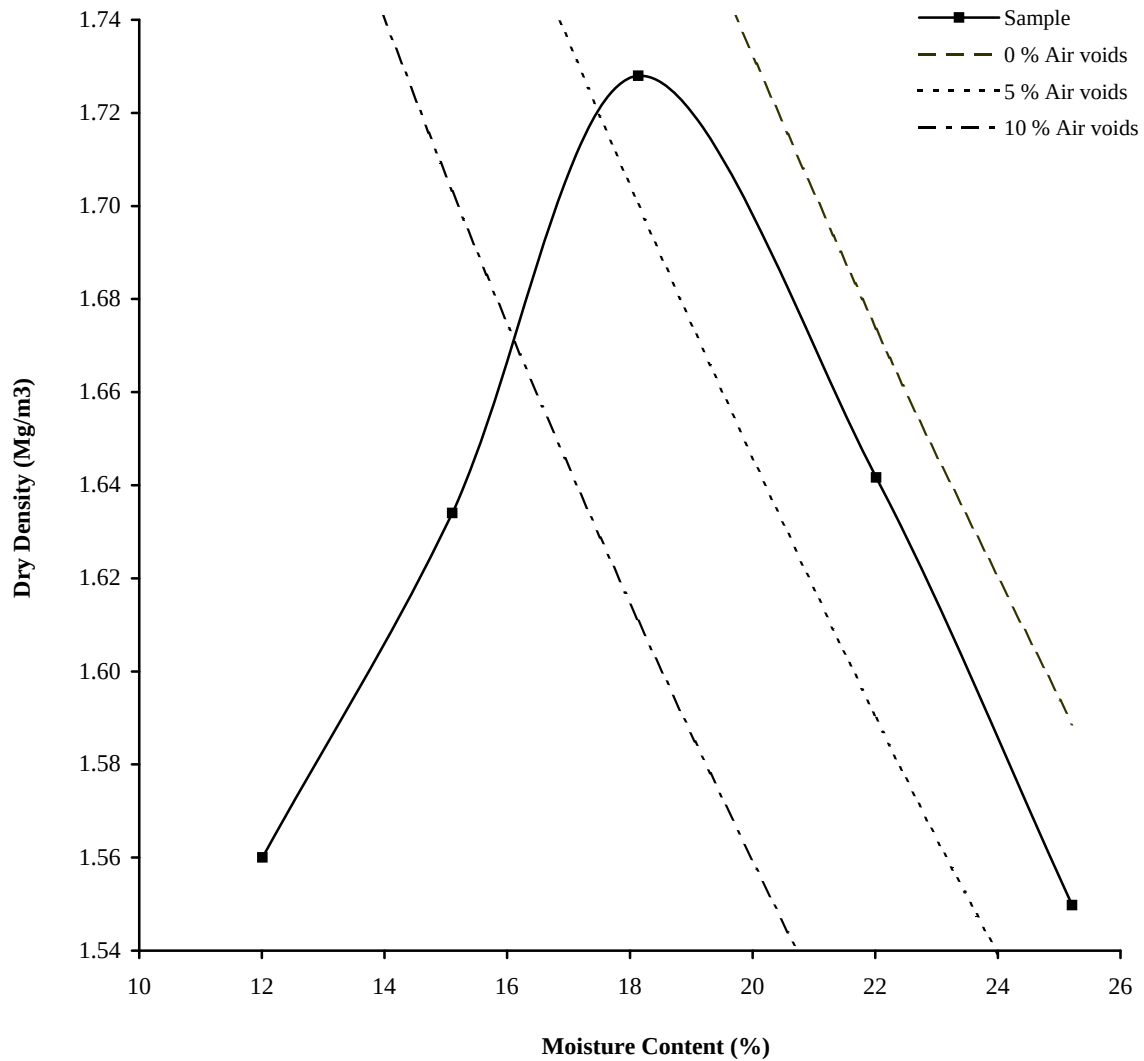
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

Dry Density/Moisture Content Relationship Test

BS 1377 : Part 4 : 1990

Hole Number: CP806 Depth (m) : 0.50

Sample Number: 1 Sample Type: B



Initial Moisture Content:	22	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	15
Maximum Dry Density (Mg/m3):		1.73	Material Retained on 20.0 mm Test Sieve (%):	4
Optimum Moisture Content (%):		18		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>Re</i>	04/12/14	<i>Re</i>	04/12/14

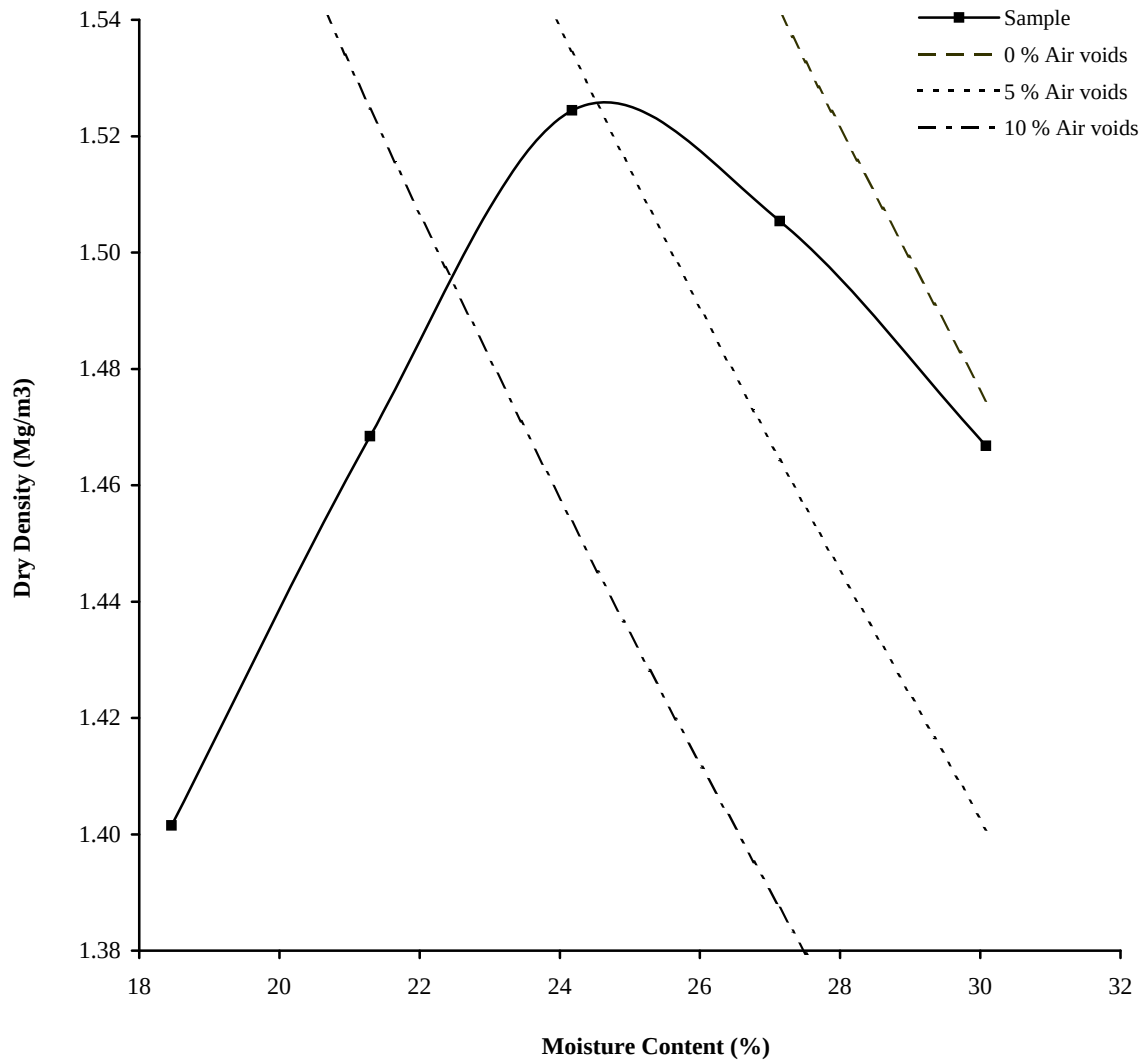
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

Dry Density/Moisture Content Relationship Test

BS 1377 : Part 4 : 1990

Hole Number: CP806 Depth (m) : 4.50

Sample Number: 2 Sample Type: B



Initial Moisture Content:	30	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):		1.52	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):		24		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>Re</i>	04/12/14	<i>Re</i>	04/12/14

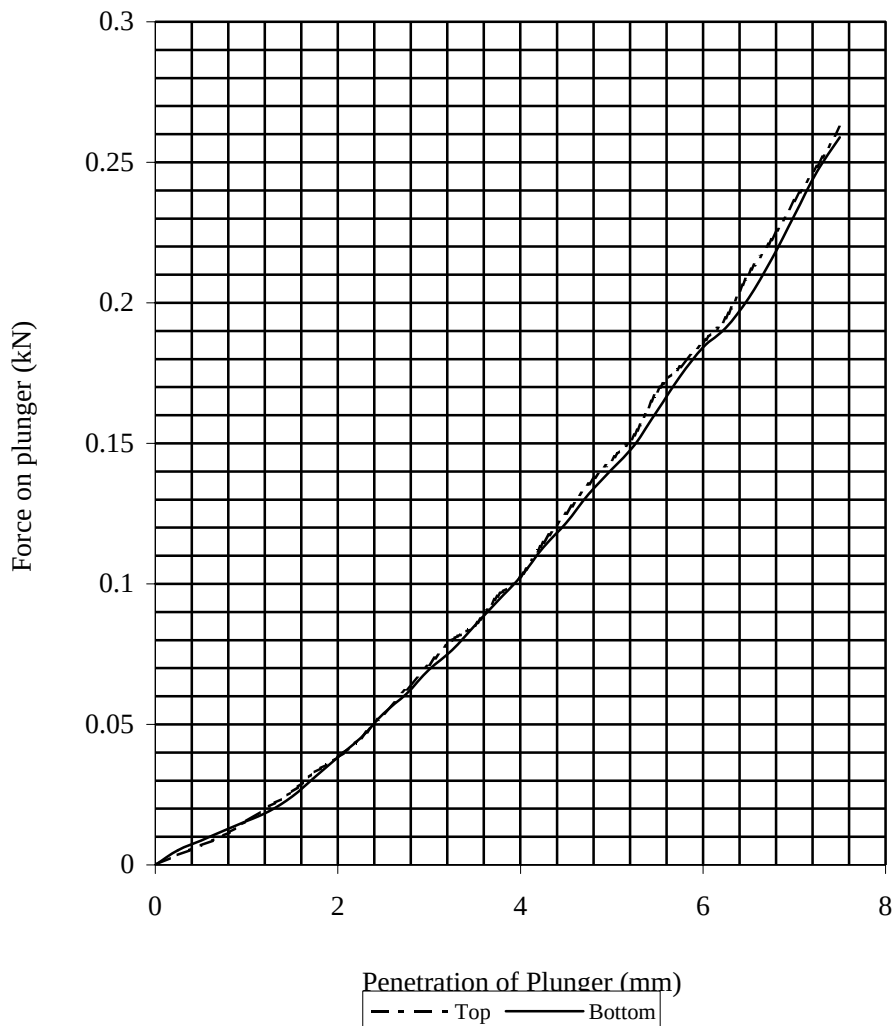
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP801 Depth (m): 0.50

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	17	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	2.09	Soaking Time hrs	0	Sample Top	17	Sample Top	0.7
Dry Density Mg/m3:	1.79	Swelling mm:	0	Sample Bottom	17	Sample Bottom	0.7
Percentage retained on 20mm BS test sieve:	16	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

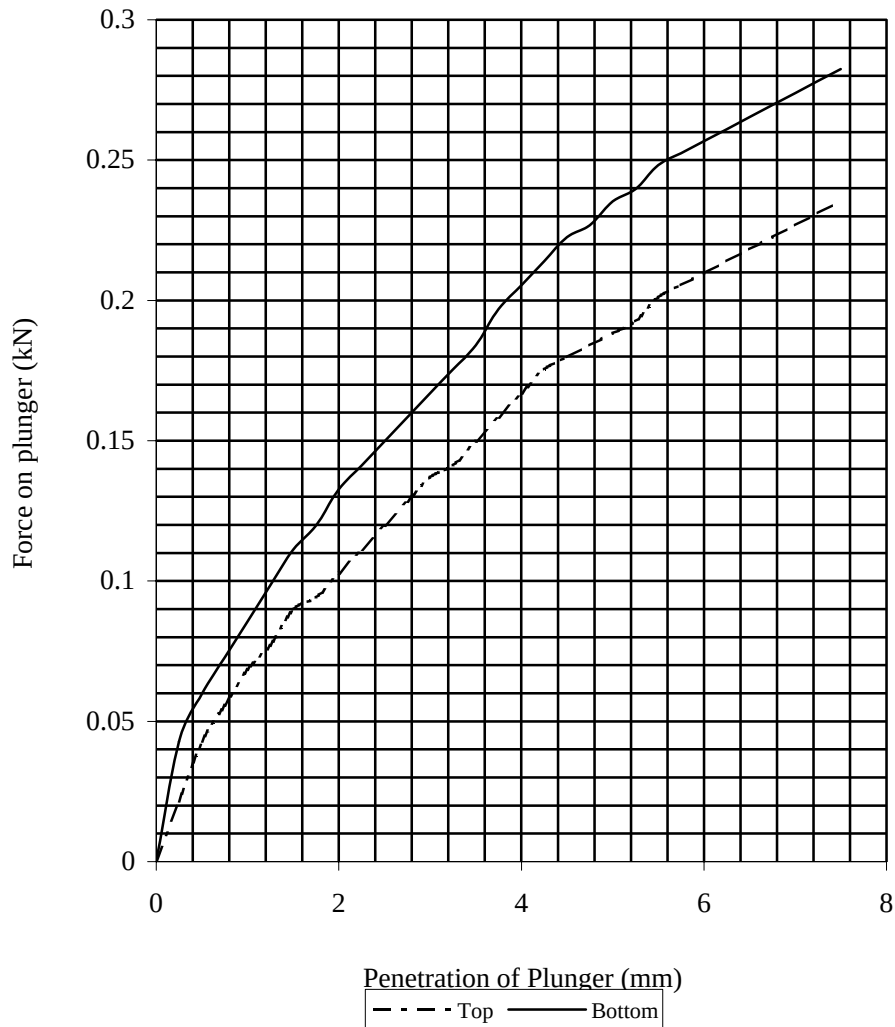
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP801 Depth (m): 4.50

Sample Number: 2 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	32	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m ³ :	1.83	Soaking Time hrs	0	Sample Top	32	Sample Top	0.9
Dry Density Mg/m ³ :	1.38	Swelling mm:	0	Sample Bottom	32	Sample Bottom	1.2
Percentage retained on 20mm BS test sieve:	0	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
	04/12/14		04/12/14

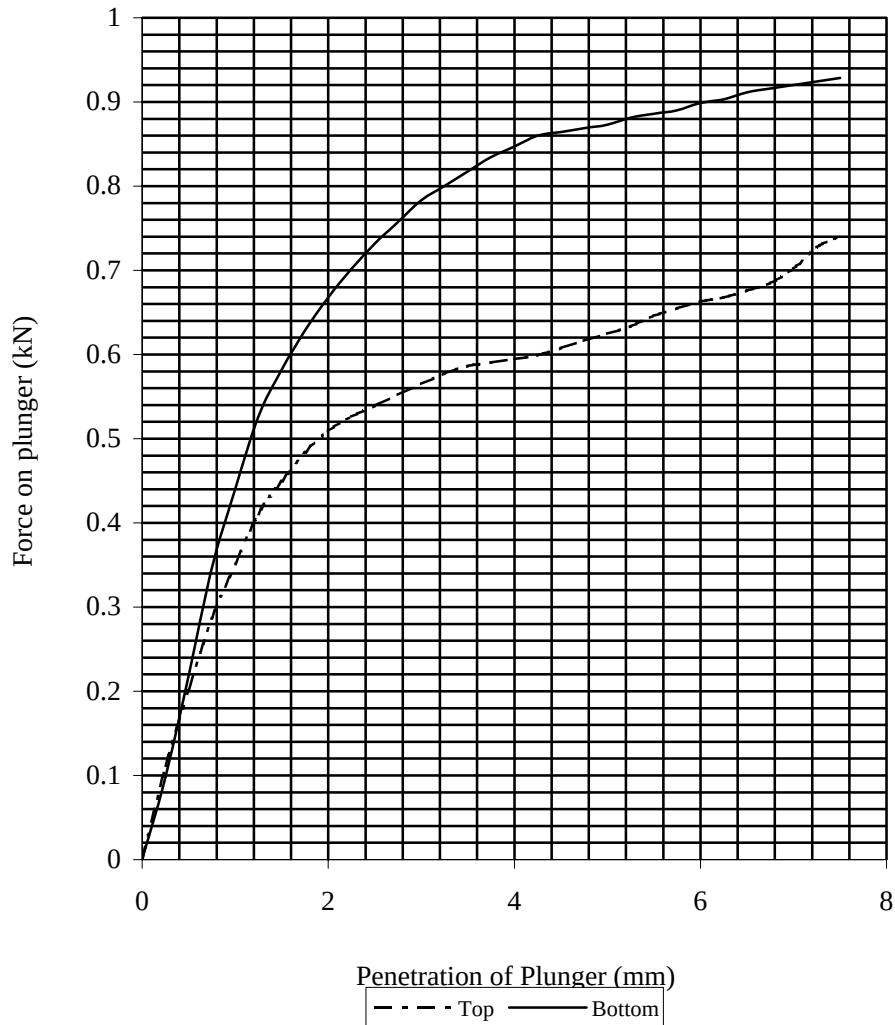
PSL Professional Soils Laboratory		ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP803 Depth (m): 0.50

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	20	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m ³ :	1.98	Soaking Time hrs	0	Sample Top	20	Sample Top	4.1
Dry Density Mg/m ³ :	1.65	Swelling mm:	0	Sample Bottom	20	Sample Bottom	5.5
Percentage retained on 20mm BS test sieve:	17	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>Re</i>	04/12/14	<i>Re</i>	04/12/14

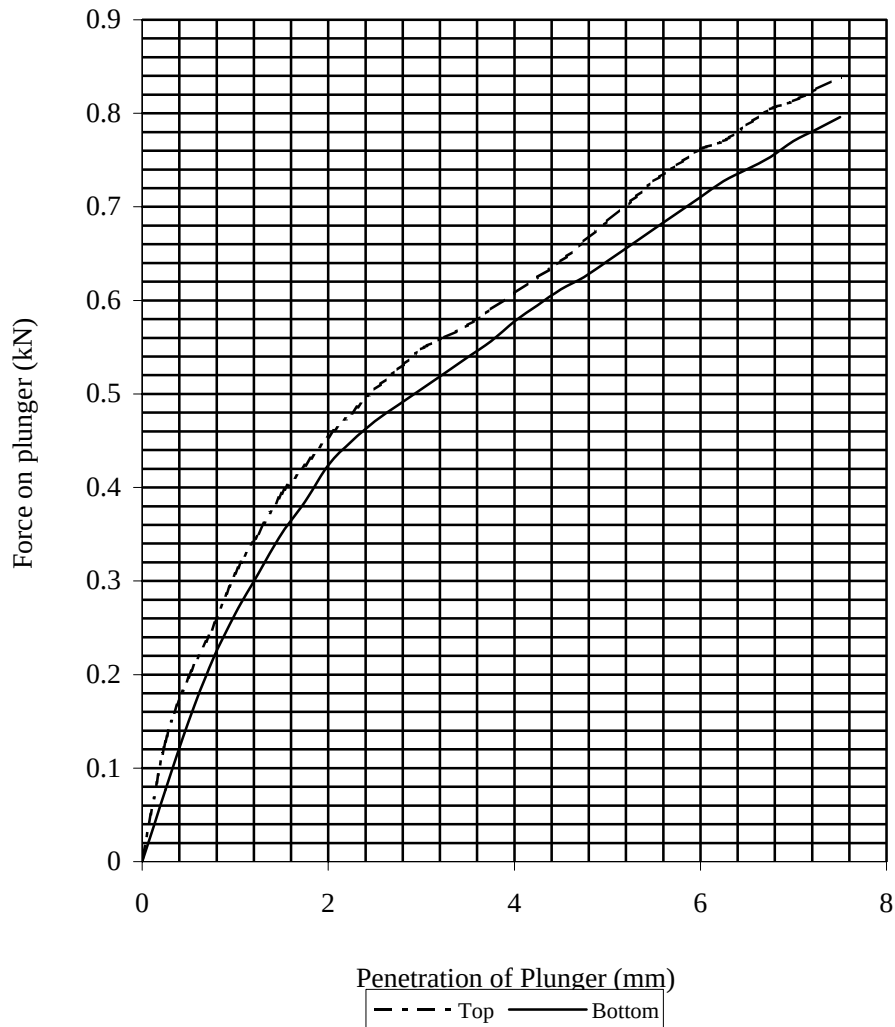
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP803 Depth (m): 4.50

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	31	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	1.89	Soaking Time hrs	0	Sample Top	31	Sample Top	3.8
Dry Density Mg/m3:	1.44	Swelling mm:	0	Sample Bottom	31	Sample Bottom	3.6
Percentage retained on 20mm BS test sieve:	0	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
	04/12/14		04/12/14

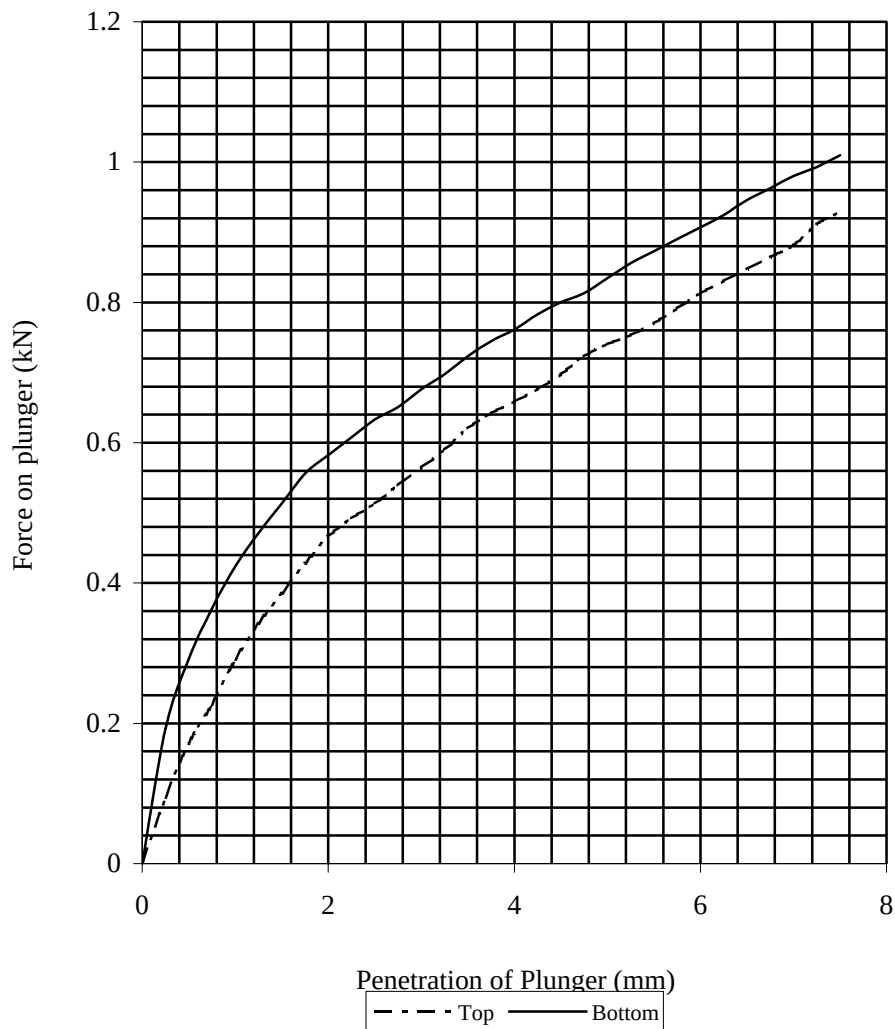
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP805 Depth (m): 0.50

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	27	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m ³ :	1.90	Soaking Time hrs	0	Sample Top	27	Sample Top	3.9
Dry Density Mg/m ³ :	1.50	Swelling mm:	0	Sample Bottom	27	Sample Bottom	4.8
Percentage retained on 20mm BS test sieve:	0	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

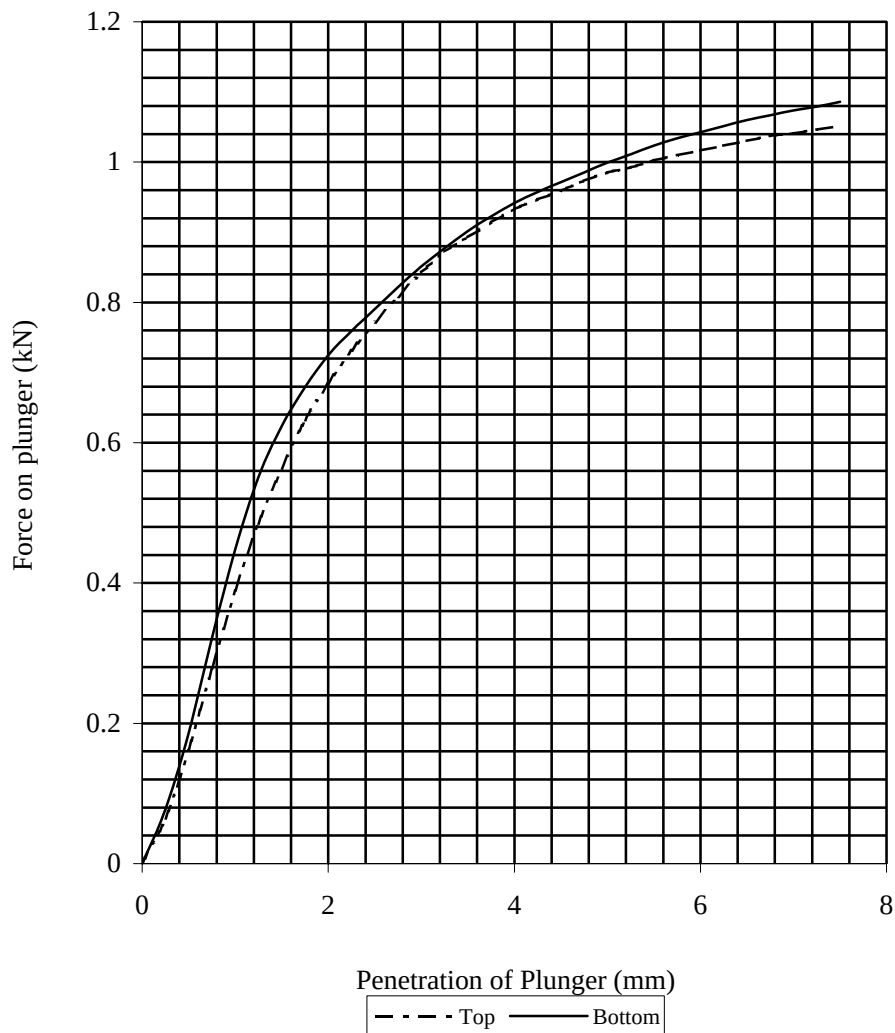
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP805 Depth (m): 4.50

Sample Number: 2 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	29	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	1.92	Soaking Time hrs	0	Sample Top	30	Sample Top	5.8
Dry Density Mg/m3:	1.49	Swelling mm:	0	Sample Bottom	29	Sample Bottom	6.0
Percentage retained on 20mm BS test sieve:	0	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

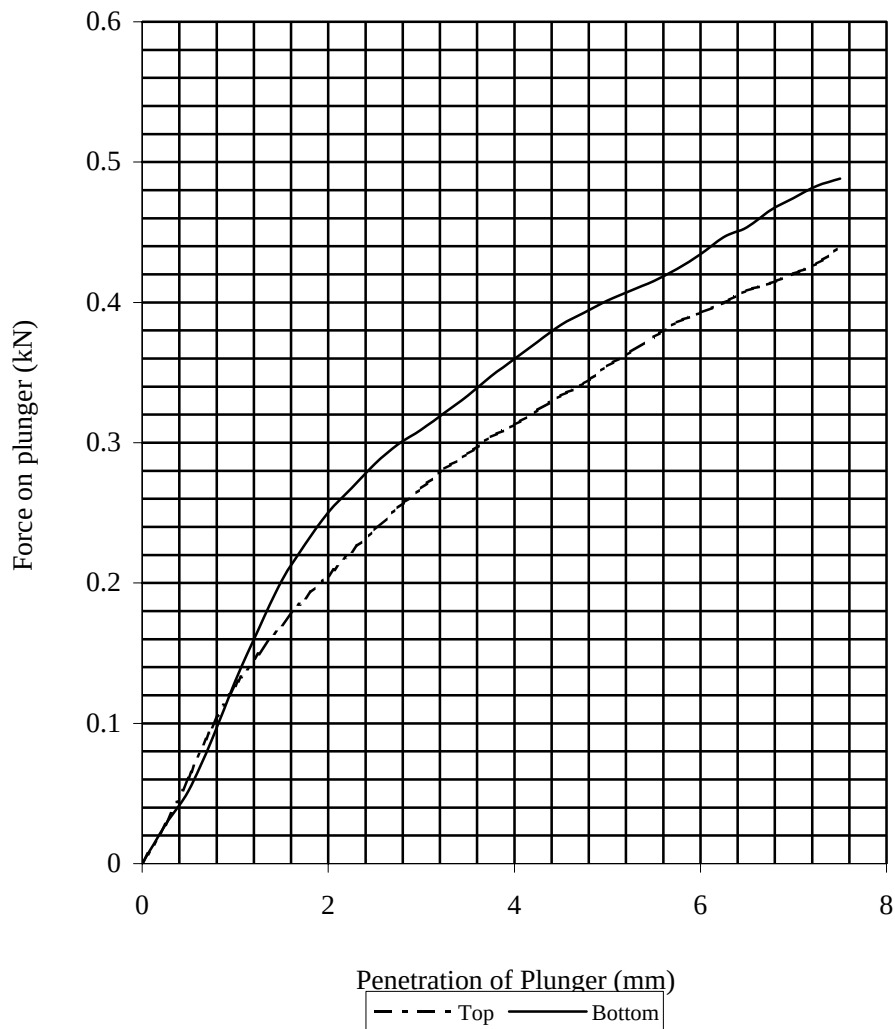
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP806 Depth (m): 0.50

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	22	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	2.00	Soaking Time hrs	0	Sample Top	22	Sample Top	1.8
Dry Density Mg/m3:	1.64	Swelling mm:	0	Sample Bottom	22	Sample Bottom	2.2
Percentage retained on 20mm BS test sieve:	19	Remarks: See Summary of Soil Description.					

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<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

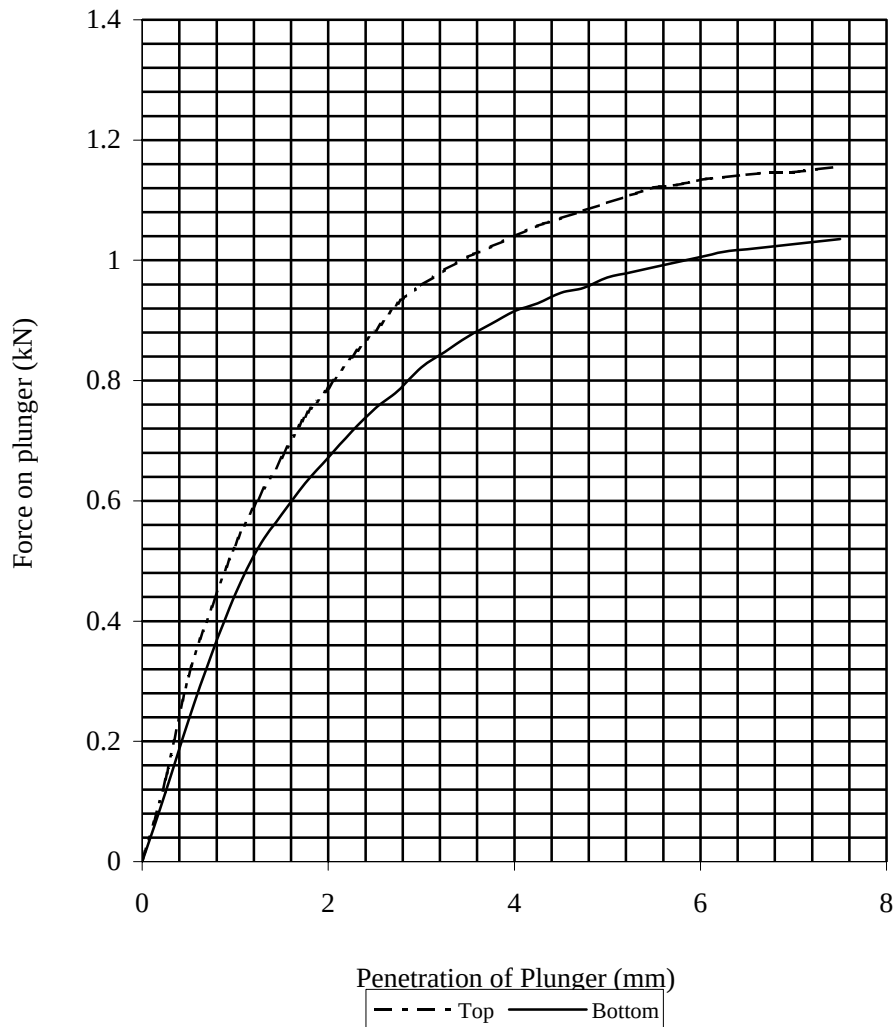
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: CP806 Depth (m): 4.50

Sample Number: 2 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	30	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	1.92	Soaking Time hrs	0	Sample Top	30	Sample Top	6.7
Dry Density Mg/m3:	1.47	Swelling mm:	0	Sample Bottom	30	Sample Bottom	5.7
Percentage retained on 20mm BS test sieve:	0	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>[Signature]</i>	04/15/14	<i>[Signature]</i>	04/15/14

PSL Professional Soils Laboratory		ST ANDREWS PARK.	Contract No. PSL14/6002

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BS 1377: Part 5: 1990

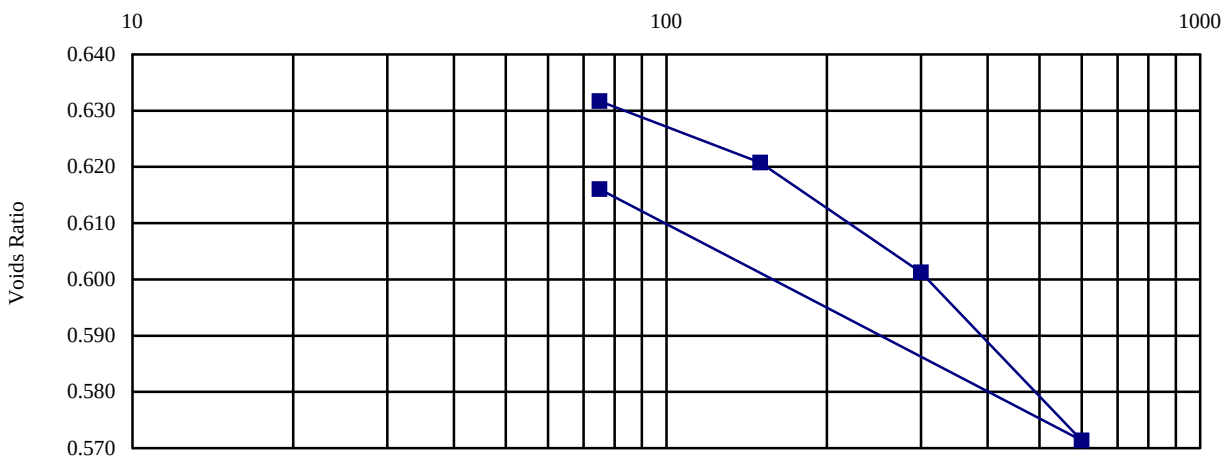
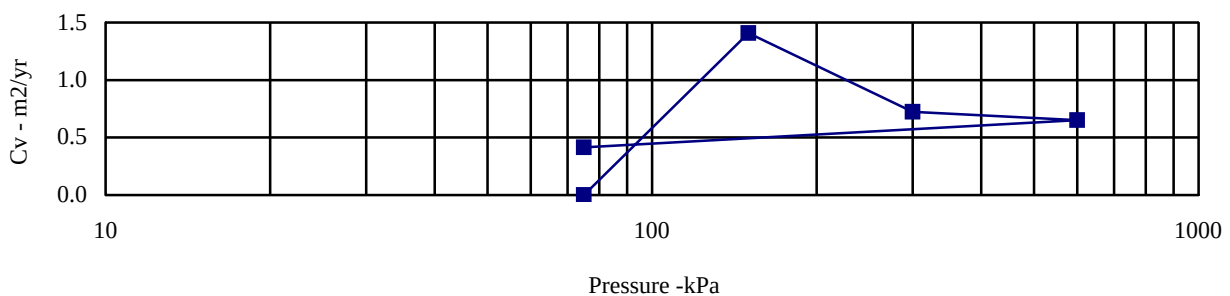
Hole Number: CP801

Depth (m): 15.50

Sample Number: 4

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	23	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	2.02	0	-	75	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.63	75	-	150	0.089	1.408	determine CV:	t90
Voids Ratio:	0.622	150	-	300	0.080	0.723	Nominal temperature	
Degree of saturation:	99.5	300	-	600	0.062	0.651	during test ' C:	20
Height (mm):	19.87	600	-	75	0.054	0.415	Remarks:	
Diameter (mm)	75.1	See summary of soils description.						
Particle Density (Mg/m3):	2.65							
Assumed								



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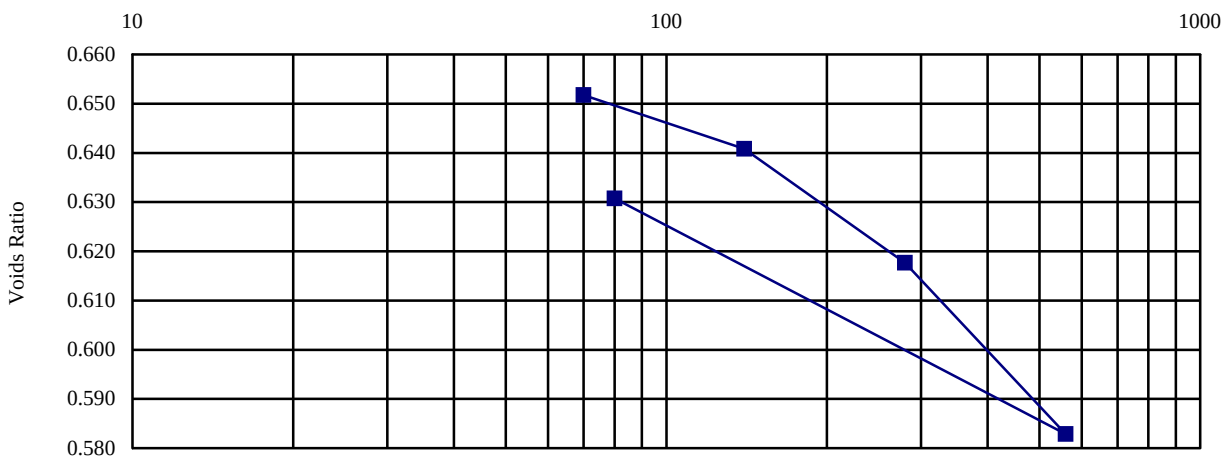
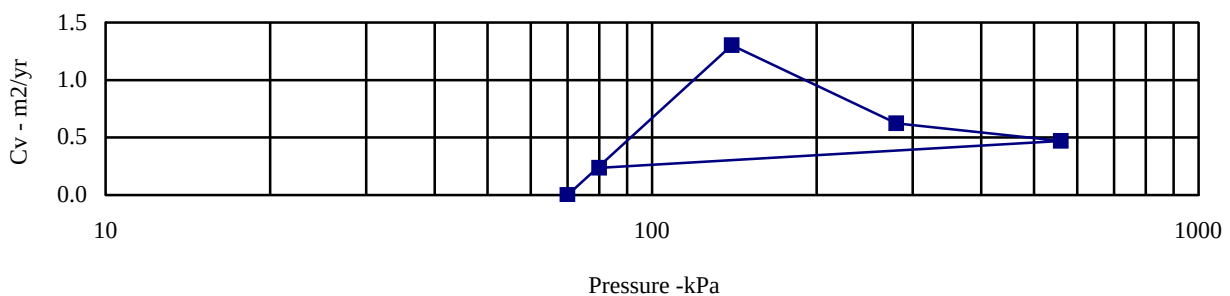
Hole Number: CP801

Depth (m): 6.50

Sample Number: 1

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	24	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	2.00	0	-	70	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.62	70	-	140	0.095	1.301	determine CV:	t90
Voids Ratio:	0.636	140	-	280	0.101	0.624	Nominal temperature	
Degree of saturation:	98.5	280	-	560	0.077	0.472	during test ' C:	20
Height (mm):	20.02	560	-	80	0.063	0.237	Remarks:	
Diameter (mm)	75.2	See summary of soils description.						
Particle Density (Mg/m3):	2.65							
Assumed								



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BS 1377: Part 5: 1990

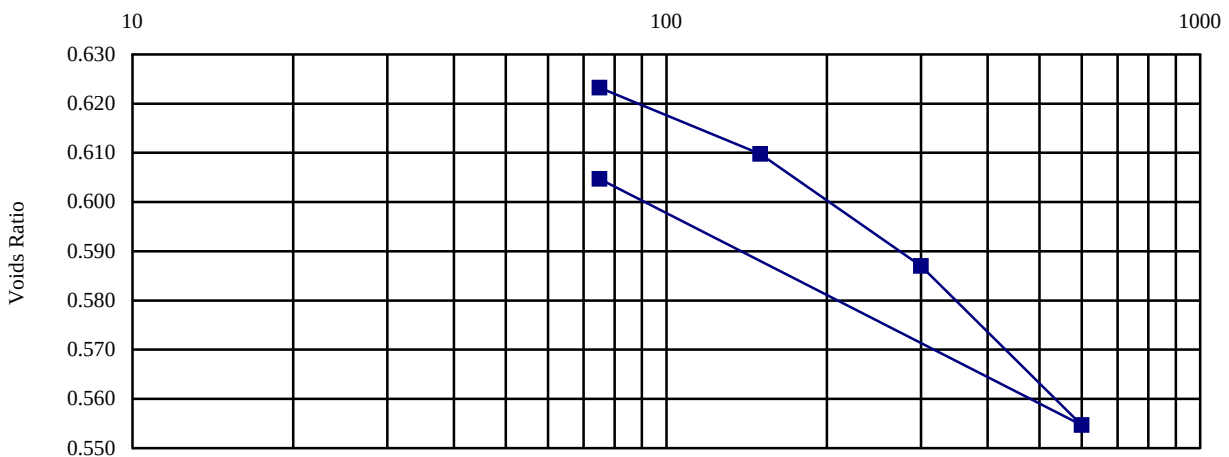
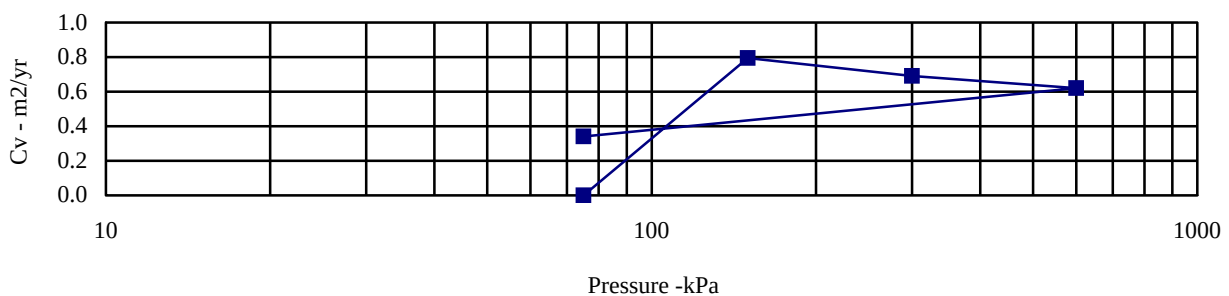
Hole Number: CP801

Depth (m): 18.50

Sample Number: 5

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	23	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	2.01	0	-	75	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.64	75	-	150	0.111	0.795	determine CV:	t90
Voids Ratio:	0.620	150	-	300	0.094	0.691	Nominal temperature	
Degree of saturation:	97.4	300	-	600	0.068	0.619	during test ' C:	20
Height (mm):	19.96	600	-	75	0.061	0.341	Remarks:	
Diameter (mm)	75.15	See summary of soils description.						
Particle Density (Mg/m3):	2.65							
Assumed								



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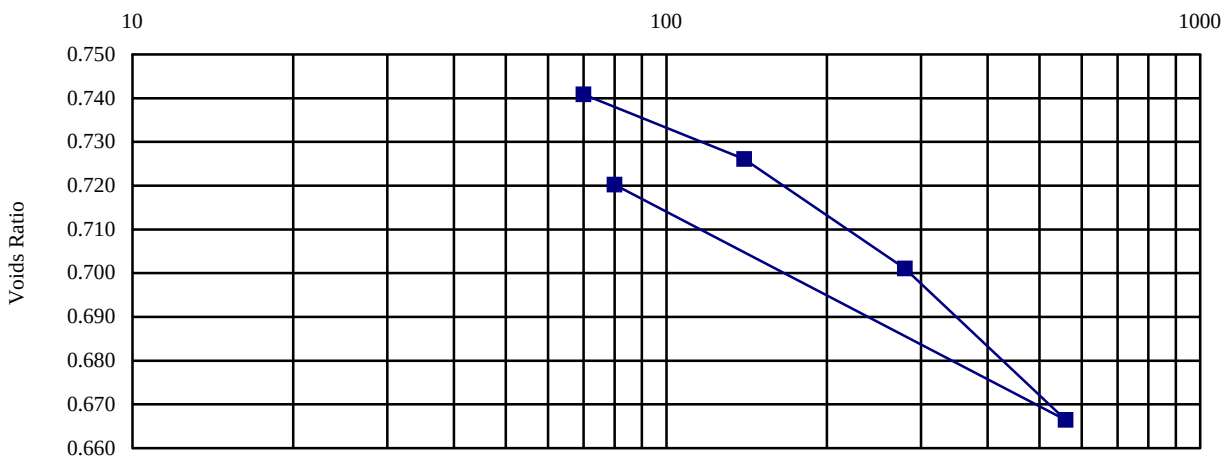
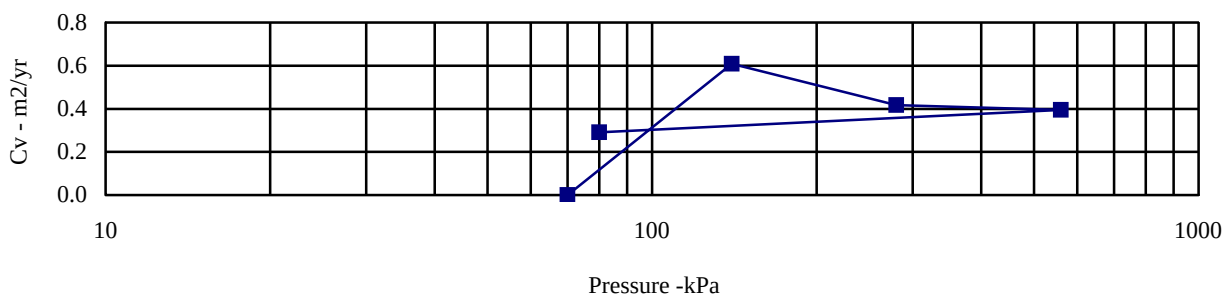
Hole Number: CP803

Depth (m): 9.50

Sample Number: 2

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	27	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	1.96	0	-	70	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.54	70	-	140	0.121	0.609	determine CV:	t90
Voids Ratio:	0.718	140	-	280	0.104	0.417	Nominal temperature	
Degree of saturation:	100.3	280	-	560	0.073	0.394	during test ' C:	20
Height (mm):	19.9	560	-	80	0.067	0.291	Remarks:	
Diameter (mm)	75.18	See summary of soils description.						
Particle Density (Mg/m3):	2.65							
Assumed								



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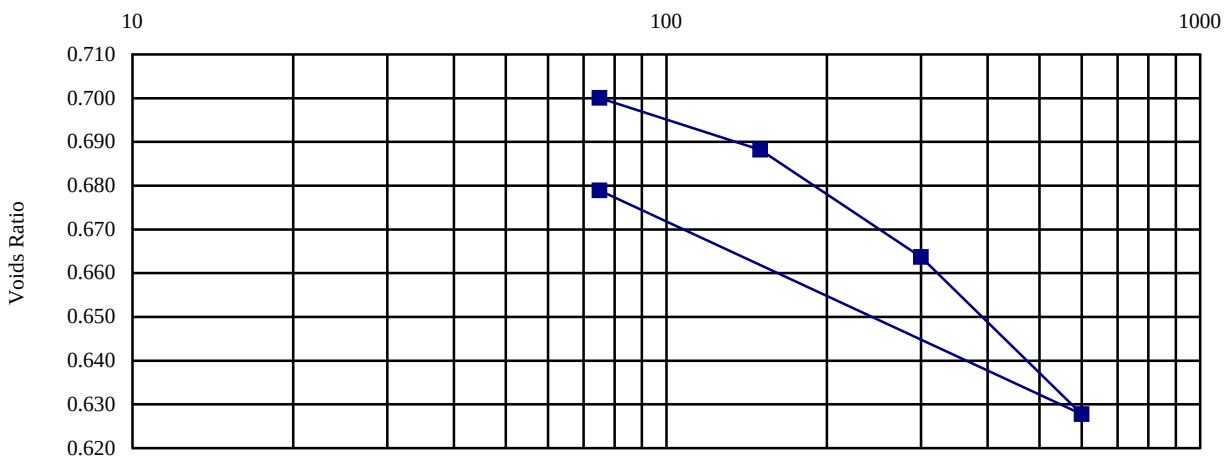
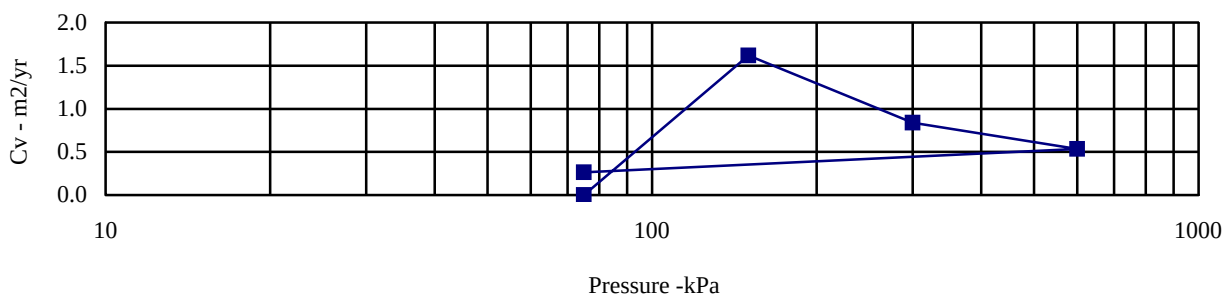
Hole Number: CP803

Depth (m): 15.50

Sample Number: 4

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	26	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	1.97	0	-	75	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.57	75	-	150	0.093	1.619	determine CV:	t90
Voids Ratio:	0.691	150	-	300	0.097	0.839	Nominal temperature	
Degree of saturation:	98.5	300	-	600	0.072	0.534	during test ' C:	20
Height (mm):	20.02	600	-	75	0.060	0.265	Remarks:	
Diameter (mm)	75.11	See summary of soils description.						
Particle Density (Mg/m3):	2.65							
Assumed								



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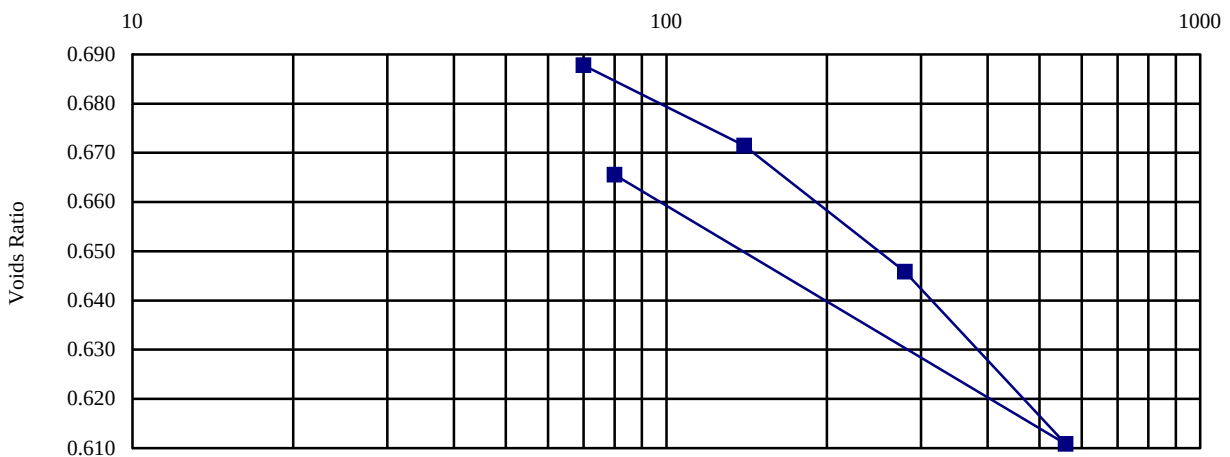
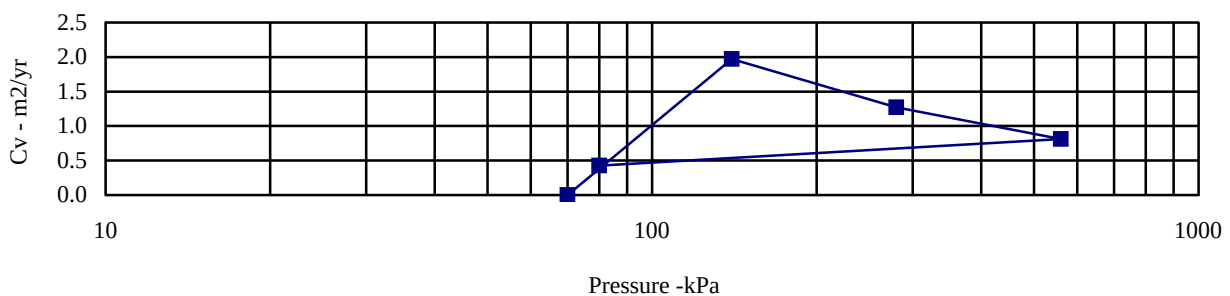
Hole Number: CP805

Depth (m): 9.50

Sample Number: 2

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	26	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	1.99	0	-	70	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.58	70	-	140	0.138	1.973	determine CV:	t90
Voids Ratio:	0.675	140	-	280	0.110	1.272	Nominal temperature	
Degree of saturation:	100.7	280	-	560	0.076	0.814	during test ' C:	20
Height (mm):	19.99	560	-	80	0.071	0.428	Remarks:	
Diameter (mm)	75.17	See summary of soils description.						
Particle Density (Mg/m3):	2.65							
Assumed								



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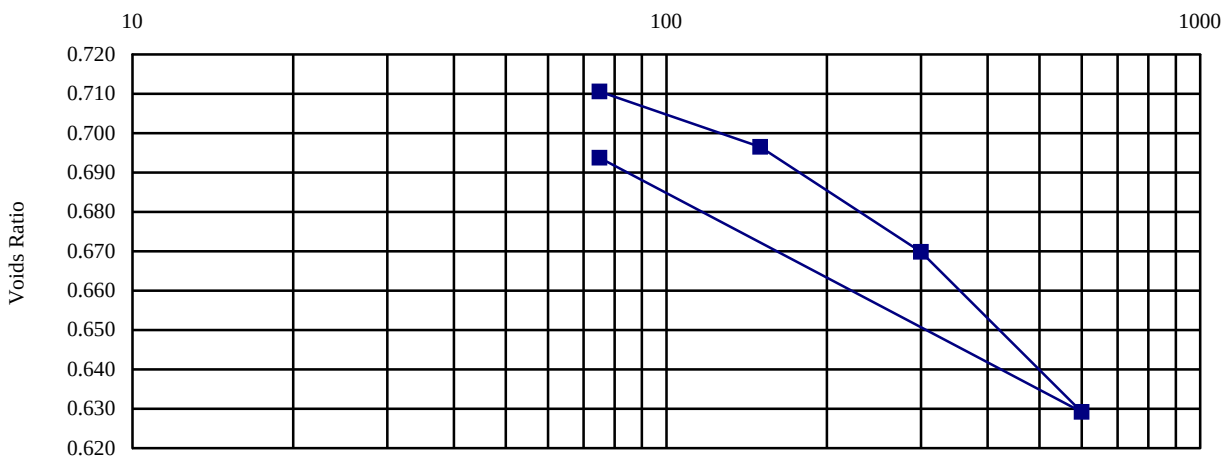
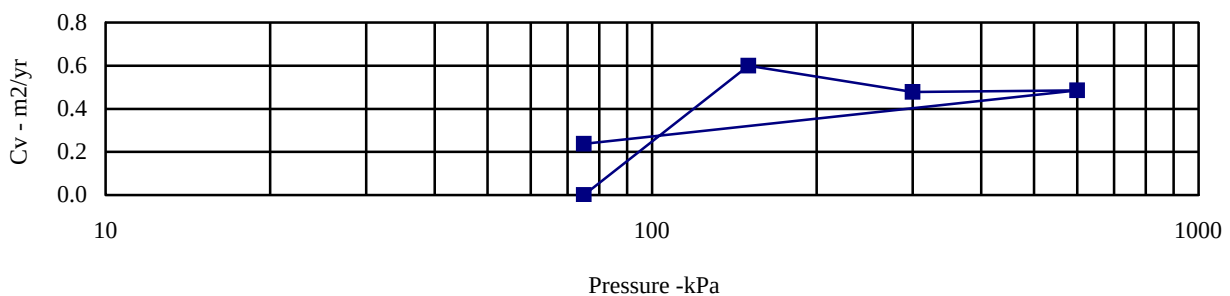
Hole Number: CP805

Depth (m): 12.50

Sample Number: 13

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	27	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	1.99	0	-	75	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.57	75	-	150	0.110	0.600	determine CV:	t90
Voids Ratio:	0.687	150	-	300	0.105	0.478	Nominal temperature	
Degree of saturation:	103.3	300	-	600	0.081	0.485	during test ' C:	20
Height (mm):	20.12	600	-	75	0.075	0.237	Remarks:	
Diameter (mm)	75.1	See summary of soils description.						
Particle Density (Mg/m3):	2.65							
Assumed								



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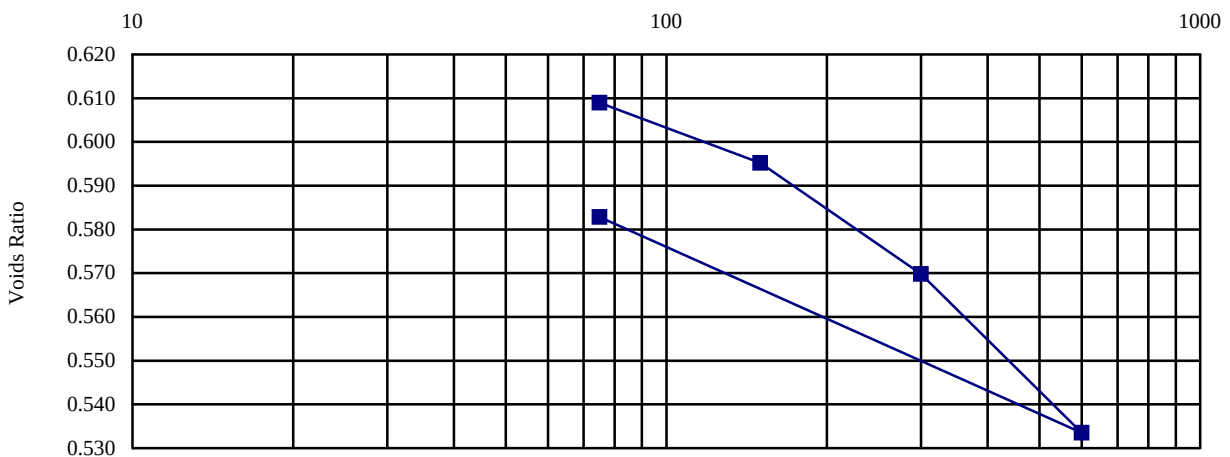
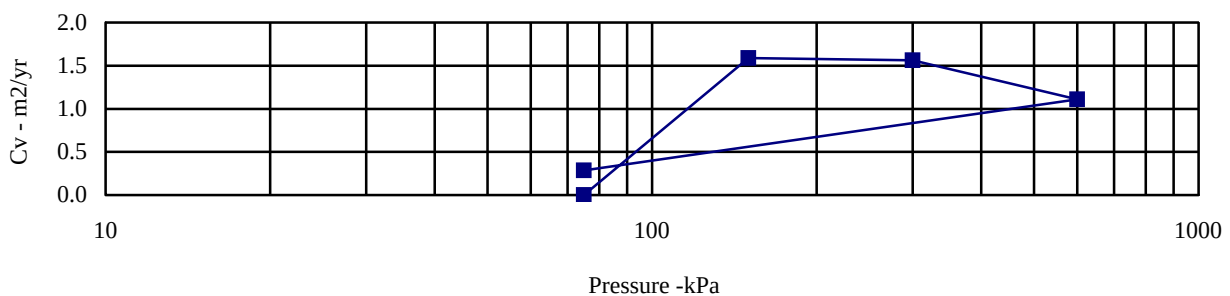
Hole Number: CP805

Depth (m): 18.50

Sample Number: 15

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	22	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	2.03	0	-	75	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.67	75	-	150	0.114	1.589	determine CV:	t90
Voids Ratio:	0.591	150	-	300	0.106	1.561	Nominal temperature	
Degree of saturation:	99.4	300	-	600	0.077	1.109	during test ' C:	20
Height (mm):	20.06	600	-	75	0.061	0.284	Remarks:	
Diameter (mm)	75.1	See summary of soils description.						
Particle Density (Mg/m3):	2.65							
Assumed								



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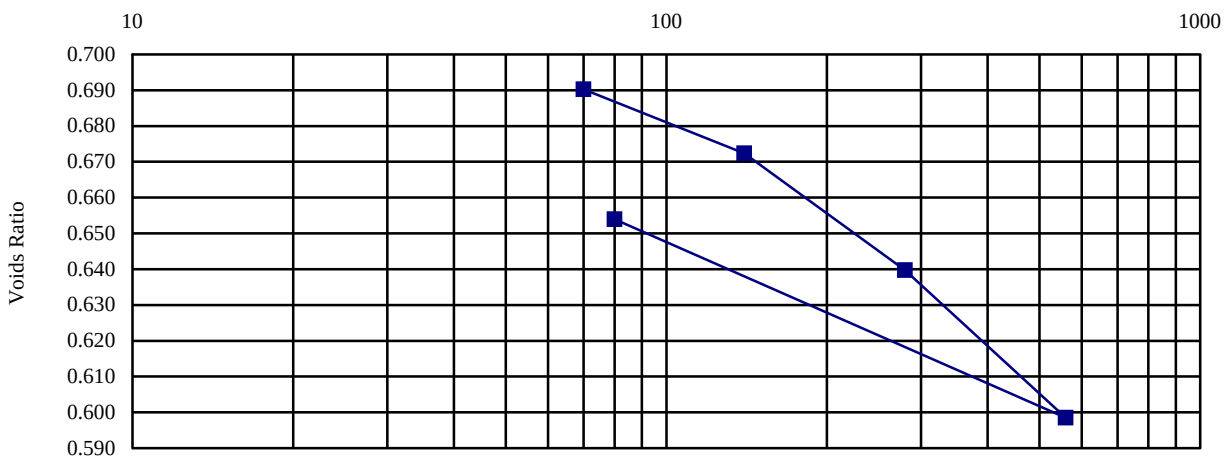
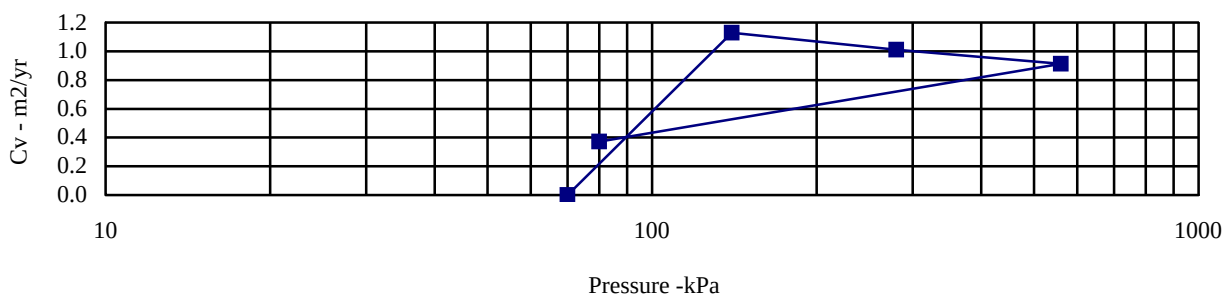
Hole Number: CP806

Depth (m): 6.50

Sample Number: 1

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	27	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	1.99	0	-	70	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.57	70	-	140	0.151	1.130	determine CV:	t90
Voids Ratio:	0.689	140	-	280	0.139	1.010	Nominal temperature	
Degree of saturation:	103.3	280	-	560	0.090	0.912	during test ' C:	20
Height (mm):	20.01	560	-	80	0.072	0.372	Remarks:	
Diameter (mm)	75.16	See summary of soils description.						
Particle Density (Mg/m3):	2.65							
Assumed								



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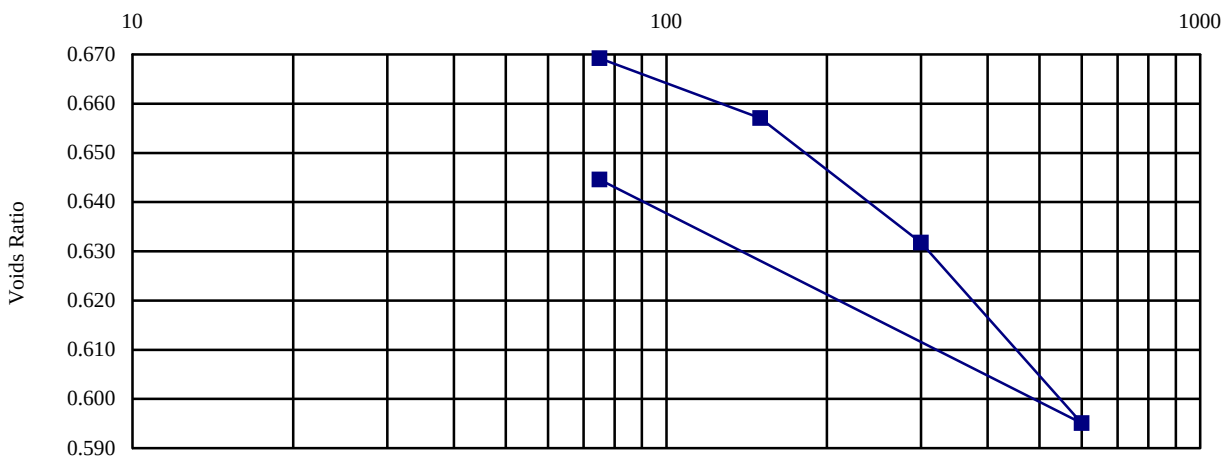
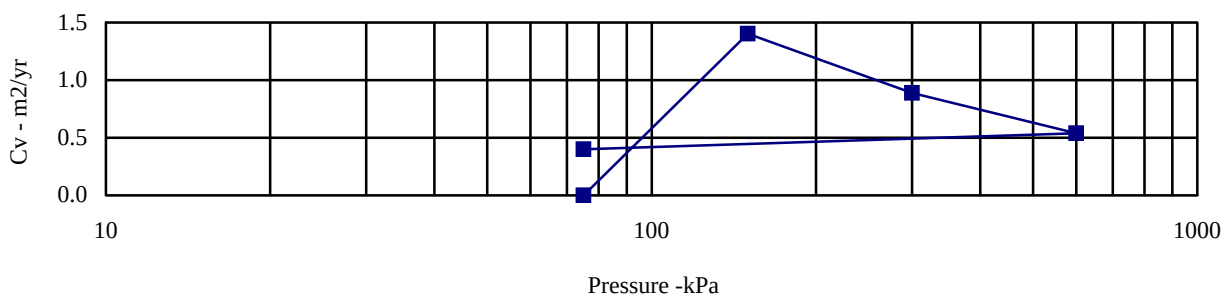
Hole Number: CP806

Depth (m): 11.00

Sample Number: 3

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	25	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	1.99	0	-	75	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.59	75	-	150	0.097	1.404	determine CV:	t90
Voids Ratio:	0.664	150	-	300	0.102	0.889	Nominal temperature	
Degree of saturation:	99.2	300	-	600	0.075	0.539	during test ' C:	20
Height (mm):	19.91	600	-	75	0.059	0.399	Remarks:	
Diameter (mm)	75.2	See summary of soils description.						
Particle Density (Mg/m3):	2.65							
Assumed								



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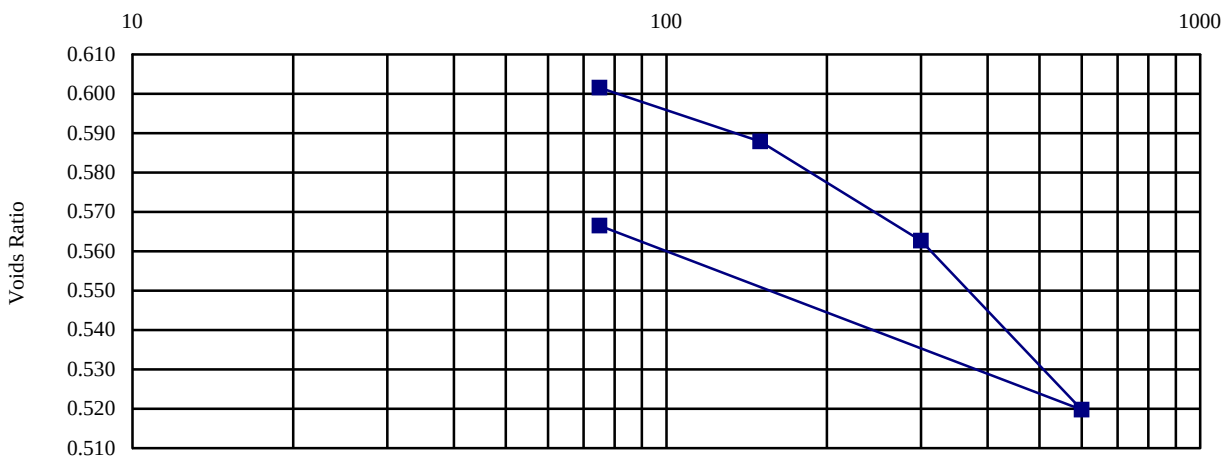
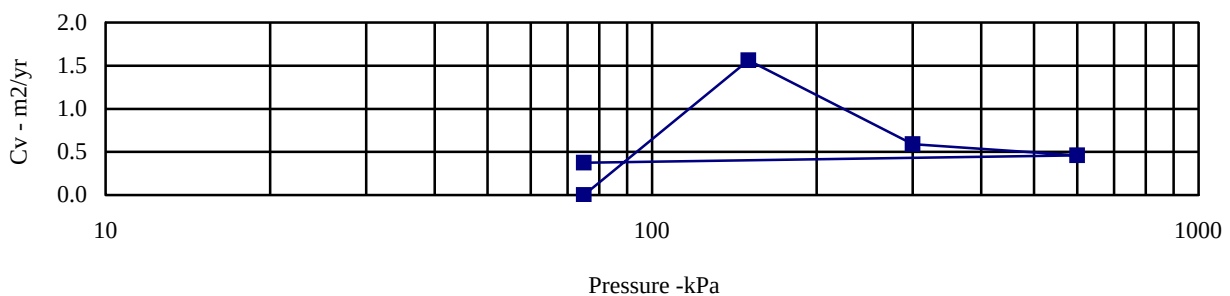
Hole Number: CP806

Depth (m): 17.00

Sample Number: 7

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	23	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	2.04	0	-	75	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.66	75	-	150	0.113	1.561	determine CV:	t90
Voids Ratio:	0.599	150	-	300	0.106	0.591	Nominal temperature	
Degree of saturation:	101.1	300	-	600	0.092	0.462	during test ' C:	20
Height (mm):	19.87	600	-	75	0.059	0.376	Remarks:	
Diameter (mm)	75.15	See summary of soils description.						
Particle Density (Mg/m3):	2.65							
Assumed								



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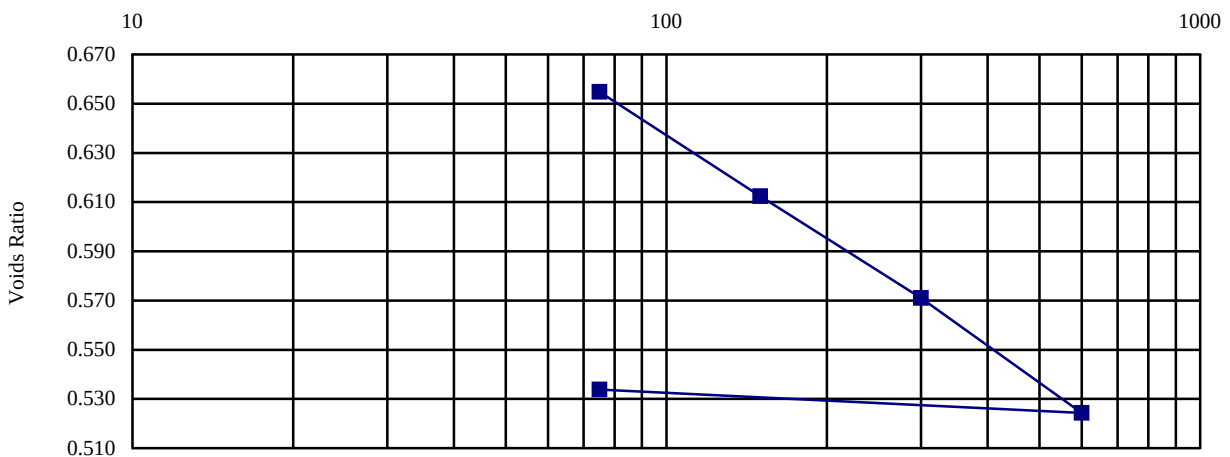
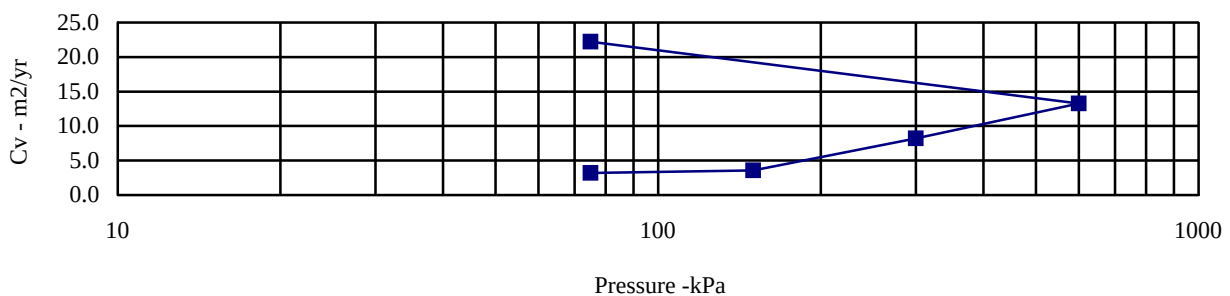
Hole Number: CP806

Depth (m): 20.00

Sample Number: 9

Sample Type: U

Initial Conditions		Pressure Range			Mv	Cv	Specimen location	
Moisture Content (%):	32	kPa			m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	1.91	0	-	75	1.290	3.185	Method used to	
Dry Density (Mg/m3):	1.45	75	-	150	0.342	3.551	determine CV:	t90
Voids Ratio:	0.832	150	-	300	0.171	8.223	Nominal temperature	
Degree of saturation:	101.6	300	-	600	0.099	13.281	during test ' C:	20
Height (mm):	20.06	600	-	75	0.012	22.223	Remarks:	
Diameter (mm)	75.2	See summary of soils description.						
Particle Density (Mg/m3):	2.65							
Assumed								



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Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

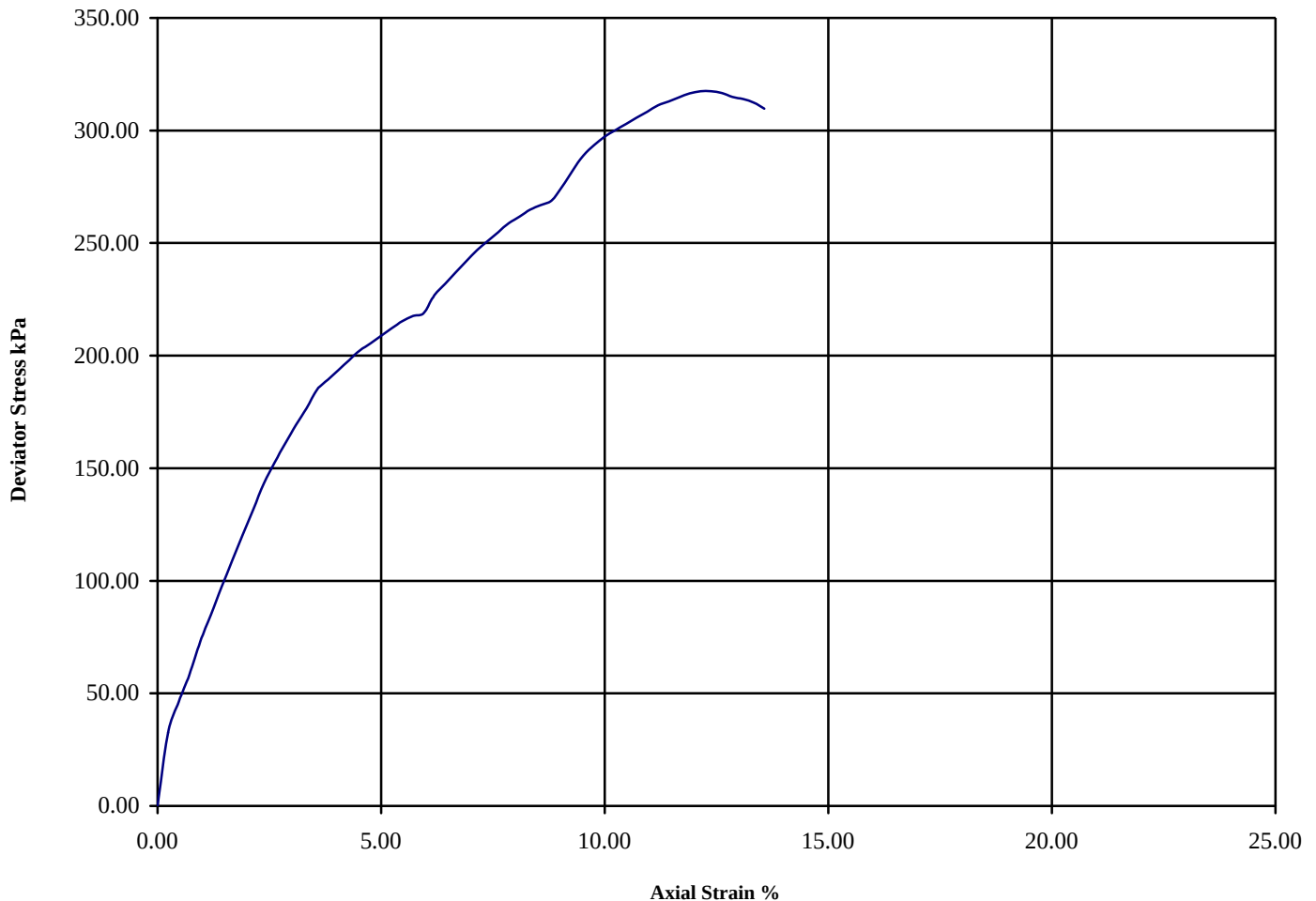
B.S. 1377 : Part 7 : Clause 9 : 1990

Hole Number: CP801

Depth (m): 6.50

Sample Number: 1

Sample Type: U



Diameter (mm):		102	Height (mm):		210	Test:	100mm Multistage							
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Remarks					
									Sample taken from top of tube					
									Rate of strain = 1.9 %/min					
									Latex Membrane used 0.2 mm thickness					
									Membrane Correction applied (kPa)					
A	25	2.03	1.62	80	219	109	6.0	Brittle	0.36	0.36	0.35			
				160	269	134	8.8		See summary of soil descriptions.					
				240	317	159	12.4		Checked	Date	Approved	Date		
										04/12/14		04/12/14		



ST ANDREWS PARK.

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Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

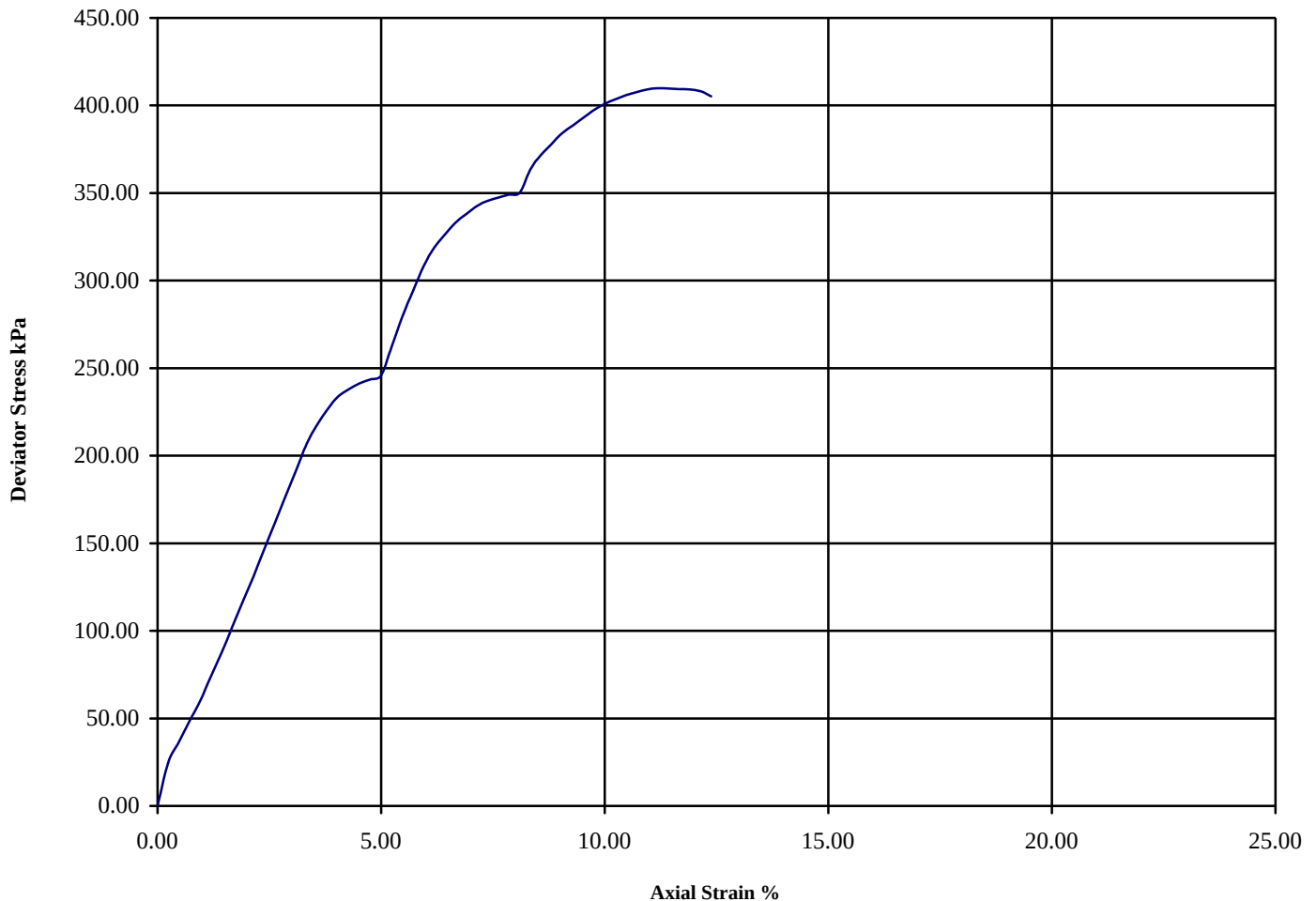
B.S. 1377 : Part7 : Clause 9 : 1990

Hole Number: CP801

Depth (m): 15.50

Sample Number: 4

Sample Type: U



Diameter (mm):		102	Height (mm):		210	Test:	100mm Multistage							
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Remarks					
									Sample taken from top of tube					
									Rate of strain = 1.9 %/min					
									Latex Membrane used 0.2 mm thickness					
									Membrane Correction applied (kPa)					
A	23	2.02	1.64	100	246	123	5.0	Brittle	0.36	0.36	0.35			
				200	350	175	8.1		See summary of soil descriptions.					
				400	410	205	11.2		Checked	Date	Approved	Date		
										04/12/14		04/12/14		



ST ANDREWS PARK.

Contract No:
PSL14/6002

Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

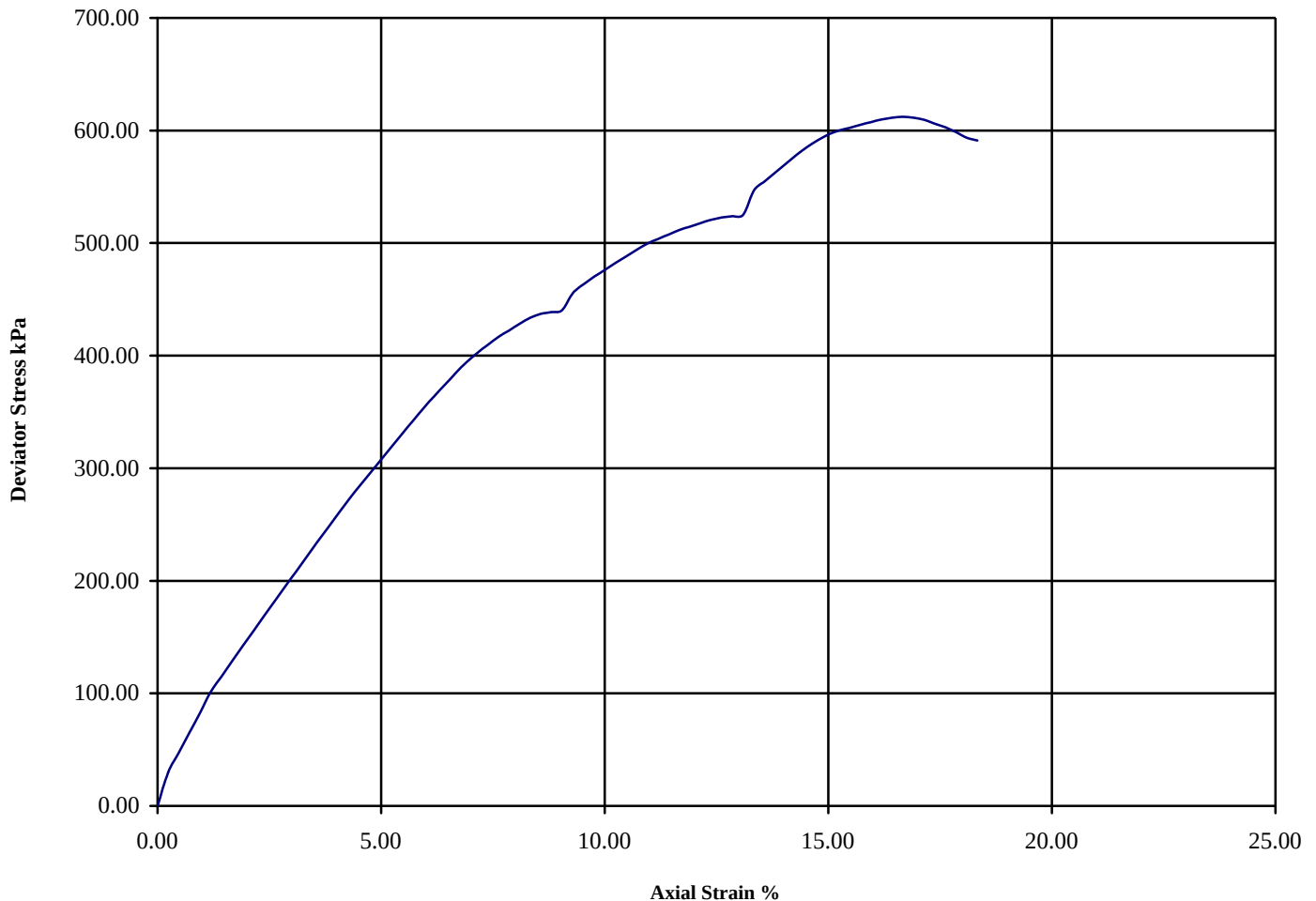
B.S. 1377 : Part7 : Clause 9 : 1990

Hole Number: CP801

Depth (m): 18.50

Sample Number: 5

Sample Type: U



Diameter (mm):		102	Height (mm):		210	Test:	100mm Multistage						
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Remarks				
									Sample taken from top of tube				
									Rate of strain = 1.9 %/min				
									Latex Membrane used 0.2 mm thickness				
									Membrane Correction applied (kPa)				
A	24	2.03	1.64	100	440	220	9.0	Brittle	0.36	0.35	0.34		
				200	525	263	13.1		See summary of soil descriptions.				
				400	612	306	16.7		Checked	Date	Approved	Date	
										04/12/14		04/12/14	



ST ANDREWS PARK.

Contract No:
PSL14/6002

Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

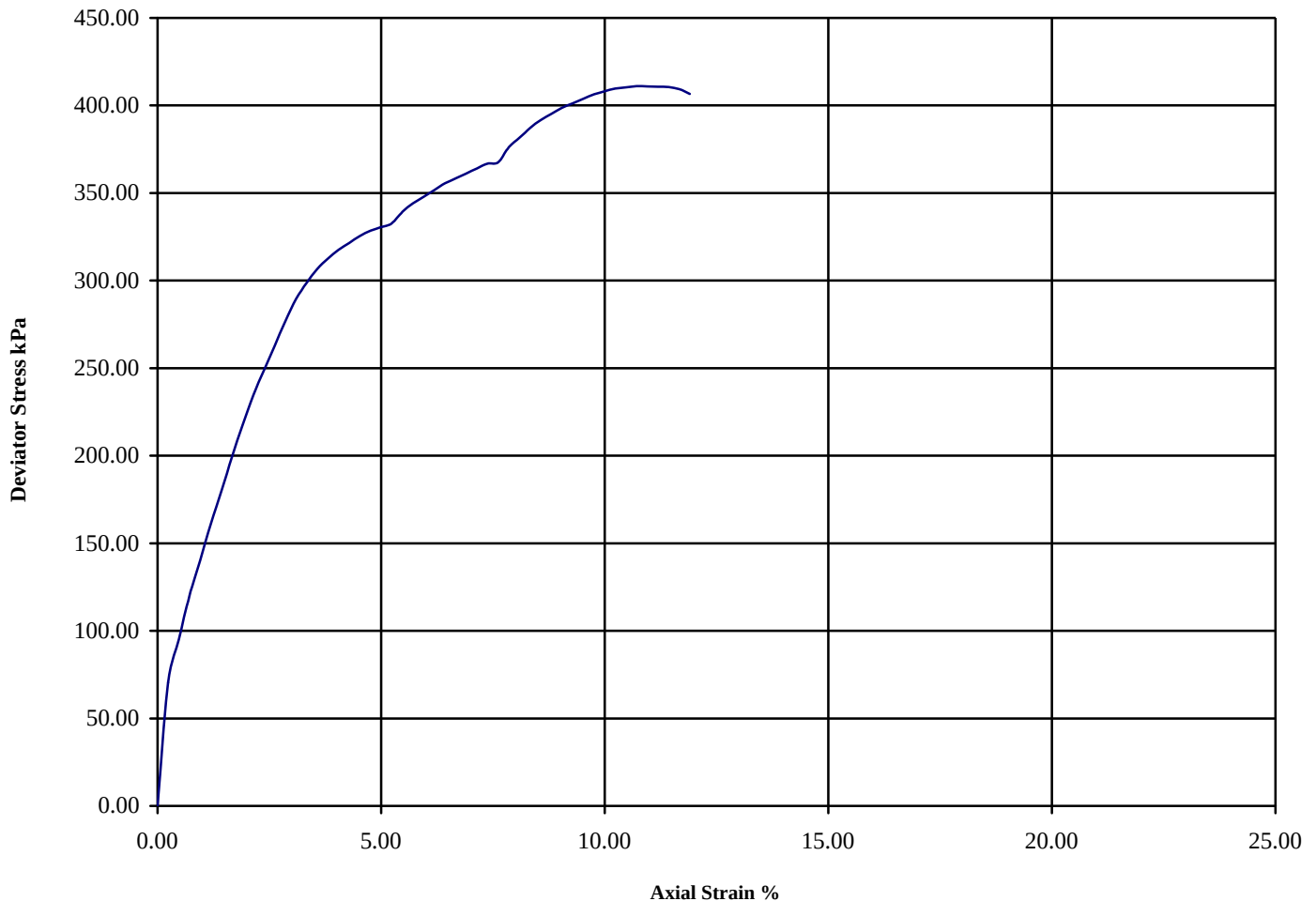
B.S. 1377 : Part 7 : Clause 9 : 1990

Hole Number: CP803

Depth (m): 9.50

Sample Number: 2

Sample Type: U



Diameter (mm):		102	Height (mm):		210	Test:	100mm Multistage							
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Remarks					
									Sample taken from top of tube					
									Rate of strain = 1.9 %/min					
									Latex Membrane used 0.2 mm thickness					
									Membrane Correction applied (kPa)					
A	27	1.98	1.56	80	333	166	5.2	Brittle	0.36	0.36	0.35			
				160	368	184	7.6		See summary of soil descriptions.					
				240	411	206	10.7		Checked	Date	Approved	Date		
										04/12/14		04/12/14		



ST ANDREWS PARK.

Contract No:
PSL14/6002

Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

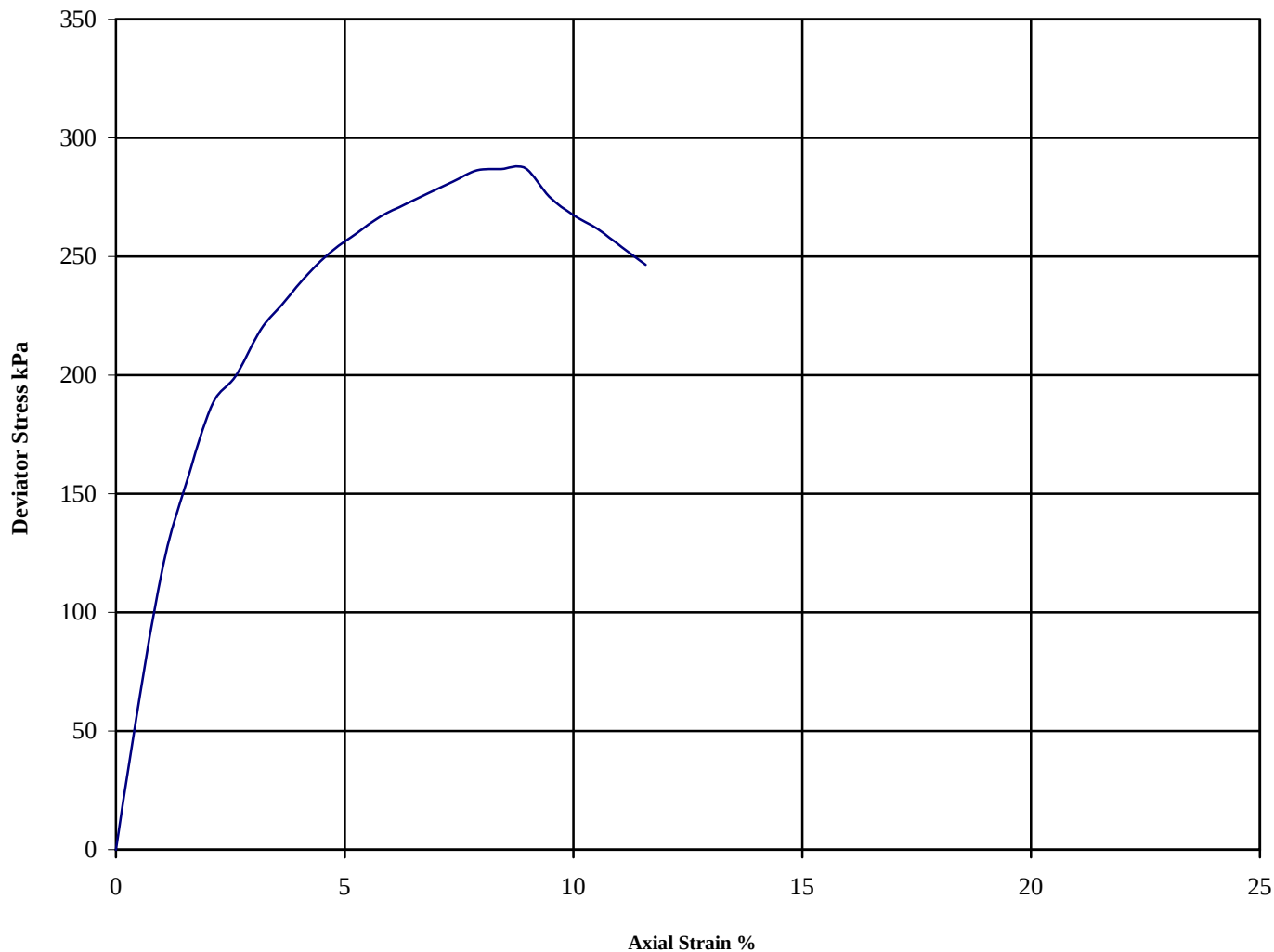
B.S. 1377 : Part7 : Clause 8 : 1990

Borehole Number: CP803

Depth (m): 15.50

Sample Number 4

Sample Type: U



Diameter (mm):		38	Height (mm):		76	Test:	38 mm Single Stage.		
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Deviator Stress (kPa)	Shear Strength (kPa)	Failure Strain (%)	Mode of Failure	Remarks
A	26	1.97	1.56	200	287	144	8.9	Brittle	See summary of soil descriptions
B									
C									

Checked and Approved By

Date

[Signature]

04/12/14

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Professional Soils Laboratory

ST ANDREWS PARK.

Contract No: PSL14/6002

Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

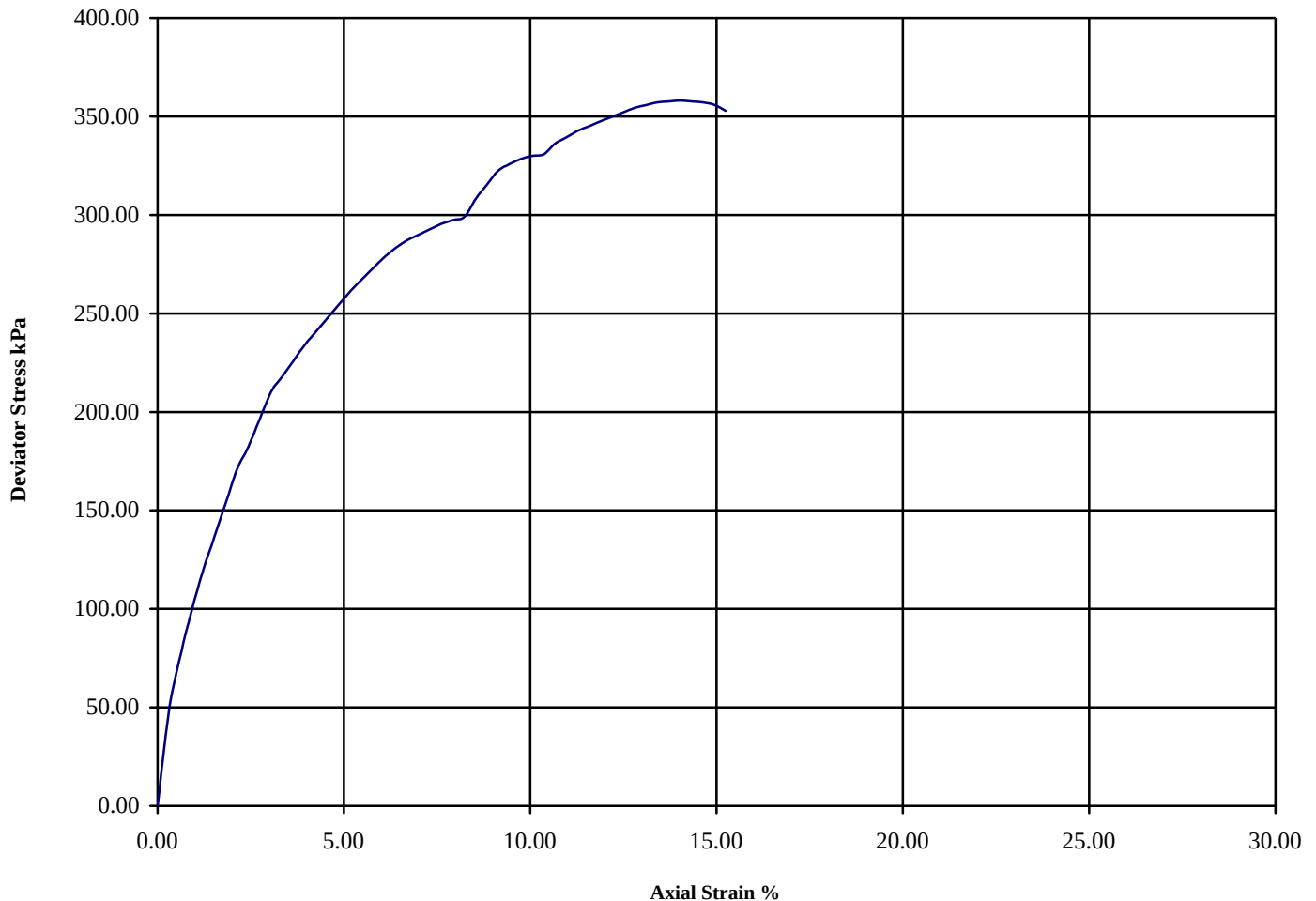
B.S. 1377 : Part 7 : Clause 9 : 1990

Hole Number: CP805

Depth (m): 9.50

Sample Number: 2

Sample Type: U



Diameter (mm):		102	Height (mm):		164	Test:	100mm Multistage						
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Remarks				
									Sample taken from top of tube				
									Rate of strain = 2 %/min				
									Latex Membrane used 0.2 mm thickness				
									Membrane Correction applied (kPa)				
A	26	2.02	1.61	80	299	150	8.2	Brittle	0.36	0.35	0.35		
				160	331	165	10.4		See summary of soil descriptions.				
				240	358	179	14.0		Checked	Date	Approved	Date	
										04/12/14		04/12/14	



ST ANDREWS PARK.

Contract No:
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Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

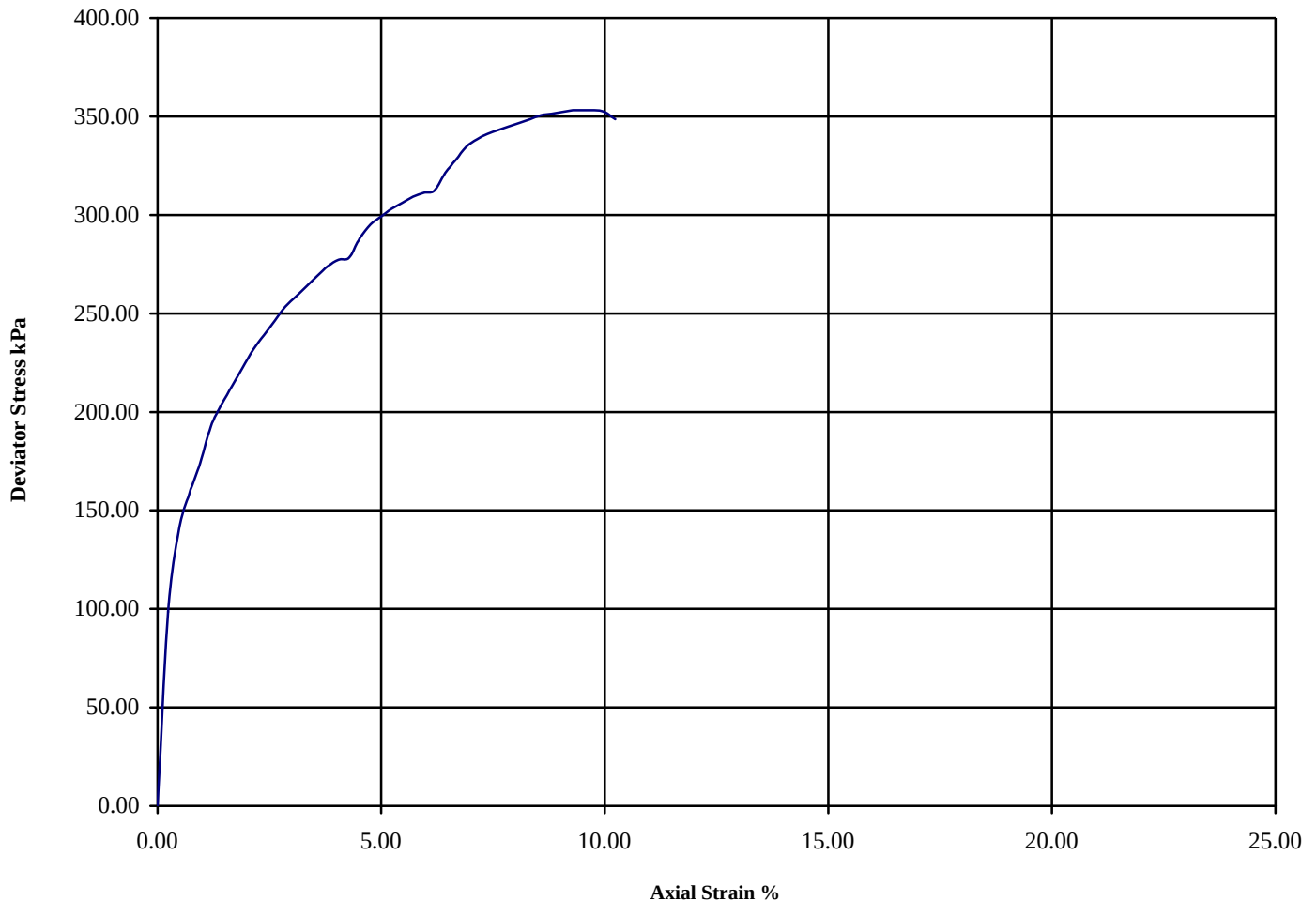
B.S. 1377 : Part 7 : Clause 9 : 1990

Hole Number: CP805

Depth (m): 12.50

Sample Number: 13

Sample Type: U



Diameter (mm):		102	Height (mm):		210	Test:	100mm Multistage							
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Remarks					
									Sample taken from top of tube					
									Rate of strain = 1.9 %/min					
									Latex Membrane used 0.2 mm thickness					
									Membrane Correction applied (kPa)					
A	26	2.00	1.58	100	278	139	4.3	Brittle	0.36	0.36	0.35			
				200	312	156	6.2		See summary of soil descriptions.					
				400	353	177	9.3		Checked	Date	Approved	Date		
										04/12/14		04/12/14		



ST ANDREWS PARK.

Contract No:
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Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

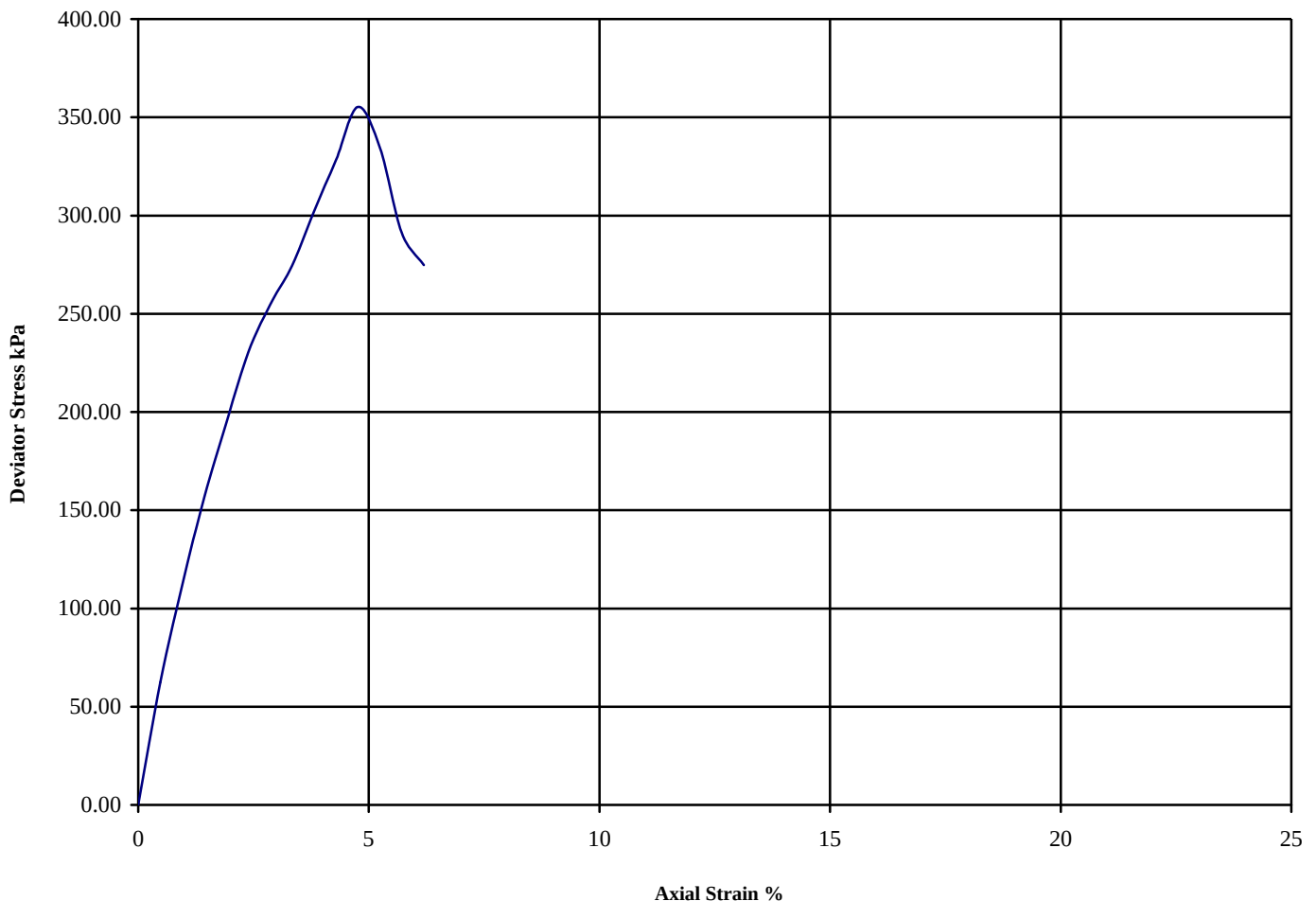
B.S. 1377 : Part 7 : Clause 8 : 1990

Hole Number: CP805

Depth (m): 18.50

Sample Number: 15

Sample Type: U



Diameter (mm):		102.0	Height (mm):		210.0	Test:	100 mm Single Stage.		Undisturbed								
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Remarks								
									Sample taken from top of tube								
									Rate of strain = 1.9 %/min								
									Latex Membrane used 0.2 mm thickness, Correction applied 0.36 kPa								
									See summary of soil descriptions.								
A	23	2.04	1.66	100	355	178	4.8	Brittle	Single stage due to brittle failure								
									<table><tr><td>Checked</td><td>Date</td><td>Approved</td><td>Date</td></tr><tr><td></td><td>04/12/14</td><td></td><td>04/12/14</td></tr></table>	Checked	Date	Approved	Date		04/12/14		04/12/14
Checked	Date	Approved	Date														
	04/12/14		04/12/14														
PSL Professional Soils Laboratory				ST ANDREWS PARK.				Contract No: PSL14/6002									

Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

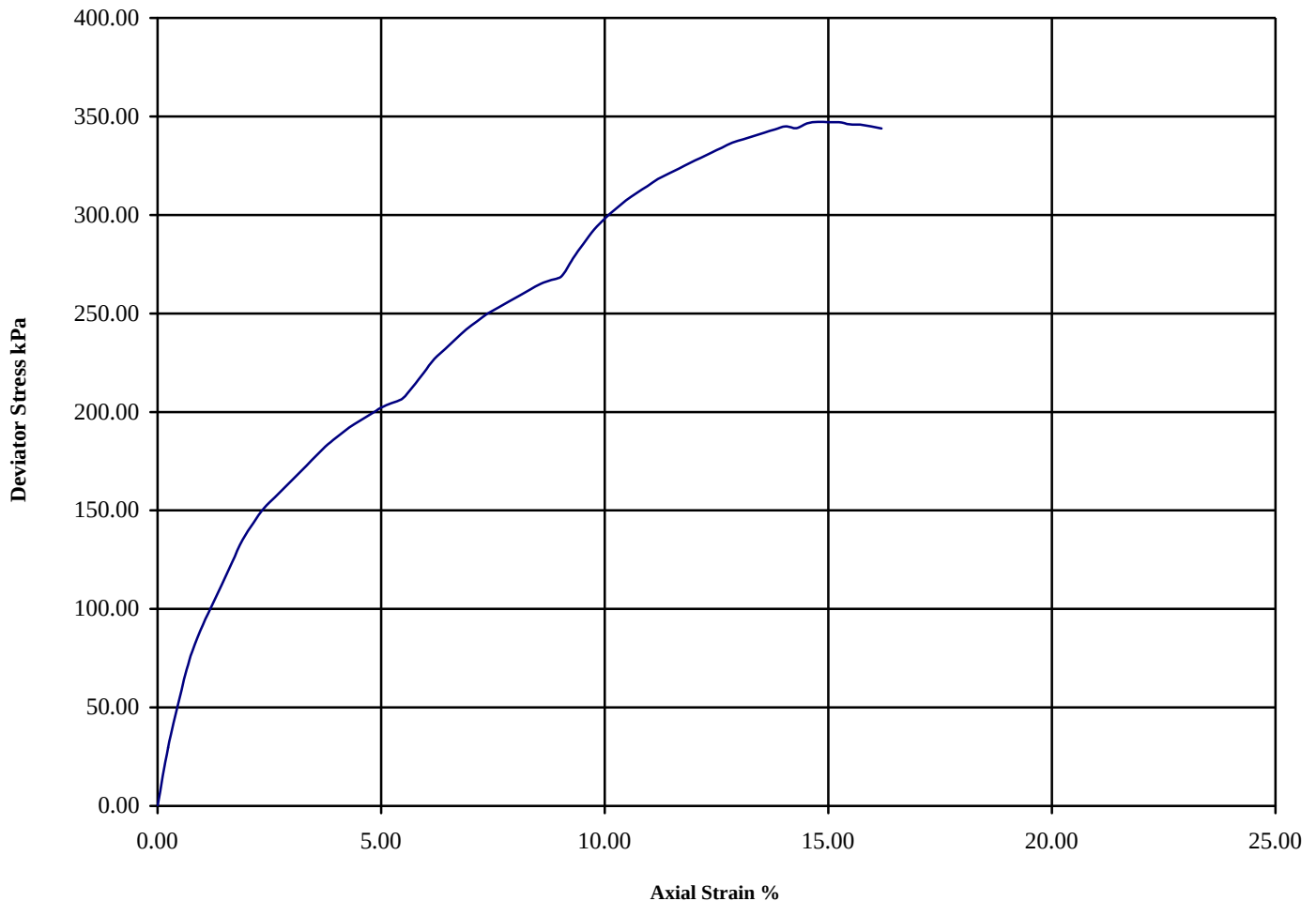
B.S. 1377 : Part 7 : Clause 9 : 1990

Hole Number: CP806

Depth (m): 6.50

Sample Number: 1

Sample Type: U



Diameter (mm):		102	Height (mm):		210	Test:	100mm Multistage							
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Remarks					
									Sample taken from top of tube					
									Rate of strain = 1.9 %/min					
									Latex Membrane used 0.2 mm thickness					
									Membrane Correction applied (kPa)					
A	27	2.01	1.59	80	207	103	5.5	Compound	0.36	0.36	0.34			
				160	269	135	9.0		See summary of soil descriptions.					
				240	347	174	14.8		Checked	Date	Approved	Date		
										04/12/14		04/12/14		



ST ANDREWS PARK.

Contract No:
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Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

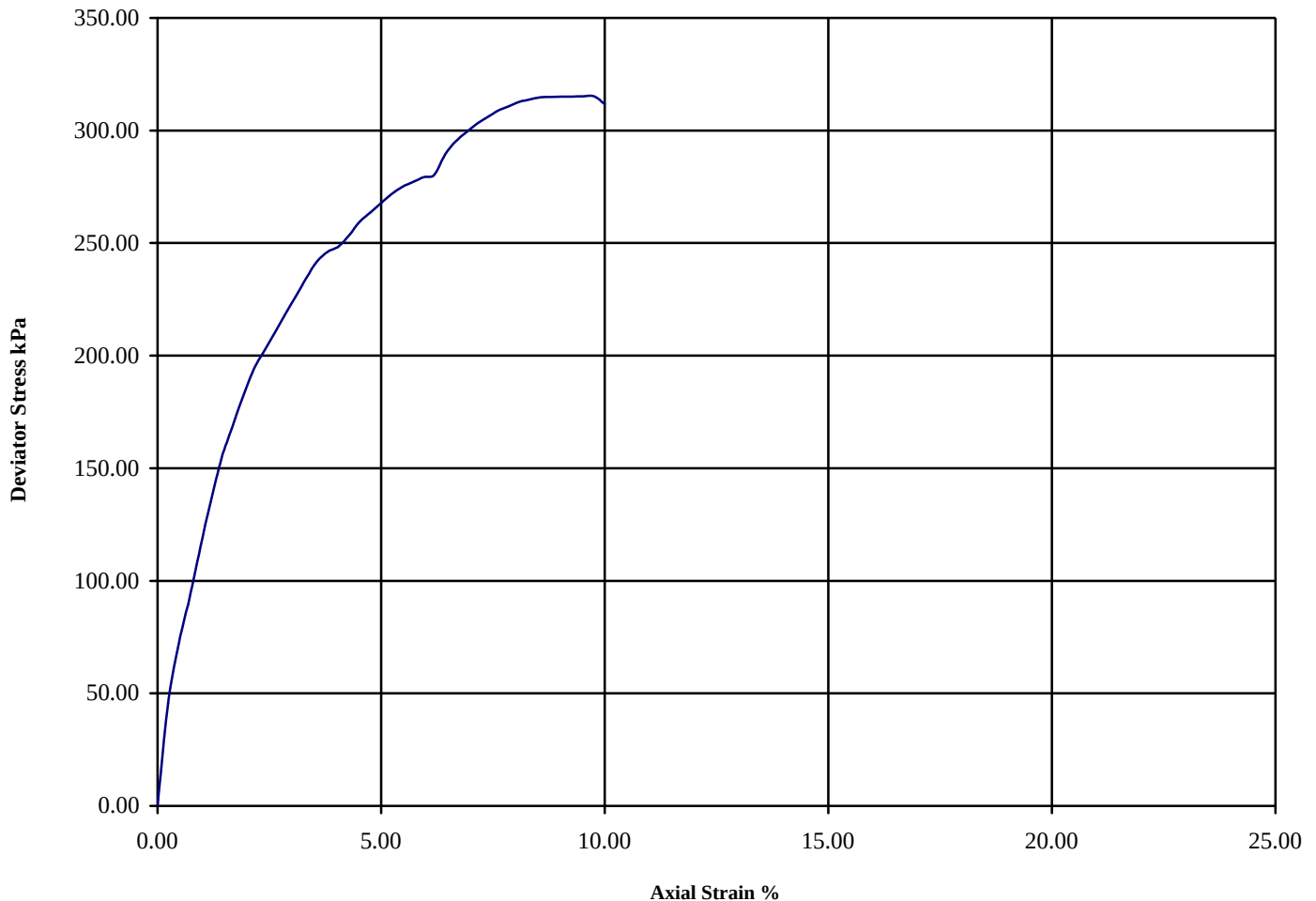
B.S. 1377 : Part7 : Clause 9 : 1990

Hole Number: CP806

Depth (m): 11.00

Sample Number: 3

Sample Type: U



Diameter (mm):		102	Height (mm):		210	Test:	100mm Multistage							
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Remarks					
									Sample taken from top of tube					
									Rate of strain = 1.9 %/min					
									Latex Membrane used 0.2 mm thickness					
									Membrane Correction applied (kPa)					
A	25	1.98	1.58	100	248	124	4.0	Brittle	0.36	0.36	0.35			
				200	280	140	6.2		See summary of soil descriptions.					
				400	315	158	9.8		Checked	Date	Approved	Date		
										04/12/14		04/12/14		



ST ANDREWS PARK.

Contract No:
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Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

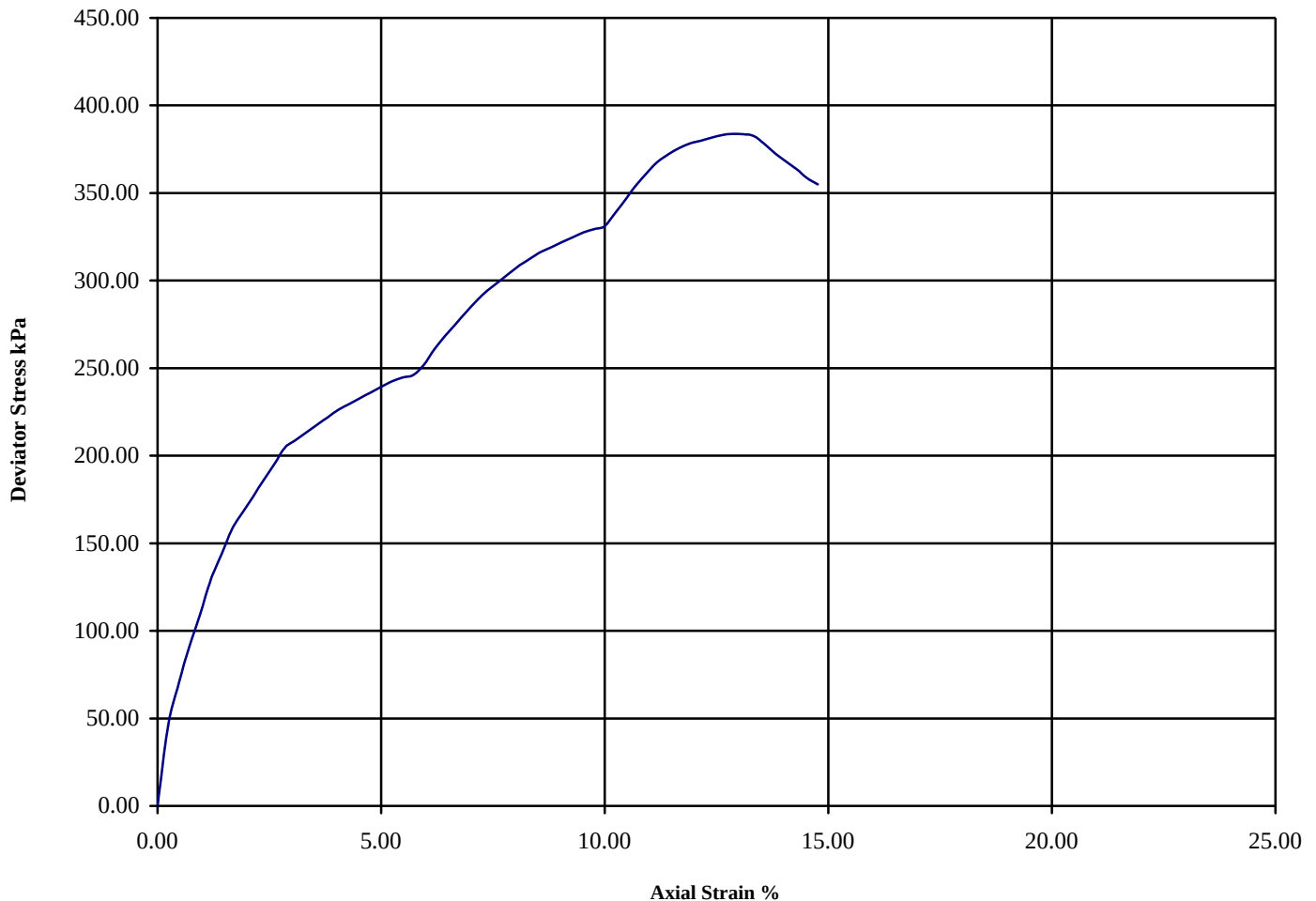
B.S. 1377 : Part7 : Clause 9 : 1990

Hole Number: CP806

Depth (m): 17.00

Sample Number: 7

Sample Type: U



Diameter (mm):		102	Height (mm):		210	Test:	100mm Multistage						
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Remarks				
									Sample taken from top of tube				
									Rate of strain = 1.9 %/min				
									Latex Membrane used 0.2 mm thickness				
									Membrane Correction applied (kPa)				
A	24	2.06	1.67	100	246	123	5.7	Brittle	0.36	0.35	0.35		
				200	331	166	10.0		See summary of soil descriptions.				
				400	384	192	12.9		Checked	Date	Approved	Date	
										04/12/14		04/12/14	



ST ANDREWS PARK.

Contract No:
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Undrained Shear Strength in Triaxial Compression

without measurement of Pore Pressure

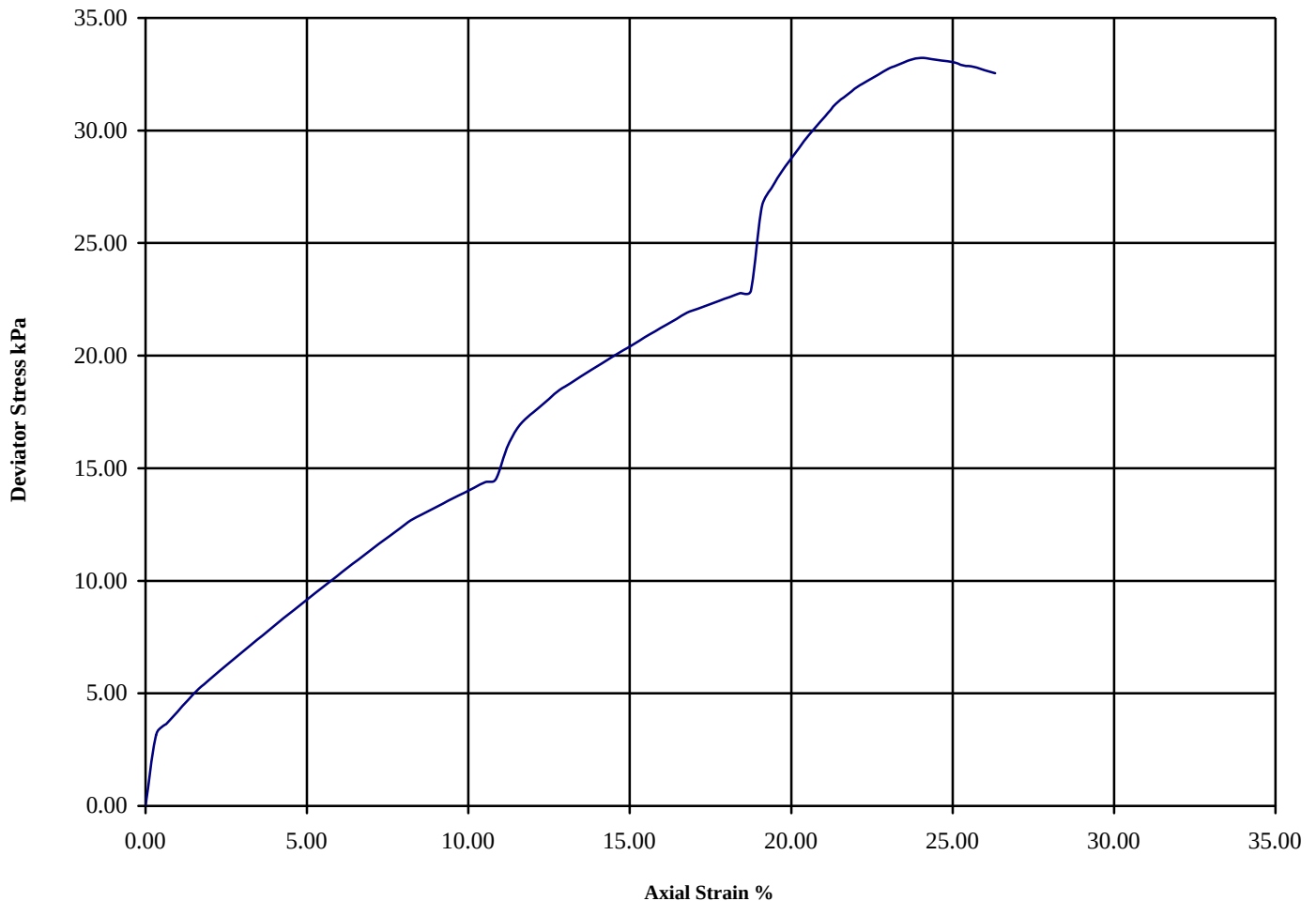
B.S. 1377 : Part7 : Clause 9 : 1990

Hole Number: CP806

Depth (m): 20.00

Sample Number: 9

Sample Type: U



Diameter (mm):		Height (mm):			Test:		100mm Multistage			
Specimen	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Remarks	
				θ_3	$(\theta_1 - \theta_3)_f$	$\frac{1}{2}(\theta_1 - \theta_3)_f$			Sample taken from top of tube	
									Rate of strain = 2.6 %/min	
									Latex Membrane used 0.2 mm thickness	
A	32	1.87	1.42	100	15	7	10.9	Plastic	Membrane Correction applied (kPa)	
				200	23	11	18.8		0.35 0.34 0.32	
				400	33	17	24.0		See summary of soil descriptions.	
									Checked	Date
									Approved	Date
									<i>RE</i>	04/12/14
									<i>RE</i>	04/12/14



ST ANDREWS PARK.

Contract No:
PSL14/6002

SUMMARY OF LABORATORY HAND VANE TESTS

Hole Number	Sample Number	Sample Type	Depth m	Moisture Content %	Shear Strength kPa	Description
CP801	1	U	6.50	25	>140	Very stiff brown slightly sandy CLAY.
CP801	4	U	15.50	25	>140	Very stiff brown slightly sandy CLAY.
CP801	5	U	18.50	24	>140	Very stiff brown slightly sandy CLAY.
CP803	2	U	9.50	26	>140	Very stiff brown slightly sandy CLAY.
CP803	4	U	15.50	26	>140	Very stiff brown slightly sandy CLAY.
CP805	2	U	9.50	26	>140	Very stiff brown slightly sandy CLAY.
CP805	13	U	12.50	26	>140	Very stiff brown slightly sandy CLAY.
CP805	15	U	18.50	23	>140	Very stiff brown slightly sandy CLAY.
CP806	1	U	6.50	27	>140	Very stiff brown slightly sandy CLAY.
CP806	3	U	11.00	25	>140	Very stiff brown slightly sandy CLAY.
CP806	7	U	17.00	24	>140	Very stiff brown slightly sandy CLAY.
CP806	9	U	20.00	32	9	Very soft brown slightly sandy CLAY.

 Professional Soils Laboratory	Compiled by	Date	Checked by	Date	Approved by	Date
		03/12/14		04/12/14		04/12/14
	ST ANDREWS PARK.					Contract No: PSL14/6002
						Client Ref: 21311

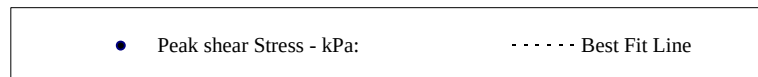
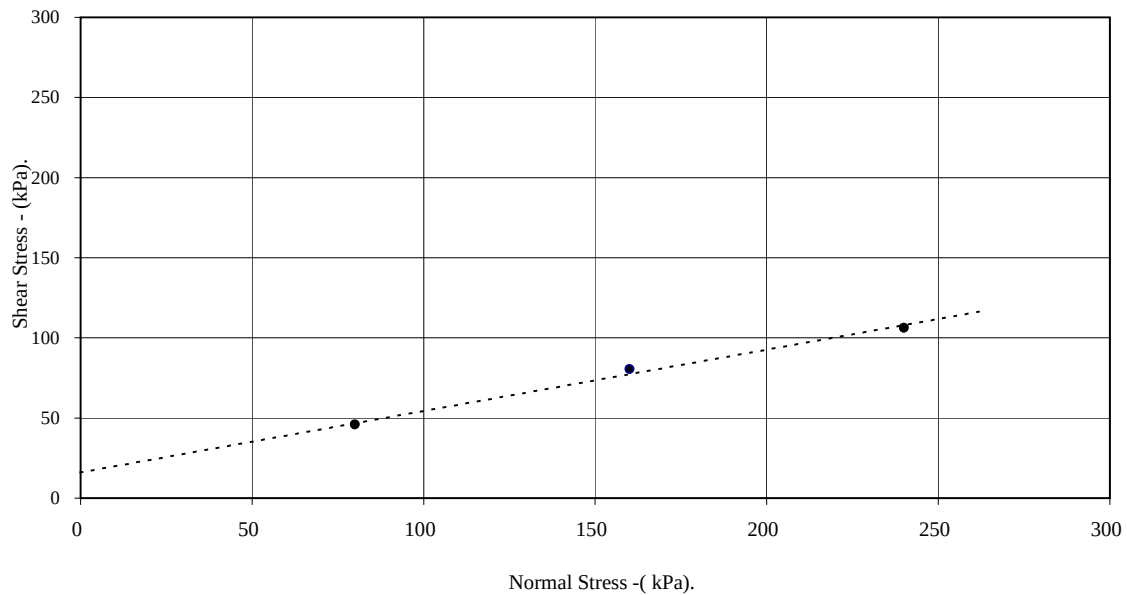
CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7 :1990.

Hole Number: **CP803** Depth (m): **9.50** Sample Type: **U**

Sample Type:	Undisturbed		
Particle Density - Mg/m ³ :	2.65 (Assumed)		
Specimen Tested:	Submerged Material tested passing 2mm		
Sample Description:	See summary of soil descriptions.		
STAGE	1	2	3
Initial Conditions			
Height - mm:	24.98	24.98	24.98
Length - mm:	60.01	60.01	60.01
Moisture Content - %:	25	25	25
Bulk Density - Mg/m ³ :	1.96	1.96	1.97
Dry Density - Mg/m ³ :	1.56	1.57	1.57
Voids Ratio:	0.695	0.690	0.686
Normal Pressure- kPa	80	160	240
Consolidation			
Consolidated Height - mm:	24.82	24.47	24.19
Shear			
Rate of Strain (mm/min)	0.028	0.028	0.028
Strain at peak shear stress (%)	2.60	3.20	1.70
Peak shear Stress - kPa:	46	81	106
Final Consolidated Conditons			
Moisture Content - %:	29	28	27
Bulk Density - Mg/m ³ :	1.97	2.01	2.03
Dry Density - Mg/m ³ :	1.53	1.56	1.60
PEAK			
Angle of Shearing Resistance:(θ)	21.0		
Effective Cohesion - kPa:	16		

FAILURE CONDITIONS



Checked by Date 03/12/2014

Approved by Date 03/12/2014



ST ANDREWS PARK.

Contract No.:
PSL14/6002

Client Ref Number:
21311

CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

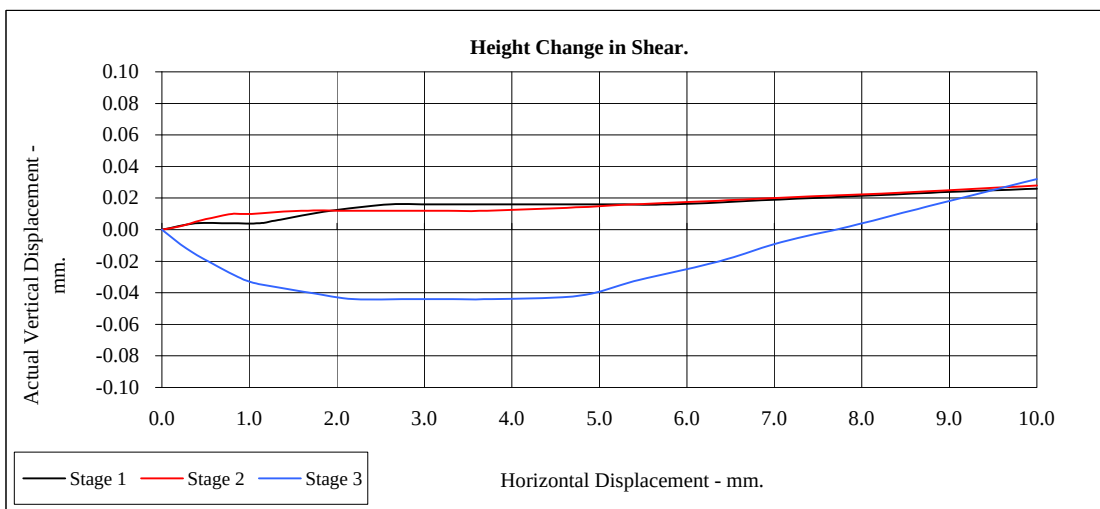
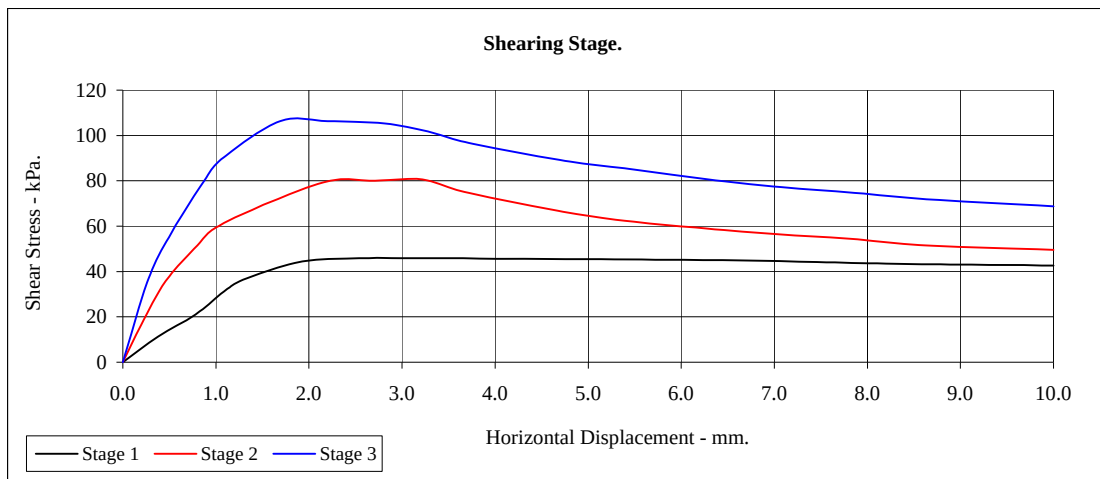
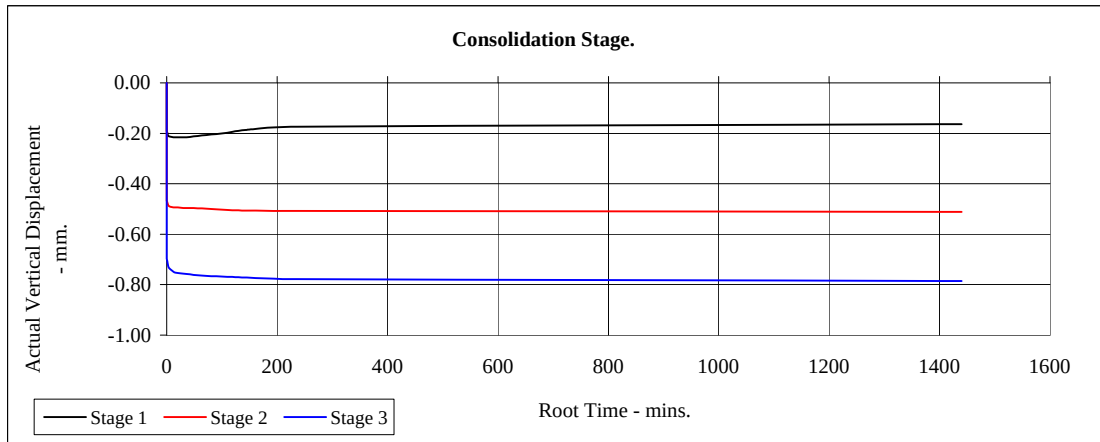
Hole Number: **CP803**

Depth (m):

9.50

Sample Type:

U



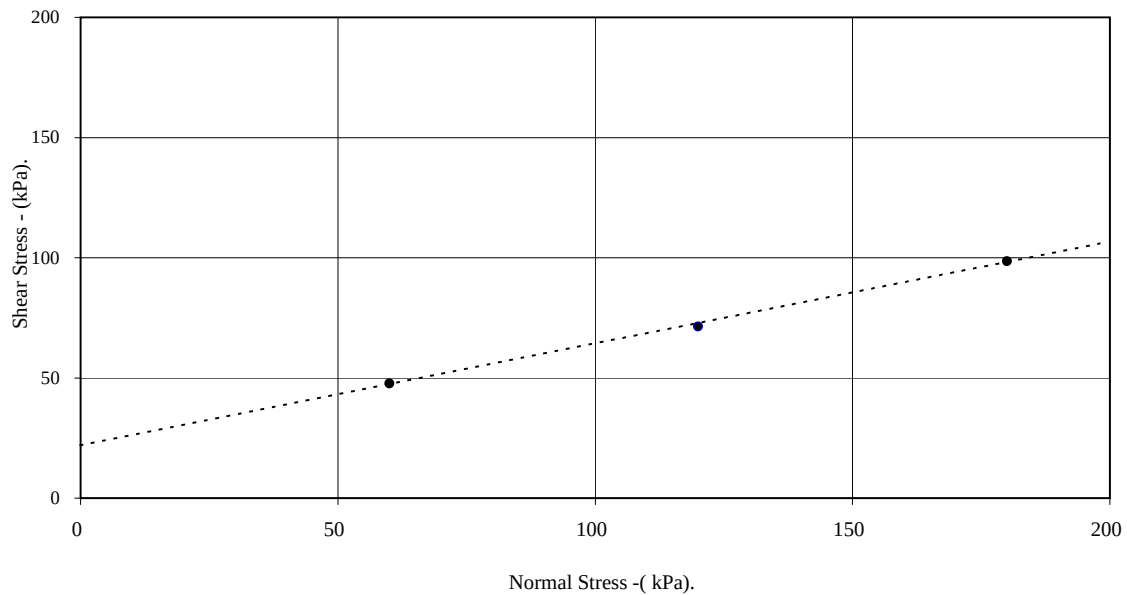
CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7 :1990.

Hole Number: **CP805** Depth (m): **6.50** Sample Type: **U**

Sample Type:	Undisturbed		
Particle Density - Mg/m ³ :	2.65 (Assumed)		
Specimen Tested:	Submerged		
	Material tested passing 2mm		
Sample Description:	See summary of descriptions		
STAGE	1	2	3
Initial Conditions			
Height - mm:	20.13	20.13	20.13
Length - mm:	59.90	59.90	59.90
Moisture Content - %:	26	26	26
Bulk Density - Mg/m ³ :	1.92	1.92	1.92
Dry Density - Mg/m ³ :	1.52	1.52	1.52
Voids Ratio:	0.741	0.739	0.738
Normal Pressure- kPa	60	120	180
Consolidation			
Consolidated Height - mm:	20.00	19.61	19.35
Shear			
Rate of Strain (mm/min)	0.025	0.025	0.025
Strain at peak shear stress (%)	2.50	2.00	2.00
Peak shear Stress - kPa:	48	71	99
Final Consolidated Conditons			
Moisture Content - %:	28	27	26
Bulk Density - Mg/m ³ :	1.93	1.97	2.00
Dry Density - Mg/m ³ :	1.52	1.56	1.59
PEAK			
Angle of Shearing Resistance:(θ)	23.0		
Effective Cohesion - kPa:	22		

FAILURE CONDITIONS



Peak shear Stress - kPa: - - - - - Best Fit Line

Checked by Date 03/12/2014

Approved by Date 03/12/2014



ST ANDREWS PARK.

Contract No.:
PSL14/6002

Client Ref Number:
21311

CONSOLIDATED DRAINED SHEARBOX TEST.

BS1377:Part 7:4.5 :1990.

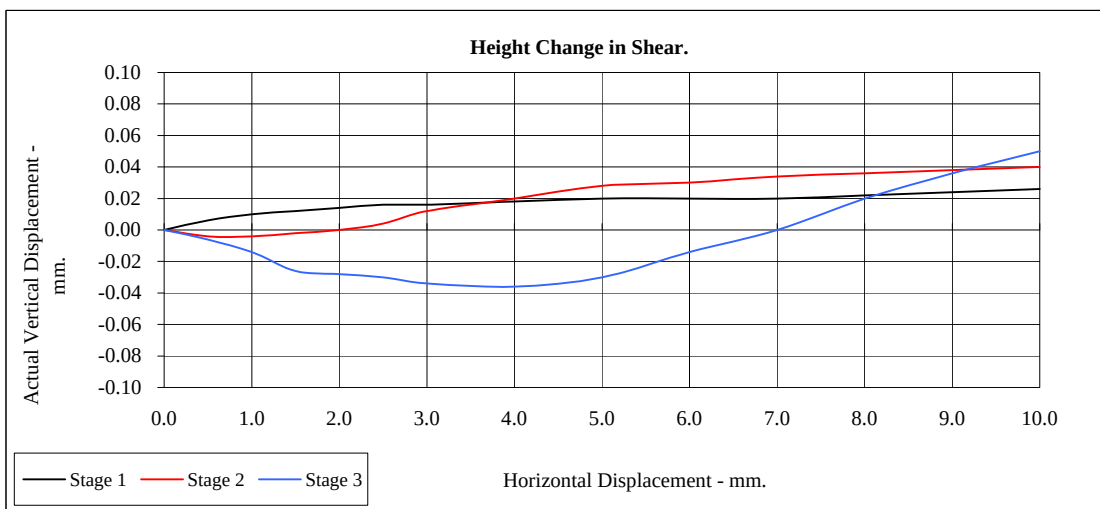
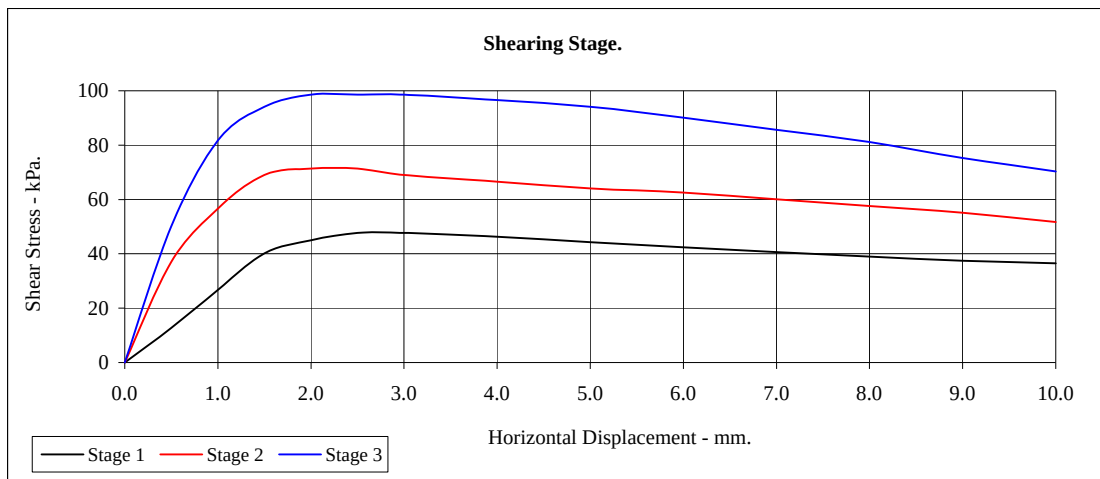
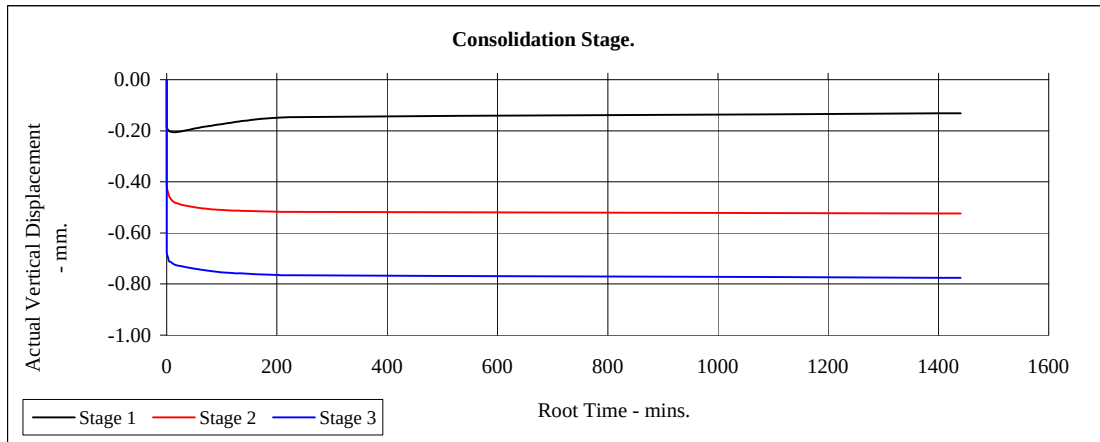
Hole Number: **CP805**

Depth (m):

6.50

Sample Type:

U



Particle Size Distribution Test

BS1377 : Part 2 : 1990

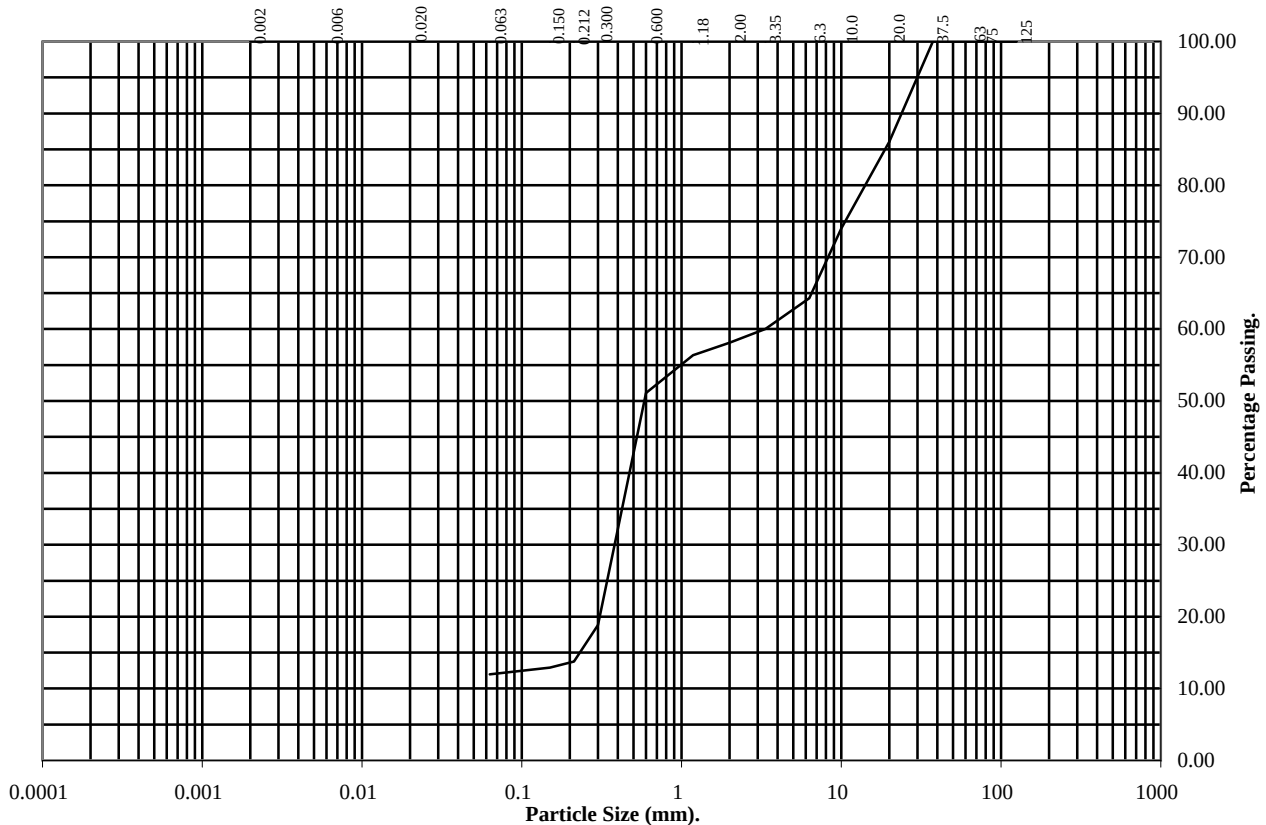
Wet Sieve, Clause 9.2

Hole Number: TP802

Depth (m): **1.70**

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	86
10	74
6.3	64
3.35	60
2	58
1.18	56
0.6	51
0.3	19
0.212	14
0.15	13
0.063	12

Soil Fraction	Total Percentage
Cobbles	0
Gravel	42
Sand	46
Silt / Clay	12

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
	05/12/14		05/12/14

Particle Size Distribution Test

BS1377 : Part 2 : 1990

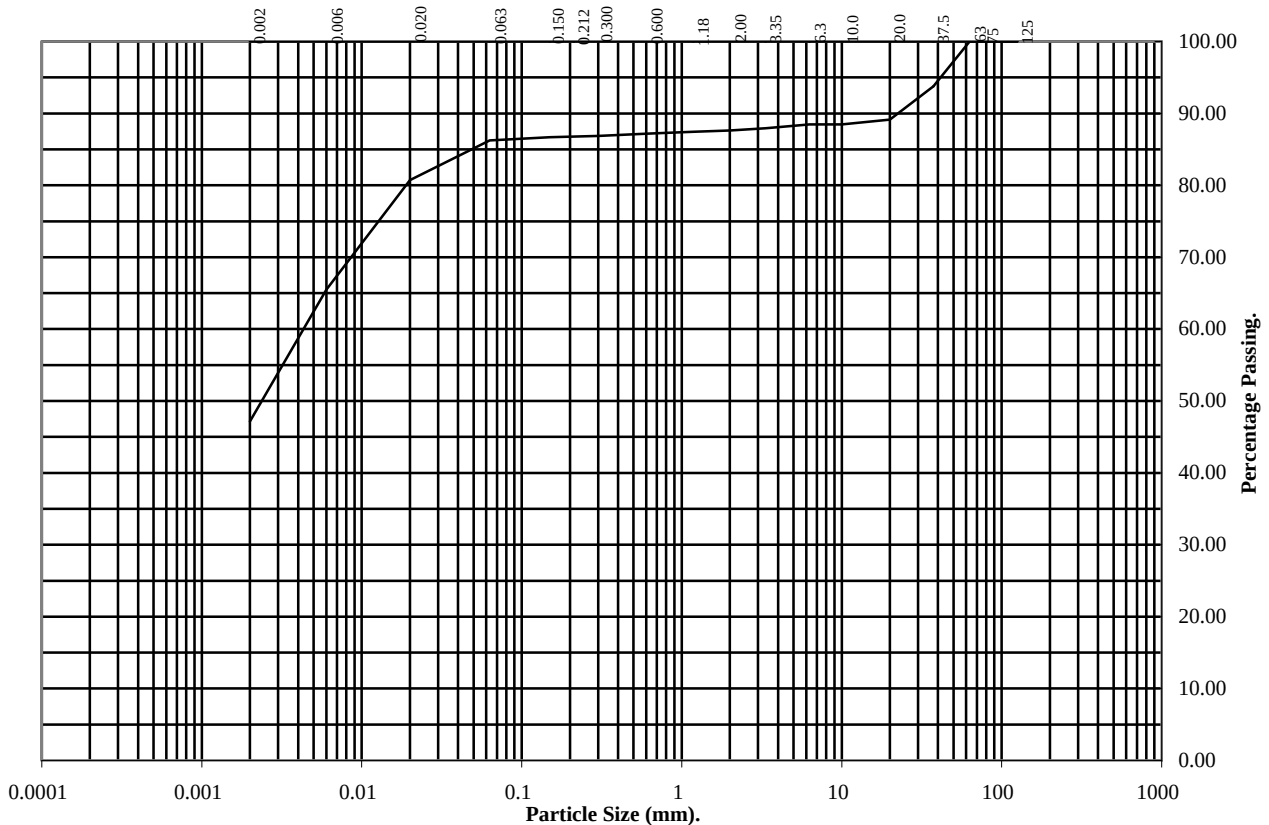
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP804

Depth (m): 2.20

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	94
20	89
10	88
6.3	88
3.35	88
2	88
1.18	87
0.6	87
0.3	87
0.212	87
0.15	87
0.063	86

Particle Diameter	Percentage Passing
0.02	81
0.006	66
0.002	47

Soil Fraction	Total Percentage
Cobbles	0
Gravel	12
Sand	2
Silt	39
Clay	47

Remarks:
See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	05/12/14

Particle Size Distribution Test

BS1377 : Part 2 : 1990

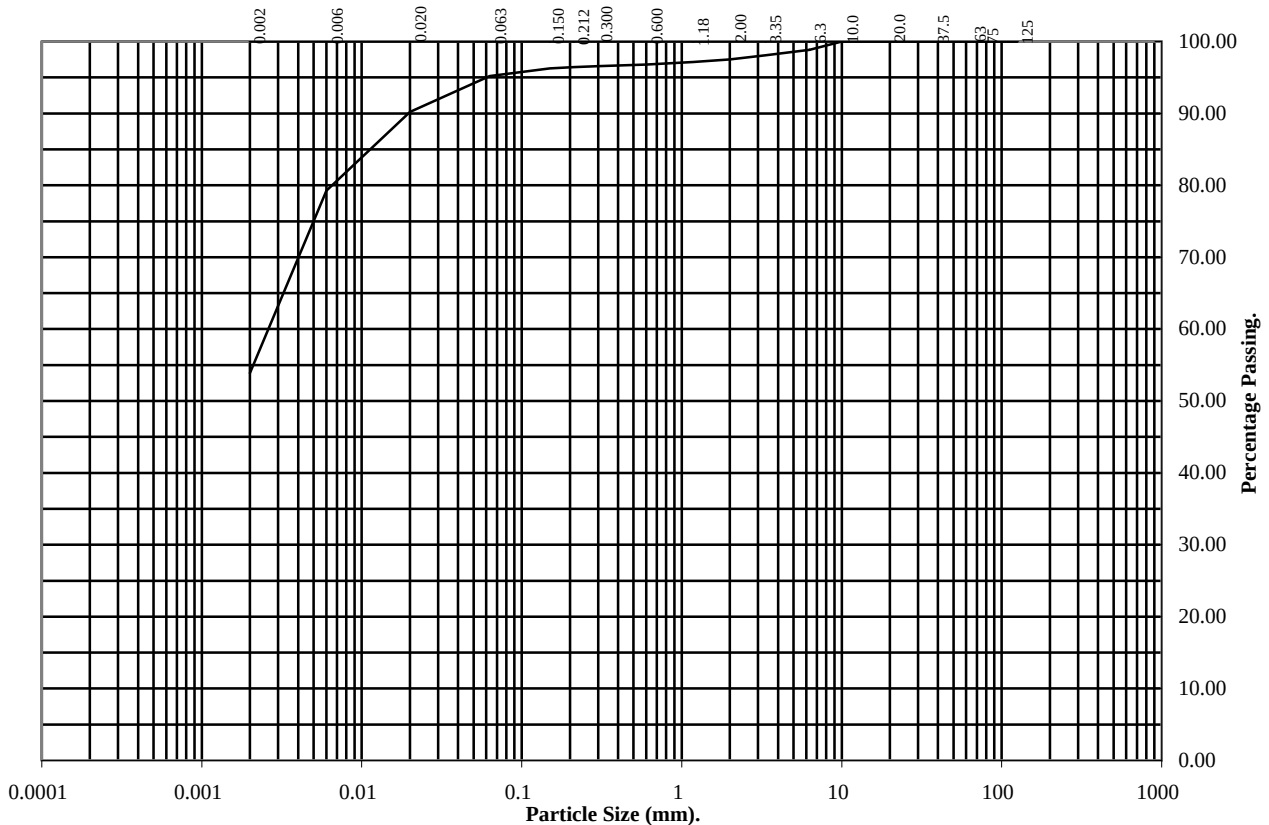
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP832

Depth (m): 1.50

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	99
3.35	98
2	97
1.18	97
0.6	97
0.3	97
0.212	96
0.15	96
0.063	95

Particle Diameter	Percentage Passing
0.02	90
0.006	79
0.002	54

Soil Fraction	Total Percentage
Cobbles	0
Gravel	3
Sand	2
Silt	41
Clay	54

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	05/12/14

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ST ANDREWS PARK.

Contract No.:
PSL14/6002

Particle Size Distribution Test

BS1377 : Part 2 : 1990

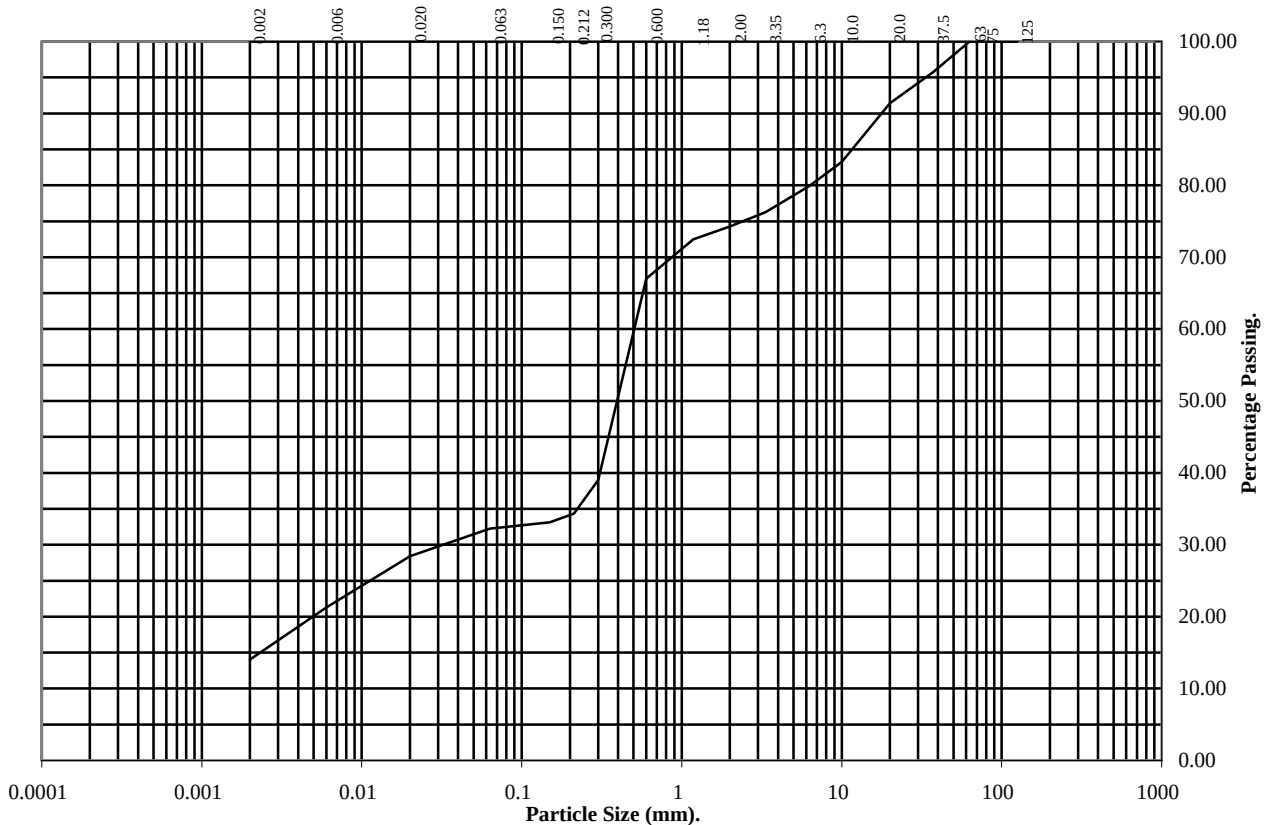
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP833

Depth (m): 1.20

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	96
20	91
10	83
6.3	80
3.35	76
2	74
1.18	73
0.6	67
0.3	39
0.212	34
0.15	33
0.063	32

Particle Diameter	Percentage Passing
0.02	28
0.006	21
0.002	14

Soil Fraction	Total Percentage
Cobbles	0
Gravel	26
Sand	42
Silt	18
Clay	14

Remarks:
See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	05/12/14

Particle Size Distribution Test

BS1377 : Part 2 : 1990

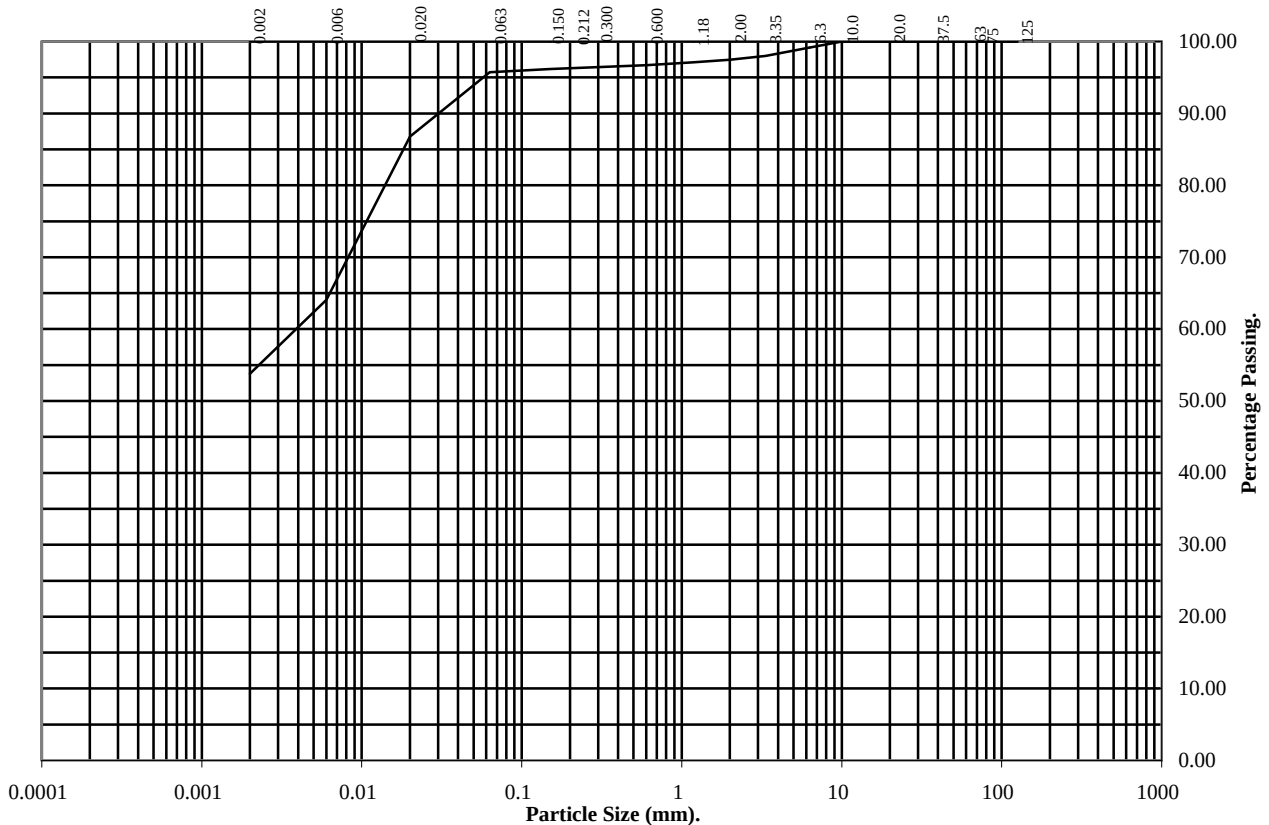
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP835

Depth (m): 2.50

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	99
3.35	98
2	97
1.18	97
0.6	97
0.3	96
0.212	96
0.15	96
0.063	96

Particle Diameter	Percentage Passing
0.02	87
0.006	64
0.002	54

Soil Fraction	Total Percentage
Cobbles	0
Gravel	3
Sand	1
Silt	42
Clay	54

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
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Particle Size Distribution Test

BS1377 : Part 2 : 1990

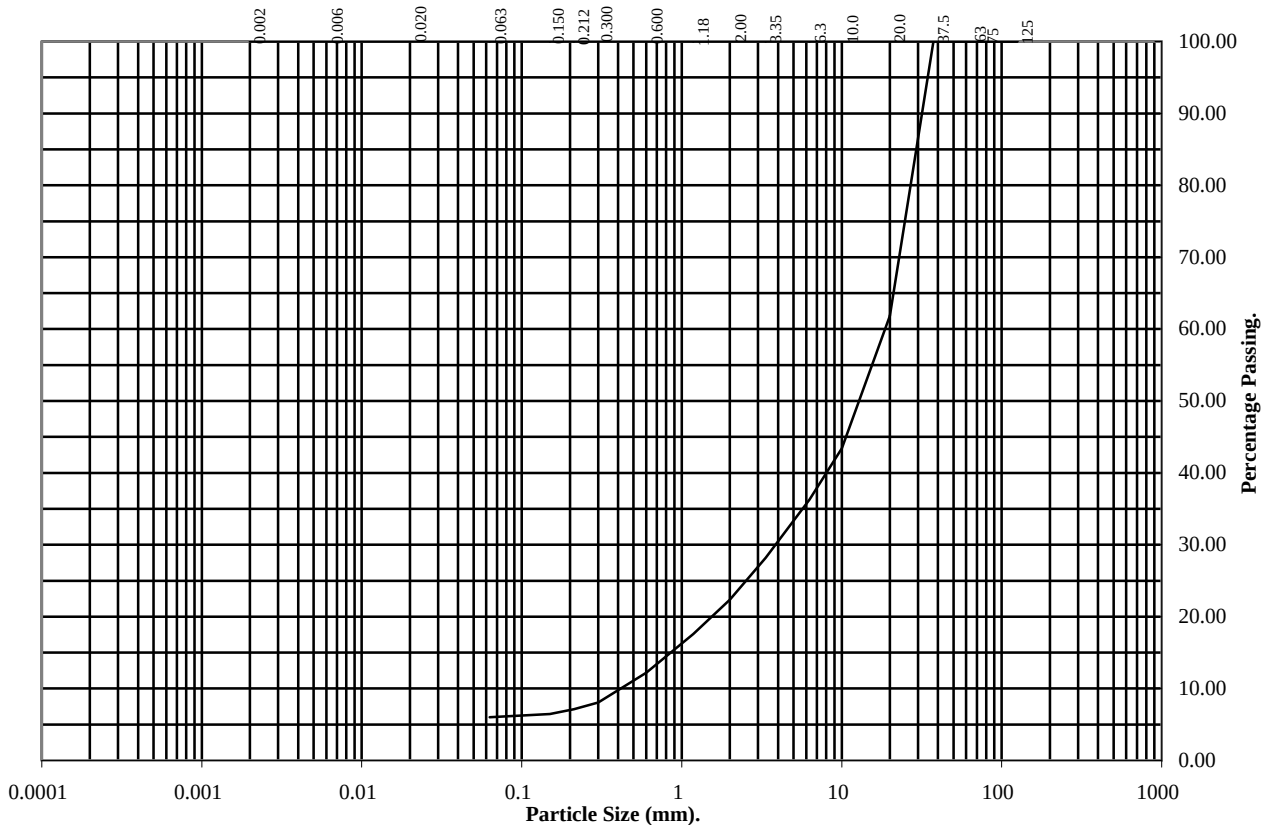
Wet Sieve, Clause 9.2

Hole Number: TP836

Depth (m): 2.50

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	62
10	43
6.3	36
3.35	28
2	22
1.18	18
0.6	12
0.3	8
0.212	7
0.15	6
0.063	6

Soil Fraction	Total Percentage
Cobbles	0
Gravel	78
Sand	16
Silt / Clay	6

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>RE</i>	05/12/14	<i>RE</i>	05/12/14

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Particle Size Distribution Test

BS1377 : Part 2 : 1990

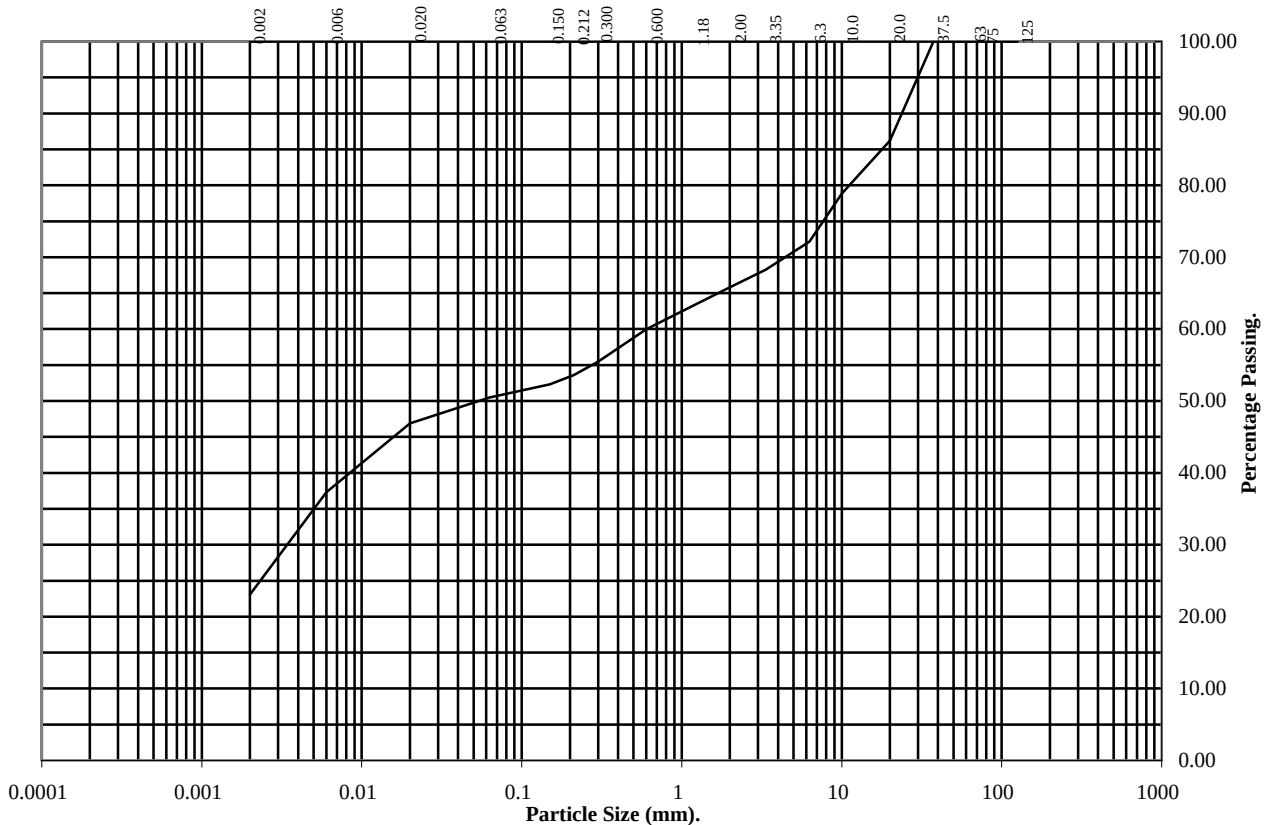
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP837

Depth (m): 1.10

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	86
10	79
6.3	72
3.35	68
2	66
1.18	63
0.6	60
0.3	55
0.212	54
0.15	52
0.063	50

Particle Diameter	Percentage Passing
0.02	47
0.006	37
0.002	23

Soil Fraction	Total Percentage
Cobbles	0
Gravel	34
Sand	16
Silt	27
Clay	23

Remarks:
See summary of soil descriptions.

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Particle Size Distribution Test

BS1377 : Part 2 : 1990

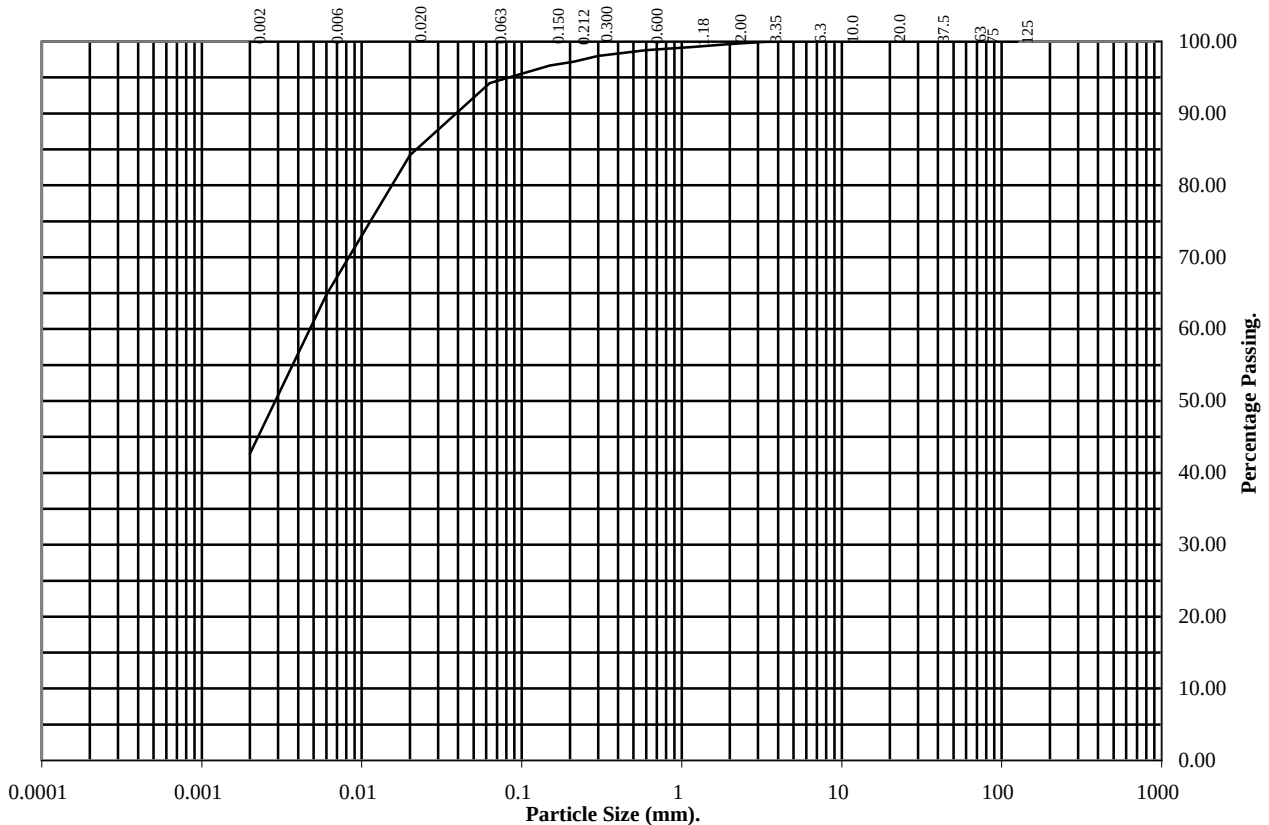
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP839

Depth (m): 1.20

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	100
2	100
1.18	99
0.6	99
0.3	98
0.212	97
0.15	97
0.063	94

Particle Diameter	Percentage Passing
0.02	84
0.006	65
0.002	43

Soil Fraction	Total Percentage
Cobbles	0
Gravel	0
Sand	6
Silt	51
Clay	43

Remarks:
See summary of soil descriptions.

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Particle Size Distribution Test

BS1377 : Part 2 : 1990

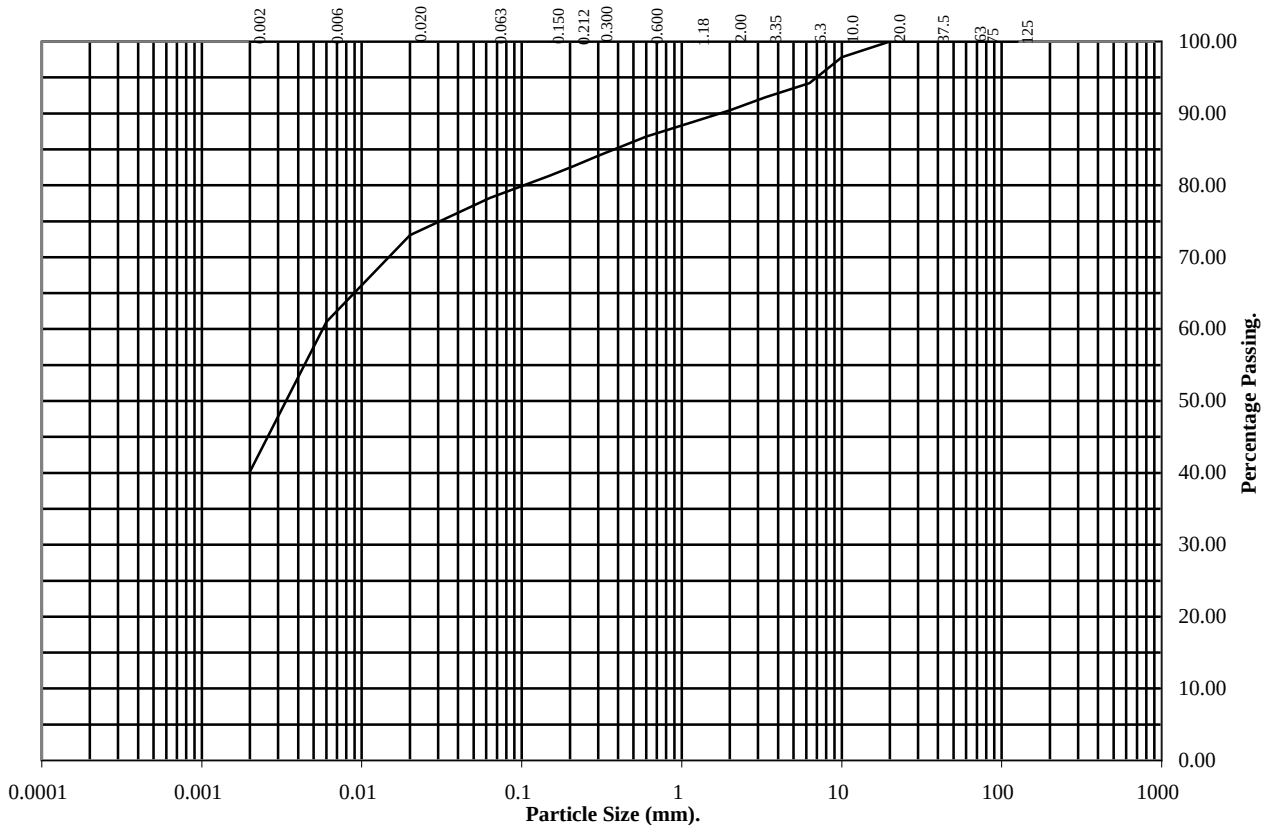
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP840

Depth (m): 2.80

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	98
6.3	94
3.35	92
2	90
1.18	89
0.6	87
0.3	84
0.212	83
0.15	81
0.063	78

Particle Diameter	Percentage Passing
0.02	73
0.006	61
0.002	40

Soil Fraction	Total Percentage
Cobbles	0
Gravel	10
Sand	12
Silt	38
Clay	40

Remarks:
See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	05/12/14

Particle Size Distribution Test

BS1377 : Part 2 : 1990

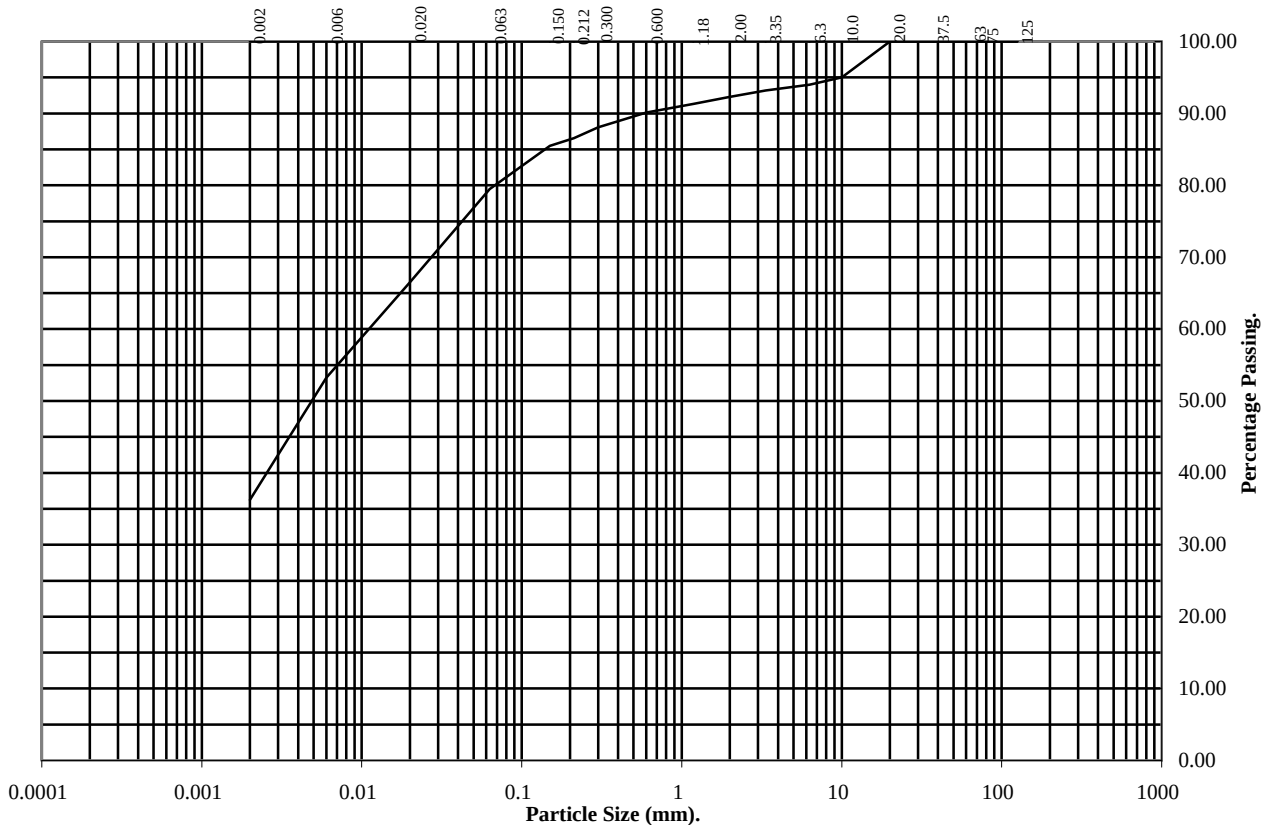
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP841

Depth (m): 1.20

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	95
6.3	94
3.35	93
2	92
1.18	91
0.6	90
0.3	88
0.212	87
0.15	85
0.063	79

Particle Diameter	Percentage Passing
0.02	67
0.006	53
0.002	36

Soil Fraction	Total Percentage
Cobbles	0
Gravel	8
Sand	13
Silt	43
Clay	36

Remarks:

See summary of soil descriptions.

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Particle Size Distribution Test

BS1377 : Part 2 : 1990

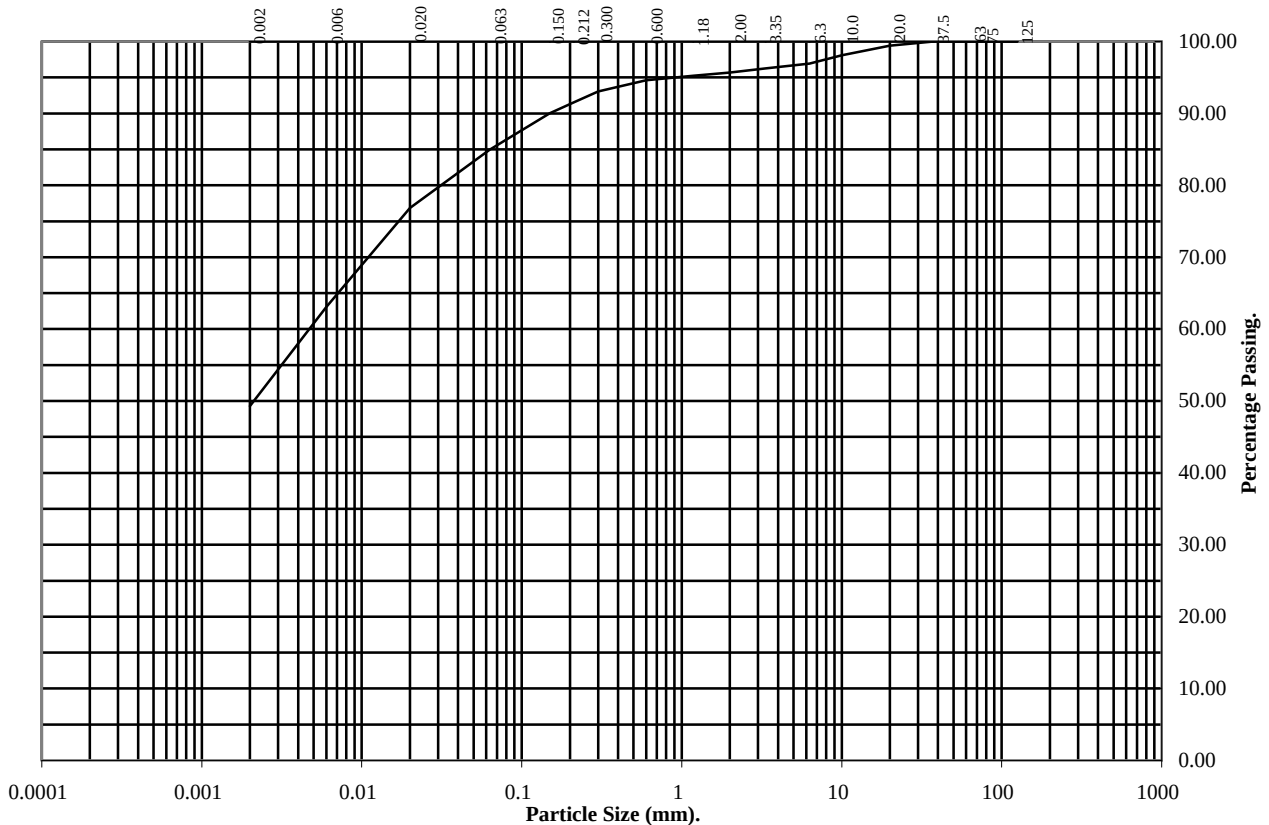
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP843

Depth (m): 2.00

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	99
10	98
6.3	97
3.35	96
2	96
1.18	95
0.6	95
0.3	93
0.212	92
0.15	90
0.063	85

Particle Diameter	Percentage Passing
0.02	77
0.006	63
0.002	49

Soil Fraction	Total Percentage
Cobbles	0
Gravel	4
Sand	11
Silt	36
Clay	49

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
<i>[Signature]</i>	04/12/14	<i>[Signature]</i>	04/12/14

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Particle Size Distribution Test

BS1377 : Part 2 : 1990

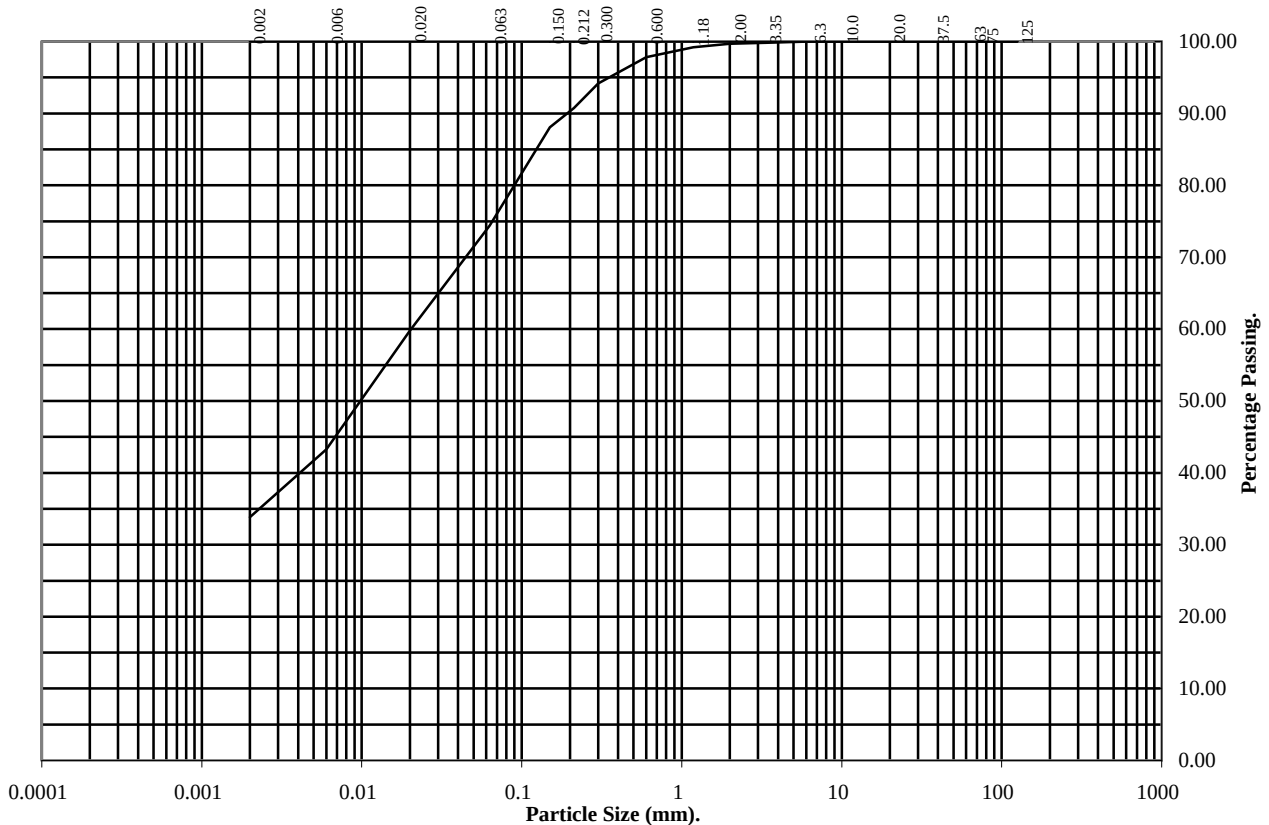
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP844

Depth (m): 1.50

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	100
2	100
1.18	99
0.6	98
0.3	94
0.212	91
0.15	88
0.063	74

Particle Diameter	Percentage Passing
0.02	60
0.006	43
0.002	34

Soil Fraction	Total Percentage
Cobbles	0
Gravel	0
Sand	26
Silt	40
Clay	34

Remarks:
See summary of soil descriptions.

Checked By	Date	Approved By	Date
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Particle Size Distribution Test

BS1377 : Part 2 : 1990

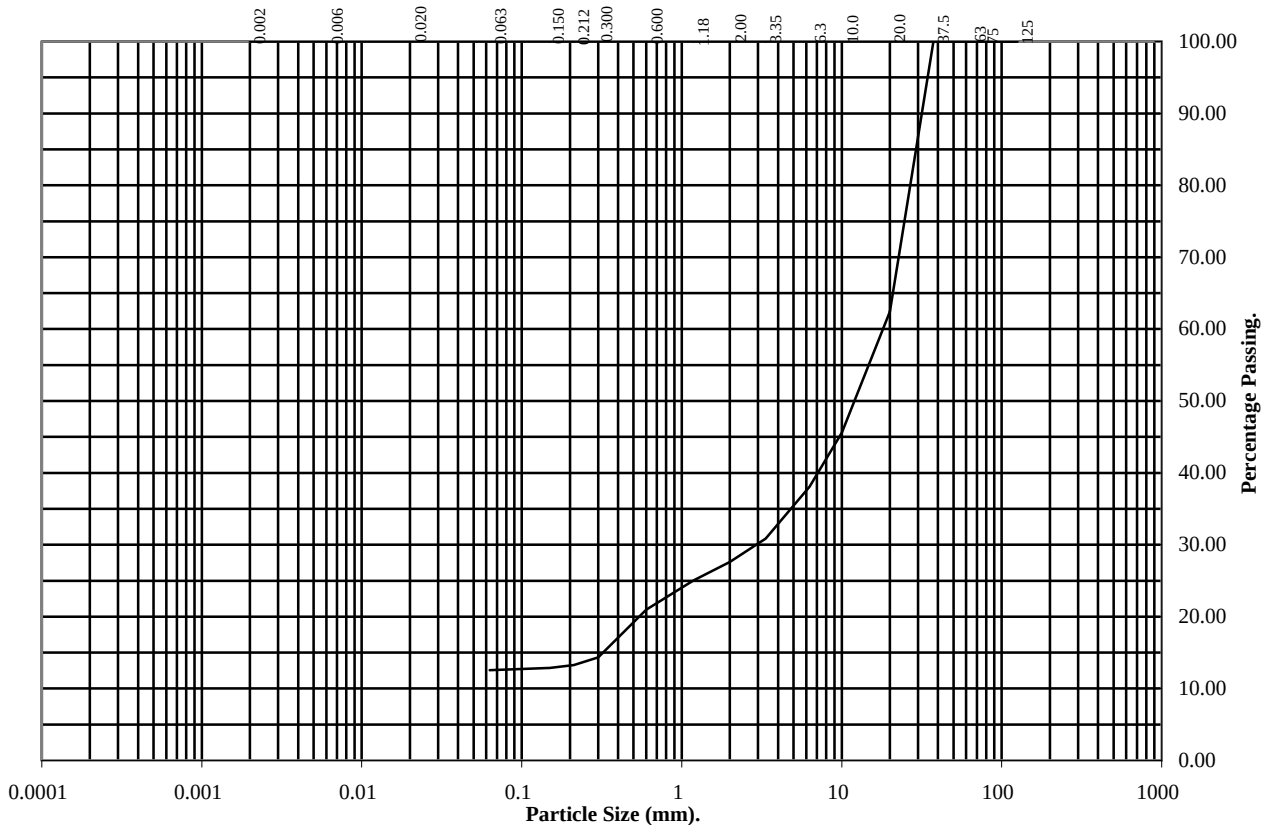
Wet Sieve, Clause 9.2

Hole Number: TP845

Depth (m): 1.50

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	62
10	46
6.3	38
3.35	31
2	28
1.18	25
0.6	21
0.3	14
0.212	13
0.15	13
0.063	13

Soil Fraction	Total Percentage
Cobbles	0
Gravel	72
Sand	15
Silt / Clay	13

Remarks:

See summary of soil descriptions.

Checked By	Date	Approved By	Date
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Particle Size Distribution Test

BS1377 : Part 2 : 1990

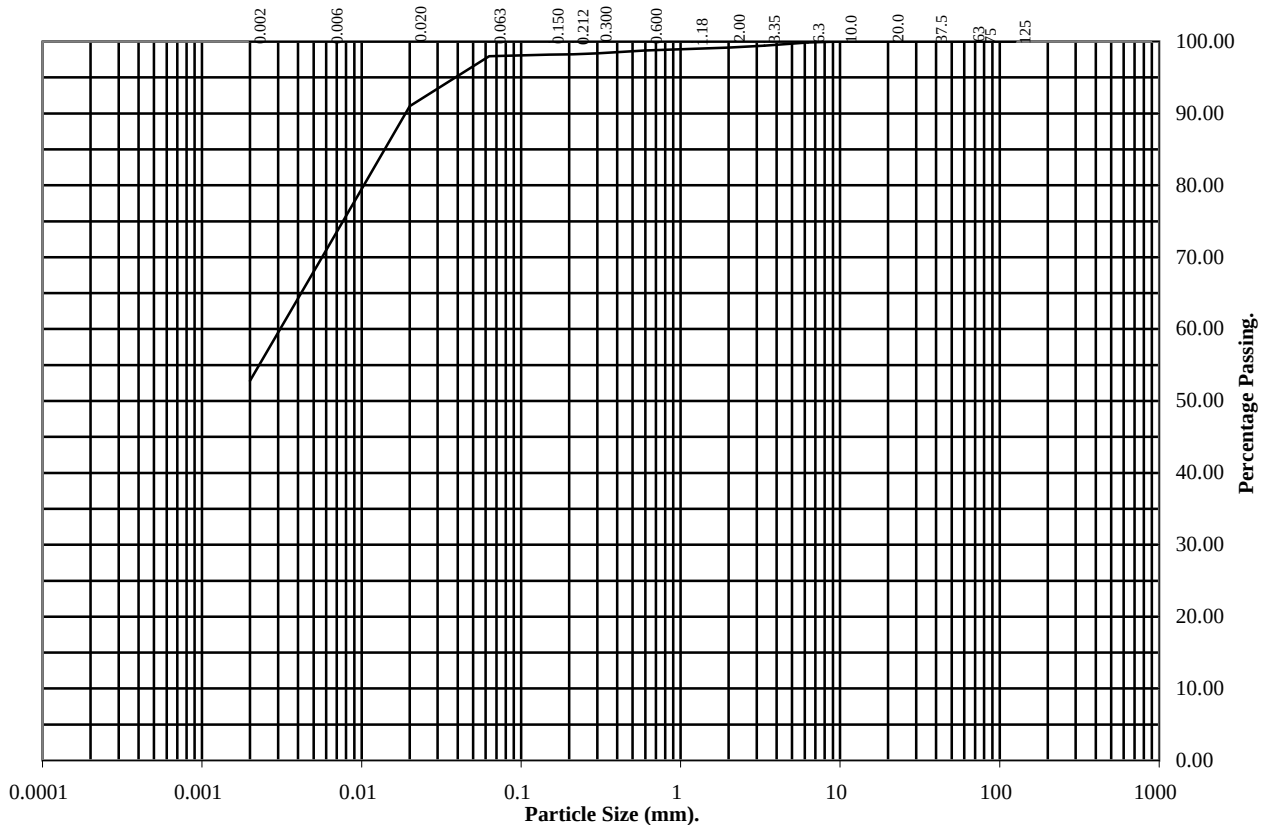
Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP850

Depth (m): 2.00

Sample Number: 1

Sample Type: B



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	99
2	99
1.18	99
0.6	99
0.3	98
0.212	98
0.15	98
0.063	98

Particle Diameter	Percentage Passing
0.02	91
0.006	71
0.002	53

Soil Fraction	Total Percentage
Cobbles	0
Gravel	1
Sand	1
Silt	45
Clay	53

Remarks:
See summary of soil descriptions.

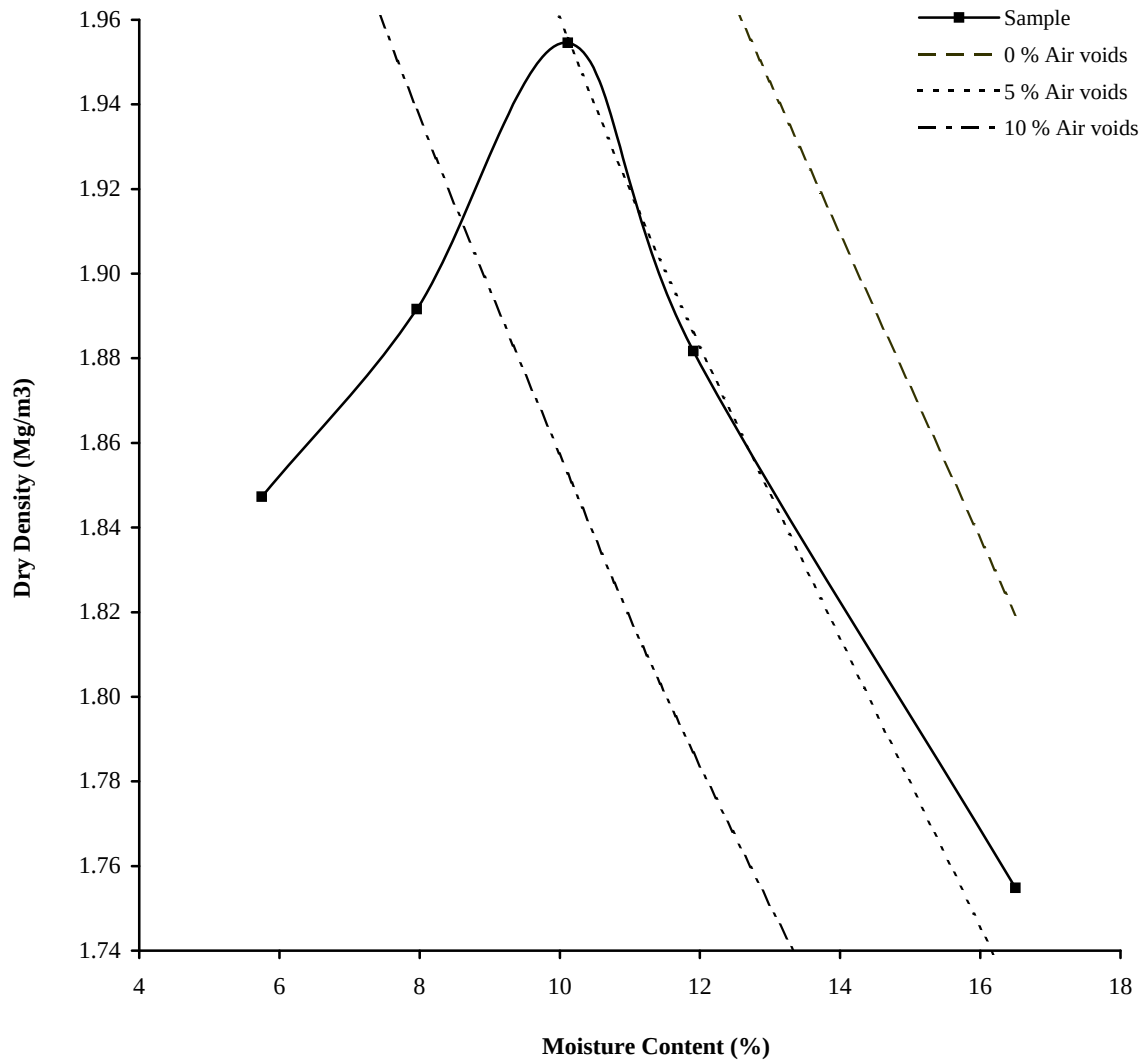
Checked By	Date	Approved By	Date
<i>Re</i>	05/12/14	<i>Re</i>	05/12/14

Dry Density/Moisture Content Relationship Test

BS 1377 : Part 4 : 1990

Hole Number: TP802 Depth (m) : 1.70

Sample Number: 1 Sample Type: B



Initial Moisture Content:	12	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.60	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):		1.95	Material Retained on 20.0 mm Test Sieve (%):	14
Optimum Moisture Content (%):		12		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	05/12/14

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Dry Density/Moisture Content Relationship Test

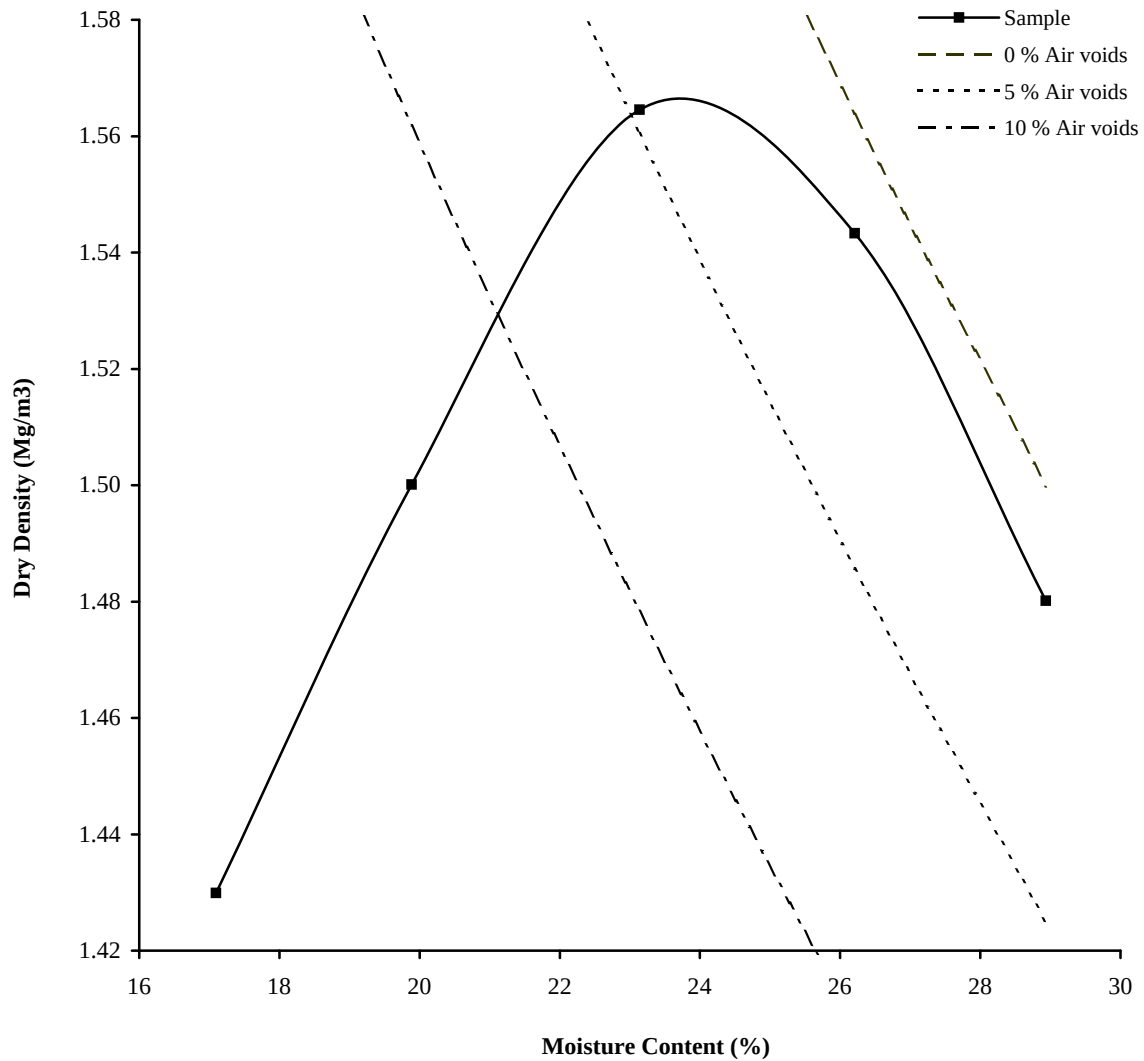
BS 1377 : Part 4 : 1990

Hole Number: TP804

Depth (m) : 2.20

Sample Number: 1

Sample Type: B



Initial Moisture Content:	26	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	6
Maximum Dry Density (Mg/m3):		1.56	Material Retained on 20.0 mm Test Sieve (%):	5
Optimum Moisture Content (%):		24		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	05/12/14

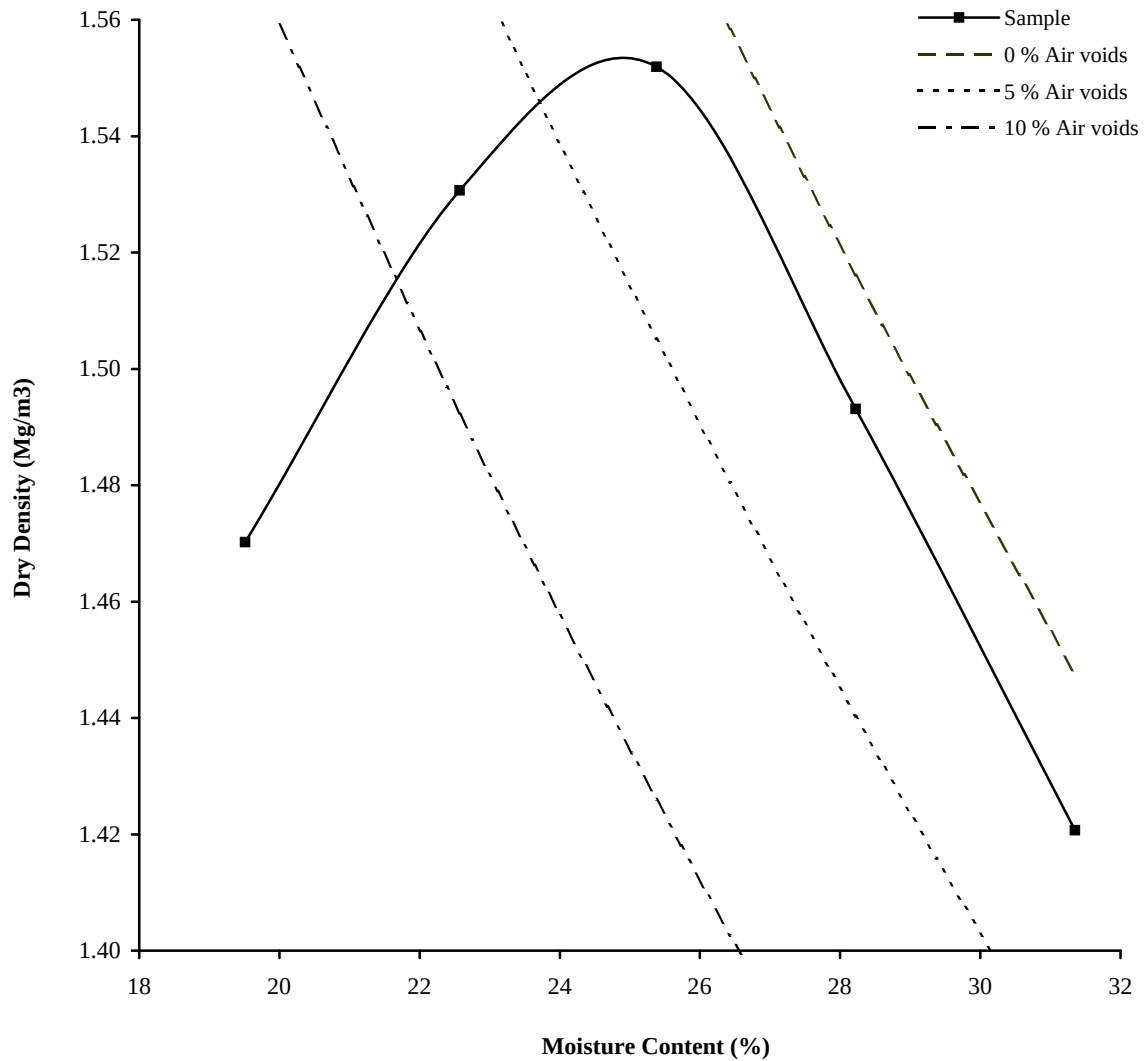
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Dry Density/Moisture Content Relationship Test

BS 1377 : Part 4 : 1990

Hole Number: TP832 Depth (m) : 1.50

Sample Number: 1 Sample Type: B



Initial Moisture Content:	25	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):		1.55	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):		25		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>RE</i>	05/12/14	<i>RE</i>	05/12/14

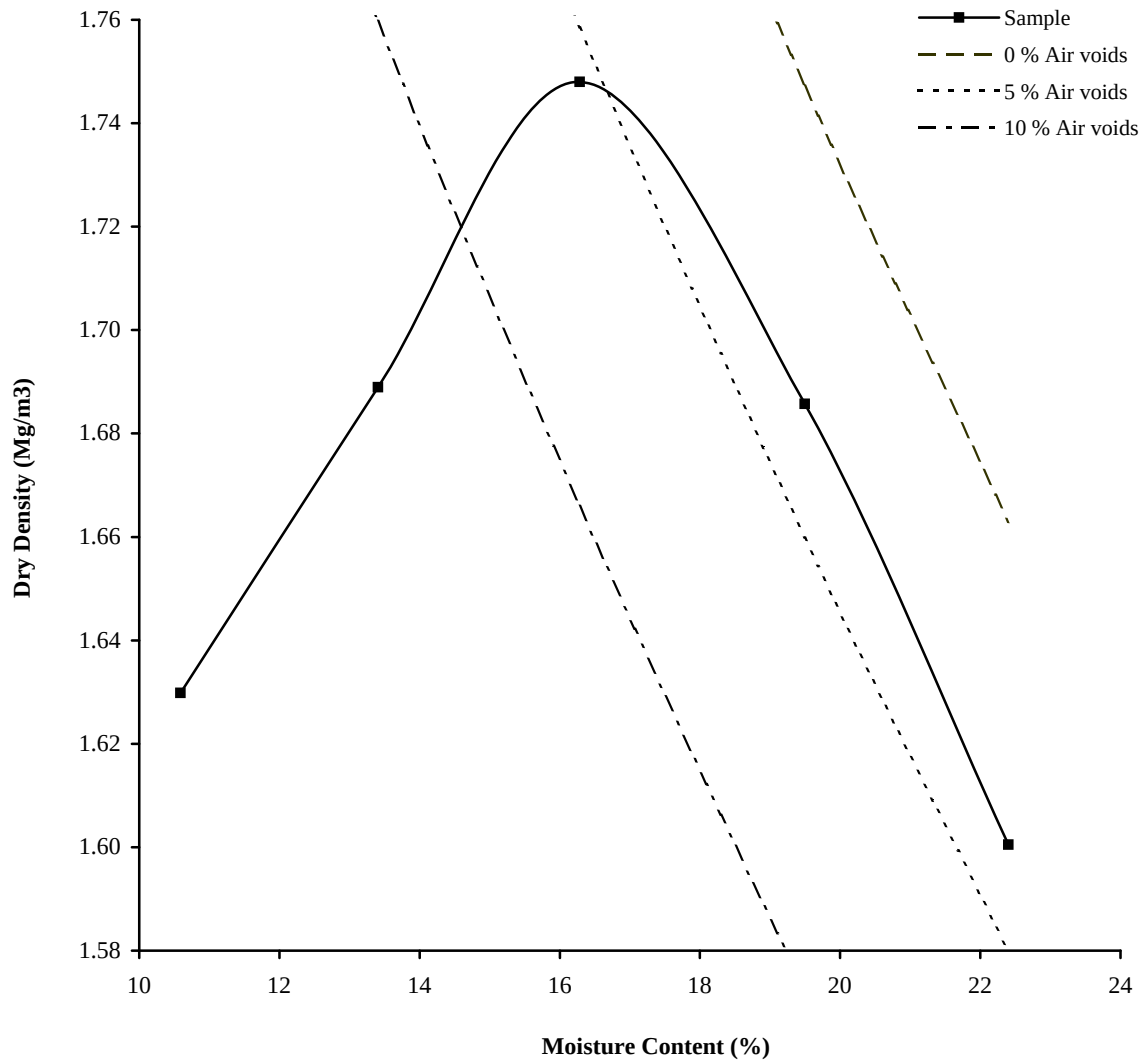
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Dry Density/Moisture Content Relationship Test

BS 1377 : Part 4 : 1990

Hole Number: TP833 Depth (m) : 1.20

Sample Number: 1 Sample Type: B



Initial Moisture Content:	19	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	4
Maximum Dry Density (Mg/m3):		1.75	Material Retained on 20.0 mm Test Sieve (%):	5
Optimum Moisture Content (%):		16		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	05/12/14

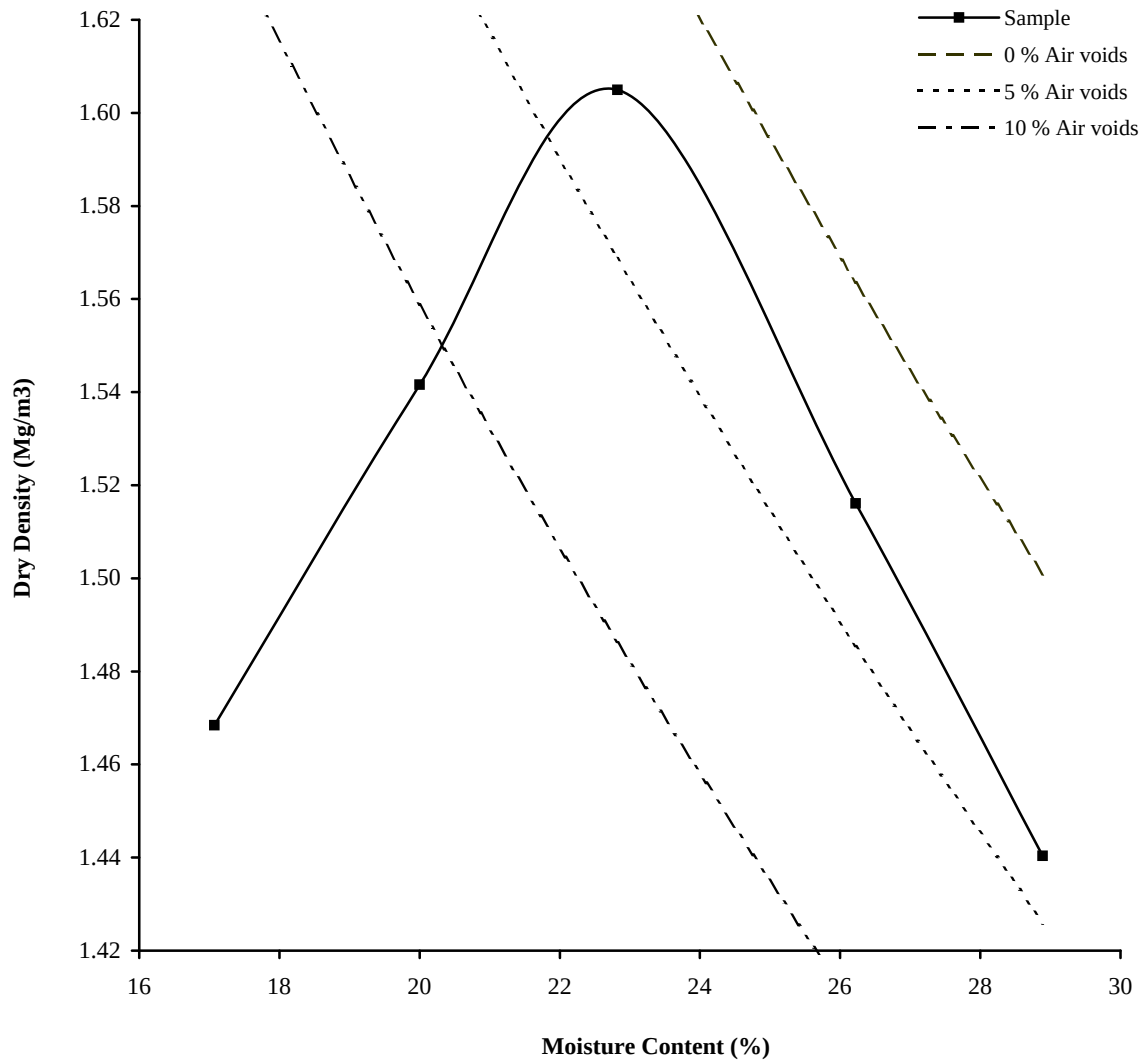
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Dry Density/Moisture Content Relationship Test

BS 1377 : Part 4 : 1990

Hole Number: TP837 Depth (m) : 1.10

Sample Number: 1 Sample Type: B



Initial Moisture Content:	26	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):	1.60	Material Retained on 20.0 mm Test Sieve (%):		14
Optimum Moisture Content (%):	23			
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	05/12/14

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Dry Density/Moisture Content Relationship Test

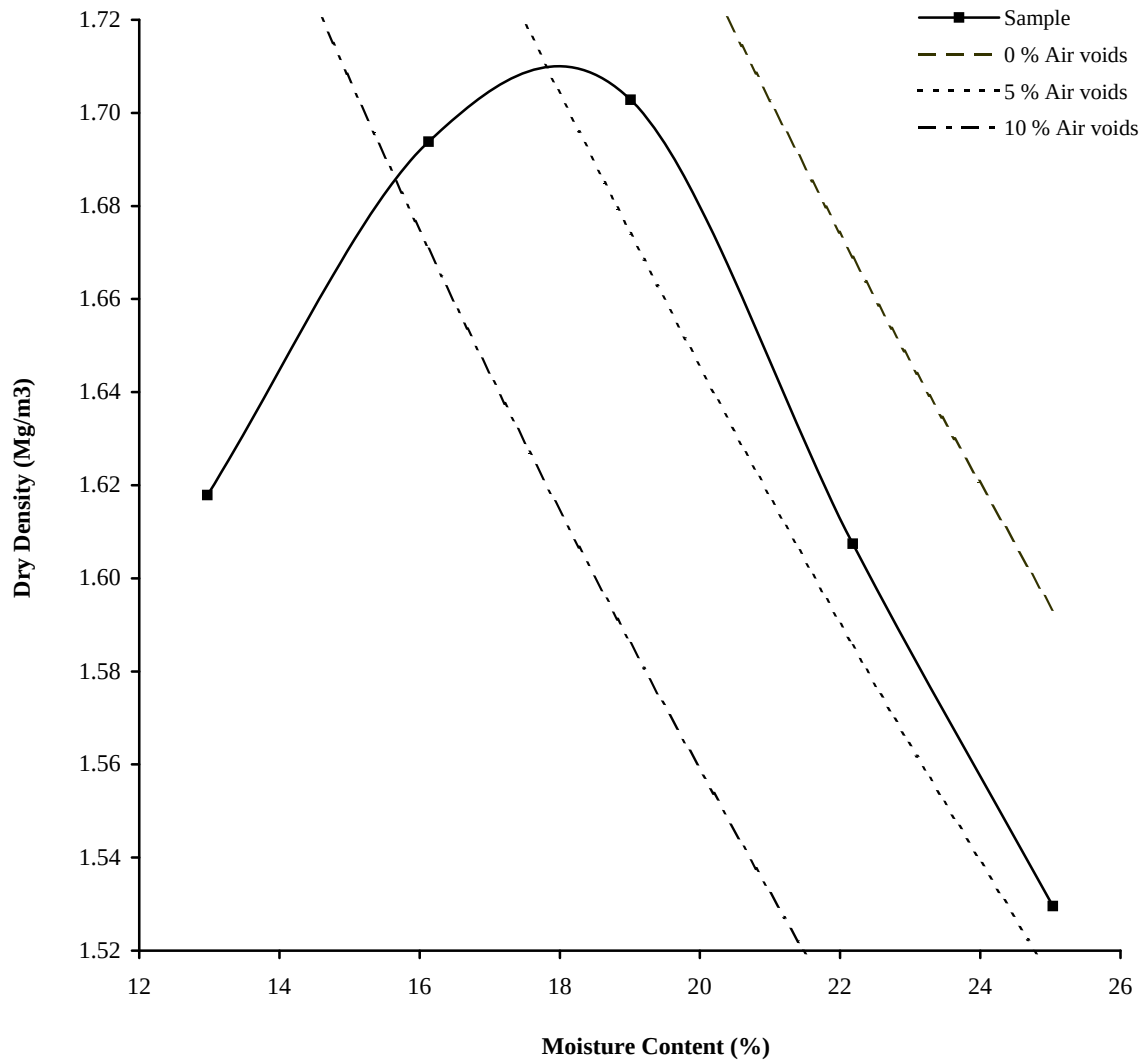
BS 1377 : Part 4 : 1990

Hole Number: TP839

Depth (m) : 1.20

Sample Number: 1

Sample Type: B



Initial Moisture Content:	22	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):		1.71	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):		18		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	05/12/14

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Dry Density/Moisture Content Relationship Test

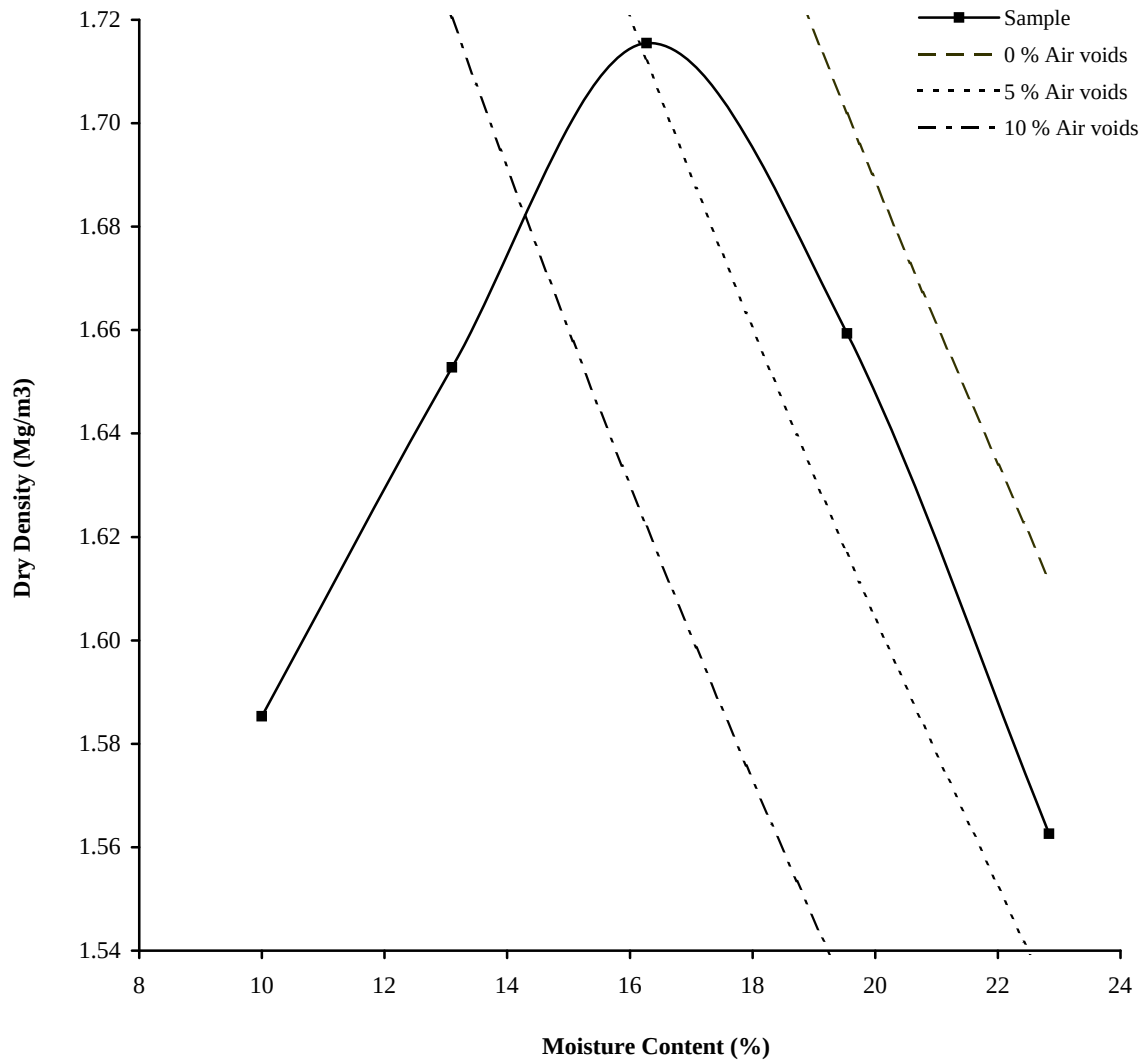
BS 1377 : Part 4 : 1990

Hole Number: TP841

Depth (m) : 1.20

Sample Number: 1

Sample Type: B



Initial Moisture Content:	16	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.55	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):		1.72	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):		16		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	05/12/14

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Dry Density/Moisture Content Relationship Test

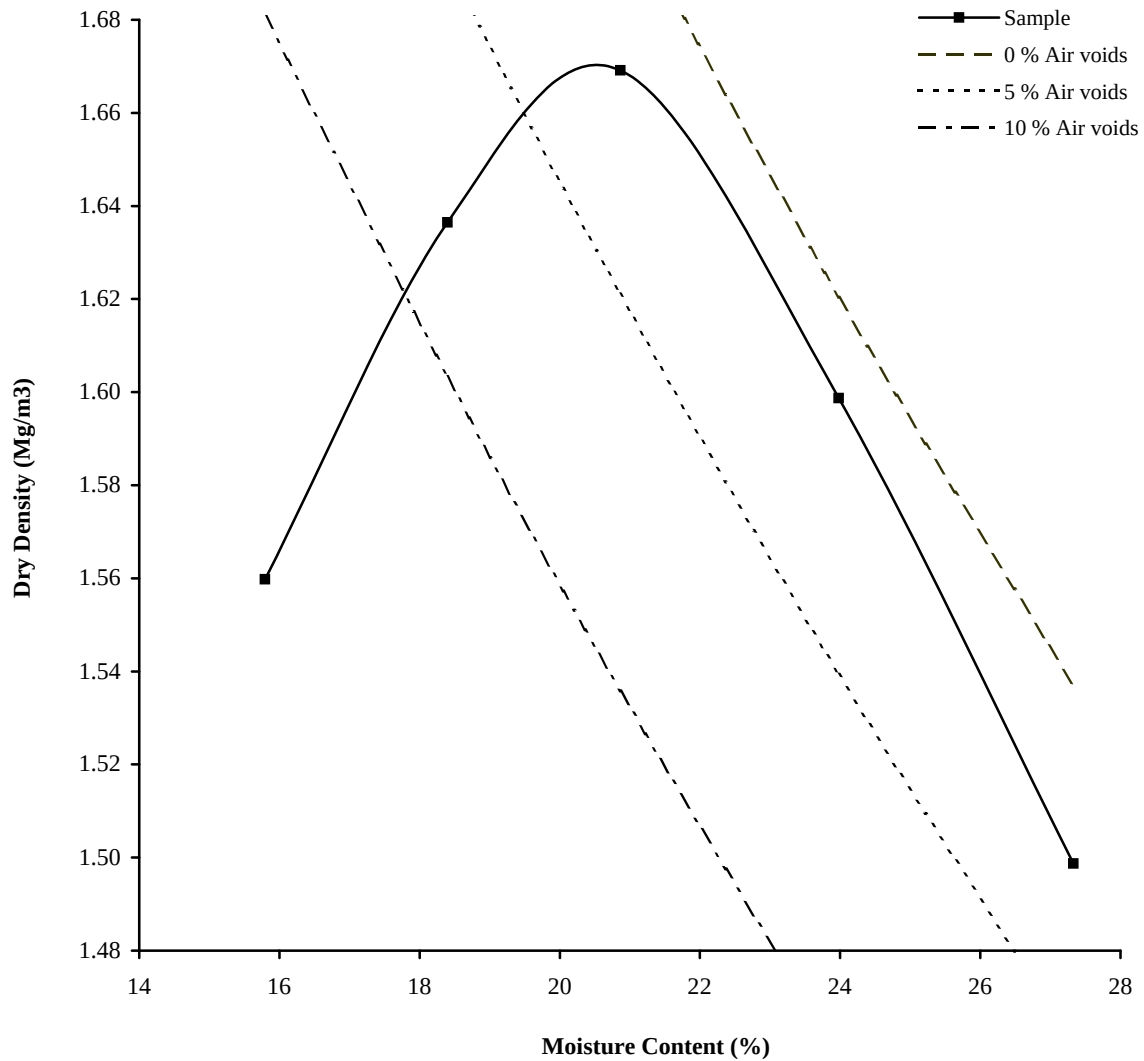
BS 1377 : Part 4 : 1990

Hole Number: TP843

Depth (m) : 2.00

Sample Number: 1

Sample Type: B



Initial Moisture Content:	27	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):	1.67		Material Retained on 20.0 mm Test Sieve (%):	1
Optimum Moisture Content (%):	21			
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>RL</i>	05/12/14	<i>RL</i>	05/12/14

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Dry Density/Moisture Content Relationship Test

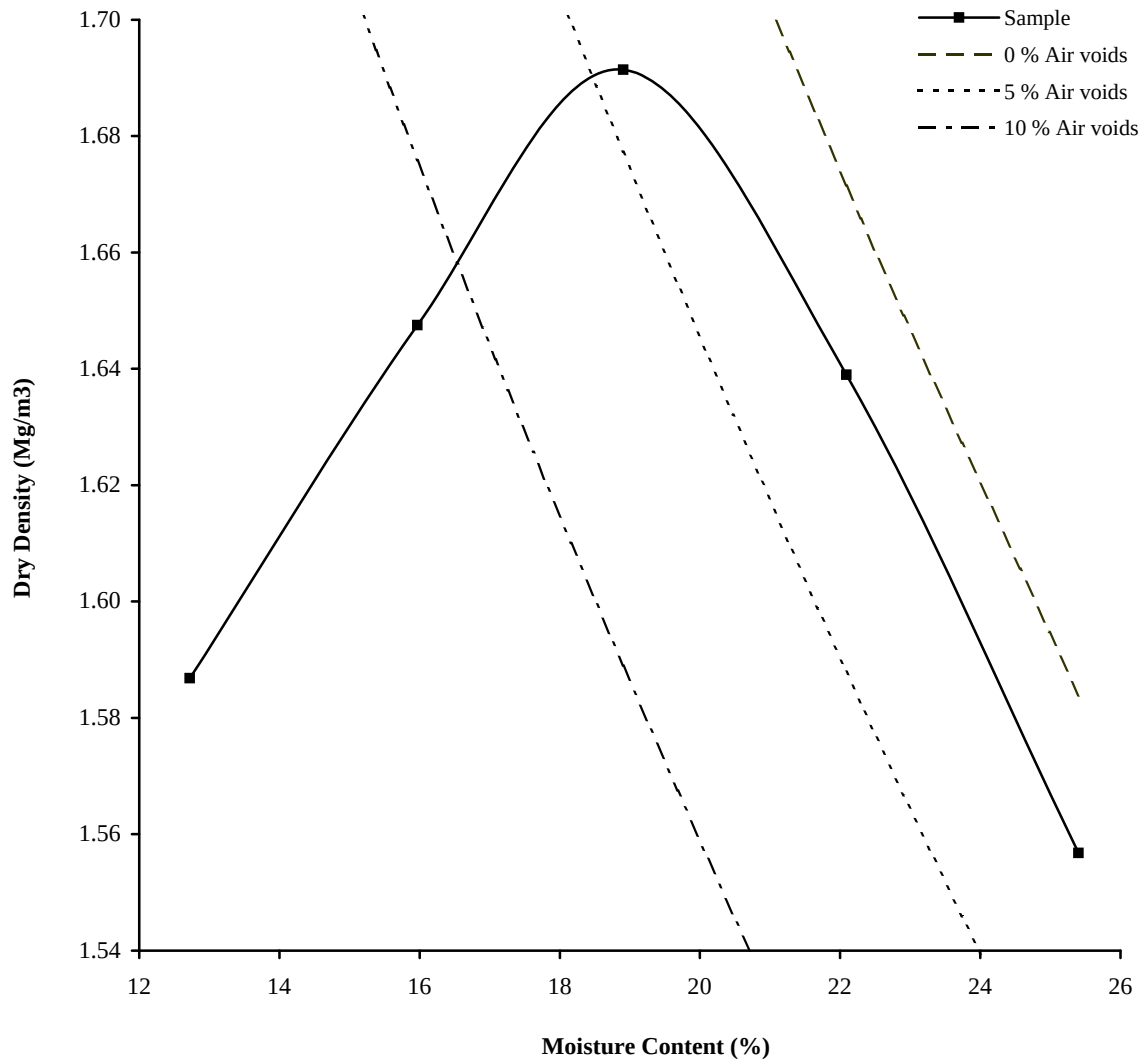
BS 1377 : Part 4 : 1990

Hole Number: TP844

Depth (m) : 1.50

Sample Number: 1

Sample Type: B



Initial Moisture Content:	22	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):		1.69	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):		19		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	05/12/14

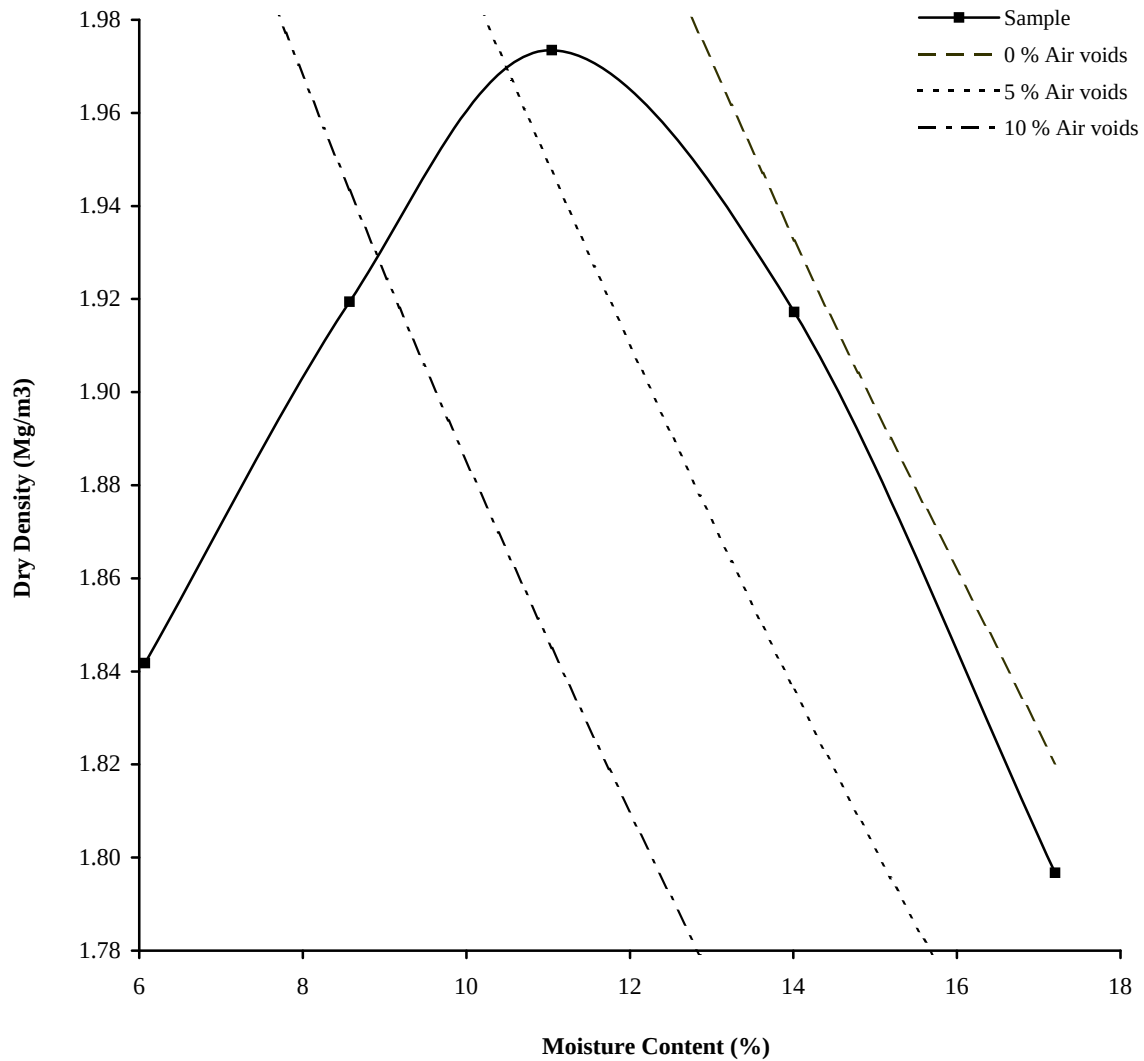
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Dry Density/Moisture Content Relationship Test

Non Compliance With BS 1377 : Part 4 : 1990

Hole Number: TP845 Depth (m) : 1.50

Sample Number: 1 Sample Type: B



Initial Moisture Content:	11	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):	1.97		Material Retained on 20.0 mm Test Sieve (%):	38
Optimum Moisture Content (%):	11			
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date

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Dry Density/Moisture Content Relationship Test

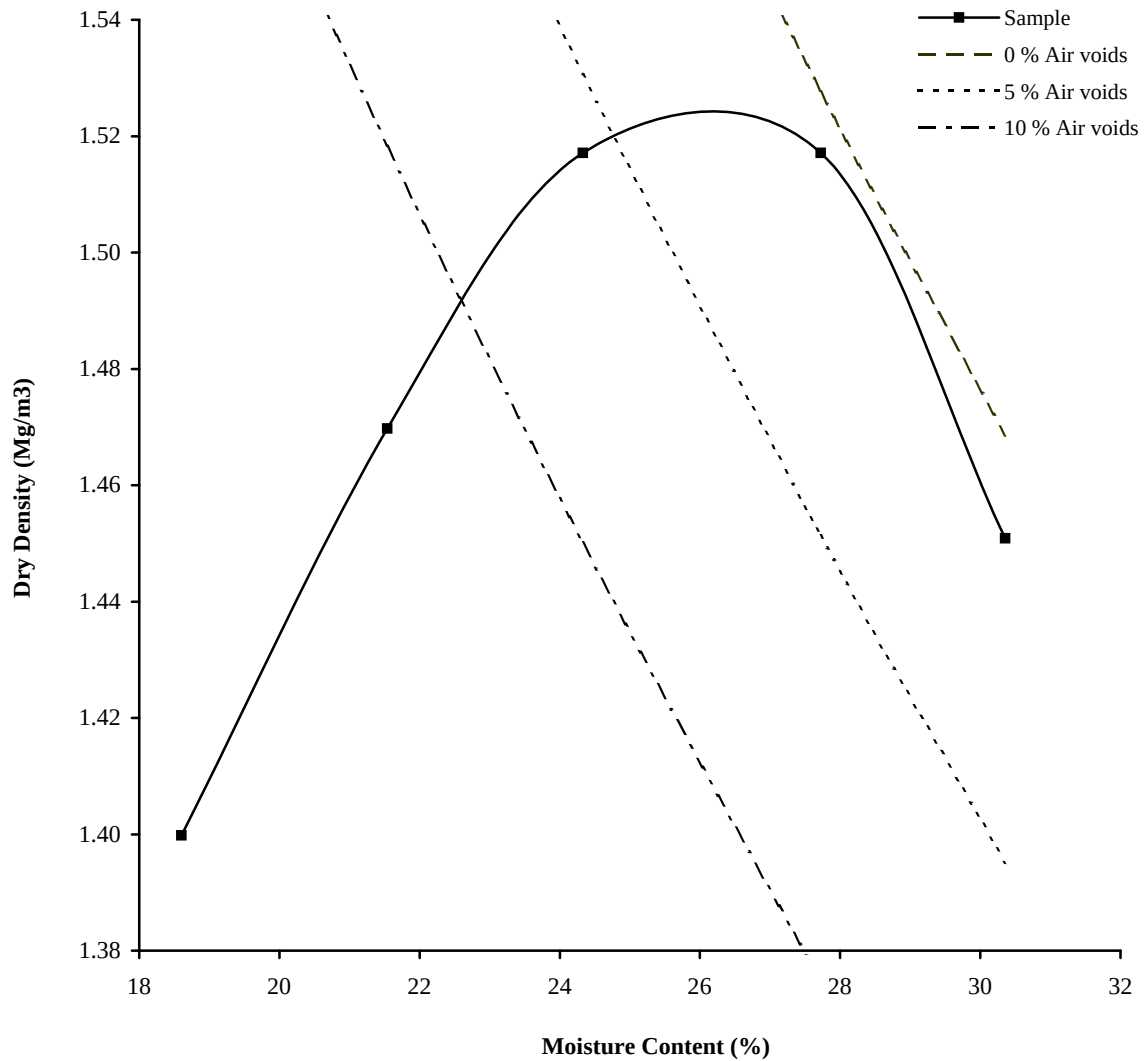
BS 1377 : Part 4 : 1990

Hole Number: TP850

Depth (m) : 2.00

Sample Number: 1

Sample Type: B



Initial Moisture Content:	28	Method of Compaction	2.5kg / Separate Sample	
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):		1.52	Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):		26		
Remarks	See Summary of Soil Descriptions.			

Checked By	Date	Approved By	Date
<i>Re</i>	05/12/14	<i>Re</i>	05/12/14

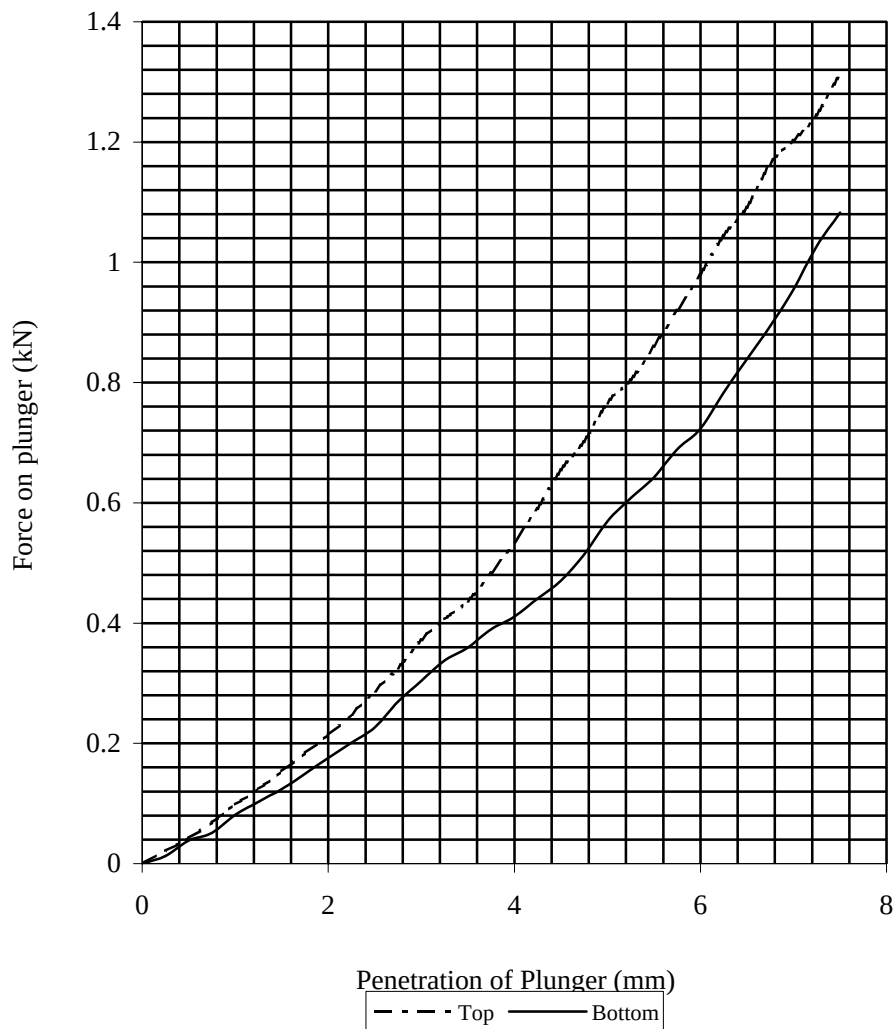
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California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: TP802 Depth (m): 1.70

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	12	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	2.18	Soaking Time hrs	0	Sample Top	12	Sample Top	3.8
Dry Density Mg/m3:	1.95	Swelling mm:	0	Sample Bottom	12	Sample Bottom	2.8
Percentage retained on 20mm BS test sieve:	14	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
	05/12/14		05/12/14

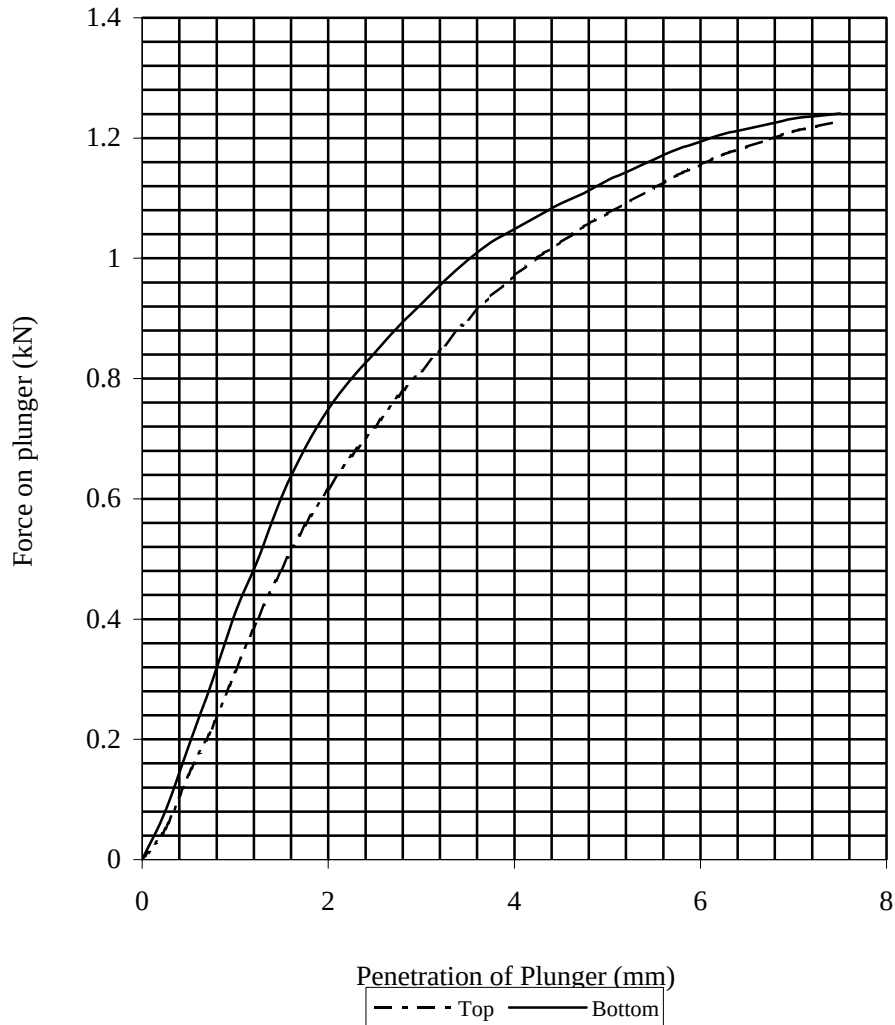
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California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: TP804 Depth (m): 2.20

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	26	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	1.94	Soaking Time hrs	0	Sample Top	26	Sample Top	5.4
Dry Density Mg/m3:	1.54	Swelling mm:	0	Sample Bottom	26	Sample Bottom	6.4
Percentage retained on 20mm BS test sieve:	11	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
	05/12/14		05/12/14

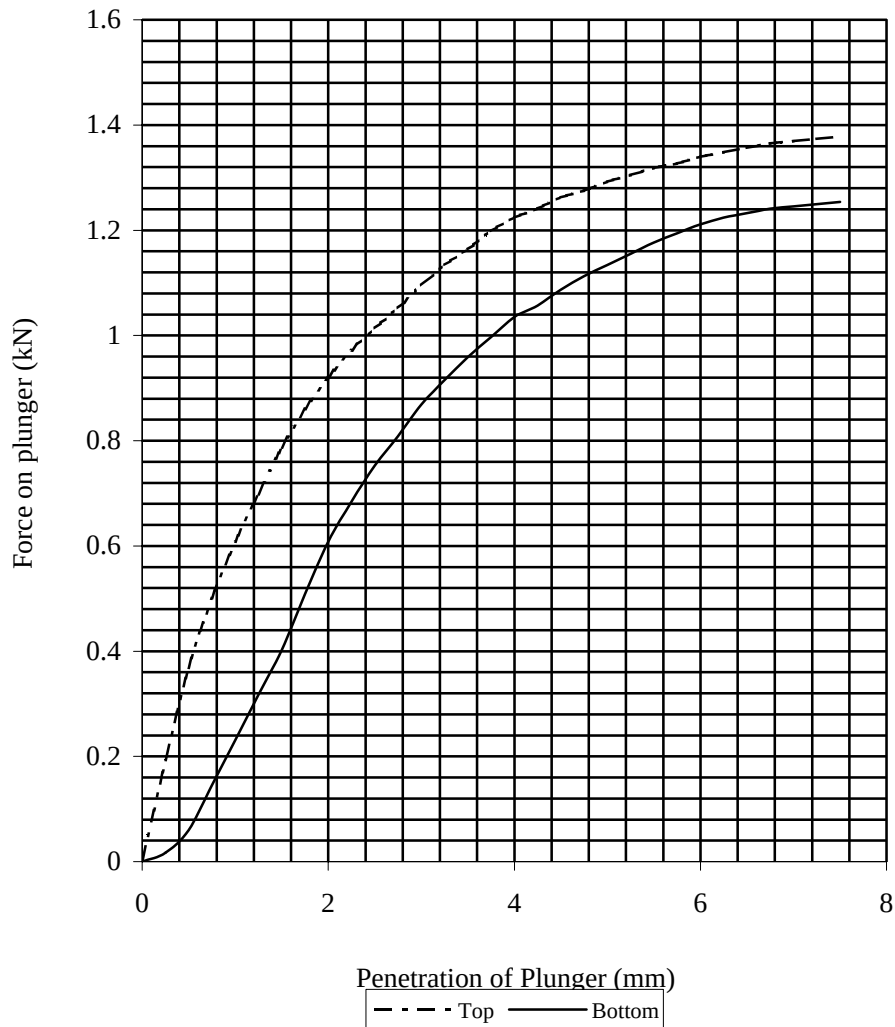
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: TP832 Depth (m): 1.50

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	25	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m ³ :	1.95	Soaking Time hrs	0	Sample Top	25	Sample Top	7.7
Dry Density Mg/m ³ :	1.55	Swelling mm:	0	Sample Bottom	25	Sample Bottom	5.7
Percentage retained on 20mm BS test sieve:	0	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
	05/12/14		05/12/14

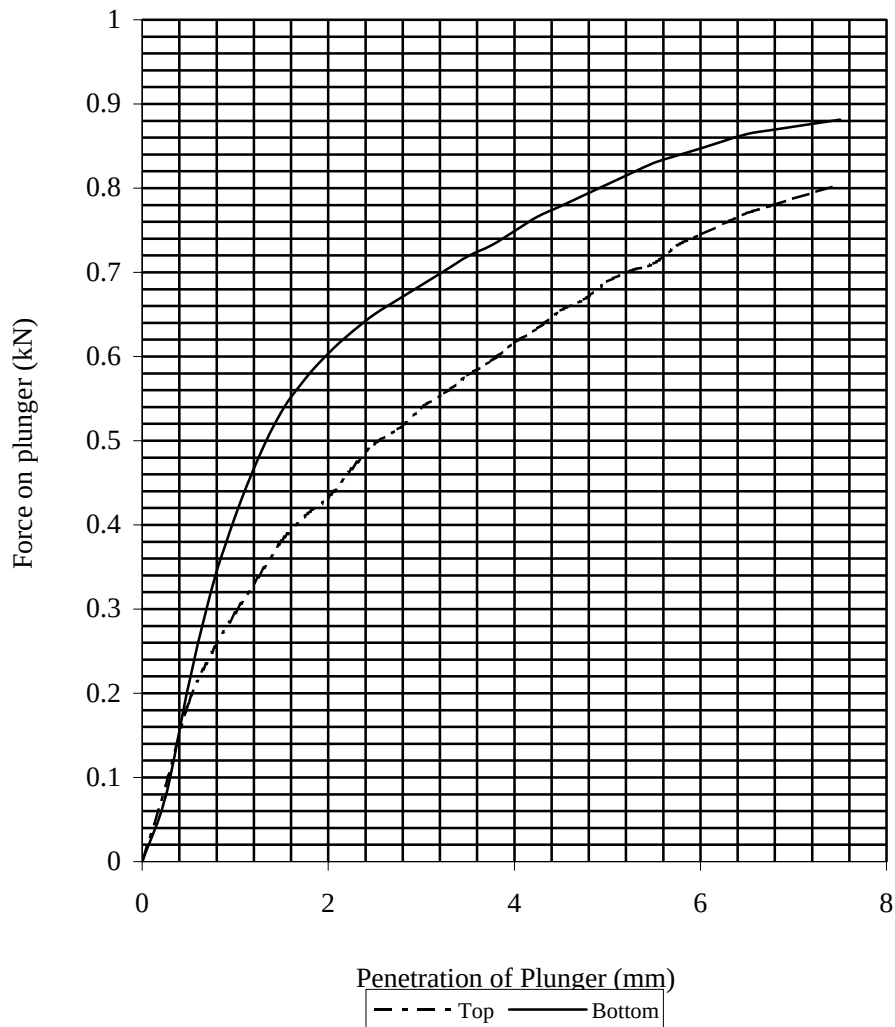
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: TP833 Depth (m): 1.20

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	20	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m ³ :	2.01	Soaking Time hrs	0	Sample Top	20	Sample Top	3.8
Dry Density Mg/m ³ :	1.69	Swelling mm:	0	Sample Bottom	20	Sample Bottom	4.9
Percentage retained on 20mm BS test sieve:	9	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
	05/12/14		05/12/14

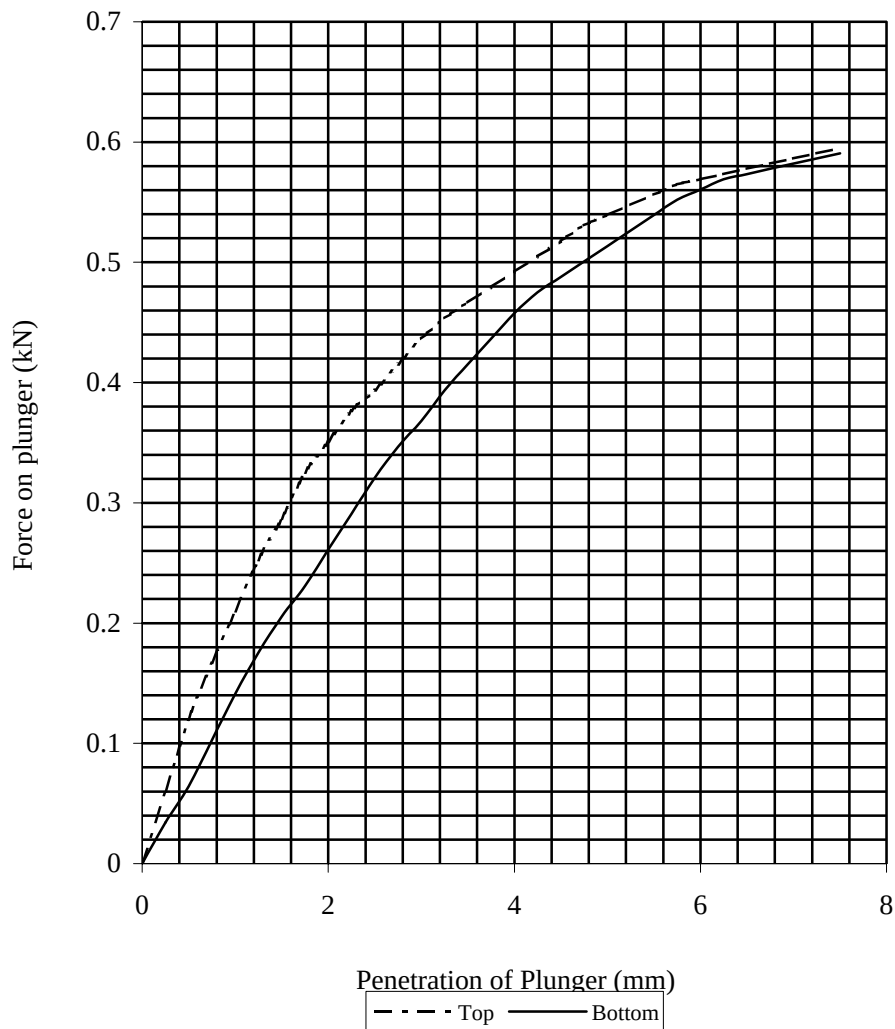
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: TP837 Depth (m): 1.10

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	26	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m ³ :	1.91	Soaking Time hrs	0	Sample Top	26	Sample Top	3.0
Dry Density Mg/m ³ :	1.52	Swelling mm:	0	Sample Bottom	26	Sample Bottom	2.6
Percentage retained on 20mm BS test sieve:	14	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
	05/12/14		05/12/14

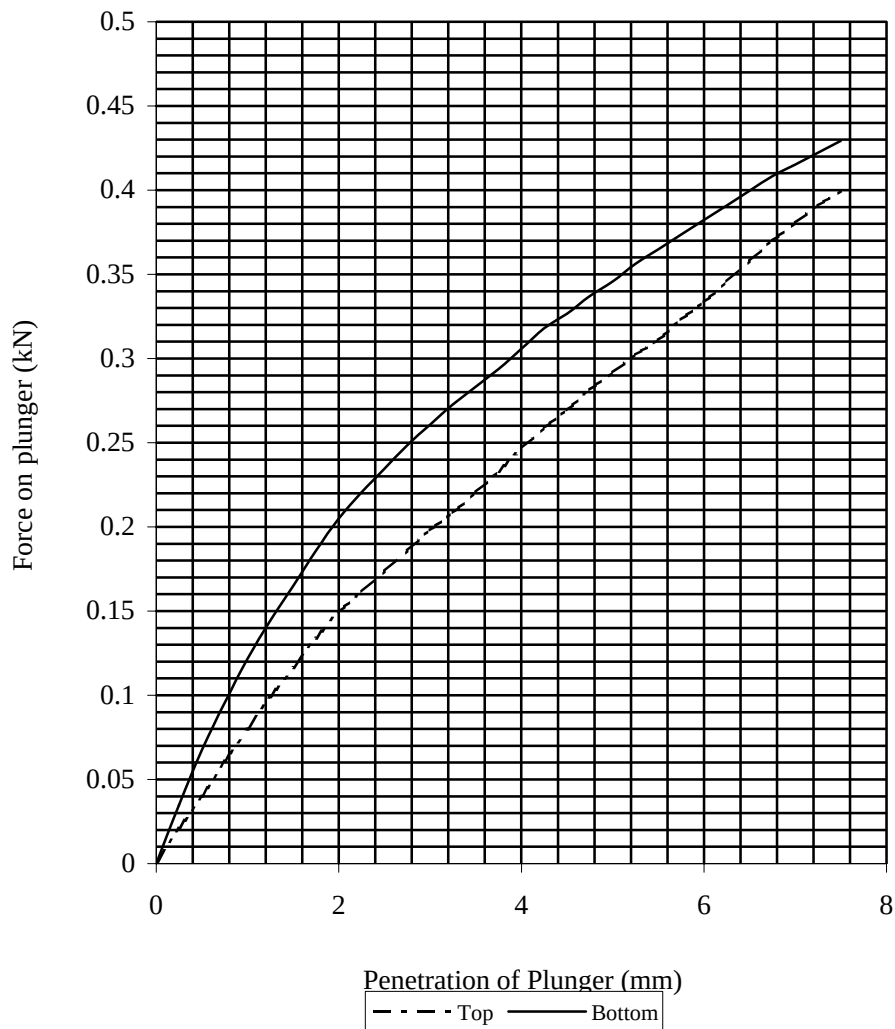
PSL Professional Soils Laboratory		ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: TP839 Depth (m): 1.20

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	22	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m ³ :	1.96	Soaking Time hrs	0	Sample Top	22	Sample Top	1.5
Dry Density Mg/m ³ :	1.61	Swelling mm:	0	Sample Bottom	22	Sample Bottom	1.8
Percentage retained on 20mm BS test sieve:	0	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
	05/12/14		05/12/14

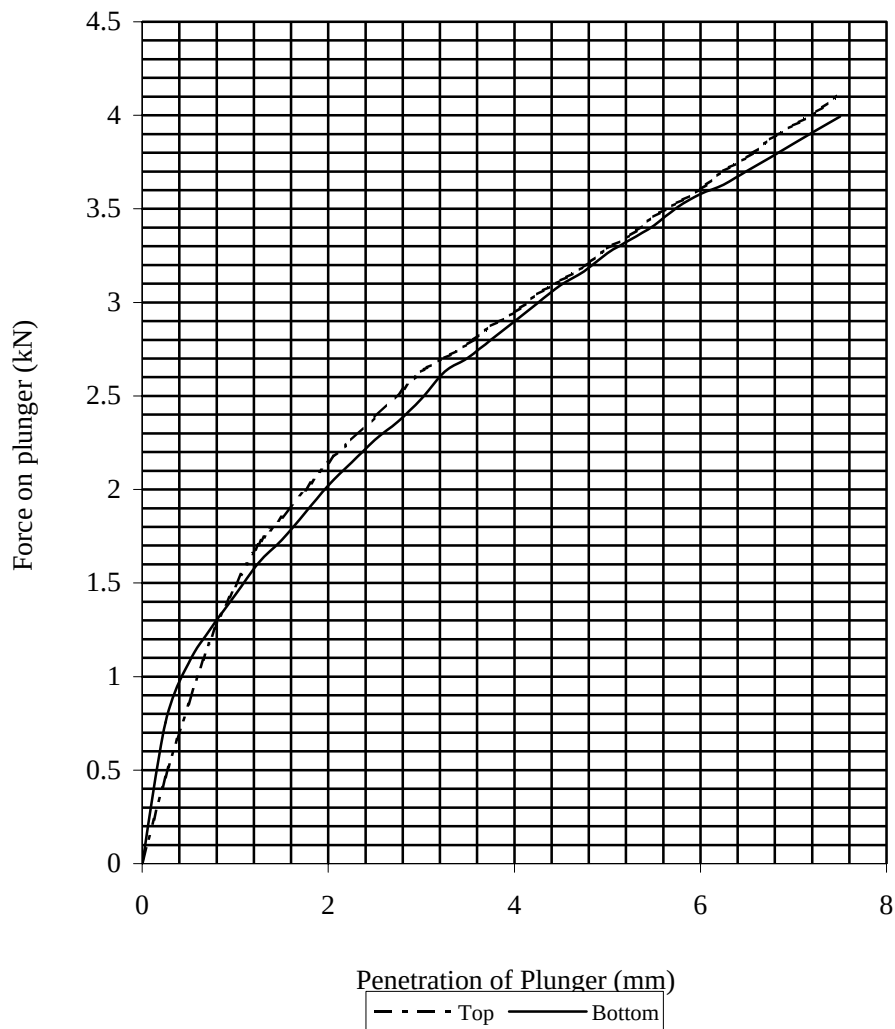
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: TP841 Depth (m): 1.20

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	16	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	2.00	Soaking Time hrs	0	Sample Top	16	Sample Top	18.1
Dry Density Mg/m3:	1.72	Swelling mm:	0	Sample Bottom	16	Sample Bottom	17.2
Percentage retained on 20mm BS test sieve:	0	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
	05/12/14		05/12/14

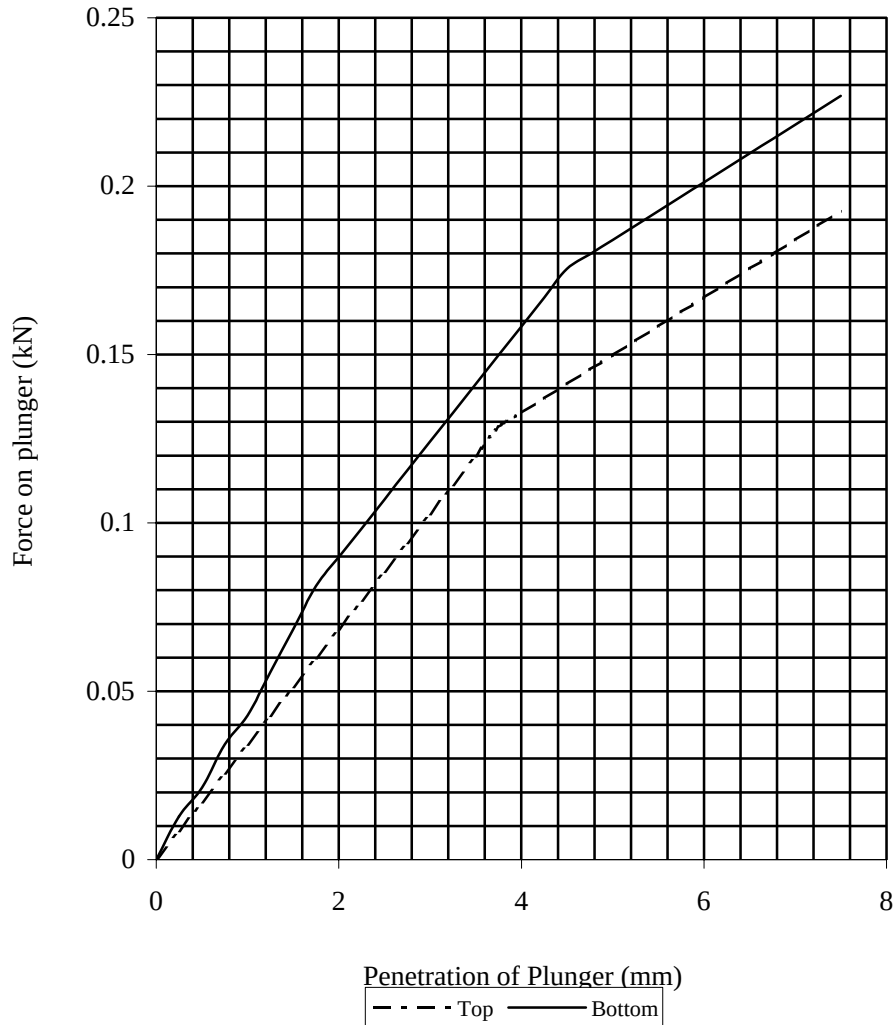
PSL Professional Soils Laboratory		ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: TP843 Depth (m): 2.00

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	27	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	1.91	Soaking Time hrs	0	Sample Top	27	Sample Top	0.7
Dry Density Mg/m3:	1.50	Swelling mm:	0	Sample Bottom	27	Sample Bottom	0.9
Percentage retained on 20mm BS test sieve:	1	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
	05/12/14		05/12/14

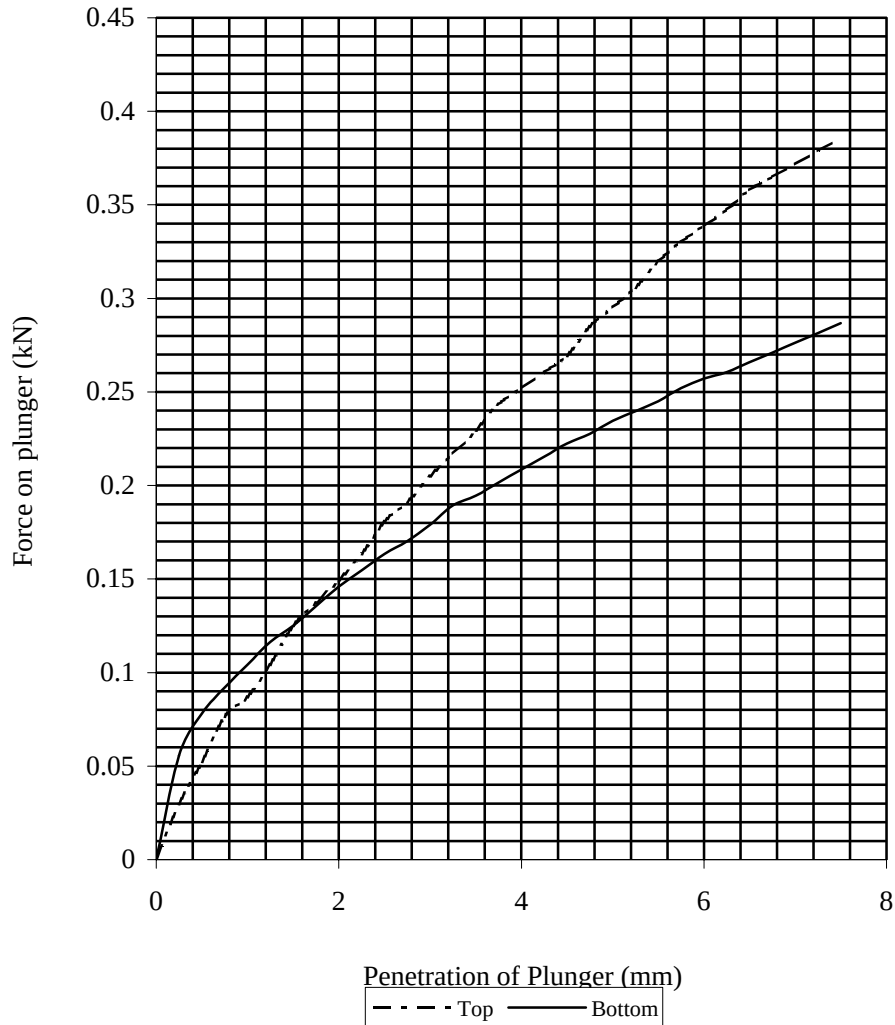
PSL Professional Soils Laboratory		ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: TP844 Depth (m): 1.50

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	22	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	2.00	Soaking Time hrs	0	Sample Top	22	Sample Top	1.5
Dry Density Mg/m3:	1.64	Swelling mm:	0	Sample Bottom	22	Sample Bottom	1.2
Percentage retained on 20mm BS test sieve:	0	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	05/12/14

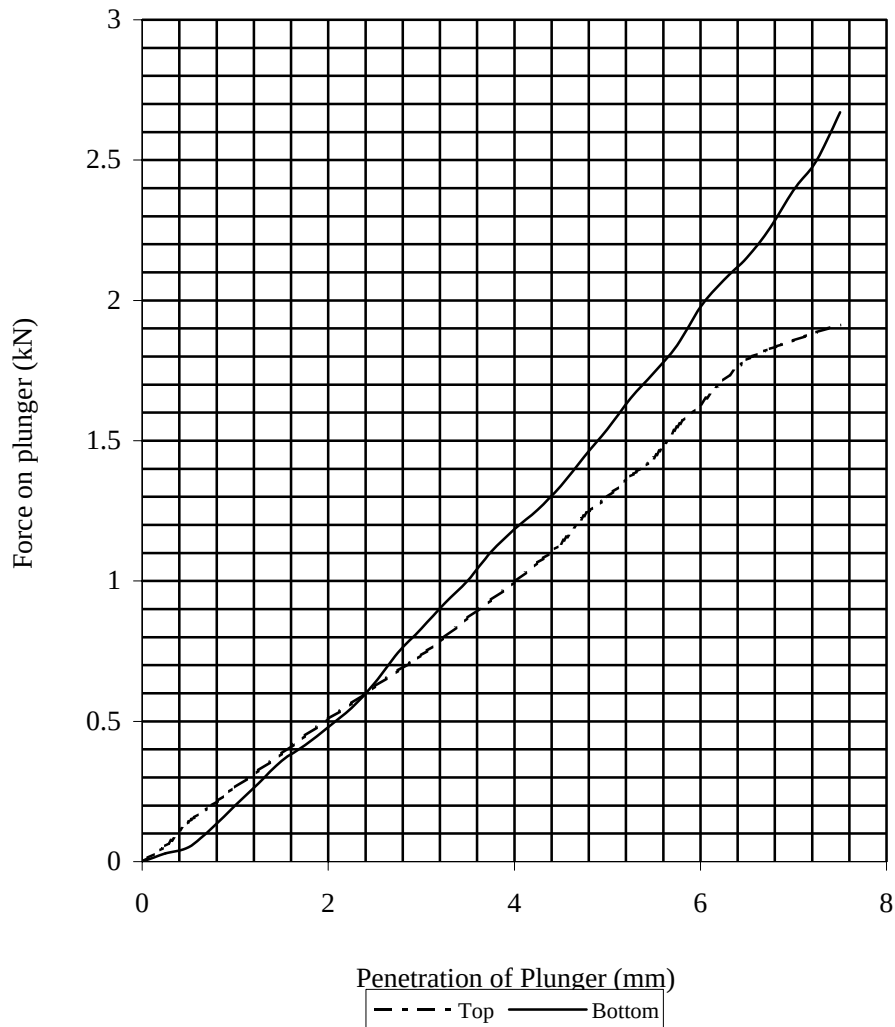
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

Non Compliance With BS 1377 : Part 4 : 1990

Hole Number: TP845 Depth (m): 1.50

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	11	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	2.19	Soaking Time hrs	0	Sample Top	12	Sample Top	6.5
Dry Density Mg/m3:	1.97	Swelling mm:	0	Sample Bottom	11	Sample Bottom	7.7
Percentage retained on 20mm BS test sieve:	38	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>[Signature]</i>	05/12/14	<i>[Signature]</i>	

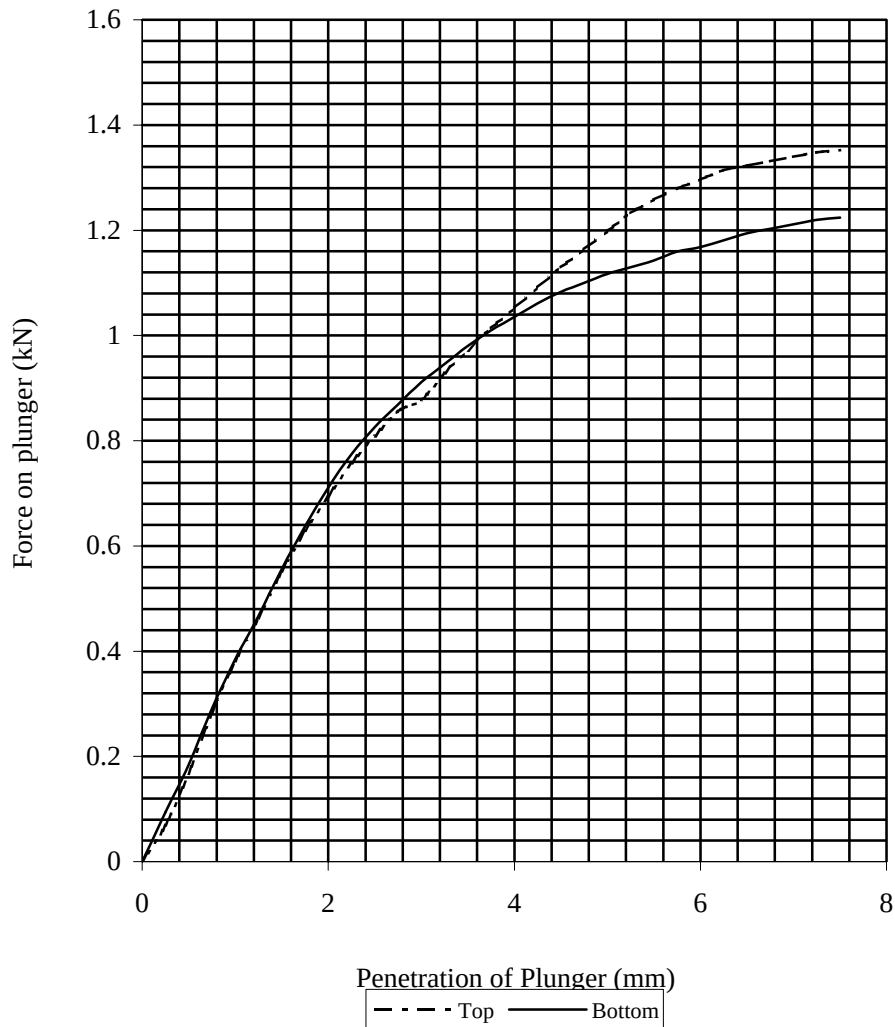
PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: TP850 Depth (m): 2.00

Sample Number: 1 Sample Type: B



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	28	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	1.94	Soaking Time hrs	0	Sample Top	28	Sample Top	6.1
Dry Density Mg/m3:	1.52	Swelling mm:	0	Sample Bottom	28	Sample Bottom	6.3
Percentage retained on 20mm BS test sieve:	0	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date

PSL Professional Soils Laboratory	ST ANDREWS PARK.	Contract No. PSL14/6002



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Coventry,
CV3 4LJ

F.A.O. Roy Smith

TEST REPORT - 21311A

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Job Number : 21311A

Originating Client : VSM Estates

Originating Reference : Not Given

Date Sampled :

Date Scheduled : 11/2/15

Date Testing Started : 12/2/15

Date Testing Finished : 23/3/15

Remarks :

- First Report for above Job Number
- Samples will be disposed of 28 days after the report is issued unless otherwise agreed
- This report may contain results from tests which are not included within the scope of the UKAS accreditation. Please see final sheet for details.

Authorised By:

Daniel Smith

Position :

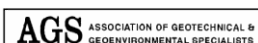
Laboratory Supervisor

Date : 27/3/15

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Job Number	21311A

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Borehole/ Trial Pit	Depth (m)	Sample	Natural / Sieved	Natural Moisture Content %	Sample Passing 425µm Sieve		Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Class	Description / Remarks
					Percentage %	Moisture Content %						
TP847	2.70	B1	Sieved	32	46	65	76	31	45	0.76	CV	Brown gravelly, sandy, silty, CLAY
TP848SE	2.20	B1	Sieved	9.9	17	33	77	29	48	0.08	CV	Brown silty clayey sandy GRAVEL
WS801	3.80	D3	Natural	26	100	26	72	26	46	0.00	CV	Brown CLAY
WS806	2.60	D3	Natural	25	100	25	69	29	40	-0.10	CH	Brown silty CLAY
WS808	4.90	D5	Natural	26	100	26	63	25	38	0.03	CH	Brown silty CLAY
WS809	1.50	D1	Sieved	32	78	40	76	31	45	0.20	CV	Brown, gravelly, sandy, CLAY

Method of Test : BS 1377:PART 2:1990:3.2 Determination of moisture content 4.3 Determination of the liquid limit 5.3 Determination of the plastic limit and plasticity index

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

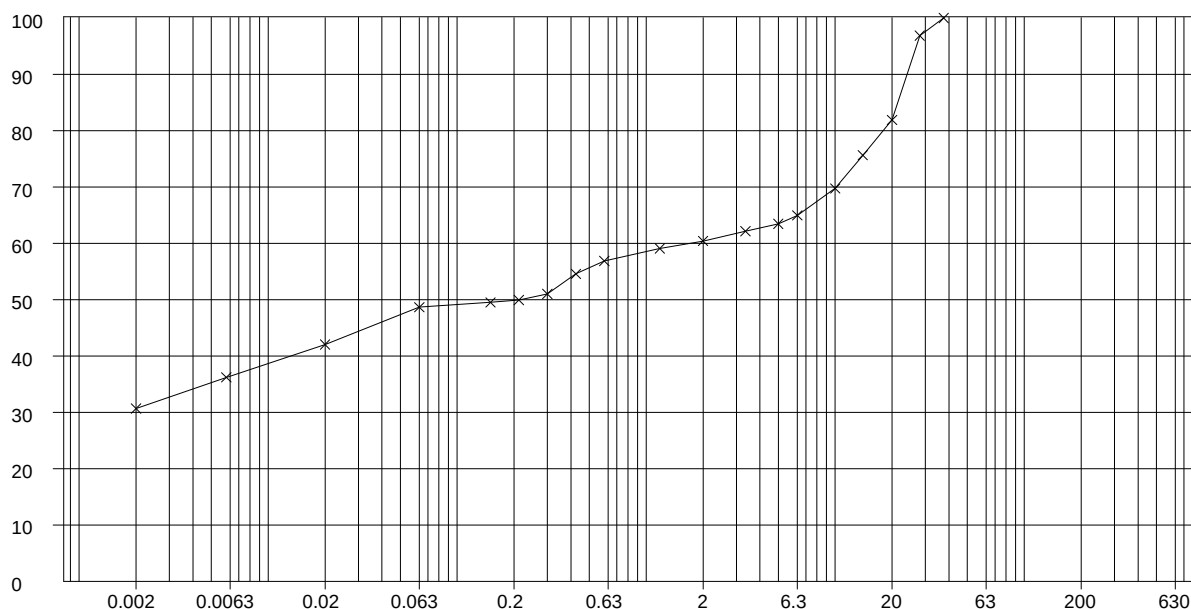
Job Number
21311A

Client : VSM Estates

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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
CP802A	2.00	B1	Pipette	Brown sandy silty clayey GRAVEL



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
28 mm	97
20 mm	82
14 mm	76
10 mm	70
6.3 mm	65
5 mm	63
3.35 mm	62
2 mm	60
1.18 mm	59
600 µm	57
425 µm	55
300 µm	51
212 µm	50
150 µm	50
63 µm	49
20 µm	42
6 µm	36
2 µm	31

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	21.6 mm
D60	1.7 mm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0%
Gravel	40%
Sand	12%
Silt	18%
Clay	31%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

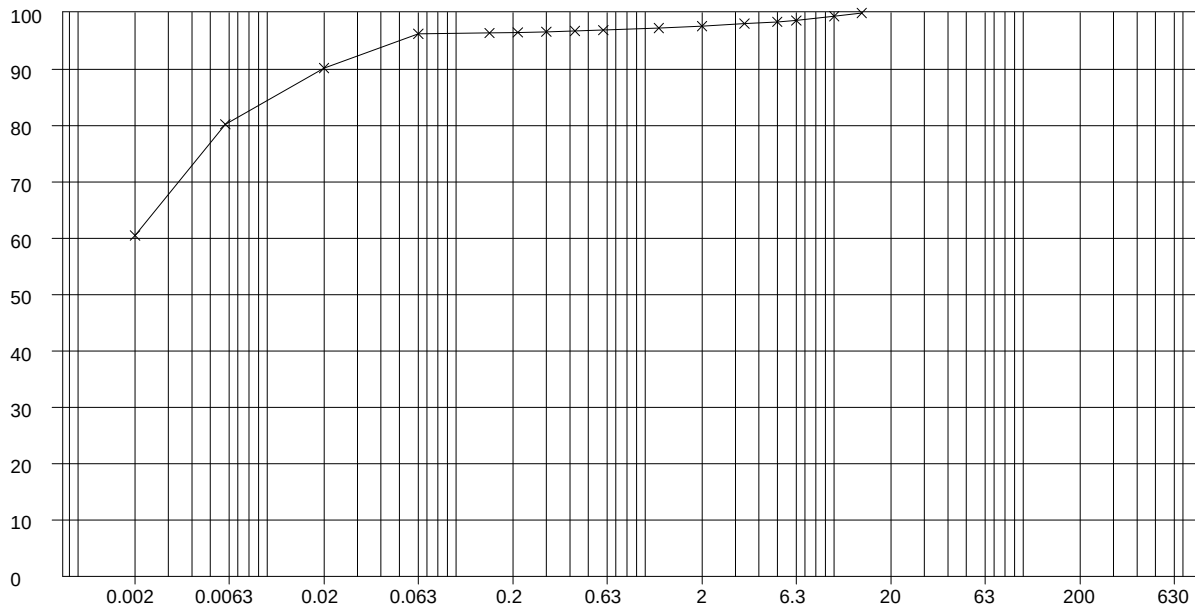
Job Number
21311A

Client : VSM Estates

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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
CP802A	8.00	B2	Pipette	Brown gravelly sandy silty CLAY



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
28 mm	100
20 mm	100
14 mm	100
10 mm	99
6.3 mm	99
5 mm	98
3.35 mm	98
2 mm	98
1.18 mm	97
600 µm	97
425 µm	97
300 µm	97
212 µm	97
150 µm	96
63 µm	96
20 µm	90
6 µm	80
2 µm	61

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	12.6 µm
D60	-
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0%
Gravel	2%
Sand	2%
Silt	36%
Clay	61%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

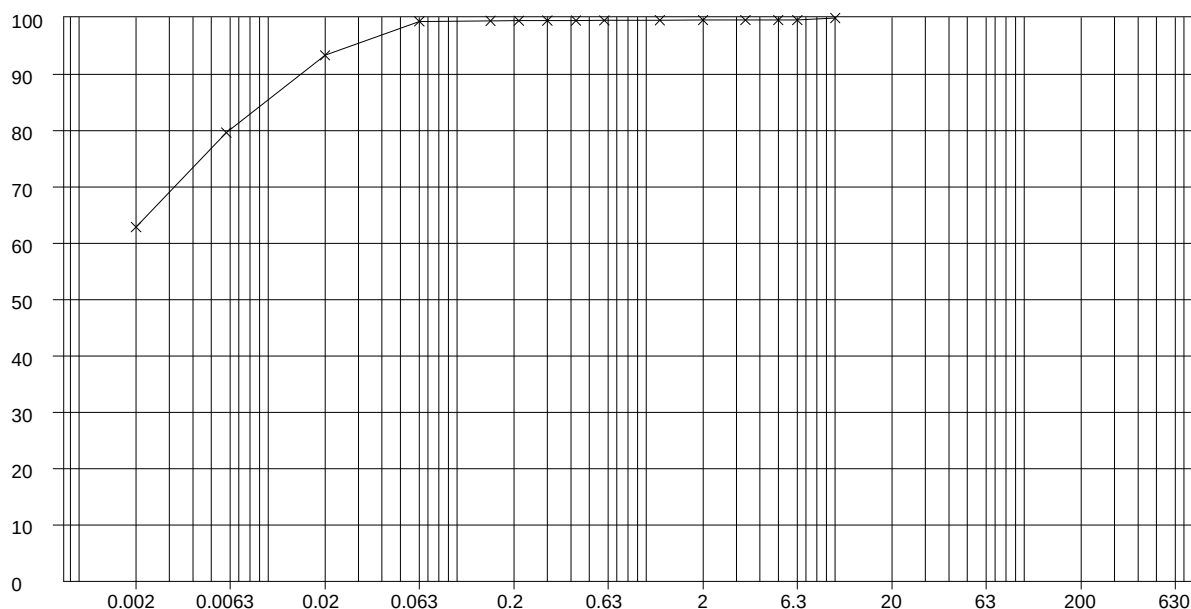
Job Number
21311A

Client : VSM Estates

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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
CP804	8.00	B1	Pipette	Brown silty CLAY



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
28 mm	100
20 mm	100
14 mm	100
10 mm	100
6.3 mm	100
5 mm	100
3.35 mm	100
2 mm	100
1.18 mm	100
600 µm	100
425 µm	100
300 µm	100
212 µm	100
150 µm	99
63 µm	99
20 µm	93
6 µm	80
2 µm	63

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	11.4 µm
D60	-
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0%
Gravel	0%
Sand	0%
Silt	36%
Clay	63%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

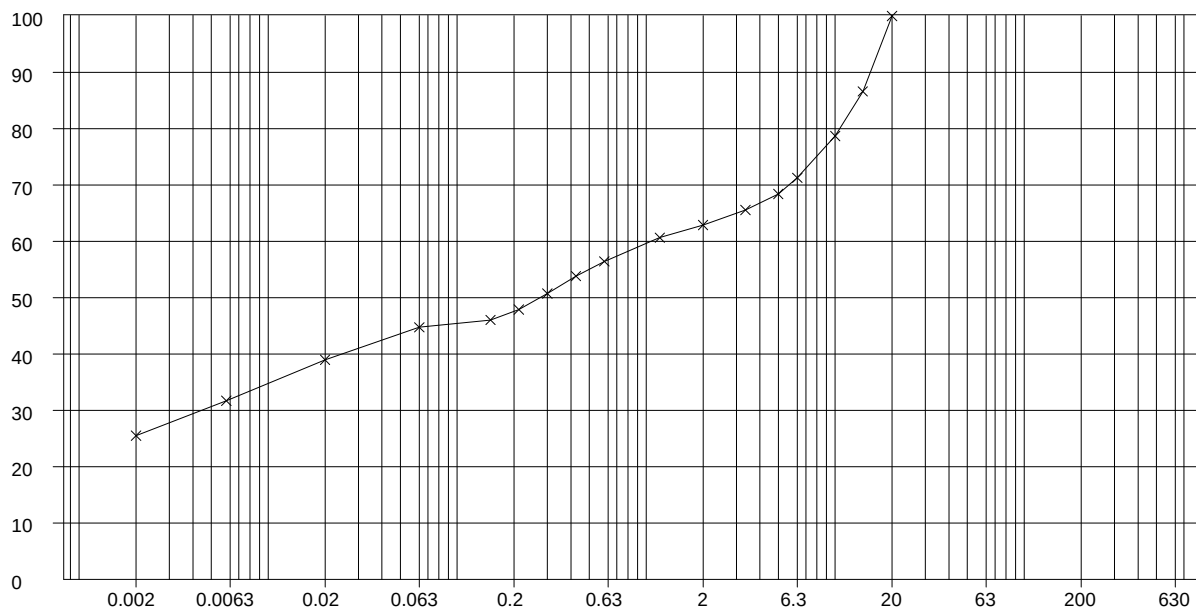
Job Number
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Client : VSM Estates

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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
CP807	2.00	B1	Pipette	Brown sandy silty clayey GRAVEL



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
28 mm	100
20 mm	100
14 mm	87
10 mm	79
6.3 mm	71
5 mm	68
3.35 mm	66
2 mm	63
1.18 mm	61
600 µm	56
425 µm	54
300 µm	51
212 µm	48
150 µm	46
63 µm	45
20 µm	39
6 µm	32
2 µm	26

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	13.2 mm
D60	1.1 mm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0%
Gravel	37%
Sand	18%
Silt	19%
Clay	26%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

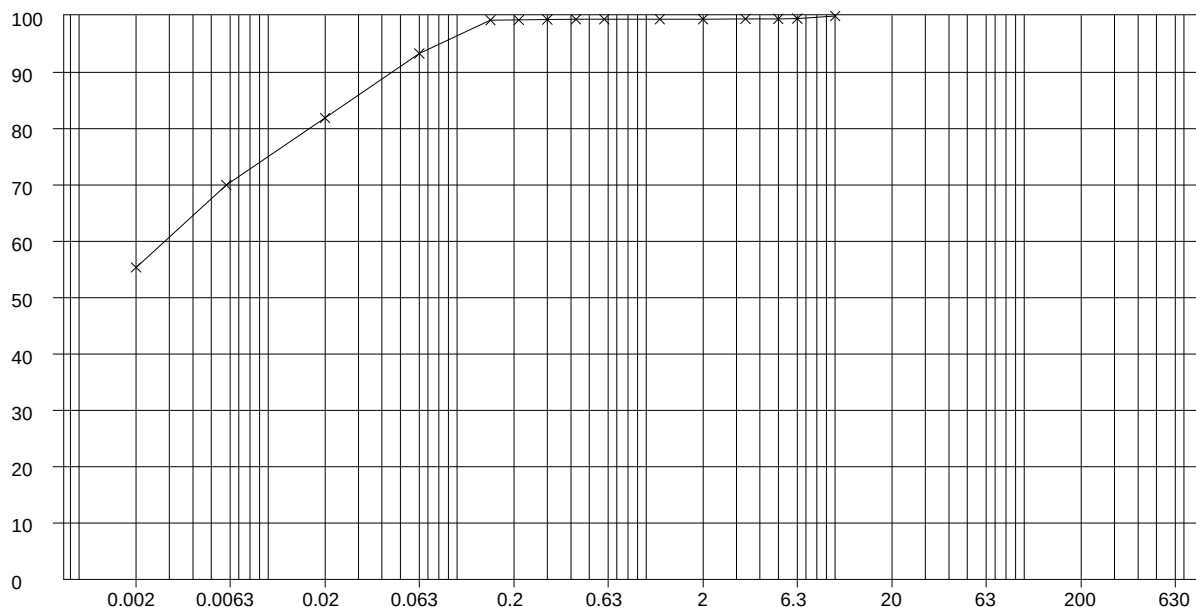
Job Number
21311A

Client : VSM Estates

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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
CP807	19.50	U6	Pipette	Brown gravelly sandy silty CLAY



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
28 mm	100
20 mm	100
14 mm	100
10 mm	100
6.3 mm	100
5 mm	100
3.35 mm	100
2 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	93
20 µm	82
6 µm	70
2 µm	55

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	31.6 µm
D60	3.3 µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0%
Gravel	1%
Sand	7%
Silt	37%
Clay	55%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

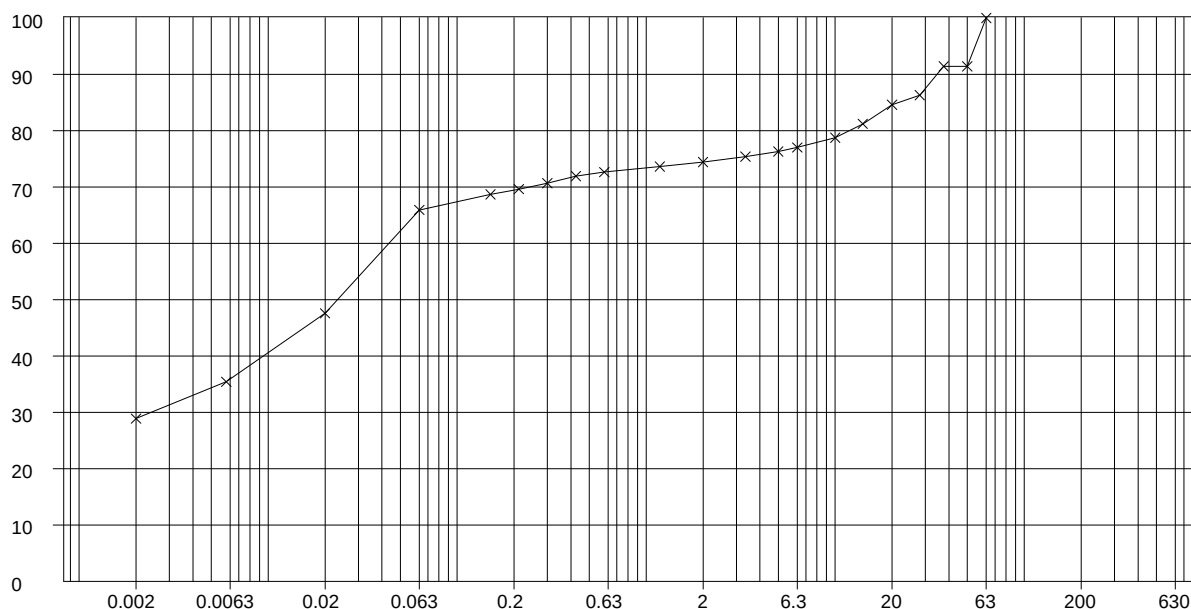
Job Number
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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
TP808	1.20	B1	Pipette	Brown sandy gravelly clayey SILT includes cobbles



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	91
37.5 mm	91
28 mm	86
20 mm	85
14 mm	81
10 mm	79
6.3 mm	77
5 mm	76
3.35 mm	75
2 mm	74
1.18 mm	74
600 µm	73
425 µm	72
300 µm	71
212 µm	70
150 µm	69
63 µm	66
20 µm	48
6 µm	35
2 µm	29

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	21.8 mm
D60	49.1 µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	2%
Gravel	24%
Sand	9%
Silt	36%
Clay	29%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

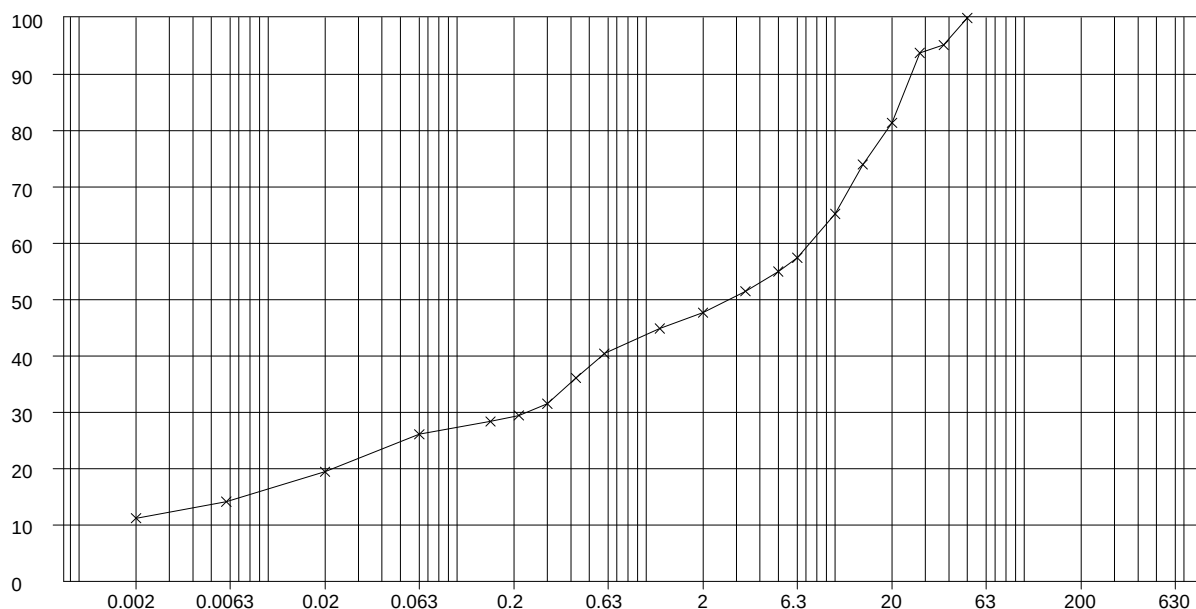
Job Number
21311A

Client : VSM Estates

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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
TP811	2.40	B1	Pipette	Brown clayey silty sandy GRAVEL



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	95
28 mm	94
20 mm	81
14 mm	74
10 mm	65
6.3 mm	57
5 mm	55
3.35 mm	52
2 mm	48
1.18 mm	45
600 µm	40
425 µm	36
300 µm	32
212 µm	29
150 µm	28
63 µm	26
20 µm	19
6 µm	14
2 µm	11

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	22.3 mm
D60	7.5 mm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0%
Gravel	52%
Sand	22%
Silt	15%
Clay	11%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

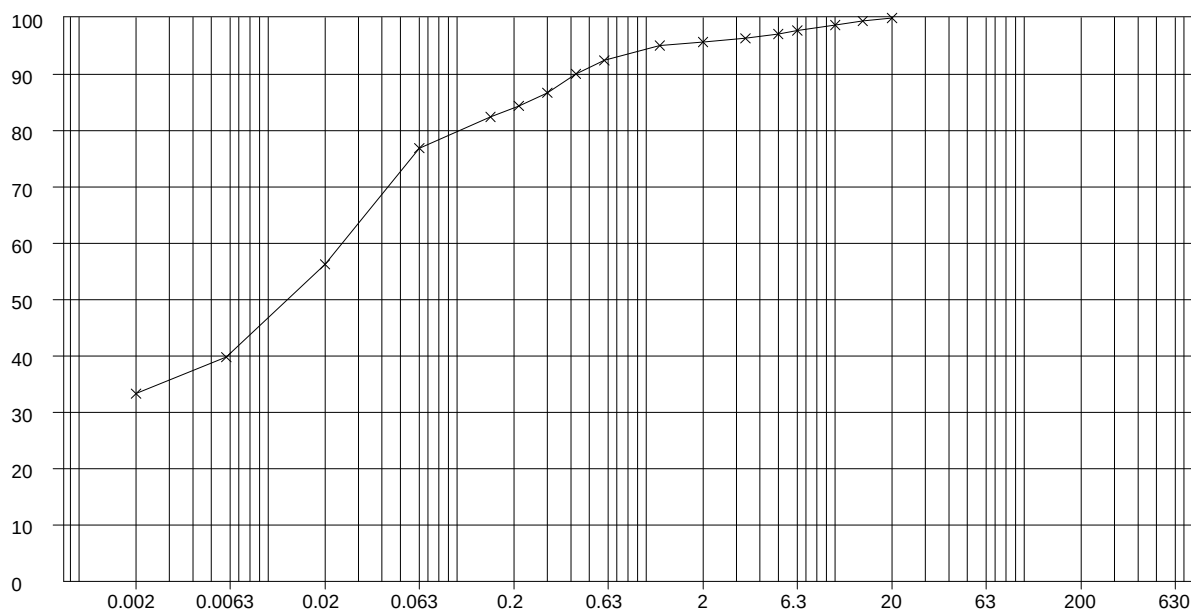
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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
TP812	2.40	B1	Pipette	Brown gravelly sandy clayey SILT



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
28 mm	100
20 mm	100
14 mm	99
10 mm	99
6.3 mm	98
5 mm	97
3.35 mm	96
2 mm	96
1.18 mm	95
600 µm	92
425 µm	90
300 µm	87
212 µm	84
150 µm	82
63 µm	77
20 µm	56
6 µm	40
2 µm	33

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	234.7 µm
D60	27.7 µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0%
Gravel	4%
Sand	20%
Silt	43%
Clay	33%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

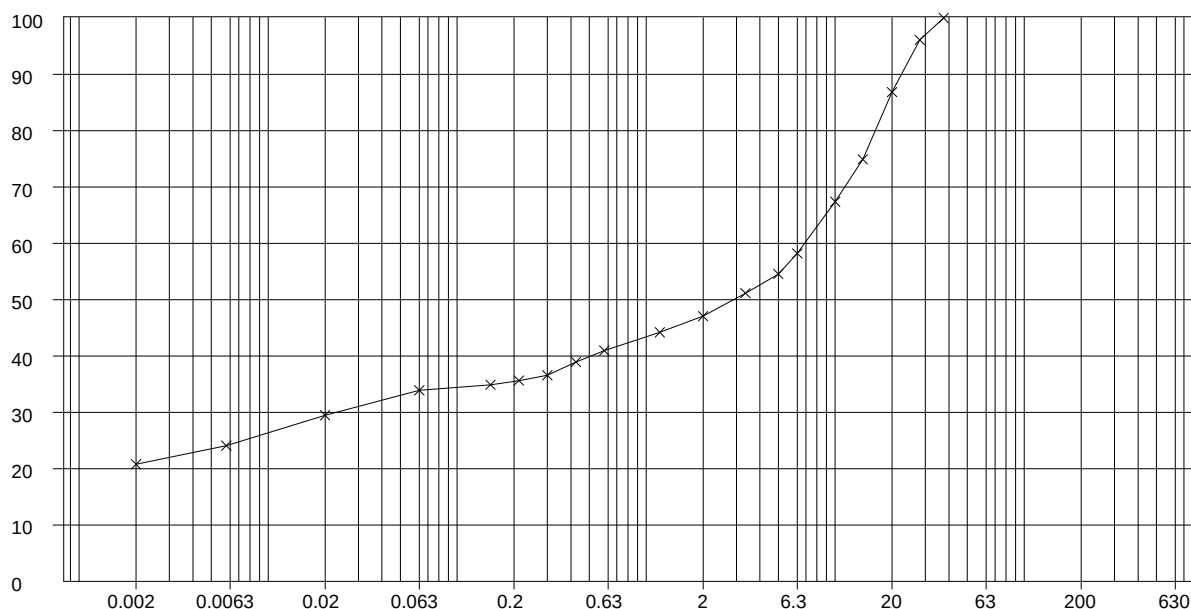
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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
TP819	1.40	B1	Pipette	Brown sandy silty clayey GRAVEL



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
28 mm	96
20 mm	87
14 mm	75
10 mm	67
6.3 mm	58
5 mm	55
3.35 mm	51
2 mm	47
1.18 mm	44
600 µm	41
425 µm	39
300 µm	37
212 µm	36
150 µm	35
63 µm	34
20 µm	29
6 µm	24
2 µm	21

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	19.1 mm
D60	7.0 mm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0%
Gravel	53%
Sand	13%
Silt	13%
Clay	21%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

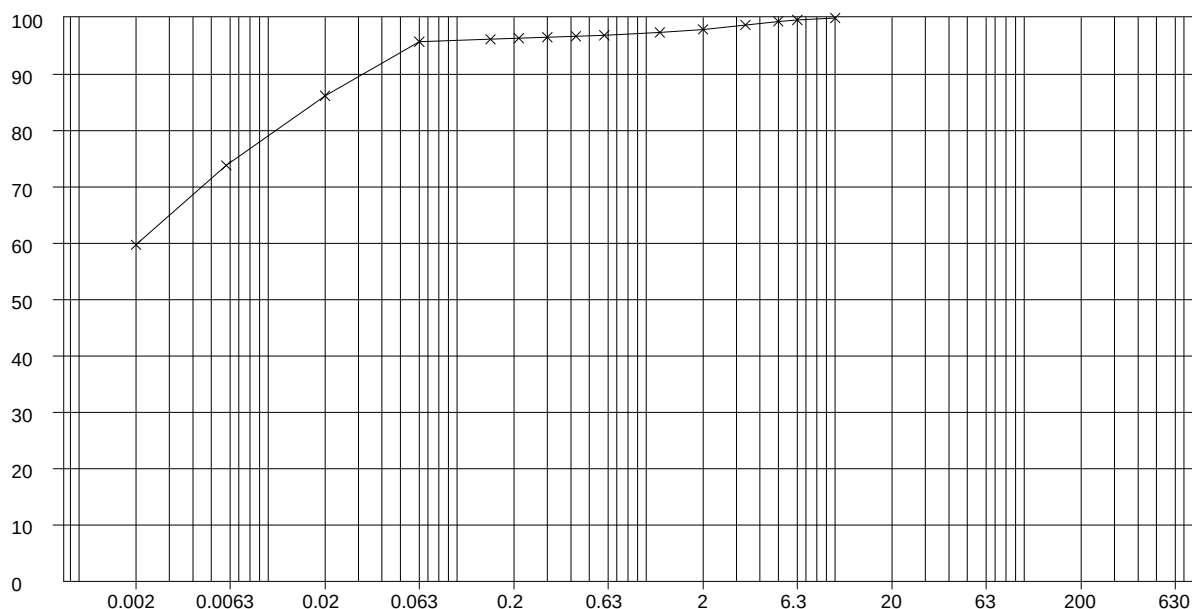
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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
TP824	1.20	B1	Pipette	Brown gravelly sandy silty CLAY



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
28 mm	100
20 mm	100
14 mm	100
10 mm	100
6.3 mm	100
5 mm	99
3.35 mm	99
2 mm	98
1.18 mm	97
600 µm	97
425 µm	97
300 µm	97
212 µm	96
150 µm	96
63 µm	96
20 µm	86
6 µm	74
2 µm	60

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	18.6 µm
D60	2.1 µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0%
Gravel	2%
Sand	3%
Silt	36%
Clay	60%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

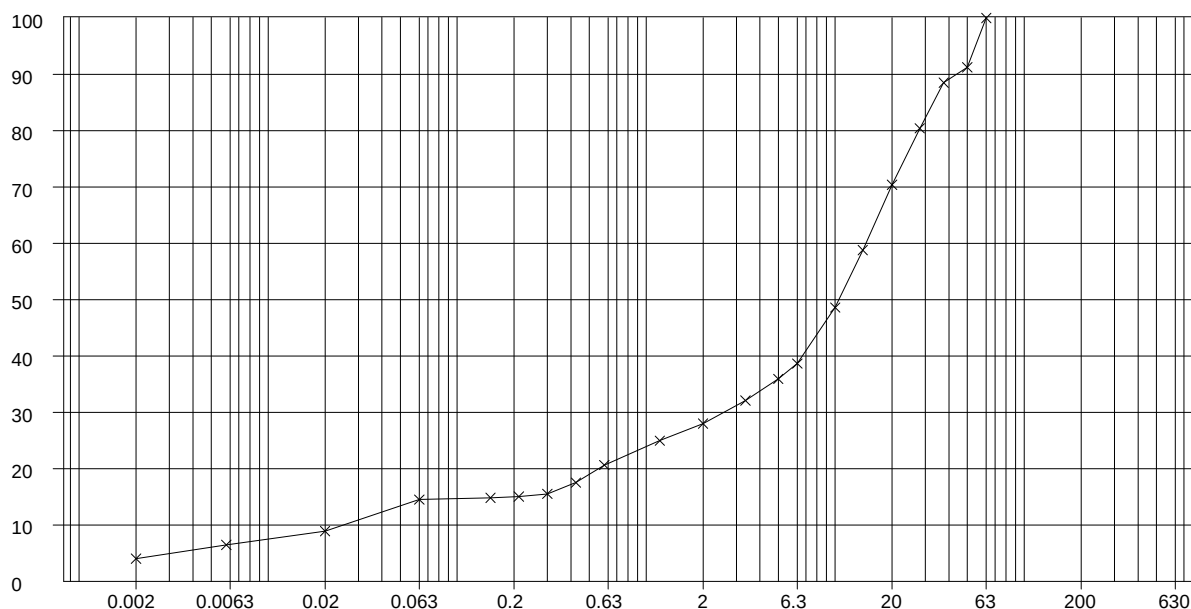
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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
TP826	1.70	B1	Pipette	Brown clayey silty sandy GRAVEL includes cobbles



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	91
37.5 mm	89
28 mm	80
20 mm	70
14 mm	59
10 mm	49
6.3 mm	39
5 mm	36
3.35 mm	32
2 mm	28
1.18 mm	25
600 µm	21
425 µm	18
300 µm	16
212 µm	15
150 µm	15
63 µm	15
20 µm	9
6 µm	6
2 µm	4

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	33.4 mm
D60	14.6 mm
D10	28.0 µm
Uniformity Coefficient	522.0

Particle Proportions	
Cobbles + Boulders	2%
Gravel	70%
Sand	14%
Silt	10%
Clay	4%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

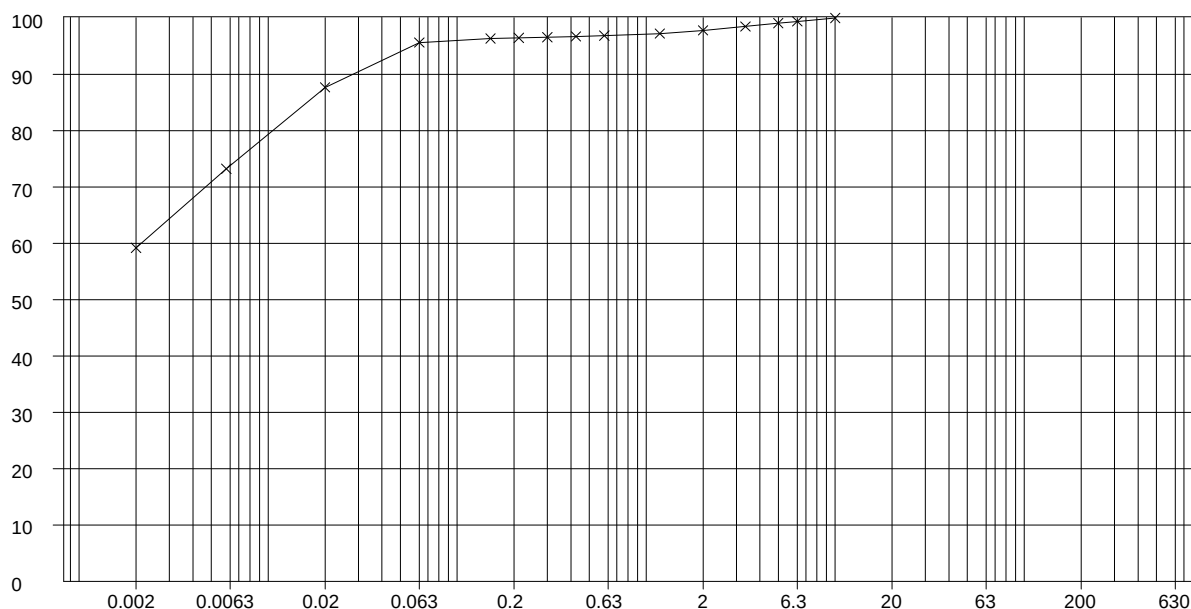
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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
TP829	3.30	B1	Pipette	Brown gravelly sandy silty CLAY



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
28 mm	100
20 mm	100
14 mm	100
10 mm	100
6.3 mm	99
5 mm	99
3.35 mm	99
2 mm	98
1.18 mm	97
600 µm	97
425 µm	97
300 µm	97
212 µm	96
150 µm	96
63 µm	96
20 µm	88
6 µm	73
2 µm	59

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	17.4 µm
D60	2.2 µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0%
Gravel	2%
Sand	2%
Silt	36%
Clay	59%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

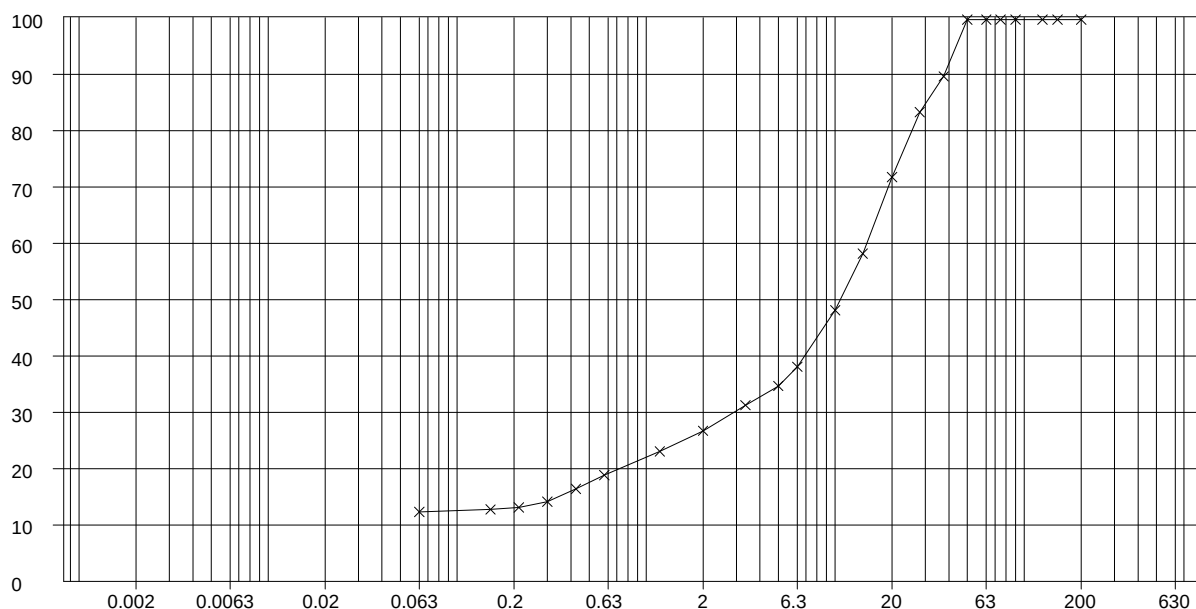
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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
TP848SE	2.20	B1	N/A	Brown silty clayey sandy GRAVEL



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	90
28 mm	83
20 mm	72
14 mm	58
10 mm	48
6.3 mm	38
5 mm	35
3.35 mm	31
2 mm	27
1.18 mm	23
600 µm	19
425 µm	16
300 µm	14
212 µm	13
150 µm	13
63 µm	12

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	30.5 mm
D60	14.8 mm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0%
Gravel	73%
Sand	14%
Silt/Clay	13%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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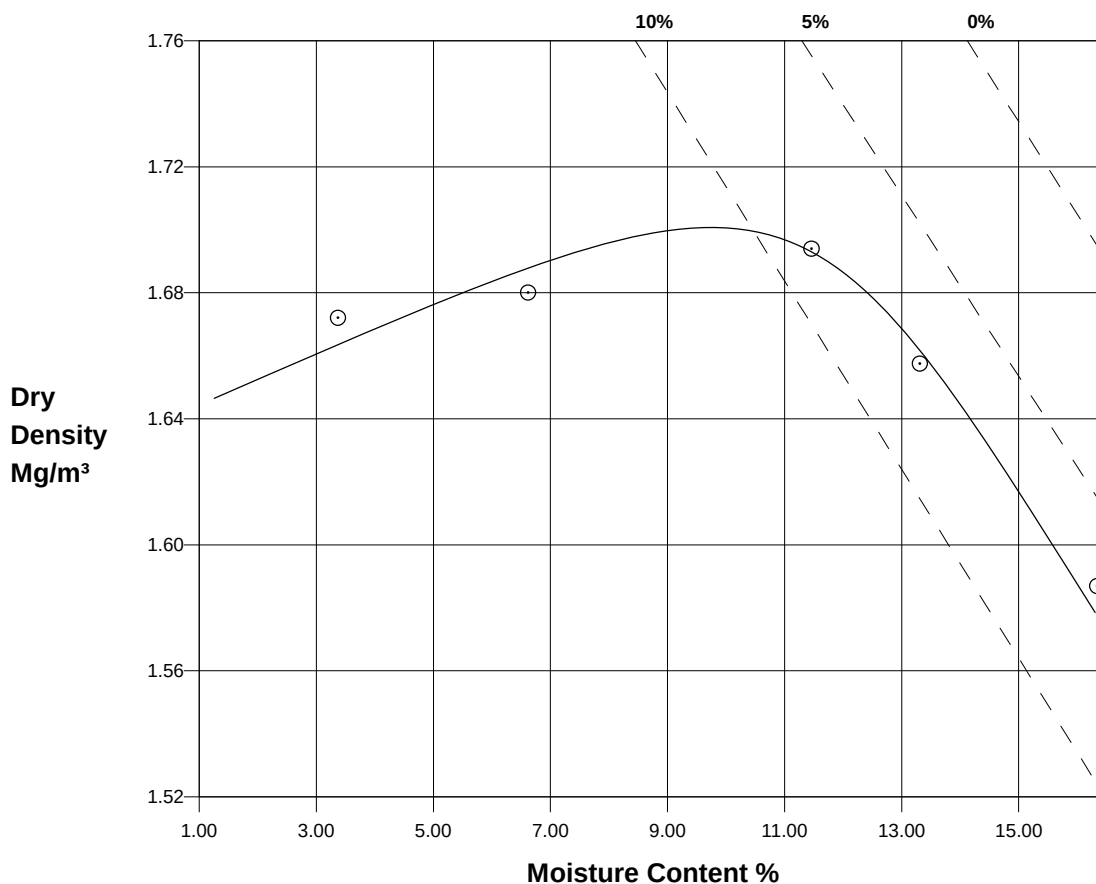
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP803	1.50	B1	Brown silty CLAY

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	0 %	Single or separate samples	Single
Grading Zone	1	Particle density	2.35 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.70 Mg/m³	OPTIMUM MOISTURE CONTENT	9.8 %


Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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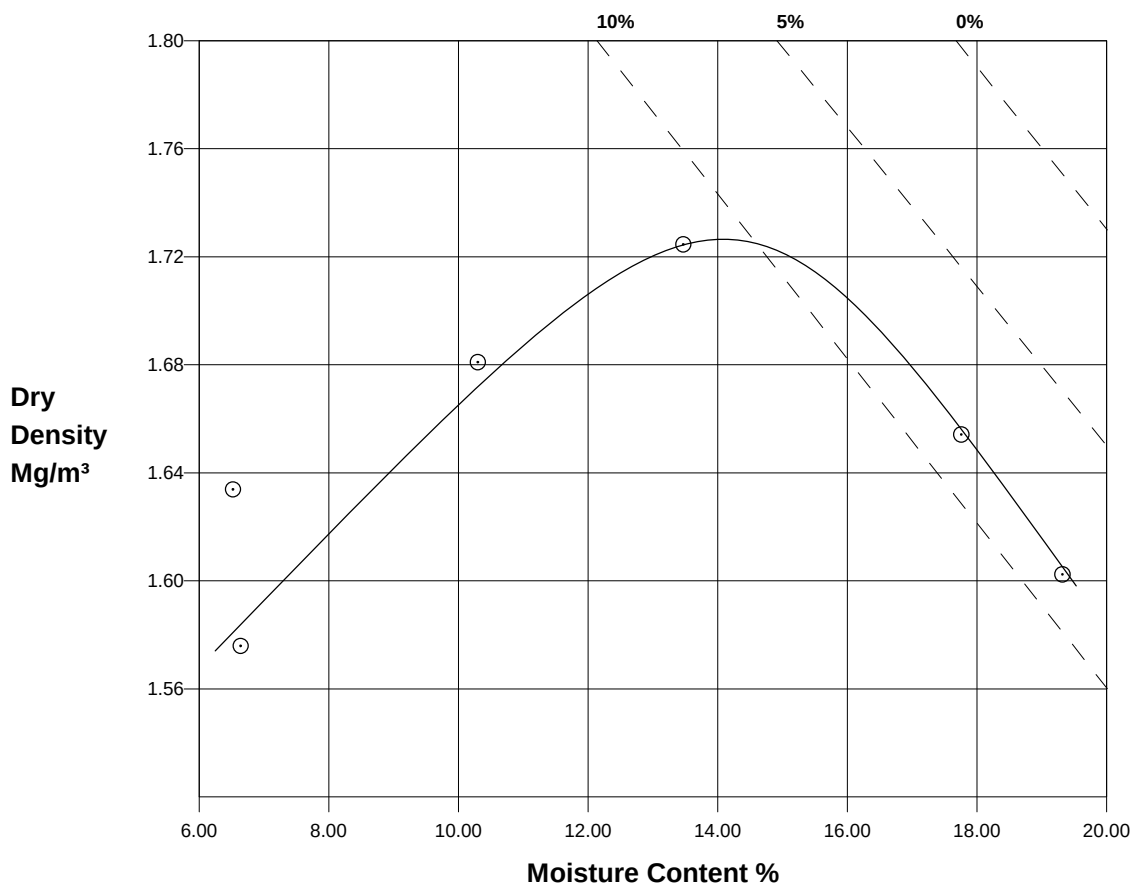
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP807	2.00	B1	Brown sandy CLAY

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	10 %	Single or separate samples	Single
Grading Zone	3	Particle density	2.65 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.73 Mg/m³	OPTIMUM MOISTURE CONTENT	14 %


Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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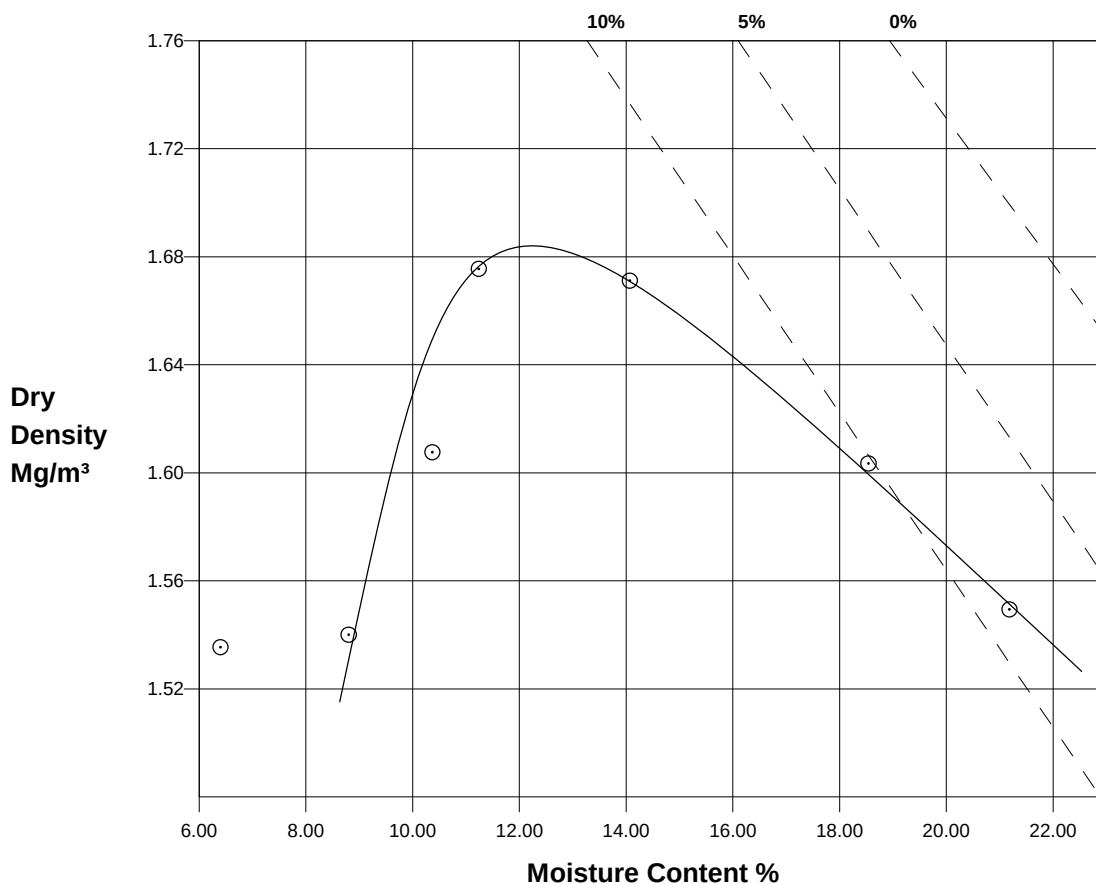
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP808	1.20	B1	Brown sandy gravelly clayey SILT includes cobbles

Percentage retained 37.5 mm	2 %	Max size of cohesive lumps	37.5 mm
Percentage retained 20.0 mm	7 %	Single or separate samples	Single
Grading Zone	4	Particle density	2.65 Assumed
Mould Type	CBR	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.68 Mg/m³	OPTIMUM MOISTURE CONTENT	12 %


Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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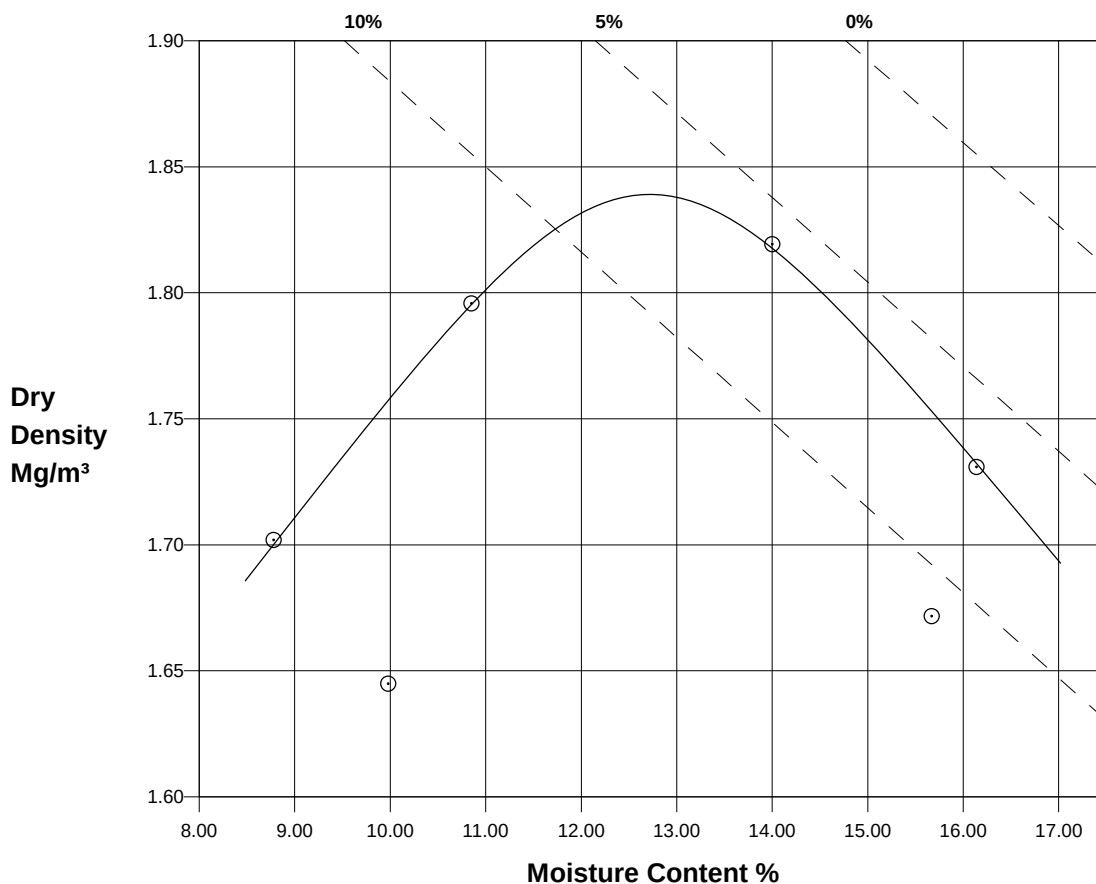
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP819	1.40	B1	Brown sandy silty clayey GRAVEL

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	0 %	Single or separate samples	Single
Grading Zone	1	Particle density	2.65 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.84 Mg/m³	OPTIMUM MOISTURE CONTENT	13 %


Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

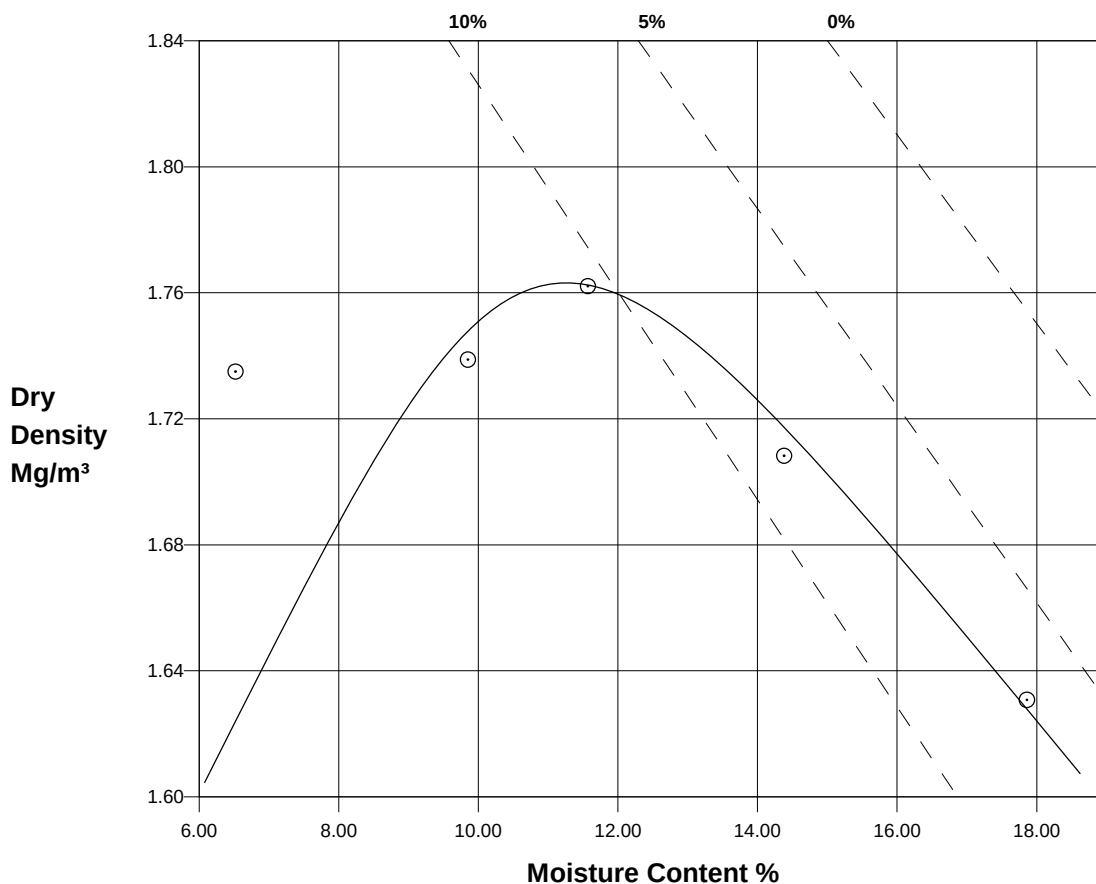
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP824	1.20	B1	Brown gravelly sandy silty CLAY

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	0 %	Single or separate samples	Single
Grading Zone	1	Particle density	2.55 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.76 Mg/m ³	OPTIMUM MOISTURE CONTENT	11 %



Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Job Number
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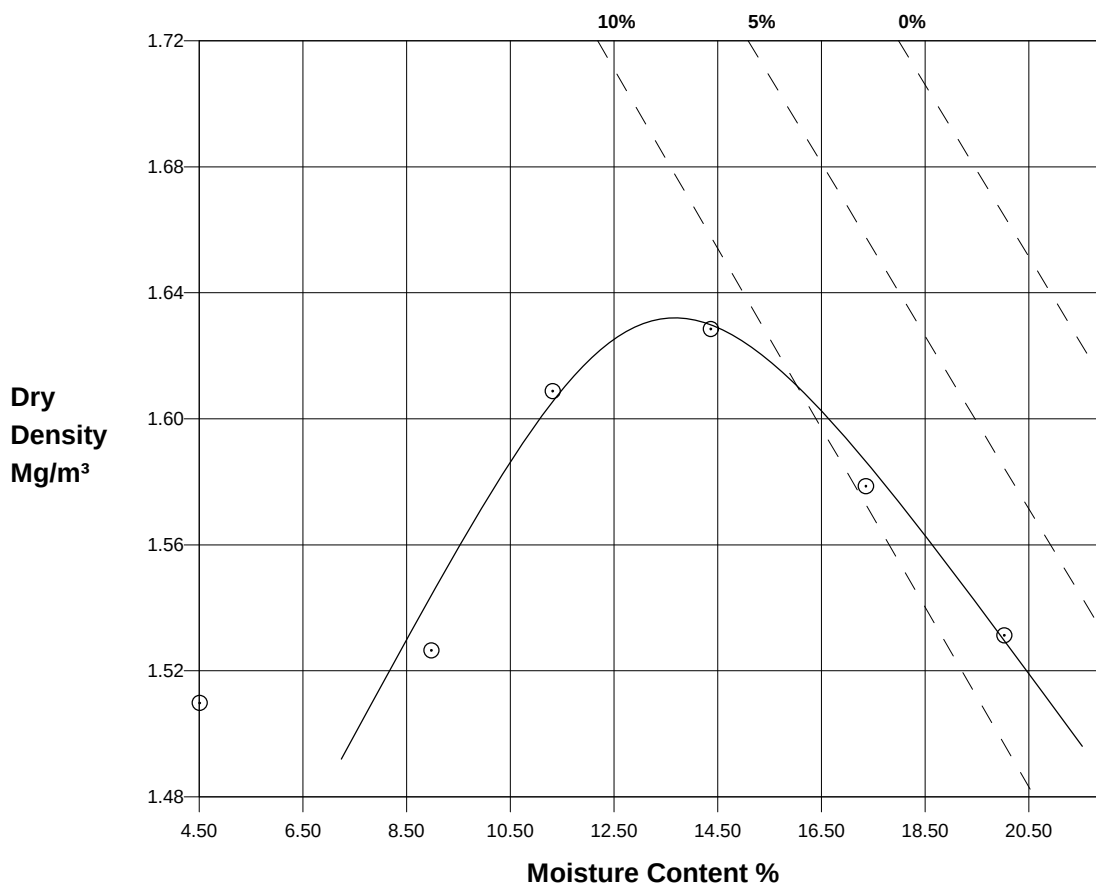
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP825	0.70	B1	Brown silty sandy gravelly CLAY

Percentage retained 37.5 mm	6 %	Max size of cohesive lumps	37.5 mm
Percentage retained 20.0 mm	3 %	Single or separate samples	Single
Grading Zone	5	Particle density	2.50 Assumed
Mould Type	CBR	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.63 Mg/m³	OPTIMUM MOISTURE CONTENT	14 %


Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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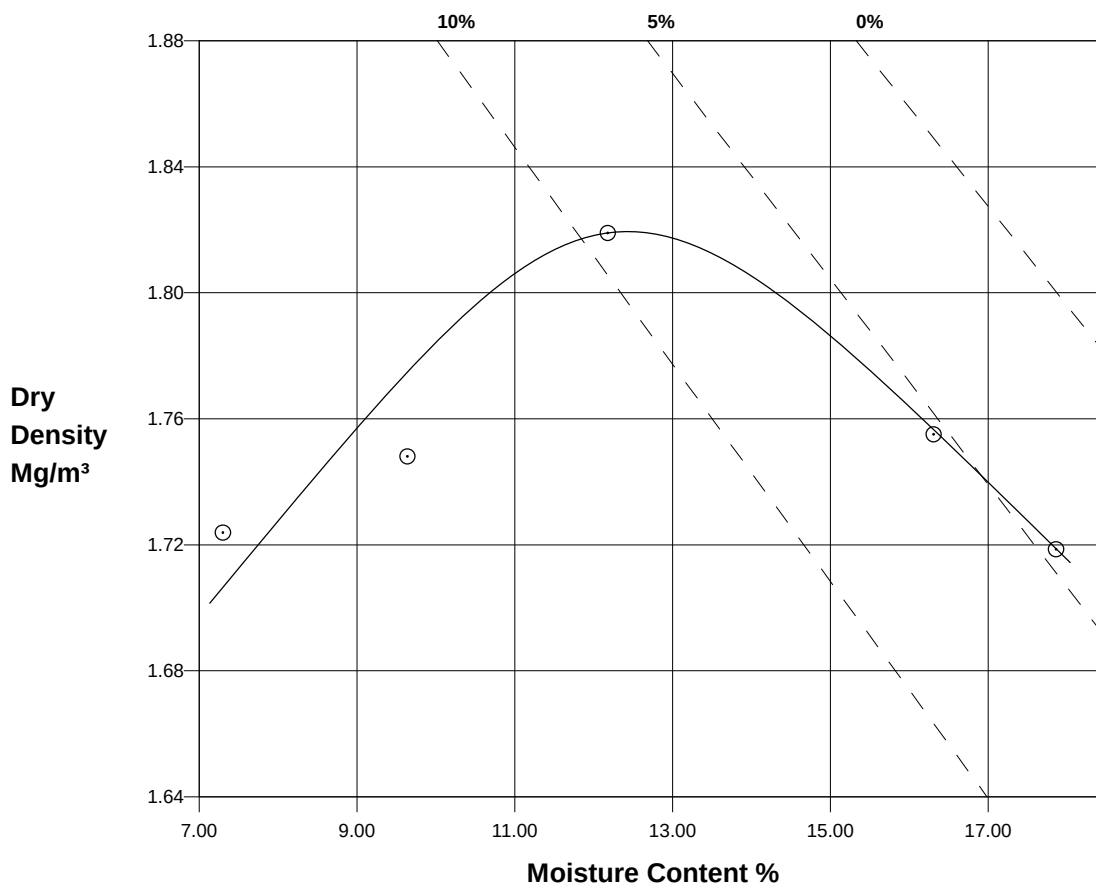
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP846	1.40	B1	Brown, clayey, silty, sandy GRAVEL

Percentage retained 37.5 mm	5 %	Max size of cohesive lumps	37.5 mm
Percentage retained 20.0 mm	19 %	Single or separate samples	Single
Grading Zone	4	Particle density	2.65 Assumed
Mould Type	CBR	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.82 Mg/m³	OPTIMUM MOISTURE CONTENT	12 %


Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

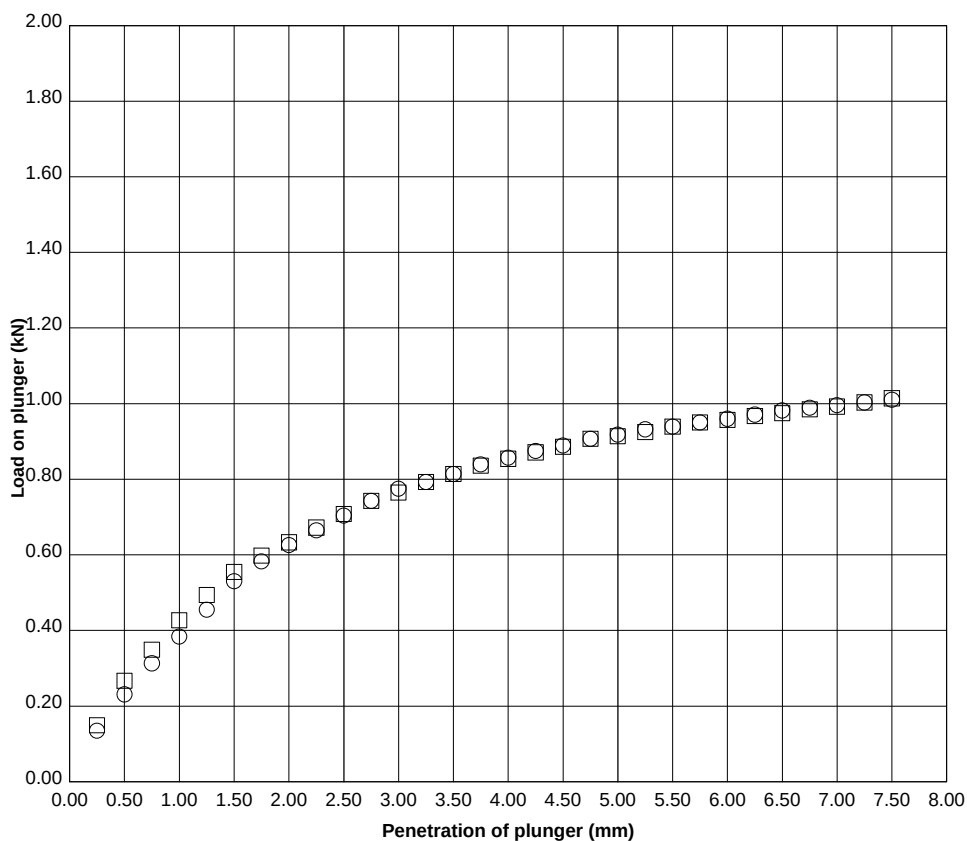
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP803	1.50	B1	100 %	Brown silty CLAY

Moisture Content %	30
Bulk Density Mg/m³	1.91
Dry Density Mg/m³	1.46
Soaked Test	No

Test on	☐ TOP	
Moisture Content %	31	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.71	0.91
Corrected CBR %	5.4	4.6

Test on	☐ BOTTOM	
Moisture Content %	30	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.70	0.92
Corrected CBR %	5.3	4.6

Test on	TOP	BOTTOM
Reported CBR %	5.4	5.3
Mean CBR %	5.3	


Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

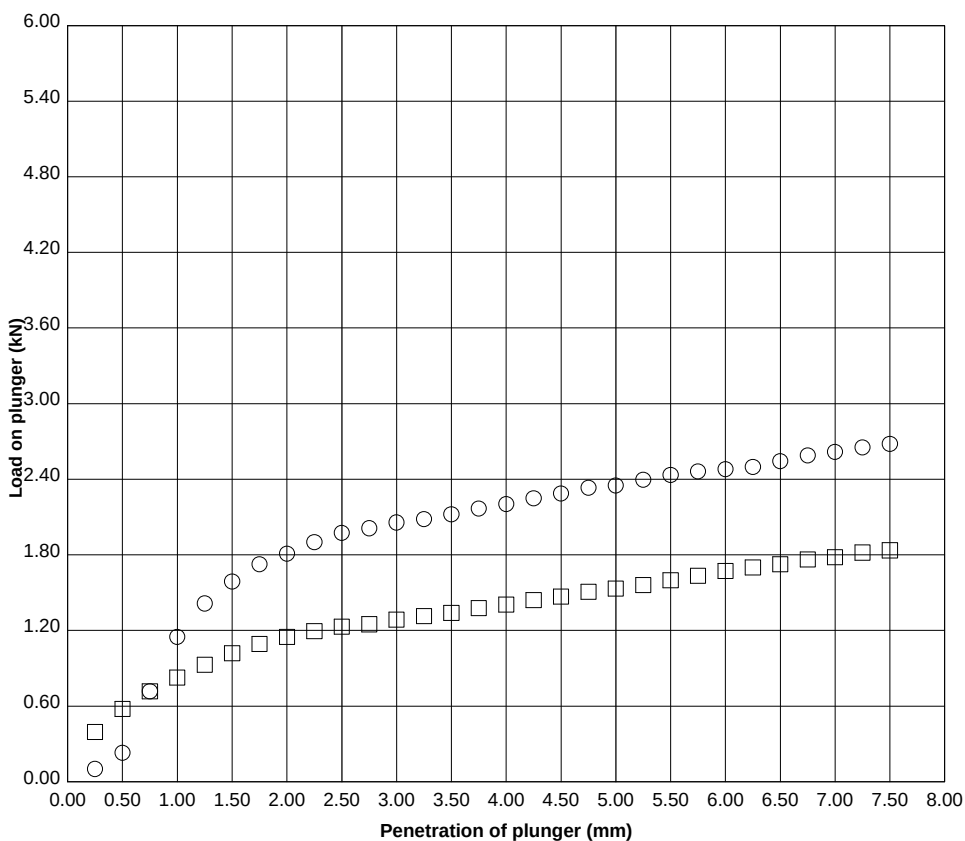
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP807	2.00	B1	76 %	Brown sandy CLAY

Moisture Content %	16
Bulk Density Mg/m³	1.99
Dry Density Mg/m³	1.72
Soaked Test	No

Test on	☐ TOP	
Moisture Content %	15	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	1.2	1.5
Corrected CBR %	9.3	7.7

Test on	☐ BOTTOM	
Moisture Content %	16	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	2.0	2.3
Corrected CBR %	15	12

Test on	TOP	BOTTOM
Reported CBR %	9.3	15


Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

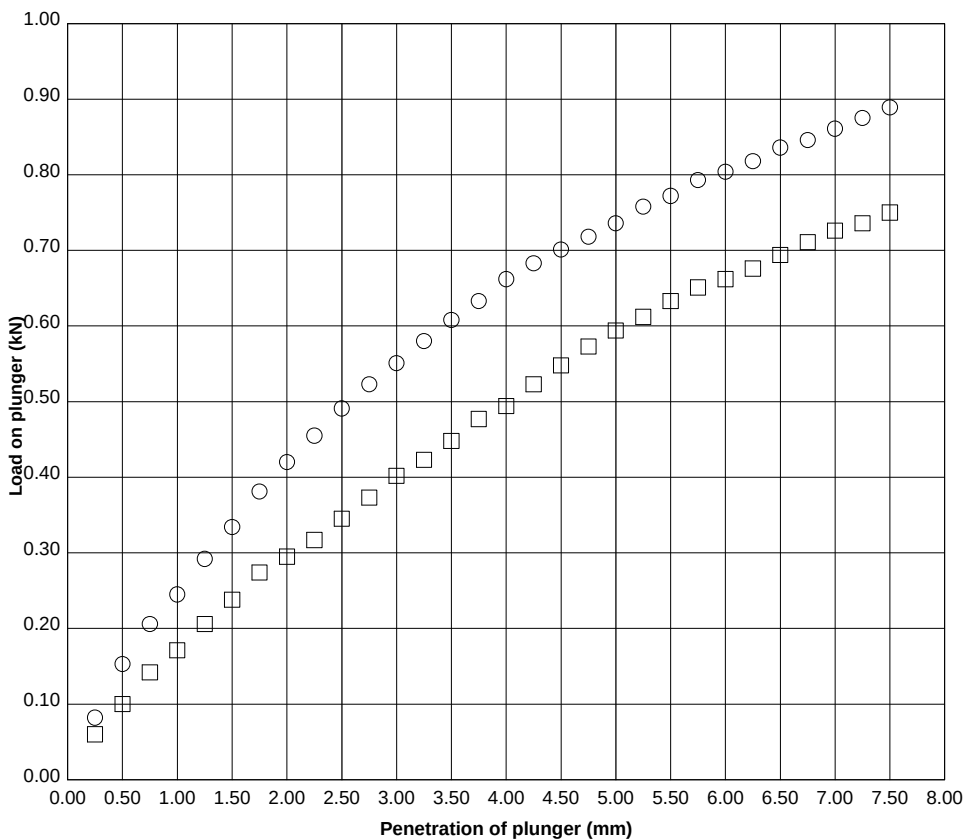
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP808	1.20	B1	91 %	Brown sandy gravelly clayey SILT includes cobbles

Moisture Content %	23
Bulk Density Mg/m³	1.99
Dry Density Mg/m³	1.62
Soaked Test	No

Test on	☐ TOP
Moisture Content %	24
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.34 0.59
Corrected CBR %	2.6 3.0

Test on	☐ BOTTOM
Moisture Content %	22
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.49 0.74
Corrected CBR %	3.7 3.7

Test on	TOP	BOTTOM
Reported CBR %	3.0	3.7


Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

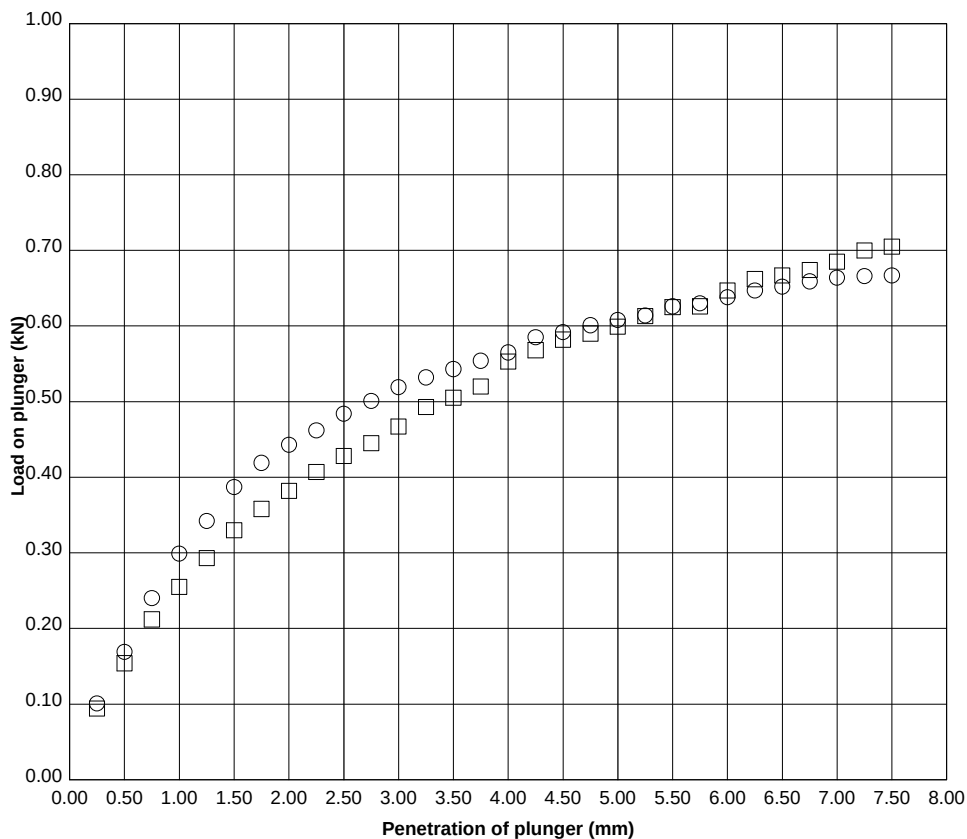
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP819	1.40	B1	97 %	Brown sandy silty clayey GRAVEL

Moisture Content %	18
Bulk Density Mg/m³	2.06
Dry Density Mg/m³	1.75
Soaked Test	No

Test on	☐ TOP	
Moisture Content %	18	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.43	0.60
Corrected CBR %	3.2	3.0

Test on	○ BOTTOM	
Moisture Content %	18	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.48	0.61
Corrected CBR %	3.7	3.0

Test on	TOP	BOTTOM
Reported CBR %	3.2	3.7
Mean CBR %	3.5	


Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

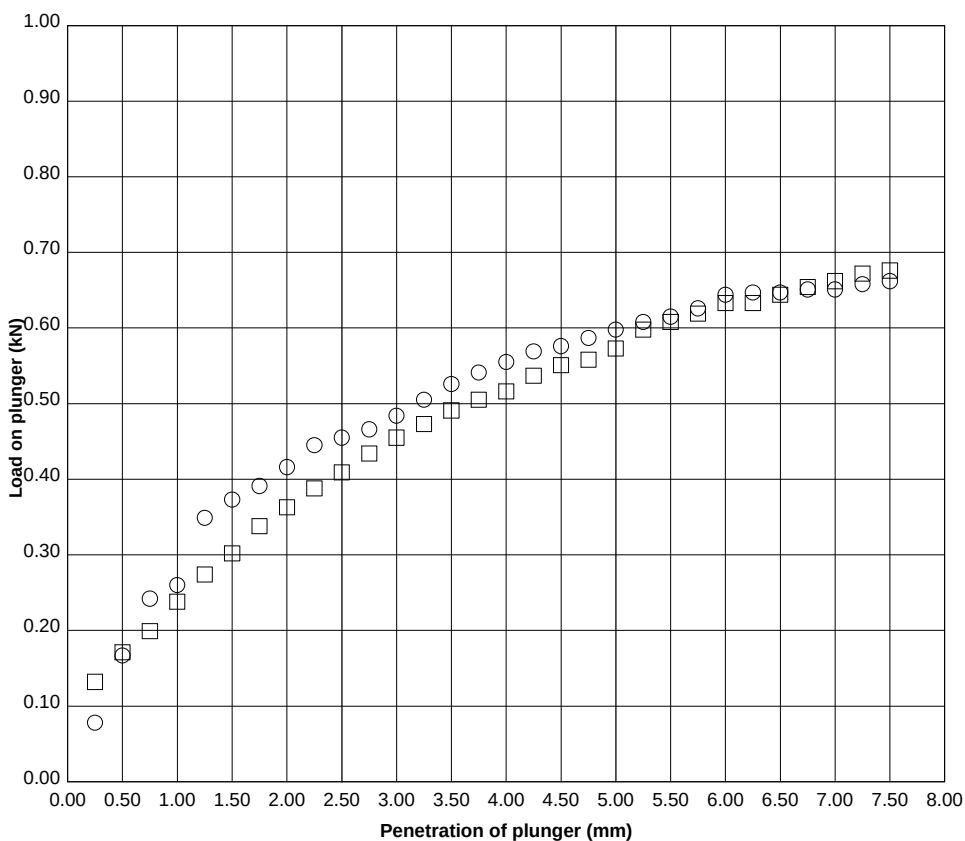
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP824	1.20	B1	100 %	Brown gravelly sandy silty CLAY

Moisture Content %	30
Bulk Density Mg/m³	1.91
Dry Density Mg/m³	1.47
Soaked Test	No

Test on	☐ TOP	
Moisture Content %	30	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.41	0.57
Corrected CBR %	3.1	2.9

Test on	☐ BOTTOM	
Moisture Content %	30	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.46	0.60
Corrected CBR %	3.5	3.0

Test on	TOP	BOTTOM
Reported CBR %	3.1	3.5
Mean CBR %	3.3	


Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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Client : VSM Estates

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

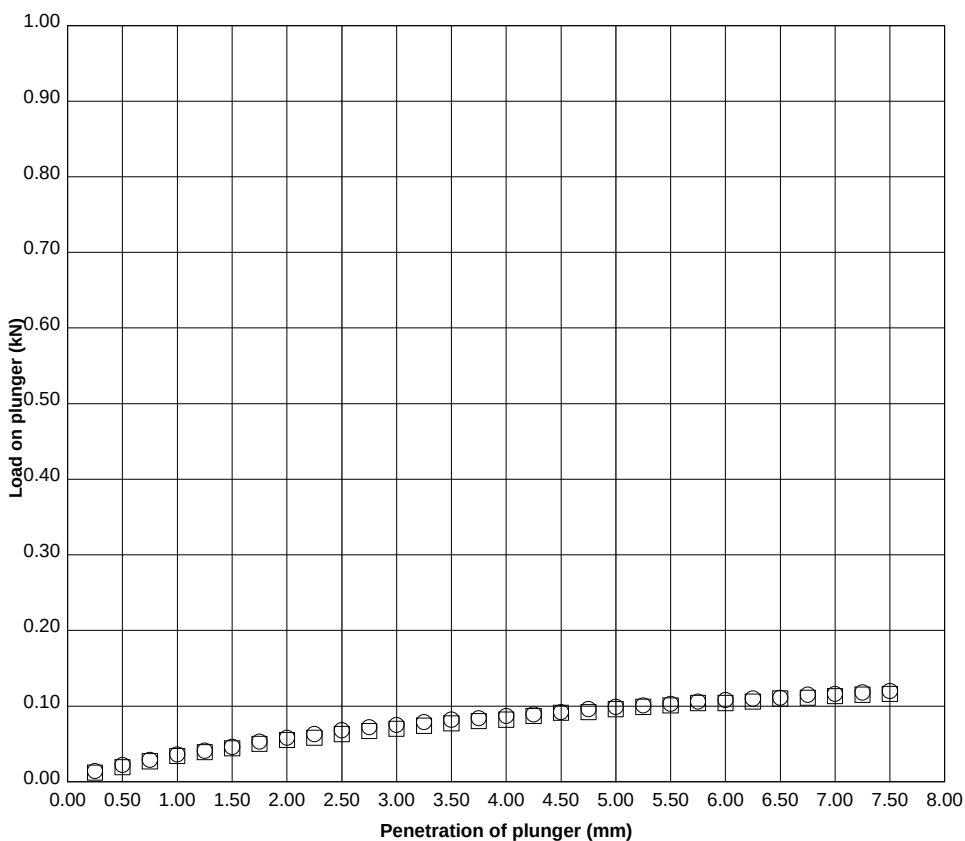
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP825	0.70	B1	91 %	Brown silty sandy gravelly CLAY

Moisture Content %	28
Bulk Density Mg/m³	1.95
Dry Density Mg/m³	1.52
Soaked Test	No

Test on	☐ TOP	
Moisture Content %	29	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.06	0.10
Corrected CBR %	0.48	0.48

Test on	☐ BOTTOM	
Moisture Content %	27	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.07	0.10
Corrected CBR %	0.52	0.50

Test on	TOP	BOTTOM
Reported CBR %	0.48	0.52
Mean CBR %	0.50	


Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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Client : VSM Estates

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

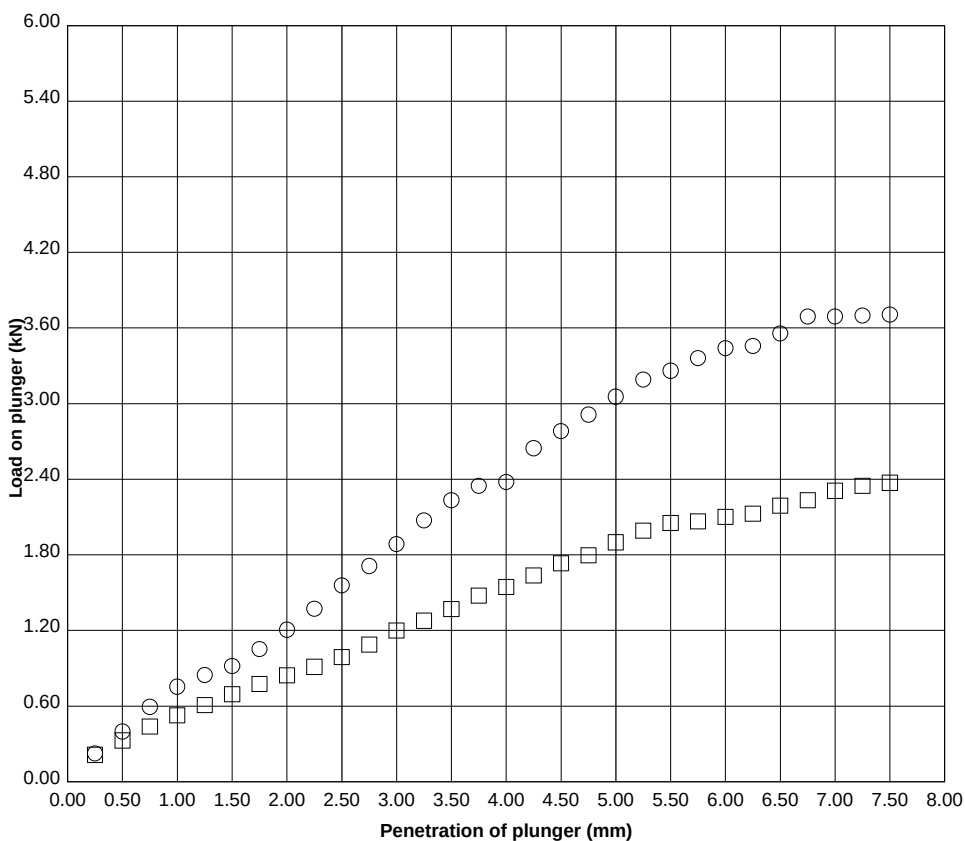
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP846	1.40	B1	77 %	Brown, clayey, silty, sandy GRAVEL

Moisture Content %	14
Bulk Density Mg/m³	2.19
Dry Density Mg/m³	1.92
Soaked Test	No

Test on	☐ TOP	
Moisture Content %	14	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.99	1.9
Corrected CBR %	7.5	9.5

Test on	☐ BOTTOM	
Moisture Content %	14	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	1.6	3.1
Corrected CBR %	12	15

Test on	TOP	BOTTOM
Reported CBR %	9.5	15


Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

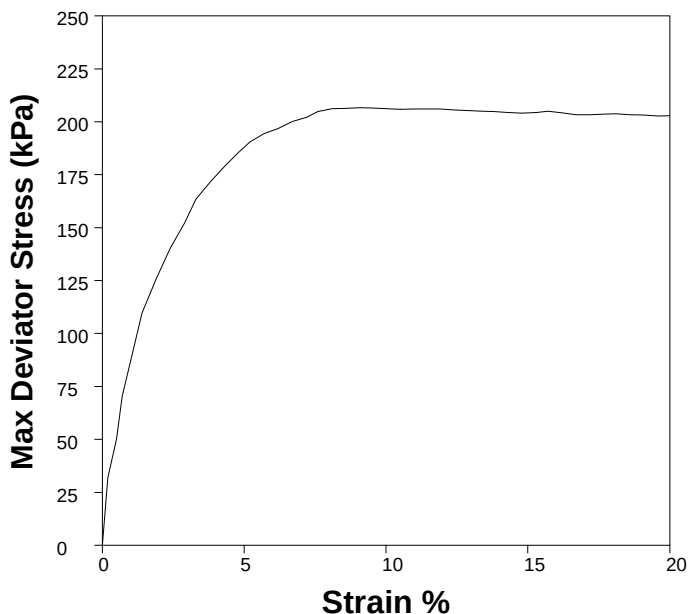
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DETERMINATION OF MOISTURE CONTENT, DENSITY AND UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITH MULTISTAGE LOADING AND WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole / Trial Pit	Depth (m)	Sample	Description
CP802A	7.50	U1	Brown silty CLAY

Initial Specimen		Length of Sample (mm)		450	
		Depth from top of sample (mm)		50	
		Condition of Sample:		Undisturbed	
		Orientation:		Vertical	
Test Type			Multistage		
Length of Specimen (mm)			209.6		
Diameter of Specimen (mm)			104.3		
Moisture Content (%)			28		
Bulk Density (Mg/m³)			1.94		
Dry Density (Mg/m³)			1.51		
Membrane Thickness (mm)			0.28		
Membrane Type			Latex		
Rate of Strain (%/min)			1.91		
Test Results	Measured Cell Pressure (kPa)		80	160	240
	Strain at Failure (%)		6.2	7.2	9.1
	Membrane Correction (kPa)		0.4	0.4	0.5
	Corrected Deviator Stress (kPa)		196	202	206
	Shear Stress (kPa)		98	101	103
	Mode of Failure (B/P/C)		Compound		



Method of Preparation : BS 1377:PT1:1990:7.4.2 Moisture Content, BS 1377:PT1:1990:8.3 Preparation of undisturbed samples for testing or BS 1377:PT1:1990:7.7.5.2 Preparation of disturbed samples for testing.

Method of Test : BS 1377:PT2:1990:3.2 Determination of moisture content, BS 1377:PT2:1990:7.2 Determination of density by linear measurement and BS1377:PT7:1990:9.4 Determination of undrained shear strength in triaxial compression with multistage loading and without measurement of pore pressure

Remarks : Membrane Type: Latex

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

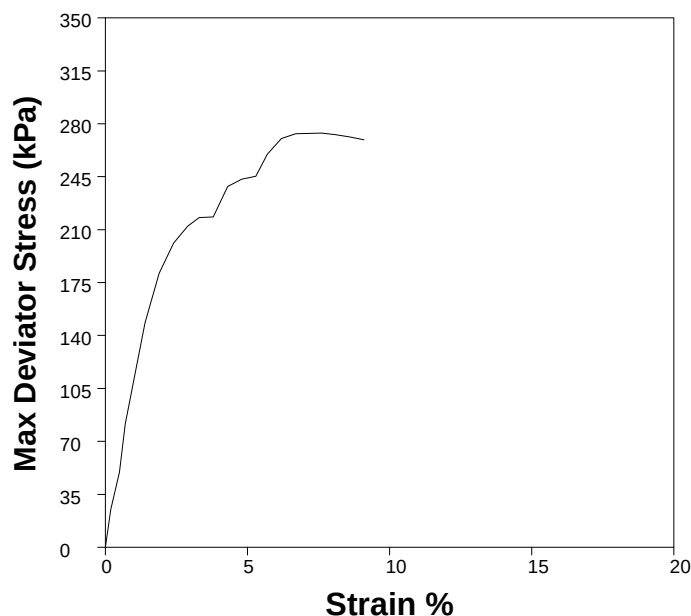
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DETERMINATION OF MOISTURE CONTENT, DENSITY AND UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITH MULTISTAGE LOADING AND WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole / Trial Pit	Depth (m)	Sample	Description
CP804	7.50	U1	Brown silty CLAY

Initial Specimen		Length of Sample (mm)		450	
		Depth from top of sample (mm)		50	
		Condition of Sample: Undisturbed			
		Orientation: Vertical			
Test Type			Multistage		
Length of Specimen (mm)			209.4		
Diameter of Specimen (mm)			102.5		
Moisture Content (%)			28		
Bulk Density (Mg/m³)			2.01		
Dry Density (Mg/m³)			1.57		
Membrane Thickness (mm)			0.31		
Membrane Type			Latex		
Rate of Strain (%/min)			1.91		
Test Results	Measured Cell Pressure (kPa)		100	200	400
	Strain at Failure (%)		3.8	5.3	7.6
	Membrane Correction (kPa)		0.3	0.4	0.5
	Corrected Deviator Stress (kPa)		218	245	273
	Shear Stress (kPa)		109	122	137
	Mode of Failure (B/P/C)		Compound		


Method of Preparation : BS 1377:PT1:1990:7.4.2 Moisture Content, BS 1377:PT1:1990:8.3 Preparation of undisturbed samples for testing or BS 1377:PT1:1990:7.7.5.2 Preparation of disturbed samples for testing.

Method of Test : BS 1377:PT2:1990:3.2 Determination of moisture content, BS 1377:PT2:1990:7.2 Determination of density by linear measurement and BS1377:PT7:1990:9.4 Determination of undrained shear strength in triaxial compression with multistage loading and without measurement of pore pressure

Remarks : Membrane Type: Latex



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

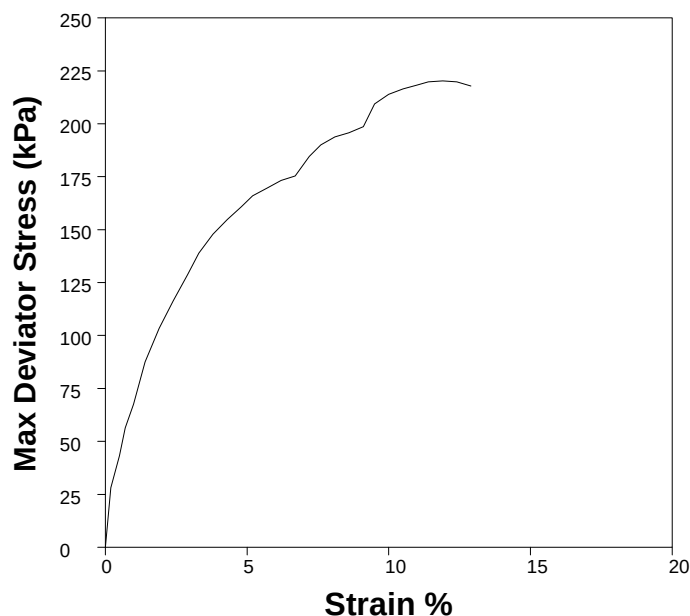
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DETERMINATION OF MOISTURE CONTENT, DENSITY AND UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITH MULTISTAGE LOADING AND WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole / Trial Pit	Depth (m)	Sample	Description
CP807	5.00	U1	Brown sandy gravelly CLAY

Initial Specimen		Length of Sample (mm)		450	
		Depth from top of sample (mm)		50	
		Condition of Sample:		Undisturbed	
		Orientation:		Vertical	
Test Type			Multistage		
Length of Specimen (mm)			209.8		
Diameter of Specimen (mm)			103.4		
Moisture Content (%)			27		
Bulk Density (Mg/m³)			1.90		
Dry Density (Mg/m³)			1.50		
Membrane Thickness (mm)			0.31		
Membrane Type			Latex		
Rate of Strain (%/min)			1.91		
Test Results	Measured Cell Pressure (kPa)		50	100	200
	Strain at Failure (%)		6.7	8.6	11.9
	Membrane Correction (kPa)		0.5	0.6	0.8
	Corrected Deviator Stress (kPa)		175	195	220
	Shear Stress (kPa)		87	98	110
	Mode of Failure (B/P/C)		Compound		



Method of Preparation : BS 1377:PT1:1990:7.4.2 Moisture Content, BS 1377:PT1:1990:8.3 Preparation of undisturbed samples for testing or BS 1377:PT1:1990:7.7.5.2 Preparation of disturbed samples for testing.

Method of Test : BS 1377:PT2:1990:3.2 Determination of moisture content, BS 1377:PT2:1990:7.2 Determination of density by linear measurement and BS1377:PT7:1990:9.4 Determination of undrained shear strength in triaxial compression with multistage loading and without measurement of pore pressure

Remarks : Membrane Type: Latex

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

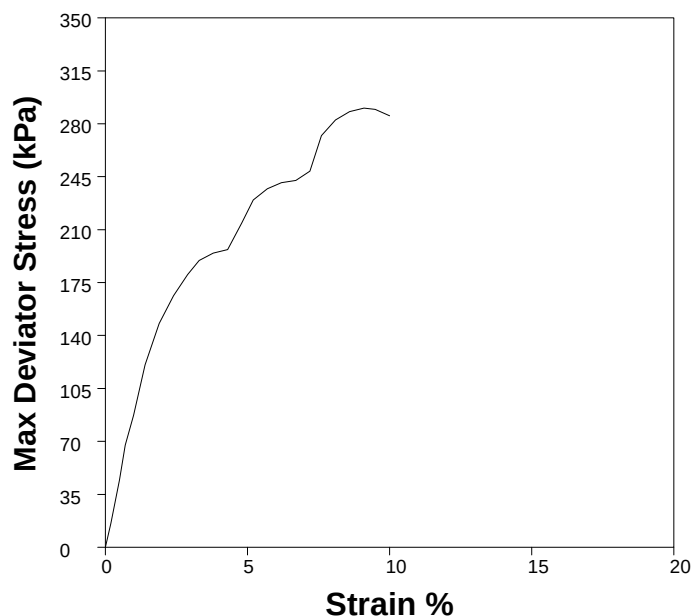
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DETERMINATION OF MOISTURE CONTENT, DENSITY AND UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITH MULTISTAGE LOADING AND WITHOUT MEASUREMENT OF PORE PRESSURE

Borehole / Trial Pit	Depth (m)	Sample	Description
CP807	7.50	U2	Brown silty CLAY

Initial Specimen		Length of Sample (mm)		450	
		Depth from top of sample (mm)		50	
		Condition of Sample:		Undisturbed	
		Orientation:		Vertical	
Test Type			Multistage		
Length of Specimen (mm)			209.6		
Diameter of Specimen (mm)			103.6		
Moisture Content (%)			26		
Bulk Density (Mg/m³)			1.97		
Dry Density (Mg/m³)			1.56		
Membrane Thickness (mm)			0.31		
Membrane Type			Latex		
Rate of Strain (%/min)			1.91		
Test Results	Measured Cell Pressure (kPa)		100	200	400
	Strain at Failure (%)		4.3	6.7	9.1
	Membrane Correction (kPa)		0.3	0.5	0.6
	Corrected Deviator Stress (kPa)		196	242	290
	Shear Stress (kPa)		98	121	145
	Mode of Failure (B/P/C)		Compound		


Method of Preparation : BS 1377:PT1:1990:7.4.2 Moisture Content, BS 1377:PT1:1990:8.3 Preparation of undisturbed samples for testing or BS 1377:PT1:1990:7.7.5.2 Preparation of disturbed samples for testing.

Method of Test : BS 1377:PT2:1990:3.2 Determination of moisture content, BS 1377:PT2:1990:7.2 Determination of density by linear measurement and BS1377:PT7:1990:9.4 Determination of undrained shear strength in triaxial compression with multistage loading and without measurement of pore pressure

Remarks : Membrane Type: Latex

**Site** : St Andrew's Park, Phase 5, 6 and Rifle Range**Job Number**
21311A**Client** : VSM Estates**Page**
35 / 46**DETERMINATION OF EQUIVALENT SHEAR STRESS BY HAND VANE**

Borehole/ Trial Pit	Depth (m)	Sample	Location	Readings	Size	Equivalent Shear Stress kN/m ²	Description / Remarks
CP802A	7.50	U1	Top	>140.00 >140.00 >140.00	Small	>212	Brown silty CLAY
CP802A	10.50	U2	Top	>140.00 >140.00 >140.00	Small	>212	Brown CLAY
CP802A	19.50	U5	Top	>140.00 >140.00 >140.00	Small	>212	Brown CLAY
CP804	7.50	U1	Top	>140.00 >140.00 >140.00	Small	>212	Brown silty CLAY
CP804	16.50	U4	Top	>140.00 >140.00 >140.00	Small	>212	Brown silty CLAY
CP807	5.00	U1	Top	112.00 92.00 92.00	Small	149	Brown sandy gravelly CLAY
CP807	7.50	U2	Top	>140.00 >140.00 >140.00	Small	>212	Brown silty CLAY
CP807	10.50	U3	Top	>140.00 >140.00 >140.00	Small	>212	Brown silty CLAY
CP807	16.50	U5	Top	>140.00 >140.00 >140.00	Small	>212	Brown silty CLAY

Method of Preparation : BS 1377:PART 1:1990:7.4.2 Moisture content, Preparation of undisturbed samples for testing BS 1377:PART 1:1990:8.3 Preparation of disturbed samples for testing BS1377 PART1:7.7.5.2**Method of Test** : Tested using a Impact Hand Vane. Rate of Turning is by Hand. Tested in accordance with manufactures instruction.

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

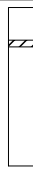
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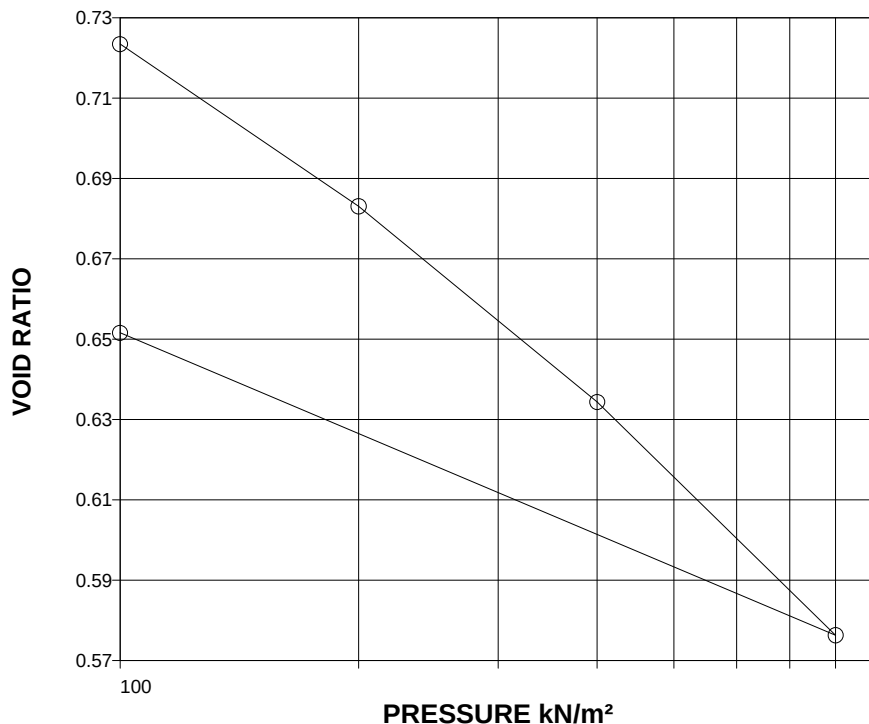
ONE-DIMENSIONAL CONSOLIDATION TEST

Borehole / Trial Pit	Depth (m)	Sample	Description
CP807	5.00	U1	Brown sandy gravelly CLAY

Initial Specimen		Length of Sample (mm)	450
		Depth from top of sample (mm)	50
		Condition of Sample:	Undisturbed
		Orientation:	Vertical

Diameter (mm)	75.06
Particle Density (Mg/m³)	2.65 (Assumed)
Swelling Pressure (kN/m²)	
Lab Temp (°C)	20

	Initial	Final
Height (mm)	19.04	17.95
Wet Weight (g)	161.87	163.45
Moisture Content (%)	27	20
Bulk Density (Mg/m³)	1.92	2.06
Dry Density (Mg/m³)	1.52	1.71
Void Ratio	0.743	0.550
Degree of Saturation (%)	94.87	97.47



Pressure kN/m²	m_v m²/MN	c_v m²/year	Void Ratio
100	0.13	4.1	0.723
200	0.24	7.7	0.683
400	0.15	1.8	0.634
800	0.09	3.2	0.576
100	0.07	1.2	0.652

Pressure kN/m²	m_v m²/MN	c_v m²/year	Void Ratio

Method of Preparation : BS 1377:PART 5:1990:3.3, 3.4

Method of Test : BS 1377:PART 5:1990:3.5. Using Square-root-time method

Remarks : Square-root-time

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

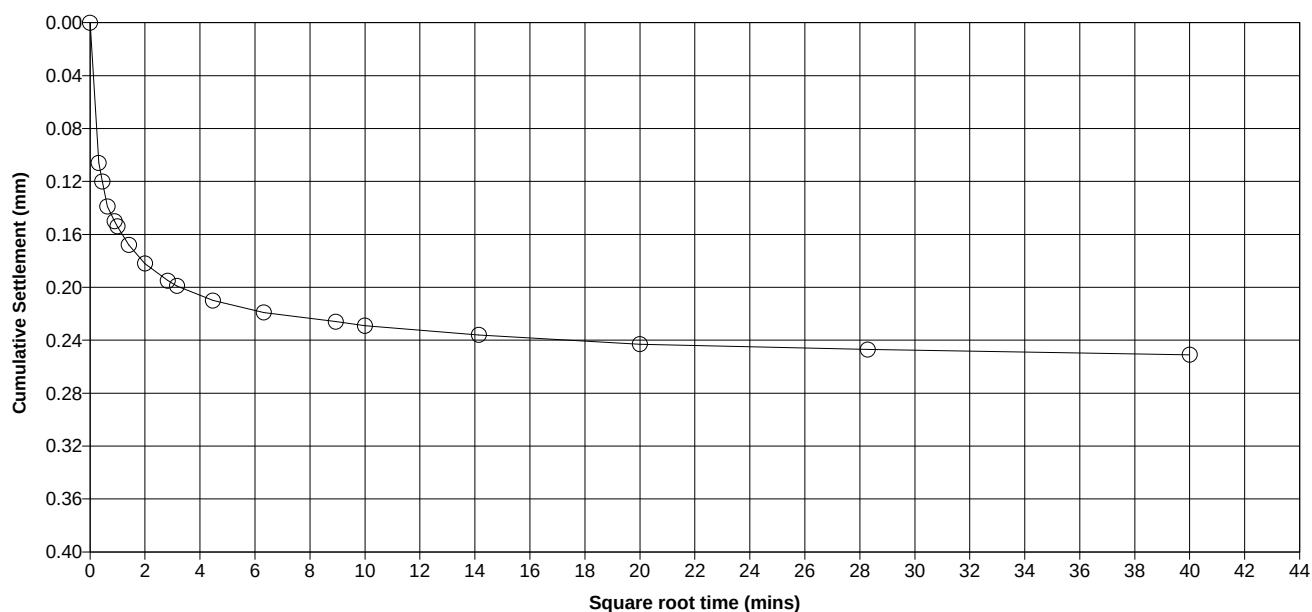
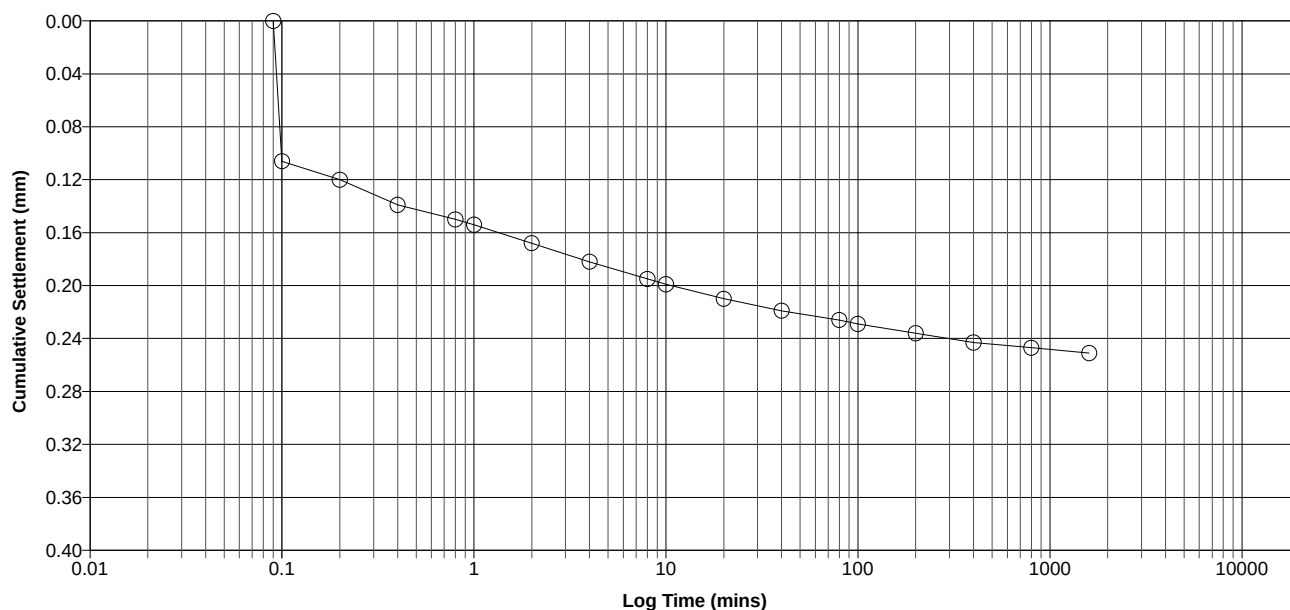
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ONE-DIMENSIONAL CONSOLIDATION TEST

Borehole / Trial Pit	Depth (m)	Sample	Stage	Description
CP807	5.00	U1	1	Brown sandy gravelly CLAY


Method of Preparation : BS 1377:PART 5:1990:3.3, 3.4

Method of Test : BS 1377:PART 5:1990:3.5. Using Square-root-time method

Remarks : Square-root-time

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

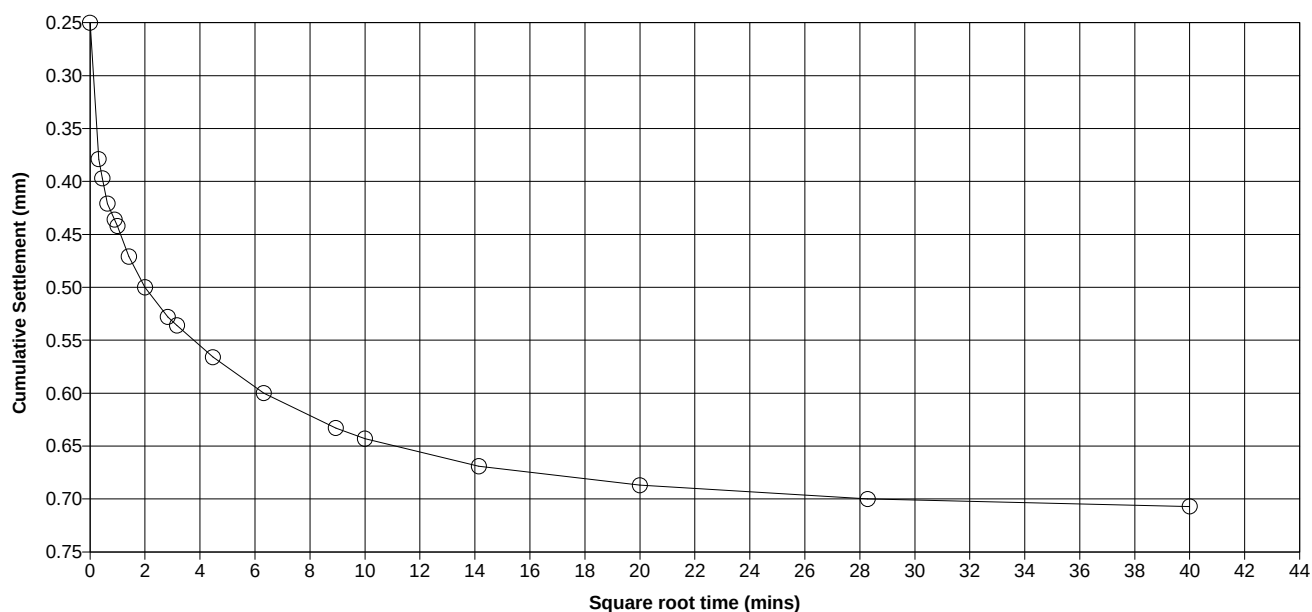
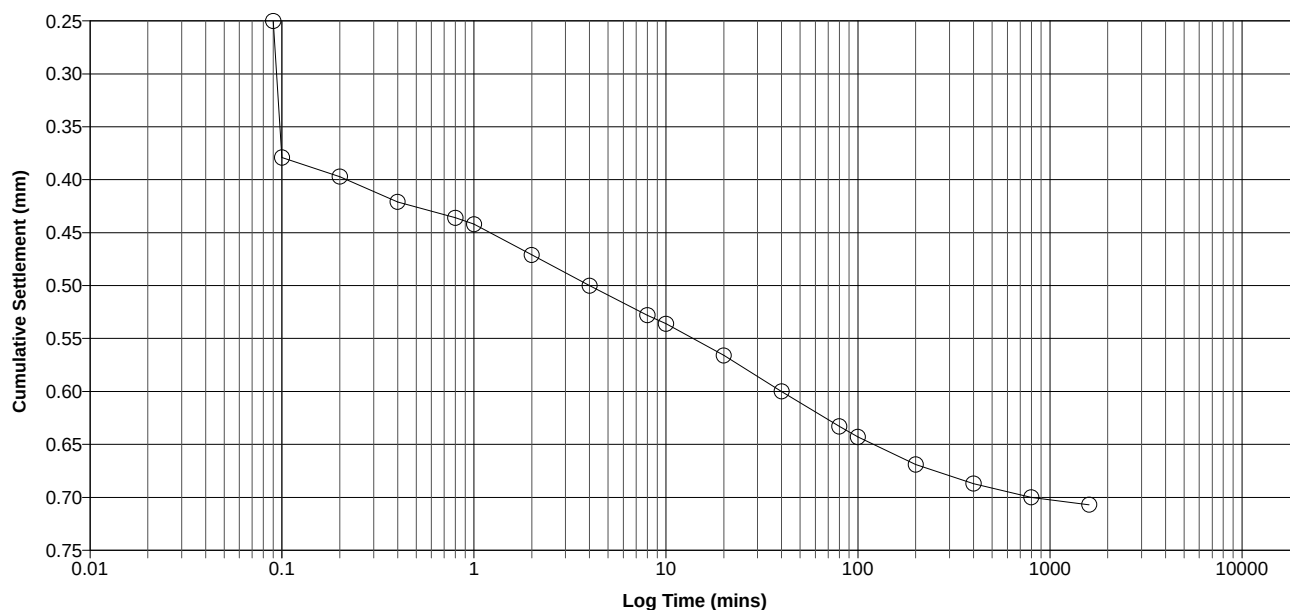
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ONE-DIMENSIONAL CONSOLIDATION TEST

Borehole / Trial Pit	Depth (m)	Sample	Stage	Description
CP807	5.00	U1	2	Brown sandy gravelly CLAY


Method of Preparation : BS 1377:PART 5:1990:3.3, 3.4

Method of Test : BS 1377:PART 5:1990:3.5. Using Square-root-time method

Remarks : Square-root-time

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

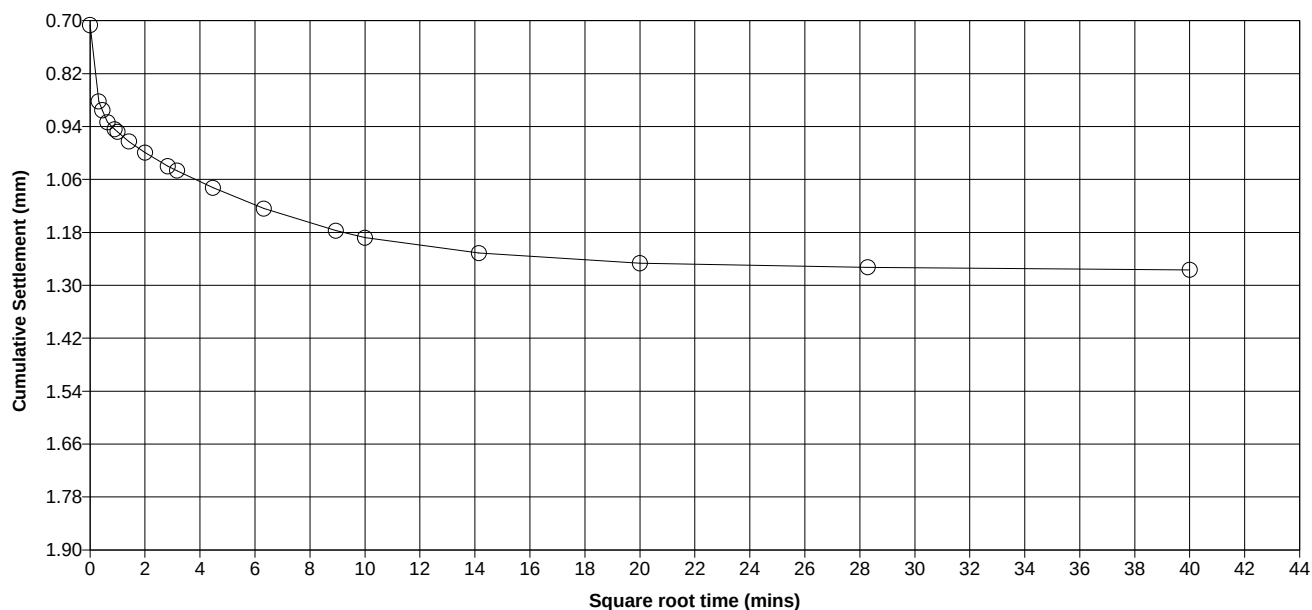
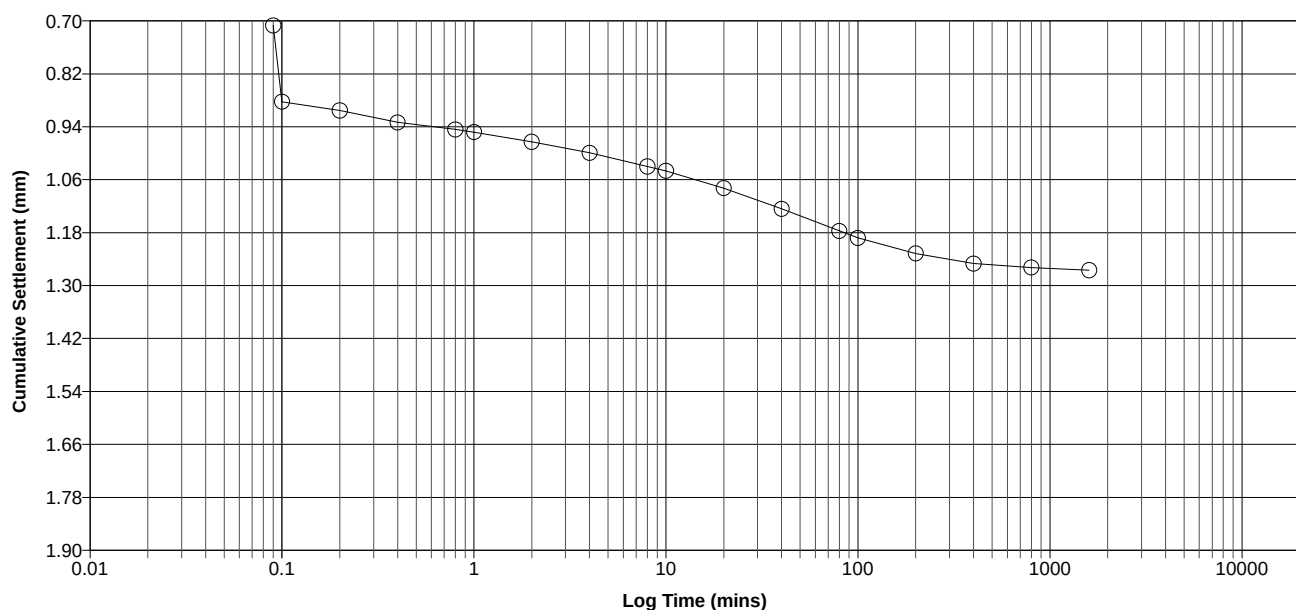
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ONE-DIMENSIONAL CONSOLIDATION TEST

Borehole / Trial Pit	Depth (m)	Sample	Stage	Description
CP807	5.00	U1	3	Brown sandy gravelly CLAY


Method of Preparation : BS 1377:PART 5:1990:3.3, 3.4

Method of Test : BS 1377:PART 5:1990:3.5. Using Square-root-time method

Remarks : Square-root-time

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

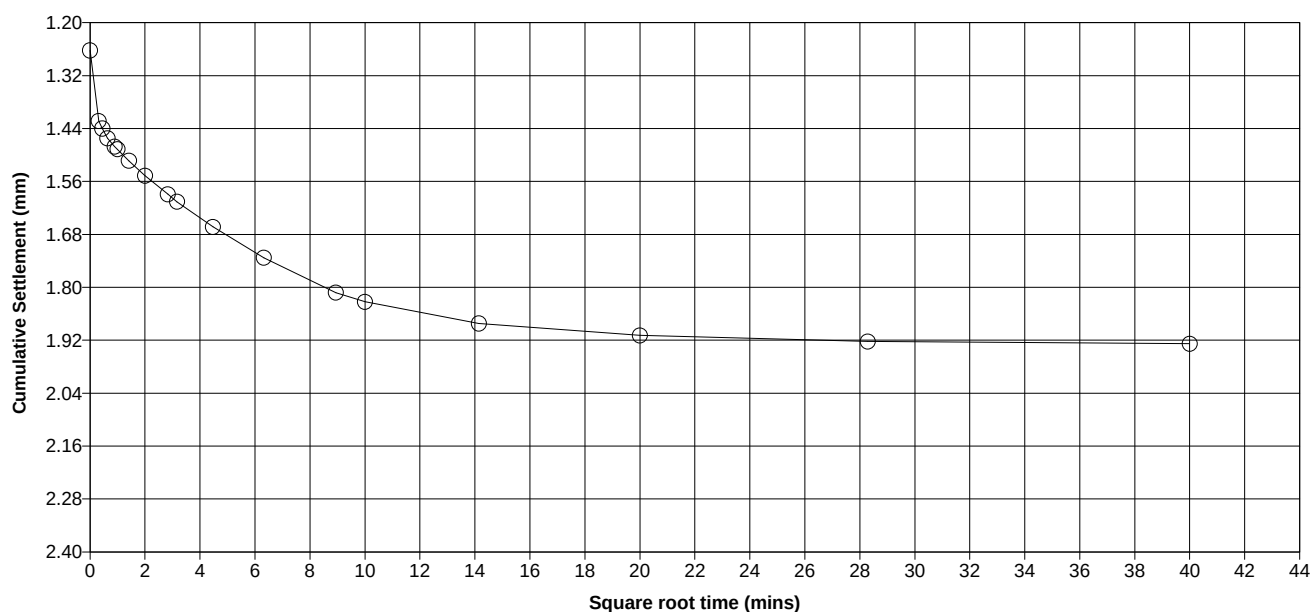
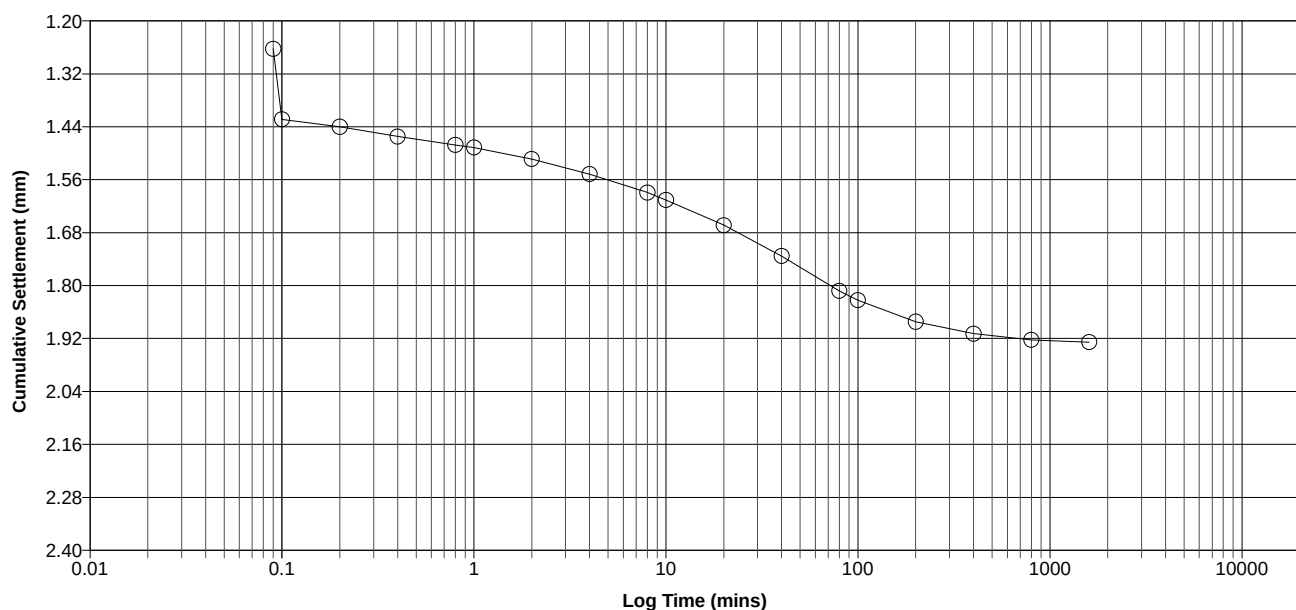
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ONE-DIMENSIONAL CONSOLIDATION TEST

Borehole / Trial Pit	Depth (m)	Sample	Stage	Description
CP807	5.00	U1	4	Brown sandy gravelly CLAY


Method of Preparation : BS 1377:PART 5:1990:3.3, 3.4

Method of Test : BS 1377:PART 5:1990:3.5. Using Square-root-time method

Remarks : Square-root-time

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

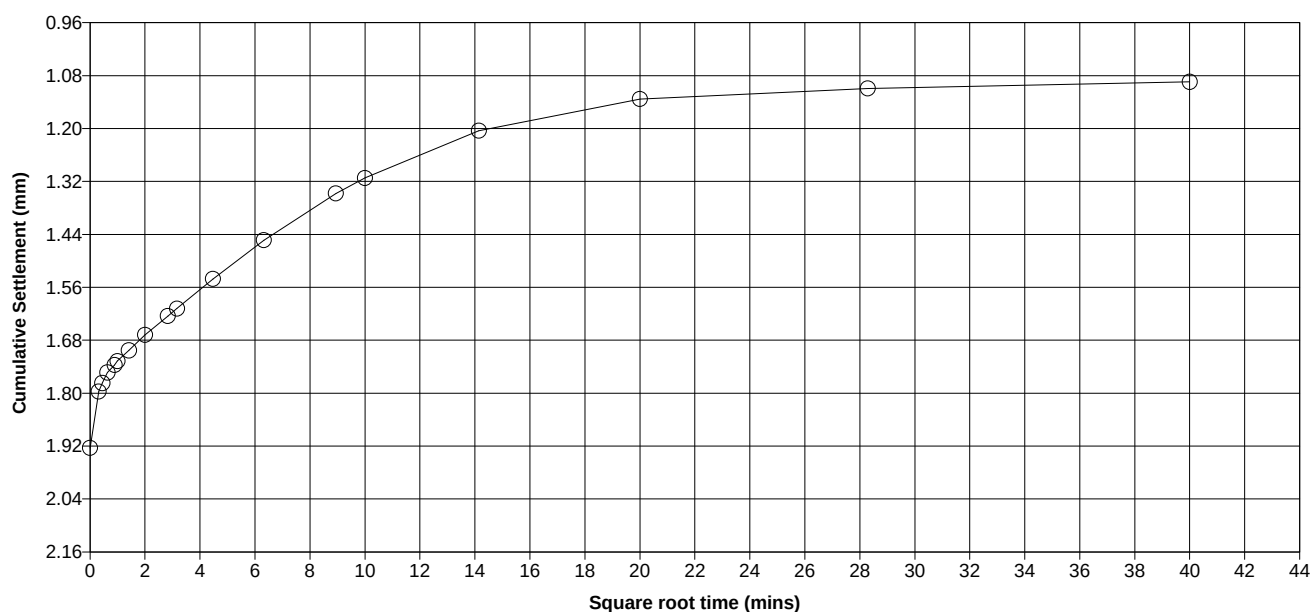
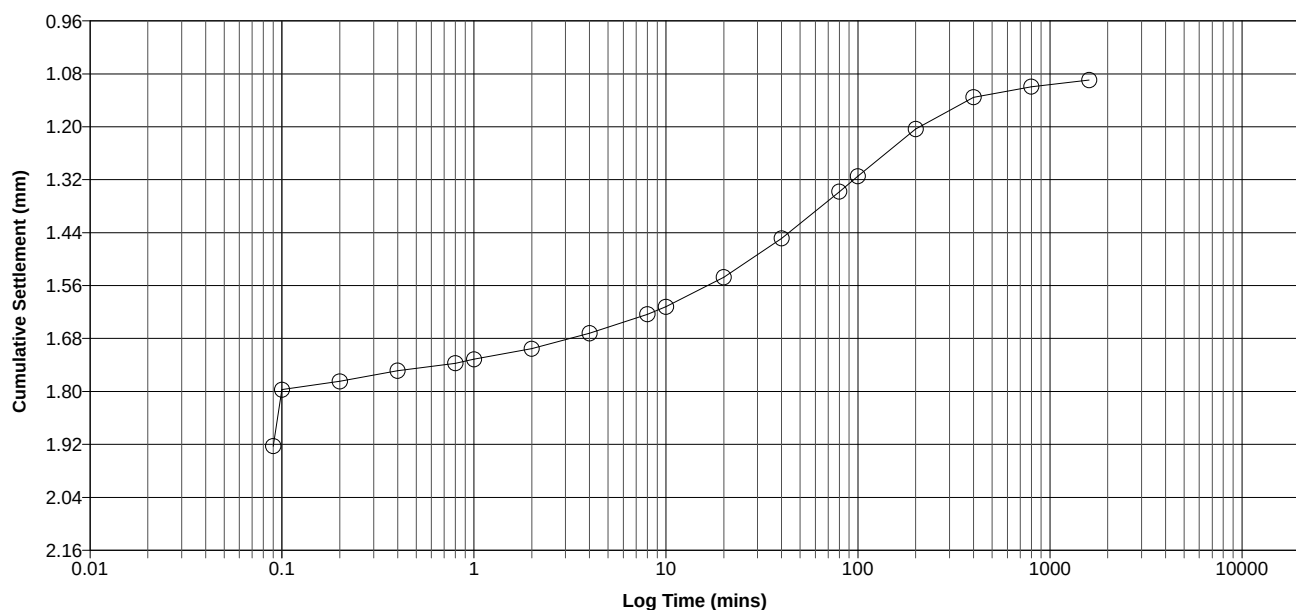
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Client : VSM Estates

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ONE-DIMENSIONAL CONSOLIDATION TEST

Borehole / Trial Pit	Depth (m)	Sample	Stage	Description
CP807	5.00	U1	5	Brown sandy gravelly CLAY


Method of Preparation : BS 1377:PART 5:1990:3.3, 3.4

Method of Test : BS 1377:PART 5:1990:3.5. Using Square-root-time method

Remarks : Square-root-time

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Job Number
21311A

Client : VSM Estates

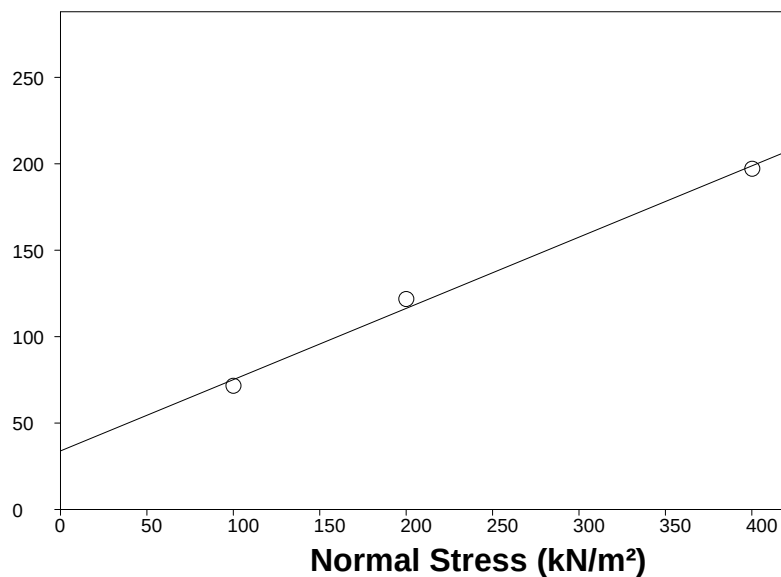
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DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR

Borehole / Trial Pit	Depth (m)	Sample	Undisturbed/ Remoulded	Description
CP807	5.00	U1	Remoulded	Brown sandy gravelly CLAY

Test Reference	A	B	C
Length (mm)	59.97	59.94	59.95
Width (mm)	59.97	59.94	59.95
Height (mm)	24.95	24.92	24.92
Mass (g)	180.95	180.43	181.79
Moisture Content (%)	25	24	25
Bulk Density (Mg/m³)	2.02	2.02	2.03
Dry Density (Mg/m³)	1.61	1.62	1.63
Particle Density (Mg/m³) (#=Assumed)	2.65#	2.65#	2.65#
Void ratio	0.65	0.64	0.63
Initial Degree of Saturation	103.50	101.70	104.40
Test Method (Sub)merged or (Dry)	Sub	Sub	Sub

Specimen Reference		A	B	C
Normal stress (kPa)		100.08	200.16	400.32
Rate of displacement (mm/min)		0.019	0.017	0.017
Peak	Shear Stress (kPa)	71.67	121.78	197.21
	Vertical Displacement at failure (mm)	-0.01	-0.08	0.06
	Horizontal Displacement at failure (mm)	1.00	3.00	2.50
Residual	Shear Stress (kPa)			
	Vertical Displacement at failure (mm)			
	Horizontal Displacement at failure (mm)			
Number of traverses for Residual		0		
Method of Reversing				

**Shear
Stress
at
Failure
(kN/m²)**


○ — Peak

Peak	
C' (kPa)	PHI (deg)
34	22.0

Method of Preparation : BS 1377:PART 7:1990:4.4, 4.5

Method of Test : BS 1377:PART 7:1990:4.4, 4.5

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Job Number
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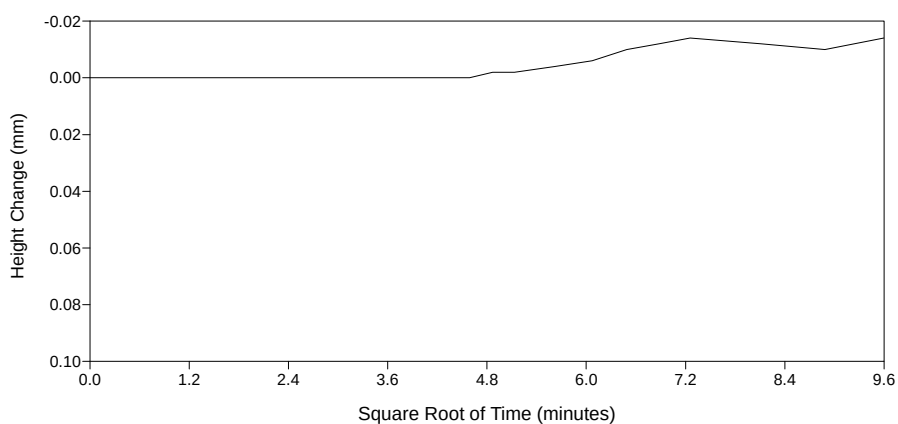
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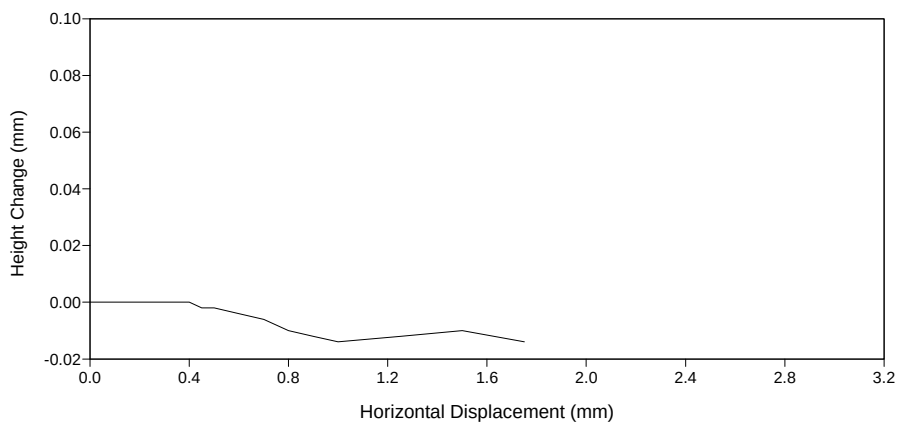
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR

Borehole / Trial Pit	Depth (m)	Sample	Specimen Ref.	Description
CP807	5.00	U1	A	Brown sandy gravelly CLAY

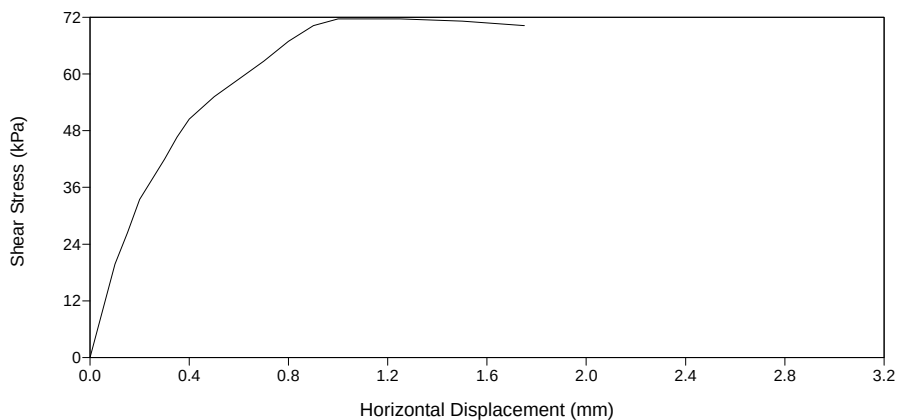
**Height Change
V
Square Root Time**



**Height Change
V
Horizontal Displacement**



**Shear Stress
V
Horizontal Displacement**



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

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21311A

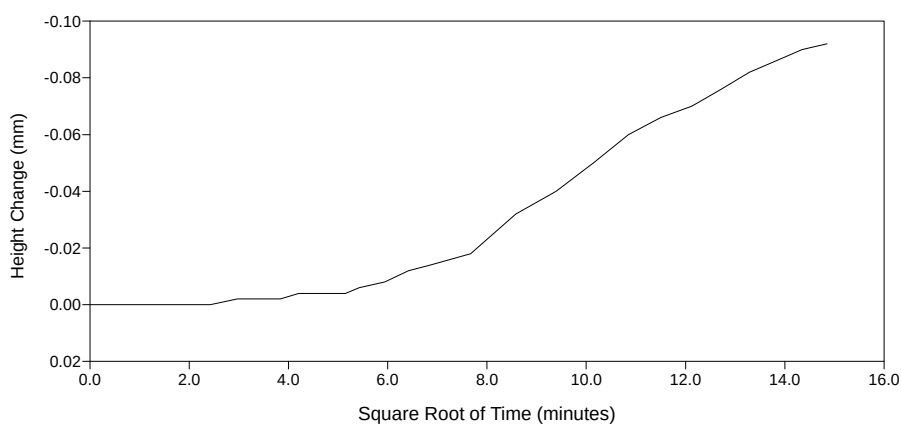
Client : VSM Estates

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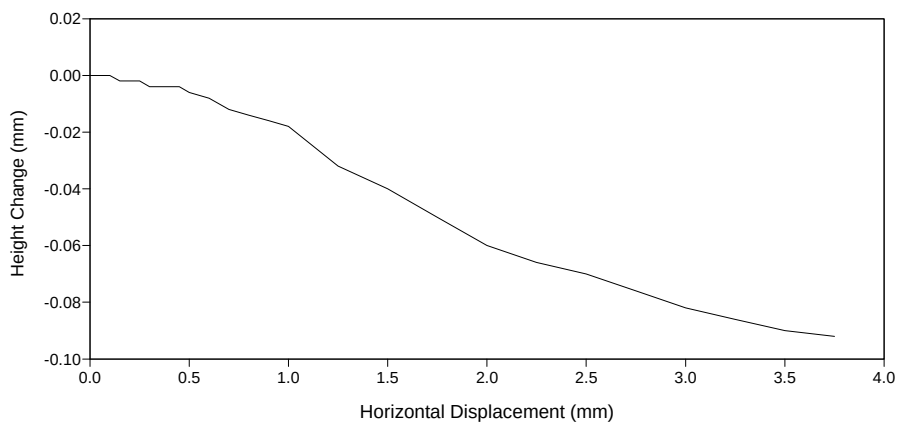
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR

Borehole / Trial Pit	Depth (m)	Sample	Specimen Ref.	Description
CP807	5.00	U1	B	Brown sandy gravelly CLAY

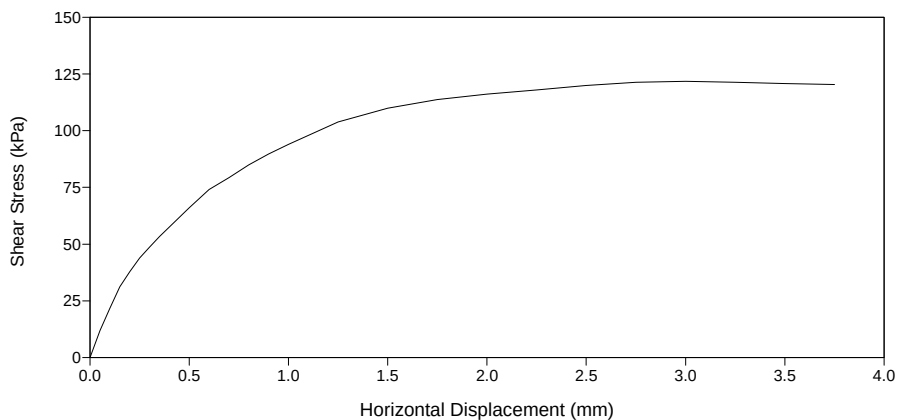
**Height Change
V
Square Root Time**



**Height Change
V
Horizontal Displacement**



**Shear Stress
V
Horizontal Displacement**



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Job Number
21311A

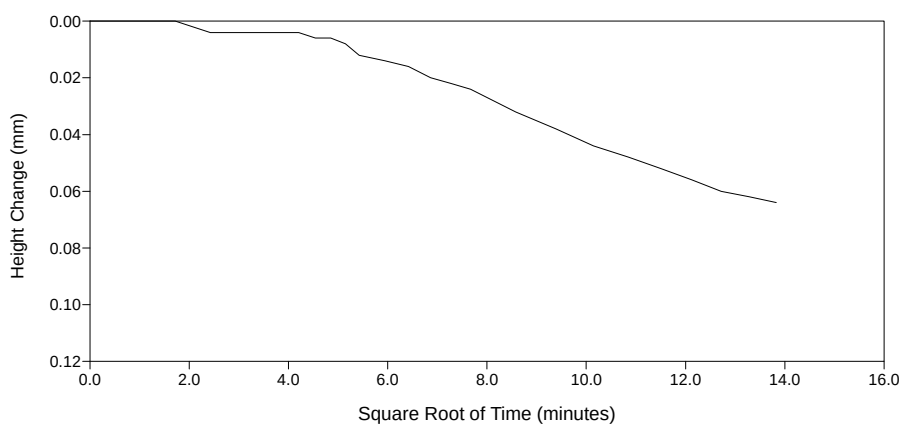
Client : VSM Estates

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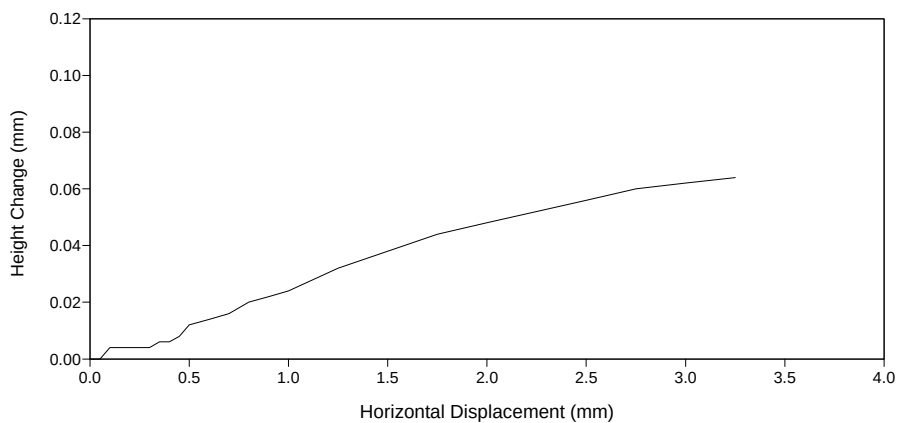
DETERMINATION OF SHEAR STRENGTH BY DIRECT SHEAR

Borehole / Trial Pit	Depth (m)	Sample	Specimen Ref.	Description
CP807	5.00	U1	C	Brown sandy gravelly CLAY

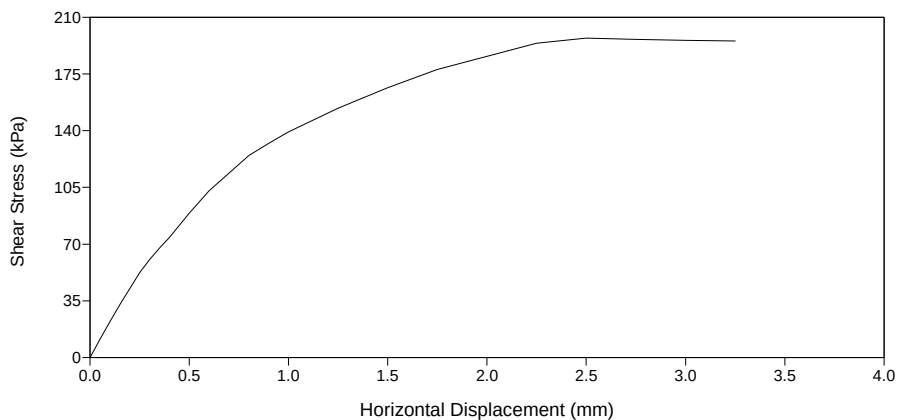
**Height Change
V
Square Root Time**



**Height Change
V
Horizontal Displacement**



**Stear Stress
V
Horizontal Displacement**



Test Report : **21311A**

Site : St Andrew's Park, Phase 5, 6 and Rifle Range
Job Number : 21311A
Originating Client : VSM Estates

All opinions and interpretations contained within this report are outside of our Scope of Accreditation.

The following tests contained within this report are not UKAS Accredited.
Hand Vane

Date of Issued : 27/3/15



**IAN FARMER
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F.A.O. Roy Smith

TEST REPORT - 21311AB/1

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Job Number : 21311AB

Originating Client : VSM Estates

Originating Reference : 21311AB

Date Sampled : Not given

Date Scheduled : 18/02/15

Date Testing Started : 24/02/15

Date Testing Finished : 20/03/15

Remarks :

- First Report for above Job Number
- Samples will be disposed of 28 days after the report is issued unless otherwise agreed
- This report may contain results from tests which are not included within the scope of the UKAS accreditation. Please see final sheet for details.

Authorised By:

Daniel Smith

Position :

Laboratory Supervisor

Date : 20/03/15

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Registered Office: Unit 4 Faraday Close, Pattinson North Industrial Estate, Washington. NE38 8QJ
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Job Number
21311AB

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Borehole/ Trial Pit	Depth (m)	Sample	Natural / Sieved	Natural Moisture Content %	Sample Passing 425µm Sieve		Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Class	Description / Remarks
					Percentage %	Moisture Content %						
TP829	0.60	B2	Natural	47	100	47	74	40	34	0.21	MV	Brown gravelly clayey sandy SILT
TP848	0.60	B2	Natural	32	98	33	66	31	35	0.06	CH	Brown gravelly sandy silty CLAY

Method of Test : BS 1377:PART 2:1990:3.2 Determination of moisture content 4.3 Determination of the liquid limit 5.3 Determination of the plastic limit and plasticity index

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

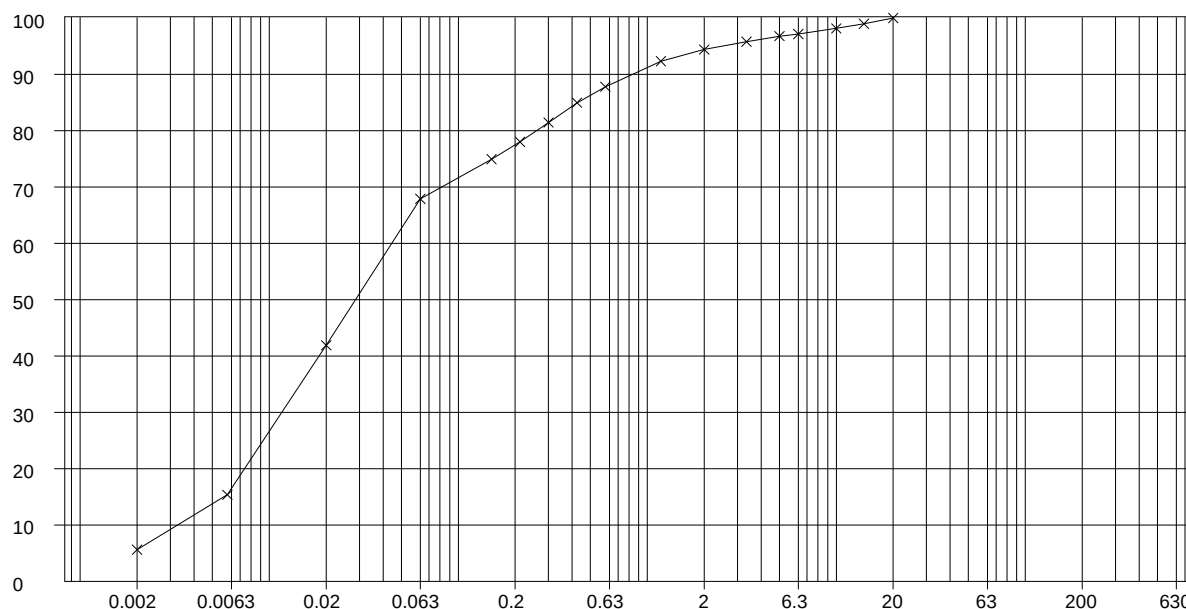
Client : VSM Estates

Job Number
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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
TP829	0.60	B2	Pipette	Brown gravelly clayey sandy SILT



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	426.8 µm
D60	49.9 µm
D10	4.0 µm
Uniformity Coefficient	12.5

Particle Proportions	
Cobbles + Boulders	0%
Gravel	6%
Sand	28%
Silt	61%
Clay	6%

Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
28 mm	100
20 mm	100
14 mm	99
10 mm	98
6.3 mm	97
5 mm	97
3.35 mm	96
2 mm	94
1.18 mm	92
600 µm	88
425 µm	85
300 µm	81
212 µm	78
150 µm	75
63 µm	68
20 µm	42
6 µm	15
2 µm	6

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

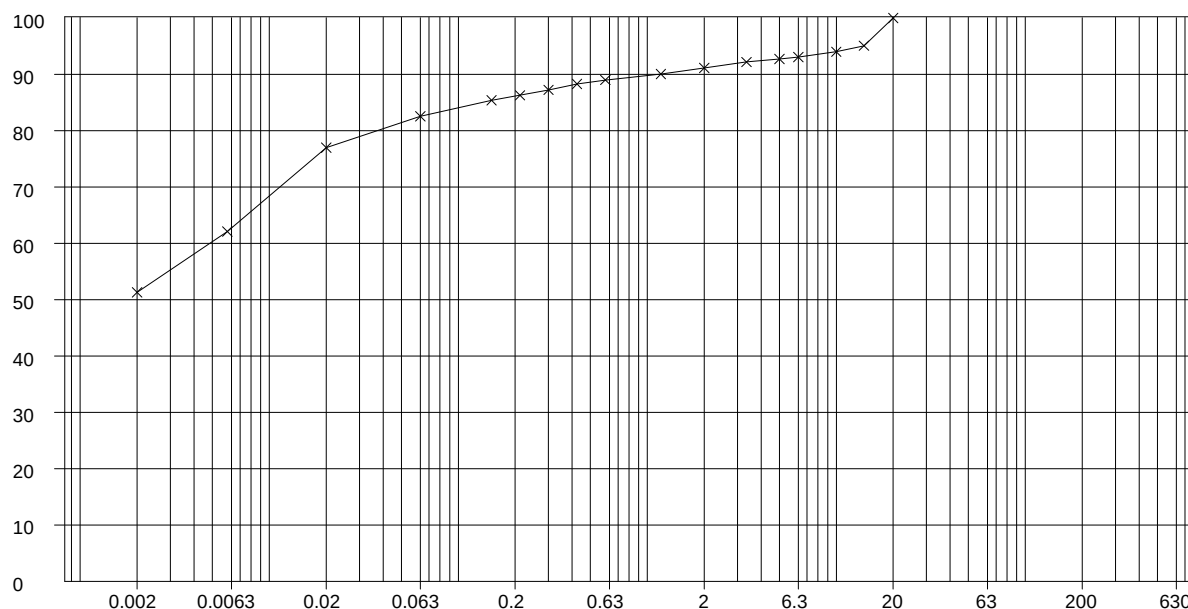
Client : VSM Estates

Job Number
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DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit	Depth (m)	Sample	Pipette/ Hydrometer	Description
TP848	0.60	B2	Pipette	Brown gravelly sandy silty CLAY



Sieve / Particle Size	% Passing
200 mm	100
150 mm	100
125 mm	100
90 mm	100
75 mm	100
63 mm	100
50 mm	100
37.5 mm	100
28 mm	100
20 mm	100
14 mm	95
10 mm	94
6.3 mm	93
5 mm	93
3.35 mm	92
2 mm	91
1.18 mm	90
600 µm	89
425 µm	88
300 µm	87
212 µm	86
150 µm	85
63 µm	83
20 µm	77
6 µm	62
2 µm	51

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	137.5 µm
D60	5.2 µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0%
Gravel	9%
Sand	9%
Silt	31%
Clay	51%

Method of Preparation : BS 1377:PART 1:1990:7.3 Initial preparation 7.4.5 Particle size tests

Preparation Details : Sample washed with no dispersant used, Oven Dried at 105 - 110°C

Method of Test : BS 1377:PART 2:1990:9 Determination of particle size distribution

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Job Number

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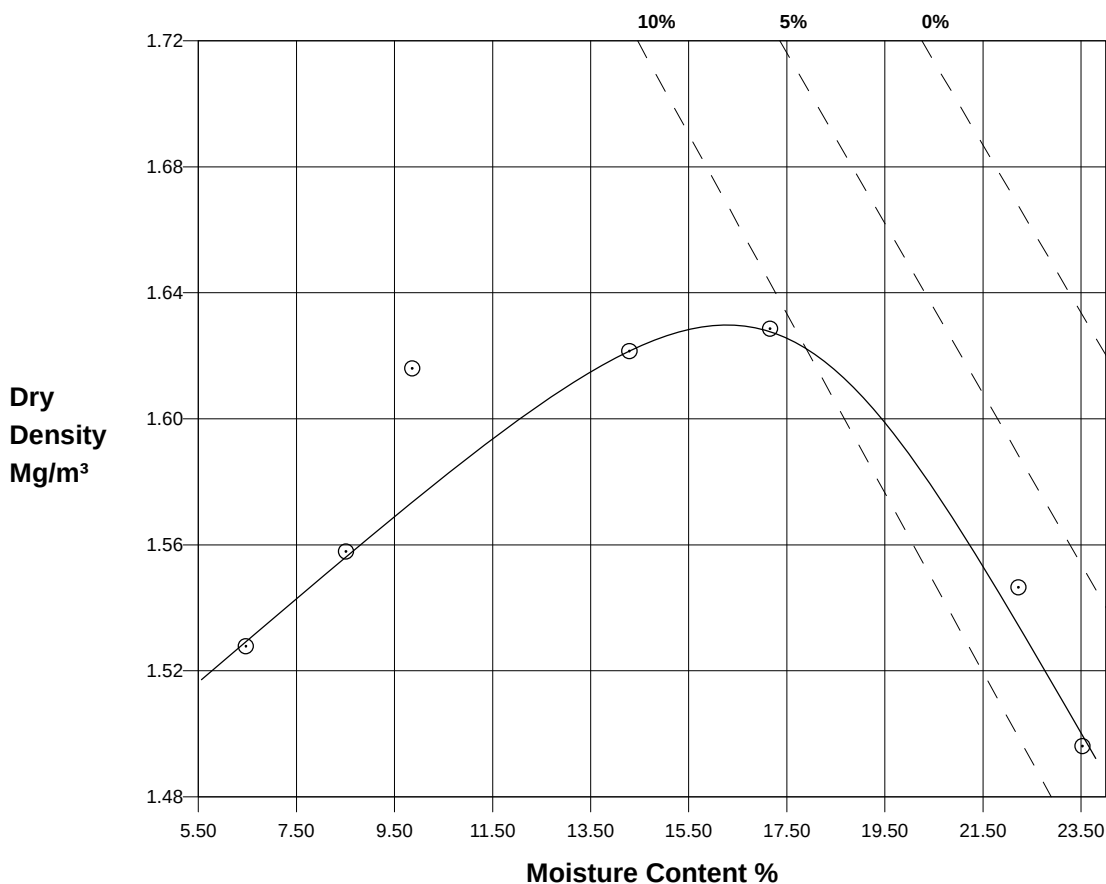
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
CP804	0.60	B2	Brown sandy silty CLAY

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	5 %	Single or separate samples	Single
Grading Zone	2	Particle density	2.65 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.63 Mg/m ³	OPTIMUM MOISTURE CONTENT	16 %



Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Job Number

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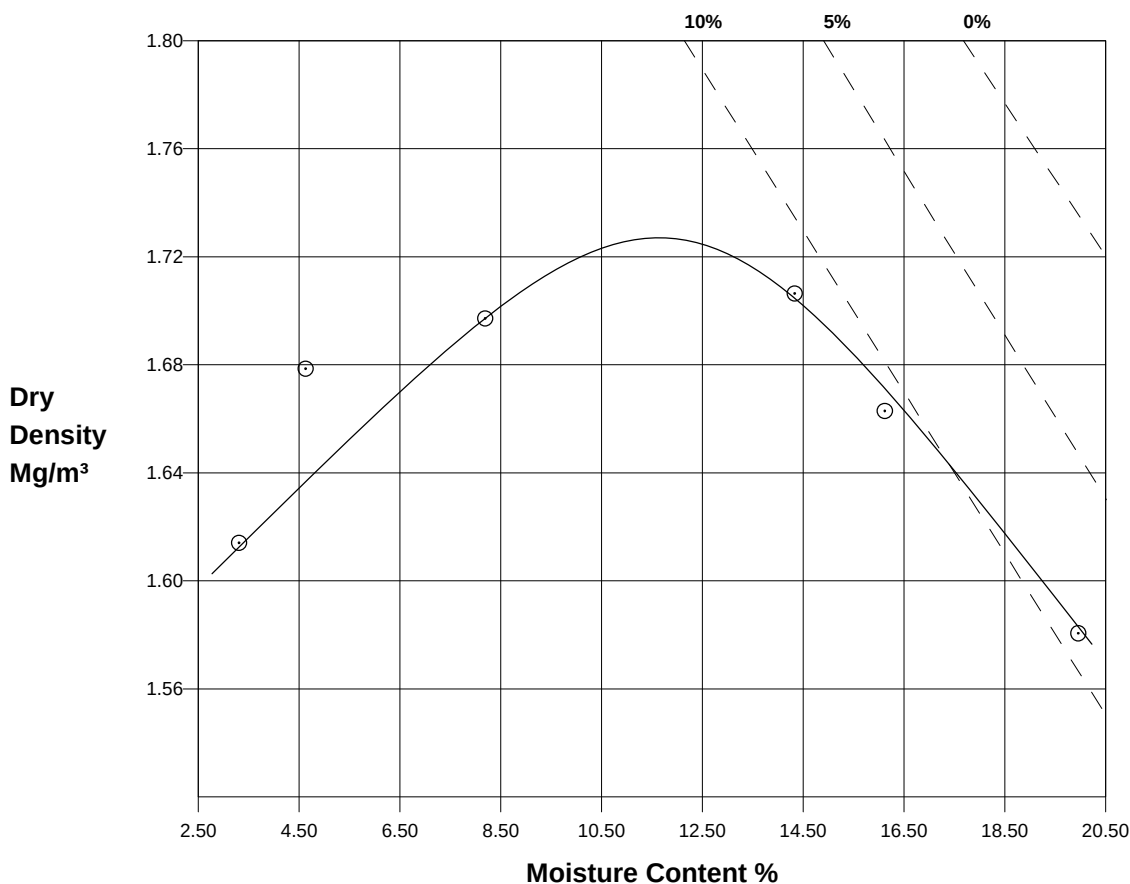
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP806	0.60	B2	Brown gravelly sandy CLAY

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	13 %	Single or separate samples	Single
Grading Zone	3	Particle density	2.65 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.73 Mg/m ³	OPTIMUM MOISTURE CONTENT	12 %



Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

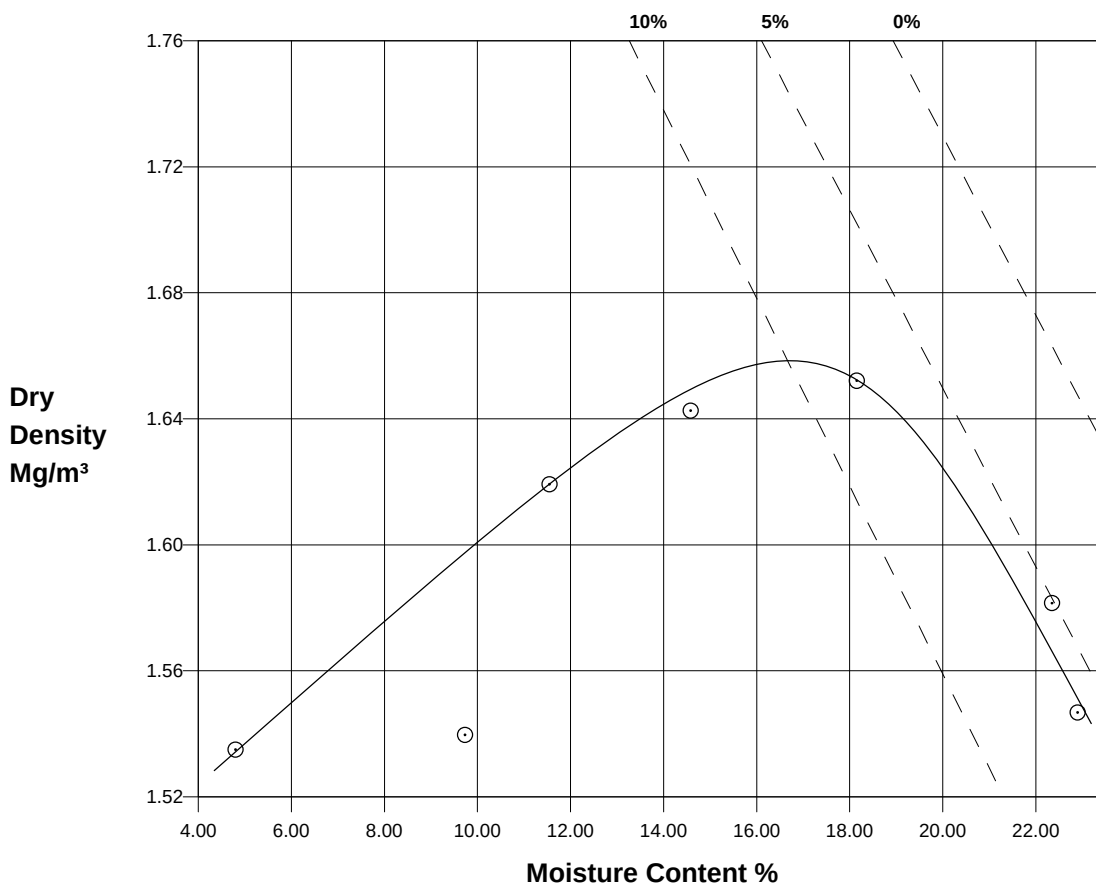
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP809	0.70	B2	Brown gravelly sandy CLAY

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	8 %	Single or separate samples	Single
Grading Zone	3	Particle density	2.65 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.66 Mg/m ³	OPTIMUM MOISTURE CONTENT	17 %



Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Job Number
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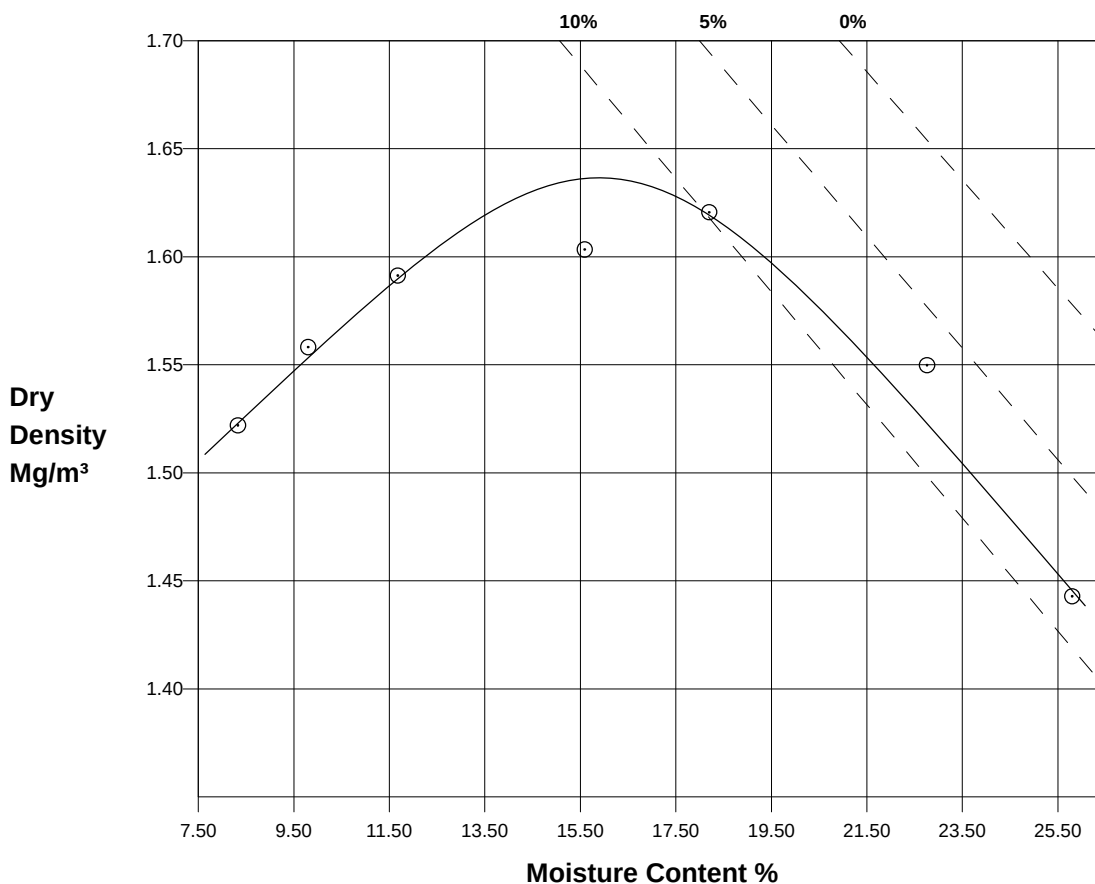
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP820	0.60	B2	Brown gravelly sandy silty CLAY

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	4 %	Single or separate samples	Single
Grading Zone	2	Particle density	2.65 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.64 Mg/m³	OPTIMUM MOISTURE CONTENT	16 %


Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

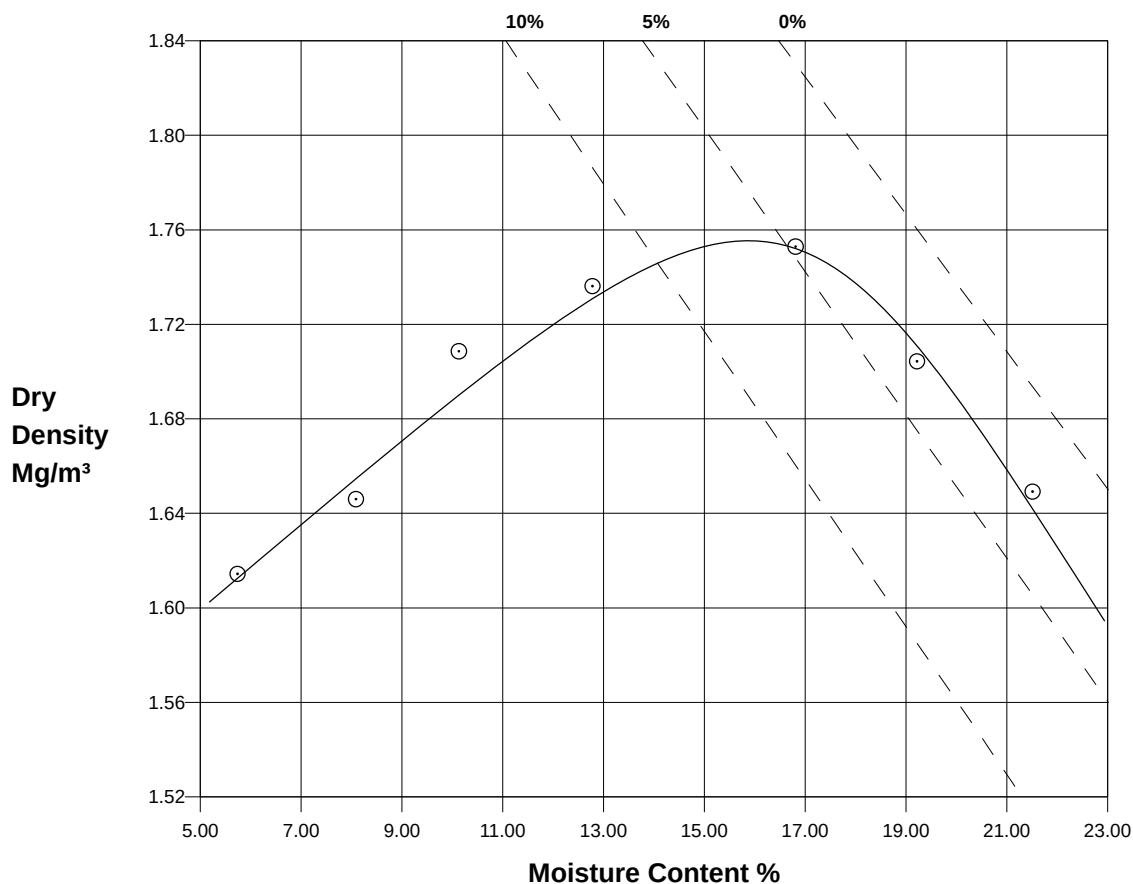
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP828	0.50	B2	Brown sandy silty CLAY

Percentage retained 37.5 mm	2 %	Max size of cohesive lumps	37.5 mm
Percentage retained 20.0 mm	7 %	Single or separate samples	Single
Grading Zone	4	Particle density	2.65 Assumed
Mould Type	CBR	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.75 Mg/m ³	OPTIMUM MOISTURE CONTENT	16 %



Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Job Number

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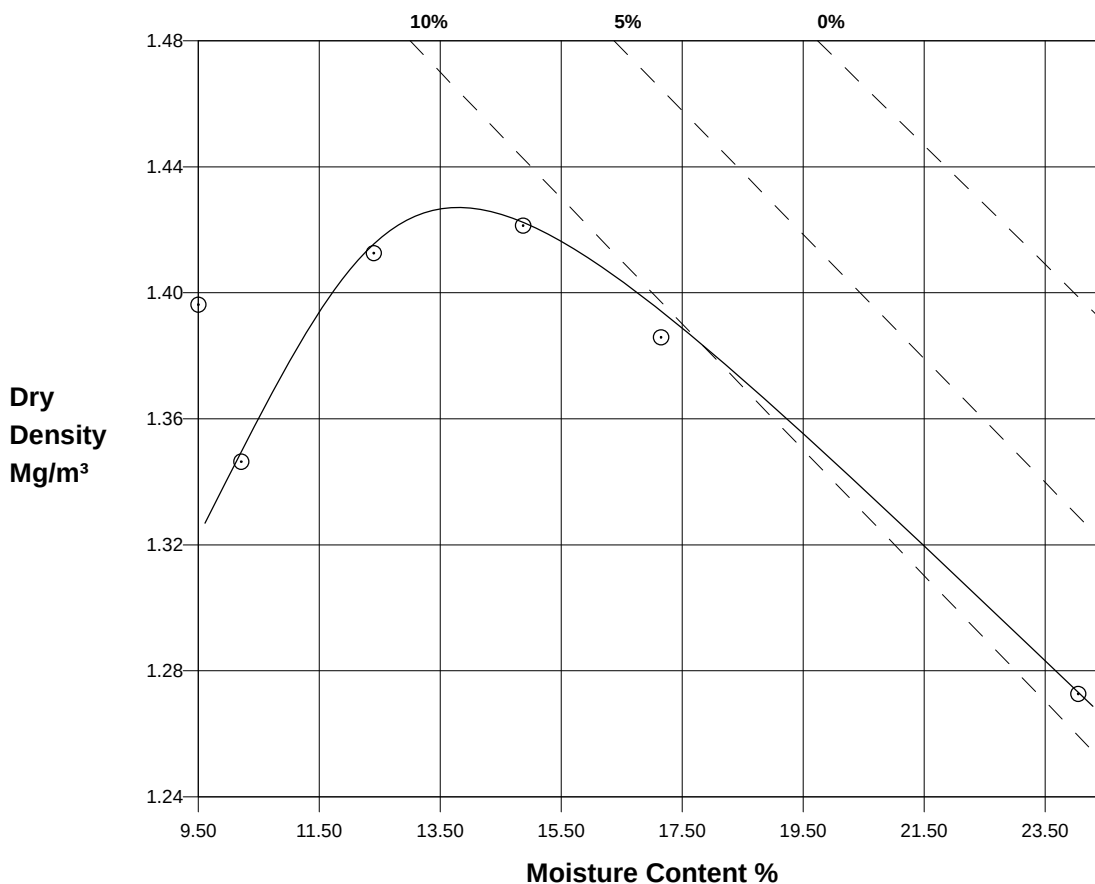
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP829	0.60	B2	Brown gravelly clayey sandy SILT

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	5 %	Single or separate samples	Single
Grading Zone	2	Particle density	2.10 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.43 Mg/m ³	OPTIMUM MOISTURE CONTENT	14 %



Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

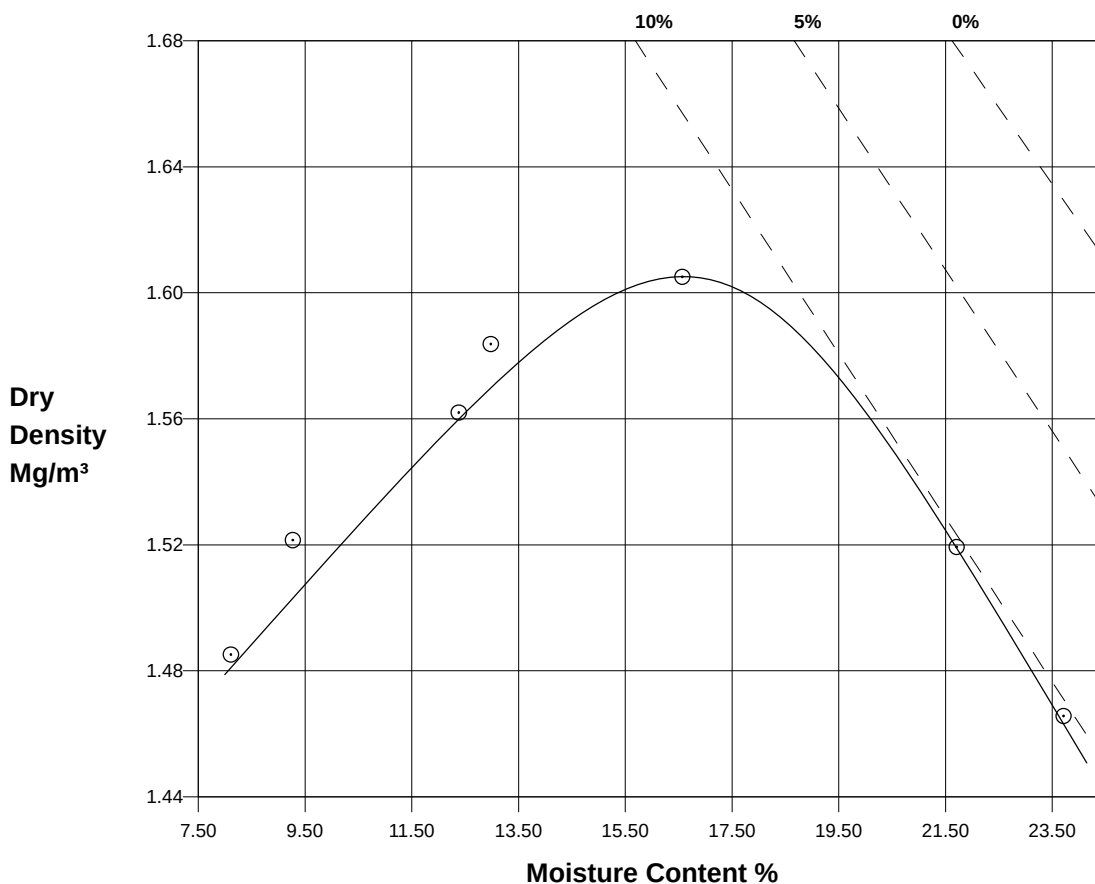
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP830	0.50	B2	Brown sandy gravelly CLAY

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	2 %	Single or separate samples	Single
Grading Zone	2	Particle density	2.65 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.61 Mg/m³	OPTIMUM MOISTURE CONTENT	17 %


Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

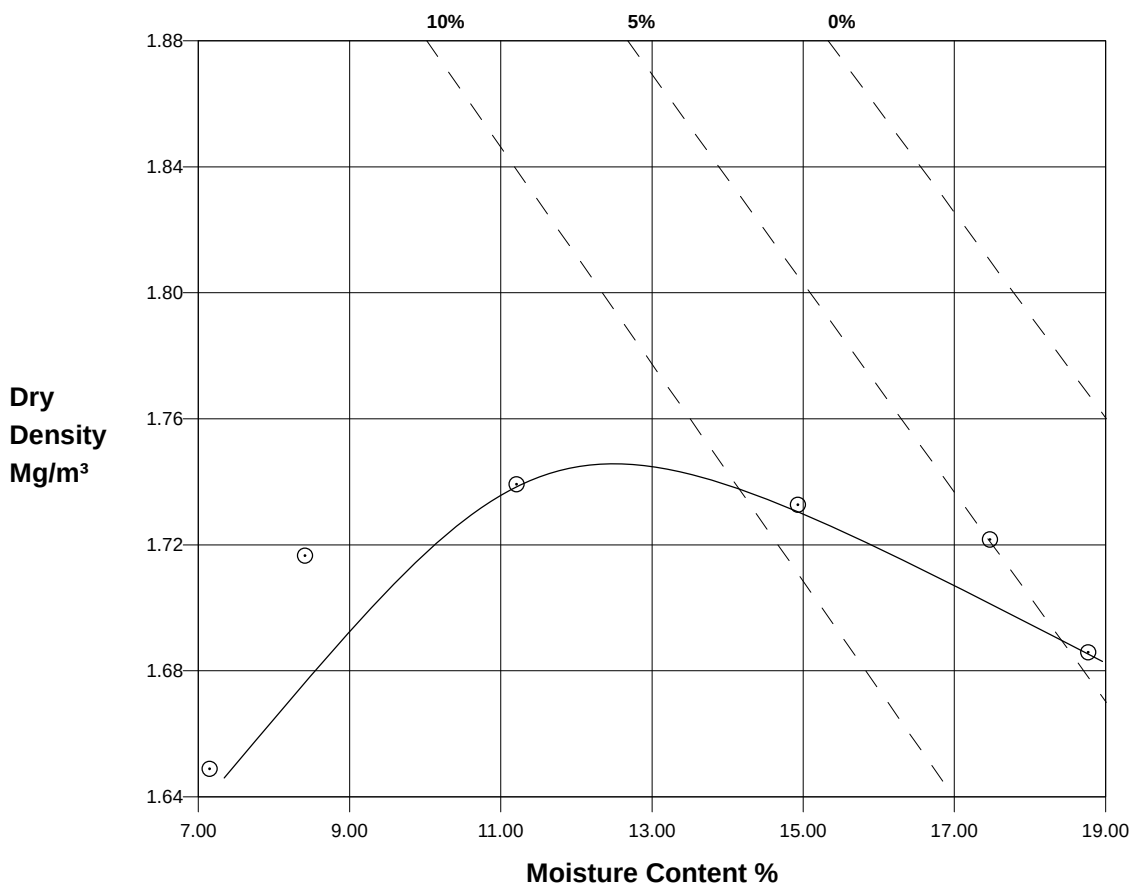
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP831	0.60	B2	Brown sandy silty CLAY

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	7 %	Single or separate samples	Single
Grading Zone	3	Particle density	2.65 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.75 Mg/m³	OPTIMUM MOISTURE CONTENT	13 %


Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Job Number

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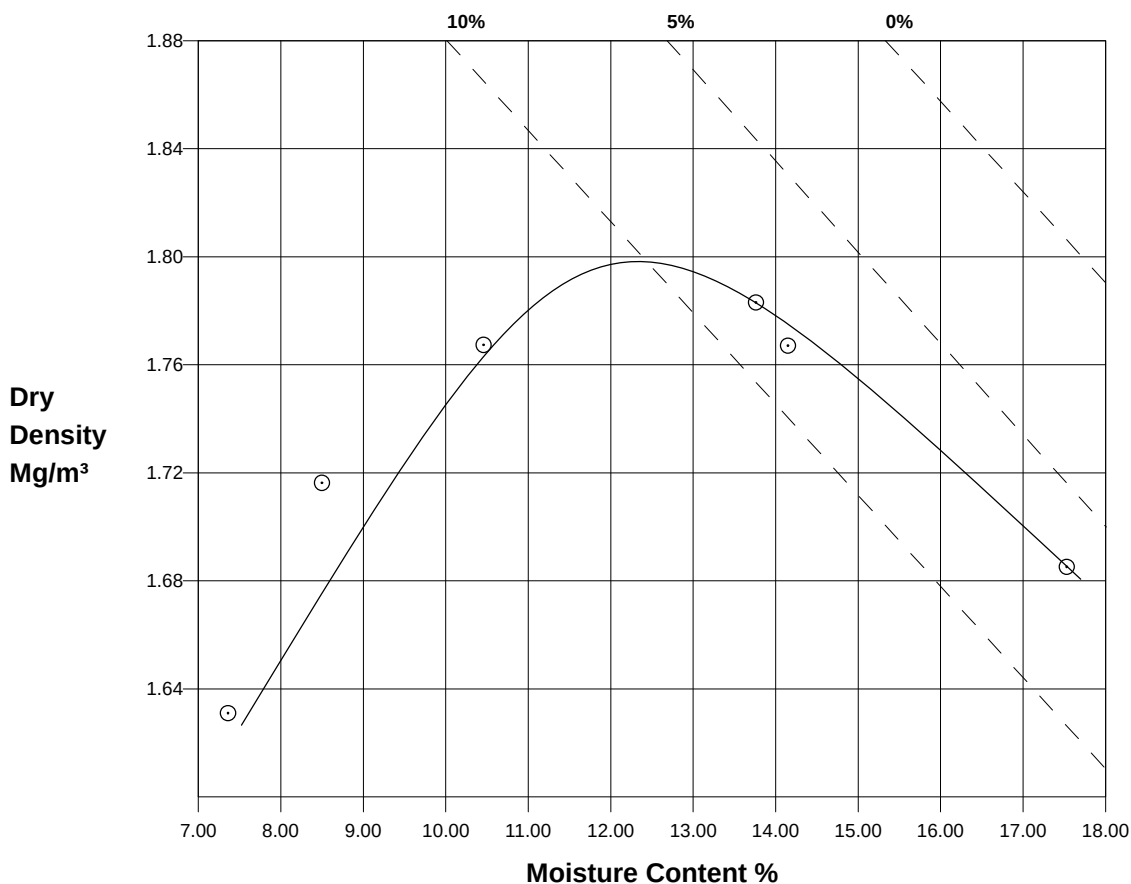
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP835	0.50	B2	Brown sandy silty CLAY

Percentage retained 37.5 mm	5 %	Max size of cohesive lumps	37.5 mm
Percentage retained 20.0 mm	12 %	Single or separate samples	Single
Grading Zone	4	Particle density	2.65 Assumed
Mould Type	CBR	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.80 Mg/m ³	OPTIMUM MOISTURE CONTENT	12 %



Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

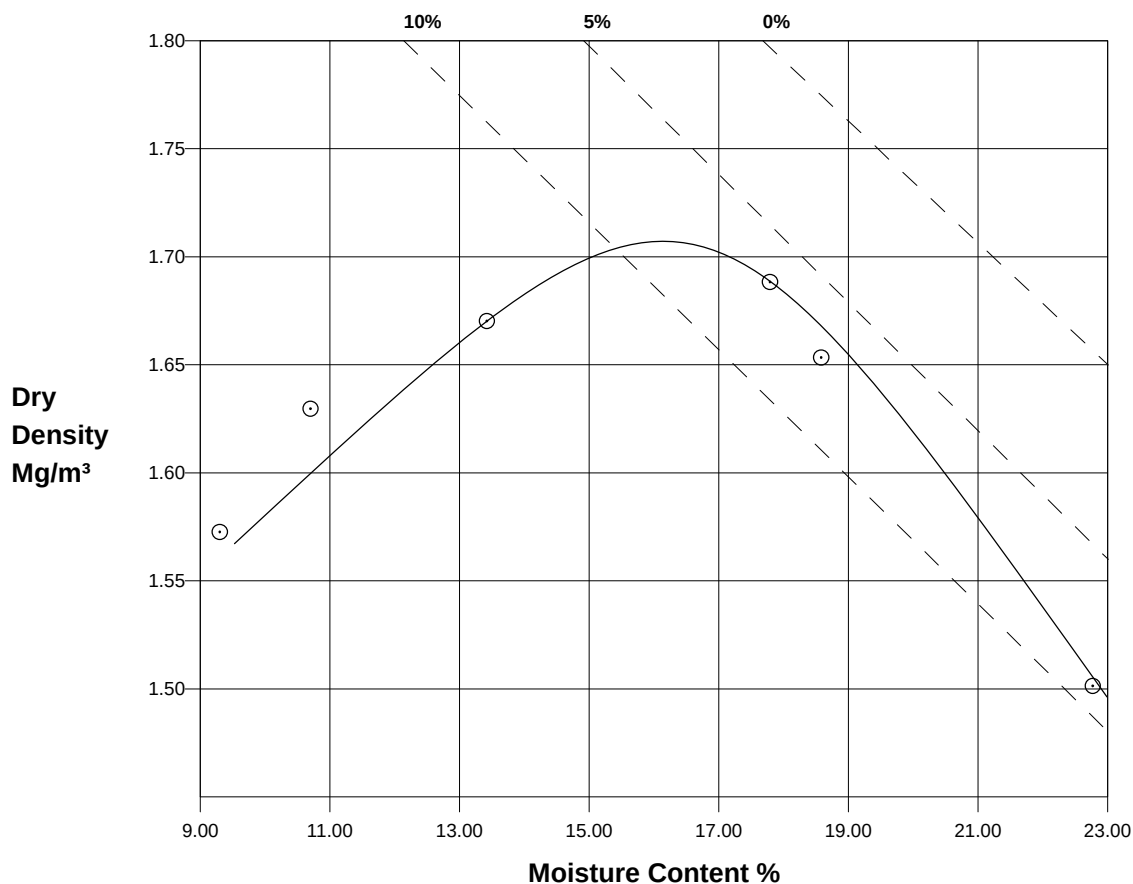
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP838	0.60	B2	Brown sandy silty gravelly CLAY

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	0 %	Single or separate samples	Single
Grading Zone	1	Particle density	2.65 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.71 Mg/m ³	OPTIMUM MOISTURE CONTENT	16 %



Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

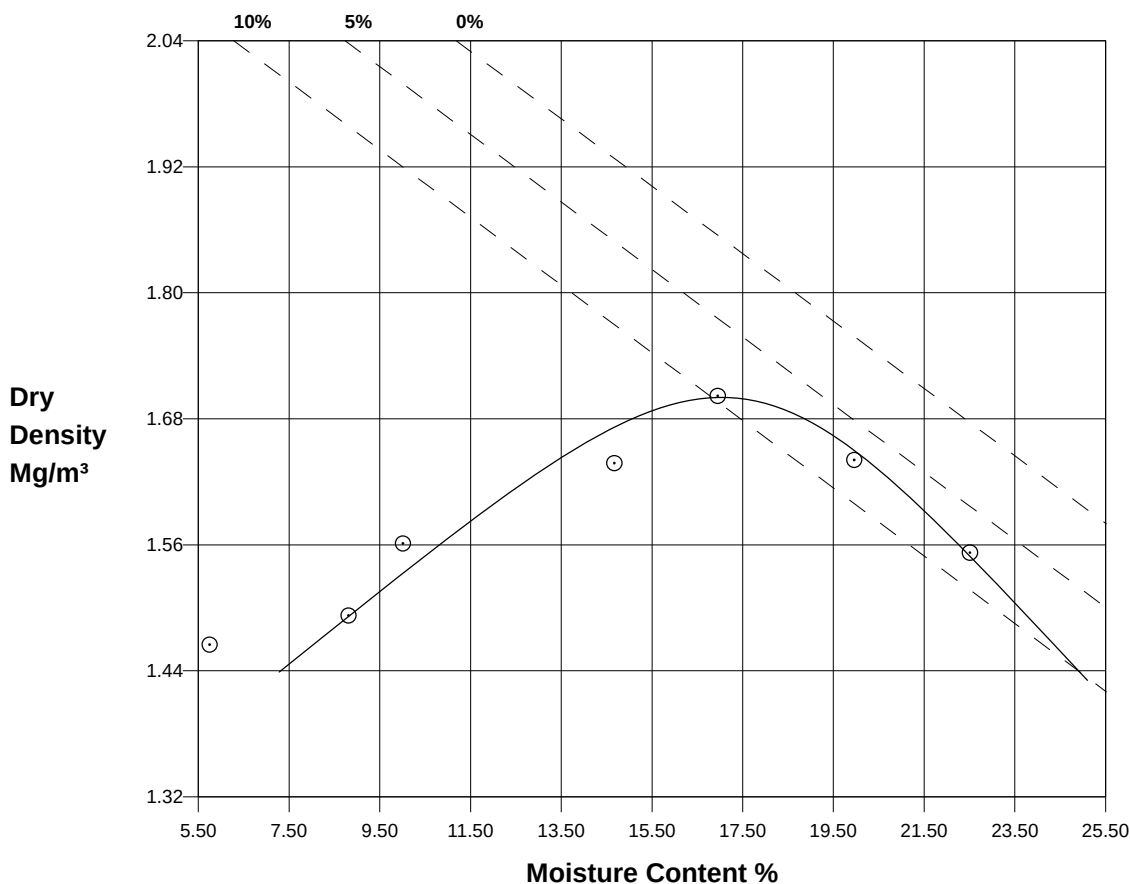
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DETERMINATION OF DRY DENSITY/MOISTURE CONTENT RELATIONSHIP

Borehole / Trial Pit	Depth (m)	Sample	Description
TP848	0.60	B2	Brown gravelly sandy silty CLAY

Percentage retained 37.5 mm	0 %	Max size of cohesive lumps	20 mm
Percentage retained 20.0 mm	0 %	Single or separate samples	Single
Grading Zone	1	Particle density	2.65 Assumed
Mould Type	1 Litre/proctor	Method of compaction	2.5kg Rammer
MAX DRY DENSITY	1.70 Mg/m ³	OPTIMUM MOISTURE CONTENT	17 %



Method of Preparation : BS 1377:PART 1:7.6, BS 1377:PART 4:1990:3.2 Preparation of samples for compaction tests

Method of Test : BS 1377:PART 4:1990:3.4/3.4 Determination using 2.5 kg rammer or 3.5/3.6 Determination using 4.5kg rammer: PART 2:1990:8.2 Determination of particle density

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

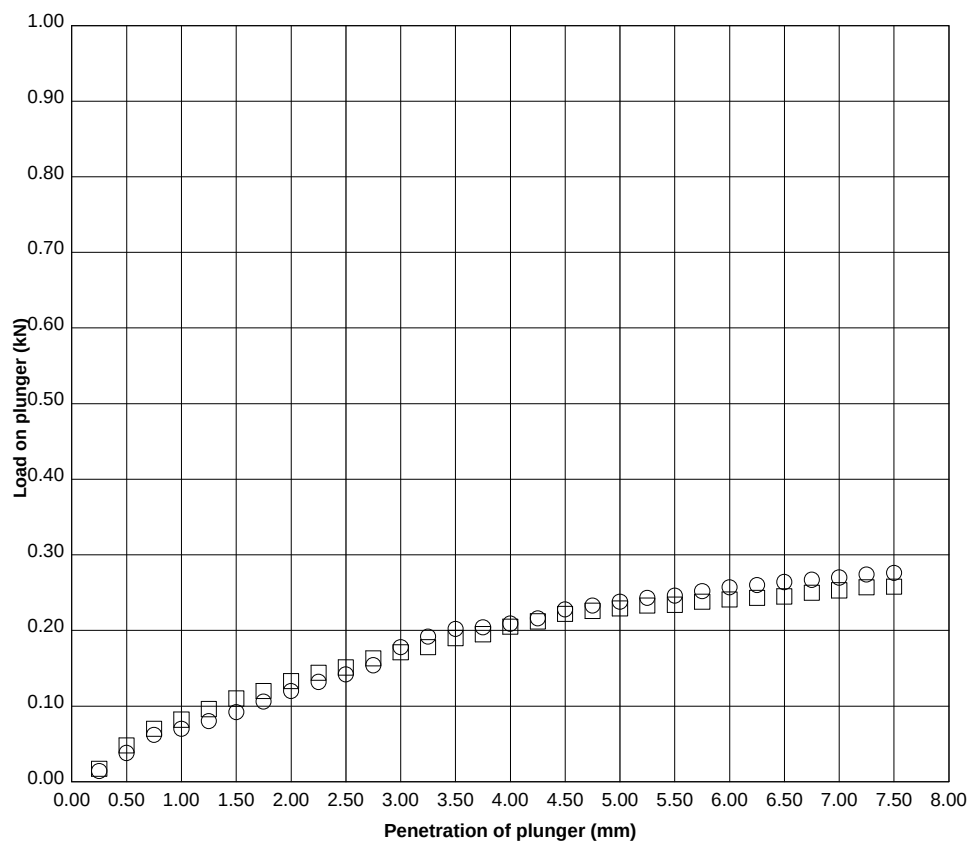
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
CP804	0.60	B2	95 %	Brown sandy silty CLAY

Moisture Content %	30
Bulk Density Mg/m ³	1.88
Dry Density Mg/m ³	1.44
Soaked Test	No

Test on	☐ TOP
Moisture Content %	31
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.15 0.23
Corrected CBR %	1.1 1.1

Test on	☐ BOTTOM
Moisture Content %	29
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.14 0.24
Corrected CBR %	1.1 1.2

Test on	TOP	BOTTOM
Reported CBR %	1.1	1.2
Mean CBR %	1.1	



Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

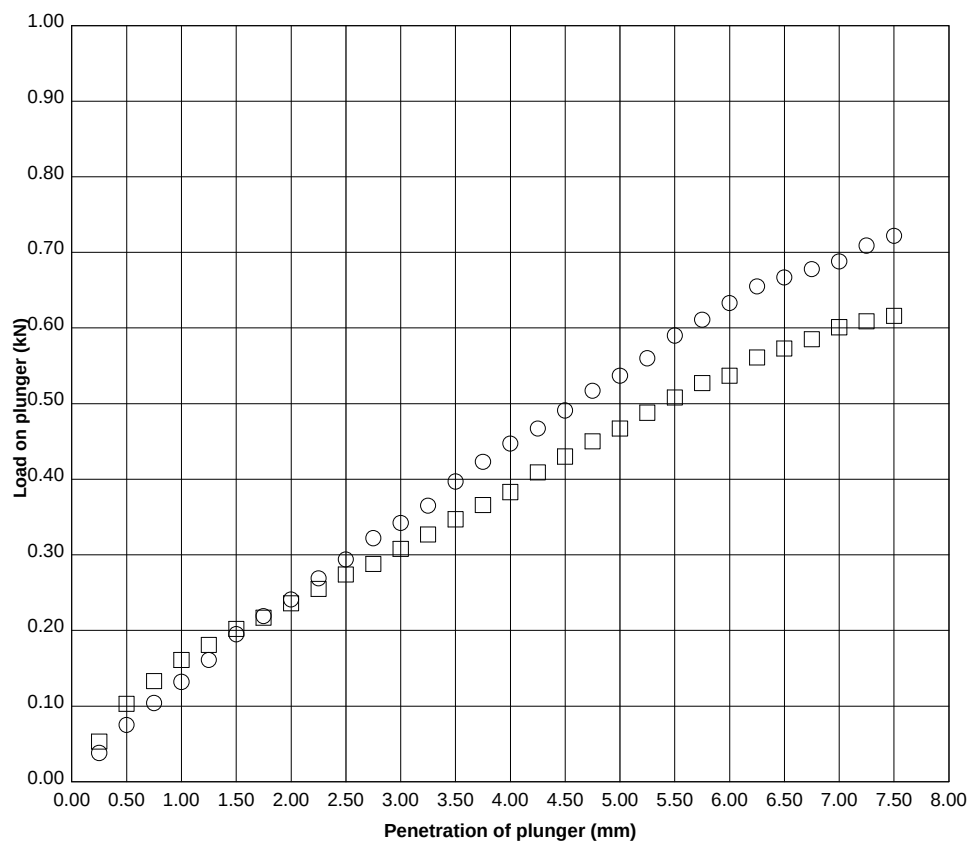
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP806	0.60	B2	87 %	Brown gravelly sandy CLAY

Moisture Content %	21
Bulk Density Mg/m ³	1.97
Dry Density Mg/m ³	1.62
Soaked Test	No

Test on	☐ TOP	
Moisture Content %	24	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.27	0.47
Corrected CBR %	2.1	2.3

Test on	☐ BOTTOM	
Moisture Content %	20	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.29	0.54
Corrected CBR %	2.2	2.7

Test on	TOP	BOTTOM
Reported CBR %	2.3	2.7
Mean CBR %	2.5	



Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Job Number

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

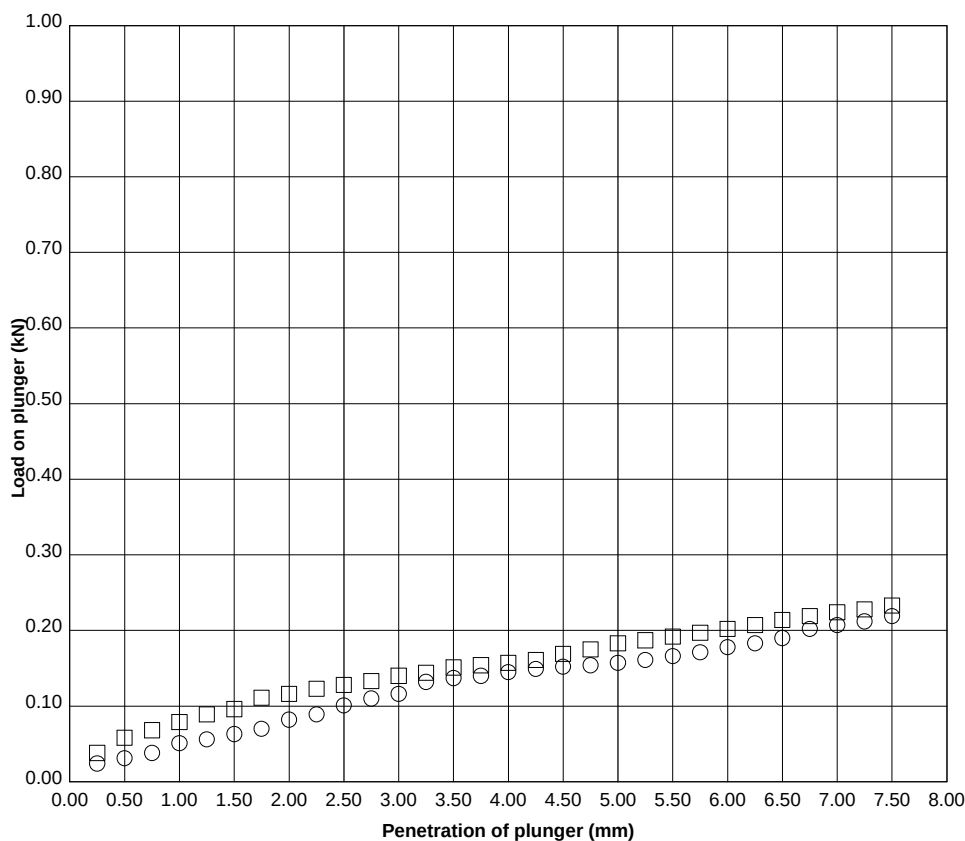
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP809	0.70	B2	92 %	Brown gravelly sandy CLAY

Moisture Content %	26
Bulk Density Mg/m ³	1.90
Dry Density Mg/m ³	1.50
Soaked Test	No

Test on	☐ TOP
Moisture Content %	24
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.13 0.18
Corrected CBR %	0.97 0.92

Test on	☐ BOTTOM
Moisture Content %	28
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.10 0.16
Corrected CBR %	0.77 0.79

Test on	TOP	BOTTOM
Reported CBR %	0.97	0.79



Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Job Number
21311AB

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

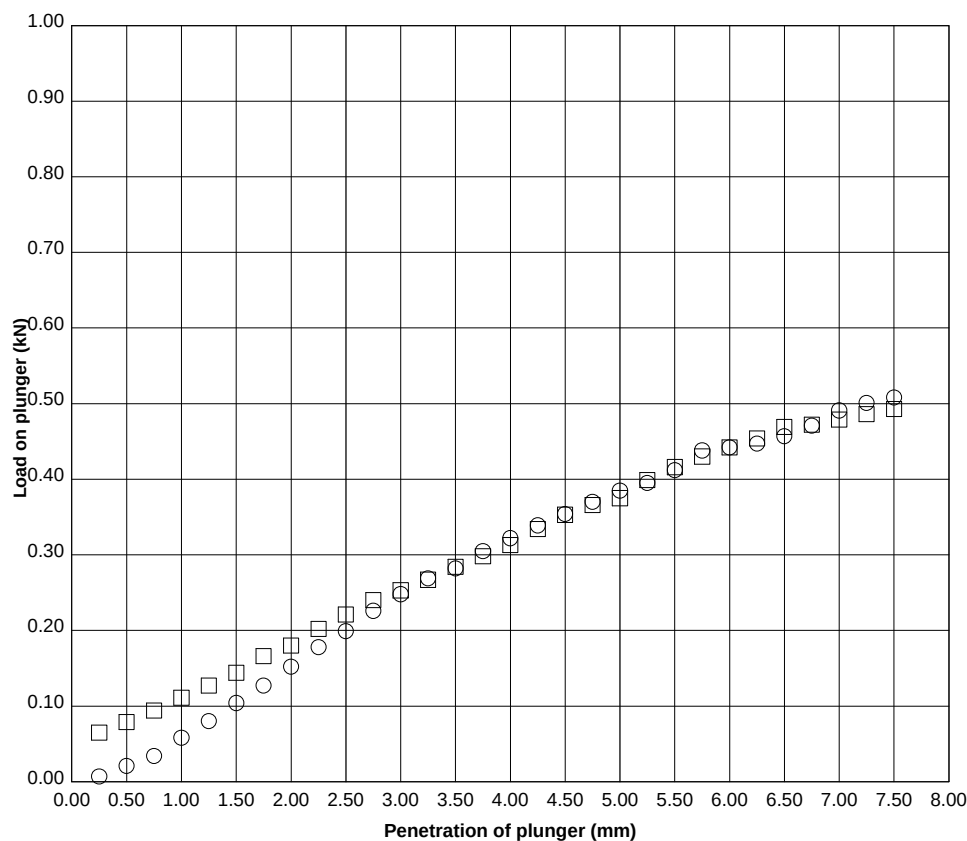
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP820	0.60	B2	97 %	Brown gravelly sandy silty CLAY

Moisture Content %	31
Bulk Density Mg/m ³	1.79
Dry Density Mg/m ³	1.37
Soaked Test	No

Test on	☐ TOP
Moisture Content %	32
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.22 0.38
Corrected CBR %	1.7 1.9

Test on	☐ BOTTOM
Moisture Content %	29
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.20 0.38
Corrected CBR %	1.5 1.9

Test on	TOP	BOTTOM
Reported CBR %	1.9	1.9
Mean CBR %	1.9	



Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Job Number

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

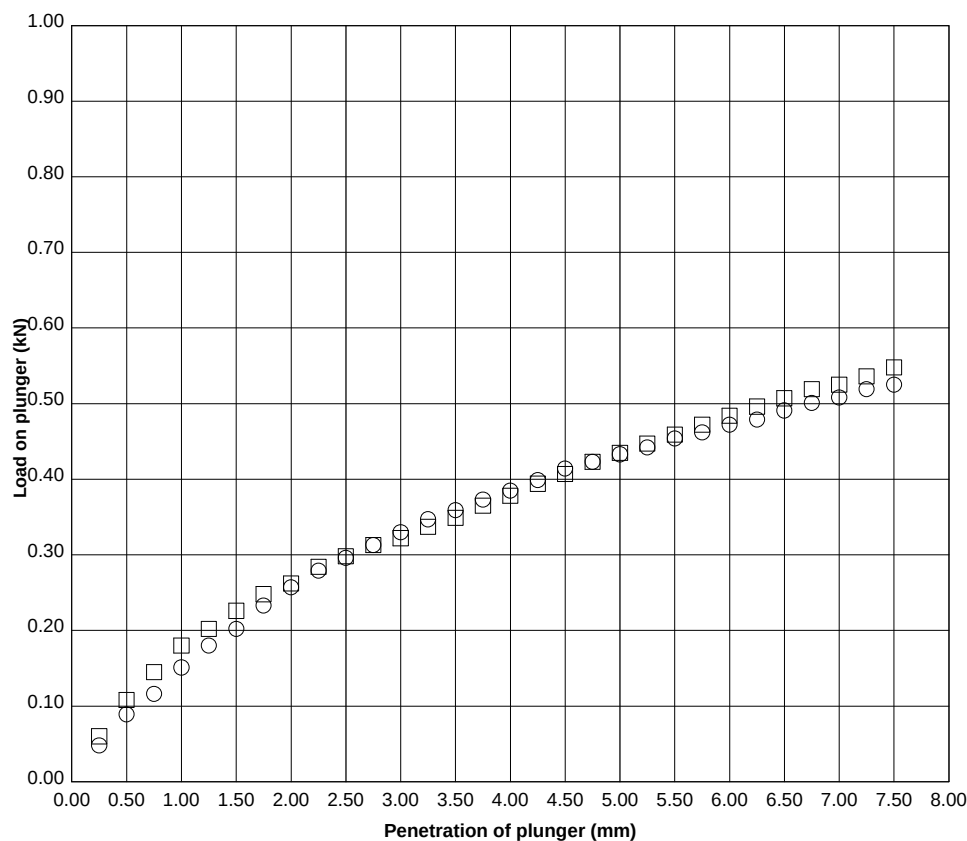
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP828	0.50	B2	99 %	Brown sandy silty CLAY

Moisture Content %	21
Bulk Density Mg/m ³	1.98
Dry Density Mg/m ³	1.63
Soaked Test	No

Test on	☐ TOP	
Moisture Content %	23	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.30	0.44
Corrected CBR %	2.3	2.2

Test on	☐ BOTTOM	
Moisture Content %	20	
Surcharge weight kg	4.20	
Penetration mm	2.5	5.0
Force kN	0.30	0.43
Corrected CBR %	2.2	2.2

Test on	TOP	BOTTOM
Reported CBR %	2.3	2.2
Mean CBR %	2.2	



Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Job Number
21311AB

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

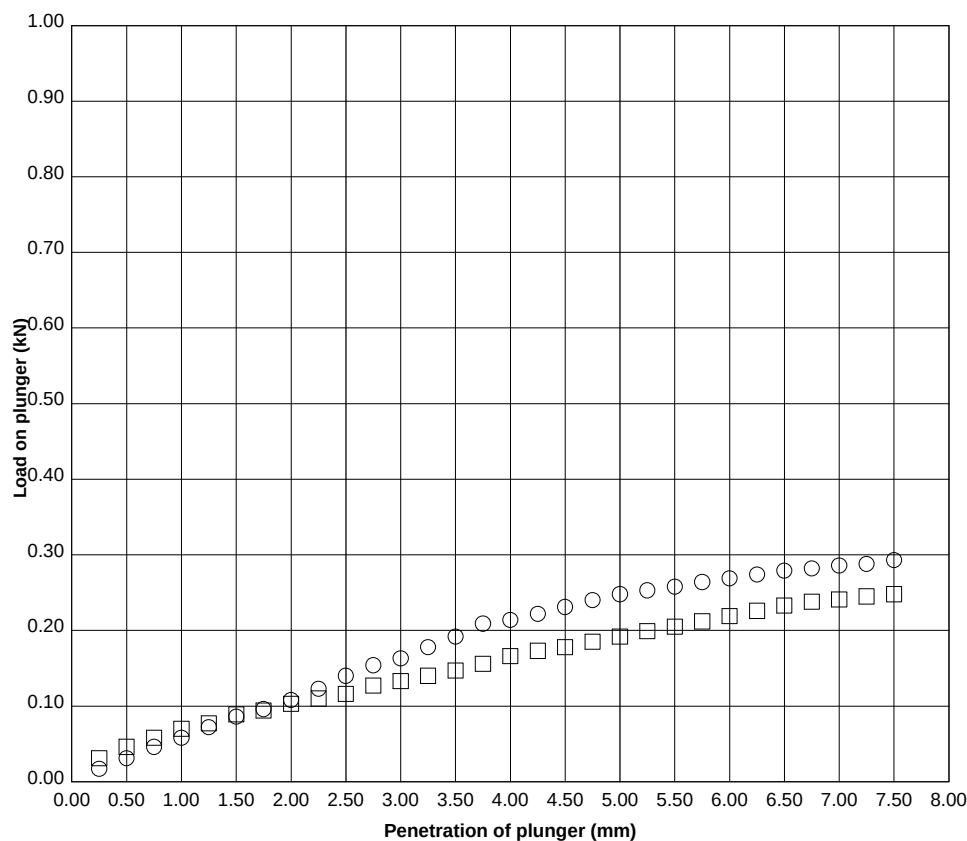
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP829	0.60	B2	95 %	Brown gravelly clayey sandy SILT

Moisture Content %	41
Bulk Density Mg/m ³	1.69
Dry Density Mg/m ³	1.20
Soaked Test	No

Test on	☐ TOP
Moisture Content %	41
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.12 0.19
Corrected CBR %	0.88 0.96

Test on	☐ BOTTOM
Moisture Content %	40
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.14 0.25
Corrected CBR %	1.1 1.2

Test on	TOP	BOTTOM
Reported CBR %	0.96	1.2



Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

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21311AB

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

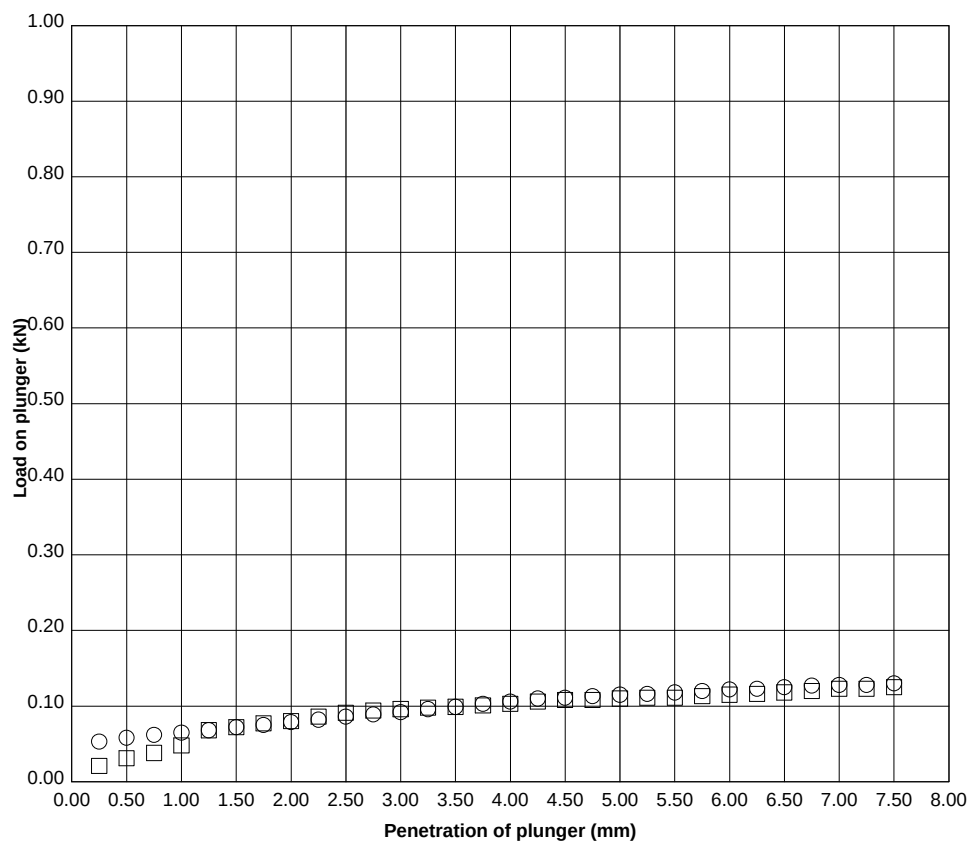
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP830	0.50	B2	98 %	Brown sandy gravelly CLAY

Moisture Content %	30
Bulk Density Mg/m ³	1.85
Dry Density Mg/m ³	1.42
Soaked Test	No

Test on	☐ TOP
Moisture Content %	29
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.09 0.11
Corrected CBR %	0.69 0.55

Test on	☐ BOTTOM
Moisture Content %	32
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.09 0.12
Corrected CBR %	0.65 0.58

Test on	TOP	BOTTOM
Reported CBR %	0.69	0.65
Mean CBR %	0.67	



Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Job Number
21311AB

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

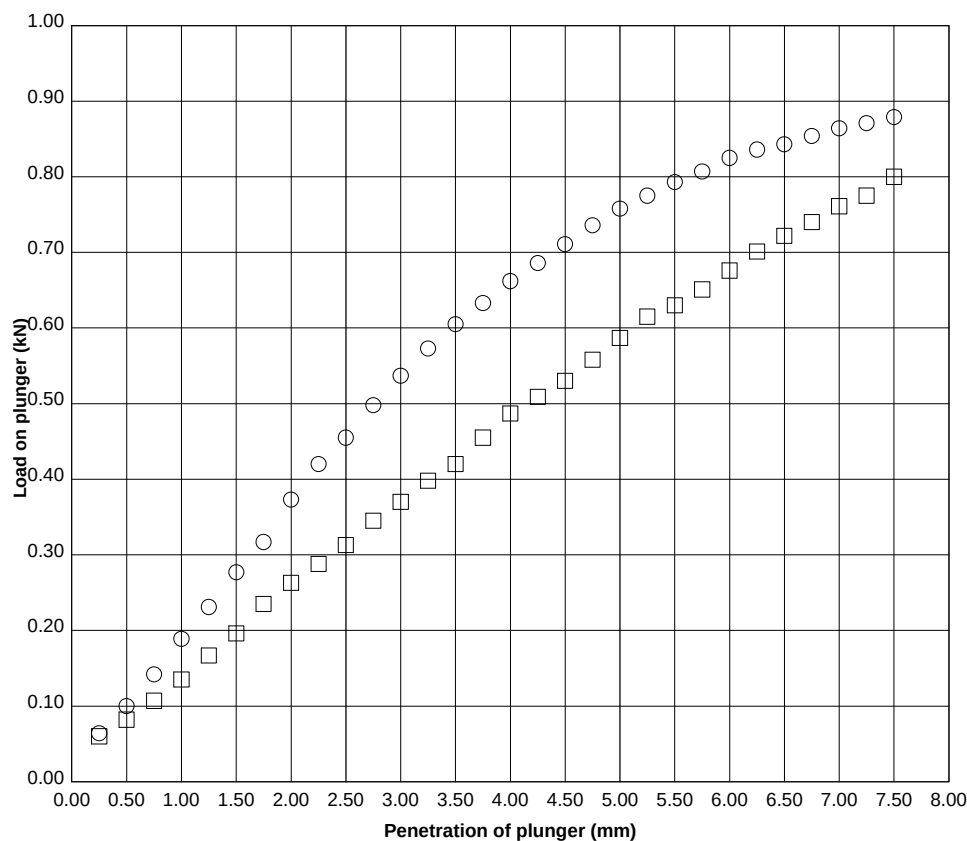
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP831	0.60	B2	93 %	Brown sandy silty CLAY

Moisture Content %	20
Bulk Density Mg/m ³	2.01
Dry Density Mg/m ³	1.67
Soaked Test	No

Test on	☐ TOP
Moisture Content %	20
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.31 0.59
Corrected CBR %	2.4 2.9

Test on	☐ BOTTOM
Moisture Content %	20
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.46 0.76
Corrected CBR %	3.5 3.8

Test on	TOP	BOTTOM
Reported CBR %	2.9	3.8



Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

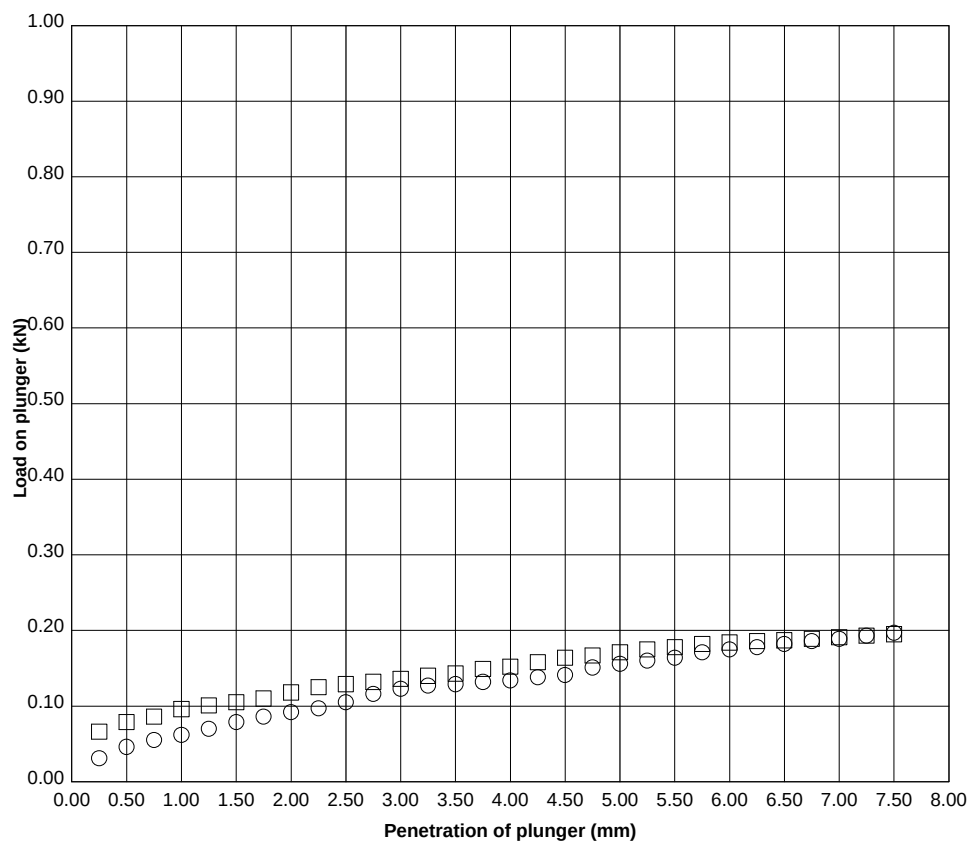
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP835	0.50	B2	95 %	Brown sandy silty CLAY

Moisture Content %	21
Bulk Density Mg/m ³	2.00
Dry Density Mg/m ³	1.66
Soaked Test	No

Test on	☐ TOP
Moisture Content %	20
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.13 0.17
Corrected CBR %	0.98 0.86

Test on	☐ BOTTOM
Moisture Content %	21
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.10 0.16
Corrected CBR %	0.80 0.78

Test on	TOP	BOTTOM
Reported CBR %	0.98	0.80


Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :



Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Job Number

21311AB

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

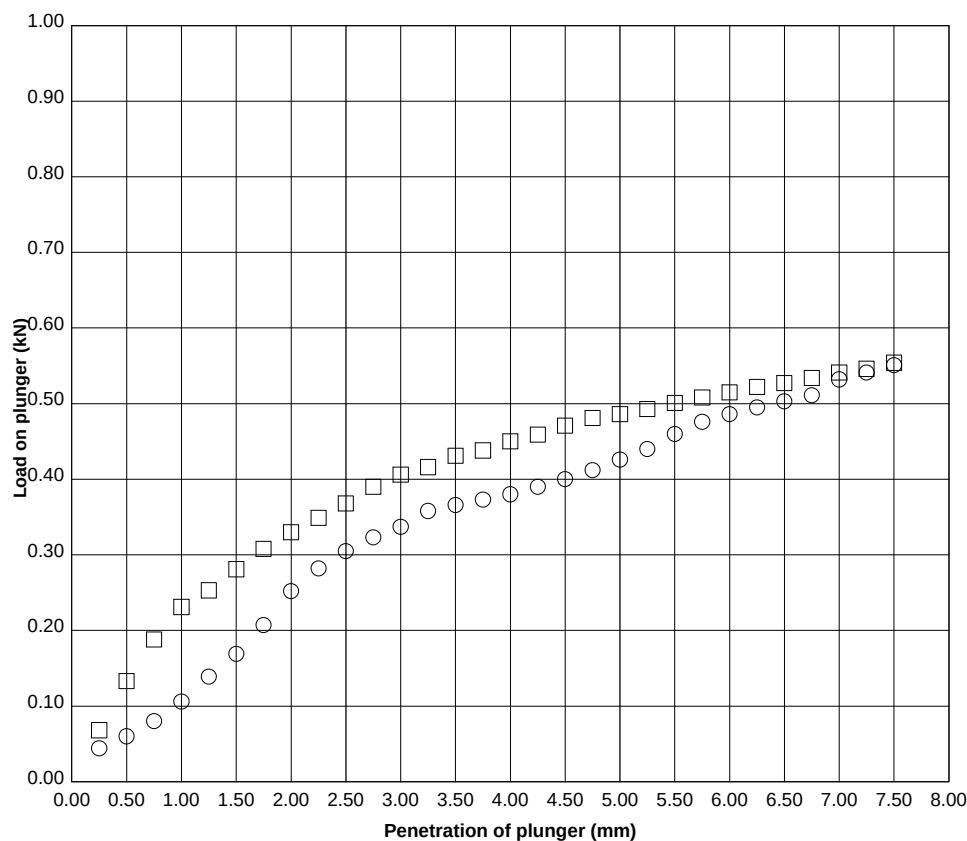
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP838	0.60	B2	98 %	Brown sandy silty gravelly CLAY

Moisture Content %	29
Bulk Density Mg/m ³	1.94
Dry Density Mg/m ³	1.50
Soaked Test	No

Test on	☐ TOP
Moisture Content %	28
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.37 0.49
Corrected CBR %	2.8 2.4

Test on	☐ BOTTOM
Moisture Content %	30
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.31 0.43
Corrected CBR %	2.3 2.1

Test on	TOP	BOTTOM
Reported CBR %	2.8	2.3



Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :

Site : St Andrew's Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Job Number
21311AB

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DETERMINATION OF CALIFORNIA BEARING RATIO (CBR)

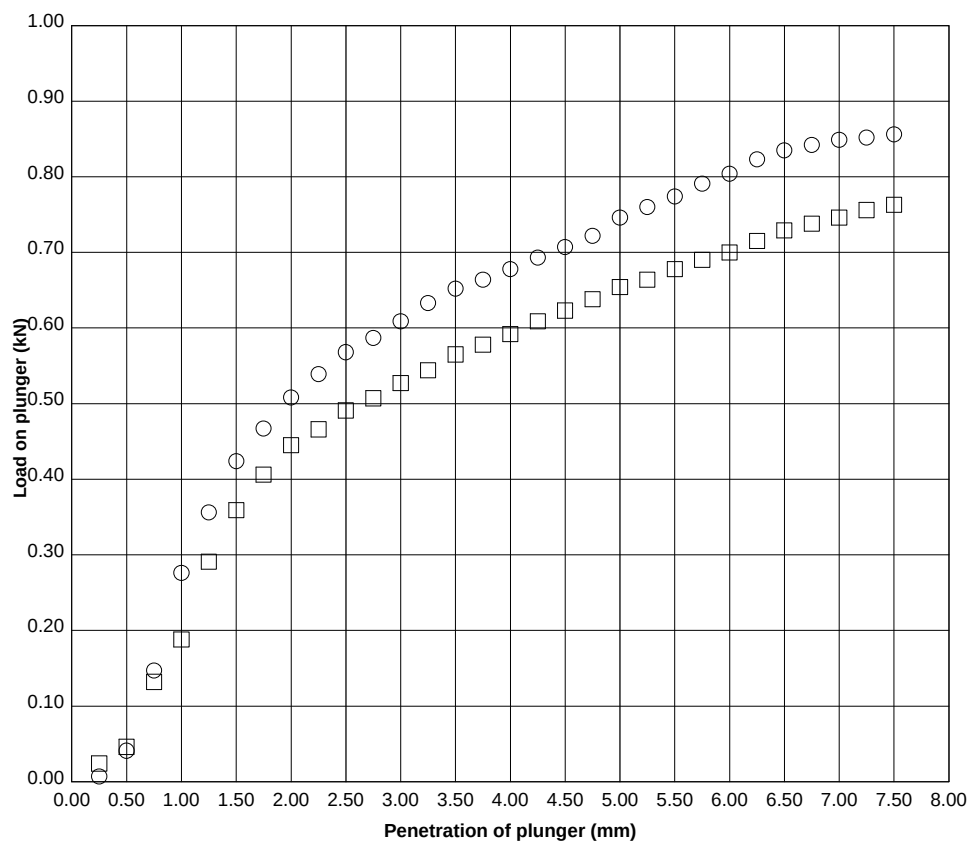
Borehole / Trial Pit	Depth (m)	Sample	% Passing 20 mm Sieve	Description
TP848	0.60	B2	100 %	Brown gravelly sandy silty CLAY

Moisture Content %	28
Bulk Density Mg/m³	1.92
Dry Density Mg/m³	1.50
Soaked Test	No

Test on	☐ TOP
Moisture Content %	28
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.49 0.65
Corrected CBR %	3.7 3.3

Test on	☐ BOTTOM
Moisture Content %	28
Surcharge weight kg	4.20
Penetration mm	2.5 5.0
Force kN	0.57 0.75
Corrected CBR %	4.3 3.7

Test on	TOP	BOTTOM
Reported CBR %	3.7	4.3
Mean CBR %	4.0	


Method of Preparation : The specimen was prepared by Dynamic compression/Specified Effort using a 2.5 kg Rammer
BS 1377:PART 1:1990:7.6.1 General 1990:7.6.5 California bearing ratio test BS 1377:PART 4:1990:7.2 Preparation of test sample

Method of Test : BS 1377:PART 4:1990:7.4 Penetration test procedure

Remarks :

Test Report : **21311AB/1**

Site : St Andrew's Park, Phase 5, 6 and Rifle Range
Job Number : 21311AB
Originating Client : VSM Estates

All opinions and interpretations contained within this report are outside of our Scope of Accreditation.

The following tests contained within this report are not UKAS Accredited.

Date of Issued : 20/03/15



Certificate of Analysis

Certificate Number 14-20675

19-Nov-14

Client Ian Farmer Associates
Unit 1 Fairfield Court
Seven Stars Industrial Estate
Wheler Road
Coventry
West Midlands
CV3 4LJ

Our Reference 14-20675

Client Reference 21311

Contract Title St Andrews Park

Description 29 Soil samples.

Date Received 13-Nov-14

Date Started 13-Nov-14

Date Completed 19-Nov-14

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read 'Rob Brown'.

Rob Brown
Business Manager



Summary of Chemical Analysis Soil Samples

Our Ref 14-20675

Client Ref 21311

Contract Title St Andrews Park

Lab No	730101	730102	730103	730104	730105	730106	730107	730108	730109	730110	730111	730112
Sample ID	CP801	CP801	CP801	CP801	CP803	CP805	CP805	CP805	CP805	CP806	CP806	CP806
Depth	0.50	6.50	14.50	17.50	0.50	1.20	5.00	12.00	18.00	0.50	2.00	6.00
Other ID												
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	24/10/14	24/10/14	24/10/14	24/10/14	23/10/14	21/10/14	21/10/14	22/10/14	22/10/14	20/10/14	20/10/14	20/10/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units											
Preparation														
Moisture Content	DETSC 1004*	0.1	%											
Inorganics														
pH	DETSC 2008#			8.3	7.5	7.9	8.2	7.2	7.9	7.8	7.9	7.8	9.5	10.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	100	2400	1000	620	64	310	830	770	1500	740	830

Summary of Chemical Analysis Soil Samples

Our Ref 14-20675

Client Ref 21311

Contract Title St Andrews Park

Lab No	730113	730114	730115	730116	730117	730118	730119	730120	730121	730122	730123	730124
Sample ID	CP806	CP806	CP806	TP802	TP804	TP831	TP831	TP833	TP835	TP837	TP841	TP843
Depth	9.50	14.50	20.00	1.70	2.20	0.50	3.30	1.20	2.50	1.10	1.20	2.00
Other ID												
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	20/10/14	20/10/14	20/10/14	23/10/14	23/10/14	21/10/14	21/10/14	21/10/14	23/10/14	22/10/14	20/10/14	22/10/14
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units												
Preparation															
Moisture Content	DETSC 1004*	0.1	%						22						
Inorganics															
pH	DETSC 2008#			8.0	7.8	8.5	7.7	7.9	9.6	8.0	7.8	7.5	9.1	6.8	7.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	510	740	610	32	370	2400	960	72	460	870	120	33

Summary of Chemical Analysis

Soil Samples

Our Ref 14-20675

Client Ref 21311

Contract Title St Andrews Park

Lab No	730125	730126	730127	730128	730129
Sample ID	TP844	TP845	WS807	WS807	WS814
Depth	3.45	1.50	1.65	3.00	3.60
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	22/10/14	22/10/14	23/10/14	23/10/14	24/10/14
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
Moisture Content	DETSC 1004*	0.1	%	25				28
Inorganics								
pH	DETSC 2008#			7.9	7.7	8.1	8.1	7.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	70	44	68	95	370

Information in Support of the Analytical Results

Our Ref 14-20675
 Client Ref 21311
 Contract St Andrews Park

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
730101	CP801 0.50 SOIL	24/10/14	PT 500ml	pH (7 days)	
730102	CP801 6.50 SOIL	24/10/14	PT 1L	pH (7 days)	
730103	CP801 14.50 SOIL	24/10/14	PT 500ml	pH (7 days)	
730104	CP801 17.50 SOIL	24/10/14	PT 1L	pH (7 days)	
730105	CP803 0.50 SOIL	23/10/14	PT 500ml	pH (7 days)	
730106	CP805 1.20 SOIL	21/10/14	PT 1L	pH (7 days)	
730107	CP805 5.00 SOIL	21/10/14	PT 1L	pH (7 days)	
730108	CP805 12.00 SOIL	22/10/14	PT 1L	pH (7 days)	
730109	CP805 18.00 SOIL	22/10/14	PT 1L	pH (7 days)	
730110	CP806 0.50 SOIL	20/10/14	PT 500ml	pH (7 days)	
730111	CP806 2.00 SOIL	20/10/14	PT 1L	pH (7 days)	
730112	CP806 6.00 SOIL	20/10/14	PT 1L	pH (7 days)	
730113	CP806 9.50 SOIL	20/10/14	PT 500ml	pH (7 days)	
730114	CP806 14.50 SOIL	20/10/14	PT 500ml	pH (7 days)	
730115	CP806 20.00 SOIL	20/10/14	PT 1L	pH (7 days)	
730116	TP802 1.70 SOIL	23/10/14	PT 500ml	pH (7 days)	
730117	TP804 2.20 SOIL	23/10/14	PT 500ml	pH (7 days)	
730118	TP831 0.50 SOIL	21/10/14	PT 1L	pH (7 days)	
730119	TP831 3.30 SOIL	21/10/14	PT 1L	pH (7 days)	
730120	TP833 1.20 SOIL	21/10/14	PT 500ml	pH (7 days)	
730121	TP835 2.50 SOIL	23/10/14	PT 500ml	pH (7 days)	
730122	TP837 1.10 SOIL	22/10/14	PT 500ml	pH (7 days)	
730123	TP841 1.20 SOIL	20/10/14	PT 500ml	pH (7 days)	
730124	TP843 2.00 SOIL	22/10/14	PT 500ml	pH (7 days)	
730125	TP844 3.45 SOIL	22/10/14	PT 1L	pH (7 days)	
730126	TP845 1.50 SOIL	22/10/14	PT 500ml	pH (7 days)	
730127	WS807 1.65 SOIL	23/10/14	PT 500ml	pH (7 days)	
730128	WS807 3.00 SOIL	23/10/14	PT 500ml	pH (7 days)	
730129	WS814 3.60 SOIL	24/10/14	PT 500ml	pH (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

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

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

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

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



Certificate of Analysis

Certificate Number 15-26959

17-Feb-15

Client Ian Farmer Associates
Unit 1 Fairfield Court
Seven Stars Industrial Estate
Wheler Road
Coventry
West Midlands
CV3 4LJ

Our Reference 15-26959

Client Reference 21311A

Contract Title ST ANDREWS PARK PH.5, 6 & PR

Description 25 Soil samples.

Date Received 11-Feb-15

Date Started 11-Feb-15

Date Completed 17-Feb-15

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read 'Rob Brown'.

Rob Brown
Business Manager



Summary of Chemical Analysis Soil Samples

Our Ref 15-26959

Client Ref 21311A

Contract Title ST ANDREWS PARK PH.5, 6 & PR

Lab No	766670	766671	766672	766673	766674	766675	766676	766677	766678	766679	766680	766681
Sample ID	CP802A	CP802A	CP802A	CP804	CP804	CP807	CP807	CP807	TP801	TP805	TP811	TP812
Depth	2.00	8.00	19.50	1.20	5.00	2.00	15.00	20.00	2.70	2.60	2.40	1.70
Other ID	1	2		1		1	2		1	1	1	1
Sample Type	B	B	D	D	D	B	B	D	B	D	B	D
Sampling Date	21/01/15	21/01/15	21/01/15	22/01/15	22/01/15	19/01/15	19/01/15	19/01/15	22/01/15	22/01/15	20/01/15	20/01/15
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units												
Inorganics															
pH	DETSC 2008#			9.0	8.1	9.3	8.1	8.0	8.5	8.0	8.3	8.1	8.3	7.8	7.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	46	180	58	53	310	140	410	420	160	76	44	14

Summary of Chemical Analysis Soil Samples

Our Ref 15-26959

Client Ref 21311A

Contract Title ST ANDREWS PARK PH.5, 6 & PR

Lab No	766682	766683	766684	766685	766686	766687	766688	766689	766690	766691	766692	766693
Sample ID	TP820	TP820	TP822	TP823	TP824	TP825	TP826	TP829	TP834	TP846	TP847	TP848
Depth	0.90	3.20	3.90	2.10	3.20	3.20	3.40	3.30	1.20	1.40	2.70	2.20
Other ID	1	1	1	1	1	2	2	1	1	1	1	1
Sample Type	D	B	B	B	D	D	D	B	B	B	B	B
Sampling Date	19/01/15	19/01/15	22/01/15	19/01/15	23/01/15	23/01/15	23/01/15	20/01/15	20/01/15	19/01/15	19/01/15	19/01/15
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units												
Inorganics															
pH	DETSC 2008#			7.3	8.1	7.9	7.7	8.2	8.0	8.0	8.1	7.8	8.3	8.2	7.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	22	76	210	43	100	150	210	71	15	62	110	44

Summary of Chemical Analysis

Soil Samples

Our Ref 15-26959

Client Ref 21311A

Contract Title ST ANDREWS PARK PH.5, 6 & PR

Lab No	766694
Sample ID	TP848
Depth	4.20
Other ID	2
Sample Type	D
Sampling Date	19/01/15
Sampling Time	n/s

Test	Method	LOD	Units
Inorganics			
pH	DETSC 2008#		7.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l 140

Information in Support of the Analytical Results

Our Ref 15-26959
 Client Ref 21311A
 Contract ST ANDREWS PARK PH.5, 6 & PR

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
766670	CP802A 2.00 SOIL	21/01/15	PT 500ml	pH (7 days)	
766671	CP802A 8.00 SOIL	21/01/15	PT 500ml	pH (7 days)	
766672	CP802A 19.50 SOIL	21/01/15	PT 500ml	pH (7 days)	
766673	CP804 1.20 SOIL	22/01/15	PT 500ml	pH (7 days)	
766674	CP804 5.00 SOIL	22/01/15	PT 500ml	pH (7 days)	
766675	CP807 2.00 SOIL	19/01/15	PT 500ml	pH (7 days)	
766676	CP807 15.00 SOIL	19/01/15	PT 500ml	pH (7 days)	
766677	CP807 20.00 SOIL	19/01/15	PT 500ml	pH (7 days)	
766678	TP801 2.70 SOIL	22/01/15	PT 500ml	pH (7 days)	
766679	TP805 2.60 SOIL	22/01/15	PT 500ml	pH (7 days)	
766680	TP811 2.40 SOIL	20/01/15	PT 500ml	pH (7 days)	
766681	TP812 1.70 SOIL	20/01/15	PT 500ml	pH (7 days)	
766682	TP820 0.90 SOIL	19/01/15	PT 500ml	pH (7 days)	
766683	TP820 3.20 SOIL	19/01/15	PT 500ml	pH (7 days)	
766684	TP822 3.90 SOIL	22/01/15	PT 500ml	pH (7 days)	
766685	TP823 2.10 SOIL	19/01/15	PT 500ml	pH (7 days)	
766686	TP824 3.20 SOIL	23/01/15	PT 500ml	pH (7 days)	
766687	TP825 3.20 SOIL	23/01/15	PT 500ml	pH (7 days)	
766688	TP826 3.40 SOIL	23/01/15	PT 500ml	pH (7 days)	
766689	TP829 3.30 SOIL	20/01/15	PT 500ml	pH (7 days)	
766690	TP834 1.20 SOIL	20/01/15	PT 500ml	pH (7 days)	
766691	TP846 1.40 SOIL	19/01/15	PT 500ml	pH (7 days)	
766692	TP847 2.70 SOIL	19/01/15	PT 500ml	pH (7 days)	
766693	TP848 2.20 SOIL	19/01/15	PT 500ml	pH (7 days)	
766694	TP848 4.20 SOIL	19/01/15	PT 500ml	pH (7 days)	

Key: P-Plastic T-Tub®

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

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

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

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

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



Certificate of Analysis

Certificate Number 15-28107

27-Feb-15

Client Ian Farmer Associates
Unit 1 Fairfield Court
Seven Stars Industrial Estate
Wheler Road
Coventry
West Midlands
CV3 4LJ

Our Reference 15-28107

Client Reference 21311A

Contract Title St Andrews Park Ph.5, 6 & RR

Description 3 Soil samples.

Date Received 24-Feb-15

Date Started 24-Feb-15

Date Completed 27-Feb-15

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read 'Rob Brown'.

Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 15-28107

Client Ref 21311A

Contract Title St Andrews Park Ph.5, 6 & RR

Lab No	773147	773148	773149
Sample ID	TP809	TP830	TP847
Depth	0.60	0.50	0.40
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Inorganics						
pH	DETSC 2008#			9.8	9.5	11.3
Sulphate Aqueous Extract as SO ₄	DETSC 2076#	10	mg/l	380	1100	2000

Information in Support of the Analytical Results

Our Ref 15-28107
 Client Ref 21311A
 Contract St Andrews Park Ph.5, 6 & RR

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
773147	TP809 0.60 SOIL		PT 500ml	Sample date not supplied	
773148	TP830 0.50 SOIL		PT 500ml	Sample date not supplied	
773149	TP847 0.40 SOIL		PT 500ml	Sample date not supplied	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

APPENDIX 4
GEOENVIRONMENTAL TESTS

APPENDIX 4

GENERAL NOTES ON GEOENVIRONMENTAL TESTS

A4.1 ACCREDITATION

- A4.1.1 Testing has been carried out to either UKAS or MCERTS accreditation, as specified in the results tables.
- A4.1.2 The unique reference for each sample is as stated on the relevant engineering log. Each sample is logged on a chain of custody, and can be traced from exploratory hole to laboratory. The date of soil samples taken is as per the date shown on the engineering log.
- A4.1.3 Subcontracted results are presented directly on headed paper from the subcontracting laboratory.



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e: reception@i2analytical.com

Analytical Report Number : 14-61517

Replaces Analytical Report Number : 14-61517, issue no. 1

Project / Site name:	Rifle Range St Andrews Park, Uxbridge	Samples received on:	15/10/2014
Your job number:	21311	Samples instructed on:	16/10/2014
Your order number:		Analysis completed by:	11/12/2014
Report Issue Number:	2	Report issued on:	11/12/2014
Samples Analysed:	34 leachate samples - 34 soil samples		

Signed:

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

Signed:

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

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

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

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

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

Analytical Report Number: 14-61517

Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382623	382624	382625	382626	382627
Sample Reference				TP901	TP901	TP902	TP902	TP903
Sample Number				E1 North	E3 South	E1	E2	E1
Depth (m)				0.60	1.20	0.55	1.50	0.10-0.88
Date Sampled				13/10/2014	13/10/2014	13/10/2014	13/10/2014	13/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Stone Content				%	0.1	NONE	< 0.1	< 0.1
Moisture Content				%	N/A	NONE	20	17
Total mass of sample received				kg	0.001	NONE	1.6	0.91
Whole Sample Crushed				N/A	NONE	-	-	-
Asbestos in Soil Screen / Identification Name				Type	N/A	ISO 17025	-	-
Asbestos in Soil				Type	N/A	ISO 17025	Not-detected	-
Asbestos Identification Name (Subcontracted)				Type	N/A	ISO 17025	-	-
Asbestos Quantification (Subcontracted)				%	0.001	ISO 17025	-	-
General Inorganics								
pH				pH Units	N/A	MCERTS	7.2	-
Total Cyanide				mg/kg	1	MCERTS	< 1	-
Total Phenols								
Total Phenols (monohydric)				mg/kg	1	MCERTS	< 1.0	-
Speciated PAHs								
Naphthalene				mg/kg	0.05	MCERTS	< 0.05	-
Acenaphthylene				mg/kg	0.1	MCERTS	< 0.10	-
Acenaphthene				mg/kg	0.1	MCERTS	< 0.10	-
Fluorene				mg/kg	0.1	MCERTS	< 0.10	-
Phenanthrene				mg/kg	0.1	MCERTS	< 0.10	-
Anthracene				mg/kg	0.1	MCERTS	< 0.10	-
Fluoranthene				mg/kg	0.1	MCERTS	< 0.10	-
Pyrene				mg/kg	0.1	MCERTS	< 0.10	-
Benzo(a)anthracene				mg/kg	0.1	MCERTS	< 0.10	-
Chrysene				mg/kg	0.05	MCERTS	< 0.05	-
Benzo(b)fluoranthene				mg/kg	0.1	MCERTS	< 0.10	-
Benzo(k)fluoranthene				mg/kg	0.1	MCERTS	< 0.10	-
Benzo(a)pyrene				mg/kg	0.1	MCERTS	< 0.10	-
Indeno(1,2,3-cd)pyrene				mg/kg	0.1	MCERTS	< 0.10	-
Dibenz(a,h)anthracene				mg/kg	0.1	MCERTS	< 0.10	-
Benzo(ghi)perylene				mg/kg	0.05	MCERTS	< 0.05	-
Total PAH								
Speciated Total EPA-16 PAHs				mg/kg	1.6	MCERTS	< 1.60	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)				mg/kg	1	MCERTS	7.0	7.2
Cadmium (aqua regia extractable)				mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)				mg/kg	4	MCERTS	< 4.0	< 4.0
Chromium (aqua regia extractable)				mg/kg	1	MCERTS	18	20
Copper (aqua regia extractable)				mg/kg	1	MCERTS	15	13
Lead (aqua regia extractable)				mg/kg	1	MCERTS	19	12
Mercury (aqua regia extractable)				mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)				mg/kg	1	MCERTS	15	15
Selenium (aqua regia extractable)				mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)				mg/kg	1	MCERTS	35	44

Analytical Report Number: 14-61517

Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number	382623	382624	382625	382626	382627
Sample Reference	TP901	TP901	TP902	TP902	TP903
Sample Number	E1 North	E3 South	E1	E2	E1
Depth (m)	0.60	1.20	0.55	1.50	0.10-0.88
Date Sampled	13/10/2014	13/10/2014	13/10/2014	13/10/2014	13/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

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

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-	4.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	13	-	18
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	49	-	61
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	62	-	83

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	< 10	-	14
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	< 10	-	46
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	-	60

Analytical Report Number: 14-61517

Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382628	382629	382630	382631	382632
Sample Reference				TP903	TP904	TP905	TP905	TP906
Sample Number				E2	E2	E1	E2	E2
Depth (m)				0.90	1.00	0.40	1.00	0.95
Date Sampled				13/10/2014	13/10/2014	13/10/2014	13/10/2014	13/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Stone Content				%	0.1	NONE	< 0.1	< 0.1
Moisture Content				%	N/A	NONE	17	9.7
Total mass of sample received				kg	0.001	NONE	1.4	1.7
Whole Sample Crushed				N/A	NONE	-	-	-
Asbestos in Soil Screen / Identification Name				Type	N/A	ISO 17025	-	-
Asbestos in Soil				Type	N/A	ISO 17025	-	-
Asbestos Identification Name (Subcontracted)				Type	N/A	ISO 17025	-	-
Asbestos Quantification (Subcontracted)				%	0.001	ISO 17025	-	-
General Inorganics								
pH				pH Units	N/A	MCERTS	-	-
Total Cyanide				mg/kg	1	MCERTS	-	-
Total Phenols								
Total Phenols (monohydric)				mg/kg	1	MCERTS	-	-
Speciated PAHs								
Naphthalene				mg/kg	0.05	MCERTS	-	-
Acenaphthylene				mg/kg	0.1	MCERTS	-	-
Acenaphthene				mg/kg	0.1	MCERTS	-	-
Fluorene				mg/kg	0.1	MCERTS	-	-
Phenanthrene				mg/kg	0.1	MCERTS	-	-
Anthracene				mg/kg	0.1	MCERTS	-	-
Fluoranthene				mg/kg	0.1	MCERTS	-	-
Pyrene				mg/kg	0.1	MCERTS	-	-
Benzo(a)anthracene				mg/kg	0.1	MCERTS	-	-
Chrysene				mg/kg	0.05	MCERTS	-	-
Benzo(b)fluoranthene				mg/kg	0.1	MCERTS	-	-
Benzo(k)fluoranthene				mg/kg	0.1	MCERTS	-	-
Benzo(a)pyrene				mg/kg	0.1	MCERTS	-	-
Indeno(1,2,3-cd)pyrene				mg/kg	0.1	MCERTS	-	-
Dibenz(a,h)anthracene				mg/kg	0.1	MCERTS	-	-
Benzo(ghi)perylene				mg/kg	0.05	MCERTS	-	-
Total PAH								
Speciated Total EPA-16 PAHs				mg/kg	1.6	MCERTS	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)				mg/kg	1	MCERTS	7.8	6.9
Cadmium (aqua regia extractable)				mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)				mg/kg	4	MCERTS	-	-
Chromium (aqua regia extractable)				mg/kg	1	MCERTS	24	19
Copper (aqua regia extractable)				mg/kg	1	MCERTS	18	16
Lead (aqua regia extractable)				mg/kg	1	MCERTS	24	16
Mercury (aqua regia extractable)				mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)				mg/kg	1	MCERTS	16	17
Selenium (aqua regia extractable)				mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)				mg/kg	1	MCERTS	44	39

Analytical Report Number: 14-61517

Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382628	382629	382630	382631	382632
Sample Reference				TP903	TP904	TP905	TP905	TP906
Sample Number				E2	E2	E1	E2	E2
Depth (m)				0.90	1.00	0.40	1.00	0.95
Date Sampled				13/10/2014	13/10/2014	13/10/2014	13/10/2014	13/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	-	-
Toluene				µg/kg	1	MCERTS	-	-
Ethylbenzene				µg/kg	1	MCERTS	-	-
p & m-xylene				µg/kg	1	MCERTS	-	-
o-xylene				µg/kg	1	MCERTS	-	-
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	7.7	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	27	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	93	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	130	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	4.0	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	29	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	77	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	110	-	-

Analytical Report Number: 14-61517

Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382633	382634	382635	382636	382637
Sample Reference				TP909B	TP909B	TP913	TP931	TP951
Sample Number				E1	E1	E1	E2	E1
Depth (m)				1.10	1.80	0.85	1.00	0.35
Date Sampled				13/10/2014	13/10/2014	13/10/2014	14/10/2014	14/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Stone Content				%	0.1	NONE	< 0.1	< 0.1
Moisture Content				%	N/A	NONE	54	23
Total mass of sample received				kg	0.001	NONE	2.0	1.5
Whole Sample Crushed				N/A	NONE	-	-	-
Asbestos in Soil Screen / Identification Name				Type	N/A	ISO 17025	-	Chrysotile - others (brick)
Asbestos in Soil				Type	N/A	ISO 17025	-	Detected
Asbestos Identification Name (Subcontracted)				Type	N/A	ISO 17025	-	Chrysotile - Cement
Asbestos Quantification (Subcontracted)				%	0.001	ISO 17025	-	0.079
General Inorganics								
pH				pH Units	N/A	MCERTS	-	10.9
Total Cyanide				mg/kg	1	MCERTS	-	< 1
Total Phenols								
Total Phenols (monohydric)				mg/kg	1	MCERTS	-	< 1.0
Speciated PAHs								
Naphthalene				mg/kg	0.05	MCERTS	-	< 0.05
Acenaphthylene				mg/kg	0.1	MCERTS	-	< 0.10
Acenaphthene				mg/kg	0.1	MCERTS	-	< 0.10
Fluorene				mg/kg	0.1	MCERTS	-	< 0.10
Phenanthrene				mg/kg	0.1	MCERTS	-	2.0
Anthracene				mg/kg	0.1	MCERTS	-	0.48
Fluoranthene				mg/kg	0.1	MCERTS	-	3.8
Pyrene				mg/kg	0.1	MCERTS	-	3.0
Benzo(a)anthracene				mg/kg	0.1	MCERTS	-	1.5
Chrysene				mg/kg	0.05	MCERTS	-	1.6
Benzo(b)fluoranthene				mg/kg	0.1	MCERTS	-	1.3
Benzo(k)fluoranthene				mg/kg	0.1	MCERTS	-	1.1
Benzo(a)pyrene				mg/kg	0.1	MCERTS	-	1.2
Indeno(1,2,3-cd)pyrene				mg/kg	0.1	MCERTS	-	0.49
Dibenz(a,h)anthracene				mg/kg	0.1	MCERTS	-	< 0.10
Benzo(ghi)perylene				mg/kg	0.05	MCERTS	-	0.60
Total PAH								
Speciated Total EPA-16 PAHs				mg/kg	1.6	MCERTS	-	17.0
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)				mg/kg	1	MCERTS	24	22
Cadmium (aqua regia extractable)				mg/kg	0.2	MCERTS	1.6	0.3
Chromium (hexavalent)				mg/kg	4	MCERTS	-	-
Chromium (aqua regia extractable)				mg/kg	1	MCERTS	23	25
Copper (aqua regia extractable)				mg/kg	1	MCERTS	1200	170
Lead (aqua regia extractable)				mg/kg	1	MCERTS	2400	490
Mercury (aqua regia extractable)				mg/kg	0.3	MCERTS	7.6	< 0.3
Nickel (aqua regia extractable)				mg/kg	1	MCERTS	300	42
Selenium (aqua regia extractable)				mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)				mg/kg	1	MCERTS	270	72

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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382633	382634	382635	382636	382637
Sample Reference				TP909B	TP909B	TP913	TP931	TP951
Sample Number				E1	E1	E1	E2	E1
Depth (m)				1.10	1.80	0.85	1.00	0.35
Date Sampled				13/10/2014	13/10/2014	13/10/2014	14/10/2014	14/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	2.3
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	24
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	83
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	110

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	14
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	21
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	34

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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382638	382639	382640	382641	382642
Sample Reference				TP951	TP952	TP953	TP954	TP954
Sample Number				E2	E1	E1	E1	E2
Depth (m)				0.80	0.70	0.60	0.40	0.70
Date Sampled				14/10/2014	14/10/2014	14/10/2014	14/10/2014	14/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Stone Content				%	0.1	NONE	< 0.1	< 0.1
Moisture Content				%	N/A	NONE	24	22
Total mass of sample received				kg	0.001	NONE	0.80	1.1
Whole Sample Crushed				N/A	NONE	-	-	-
Asbestos in Soil Screen / Identification Name				Type	N/A	ISO 17025	-	-
Asbestos in Soil				Type	N/A	ISO 17025	-	-
Asbestos Identification Name (Subcontracted)				Type	N/A	ISO 17025	-	-
Asbestos Quantification (Subcontracted)				%	0.001	ISO 17025	-	-
General Inorganics								
pH				pH Units	N/A	MCERTS	-	-
Total Cyanide				mg/kg	1	MCERTS	-	-
Total Phenols								
Total Phenols (monohydric)				mg/kg	1	MCERTS	-	-
Speciated PAHs								
Naphthalene				mg/kg	0.05	MCERTS	-	-
Acenaphthylene				mg/kg	0.1	MCERTS	-	-
Acenaphthene				mg/kg	0.1	MCERTS	-	-
Fluorene				mg/kg	0.1	MCERTS	-	-
Phenanthrene				mg/kg	0.1	MCERTS	-	-
Anthracene				mg/kg	0.1	MCERTS	-	-
Fluoranthene				mg/kg	0.1	MCERTS	-	-
Pyrene				mg/kg	0.1	MCERTS	-	-
Benzo(a)anthracene				mg/kg	0.1	MCERTS	-	-
Chrysene				mg/kg	0.05	MCERTS	-	-
Benzo(b)fluoranthene				mg/kg	0.1	MCERTS	-	-
Benzo(k)fluoranthene				mg/kg	0.1	MCERTS	-	-
Benzo(a)pyrene				mg/kg	0.1	MCERTS	-	-
Indeno(1,2,3-cd)pyrene				mg/kg	0.1	MCERTS	-	-
Dibenz(a,h)anthracene				mg/kg	0.1	MCERTS	-	-
Benzo(ghi)perylene				mg/kg	0.05	MCERTS	-	-
Total PAH								
Speciated Total EPA-16 PAHs				mg/kg	1.6	MCERTS	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)				mg/kg	1	MCERTS	12	15
Cadmium (aqua regia extractable)				mg/kg	0.2	MCERTS	0.2	0.3
Chromium (hexavalent)				mg/kg	4	MCERTS	-	-
Chromium (aqua regia extractable)				mg/kg	1	MCERTS	43	46
Copper (aqua regia extractable)				mg/kg	1	MCERTS	27	27
Lead (aqua regia extractable)				mg/kg	1	MCERTS	42	39
Mercury (aqua regia extractable)				mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)				mg/kg	1	MCERTS	28	28
Selenium (aqua regia extractable)				mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)				mg/kg	1	MCERTS	75	81

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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382638	382639	382640	382641	382642
Sample Reference				TP951	TP952	TP953	TP954	TP954
Sample Number				E2	E1	E1	E1	E2
Depth (m)				0.80	0.70	0.60	0.40	0.70
Date Sampled				14/10/2014	14/10/2014	14/10/2014	14/10/2014	14/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	-	< 1.0
Toluene				µg/kg	1	MCERTS	-	< 1.0
Ethylbenzene				µg/kg	1	MCERTS	-	< 1.0
p & m-xylene				µg/kg	1	MCERTS	-	< 1.0
o-xylene				µg/kg	1	MCERTS	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	-	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	3.8	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	21	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	70	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	95	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	16	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	16	-

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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382643	382644	382645	382646	382647
Sample Reference				TP954	TP955	TP956	TP957	TP957
Sample Number				E1 N.E.	E1	E1	E1	E2
Depth (m)				0.40	0.75	1.00	0.80	1.10
Date Sampled				14/10/2014	14/10/2014	14/10/2014	14/10/2014	14/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Stone Content				%	0.1	NONE	< 0.1	< 0.1
Moisture Content				%	N/A	NONE	24	17
Total mass of sample received				kg	0.001	NONE	0.40	1.2
Whole Sample Crushed				N/A	NONE	-	-	-
Asbestos in Soil Screen / Identification Name				Type	N/A	ISO 17025	-	-
Asbestos in Soil				Type	N/A	ISO 17025	Not-detected	-
Asbestos Identification Name (Subcontracted)				Type	N/A	ISO 17025	-	-
Asbestos Quantification (Subcontracted)				%	0.001	ISO 17025	-	-
General Inorganics								
pH				pH Units	N/A	MCERTS	9.4	-
Total Cyanide				mg/kg	1	MCERTS	< 1	-
Total Phenols								
Total Phenols (monohydric)				mg/kg	1	MCERTS	< 1.0	-
Speciated PAHs								
Naphthalene				mg/kg	0.05	MCERTS	< 0.05	-
Acenaphthylene				mg/kg	0.1	MCERTS	< 0.10	-
Acenaphthene				mg/kg	0.1	MCERTS	< 0.10	-
Fluorene				mg/kg	0.1	MCERTS	< 0.10	-
Phenanthrene				mg/kg	0.1	MCERTS	< 0.10	-
Anthracene				mg/kg	0.1	MCERTS	< 0.10	-
Fluoranthene				mg/kg	0.1	MCERTS	< 0.10	-
Pyrene				mg/kg	0.1	MCERTS	< 0.10	-
Benzo(a)anthracene				mg/kg	0.1	MCERTS	< 0.10	-
Chrysene				mg/kg	0.05	MCERTS	< 0.05	-
Benzo(b)fluoranthene				mg/kg	0.1	MCERTS	< 0.10	-
Benzo(k)fluoranthene				mg/kg	0.1	MCERTS	< 0.10	-
Benzo(a)pyrene				mg/kg	0.1	MCERTS	< 0.10	-
Indeno(1,2,3-cd)pyrene				mg/kg	0.1	MCERTS	< 0.10	-
Dibenz(a,h)anthracene				mg/kg	0.1	MCERTS	< 0.10	-
Benzo(ghi)perylene				mg/kg	0.05	MCERTS	< 0.05	-
Total PAH								
Speciated Total EPA-16 PAHs				mg/kg	1.6	MCERTS	< 1.60	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)				mg/kg	1	MCERTS	19	8.6
Cadmium (aqua regia extractable)				mg/kg	0.2	MCERTS	0.3	< 0.2
Chromium (hexavalent)				mg/kg	4	MCERTS	< 4.0	-
Chromium (aqua regia extractable)				mg/kg	1	MCERTS	53	27
Copper (aqua regia extractable)				mg/kg	1	MCERTS	28	19
Lead (aqua regia extractable)				mg/kg	1	MCERTS	39	40
Mercury (aqua regia extractable)				mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)				mg/kg	1	MCERTS	32	21
Selenium (aqua regia extractable)				mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)				mg/kg	1	MCERTS	93	73

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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382643	382644	382645	382646	382647
Sample Reference				TP954	TP955	TP956	TP957	TP957
Sample Number				E1 N.E.	E1	E1	E1	E2
Depth (m)				0.40	0.75	1.00	0.80	1.10
Date Sampled				14/10/2014	14/10/2014	14/10/2014	14/10/2014	14/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	8.2	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	49	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	180	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	230	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	2.9	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	23	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	100	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	130	-

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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382648	382649	382650	382651	382652
Sample Reference				TP958	TP958	TP959	TP947	TP947
Sample Number				E1	E2	E1	E1	E2
Depth (m)				0.75	0.90	1.00	0.90	1.20
Date Sampled				14/10/2014	14/10/2014	14/10/2014	14/10/2014	14/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Stone Content				%	0.1	NONE	14	< 0.1
Moisture Content				%	N/A	NONE	25	16
Total mass of sample received				kg	0.001	NONE	1.3	1.3
Whole Sample Crushed				N/A	NONE	-	-	-
Asbestos in Soil Screen / Identification Name				Type	N/A	ISO 17025	Chrysotile - Insulation lagging	-
Asbestos in Soil				Type	N/A	ISO 17025	Detected	-
Asbestos Identification Name (Subcontracted)				Type	N/A	ISO 17025	No Asbestos Detected	-
Asbestos Quantification (Subcontracted)				%	0.001	ISO 17025	<0.001	-
General Inorganics								
pH				pH Units	N/A	MCERTS	9.4	-
Total Cyanide				mg/kg	1	MCERTS	< 1	-
Total Phenols								
Total Phenols (monohydric)				mg/kg	1	MCERTS	< 1.0	-
Speciated PAHs								
Naphthalene				mg/kg	0.05	MCERTS	< 0.05	-
Acenaphthylene				mg/kg	0.1	MCERTS	< 0.10	-
Acenaphthene				mg/kg	0.1	MCERTS	0.39	-
Fluorene				mg/kg	0.1	MCERTS	0.34	-
Phenanthrene				mg/kg	0.1	MCERTS	3.2	-
Anthracene				mg/kg	0.1	MCERTS	0.91	-
Fluoranthene				mg/kg	0.1	MCERTS	5.8	-
Pyrene				mg/kg	0.1	MCERTS	4.8	-
Benzo(a)anthracene				mg/kg	0.1	MCERTS	2.6	-
Chrysene				mg/kg	0.05	MCERTS	2.7	-
Benzo(b)fluoranthene				mg/kg	0.1	MCERTS	2.7	-
Benzo(k)fluoranthene				mg/kg	0.1	MCERTS	1.8	-
Benzo(a)pyrene				mg/kg	0.1	MCERTS	2.7	-
Indeno(1,2,3-cd)pyrene				mg/kg	0.1	MCERTS	1.3	-
Dibenz(a,h)anthracene				mg/kg	0.1	MCERTS	0.40	-
Benzo(ghi)perylene				mg/kg	0.05	MCERTS	1.6	-
Total PAH								
Speciated Total EPA-16 PAHs				mg/kg	1.6	MCERTS	31.3	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)				mg/kg	1	MCERTS	13	9.3
Cadmium (aqua regia extractable)				mg/kg	0.2	MCERTS	0.3	< 0.2
Chromium (hexavalent)				mg/kg	4	MCERTS	< 4.0	-
Chromium (aqua regia extractable)				mg/kg	1	MCERTS	22	34
Copper (aqua regia extractable)				mg/kg	1	MCERTS	51	19
Lead (aqua regia extractable)				mg/kg	1	MCERTS	260	30
Mercury (aqua regia extractable)				mg/kg	0.3	MCERTS	1.0	< 0.3
Nickel (aqua regia extractable)				mg/kg	1	MCERTS	15	21
Selenium (aqua regia extractable)				mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)				mg/kg	1	MCERTS	190	60

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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382648	382649	382650	382651	382652
Sample Reference				TP958	TP958	TP959	TP947	TP947
Sample Number				E1	E2	E1	E1	E2
Depth (m)				0.75	0.90	1.00	0.90	1.20
Date Sampled				14/10/2014	14/10/2014	14/10/2014	14/10/2014	14/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	3.0	-	-	2.5	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	24	-	-	13	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	110	-	-	46	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	140	-	-	61	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	3.4	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	34	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	110	-	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	150	-	-	< 10	-

Analytical Report Number: 14-61517

Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382653	382654	382655	382656	
Sample Reference				TP946	TP945	TP945	TP944	
Sample Number				E1	E1	E2	E1	
Depth (m)				0.80	0.60	1.10	0.70	
Date Sampled				14/10/2014	14/10/2014	14/10/2014	14/10/2014	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	19	12	17	17	
Total mass of sample received	kg	0.001	NONE	1.6	1.6	1.5	1.6	

Whole Sample Crushed		N/A	NONE	-	-	-	-	

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile - Insulation board/tile	-	-	
Asbestos in Soil	Type	N/A	ISO 17025	-	Detected	-	-	

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	No Asbestos Detected	-	-	
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	<0.001	-	-	

General Inorganics

pH	pH Units	N/A	MCERTS	-	10.7	-	-	
Total Cyanide	mg/kg	1	MCERTS	-	< 1	-	-	

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-	-	

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	
Acenaphthylene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	
Acenaphthene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	
Fluorene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	
Phenanthrene	mg/kg	0.1	MCERTS	-	1.6	-	-	
Anthracene	mg/kg	0.1	MCERTS	-	0.52	-	-	
Fluoranthene	mg/kg	0.1	MCERTS	-	4.2	-	-	
Pyrene	mg/kg	0.1	MCERTS	-	3.9	-	-	
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	2.1	-	-	
Chrysene	mg/kg	0.05	MCERTS	-	1.6	-	-	
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	2.0	-	-	
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	0.70	-	-	
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	1.6	-	-	
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	0.68	-	-	
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.72	-	-	

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	19.6	-	-	

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.8	8.5	11	7.2	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	-	-	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	26	20	25	22	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	34	24	13	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	37	50	78	16	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	14	30	16	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	53	69	39	52	

Analytical Report Number: 14-61517

Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382653	382654	382655	382656	
Sample Reference				TP946	TP945	TP945	TP944	
Sample Number				E1	E1	E2	E1	
Depth (m)				0.80	0.60	1.10	0.70	
Date Sampled				14/10/2014	14/10/2014	14/10/2014	14/10/2014	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	-	< 1.0
Toluene				µg/kg	1	MCERTS	-	< 1.0
Ethylbenzene				µg/kg	1	MCERTS	-	< 1.0
p & m-xylene				µg/kg	1	MCERTS	-	< 1.0
o-xylene				µg/kg	1	MCERTS	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	-	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1	-	-	
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	-	-	
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	-	-	
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-	
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	9.4	-	-	
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	60	-	-	
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	220	-	-	
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	290	-	-	

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1	-	-	
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	-	-	
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	-	-	
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-	
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	5.2	-	-	
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	38	-	-	
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	150	-	-	
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	190	-	-	



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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382657	382658	382659	382660	382661
Sample Reference				TP901	TP901	TP902	TP902	TP903
Sample Number				E1 North	E3 South	E1	E2	E1
Depth (m)				0.60	1.20	0.55	1.50	0.10-0.88
Date Sampled				13/10/2014	13/10/2014	13/10/2014	13/10/2014	13/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	< 1.1	3.2	< 1.1	< 1.1
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.1	1.2	17	1.6	2.6
Copper (dissolved)	µg/l	0.7	ISO 17025	7.7	6.0	36	8.5	9.3
Lead (dissolved)	µg/l	1	ISO 17025	1.4	2.1	2.2	3.3	1.2
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.0	1.7	8.6	2.4	3.4
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	6.3	5.9	5.6	5.6	9.2



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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382662	382663	382664	382665	382666
Sample Reference				TP903	TP904	TP905	TP905	TP906
Sample Number				E2	E2	E1	E2	E2
Depth (m)				0.90	1.00	0.40	1.00	0.95
Date Sampled				13/10/2014	13/10/2014	13/10/2014	13/10/2014	13/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	2.6	3.8	2.1	4.0	< 1.1
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.6	1.5	6.0	1.4	1.8
Copper (dissolved)	µg/l	0.7	ISO 17025	12	15	29	26	11
Lead (dissolved)	µg/l	1	ISO 17025	5.3	4.8	1.5	5.3	1.8
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.2	7.1	6.3	1.2	4.0
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	6.9	3.8	1.8	6.3	3.9



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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382667	382668	382669	382670	382671
Sample Reference				TP909B	TP909B	TP913	TP931	TP951
Sample Number				E1	E1	E1	E2	E1
Depth (m)				1.10	1.80	0.85	1.00	0.35
Date Sampled				13/10/2014	13/10/2014	13/10/2014	14/10/2014	14/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	7.1	< 1.1	5.5	2.6	1.5
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.7	1.6	4.0	1.3	18
Copper (dissolved)	µg/l	0.7	ISO 17025	34	7.6	97	13	28
Lead (dissolved)	µg/l	1	ISO 17025	140	4.6	74	4.9	1.4
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	21	1.5	18	2.8	4.5
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	18	6.5	26	2.3	1.0



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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382672	382673	382674	382675	382676
Sample Reference				TP951	TP952	TP953	TP954	TP954
Sample Number				E2	E1	E1	E1	E2
Depth (m)				0.80	0.70	0.60	0.40	0.70
Date Sampled				14/10/2014	14/10/2014	14/10/2014	14/10/2014	14/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	3.2	< 1.1	8.1	2.5
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.2	1.6	1.5	3.5	1.3
Copper (dissolved)	µg/l	0.7	ISO 17025	12	20	29	79	12
Lead (dissolved)	µg/l	1	ISO 17025	4.2	10	6.5	3.3	3.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	4.5	5.5	3.8	18	4.5
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	5.4	14	13	4.3	3.5



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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382677	382678	382679	382680	382681
Sample Reference				TP954	TP955	TP956	TP957	TP957
Sample Number				E1 N.E	E1	E1	E1	E2
Depth (m)				0.40	0.75	1.00	0.80	1.10
Date Sampled				14/10/2014	14/10/2014	14/10/2014	14/10/2014	14/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	1.4	2.8	< 1.1	< 1.1	2.1
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.5	1.3	1.4	4.6	1.6
Copper (dissolved)	µg/l	0.7	ISO 17025	10	6.8	6.5	33	12
Lead (dissolved)	µg/l	1	ISO 17025	7.3	5.4	2.2	2.0	6.6
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.5	4.2	2.4	4.8	4.0
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	6.8	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	5.0	3.7	3.9	1.1	5.5



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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382682	382683	382684	382685	382686
Sample Reference				TP958	TP958	TP959	TP947	TP947
Sample Number				E1	E2	E1	E1	E2
Depth (m)				0.75	0.90	1.00	0.90	1.20
Date Sampled				14/10/2014	14/10/2014	14/10/2014	14/10/2014	14/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	14	< 1.1	2.5	4.2	2.0
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.1	1.8	1.3	7.2	2.1
Copper (dissolved)	µg/l	0.7	ISO 17025	24	10	10	27	7.4
Lead (dissolved)	µg/l	1	ISO 17025	9.4	4.9	4.9	3.3	1.5
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	9.4	1.9	3.2	6.2	2.8
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	9.0	6.4	7.5	1.0	4.0



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Project / Site name: Rifle Range St Andrews Park, Uxbridge

Lab Sample Number				382687	382688	382689	382690	
Sample Reference				TP946	TP945	TP945	TP944	
Sample Number				E1	E1	E2	E1	
Depth (m)				0.80	0.60	1.10	0.70	
Date Sampled				14/10/2014	14/10/2014	14/10/2014	14/10/2014	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	4.5	< 1.1	2.9	< 1.1	
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.5	14	1.3	1.3	
Copper (dissolved)	µg/l	0.7	ISO 17025	20	13	21	8.4	
Lead (dissolved)	µg/l	1	ISO 17025	14	4.0	38	6.9	
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.9	2.4	3.9	2.1	
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	
Zinc (dissolved)	µg/l	0.4	ISO 17025	5.3	< 0.4	4.6	4.4	

Analytical Report Number : 14-61517

Project / Site name: Rifle Range St Andrews Park, Uxbridge

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
382623	TP901	E1 North	0.60	Light brown clay and topsoil with vegetation.
382624	TP901	E3 South	1.20	Light brown clay and topsoil with vegetation.
382625	TP902	E1	0.55	Light brown topsoil and sand with gravel.
382626	TP902	E2	1.50	Light brown clay and topsoil.
382627	TP903	E1	0.10-0.88	Light brown sand with gravel.
382628	TP903	E2	0.90	Light brown clay and topsoil with vegetation.
382629	TP904	E2	1.00	Light brown clay and topsoil with vegetation.
382630	TP905	E1	0.40	Light brown topsoil and sand with gravel.
382631	TP905	E2	1.00	Grey clay and sand.
382632	TP906	E2	0.95	Light brown clay and topsoil with vegetation.
382633	TP909B	E1	1.10	Black clay and topsoil with vegetation.
382634	TP909B	E1	1.80	Light brown clay and sand.
382635	TP913	E1	0.85	Brown clay and topsoil with vegetation.
382636	TP931	E2	1.00	Light brown clay and topsoil with vegetation.
382637	TP951	E1	0.35	Light brown topsoil and sand with gravel.
382638	TP951	E2	0.80	Light brown clay and sand.
382639	TP952	E1	0.70	Brown clay and sand.
382640	TP953	E1	0.60	Brown clay and topsoil.
382641	TP954	E1	0.40	Brown clay and sand with gravel.
382642	TP954	E2	0.70	Brown clay and topsoil.
382643	TP954	E1 N.E.	0.40	Brown silt with gravel. **
382644	TP955	E1	0.75	Brown clay and topsoil with gravel.
382645	TP956	E1	1.00	Brown clay and topsoil with gravel.
382646	TP957	E1	0.80	Brown gravelly sand with stones and vegetation.
382647	TP957	E2	1.10	Brown clay and sand.
382648	TP958	E1	0.75	Brown clay and sand with stones.
382649	TP958	E2	0.90	Brown clay and sand with gravel.
382650	TP959	E1	1.00	Brown clay and sand with gravel.
382651	TP947	E1	0.90	Brown topsoil and sand with gravel.
382652	TP947	E2	1.20	Light brown clay and sand.
382653	TP946	E1	0.80	Brown clay and sand.
382654	TP945	E1	0.60	Brown clay and sand.
382655	TP945	E2	1.10	Brown clay and sand.
382656	TP944	E1	0.70	Brown clay and sand.

** Non MCERTS matrix.

Analytical Report Number : 14-61517

Project / Site name: Rifle Range St Andrews Park, Uxbridge

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos quantification/ID Subcontracted analysis	Subcontracted analysis	Subcontracted analysis		D	ISO 17025
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Crush Whole Sample	Either: Client specific preparation instructions - sample(s) crushed whole prior to analysis; OR Sample unsuitable for standard preparation and therefore crushed whole prior to analysis.	In house method, applicable to dry samples only.	L019-UK	D	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	D	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS



Analytical Report Number : 14-61517

Project / Site name: Rifle Range St Andrews Park, Uxbridge

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

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

Asbestos Methodology

Samples analysed by the in-house method were screened using approximately 100 g of soil sample. Quantification is performed on the whole sample.

Please note that on occasions where asbestos is found in the in-house method, the fibres are removed and isolated on the microscope slide; and therefore are not sent for quantification. In these instances there may be occasions where the quantification will be reported as negative (i.e the asbestos present has been isolated on the slide). This may also occur where more than one asbestos fibre type is identified in-house; and the quantification does not find all types previously identified (in-house method).

It is also possible that the in house method does not find any asbestos in the 100 g representative sub sample, whereas the quantification method (using the whole sample) has found fibres not previously identified.

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

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

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

CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: Marian Jones
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford
WD18 8YS

CONTRACT NO: 41803
PROJECT NO: 610
DATE OF ISSUE: 10.12.14

DATE SAMPLES RECEIVED: 03.12.14

DATE SAMPLES ANALYSED: 10.12.14

SAMPLE DESCRIPTION: Five soil/loose aggregate samples each weighing approximately 0.1kg

ANALYSIS REQUESTED: Qualitative and quantitative analysis of soil/loose aggregate samples for mass determination of asbestos.

METHODS:

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

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies *et al*, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

RESULTS:

Initial Screening

Asbestos was detected in two of the five soil samples by stereo-binocular and polarised light microscopy.

A summary of the qualitative and quantitative results are given in Tables 1 & 2 respectively.



CONTRACT NO: 41803
PROJECT NO: 610
DATE OF ISSUE: 10.12.14

RESULTS: (cont.)

Table 1: Qualitative Results

Job Ref: 14-61517

IOM Sample Number	Client Sample Number	ACM Type Detected	PLM Result
S32955	382637	Cement ¹	Chrysotile
S32956	382641	-	No Asbestos Detected
S32957	382648	-	No Asbestos Detected
S32958	382651	Cement ²	Chrysotile
S32959	382654	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

Table 2: Quantitative Analysis Results

Client Sample Number	Sample Weight (g)	% Asbestos in Sample from ACM's	% Asbestos in Sample as Unbound Fibres	Total % Asbestos in Sample
382637	85	0.079	-	0.079
382651	78	0.008	-	0.008

- not applicable

Our limit of quantification for gravimetric analysis of soil samples is 0.001%.

The detection limit for fibre counting/sizing is around 0.0001% with a limit of quantification of 0.001%.

COMMENTS

¹ ACM was visible during initial examination of the sample.

² ACM was detected during microscopic examination of the sample.

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are out with the scope of our UKAS accreditation.

AUTHORISED BY:

S Clark

Mineralogy Section Manager



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Analytical Report Number : 14-62467

Replaces Analytical Report Number : 14-62467, issue no. 2

Project / Site name:	Rifle Range, St Andrews Park, Uxbridge	Samples received on:	24/10/2014
Your job number:	21311	Samples instructed on:	04/11/2014
Your order number:	29986	Analysis completed by:	11/12/2014
Report Issue Number:	3	Report issued on:	27/02/2015
Samples Analysed:	38 leachate samples - 57 soil samples		

Signed:

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

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388208	388209	388210	388211	388212
Sample Reference	TP915	TP916	TP917	TP918	TP918
Sample Number	C1	C1	C1	C1	C2
Depth (m)	0.70	1.60	0.70	0.40	0.80
Date Sampled	16/10/2014	16/10/2014	16/10/2014	16/10/2014	16/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	19	17
Total mass of sample received	kg	0.001	NONE	1.6	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	Not-detected	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	7.0	-	-	10.1	-
Total Cyanide	mg/kg	1	MCERTS	< 1	-	-	< 1	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05	-
Acenaphthylene	mg/kg	0.1	MCERTS	0.25	-	-	< 0.10	-
Acenaphthene	mg/kg	0.1	MCERTS	0.41	-	-	< 0.10	-
Fluorene	mg/kg	0.1	MCERTS	0.59	-	-	< 0.10	-
Phenanthrene	mg/kg	0.1	MCERTS	4.6	-	-	< 0.10	-
Anthracene	mg/kg	0.1	MCERTS	0.84	-	-	< 0.10	-
Fluoranthene	mg/kg	0.1	MCERTS	6.3	-	-	< 0.10	-
Pyrene	mg/kg	0.1	MCERTS	5.6	-	-	< 0.10	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	2.8	-	-	< 0.10	-
Chrysene	mg/kg	0.05	MCERTS	2.9	-	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	4.4	-	-	< 0.10	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.4	-	-	< 0.10	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	3.1	-	-	< 0.10	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	1.4	-	-	< 0.10	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.22	-	-	< 0.10	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.6	-	-	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	36.3	-	-	< 1.60	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	13	14	7.9	15
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.8	< 0.2	< 0.2	1.6	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	-	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	22	26	19	37
Copper (aqua regia extractable)	mg/kg	1	MCERTS	51	18	22	17	27
Lead (aqua regia extractable)	mg/kg	1	MCERTS	210	13	26	36	35
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21	31	32	14	110
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	140	45	52	49	70

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388208	388209	388210	388211	388212
Sample Reference	TP915	TP916	TP917	TP918	TP918
Sample Number	C1	C1	C1	C1	C2
Depth (m)	0.70	1.60	0.70	0.40	0.80
Date Sampled	16/10/2014	16/10/2014	16/10/2014	16/10/2014	16/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

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

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	10	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	57	-	-	44	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	57	-	-	54	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	2.2	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	27	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	47	-	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	76	-	-	< 10	-

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388213	388214	388215	388216	388217
Sample Reference	TP919	TP920	TP921	TP921	TP922
Sample Number	C1	C1	C1	C2	C1
Depth (m)	1.00	1.00	0.50	0.80	0.90
Date Sampled	16/10/2014	17/10/2014	17/10/2014	17/10/2014	16/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	13	24
Total mass of sample received	kg	0.001	NONE	1.3	1.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	-	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	10.5	-	-
Total Cyanide	mg/kg	1	MCERTS	-	-	< 1	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	< 1.0	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Acenaphthene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Fluorene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Phenanthrene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Anthracene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Fluoranthene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Pyrene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	-	< 1.60	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	12	9.9	1.4	16
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.6	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	< 4.0	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	38	22	20	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	20	21	14	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	12	19	27	20	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	45	31	13	14	40
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	45	77	51	43	49

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388213	388214	388215	388216	388217
Sample Reference				TP919	TP920	TP921	TP921	TP922
Sample Number				C1	C1	C1	C2	C1
Depth (m)				1.00	1.00	0.50	0..80	0.90
Date Sampled				16/10/2014	17/10/2014	17/10/2014	17/10/2014	16/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	-	-
Toluene				µg/kg	1	MCERTS	-	-
Ethylbenzene				µg/kg	1	MCERTS	-	-
p & m-xylene				µg/kg	1	MCERTS	-	-
o-xylene				µg/kg	1	MCERTS	-	-
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6				mg/kg	0.1	MCERTS	-	-
TPH-CWG - Aliphatic >EC6 - EC8				mg/kg	0.1	MCERTS	-	-
TPH-CWG - Aliphatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	-
TPH-CWG - Aliphatic >EC10 - EC12				mg/kg	1	MCERTS	-	-
TPH-CWG - Aliphatic >EC12 - EC16				mg/kg	2	MCERTS	-	-
TPH-CWG - Aliphatic >EC16 - EC21				mg/kg	8	MCERTS	-	-
TPH-CWG - Aliphatic >EC21 - EC35				mg/kg	8	MCERTS	-	-
TPH-CWG - Aliphatic (EC5 - EC35)				mg/kg	10	MCERTS	-	-
TPH-CWG - Aromatic >EC5 - EC7				mg/kg	0.1	MCERTS	-	-
TPH-CWG - Aromatic >EC7 - EC8				mg/kg	0.1	MCERTS	-	-
TPH-CWG - Aromatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	-
TPH-CWG - Aromatic >EC10 - EC12				mg/kg	1	MCERTS	-	-
TPH-CWG - Aromatic >EC12 - EC16				mg/kg	2	MCERTS	-	-
TPH-CWG - Aromatic >EC16 - EC21				mg/kg	10	MCERTS	-	-
TPH-CWG - Aromatic >EC21 - EC35				mg/kg	10	MCERTS	-	-
TPH-CWG - Aromatic (EC5 - EC35)				mg/kg	10	MCERTS	-	-

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388218	388219	388220	388221	388222
Sample Reference				TP923	TP923	TP924	TP925	TP925
Sample Number				C1	C2	C1	C1	C2
Depth (m)				0.60	0.80	0.90	0.50	0.90
Date Sampled				16/10/2014	16/10/2014	16/10/2014	16/10/2014	16/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	8.2	18	23	11	23
Total mass of sample received	kg	0.001	NONE	1.5	1.4	1.6	1.6	1.3

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	Not-detected	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	-	10.3	-
Total Cyanide	mg/kg	1	MCERTS	-	-	-	< 1	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	< 1.0	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Acenaphthylene	mg/kg	0.1	MCERTS	-	-	-	< 0.10	-
Acenaphthene	mg/kg	0.1	MCERTS	-	-	-	< 0.10	-
Fluorene	mg/kg	0.1	MCERTS	-	-	-	< 0.10	-
Phenanthrene	mg/kg	0.1	MCERTS	-	-	-	2.7	-
Anthracene	mg/kg	0.1	MCERTS	-	-	-	0.73	-
Fluoranthene	mg/kg	0.1	MCERTS	-	-	-	4.3	-
Pyrene	mg/kg	0.1	MCERTS	-	-	-	3.5	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	-	-	1.8	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	1.7	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	-	-	2.7	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	-	-	0.92	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	-	-	1.9	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	-	-	0.83	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	-	-	0.13	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	0.94	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	-	-	22.2	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.4	4.3	11	16	17
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.0	< 0.2	0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	-	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	29	36	24	42
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21	22	66	32	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	37	23	400	40	21
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12	17	30	20	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	56	56	71	75	80

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388218	388219	388220	388221	388222
Sample Reference				TP923	TP923	TP924	TP925	TP925
Sample Number				C1	C2	C1	C1	C2
Depth (m)				0.60	0.80	0.90	0.50	0.90
Date Sampled				16/10/2014	16/10/2014	16/10/2014	16/10/2014	16/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	-	< 1.0
Toluene				µg/kg	1	MCERTS	-	< 1.0
Ethylbenzene				µg/kg	1	MCERTS	-	< 1.0
p & m-xylene				µg/kg	1	MCERTS	-	< 1.0
o-xylene				µg/kg	1	MCERTS	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	-	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16				mg/kg	2	MCERTS	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21				mg/kg	8	MCERTS	-	9.3
TPH-CWG - Aliphatic >EC21 - EC35				mg/kg	8	MCERTS	-	60
TPH-CWG - Aliphatic (EC5 - EC35)				mg/kg	10	MCERTS	-	69
TPH-CWG - Aromatic >EC5 - EC7				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16				mg/kg	2	MCERTS	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21				mg/kg	10	MCERTS	-	23
TPH-CWG - Aromatic >EC21 - EC35				mg/kg	10	MCERTS	-	96
TPH-CWG - Aromatic (EC5 - EC35)				mg/kg	10	MCERTS	-	120

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388223	388224	388225	388226	388227
Sample Reference	TP926	TP927	TP927	TP928	TP928
Sample Number	C1	C1	C3	C1	C2
Depth (m)	0.80	0.70	1.60	0.90	1.10
Date Sampled	16/10/2014	16/10/2014	16/10/2014	16/10/2014	16/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	17	9.3
Total mass of sample received	kg	0.001	NONE	1.4	1.5

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	Not-detected	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	-	10.5	-	10.5	-
Total Cyanide	mg/kg	1	MCERTS	-	< 1	-	< 1	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Acenaphthylene	mg/kg	0.1	MCERTS	-	< 0.10	-	< 0.10	-
Acenaphthene	mg/kg	0.1	MCERTS	-	< 0.10	-	< 0.10	-
Fluorene	mg/kg	0.1	MCERTS	-	< 0.10	-	< 0.10	-
Phenanthrene	mg/kg	0.1	MCERTS	-	1.6	-	2.5	-
Anthracene	mg/kg	0.1	MCERTS	-	0.37	-	0.65	-
Fluoranthene	mg/kg	0.1	MCERTS	-	2.7	-	4.2	-
Pyrene	mg/kg	0.1	MCERTS	-	2.4	-	3.5	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	1.4	-	1.9	-
Chrysene	mg/kg	0.05	MCERTS	-	1.3	-	1.8	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	2.2	-	2.6	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	0.71	-	0.80	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	1.5	-	1.8	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	0.73	-	0.79	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	0.12	-	0.13	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.75	-	0.84	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	15.8	-	21.6	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.2	9.2	10	9.2	10
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	-	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	28	24	22	38
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	33	27	42	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	20	45	48	57	18
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	17	29	22	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	40	70	51	76	75

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388223	388224	388225	388226	388227
Sample Reference				TP926	TP927	TP927	TP928	TP928
Sample Number				C1	C1	C3	C1	C2
Depth (m)				0.80	0.70	1.60	0.90	1.10
Date Sampled				16/10/2014	16/10/2014	16/10/2014	16/10/2014	16/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	-	< 1.0
Toluene				µg/kg	1	MCERTS	-	< 1.0
Ethylbenzene				µg/kg	1	MCERTS	-	< 1.0
p & m-xylene				µg/kg	1	MCERTS	-	< 1.0
o-xylene				µg/kg	1	MCERTS	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	-	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16				mg/kg	2	MCERTS	-	3.4
TPH-CWG - Aliphatic >EC16 - EC21				mg/kg	8	MCERTS	-	13
TPH-CWG - Aliphatic >EC21 - EC35				mg/kg	8	MCERTS	-	53
TPH-CWG - Aliphatic (EC5 - EC35)				mg/kg	10	MCERTS	-	70
TPH-CWG - Aromatic >EC5 - EC7				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16				mg/kg	2	MCERTS	-	2.9
TPH-CWG - Aromatic >EC16 - EC21				mg/kg	10	MCERTS	-	29
TPH-CWG - Aromatic >EC21 - EC35				mg/kg	10	MCERTS	-	58
TPH-CWG - Aromatic (EC5 - EC35)				mg/kg	10	MCERTS	-	90

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388228	388229	388230	388231	388232
Sample Reference	TP929	TP930	TP930	TP932	TP932
Sample Number	C1	C1	C2	C1	C2
Depth (m)	1.00	1.20	1.60	0.40	0.80
Date Sampled	16/10/2014	15/10/2014	15/10/2014	15/10/2014	15/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	48
Moisture Content	%	N/A	NONE	20	8.5
Total mass of sample received	kg	0.001	NONE	1.3	1.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	Not-detected	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	-	10.4	-	10.7	-
Total Cyanide	mg/kg	1	MCERTS	-	< 1	-	< 1	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Acenaphthylene	mg/kg	0.1	MCERTS	-	< 0.10	-	< 0.10	-
Acenaphthene	mg/kg	0.1	MCERTS	-	< 0.10	-	< 0.10	-
Fluorene	mg/kg	0.1	MCERTS	-	< 0.10	-	< 0.10	-
Phenanthrene	mg/kg	0.1	MCERTS	-	1.9	-	0.38	-
Anthracene	mg/kg	0.1	MCERTS	-	0.41	-	< 0.10	-
Fluoranthene	mg/kg	0.1	MCERTS	-	2.8	-	0.80	-
Pyrene	mg/kg	0.1	MCERTS	-	2.4	-	0.70	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	1.3	-	0.33	-
Chrysene	mg/kg	0.05	MCERTS	-	1.3	-	0.31	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	1.8	-	0.44	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	0.60	-	0.14	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	1.3	-	0.28	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	0.51	-	< 0.10	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	< 0.10	-	< 0.10	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.62	-	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	14.8	-	3.38	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.7	7.3	10	6.7	7.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	2.1	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	-	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	38	21	22	19	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	29	15	16	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	20	40	7.5	31	12
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	28	37	21	15	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	78	62	50	51	48

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388228	388229	388230	388231	388232
Sample Reference				TP929	TP930	TP930	TP932	TP932
Sample Number				C1	C1	C2	C1	C2
Depth (m)				1.00	1.20	1.60	0.40	0.80
Date Sampled				16/10/2014	15/10/2014	15/10/2014	15/10/2014	15/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	-	< 1.0
Toluene				µg/kg	1	MCERTS	-	< 1.0
Ethylbenzene				µg/kg	1	MCERTS	-	< 1.0
p & m-xylene				µg/kg	1	MCERTS	-	< 1.0
o-xylene				µg/kg	1	MCERTS	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	-	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16				mg/kg	2	MCERTS	-	10
TPH-CWG - Aliphatic >EC16 - EC21				mg/kg	8	MCERTS	-	40
TPH-CWG - Aliphatic >EC21 - EC35				mg/kg	8	MCERTS	-	160
TPH-CWG - Aliphatic (EC5 - EC35)				mg/kg	10	MCERTS	-	210
TPH-CWG - Aromatic >EC5 - EC7				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16				mg/kg	2	MCERTS	-	2.4
TPH-CWG - Aromatic >EC16 - EC21				mg/kg	10	MCERTS	-	31
TPH-CWG - Aromatic >EC21 - EC35				mg/kg	10	MCERTS	-	84
TPH-CWG - Aromatic (EC5 - EC35)				mg/kg	10	MCERTS	-	120

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388233	388234	388235	388236	388237
Sample Reference	TP933	TP934	TP934	TP935	TP936
Sample Number	C1	C1	C2	C1	C1
Depth (m)	0.70	0.50	0.70	0.70	1.30
Date Sampled	15/10/2014	15/10/2014	15/10/2014	15/10/2014	15/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	11	15
Total mass of sample received	kg	0.001	NONE	1.4	1.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Amosite- Loose fibres
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	-	Detected

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	No Asbestos Detected
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	<0.001

General Inorganics

pH	pH Units	N/A	MCERTS	-	10.5	-	-	10.2
Total Cyanide	mg/kg	1	MCERTS	-	< 1	-	-	< 1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	< 0.10
Fluorene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	-	1.0	-	-	0.86
Anthracene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	0.28
Fluoranthene	mg/kg	0.1	MCERTS	-	1.7	-	-	1.9
Pyrene	mg/kg	0.1	MCERTS	-	1.4	-	-	1.6
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	0.77	-	-	0.90
Chrysene	mg/kg	0.05	MCERTS	-	0.83	-	-	0.94
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	1.1	-	-	1.4
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	0.40	-	-	0.44
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	0.74	-	-	0.92
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	0.44
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	0.55

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	7.94	-	-	10.2

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.7	11	15	17	7.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	1.6	0.3	< 0.2	0.3
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	-	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	17	22	28	27	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	10	24	19	20	23
Lead (aqua regia extractable)	mg/kg	1	MCERTS	10	50	13	14	50
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	18	35	34	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	41	70	51	49	53

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388233	388234	388235	388236	388237
Sample Reference				TP933	TP934	TP934	TP935	TP936
Sample Number				C1	C1	C2	C1	C1
Depth (m)				0.70	0.50	0.70	0.70	1.30
Date Sampled				15/10/2014	15/10/2014	15/10/2014	15/10/2014	15/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	-	< 1.0
Toluene				µg/kg	1	MCERTS	-	< 1.0
Ethylbenzene				µg/kg	1	MCERTS	-	< 1.0
p & m-xylene				µg/kg	1	MCERTS	-	< 1.0
o-xylene				µg/kg	1	MCERTS	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	-	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16				mg/kg	2	MCERTS	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21				mg/kg	8	MCERTS	-	12
TPH-CWG - Aliphatic >EC21 - EC35				mg/kg	8	MCERTS	-	57
TPH-CWG - Aliphatic (EC5 - EC35)				mg/kg	10	MCERTS	-	69
TPH-CWG - Aromatic >EC5 - EC7				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16				mg/kg	2	MCERTS	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21				mg/kg	10	MCERTS	-	12
TPH-CWG - Aromatic >EC21 - EC35				mg/kg	10	MCERTS	-	24
TPH-CWG - Aromatic (EC5 - EC35)				mg/kg	10	MCERTS	-	36

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388238	388239	388240	388241	388242
Sample Reference	TP936	TP937	TP938	TP938	TP939
Sample Number	C2	C1	C1	C2	C1
Depth (m)	1.60	0.90	0.60	0.80	1.35
Date Sampled	15/10/2014	15/10/2014	15/10/2014	15/10/2014	15/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	16	17
Total mass of sample received	kg	0.001	NONE	1.6	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	-	Not-detected

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	10.1	-	9.4
Total Cyanide	mg/kg	1	MCERTS	-	-	< 1	-	< 1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	< 1.0	-	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	< 0.10
Fluorene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	-	-	1.5	-	0.65
Anthracene	mg/kg	0.1	MCERTS	-	-	0.38	-	0.18
Fluoranthene	mg/kg	0.1	MCERTS	-	-	2.6	-	1.4
Pyrene	mg/kg	0.1	MCERTS	-	-	2.4	-	1.2
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	-	1.3	-	0.55
Chrysene	mg/kg	0.05	MCERTS	-	-	1.2	-	0.62
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	-	1.8	-	0.89
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	-	0.62	-	0.30
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	-	1.3	-	0.63
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	-	0.58	-	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	-	0.10	-	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	0.68	-	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	-	14.4	-	6.39

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	21	7.3	10	6.1	10
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	< 4.0	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	22	21	18	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	15	31	15	97
Lead (aqua regia extractable)	mg/kg	1	MCERTS	16	33	49	28	330
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	28	20	31	19	33
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	51	41	79	36	91

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388238	388239	388240	388241	388242
Sample Reference				TP936	TP937	TP938	TP938	TP939
Sample Number				C2	C1	C1	C2	C1
Depth (m)				1.60	0.90	0.60	0.80	1.35
Date Sampled				15/10/2014	15/10/2014	15/10/2014	15/10/2014	15/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	-	< 1.0
Toluene				µg/kg	1	MCERTS	-	< 1.0
Ethylbenzene				µg/kg	1	MCERTS	-	< 1.0
p & m-xylene				µg/kg	1	MCERTS	-	< 1.0
o-xylene				µg/kg	1	MCERTS	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	-	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16				mg/kg	2	MCERTS	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21				mg/kg	8	MCERTS	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35				mg/kg	8	MCERTS	-	41
TPH-CWG - Aliphatic (EC5 - EC35)				mg/kg	10	MCERTS	-	41
TPH-CWG - Aromatic >EC5 - EC7				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16				mg/kg	2	MCERTS	-	2.5
TPH-CWG - Aromatic >EC16 - EC21				mg/kg	10	MCERTS	-	17
TPH-CWG - Aromatic >EC21 - EC35				mg/kg	10	MCERTS	-	35
TPH-CWG - Aromatic (EC5 - EC35)				mg/kg	10	MCERTS	-	54

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388243	388244	388245	388246	388247
Sample Reference	TP939	TP940	TP941	TP941	TP942
Sample Number	C2	C1	C1	C2	C1
Depth (m)	1.50	1.00	0.50	0.90	0.70
Date Sampled	15/10/2014	15/10/2014	15/10/2014	15/10/2014	15/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	23	18
Total mass of sample received	kg	0.001	NONE	1.3	1.3

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	-	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	10.9	-	-
Total Cyanide	mg/kg	1	MCERTS	-	-	< 1	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	< 1.0	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Acenaphthene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Fluorene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Phenanthrene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Anthracene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Fluoranthene	mg/kg	0.1	MCERTS	-	-	0.72	-	-
Pyrene	mg/kg	0.1	MCERTS	-	-	0.56	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	-	0.29	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	0.28	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	-	0.42	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	-	0.14	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	-	0.26	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	-	< 0.10	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	-	2.67	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	14	8.0	9.0	8.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.3	1.4	< 0.2	0.4
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	< 4.0	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	47	21	31	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	25	25	14	16
Lead (aqua regia extractable)	mg/kg	1	MCERTS	18	25	36	13	17
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	29	35	16	23	28
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	42	100	77	70	72

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388243	388244	388245	388246	388247
Sample Reference				TP939	TP940	TP941	TP941	TP942
Sample Number				C2	C1	C1	C2	C1
Depth (m)				1.50	1.00	0.50	0.90	0.70
Date Sampled				15/10/2014	15/10/2014	15/10/2014	15/10/2014	15/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	-	-
Toluene				µg/kg	1	MCERTS	-	-
Ethylbenzene				µg/kg	1	MCERTS	-	-
p & m-xylene				µg/kg	1	MCERTS	-	-
o-xylene				µg/kg	1	MCERTS	-	-
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6				mg/kg	0.1	MCERTS	-	-
TPH-CWG - Aliphatic >EC6 - EC8				mg/kg	0.1	MCERTS	-	-
TPH-CWG - Aliphatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	-
TPH-CWG - Aliphatic >EC10 - EC12				mg/kg	1	MCERTS	-	-
TPH-CWG - Aliphatic >EC12 - EC16				mg/kg	2	MCERTS	-	-
TPH-CWG - Aliphatic >EC16 - EC21				mg/kg	8	MCERTS	-	-
TPH-CWG - Aliphatic >EC21 - EC35				mg/kg	8	MCERTS	-	-
TPH-CWG - Aliphatic (EC5 - EC35)				mg/kg	10	MCERTS	-	-
TPH-CWG - Aromatic >EC5 - EC7				mg/kg	0.1	MCERTS	-	-
TPH-CWG - Aromatic >EC7 - EC8				mg/kg	0.1	MCERTS	-	-
TPH-CWG - Aromatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	-
TPH-CWG - Aromatic >EC10 - EC12				mg/kg	1	MCERTS	-	-
TPH-CWG - Aromatic >EC12 - EC16				mg/kg	2	MCERTS	-	-
TPH-CWG - Aromatic >EC16 - EC21				mg/kg	10	MCERTS	-	-
TPH-CWG - Aromatic >EC21 - EC35				mg/kg	10	MCERTS	-	-
TPH-CWG - Aromatic (EC5 - EC35)				mg/kg	10	MCERTS	-	-

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388248	388249	388250	388251	388252
Sample Reference	TP943	TP943	TP948	TP948	TP949
Sample Number	C1	C2	C1	C2	C1
Depth (m)	0.40	0.65	0.60	1.10	1.20
Date Sampled	15/10/2014	15/10/2014	16/10/2014	16/10/2014	16/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	21	23
Total mass of sample received	kg	0.001	NONE	1.5	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Amosite- Loose fibres	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	-	Not-detected	-	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	No Asbestos Detected	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	<0.001	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	10.9	-	11.1	-	-
Total Cyanide	mg/kg	1	MCERTS	< 1	-	< 1	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	-	< 0.10	-	-
Acenaphthene	mg/kg	0.1	MCERTS	0.47	-	< 0.10	-	-
Fluorene	mg/kg	0.1	MCERTS	0.87	-	< 0.10	-	-
Phenanthrene	mg/kg	0.1	MCERTS	7.4	-	0.49	-	-
Anthracene	mg/kg	0.1	MCERTS	2.3	-	< 0.10	-	-
Fluoranthene	mg/kg	0.1	MCERTS	7.9	-	1.2	-	-
Pyrene	mg/kg	0.1	MCERTS	5.8	-	0.98	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	2.9	-	0.47	-	-
Chrysene	mg/kg	0.05	MCERTS	2.7	-	0.45	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.5	-	0.71	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.2	-	0.24	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	2.2	-	0.44	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.87	-	< 0.10	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.18	-	< 0.10	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.87	-	< 0.05	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	39.1	-	4.93	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.8	13	7.6	11	12
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.1	1.9	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	< 4.0	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	52	19	43	49
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	32	21	16	130
Lead (aqua regia extractable)	mg/kg	1	MCERTS	30	16	29	20	100
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	93	15	29	290
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	66	140	49	72	89

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388248	388249	388250	388251	388252
Sample Reference				TP943	TP943	TP948	TP948	TP949
Sample Number				C1	C2	C1	C2	C1
Depth (m)				0.40	0.65	0.60	1.10	1.20
Date Sampled				15/10/2014	15/10/2014	16/10/2014	16/10/2014	16/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	< 1.0	-
Toluene				µg/kg	1	MCERTS	< 1.0	-
Ethylbenzene				µg/kg	1	MCERTS	< 1.0	-
p & m-xylene				µg/kg	1	MCERTS	< 1.0	-
o-xylene				µg/kg	1	MCERTS	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	< 1.0	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6				mg/kg	0.1	MCERTS	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8				mg/kg	0.1	MCERTS	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10				mg/kg	0.1	MCERTS	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12				mg/kg	1	MCERTS	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16				mg/kg	2	MCERTS	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21				mg/kg	8	MCERTS	98	-
TPH-CWG - Aliphatic >EC21 - EC35				mg/kg	8	MCERTS	280	-
TPH-CWG - Aliphatic (EC5 - EC35)				mg/kg	10	MCERTS	380	-
TPH-CWG - Aromatic >EC5 - EC7				mg/kg	0.1	MCERTS	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8				mg/kg	0.1	MCERTS	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10				mg/kg	0.1	MCERTS	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12				mg/kg	1	MCERTS	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16				mg/kg	2	MCERTS	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21				mg/kg	10	MCERTS	56	-
TPH-CWG - Aromatic >EC21 - EC35				mg/kg	10	MCERTS	74	-
TPH-CWG - Aromatic (EC5 - EC35)				mg/kg	10	MCERTS	140	-

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388253	388254	388255	388256	388257
Sample Reference	TP950	TP960	TP960	TP961	TP963
Sample Number	C1	C1	C2	C2	C1
Depth (m)	1.00	0.40	1.30	1.50	0.60
Date Sampled	15/10/2014	17/10/2014	17/10/2014	17/10/2014	17/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	19	8.6
Total mass of sample received	kg	0.001	NONE	1.3	1.5

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	-	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	-	8.4	-	-	-
Total Cyanide	mg/kg	1	MCERTS	-	< 1	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	-
Acenaphthene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	-
Fluorene	mg/kg	0.1	MCERTS	-	< 0.10	-	-	-
Phenanthrene	mg/kg	0.1	MCERTS	-	4.2	-	-	-
Anthracene	mg/kg	0.1	MCERTS	-	1.0	-	-	-
Fluoranthene	mg/kg	0.1	MCERTS	-	7.5	-	-	-
Pyrene	mg/kg	0.1	MCERTS	-	7.4	-	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	3.6	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	3.4	-	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	5.5	-	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	1.9	-	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	3.6	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	1.7	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	0.29	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	2.0	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	42.0	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.0	6.8	11	9.4	7.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	38	21	35	34	22
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13	23	20	19	16
Lead (aqua regia extractable)	mg/kg	1	MCERTS	14	51	14	13	19
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	26	15	36	35	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	75	53	59	56	45

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388253	388254	388255	388256	388257
Sample Reference				TP950	TP960	TP960	TP961	TP963
Sample Number				C1	C1	C2	C2	C1
Depth (m)				1.00	0.40	1.30	1.50	0.60
Date Sampled				15/10/2014	17/10/2014	17/10/2014	17/10/2014	17/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	-	< 1.0
Toluene				µg/kg	1	MCERTS	-	< 1.0
Ethylbenzene				µg/kg	1	MCERTS	-	< 1.0
p & m-xylene				µg/kg	1	MCERTS	-	< 1.0
o-xylene				µg/kg	1	MCERTS	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	-	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16				mg/kg	2	MCERTS	-	8.3
TPH-CWG - Aliphatic >EC16 - EC21				mg/kg	8	MCERTS	-	28
TPH-CWG - Aliphatic >EC21 - EC35				mg/kg	8	MCERTS	-	190
TPH-CWG - Aliphatic (EC5 - EC35)				mg/kg	10	MCERTS	-	220
TPH-CWG - Aromatic >EC5 - EC7				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16				mg/kg	2	MCERTS	-	5.2
TPH-CWG - Aromatic >EC16 - EC21				mg/kg	10	MCERTS	-	65
TPH-CWG - Aromatic >EC21 - EC35				mg/kg	10	MCERTS	-	560
TPH-CWG - Aromatic (EC5 - EC35)				mg/kg	10	MCERTS	-	630

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388258	388259	388260	388261	388262
Sample Reference	TP964	TP965	TP965	TP966	TP966
Sample Number	C1	C1	C2	C1	C3
Depth (m)	0.50	0.30	0.70	0.80	1.10
Date Sampled	17/10/2014	17/10/2014	17/10/2014	17/10/2014	17/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	17	17
Total mass of sample received	kg	0.001	NONE	1.5	1.5

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	Not-detected	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	-	7.7	-	11.1	-
Total Cyanide	mg/kg	1	MCERTS	-	< 1	-	< 1	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	-
Acenaphthylene	mg/kg	0.1	MCERTS	-	0.46	-	< 0.10	-
Acenaphthene	mg/kg	0.1	MCERTS	-	0.59	-	< 0.10	-
Fluorene	mg/kg	0.1	MCERTS	-	0.56	-	< 0.10	-
Phenanthrene	mg/kg	0.1	MCERTS	-	11	-	1.2	-
Anthracene	mg/kg	0.1	MCERTS	-	3.1	-	0.30	-
Fluoranthene	mg/kg	0.1	MCERTS	-	28	-	1.8	-
Pyrene	mg/kg	0.1	MCERTS	-	25	-	1.6	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	13	-	0.73	-
Chrysene	mg/kg	0.05	MCERTS	-	13	-	0.72	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	20	-	1.1	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	6.3	-	0.35	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	14	-	0.71	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	6.1	-	0.33	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	1.1	-	< 0.10	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	6.5	-	0.39	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	149	-	9.21	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.1	14	7.0	11	6.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.6	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	-	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	33	20	20	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	16	62	12	28	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	25	190	15	40	12
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	26	14	14	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	53	200	38	68	40

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388258	388259	388260	388261	388262
Sample Reference				TP964	TP965	TP965	TP966	TP966
Sample Number				C1	C1	C2	C1	C3
Depth (m)				0.50	0.30	0.70	0.80	1.10
Date Sampled				17/10/2014	17/10/2014	17/10/2014	17/10/2014	17/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	11	-	12	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	51	-	47	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	61	-	59	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	5.3	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	150	-	15	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	210	-	35	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	370	-	50	-

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388263	388264			
Sample Reference	TP967	WS903			
Sample Number	C1	C1			
Depth (m)	1.20	0.30			
Date Sampled	17/10/2014	24/10/2014			
Time Taken	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	18	6.4
Total mass of sample received	kg	0.001	NONE	1.3	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile- Loose fibres Detected
Asbestos in Soil	Type	N/A	ISO 17025	-	

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	No Asbestos Detected
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	<0.001

General Inorganics

pH	pH Units	N/A	MCERTS	-	11.0
Total Cyanide	mg/kg	1	MCERTS	-	< 1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	0.81
Acenaphthylene	mg/kg	0.1	MCERTS	-	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	-	0.60
Fluorene	mg/kg	0.1	MCERTS	-	0.59
Phenanthrene	mg/kg	0.1	MCERTS	-	4.5
Anthracene	mg/kg	0.1	MCERTS	-	0.88
Fluoranthene	mg/kg	0.1	MCERTS	-	5.4
Pyrene	mg/kg	0.1	MCERTS	-	4.7
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	2.2
Chrysene	mg/kg	0.05	MCERTS	-	2.2
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	3.0
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	1.0
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	2.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	0.93
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	0.16
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	1.0

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	30.1

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.0	7.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	13	31
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15	47
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	39	72

Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388263	388264			
Sample Reference				TP967	WS903			
Sample Number				C1	C1			
Depth (m)				1.20	0.30			
Date Sampled				17/10/2014	24/10/2014			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	-	< 1.0
Toluene				µg/kg	1	MCERTS	-	< 1.0
Ethylbenzene				µg/kg	1	MCERTS	-	< 1.0
p & m-xylene				µg/kg	1	MCERTS	-	< 1.0
o-xylene				µg/kg	1	MCERTS	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	-	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12				mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16				mg/kg	2	MCERTS	-	5.4
TPH-CWG - Aliphatic >EC16 - EC21				mg/kg	8	MCERTS	-	13
TPH-CWG - Aliphatic >EC21 - EC35				mg/kg	8	MCERTS	-	60
TPH-CWG - Aliphatic (EC5 - EC35)				mg/kg	10	MCERTS	-	78
TPH-CWG - Aromatic >EC5 - EC7				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10				mg/kg	0.1	MCERTS	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12				mg/kg	1	MCERTS	-	2.0
TPH-CWG - Aromatic >EC12 - EC16				mg/kg	2	MCERTS	-	9.1
TPH-CWG - Aromatic >EC16 - EC21				mg/kg	10	MCERTS	-	44
TPH-CWG - Aromatic >EC21 - EC35				mg/kg	10	MCERTS	-	54
TPH-CWG - Aromatic (EC5 - EC35)				mg/kg	10	MCERTS	-	110



Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388375	388376	388377	388378	388379
Sample Reference	TP915	TP918	TP921	TP925	TP927
Sample Number	C1	C1	C1	C1	C1
Depth (m)	0.70	0.40	0.50	0.50	0.70
Date Sampled	16/10/2014	16/10/2014	16/10/2014	16/10/2014	16/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	5.1	< 1.1	< 1.1	3.1	< 1.1
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	0.10	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.5	6.6	3.6	2.9	6.5
Copper (dissolved)	µg/l	0.7	ISO 17025	7.9	4.8	3.4	10	9.9
Lead (dissolved)	µg/l	1	ISO 17025	11	3.5	2.8	8.6	8.6
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.2	1.3	0.4	4.3	2.8
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	9.7	2.2	1.6	6.1	10



Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number	388380	388381	388382	388383	388384
Sample Reference	TP928	TP930	TP932	TP934	TP936
Sample Number	C1	C1	C1	C1	C1
Depth (m)	0.90	1.20	0.40	0.50	1.30
Date Sampled	16/10/2014	16/10/2014	16/10/2014	16/10/2014	16/10/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	1.2	< 1.1	< 1.1	2.0	5.6
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	0.13
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.2	1.8	4.8	8.3	5.5
Copper (dissolved)	µg/l	0.7	ISO 17025	13	18	4.5	19	20
Lead (dissolved)	µg/l	1	ISO 17025	5.5	4.6	4.5	6.1	2.1
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.5	5.3	0.6	5.8	7.9
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	3.0	4.1	4.5	3.3	16



Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388385	388386	388387	388388	388389
Sample Reference				TP938	TP939	TP941	TP943	TP948
Sample Number				C1	C1	C1	C1	C1
Depth (m)				0.60	1.35	0.50	0.40	0.60
Date Sampled				16/10/2014	16/10/2014	16/10/2014	16/10/2014	16/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	9.7	< 1.1	< 1.1	< 1.1
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	3.7	1.8	5.1	3.2	7.2
Copper (dissolved)	µg/l	0.7	ISO 17025	6.9	28	3.8	7.1	12
Lead (dissolved)	µg/l	1	ISO 17025	8.4	34	2.6	3.3	4.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.4	9.2	0.9	2.0	2.3
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	4.8	6.4	0.8	0.5	0.9



Analytical Report Number: 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

Your Order No: 29986

Lab Sample Number				388390	388391	388392	388393	
Sample Reference				TP960	TP965	TP966	WS903	
Sample Number				C1	C1	C1	C1	
Depth (m)				0.40	0.30	0.80	0.30	
Date Sampled				16/10/2014	16/10/2014	16/10/2014	16/10/2014	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	5.3	2.7	< 1.1	< 1.1	
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	0.09	< 0.08	< 0.08	
Chromium (dissolved)	µg/l	0.4	ISO 17025	4.7	2.9	1.1	13	
Copper (dissolved)	µg/l	0.7	ISO 17025	10	9.5	10	11	
Lead (dissolved)	µg/l	1	ISO 17025	13	18	1.9	2.5	
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.1	3.3	2.8	1.8	
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	
Zinc (dissolved)	µg/l	0.4	ISO 17025	6.6	13	1.9	7.6	

Analytical Report Number : 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
388208	TP915	C1	0.70	Brown clay and topsoil with gravel and vegetation.
388209	TP916	C1	1.60	Light brown clay and sand.
388210	TP917	C1	0.70	Light brown clay and sand with gravel.
388211	TP918	C1	0.40	Light grey sandy gravel with rubble.
388212	TP918	C2	0.80	Light brown clay and sand with brick.
388213	TP919	C1	1.00	Light brown clay and sand.
388214	TP920	C1	1.00	Brown clay and topsoil with vegetation.
388215	TP921	C1	0.50	Light grey sandy gravel with rubble.
388216	TP921	C2	0.80	Grey clay and sand.
388217	TP922	C1	0.90	Light brown clay and sand.
388218	TP923	C1	0.60	Light grey sandy gravel with glass and rubble.
388219	TP923	C2	0.80	Light brown clay.
388220	TP924	C1	0.90	Grey clay.
388221	TP925	C1	0.50	Brown gravelly clay with rubble.
388222	TP925	C2	0.90	Light brown clay and sand.
388223	TP926	C1	0.80	Light brown clay and sand.
388224	TP927	C1	0.70	Light grey sandy gravel with rubble.
388225	TP927	C3	1.60	Light brown clay and sand.
388226	TP928	C1	0.90	Light grey gravelly sand with rubble.
388227	TP928	C2	1.10	Brown clay.
388228	TP929	C1	1.00	Brown clay.
388229	TP930	C1	1.20	Light grey sandy gravel with rubble and stones.
388230	TP930	C2	1.60	Light brown clay and sand.
388231	TP932	C1	0.40	Light grey sandy gravel with rubble.
388232	TP932	C2	0.80	Light brown clay and sand.
388233	TP933	C1	0.70	Light brown clay and sand.
388234	TP934	C1	0.50	Light grey sandy gravel with rubble.
388235	TP934	C2	0.70	Light brown clay and sand.
388236	TP935	C1	0.70	Light brown clay and sand.
388237	TP936	C1	1.30	Light grey gravelly clay with rubble.
388238	TP936	C2	1.60	Light brown clay and sand with gravel.
388239	TP937	C1	0.90	Light brown clay and sand.
388240	TP938	C1	0.60	Light grey sandy gravel with rubble.
388241	TP938	C2	0.80	Light brown clay and sand.
388242	TP939	C1	1.35	Brown clay and topsoil with gravel.
388243	TP939	C2	1.50	Light brown clay and sand.
388244	TP940	C1	1.00	Brown clay and topsoil.
388245	TP941	C1	0.50	Light grey sandy gravel with rubble.
388246	TP941	C2	0.90	Light brown clay and sand.
388247	TP942	C1	0.70	Light brown clay and sand.
388248	TP943	C1	0.40	Light grey sandy gravel with rubble.
388249	TP943	C2	0.65	Brown clay and topsoil.
388250	TP948	C1	0.60	Light grey sandy gravel with rubble.
388251	TP948	C2	1.10	Light brown clay and sand.
388252	TP949	C1	1.20	Light brown clay and sand.
388253	TP950	C1	1.00	Light brown clay and sand.
388254	TP960	C1	0.40	Light brown sandy topsoil with gravel and rubble.
388255	TP960	C2	1.30	Light brown clay and sand.
388256	TP961	C2	1.50	Light brown clay and sand.
388257	TP963	C1	0.60	Light brown clay and sand.
388258	TP964	C1	0.50	Light brown clay and sand.
388259	TP965	C1	0.30	Brown topsoil and clay with gravel and vegetation.
388260	TP965	C2	0.70	Light brown clay and sand.
388261	TP966	C1	0.80	Light grey sandy gravel with rubble.
388262	TP966	C3	1.10	Light brown clay and sand.
388263	TP967	C1	1.20	Light brown clay and sand.
388264	WS903	C1	0.30	Light grey rubble with brick.**

**Non MCERTS matrix

Analytical Report Number : 14-62467

Project / Site name: Rifle Range, St Andrews Park, Uxbridge

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos quantification/ID Subcontracted analysis	Subcontracted analysis	Subcontracted analysis		D	ISO 17025
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

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

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

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

CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: Marian Jones
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford
WD18 8YS

CONTRACT NO: 41804

PROJECT NO: 610

DATE OF ISSUE: 10.12.14

DATE SAMPLES RECEIVED: 03.12.14

DATE SAMPLES ANALYSED: 10.12.14

SAMPLE DESCRIPTION: Three soil/loose aggregate samples each weighing approximately 50g.

ANALYSIS REQUESTED: Qualitative and quantitative analysis of soil/loose aggregate samples for mass determination of asbestos.

METHODS:

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

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies *et al*, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

RESULTS:

Initial Screening

No asbestos was detected in any of the three soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.





CONTRACT NO: 41804
PROJECT NO: 610
DATE OF ISSUE: 10.12.14

RESULTS: (cont.)

Table 1: Qualitative Results

Job Ref: 14-62467

IOM Sample Number	Client Sample Number	ACM Type Detected	PLM Result
S32960	388237	-	No Asbestos Detected
S32961	388248	-	No Asbestos Detected
S32962	388264	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

COMMENTS

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are out with the scope of our UKAS accreditation.

AUTHORISED BY:

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Mineralogy Section Manager

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Analytical Report Number : 14-62782

Replaces Analytical Report Number : 14-62782, issue no. 1

Project / Site name:	RME Range St Andrew Park, Uxbridge	Samples received on:	24/10/2014
Your job number:	21311	Samples instructed on:	10/11/2014
Your order number:	20004	Analysis completed by:	07/01/2015
Report Issue Number:	2	Report issued on:	07/01/2015
Samples Analysed:	27 leachate samples - 51 soil samples		

Signed:

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

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390238	390239	390240	390241	390242
Sample Reference				TP802	TP802	TP804	TP815	TP815
Sample Number				1	2	1	1	2
Depth (m)				0.55	1.00	0.50	0.50	0.70
Date Sampled				23/10/2014	23/10/2014	23/10/2014	22/10/2014	22/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	11	11	5.9	14	17
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile- Loose fibres	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Detected	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	7.9	7.8	7.9	7.9	-
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.35	0.076	0.68	0.061	-
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	350	76	680	61	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.18	0.038	0.34	0.031	-
Organic Matter	%	0.1	MCERTS	0.8	-	< 0.1	0.1	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	0.15	0.10	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	-	-	0.20	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	-	-	1.1	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	-	-	1.5	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	-	-	12	0.89	0.25
Anthracene	mg/kg	0.1	MCERTS	-	-	3.2	0.30	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	-	-	16	3.5	0.63
Pyrene	mg/kg	0.1	MCERTS	-	-	11	3.2	0.60
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	-	5.4	2.1	0.30
Chrysene	mg/kg	0.05	MCERTS	-	-	5.3	1.6	0.35
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	-	7.2	3.0	0.45
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	-	2.6	1.4	0.21
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	-	4.2	2.2	0.28
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	-	2.4	1.2	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	-	0.64	0.21	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	2.5	1.3	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	-	75.0	21.0	3.07

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	11	11	15	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.3	-
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32	38	19	32	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	24	21	23	35	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	31	16	88	92	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	19	17	28	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	44	45	62	120	-



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390238	390239	390240	390241	390242
Sample Reference				TP802	TP802	TP804	TP815	TP815
Sample Number				1	2	1	1	2
Depth (m)				0.55	1.00	0.50	0.50	0.70
Date Sampled				23/10/2014	23/10/2014	23/10/2014	22/10/2014	22/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

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

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	11	< 8.0	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	11	< 10	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	6.4	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	58	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	110	13	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	180	13	-



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390243	390244	390245	390246	390247
Sample Reference				TP816	TP816	TP817	TP817	TP818A
Sample Number				1	2	1	2	1
Depth (m)				0.50	0.70	0.30	0.50	0.30
Date Sampled				22/10/2014	22/10/2014	21/10/2014	21/10/2014	21/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	13	15	11	10	6.9
Total mass of sample received	kg	0.001	NONE	1.1	1.2	1.1	1.1	1.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Crocidolite- Loose fibres	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	-	-	-	Not-detected

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	-	-	-
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.13	0.18	0.41
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.18	0.15	0.96
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.18	0.15	1.1
Phenanthrene	mg/kg	0.1	MCERTS	1.1	0.28	2.5	1.7	14
Anthracene	mg/kg	0.1	MCERTS	0.31	< 0.10	0.77	0.80	4.7
Fluoranthene	mg/kg	0.1	MCERTS	2.7	0.90	5.0	4.1	44
Pyrene	mg/kg	0.1	MCERTS	2.6	0.91	4.7	3.9	38
Benzo(a)anthracene	mg/kg	0.1	MCERTS	1.5	0.50	2.5	2.3	25
Chrysene	mg/kg	0.05	MCERTS	1.2	0.54	2.4	2.0	24
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	2.1	0.76	3.4	3.7	28
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.77	0.38	1.8	1.2	10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	1.5	0.61	2.4	2.4	24
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.76	0.34	1.3	1.3	11
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.12	< 0.10	0.24	0.28	1.5
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.73	0.30	1.6	1.5	13

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	15.4	5.52	29.0	25.7	239

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	-	15	14	12
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	1.1	0.9	0.3
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	-	32	35	22
Copper (aqua regia extractable)	mg/kg	1	MCERTS	37	-	54	53	45
Lead (aqua regia extractable)	mg/kg	1	MCERTS	85	-	130	160	170
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	-	25	25	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	-	160	150	110



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390243	390244	390245	390246	390247
Sample Reference				TP816	TP816	TP817	TP817	TP818A
Sample Number				1	2	1	2	1
Depth (m)				0.50	0.70	0.30	0.50	0.30
Date Sampled				22/10/2014	22/10/2014	21/10/2014	21/10/2014	21/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	21
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	21
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	12
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	210
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	520
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	740



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390248	390249	390250	390251	390252
Sample Reference				TP818A	TP827	TP830	TP831	TP832
Sample Number				2	1	1	1	1
Depth (m)				0.50	0.30	0.50	0.85	0.50
Date Sampled				21/10/2014	21/10/2014	23/10/2014	21/10/2014	21/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	16	15	22	5.7
Total mass of sample received	kg	0.001	NONE	1.1	1.3	1.0	1.4	1.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile- Loose fibres	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Detected	Not-detected	Not-detected	Not-detected

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	-	7.8	7.9	7.9	7.8
Total Cyanide	mg/kg	1	MCERTS	-	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	0.45	0.20	3.2	0.84
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-	450	200	3200	840
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.22	0.10	1.6	0.42
Organic Matter	%	0.1	MCERTS	-	< 0.1	1.6	2.5	0.8

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	0.16	-	-	-
Acenaphthene	mg/kg	0.1	MCERTS	0.11	0.12	-	-	-
Fluorene	mg/kg	0.1	MCERTS	0.11	0.20	-	-	-
Phenanthrene	mg/kg	0.1	MCERTS	1.7	6.4	-	-	-
Anthracene	mg/kg	0.1	MCERTS	0.45	0.61	-	-	-
Fluoranthene	mg/kg	0.1	MCERTS	4.2	7.3	-	-	-
Pyrene	mg/kg	0.1	MCERTS	3.9	5.9	-	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	2.0	2.3	-	-	-
Chrysene	mg/kg	0.05	MCERTS	2.0	2.3	-	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.3	3.3	-	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.3	1.1	-	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	2.2	2.0	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	1.4	1.0	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.25	0.22	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.4	1.2	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	24.1	34.1	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	15	13	15	9.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.4	0.4	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	30	28	27	27	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	39	41	52	63	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	70	140	270	210	39
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.8	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	26	18	22	22	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	92	170	160	200	36



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390248	390249	390250	390251	390252
Sample Reference				TP818A	TP827	TP830	TP831	TP832
Sample Number				2	1	1	1	1
Depth (m)				0.50	0.30	0.50	0.85	0.50
Date Sampled				21/10/2014	21/10/2014	23/10/2014	21/10/2014	21/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	< 8.0	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	< 8.0	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	-	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	30	< 10	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	51	11	-	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	81	11	-	< 10



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390253	390254	390255	390256	390257
Sample Reference				TP833	TP835	TP835	TP836	TP837
Sample Number				1	1	2	1	1
Depth (m)				0.20	0.70	1.00	0.10	1.10
Date Sampled				21/10/2014	23/10/2014	23/10/2014	21/10/2014	21/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	13	12	11	13	12
Total mass of sample received	kg	0.001	NONE	1.2	1.0	1.2	1.3	1.3

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile- Loose fibres, Amosite- Insulation lagging	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	-	Not-detected	Not-detected

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	7.8	9.1	8.8	-	8.4
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	-	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.10	1.5	0.056	-	0.95
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	100	1500	56	-	950
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.050	0.74	0.028	-	0.48
Organic Matter	%	0.1	MCERTS	3.4	2.5	0.6	< 0.1	1.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.25	< 0.05	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	0.89	0.69	-	0.26	0.17
Acenaphthene	mg/kg	0.1	MCERTS	1.0	2.8	-	0.75	0.19
Fluorene	mg/kg	0.1	MCERTS	1.5	3.0	-	0.86	0.24
Phenanthrene	mg/kg	0.1	MCERTS	17	32	-	11	2.8
Anthracene	mg/kg	0.1	MCERTS	4.4	9.3	-	3.3	0.95
Fluoranthene	mg/kg	0.1	MCERTS	24	46	-	13	5.8
Pyrene	mg/kg	0.1	MCERTS	23	35	-	11	5.4
Benzo(a)anthracene	mg/kg	0.1	MCERTS	12	20	-	5.5	2.9
Chrysene	mg/kg	0.05	MCERTS	11	19	-	4.6	2.5
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	17	18	-	7.5	4.5
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	6.5	8.5	-	2.5	1.3
Benzo(a)pyrene	mg/kg	0.1	MCERTS	11	16	-	4.8	2.7
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	6.4	7.2	-	2.9	1.5
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	1.4	0.82	-	0.64	0.31
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	6.1	8.3	-	2.7	1.6

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	143	227	-	72.3	33.0

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	12	14	12	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.8	1.8	0.2	0.3	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	33	30	23	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	77	45	20	94	36
Lead (aqua regia extractable)	mg/kg	1	MCERTS	250	110	29	100	65
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	18	28	19	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	270	130	56	130	110



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390253	390254	390255	390256	390257
Sample Reference				TP833	TP835	TP835	TP836	TP837
Sample Number				1	1	2	1	1
Depth (m)				0.20	0.70	1.00	0.10	1.10
Date Sampled				21/10/2014	23/10/2014	23/10/2014	21/10/2014	21/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	-	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	-	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	-	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	-	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	6.4	17	-	2.9	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	100	130	-	50	26
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	200	210	-	83	59
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	310	360	-	140	85



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390258	390259	390260	390261	390262
Sample Reference				TP837	TP838	TP838	TP839	TP840
Sample Number				3	1	2	1	1
Depth (m)				2.90	0.50	2.40	0.50	0.50
Date Sampled				21/10/2014	20/10/2014	20/10/2014	20/10/2014	20/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	74
Moisture Content	%	N/A	NONE	19	13	20	19	11
Total mass of sample received	kg	0.001	NONE	1.1	1.5	1.5	1.2	1.5

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Chrysotile- Loose fibres
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	Not-detected	Detected

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	9.0	7.9	7.6	7.7	9.2
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.68	0.51	0.71	0.25	3.7
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	680	510	710	250	3700
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.34	0.26	0.35	0.13	1.8
Organic Matter	%	0.1	MCERTS	0.1	1.1	0.8	2.2	0.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	0.16	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	-	-	-	0.26	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	-	-	-	0.19	< 0.10
Fluorene	mg/kg	0.1	MCERTS	-	-	-	0.23	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	-	-	-	3.9	0.41
Anthracene	mg/kg	0.1	MCERTS	-	-	-	0.96	0.13
Fluoranthene	mg/kg	0.1	MCERTS	-	-	-	7.5	0.98
Pyrene	mg/kg	0.1	MCERTS	-	-	-	7.1	0.96
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	-	-	3.9	0.52
Chrysene	mg/kg	0.05	MCERTS	-	-	-	4.1	0.45
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	-	-	5.2	0.79
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	-	-	2.9	0.25
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	-	-	3.9	0.45
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	-	-	2.4	0.19
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	-	-	0.53	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	2.2	0.27

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	-	-	45.5	5.40

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	11	11	13	7.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	44	22	41	30	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	33	22	20	41	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15	56	14	120	50
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	43	18	27	21	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	72	83	62	190	60



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390258	390259	390260	390261	390262
Sample Reference				TP837	TP838	TP838	TP839	TP840
Sample Number				3	1	2	1	1
Depth (m)				2.90	0.50	2.40	0.50	0.50
Date Sampled				21/10/2014	20/10/2014	20/10/2014	20/10/2014	20/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	18	< 10	30	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	48	< 10	35	14
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	66	< 10	65	14



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390263	390264	390265	390266	390267
Sample Reference				TP840	TP841	TP841	TP842	TP842
Sample Number				2	1	2	1	2
Depth (m)				1.55	0.30	1.10	0.70	1.70
Date Sampled				20/10/2014	20/10/2014	20/10/2014	20/10/2014	20/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	11	7.9	17	16
Total mass of sample received	kg	0.001	NONE	1.1	1.3	1.1	1.5	1.3

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	Not-detected	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	8.7	9.0	-	8.4	9.1
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	-	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.27	0.73	-	1.2	0.085
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	270	730	-	1200	85
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.13	0.37	-	0.60	0.043
Organic Matter	%	0.1	MCERTS	0.1	0.9	< 0.1	1.1	0.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	0.30	< 0.05	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	-	0.15	< 0.10	-	-
Acenaphthene	mg/kg	0.1	MCERTS	-	0.22	< 0.10	-	-
Fluorene	mg/kg	0.1	MCERTS	-	0.22	< 0.10	-	-
Phenanthrene	mg/kg	0.1	MCERTS	-	2.7	< 0.10	-	-
Anthracene	mg/kg	0.1	MCERTS	-	0.84	< 0.10	-	-
Fluoranthene	mg/kg	0.1	MCERTS	-	5.8	< 0.10	-	-
Pyrene	mg/kg	0.1	MCERTS	-	5.5	< 0.10	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	3.5	< 0.10	-	-
Chrysene	mg/kg	0.05	MCERTS	-	2.9	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	5.9	< 0.10	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	1.6	< 0.10	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	3.4	< 0.10	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	1.9	< 0.10	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	0.35	< 0.10	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	1.9	< 0.05	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	37.2	< 1.60	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	11	11	13	17
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	46	23	35	27	50
Copper (aqua regia extractable)	mg/kg	1	MCERTS	34	29	23	32	38
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21	65	14	81	18
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	43	19	24	21	53
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	79	72	54	88	95



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390263	390264	390265	390266	390267
Sample Reference				TP840	TP841	TP841	TP842	TP842
Sample Number				2	1	2	1	2
Depth (m)				1.55	0.30	1.10	0.70	1.70
Date Sampled				20/10/2014	20/10/2014	20/10/2014	20/10/2014	20/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390268	390269	390270	390271	390272
Sample Reference				TP843	TP844	TP845	TP849	TP850
Sample Number				1	1	1	1	1
Depth (m)				0.50	0.60	0.90	0.65	0.80
Date Sampled				22/10/2014	22/10/2014	22/10/2014	22/10/2014	23/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	41
Moisture Content	%	N/A	NONE	8.2	10	20	17	5.1
Total mass of sample received	kg	0.001	NONE	1.3	1.2	1.3	1.3	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	Not-detected	Not-detected	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	7.3	7.5	7.6	7.5	9.9
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.055	0.093	0.42	1.4	0.49
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	55	93	420	1400	490
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.027	0.047	0.21	0.72	0.25
Organic Matter	%	0.1	MCERTS	1.0	2.2	0.1	1.7	0.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	0.25	-
Acenaphthylene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	0.24	-
Acenaphthene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	0.63	-
Fluorene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	0.81	-
Phenanthrene	mg/kg	0.1	MCERTS	-	0.27	0.12	6.4	-
Anthracene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	2.2	-
Fluoranthene	mg/kg	0.1	MCERTS	-	0.69	0.49	12	-
Pyrene	mg/kg	0.1	MCERTS	-	0.66	0.51	11	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	0.38	0.29	5.5	-
Chrysene	mg/kg	0.05	MCERTS	-	0.36	0.29	5.5	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	0.54	0.38	7.5	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	0.25	0.21	3.7	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	0.41	0.28	5.0	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	2.9	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	0.58	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	2.9	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	3.56	2.57	67.1	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	12	13	17	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	30	43	31	17
Copper (aqua regia extractable)	mg/kg	1	MCERTS	23	35	36	61	27
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15	94	38	78	130
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	34	25	32	31	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	54	140	71	91	83



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390268	390269	390270	390271	390272
Sample Reference				TP843	TP844	TP845	TP849	TP850
Sample Number				1	1	1	1	1
Depth (m)				0.50	0.60	0.90	0.65	0.80
Date Sampled				22/10/2014	22/10/2014	22/10/2014	22/10/2014	23/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	< 8.0	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	< 8.0	< 8.0	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	< 10	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	6.7	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	< 10	53	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	< 10	110	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	170	-



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390273	390274	390275	390276	390277
Sample Reference				WS802	WS804	WS804	WS805	WS805
Sample Number				2	1	2	1	2
Depth (m)				0.60	0.10	1.20	0.20	0.90
Date Sampled				23/10/2014	23/10/2014	23/10/2014	24/10/2014	24/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	14	10	13	9.5	16
Total mass of sample received	kg	0.001	NONE	1.1	1.6	1.7	1.2	1.0

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Amosite- Loose fibres	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	Detected	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	7.8	7.7	7.6	7.8	7.9
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.10	0.13	0.32	0.077	0.099
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	100	130	320	77	99
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.051	0.065	0.16	0.039	0.049
Organic Matter	%	0.1	MCERTS	1.5	3.0	0.1	1.8	< 0.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.25	0.18	< 0.05	0.13	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	0.37	< 0.10	0.32	0.65
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.25	0.14	< 0.10	0.77
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.24	< 0.10	0.17	1.3
Phenanthrene	mg/kg	0.1	MCERTS	1.2	5.7	0.59	1.9	22
Anthracene	mg/kg	0.1	MCERTS	< 0.10	1.3	0.24	0.38	8.3
Fluoranthene	mg/kg	0.1	MCERTS	1.1	14	1.9	3.5	43
Pyrene	mg/kg	0.1	MCERTS	0.93	13	1.6	3.7	34
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.42	8.0	0.82	2.2	20
Chrysene	mg/kg	0.05	MCERTS	0.51	6.5	0.88	2.5	19
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.53	13	1.1	4.9	16
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.37	4.1	0.62	2.4	8.6
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.42	9.1	0.76	4.1	14
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.22	5.3	0.48	2.3	6.7
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	1.1	< 0.10	0.49	0.95
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.20	5.5	0.48	2.7	7.9

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	6.12	88.0	9.51	31.5	203

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	10	31	13	12	16
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	2.3	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	26	25	55	28	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	32	160	32	35	54
Lead (aqua regia extractable)	mg/kg	1	MCERTS	75	330	25	91	160
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	34	31	23	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	81	3500	77	76	100



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390273	390274	390275	390276	390277
Sample Reference				WS802	WS804	WS804	WS805	WS805
Sample Number				2	1	2	1	2
Depth (m)				0.60	0.10	1.20	0.20	0.90
Date Sampled				23/10/2014	23/10/2014	23/10/2014	24/10/2014	24/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	11
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	46	< 10	17	130
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	130	18	110	180
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	170	18	130	320



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390278	390279	390280	390281	390282
Sample Reference				WS807	WS810	WS811	WS812	WS814
Sample Number				1	1	1	1	1
Depth (m)				0.40	0.50	0.30	0.20	0.20
Date Sampled				24/10/2014	23/10/2014	23/10/2014	23/10/2014	24/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	4.1	7.2	3.2	14	7.4
Total mass of sample received	kg	0.001	NONE	1.3	1.0	1.1	1.1	1.0

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Amosite - Loose fibres
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	-	Detected

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	No Asbestos Detected
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	<0.001

General Inorganics

pH	pH Units	N/A	MCERTS	7.5	7.5	8.5	8.1	7.5
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.11	0.38	0.022	0.95	0.49
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	110	380	22	950	490
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.054	0.19	0.011	0.47	0.25
Organic Matter	%	0.1	MCERTS	< 0.1	2.5	0.1	1.0	2.7

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	0.29
Acenaphthylene	mg/kg	0.1	MCERTS	-	-	-	-	0.47
Acenaphthene	mg/kg	0.1	MCERTS	-	-	-	-	0.81
Fluorene	mg/kg	0.1	MCERTS	-	-	-	-	1.0
Phenanthrene	mg/kg	0.1	MCERTS	-	-	-	-	7.8
Anthracene	mg/kg	0.1	MCERTS	-	-	-	-	2.9
Fluoranthene	mg/kg	0.1	MCERTS	-	-	-	-	16
Pyrene	mg/kg	0.1	MCERTS	-	-	-	-	15
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	-	-	-	8.1
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	7.8
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	-	-	-	13
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	-	-	-	5.0
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	-	-	-	8.0
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	-	-	-	4.4
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	-	-	-	1.1
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	4.6

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	-	-	-	96.4

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	10	19	8.1	15	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	19	17	36	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	110	11	38	37
Lead (aqua regia extractable)	mg/kg	1	MCERTS	39	240	12	81	57
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	35	15	30	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	54	140	29	96	58



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390278	390279	390280	390281	390282
Sample Reference				WS807	WS810	WS811	WS812	WS814
Sample Number				1	1	1	1	1
Depth (m)				0.40	0.50	0.30	0.20	0.20
Date Sampled				24/10/2014	23/10/2014	23/10/2014	23/10/2014	24/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	< 8.0	< 8.0	32
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	< 10	< 10	32

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	< 2.0	< 2.0	3.4
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	< 10	19	63
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	< 10	61	240
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	< 10	80	310



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390283	390284	390285	390286	390287
Sample Reference				CP801	CP803	CP803	CP805	CP805
Sample Number				1	1	2	1	2
Depth (m)				0.20	0.20	1.00	0.30	1.00
Date Sampled				24/10/2014	23/10/2014	23/10/2014	21/10/2014	21/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	7.9	8.8	14	14	13
Total mass of sample received	kg	0.001	NONE	1.0	1.0	1.0	1.1	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile - Loose fibres	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Detected	-

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	7.9	7.8	7.9	7.9	7.8
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.40	0.050	0.48	0.72	0.52
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	400	50	480	720	520
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.20	0.025	0.24	0.36	0.26
Organic Matter	%	0.1	MCERTS	2.4	1.3	0.1	1.7	< 0.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.1	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.1	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.1	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.1	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.1	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.1	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	-	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.5	18	12	16	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.3	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	26	50	28	50
Copper (aqua regia extractable)	mg/kg	1	MCERTS	67	73	36	61	35
Lead (aqua regia extractable)	mg/kg	1	MCERTS	41	250	18	200	43
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	32	24	48	25	44
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	57	100	83	110	75



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390283	390284	390285	390286	390287
Sample Reference				CP801	CP803	CP803	CP805	CP805
Sample Number				1	1	2	1	2
Depth (m)				0.20	0.20	1.00	0.30	1.00
Date Sampled				24/10/2014	23/10/2014	23/10/2014	21/10/2014	21/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number	390288				
Sample Reference	CP806				
Sample Number	1				
Depth (m)	1.00				
Date Sampled	20/10/2014				
Time Taken	None Supplied				

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	13				
Total mass of sample received	kg	0.001	NONE	1.4				

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-				
Asbestos in Soil	Type	N/A	ISO 17025	-				

Asbestos Identification Name (Subcontracted)	Type	N/A	ISO 17025	-				
Asbestos Quantification (Subcontracted)	%	0.001	ISO 17025	-				

General Inorganics

pH	pH Units	N/A	MCERTS	-				
Total Cyanide	mg/kg	1	MCERTS	-				
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-				
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-				
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-				
Organic Matter	%	0.1	MCERTS	0.1				

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-				

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-				
Acenaphthylene	mg/kg	0.1	MCERTS	-				
Acenaphthene	mg/kg	0.1	MCERTS	-				
Fluorene	mg/kg	0.1	MCERTS	-				
Phenanthrene	mg/kg	0.1	MCERTS	-				
Anthracene	mg/kg	0.1	MCERTS	-				
Fluoranthene	mg/kg	0.1	MCERTS	-				
Pyrene	mg/kg	0.1	MCERTS	-				
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-				
Chrysene	mg/kg	0.05	MCERTS	-				
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-				
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-				
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-				
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-				
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-				
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-				

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-				

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13				
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2				
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0				
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32				
Copper (aqua regia extractable)	mg/kg	1	MCERTS	32				
Lead (aqua regia extractable)	mg/kg	1	MCERTS	47				
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3				
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	31				
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0				
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	79				



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Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390288				
Sample Reference				CP806				
Sample Number				1				
Depth (m)				1.00				
Date Sampled				20/10/2014				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-				
Toluene	µg/kg	1	MCERTS	-				
Ethylbenzene	µg/kg	1	MCERTS	-				
p & m-xylene	µg/kg	1	MCERTS	-				
o-xylene	µg/kg	1	MCERTS	-				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-				

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-				
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-				
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-				
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-				
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-				
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-				
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-				
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-				
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-				
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-				
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-				
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-				
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-				
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-				
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-				



Analytical Report Number: 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390289	390290	390291	390292	390293
Sample Reference				TP802	TP804	TP817	TP818A	TP830
Sample Number				1	1	1	1	1
Depth (m)				0.55	0.50	0.30	0.30	0.50
Date Sampled				23/10/2014	23/10/2014	21/10/2014	21/10/2014	23/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	6.0	1.8	3.2	2.4	5.9
Boron (dissolved)	µg/l	10	ISO 17025	58	< 10	100	27	130
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	12	31	2.2	1.4	0.5
Copper (dissolved)	µg/l	0.7	ISO 17025	16	31	11	7.9	6.8
Lead (dissolved)	µg/l	1	ISO 17025	9.2	2.0	< 1.0	3.8	3.2
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	7.7	18	2.2	1.9	3.7
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	15	< 0.4	5.1	2.7	1.8



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Project / Site name: RME Range St Andrew Park, Uxbridge

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Lab Sample Number				390294	390295	390296	390297	390298
Sample Reference				TP831	TP833	TP835	TP837	TP838
Sample Number				1	1	1	1	1
Depth (m)				0.85	0.20	0.70	1.10	0.50
Date Sampled				21/10/2014	21/10/2014	23/10/2014	21/10/2014	20/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	1.5	3.3	11	11	7.3
Boron (dissolved)	µg/l	10	ISO 17025	110	58	89	40	13
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.5	4.3	4.8	13	9.9
Copper (dissolved)	µg/l	0.7	ISO 17025	9.7	21	27	18	25
Lead (dissolved)	µg/l	1	ISO 17025	8.5	14	9.6	< 1.0	3.1
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.5	4.0	6.1	3.1	7.7
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	18	28	17	1.4	< 0.4



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Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390299	390300	390301	390302	390303
Sample Reference				TP839	TP841	TP844	TP845	TP849
Sample Number				1	1	1	1	1
Depth (m)				0.50	0.30	0.60	0.90	0.65
Date Sampled				20/10/2014	20/10/2014	22/10/2014	22/10/2014	22/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	4.9	10	< 1.1	1.3	3.9
Boron (dissolved)	µg/l	10	ISO 17025	18	92	76	51	180
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	0.10	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	3.5	13	3.1	7.7	< 0.4
Copper (dissolved)	µg/l	0.7	ISO 17025	11	16	7.7	11	2.1
Lead (dissolved)	µg/l	1	ISO 17025	6.6	4.2	5.5	3.7	2.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.3	2.8	3.5	2.5	4.4
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	14	2.7	13	4.6	2.1



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Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390304	390305	390306	390307	390308
Sample Reference				TP850	WS802	WS804	WS805	WS807
Sample Number				1	2	1	1	1
Depth (m)				0.80	0.60	0.10	0.20	0.40
Date Sampled				22/10/2014	23/10/2014	23/10/2014	24/10/2014	24/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	2.2	2.1	5.5	3.8
Boron (dissolved)	µg/l	10	ISO 17025	14	91	51	30	10
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	34	6.9	1.7	5.2	5.4
Copper (dissolved)	µg/l	0.7	ISO 17025	8.1	7.5	6.4	9.4	7.4
Lead (dissolved)	µg/l	1	ISO 17025	< 1.0	10	5.9	15	8.1
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.2	3.5	1.5	4.5	3.9
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	< 0.4	11	13	16	19



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Project / Site name: RME Range St Andrew Park, Uxbridge

Your Order No: 20004

Lab Sample Number				390309	390310	390311	390312	390313
Sample Reference				WS810	WS811	WS812	CP801	CP803
Sample Number				1	1	1	1	1
Depth (m)				0.50	0.30	0.20	0.20	0.20
Date Sampled				23/10/2014	23/10/2014	23/10/2014	24/10/2014	23/10/2014
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	4.4	1.5	2.0	2.3	< 1.1
Boron (dissolved)	µg/l	10	ISO 17025	32	41	65	41	21
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.1	38	1.7	1.9	2.9
Copper (dissolved)	µg/l	0.7	ISO 17025	4.1	3.6	18	5.3	9.1
Lead (dissolved)	µg/l	1	ISO 17025	6.3	2.0	1.2	1.1	14
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.5	1.9	1.6	1.6	2.7
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	4.5	< 0.4	2.2	2.2	11



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Project / Site name: RME Range St Andrew Park, Uxbridge

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Lab Sample Number				390314	390315			
Sample Reference				CP805	CP806			
Sample Number				1	1			
Depth (m)				0.30	1.00			
Date Sampled				21/10/2014	20/10/2014			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	2.3	2.4			
Boron (dissolved)	µg/l	10	ISO 17025	93	62			
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08			
Chromium (hexavalent)	µg/l	5	NONE	< 5.0	< 5.0			
Chromium (dissolved)	µg/l	0.4	ISO 17025	12	3.5			
Copper (dissolved)	µg/l	0.7	ISO 17025	4.8	3.3			
Lead (dissolved)	µg/l	1	ISO 17025	2.8	2.1			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5			
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.6	2.5			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0			
Zinc (dissolved)	µg/l	0.4	ISO 17025	1.6	7.4			



Analytical Report Number : 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
390238	TP802	1	0.55	Light brown clay and sand.
390239	TP802	2	1.00	Light brown clay and sand.
390240	TP804	1	0.50	Beige sandy topsoil with gravel.
390241	TP815	1	0.50	Brown clay and topsoil with gravel and vegetation.
390242	TP815	2	0.70	Brown clay and topsoil with gravel and vegetation.
390243	TP816	1	0.50	Brown clay and topsoil with gravel and vegetation.
390244	TP816	2	0.70	Brown clay and topsoil with gravel and vegetation.
390245	TP817	1	0.30	Brown clay and topsoil with gravel and vegetation.
390246	TP817	2	0.50	Brown clay and topsoil with gravel and vegetation.
390247	TP818A	1	0.30	Brown clay and topsoil with gravel and vegetation.
390248	TP818A	2	0.50	Brown clay and topsoil with gravel and vegetation.
390249	TP827	1	0.30	Brown clay and topsoil with gravel and vegetation.
390250	TP830	1	0.50	Brown clay and topsoil with gravel and vegetation.
390251	TP831	1	0.85	Brown clay and topsoil with gravel and vegetation.
390252	TP832	1	0.50	Brown clay and topsoil with gravel and vegetation.
390253	TP833	1	0.20	Brown clay and topsoil with gravel and vegetation.
390254	TP835	1	0.70	Brown clay and topsoil with gravel and vegetation.
390255	TP835	2	1.00	Brown clay and topsoil with gravel and vegetation.
390256	TP836	1	0.10	Brown clay and topsoil with gravel and vegetation.
390257	TP837	1	1.10	Brown clay and topsoil with gravel and vegetation.
390258	TP837	3	2.90	Light brown clay.
390259	TP838	1	0.50	Light brown clay and sand.
390260	TP838	2	2.40	Light brown clay with vegetation.
390261	TP839	1	0.50	Brown topsoil and sand with gravel.
390262	TP840	1	0.50	Brown topsoil and sand with gravel and stones.
390263	TP840	2	1.55	Light brown clay.
390264	TP841	1	0.30	Light brown clay and sand.
390265	TP841	2	1.10	Light brown clay and sand.
390266	TP842	1	0.70	Light brown clay and sand.
390267	TP842	2	1.70	Light brown clay and sand.
390268	TP843	1	0.50	Light brown clay and sand.
390269	TP844	1	0.60	Light brown topsoil and sand with gravel and vegetation.
390270	TP845	1	0.90	Light brown clay.
390271	TP849	1	0.65	Light brown clay and topsoil with vegetation.
390272	TP850	1	0.80	Light brown sandy topsoil with gravel and stones.
390273	WS802	2	0.60	Light brown topsoil and sand with gravel.
390274	WS804	1	0.10	Light brown topsoil and sand with gravel.
390275	WS804	2	1.20	Light brown clay.
390276	WS805	1	0.20	Light brown clay and sand with vegetation.
390277	WS805	2	0.90	Light brown clay and sand with vegetation.
390278	WS807	1	0.40	Brown clay with gravel and vegetation.
390279	WS810	1	0.50	Brown topsoil and sand with gravel and vegetation.
390280	WS811	1	0.30	Beige clay and sand.
390281	WS812	1	0.20	Light brown clay and sand with gravel.
390282	WS814	1	0.20	Light brown clay and sand with gravel.
390283	CP801	1	0.20	Brown topsoil and sand with gravel.
390284	CP803	1	0.20	Brown topsoil and sand with gravel and vegetation.
390285	CP803	2	1.00	Brown clay.
390286	CP805	1	0.30	Brown topsoil and sand with gravel and vegetation.
390287	CP805	2	1.00	Brown clay and sand.
390288	CP806	1	1.00	Brown topsoil and sand with gravel and vegetation.

Analytical Report Number : 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos quantification/ID Subcontracted analysis	Subcontracted analysis	Subcontracted analysis		D	ISO 17025
Boron in leachate	Determination of boron by acidification followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES. Results reported corrected for extraction ratio (soil equivalent) as g/l and mg/kg; and upon the 2:1 leachate (g/l).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

Iss No 14-62782-2



Analytical Report Number : 14-62782

Project / Site name: RME Range St Andrew Park, Uxbridge

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

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

Asbestos Methodology

Samples analysed by the in-house method were screened using approximately 100 g of soil sample. Quantification is performed on the whole sample.

Please note that on occasions where asbestos is found in the in-house method, the fibres are removed and isolated on the microscope slide; and therefore are not sent for quantification. In these instances there may be occasions where the quantification will be reported as negative (i.e the asbestos present has been isolated on the slide). This may also occur where more than one asbestos fibre type is identified in-house; and the quantification does not find all types previously identified (in-house method). It is also possible that the in house method does not find any asbestos in the 100 g representative sub sample, whereas the quantification method (using the whole sample) has found fibres not previously identified.

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

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

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

CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: Marian Jones
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford
WD18 8YS

CONTRACT NO: 42084

PROJECT NO: 610

DATE OF ISSUE: 07.01.15

DATE SAMPLES RECEIVED: 24.12.14

DATE SAMPLES ANALYSED: 06.01.15

SAMPLE DESCRIPTION: One soil/loose aggregate sample weighing approximately 0.3kg

ANALYSIS REQUESTED: Qualitative and quantitative analysis of a soil/loose aggregate sample for mass determination of asbestos.

METHODS:

Qualitative - The sample was analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies *et al*, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

RESULTS:

Initial Screening

No asbestos was detected in the soil sample by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.



CONTRACT NO: 42084
PROJECT NO: 610
DATE OF ISSUE: 07.01.15

RESULTS: (cont.)

Table 1: Qualitative Results

Job Ref: 14-62782

IOM Sample Number	Client Sample Number	ACM Type Detected	PLM Result
S33246	390282	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

COMMENTS

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are out with the scope of our UKAS accreditation.

AUTHORISED BY:

J Reid

Senior Scientific Technician

**Paul Bailey**

Ian Farmer Associates
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Analytical Report Number : 14-63465

Replaces Analytical Report Number : 14-63465, issue no. 1

Project / Site name:	St Andrews Park	Samples received on:	21/11/2014
Your job number:	21311	Samples instructed on:	24/11/2014
Your order number:	20061	Analysis completed by:	05/12/2014
Report Issue Number:	2	Report issued on:	05/12/2014
Samples Analysed:	11 water samples		

Signed:

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

Signed:

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

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

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

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

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



Analytical Report Number: 14-63465
Project / Site name: St Andrews Park

Your Order No: 20061

Lab Sample Number	394728	394729	394730	394731	394732
Sample Reference	CP801	CP803	CP805	CP806	WS802
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	20/11/2014	20/11/2014	20/11/2014	20/11/2014	20/11/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	7.2	7.0	7.0	7.9	7.5
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	460
Sulphate as SO ₄	µg/l	45	ISO 17025	375000	1110000	1580000	296000	654000
Chloride	mg/l	0.15	ISO 17025	210	870	2900	160	790
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	370	340	1700	1000	230
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	7.21	7.51	4.32	6.06	39.4
Nitrate as N	mg/l	0.25	ISO 17025	0.3	0.7	0.6	< 0.3	< 0.3
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	48	64	29	2000	580
BOD (Biochemical Oxygen Demand)	mg/l	1	ISO 17025	3.1	1.7	6.4	54	25

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.17	0.80	0.96	3.50	1.52
Boron (dissolved)	µg/l	10	ISO 17025	370	250	680	390	90
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.05	< 0.02	0.08	0.02	0.04
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.5	0.4	0.2	< 0.2	0.3
Copper (dissolved)	µg/l	0.5	ISO 17025	4.0	4.1	1.7	2.0	6.4
Lead (dissolved)	µg/l	0.2	ISO 17025	0.8	0.4	0.6	0.2	0.3
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	6.3	18	28	4.4	17
Selenium (dissolved)	µg/l	0.6	ISO 17025	5.3	50	21	2.5	27
Zinc (dissolved)	µg/l	0.5	ISO 17025	5.4	7.3	13	2.0	3.4

Magnesium (dissolved)	mg/l	0.002	ISO 17025	79	210	570	74	76



Analytical Report Number: 14-63465

Project / Site name: St Andrews Park

Your Order No: 20061

Lab Sample Number	394728	394729	394730	394731	394732
Sample Reference	CP801	CP803	CP805	CP806	WS802
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	20/11/2014	20/11/2014	20/11/2014	20/11/2014	20/11/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 14-63465

Project / Site name: St Andrews Park

Your Order No: 20061

Lab Sample Number	394733	394734	394735	394736	394737
Sample Reference	WS805	WS807	WS810	WS812	WS903
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	20/11/2014	20/11/2014	20/11/2014	20/11/2014	20/11/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	7.7	7.2	7.2	7.4	7.7
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Sulphate as SO ₄	µg/l	45	ISO 17025	123000	72000	154000	589000	72700
Chloride	mg/l	0.15	ISO 17025	49	180	11	85	65
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	260	330	230	270	950
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	4.76	10.4	7.32	15.2	11.4
Nitrate as N	mg/l	0.25	ISO 17025	2.1	< 0.3	24	6.1	2.9
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	170	350	310	470	680
BOD (Biochemical Oxygen Demand)	mg/l	1	ISO 17025	6.3	24	1.5	-	8.4

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.72	1.90	1.12	1.29	2.49
Boron (dissolved)	µg/l	10	ISO 17025	120	170	260	440	97
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.4	< 0.2	0.9	1.7	0.5
Copper (dissolved)	µg/l	0.5	ISO 17025	2.9	1.4	4.8	5.6	9.5
Lead (dissolved)	µg/l	0.2	ISO 17025	0.6	< 0.2	0.4	0.3	0.6
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	4.3	9.6	8.2	9.6	4.7
Selenium (dissolved)	µg/l	0.6	ISO 17025	2.6	2.6	29	< 0.6	3.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	2.3	9.4	3.4	0.8	3.1

Magnesium (dissolved)	mg/l	0.002	ISO 17025	21	30	18	36	19



Analytical Report Number: 14-63465

Project / Site name: St Andrews Park

Your Order No: 20061

Lab Sample Number	394733	394734	394735	394736	394737
Sample Reference	WS805	WS807	WS810	WS812	WS903
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	20/11/2014	20/11/2014	20/11/2014	20/11/2014	20/11/2014
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 14-63465

Project / Site name: St Andrews Park

Your Order No: 20061

Lab Sample Number	394738						
Sample Reference	WS904						
Sample Number	None Supplied						
Depth (m)	None Supplied						
Date Sampled	20/11/2014						
Time Taken	None Supplied						
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status				

General Inorganics

pH	pH Units	N/A	ISO 17025	10.4				
Total Cyanide	µg/l	10	ISO 17025	< 10				
Sulphate as SO ₄	µg/l	45	ISO 17025	38900				
Chloride	mg/l	0.15	ISO 17025	85				
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	5400				
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	21.9				
Nitrate as N	mg/l	0.25	ISO 17025	< 0.3				
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	2000				
BOD (Biochemical Oxygen Demand)	mg/l	1	ISO 17025	7.7				

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10				

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthene	µg/l	0.01	ISO 17025	1.5				
Fluorene	µg/l	0.01	ISO 17025	0.53				
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01				
Anthracene	µg/l	0.01	ISO 17025	< 0.01				
Fluoranthene	µg/l	0.01	ISO 17025	0.88				
Pyrene	µg/l	0.01	ISO 17025	0.70				
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Chrysene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01				

Total PAH

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	3.65				

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	11.0				
Boron (dissolved)	µg/l	10	ISO 17025	42				
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02				
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0				
Chromium (dissolved)	µg/l	0.2	ISO 17025	2.3				
Copper (dissolved)	µg/l	0.5	ISO 17025	20				
Lead (dissolved)	µg/l	0.2	ISO 17025	0.3				
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05				
Nickel (dissolved)	µg/l	0.5	ISO 17025	36				
Selenium (dissolved)	µg/l	0.6	ISO 17025	9.6				
Zinc (dissolved)	µg/l	0.5	ISO 17025	2.2				

Magnesium (dissolved)	mg/l	0.002	ISO 17025	0.097				



Analytical Report Number: 14-63465
Project / Site name: St Andrews Park

Your Order No: 20061

Lab Sample Number	394738						
Sample Reference	WS904						
Sample Number	None Supplied						
Depth (m)	None Supplied						
Date Sampled	20/11/2014						
Time Taken	None Supplied						
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status				

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0				
Toluene	µg/l	1	ISO 17025	< 1.0				
Ethylbenzene	µg/l	1	ISO 17025	< 1.0				
p & m-xylene	µg/l	1	ISO 17025	< 1.0				
o-xylene	µg/l	1	ISO 17025	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0				

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10				

TPH-CWG - Aromatic >C5 - C7	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C7 - C8	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C8 - C10	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10				

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 14-63465

Project / Site name: St Andrews Park

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Biological oxygen demand of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW.	In-house method based on standard method 5210B. Samples received > 24 hrs after sampling, data may not be valid and should be interpreted with care.	L086-PL	W	ISO 17025
Boron in water	Determination of boron by acidification followed by ICP-MS. Accredited matrices: SW, GW.	In-house method based on MEWAM	L012-PL	W	ISO 17025
BTEX and MTBE in water	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073W-PL	W	ISO 17025
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by oxidation with acidified potassium dichromate at 150°C.Reduced chromate ions assayed colorimetrically. Accredited matrices: Accredited matrices: SW, PW, GW	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025
Chloride in water	Determination of Chloride in water by Gallery Discrete Analyser based on reaction with mercury (II) thiocyanate and acid solution with iron (III) nitrate to form a red/brown iron (III) thiocyanate complex followed by spectrophotometry.	Methods for the Examination of Water and Associated Materials Chloride in Waters, Sewage and Effluents 1981.ISBN 0117516260 Accredited matrices: SW, PW, GW	L082 B	W	ISO 17025
Dissolved Organic Carbon in water	Determination of dissolved organic carbon in water by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L012-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate in water by colorimetric assay. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L078-PL	W	ISO 17025
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L070-UK	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-UK	W	NONE

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

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

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



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Analytical Report Number : 15-66395

Project / Site name:	Rifle Range St Andrews Park , Uxbridge	Samples received on:	27/01/2015
Your job number:	21311A	Samples instructed on:	02/02/2015
Your order number:	20243	Analysis completed by:	11/02/2015
Report Issue Number:	1	Report issued on:	11/02/2015
Samples Analysed:	34 leachate samples - 65 soil samples		

Signed: 

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

Signed: 

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413013	413014	413015	413016	413017
Sample Reference	TP823	TP820	TP820	TP819	TP819
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.60	0.30	0.50	0.20	0.80
Date Sampled	19/01/2015	19/01/2015	19/01/2015	19/01/2015	19/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	16	14
Total mass of sample received	kg	0.001	NONE	1.6	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	Not-detected	-

General Inorganics

pH	pH Units	N/A	MCERTS	10.3	7.7	7.3	7.2	7.4
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	2.5	0.23	0.19	0.045	0.071
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	2500	230	190	45	71
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	1.3	0.12	0.097	0.023	0.036
Organic Matter	%	0.1	MCERTS	1.6	1.5	-	3.5	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	0.31	< 0.10	0.21	-
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.77	< 0.10	0.23	-
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.66	< 0.10	0.22	-
Phenanthrene	mg/kg	0.1	MCERTS	2.1	8.9	< 0.10	4.0	-
Anthracene	mg/kg	0.1	MCERTS	0.60	3.3	< 0.10	0.80	-
Fluoranthene	mg/kg	0.1	MCERTS	4.7	31	0.41	11	-
Pyrene	mg/kg	0.1	MCERTS	4.0	28	0.39	8.9	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	2.6	17	0.23	4.9	-
Chrysene	mg/kg	0.05	MCERTS	2.3	15	0.22	4.5	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	2.1	21	0.28	5.3	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.5	7.4	0.17	3.1	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	1.9	16	0.21	4.6	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.93	8.0	< 0.10	2.3	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.18	1.2	< 0.10	0.36	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.2	9.3	< 0.05	3.1	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	24.2	169	1.91	52.8	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	110	11	16	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	4.1	< 0.2	1.3	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	48	23	33	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	43	2300	40	85	33
Lead (aqua regia extractable)	mg/kg	1	MCERTS	100	2100	210	210	83
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	120	17	30	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	170	1700	69	170	65

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413013	413014	413015	413016	413017
Sample Reference	TP823	TP820	TP820	TP819	TP819
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.60	0.30	0.50	0.20	0.80
Date Sampled	19/01/2015	19/01/2015	19/01/2015	19/01/2015	19/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

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

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	4.4	2.5	< 2.0	3.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	34	13	< 8.0	9.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	220	31	21	23	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	260	46	21	35	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	4.0	11	< 2.0	3.1	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	44	180	< 10	31	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	290	250	< 10	31	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	340	440	< 10	65	-

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413018	413019	413020	413021	413022
Sample Reference	TP813	TP813	TP813	TP810	TP810
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.30	0.50	1.40	0.50	0.80
Date Sampled	20/01/2015	20/01/2015	20/01/2015	20/01/2015	20/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	9.2
Total mass of sample received	kg	0.001	NONE	1.1	1.3

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	Not-detected	Not-detected

General Inorganics

pH	pH Units	N/A	MCERTS	7.0	7.2	7.2	7.1	7.3
Total Cyanide	mg/kg	1	MCERTS	< 1	-	-	< 1	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.18	-	0.087	1.3	0.060
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	180	-	87	1300	60
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.092	-	0.044	0.66	0.030
Organic Matter	%	0.1	MCERTS	4.6	-	-	2.8	1.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.80	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.33	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	4.3	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	4.4	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	5.4	< 0.10	< 0.10	30	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	9.5	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	6.5	2.2	< 0.10	43	< 0.10
Pyrene	mg/kg	0.1	MCERTS	5.6	1.7	< 0.10	33	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	2.6	0.92	< 0.10	16	< 0.10
Chrysene	mg/kg	0.05	MCERTS	2.7	0.88	< 0.05	15	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.4	0.92	< 0.10	16	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.1	0.59	< 0.10	7.5	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	2.4	0.75	< 0.10	14	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	1.4	0.37	< 0.10	6.3	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.17	< 0.10	< 0.10	0.99	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.6	0.53	< 0.05	7.2	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	32.6	8.82	< 1.60	209	< 1.60

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	-	-	27	8.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.6	-	-	0.4	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	-	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	-	-	26	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	52	-	-	120	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	120	-	-	200	38
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	-	-	31	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	300	-	-	170	45

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413018	413019	413020	413021	413022
Sample Reference				TP813	TP813	TP813	TP810	TP810
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.50	1.40	0.50	0.80
Date Sampled				20/01/2015	20/01/2015	20/01/2015	20/01/2015	20/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	5.7	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	1400	770	520	3.8	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	12000	7800	3500	62	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	9000	6300	3100	1500	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	22000	15000	7200	1600	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	5.9	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	380	290	130	27	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	3200	2000	730	190	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	3400	2000	640	390	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	7000	4400	1500	600	< 10

PCBs

PCB Congener 077	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 081	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 105	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 114	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 123	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 126	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 156	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 157	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 167	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 169	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 189	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
Total PCBs	mg/kg	0.012	NONE	< 0.012	< 0.012	< 0.012	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413023	413024	413025	413026	413027
Sample Reference	TP812	TP829	TP829	TP834	TP828
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.30	0.40	0.60	0.50	0.60
Date Sampled	20/01/2015	20/01/2015	20/01/2015	20/01/2015	20/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	13	25
Total mass of sample received	kg	0.001	NONE	1.4	1.3

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile- Loose fibres	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	-	Not-detected	Not-detected

General Inorganics

pH	pH Units	N/A	MCERTS	7.3	7.2	7.1	7.1	6.9
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.18	0.12	0.28	2.6	0.14
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	180	120	280	2600	140
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.089	0.060	0.14	1.3	0.070
Organic Matter	%	0.1	MCERTS	1.8	2.2	-	2.7	0.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.14	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.27	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.40	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	2.6	0.83	0.33	2.7	< 0.10
Anthracene	mg/kg	0.1	MCERTS	0.61	0.20	< 0.10	0.74	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	7.5	1.7	0.58	4.4	< 0.10
Pyrene	mg/kg	0.1	MCERTS	6.2	1.2	0.42	3.6	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	3.9	0.88	0.32	2.0	< 0.10
Chrysene	mg/kg	0.05	MCERTS	3.4	0.72	0.23	1.7	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.9	0.90	0.29	2.1	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	2.8	0.28	0.17	0.76	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	4.0	0.54	0.24	1.6	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	2.3	0.37	< 0.10	0.83	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.37	< 0.10	< 0.10	0.13	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.8	0.35	< 0.05	0.95	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	40.2	7.91	2.58	22.4	< 1.60

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	24	15	14	19
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	< 0.2	< 0.2	0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	37	37	26	39
Copper (aqua regia extractable)	mg/kg	1	MCERTS	35	89	41	73	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	95	400	120	120	20
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	32	30	18	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	98	140	88	120	49

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413023	413024	413025	413026	413027
Sample Reference				TP812	TP829	TP829	TP834	TP828
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.40	0.60	0.50	0.60
Date Sampled				20/01/2015	20/01/2015	20/01/2015	20/01/2015	20/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	11	< 8.0	< 8.0	25	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	11	< 10	< 10	25	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	21	< 10	< 10	14	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	25	< 10	< 10	16	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	46	< 10	< 10	29	< 10

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413028	413029	413030	413031	413032
Sample Reference	CP807	CP807	CP802A	CP802A	TP908
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	1.00	0.50	1.00	0.70
Date Sampled	20/01/2015	20/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	13	16
Total mass of sample received	kg	0.001	NONE	0.91	1.1
				0.99	1.0
				1.0	1.3

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	-	Not-detected

General Inorganics

pH	pH Units	N/A	MCERTS	6.8	-	9.1	-	-
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	1.0	0.75	0.43	0.60	-
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	1000	750	430	600	-
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.51	0.37	0.22	0.30	-
Organic Matter	%	0.1	MCERTS	2.0	-	1.9	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	0.22	-	< 0.10	-	-
Acenaphthene	mg/kg	0.1	MCERTS	0.49	-	0.74	-	-
Fluorene	mg/kg	0.1	MCERTS	0.55	-	0.62	-	-
Phenanthrene	mg/kg	0.1	MCERTS	4.6	-	6.7	-	-
Anthracene	mg/kg	0.1	MCERTS	1.4	-	1.7	-	-
Fluoranthene	mg/kg	0.1	MCERTS	10	-	12	-	-
Pyrene	mg/kg	0.1	MCERTS	8.6	-	8.5	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	5.2	-	5.0	-	-
Chrysene	mg/kg	0.05	MCERTS	4.1	-	4.2	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	5.2	-	4.4	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	2.1	-	2.8	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	3.8	-	3.7	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	2.2	-	2.4	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.27	-	0.29	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.9	-	2.7	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	51.8	-	55.3	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	21	16	15	19
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	30	37	26	29	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	56	52	42	42	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	71	170	180	98	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	27	36	21	28	41
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	86	96	120	160	54

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413028	413029	413030	413031	413032
Sample Reference				CP807	CP807	CP802A	CP802A	TP908
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.00	0.50	1.00	0.70
Date Sampled				20/01/2015	20/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	3.0	-	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	16	-	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	160	-	< 8.0	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	180	-	< 10	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	6.1	-	6.1	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	51	-	49	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	160	-	37	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	220	-	92	-	-

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413033	413034	413035	413036	413037
Sample Reference	TP907	TP907	TP968	TP912	TP910A
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	1.80	1.90	1.30	0.70
Date Sampled	21/01/2015	21/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	22	15
Total mass of sample received	kg	0.001	NONE	1.6	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile - Loose Fibres	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	-	-	-	Not-detected

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	-	-	7.9
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	0.36
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	0.16
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	0.19
Fluorene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	0.30
Phenanthrene	mg/kg	0.1	MCERTS	0.70	-	-	-	2.4
Anthracene	mg/kg	0.1	MCERTS	0.18	-	-	-	0.43
Fluoranthene	mg/kg	0.1	MCERTS	2.0	-	-	-	5.9
Pyrene	mg/kg	0.1	MCERTS	1.7	-	-	-	5.1
Benzo(a)anthracene	mg/kg	0.1	MCERTS	1.1	-	-	-	2.6
Chrysene	mg/kg	0.05	MCERTS	0.89	-	-	-	2.6
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	1.1	-	-	-	2.6
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.62	-	-	-	2.0
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.98	-	-	-	2.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.51	-	-	-	0.98
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	0.17
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.67	-	-	-	1.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	10.4	-	-	-	29.4

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	15	1.7	10	16
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.3	0.3
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32	23	27	34	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	44	20	19	23	380
Lead (aqua regia extractable)	mg/kg	1	MCERTS	130	13	13	42	2400
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	30	36	20	50	31
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	93	49	63	86	600

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413033	413034	413035	413036	413037
Sample Reference				TP907	TP907	TP968	TP912	TP910A
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.80	1.90	1.30	0.70
Date Sampled				21/01/2015	21/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	99
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	-	220
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	-	98
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	420

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	45
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	-	120
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	-	43
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	210

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413038	413039	413040	413041	413042
Sample Reference	TP910A	TP910	TP911	TP911	TP914
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.20	0.40	0.30	1.00	0.80
Date Sampled	21/01/2015	21/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	20	19
Total mass of sample received	kg	0.001	NONE	1.2	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	Not-detected	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	7.7	-	-	-	-
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Fluorene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Anthracene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Pyrene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	-	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.0	14	12	4.8	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.9	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	32	25	18	46
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	44	54	17	30
Lead (aqua regia extractable)	mg/kg	1	MCERTS	45	180	120	24	46
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	22	28	12	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	89	130	84	45	110

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413038	413039	413040	413041	413042
Sample Reference				TP910A	TP910	TP911	TP911	TP914
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	0.40	0.30	1.00	0.80
Date Sampled				21/01/2015	21/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	-

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413043	413044	413045	413046	413047
Sample Reference	TP811	CP804	CP804	TP803	TP822
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	0.50	1.00	0.40	0.50
Date Sampled	22/01/2015	22/01/2015	22/01/2015	22/01/2015	22/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	15	23
Total mass of sample received	kg	0.001	NONE	1.3	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile - Loose Fibres	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	-	Not-detected	-

General Inorganics

pH	pH Units	N/A	MCERTS	7.7	7.5	7.8	7.9	7.8
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.18	0.63	0.085	0.071	0.21
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	180	630	85	71	210
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.088	0.31	0.043	0.036	0.11
Organic Matter	%	0.1	MCERTS	-	-	-	4.9	2.9

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.43	< 0.05	-	0.38	1.6
Acenaphthylene	mg/kg	0.1	MCERTS	1.0	< 0.10	-	0.16	1.9
Acenaphthene	mg/kg	0.1	MCERTS	13	0.34	-	0.22	11
Fluorene	mg/kg	0.1	MCERTS	8.8	0.33	-	0.30	13
Phenanthrene	mg/kg	0.1	MCERTS	120	3.2	-	3.7	100
Anthracene	mg/kg	0.1	MCERTS	25	0.75	-	0.93	25
Fluoranthene	mg/kg	0.1	MCERTS	230	6.8	-	8.6	160
Pyrene	mg/kg	0.1	MCERTS	180	5.7	-	7.5	130
Benzo(a)anthracene	mg/kg	0.1	MCERTS	97	3.4	-	4.7	69
Chrysene	mg/kg	0.05	MCERTS	81	3.0	-	4.2	55
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	100	4.1	-	4.3	64
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	53	1.5	-	2.6	36
Benzo(a)pyrene	mg/kg	0.1	MCERTS	91	3.1	-	3.9	62
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	54	1.8	-	2.1	26
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	6.1	0.26	-	0.37	4.1
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	48	2.0	-	2.5	29

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1110	36.2	-	46.4	783

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	13	14	43	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.3	0.2	< 0.2	0.4	0.3
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	30	40	27	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	80	79	32	100	57
Lead (aqua regia extractable)	mg/kg	1	MCERTS	120	110	14	160	130
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	69	28	41	47	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	1400	120	68	130	120

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413043	413044	413045	413046	413047
Sample Reference				TP811	CP804	CP804	TP803	TP822
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.50	1.00	0.40	0.50
Date Sampled				22/01/2015	22/01/2015	22/01/2015	22/01/2015	22/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	20	< 2.0	-	< 2.0	9.2
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	49	18	-	< 8.0	32
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	130	960	-	< 8.0	90
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	200	980	-	< 10	130

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	3.3
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	130	5.6	-	3.4	110
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	860	21	-	42	750
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	1200	12	-	37	720
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	2200	38	-	82	1600

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413048	413049	413050	413051	413052
Sample Reference	TP822A	TP821	TP801	TP808	TP806
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.50	0.20	1.20	0.20
Date Sampled	22/01/2015	22/01/2015	22/01/2015	22/01/2015	22/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	17	12
Total mass of sample received	kg	0.001	NONE	1.2	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	-	Not-detected

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	7.1	7.1	8.9
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	0.88	0.041	2.2	3.8
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-	880	41	2200	3800
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	-	0.44	0.020	1.1	1.9
Organic Matter	%	0.1	MCERTS	-	3.9	4.1	1.6	0.9

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	0.86	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	-	4.1	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	-	9.6	< 0.10	0.28	0.67
Fluorene	mg/kg	0.1	MCERTS	-	12	< 0.10	0.26	0.75
Phenanthrene	mg/kg	0.1	MCERTS	-	110	0.42	3.1	9.4
Anthracene	mg/kg	0.1	MCERTS	-	26	0.11	0.91	1.9
Fluoranthene	mg/kg	0.1	MCERTS	-	170	1.3	5.9	14
Pyrene	mg/kg	0.1	MCERTS	-	150	1.0	4.7	10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	83	0.68	2.9	4.6
Chrysene	mg/kg	0.05	MCERTS	-	71	0.56	2.4	4.7
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	88	0.78	2.8	4.1
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	42	0.39	1.7	3.3
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	81	0.63	2.6	4.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	31	0.39	1.3	2.4
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	4.9	< 0.10	0.21	0.43
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	36	0.44	1.5	2.6

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	917	6.70	30.5	63.6

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	44	12	16	13
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	1.1	< 0.2	0.3	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	58	27	32	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	70	200	51	70	31
Lead (aqua regia extractable)	mg/kg	1	MCERTS	470	930	300	150	200
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	49	17	26	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	1300	110	160	260

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413048	413049	413050	413051	413052
Sample Reference				TP822A	TP821	TP801	TP808	TP806
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.20	1.20	0.20
Date Sampled				22/01/2015	22/01/2015	22/01/2015	22/01/2015	22/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	5.8	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	26	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	97	< 8.0	< 8.0	33
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	130	< 10	< 10	33

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	98	< 2.0	2.2	5.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	840	< 10	23	57
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	1200	< 10	15	67
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	2200	< 10	40	130

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413053	413054	413055	413056	413057
Sample Reference	TP807	TP805	TP809	TP826	TP825
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.60	0.20	0.60	0.70	0.70
Date Sampled	22/01/2015	22/01/2015	23/01/2015	23/01/2015	23/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	15	17
Total mass of sample received	kg	0.001	NONE	1.2	1.6

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Crocidolite- Loose fibres	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	-	Not-detected

General Inorganics

pH	pH Units	N/A	MCERTS	8.3	8.1	8.4	7.8	7.2
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.99	1.7	1.9	1.2	0.19
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	990	1700	1900	1200	190
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.49	0.85	0.95	0.59	0.095
Organic Matter	%	0.1	MCERTS	1.4	0.8	2.4	-	0.7

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.22	0.77	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.63	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.28	1.5	8.8	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.34	1.5	14	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	0.20	3.0	13	83	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.76	4.2	24	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	0.35	4.2	37	87	< 0.10
Pyrene	mg/kg	0.1	MCERTS	0.27	3.5	32	69	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.16	1.7	20	36	< 0.10
Chrysene	mg/kg	0.05	MCERTS	0.18	1.7	14	25	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.15	1.3	20	28	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.14	1.3	9.1	16	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.13	1.4	18	27	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	0.78	8.5	11	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	0.13	1.7	3.0	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.90	9.5	12	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	21.3	191	444	< 1.60

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.7	16	14	15	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.3	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	32	26	25	30
Copper (aqua regia extractable)	mg/kg	1	MCERTS	22	38	54	48	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	49	100	160	110	38
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	27	21	21	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	51	110	190	110	50

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413053	413054	413055	413056	413057
Sample Reference				TP807	TP805	TP809	TP826	TP825
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.20	0.60	0.70	0.70
Date Sampled				22/01/2015	22/01/2015	23/01/2015	23/01/2015	23/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	28	18	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	49	54	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	8.2	18	130	110	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	18	210	180	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	1.1	2.4	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	27	79	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	12	170	390	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	240	220	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	12	440	690	< 10

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413058	413059	413060	413061	413062
Sample Reference	TP824	WS806	WS809	WS809	WS801
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40	0.40	0.70	1.00	0.70
Date Sampled	23/01/2015	26/01/2015	26/01/2015	26/01/2015	26/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	19	15
Total mass of sample received	kg	0.001	NONE	1.2	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Amosite-Insulation lagging	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	6.3	7.3	7.5	7.4	7.3
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.44	0.83	0.19	0.031	0.14
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	440	830	190	31	140
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.22	0.41	0.096	0.015	0.069
Organic Matter	%	0.1	MCERTS	1.2	0.2	2.6	1.9	1.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.22	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.21	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	0.54	3.9	2.8	< 0.10	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.79	0.47	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	0.78	7.9	5.4	< 0.10	< 0.10
Pyrene	mg/kg	0.1	MCERTS	0.64	6.2	4.5	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.39	2.9	2.1	< 0.10	< 0.10
Chrysene	mg/kg	0.05	MCERTS	0.37	3.0	2.4	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.30	2.6	2.2	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.23	2.2	1.6	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.31	2.6	2.2	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	1.4	1.1	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	0.25	0.19	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	1.6	1.3	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	3.56	35.6	26.3	< 1.60	< 1.60

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.3	11	12	11	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.3	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	26	37	23	28	30
Copper (aqua regia extractable)	mg/kg	1	MCERTS	37	21	56	24	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	80	37	110	43	24
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	28	18	18	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	52	55	99	62	45

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413058	413059	413060	413061	413062
Sample Reference				TP824	WS806	WS809	WS809	WS801
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.40	0.70	1.00	0.70
Date Sampled				23/01/2015	26/01/2015	26/01/2015	26/01/2015	26/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	11	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	11	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	2.1	2.4	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	19	21	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	21	35	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	42	58	< 10	< 10

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413063	413064	413065	413066	413067
Sample Reference	WS808	WS808	HP812	HP811	HP813
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.00	0.60	0.30	0.20	0.40
Date Sampled	26/01/2015	26/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	24	21
Total mass of sample received	kg	0.001	NONE	1.2	1.0
				1.1	1.3
				1.3	1.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile, Crocidolite - Loose fibres	-	-	Chrysotile - Loose fibres
Asbestos in Soil	Type	N/A	ISO 17025	-	Detected	Not-detected	Not-detected	Detected

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	7.3	7.6	-
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	0.32	0.77	0.66	-
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-	320	770	660	-
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	-	0.16	0.38	0.33	-
Organic Matter	%	0.1	MCERTS	-	-	0.1	1.3	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	0.21	0.26
Acenaphthylene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	0.15	0.79
Acenaphthene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	0.42	2.3
Fluorene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	0.50	2.6
Phenanthrene	mg/kg	0.1	MCERTS	-	0.49	0.60	4.8	27
Anthracene	mg/kg	0.1	MCERTS	-	< 0.10	0.14	1.3	7.7
Fluoranthene	mg/kg	0.1	MCERTS	-	1.3	1.1	8.8	50
Pyrene	mg/kg	0.1	MCERTS	-	1.1	0.93	7.2	44
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	0.76	0.52	4.1	24
Chrysene	mg/kg	0.05	MCERTS	-	0.71	0.53	3.6	24
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	0.64	0.48	3.7	24
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	0.64	0.33	2.2	19
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	0.64	0.47	3.8	27
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	0.32	0.23	1.8	13
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	0.31	2.6
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.37	0.29	2.0	15

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	6.95	5.60	44.8	283

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	8.7	12	12	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.2	-
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	48	25	42	29	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	41	98	34	39	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21	130	23	69	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	59	32	62	25	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	78	63	76	90	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413063	413064	413065	413066	413067
Sample Reference				WS808	WS808	HP812	HP811	HP813
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.60	0.30	0.20	0.40
Date Sampled				26/01/2015	26/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	< 8.0	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	< 8.0	32	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	32	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	5.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	< 10	32	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	< 10	41	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	78	-

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413068	413069	413070	413071	413072
Sample Reference	HP807	HP808	HP809	HP810	HP804
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.30	0.50	0.15	0.20	0.20
Date Sampled	27/01/2015	27/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	20	12
Total mass of sample received	kg	0.001	NONE	1.5	1.3

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile - Insulation lagging	-	-	Chrysotile - Insulation board
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Not-detected	Detected

General Inorganics

pH	pH Units	N/A	MCERTS	7.5	-	7.8	7.8	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1	-	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.71	-	0.67	0.36	0.84
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	710	-	670	360	840
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.36	-	0.33	0.18	0.42
Organic Matter	%	0.1	MCERTS	1.0	-	2.3	1.6	2.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.37	0.29	< 0.05	0.57	0.23
Acenaphthylene	mg/kg	0.1	MCERTS	0.22	0.19	0.25	0.18	0.59
Acenaphthene	mg/kg	0.1	MCERTS	0.90	0.71	0.21	0.30	0.84
Fluorene	mg/kg	0.1	MCERTS	1.3	1.1	< 0.10	0.41	0.79
Phenanthrene	mg/kg	0.1	MCERTS	8.3	8.5	3.4	4.0	8.2
Anthracene	mg/kg	0.1	MCERTS	2.5	2.7	0.81	0.98	3.1
Fluoranthene	mg/kg	0.1	MCERTS	13	13	10	9.4	32
Pyrene	mg/kg	0.1	MCERTS	11	11	8.7	8.2	31
Benzo(a)anthracene	mg/kg	0.1	MCERTS	6.6	5.6	4.7	4.5	20
Chrysene	mg/kg	0.05	MCERTS	4.9	5.5	4.4	4.1	17
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	5.4	5.4	3.8	4.1	26
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	3.9	2.3	3.8	3.1	14
Benzo(a)pyrene	mg/kg	0.1	MCERTS	5.8	5.0	4.1	4.1	25
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	2.8	2.3	1.8	1.9	13
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.43	0.43	0.51	0.52	3.2
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	3.0	2.6	2.1	2.3	14

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	70.3	66.6	48.7	48.5	209

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	-	53	14	9.0
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	0.4	0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	36	-	46	37	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	42	-	440	47	34
Lead (aqua regia extractable)	mg/kg	1	MCERTS	46	-	360	66	110
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	29	-	120	36	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	81	-	450	96	72

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413068	413069	413070	413071	413072
Sample Reference				HP807	HP808	HP809	HP810	HP804
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.50	0.15	0.20	0.20
Date Sampled				27/01/2015	27/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	< 2.0	13
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	< 8.0	< 8.0	34
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	11	-	< 8.0	< 8.0	130
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	11	-	< 10	< 10	180

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	8.3	-	2.6	5.5	14
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	37	-	36	23	180
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	40	-	41	31	440
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	85	-	79	59	630

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413073	413074	413075	413076	413077
Sample Reference	HP805	HP806	HP801	HP802	HP803
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40	0.50	0.50	0.40	0.30
Date Sampled	27/01/2015	27/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	16	22
Total mass of sample received	kg	0.001	NONE	1.2	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Chrysotile-Insulation lagging
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Detected

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	-	-	7.7
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	-	-	-	0.50
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	500
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	0.25
Organic Matter	%	0.1	MCERTS	-	-	-	-	1.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.13	0.29	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	0.21	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.53	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	0.29	0.90	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	2.8	7.3	1.3	0.73	1.3
Anthracene	mg/kg	0.1	MCERTS	0.79	2.2	0.30	0.15	0.29
Fluoranthene	mg/kg	0.1	MCERTS	6.5	11	2.9	1.6	2.6
Pyrene	mg/kg	0.1	MCERTS	5.7	9.0	2.4	1.4	2.1
Benzo(a)anthracene	mg/kg	0.1	MCERTS	3.5	5.1	1.5	0.88	1.1
Chrysene	mg/kg	0.05	MCERTS	2.6	3.8	1.4	1.0	1.1
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.3	3.9	1.3	0.90	1.1
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.6	3.5	1.3	0.93	0.75
Benzo(a)pyrene	mg/kg	0.1	MCERTS	3.0	4.3	1.5	1.0	1.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	1.4	2.0	0.67	0.49	0.47
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.36	0.50	0.20	0.12	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.5	2.2	0.84	0.58	0.55

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	33.4	56.8	15.7	9.86	12.4

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	10
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	-	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	36
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	37
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	71
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	84

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413073	413074	413075	413076	413077
Sample Reference				HP805	HP806	HP801	HP802	HP803
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.50	0.50	0.40	0.30
Date Sampled				27/01/2015	27/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	< 10

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413078	413079	413080	413081	413082
Sample Reference				TP820	TP820	TP819	TP829	TP834
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.50	0.20	0.40	0.50
Date Sampled				19/01/2015	19/01/2015	19/01/2015	20/01/2015	20/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	7.6	3.7	4.2	5.5	1.9
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.9	1.8	1.9	< 0.4	0.6
Copper (dissolved)	µg/l	0.7	ISO 17025	15	17	12	3.5	12
Lead (dissolved)	µg/l	1	ISO 17025	5.9	21	7.6	1.1	4.8
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.6	2.9	3.1	1.7	2.4
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	15	8.8	7.1	3.3	3.3



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413083	413084	413085	413086	413087
Sample Reference	TP908	TP907	TP907	TP968	TP912
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.70	0.50	1.80	1.90	1.30
Date Sampled	21/01/2015	21/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	3.3	< 1.1	< 1.1	1.9
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.8	0.9	2.7	1.5	2.2
Copper (dissolved)	µg/l	0.7	ISO 17025	1.9	14	1.6	3.5	3.0
Lead (dissolved)	µg/l	1	ISO 17025	4.6	5.4	3.4	4.3	5.6
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.2	2.6	1.9	1.7	2.1
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	3.4	1.9	4.4	2.7	3.7



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413088	413089	413090	413091	413092
Sample Reference	TP910A	TP910A	TP910	TP911	TP911
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.70	1.20	0.40	0.30	1.00
Date Sampled	21/01/2015	21/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	< 1.1	6.0	2.0	2.6
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.3	1.9	2.2	1.1	2.4
Copper (dissolved)	µg/l	0.7	ISO 17025	7.5	3.1	21	13	5.7
Lead (dissolved)	µg/l	1	ISO 17025	7.7	5.4	6.3	3.3	8.9
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.3	1.4	5.9	3.8	1.5
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	17	5.7	6.0	1.3	5.8



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413093	413094	413095	413096	413097
Sample Reference	TP914	TP811	TP803	TP822	TP821
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.80	0.20	0.40	0.50	0.50
Date Sampled	21/01/2015	21/01/2015	22/01/2015	22/01/2015	22/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	3.5	14	5.7	4.8	7.6
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.3	6.2	2.5	2.7	5.4
Copper (dissolved)	µg/l	0.7	ISO 17025	1.5	5.0	11	8.5	7.4
Lead (dissolved)	µg/l	1	ISO 17025	3.5	9.5	11	11	16
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.6	1.5	2.0	1.6	1.9
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	2.0	74	13	8.8	59



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413098	413099	413100	413101	413102
Sample Reference				TP808	TP805	WS806	WS809	WS801
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	0.20	0.40	0.70	0.70
Date Sampled				22/01/2015	22/01/2015	26/01/2015	26/01/2015	26/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	3.6	4.0	4.6	9.9	2.7
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	5.2	7.7	16	0.7	2.7
Copper (dissolved)	µg/l	0.7	ISO 17025	8.7	9.9	6.7	9.6	15
Lead (dissolved)	µg/l	1	ISO 17025	2.7	2.7	2.9	4.0	9.7
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.3	1.5	1.3	3.4	7.5
Selenium (dissolved)	µg/l	4	ISO 17025	5.7	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	4.1	2.3	2.1	5.5	6.3



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413103	413104	413105	413106	413107
Sample Reference	WS808	WS808	HP812	HP811	HP807
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.00	0.60	0.30	0.20	0.30
Date Sampled	26/01/2015	26/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied

Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	3.3	< 1.1	1.6	4.5	2.7
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1.6	< 0.4	1.1	0.8
Copper (dissolved)	µg/l	0.7	ISO 17025	1.9	9.3	2.8	12	4.7
Lead (dissolved)	µg/l	1	ISO 17025	1.7	9.1	1.6	4.8	5.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	0.6	4.0	1.3	2.5	1.8
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	0.9	4.8	4.2	2.1	1.4



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413108	413109	413110	413111	
Sample Reference				HP809	HP810	HP804	HP803	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				0.15	0.20	0.20	0.30	
Date Sampled				27/01/2015	27/01/2015	27/01/2015	27/01/2015	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	6.3	3.6	4.4	4.6	
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	
Chromium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1.2	1.9	0.5	
Copper (dissolved)	µg/l	0.7	ISO 17025	10	12	9.4	6.8	
Lead (dissolved)	µg/l	1	ISO 17025	6.5	2.4	9.2	4.2	
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.9	2.7	1.6	2.7	
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	
Zinc (dissolved)	µg/l	0.4	ISO 17025	2.9	5.7	2.6	2.0	

Analytical Report Number : 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
413013	TP823	None Supplied	0.60	Light brown gravelly sand with rubble.
413014	TP820	None Supplied	0.30	Brown sandy topsoil with gravel and glass.
413015	TP820	None Supplied	0.50	Brown topsoil and clay with vegetation.
413016	TP819	None Supplied	0.20	Brown topsoil and clay with gravel and vegetation.
413017	TP819	None Supplied	0.80	Light brown topsoil and clay with vegetation.
413018	TP813	None Supplied	0.30	Light brown clay and sand with rubble.
413019	TP813	None Supplied	0.50	Brown gravelly clay with oil / petroleum.
413020	TP813	None Supplied	1.40	Light brown clay and sand.
413021	TP810	None Supplied	0.50	Brown topsoil and sand with gravel.
413022	TP810	None Supplied	0.80	Light brown sandy clay.
413023	TP812	None Supplied	0.30	Brown topsoil and clay.
413024	TP829	None Supplied	0.40	Grey clay and topsoil.
413025	TP829	None Supplied	0.60	Grey clay and sand.
413026	TP834	None Supplied	0.50	Brown topsoil and clay with gravel and vegetation.
413027	TP828	None Supplied	0.60	Light brown sandy clay with gravel.
413028	CP807	None Supplied	0.50	Light brown clay and topsoil.
413029	CP807	None Supplied	1.00	Light brown clay and topsoil.
413030	CP802A	None Supplied	0.50	Light brown clay and sand with rubble and brick.
413031	CP802A	None Supplied	1.00	Brown clay and sand.
413032	TP908	None Supplied	0.70	Light brown sandy clay.
413033	TP907	None Supplied	0.50	Light brown clay and sand with vegetation.
413034	TP907	None Supplied	1.80	Light brown clay.
413035	TP968	None Supplied	1.90	Light grey clay.
413036	TP912	None Supplied	1.30	Grey clay.
413037	TP910A	None Supplied	0.70	Black sandy clay with vegetation and coal.
413038	TP910A	None Supplied	1.20	Grey clay and sand with vegetation.
413039	TP910	None Supplied	0.40	Brown sandy topsoil with vegetation.
413040	TP911	None Supplied	0.30	Light brown clay and sand.
413041	TP911	None Supplied	1.00	Light brown clay and sand.
413042	TP914	None Supplied	0.80	Grey clay.
413043	TP811	None Supplied	0.20	Black sandy gravel with rubble and brick.
413044	CP804	None Supplied	0.50	Light brown clay and sand with rubble and brick.
413045	CP804	None Supplied	1.00	Light brown clay.
413046	TP803	None Supplied	0.40	Black topsoil and sand with gravel and vegetation.
413047	TP822	None Supplied	0.50	Brown topsoil and clay with gravel and vegetation.
413048	TP822A	None Supplied	0.50	Brown topsoil and clay with gravel and vegetation.
413049	TP821	None Supplied	0.50	Brown topsoil and sand with gravel and brick.
413050	TP801	None Supplied	0.20	Brown topsoil and clay with vegetation.
413051	TP808	None Supplied	1.20	Light brown clay and topsoil with rubble.
413052	TP806	None Supplied	0.20	Light brown sand with rubble and brick.
413053	TP807	None Supplied	0.60	Light brown clay and sand with gravel.
413054	TP805	None Supplied	0.20	Light brown clay and sand with gravel.
413055	TP809	None Supplied	0.60	Brown clay and topsoil with gravel.
413056	TP826	None Supplied	0.70	Brown clay and topsoil with gravel.
413057	TP825	None Supplied	0.70	Light brown clay.
413058	TP824	None Supplied	0.40	Light brown sandy clay.
413059	WS806	None Supplied	0.40	Light brown clay and sand.
413060	WS809	None Supplied	0.70	Brown topsoil and clay with gravel and rubble.
413061	WS809	None Supplied	1.00	Light brown topsoil and clay.
413062	WS801	None Supplied	0.70	Light brown clay and sand with gravel.
413063	WS808	None Supplied	1.00	Light brown clay.
413064	WS808	None Supplied	0.60	Brown topsoil and clay with gravel and brick.
413065	HP812	None Supplied	0.30	Light brown clay.
413066	HP811	None Supplied	0.20	Brown clay and topsoil with gravel and brick.
413067	HP813	None Supplied	0.40	Brown clay and topsoil with gravel and brick.
413068	HP807	None Supplied	0.30	Light brown clay and topsoil.
413069	HP808	None Supplied	0.50	Light brown clay and sand with gravel.
413070	HP809	None Supplied	0.15	Black topsoil and clay with gravel and vegetation.
413071	HP810	None Supplied	0.20	Light brown clay and topsoil.
413072	HP804	None Supplied	0.20	Brown topsoil and clay with gravel.
413073	HP805	None Supplied	0.40	Light brown clay and topsoil with gravel and vegetation.
413074	HP806	None Supplied	0.50	Light brown clay and topsoil with gravel and vegetation.
413075	HP801	None Supplied	0.50	Light brown clay and topsoil with gravel and vegetation.
413076	HP802	None Supplied	0.40	Light brown clay and topsoil with gravel and vegetation.
413077	HP803	None Supplied	0.30	Light brown clay and topsoil with gravel and vegetation.

Analytical Report Number : 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Stones not passing through a 10 mm sieve is determined gravimetrically and reported as a percentage of the dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES. Results reported corrected for extraction ratio (soil equivalent) as g/l and mg/kg; and upon the 2:1	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

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

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

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



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Analytical Report Number : 15-66395

Replaces Analytical Report Number : 15-66395, issue no. 1

Project / Site name:	Rifle Range St Andrews Park , Uxbridge	Samples received on:	27/01/2015
Your job number:	21311A	Samples instructed on:	02/02/2015
Your order number:	20243	Analysis completed by:	06/03/2015
Report Issue Number:	2	Report issued on:	06/03/2015
Samples Analysed:	34 leachate samples - 65 soil samples		

Signed: 

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

Signed: 

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

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

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

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

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Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413013	413014	413015	413016	413017
Sample Reference				TP823	TP820	TP820	TP819	TP819
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.30	0.50	0.20	0.80
Date Sampled				19/01/2015	19/01/2015	19/01/2015	19/01/2015	19/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	16	14	19	18	14
Total mass of sample received	kg	0.001	NONE	1.6	1.1	1.3	1.1	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	Not-detected	-
Asbestos Quantification	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	10.3	7.7	7.3	7.2	7.4
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	2.5	0.23	0.19	0.045	0.071
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	2500	230	190	45	71
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	1.3	0.12	0.097	0.023	0.036
Organic Matter	%	0.1	MCERTS	1.6	1.5	-	3.5	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	0.31	< 0.10	0.21	-
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.77	< 0.10	0.23	-
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.66	< 0.10	0.22	-
Phenanthrene	mg/kg	0.1	MCERTS	2.1	8.9	< 0.10	4.0	-
Anthracene	mg/kg	0.1	MCERTS	0.60	3.3	< 0.10	0.80	-
Fluoranthene	mg/kg	0.1	MCERTS	4.7	31	0.41	11	-
Pyrene	mg/kg	0.1	MCERTS	4.0	28	0.39	8.9	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	2.6	17	0.23	4.9	-
Chrysene	mg/kg	0.05	MCERTS	2.3	15	0.22	4.5	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	2.1	21	0.28	5.3	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.5	7.4	0.17	3.1	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	1.9	16	0.21	4.6	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.93	8.0	< 0.10	2.3	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.18	1.2	< 0.10	0.36	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.2	9.3	< 0.05	3.1	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	24.2	169	1.91	52.8	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	110	11	16	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	4.1	< 0.2	1.3	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	48	23	33	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	43	2300	40	85	33
Lead (aqua regia extractable)	mg/kg	1	MCERTS	100	2100	210	210	83
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	120	17	30	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	170	1700	69	170	65

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413013	413014	413015	413016	413017
Sample Reference				TP823	TP820	TP820	TP819	TP819
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.30	0.50	0.20	0.80
Date Sampled				19/01/2015	19/01/2015	19/01/2015	19/01/2015	19/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Monoaromatics

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

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	4.4	2.5	< 2.0	3.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	34	13	< 8.0	9.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	220	31	21	23	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	260	46	21	35	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	4.0	11	< 2.0	3.1	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	44	180	< 10	31	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	290	250	< 10	31	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	340	440	< 10	65	-

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413018	413019	413020	413021	413022
Sample Reference				TP813	TP813	TP813	TP810	TP810
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.50	1.40	0.50	0.80
Date Sampled				20/01/2015	20/01/2015	20/01/2015	20/01/2015	20/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	9.2	19	16	17
Total mass of sample received	kg	0.001	NONE	1.1	1.3	1.2	0.93	1.5

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	Not-detected	Not-detected
Asbestos Quantification	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	7.0	7.2	7.2	7.1	7.3
Total Cyanide	mg/kg	1	MCERTS	< 1	-	-	< 1	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.18	-	0.087	1.3	0.060
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	180	-	87	1300	60
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.092	-	0.044	0.66	0.030
Organic Matter	%	0.1	MCERTS	4.6	-	-	2.8	1.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.80	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.33	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	4.3	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	4.4	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	5.4	< 0.10	< 0.10	30	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	9.5	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	6.5	2.2	< 0.10	43	< 0.10
Pyrene	mg/kg	0.1	MCERTS	5.6	1.7	< 0.10	33	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	2.6	0.92	< 0.10	16	< 0.10
Chrysene	mg/kg	0.05	MCERTS	2.7	0.88	< 0.05	15	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.4	0.92	< 0.10	16	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.1	0.59	< 0.10	7.5	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	2.4	0.75	< 0.10	14	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	1.4	0.37	< 0.10	6.3	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.17	< 0.10	< 0.10	0.99	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.6	0.53	< 0.05	7.2	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	32.6	8.82	< 1.60	209	< 1.60

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	-	-	27	8.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.6	-	-	0.4	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	-	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	-	-	26	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	52	-	-	120	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	120	-	-	200	38
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	-	-	31	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	300	-	-	170	45

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413018	413019	413020	413021	413022
Sample Reference				TP813	TP813	TP813	TP810	TP810
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.50	1.40	0.50	0.80
Date Sampled				20/01/2015	20/01/2015	20/01/2015	20/01/2015	20/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	5.7	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	1400	770	520	3.8	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	12000	7800	3500	62	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	9000	6300	3100	1500	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	22000	15000	7200	1600	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	5.9	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	380	290	130	27	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	3200	2000	730	190	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	3400	2000	640	390	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	7000	4400	1500	600	< 10

PCBs

PCB Congener 077	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 081	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 105	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 114	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 123	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 126	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 156	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 157	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 167	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 169	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
PCB Congener 189	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	-	-
Total PCBs	mg/kg	0.012	NONE	< 0.012	< 0.012	< 0.012	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413023	413024	413025	413026	413027
Sample Reference				TP812	TP829	TP829	TP834	TP828
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.40	0.60	0.50	0.60
Date Sampled				20/01/2015	20/01/2015	20/01/2015	20/01/2015	20/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	13	25	31	18	9.6
Total mass of sample received	kg	0.001	NONE	1.4	1.3	1.2	1.2	1.3

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

General Inorganics

pH	pH Units	N/A	MCERTS	7.3	7.2	7.1	7.1	6.9
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.18	0.12	0.28	2.6	0.14
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	180	120	280	2600	140
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.089	0.060	0.14	1.3	0.070
Organic Matter	%	0.1	MCERTS	1.8	2.2	-	2.7	0.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.14	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.27	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	0.40	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	2.6	0.83	0.33	2.7	< 0.10
Anthracene	mg/kg	0.1	MCERTS	0.61	0.20	< 0.10	0.74	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	7.5	1.7	0.58	4.4	< 0.10
Pyrene	mg/kg	0.1	MCERTS	6.2	1.2	0.42	3.6	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	3.9	0.88	0.32	2.0	< 0.10
Chrysene	mg/kg	0.05	MCERTS	3.4	0.72	0.23	1.7	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.9	0.90	0.29	2.1	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	2.8	0.28	0.17	0.76	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	4.0	0.54	0.24	1.6	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	2.3	0.37	< 0.10	0.83	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.37	< 0.10	< 0.10	0.13	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.8	0.35	< 0.05	0.95	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	40.2	7.91	2.58	22.4	< 1.60

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	24	15	14	19
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	< 0.2	< 0.2	0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	37	37	26	39
Copper (aqua regia extractable)	mg/kg	1	MCERTS	35	89	41	73	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	95	400	120	120	20
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	32	30	18	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	98	140	88	120	49

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413023	413024	413025	413026	413027
Sample Reference				TP812	TP829	TP829	TP834	TP828
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.40	0.60	0.50	0.60
Date Sampled				20/01/2015	20/01/2015	20/01/2015	20/01/2015	20/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	11	< 8.0	< 8.0	25	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	11	< 10	< 10	25	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	21	< 10	< 10	14	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	25	< 10	< 10	16	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	46	< 10	< 10	29	< 10

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413028	413029	413030	413031	413032
Sample Reference				CP807	CP807	CP802A	CP802A	TP908
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.00	0.50	1.00	0.70
Date Sampled				20/01/2015	20/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	13	16	18	20	14
Total mass of sample received	kg	0.001	NONE	0.91	1.1	0.99	1.0	1.3

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	-	Not-detected
Asbestos Quantification	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	6.8	-	9.1	-	-
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	1.0	0.75	0.43	0.60	-
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	1000	750	430	600	-
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.51	0.37	0.22	0.30	-
Organic Matter	%	0.1	MCERTS	2.0	-	1.9	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	0.22	-	< 0.10	-	-
Acenaphthene	mg/kg	0.1	MCERTS	0.49	-	0.74	-	-
Fluorene	mg/kg	0.1	MCERTS	0.55	-	0.62	-	-
Phenanthrene	mg/kg	0.1	MCERTS	4.6	-	6.7	-	-
Anthracene	mg/kg	0.1	MCERTS	1.4	-	1.7	-	-
Fluoranthene	mg/kg	0.1	MCERTS	10	-	12	-	-
Pyrene	mg/kg	0.1	MCERTS	8.6	-	8.5	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	5.2	-	5.0	-	-
Chrysene	mg/kg	0.05	MCERTS	4.1	-	4.2	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	5.2	-	4.4	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	2.1	-	2.8	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	3.8	-	3.7	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	2.2	-	2.4	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.27	-	0.29	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.9	-	2.7	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	51.8	-	55.3	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	21	16	15	19
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	30	37	26	29	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	56	52	42	42	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	71	170	180	98	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	27	36	21	28	41
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	86	96	120	160	54

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413028	413029	413030	413031	413032
Sample Reference				CP807	CP807	CP802A	CP802A	TP908
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.00	0.50	1.00	0.70
Date Sampled				20/01/2015	20/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	3.0	-	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	16	-	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	160	-	< 8.0	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	180	-	< 10	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	6.1	-	6.1	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	51	-	49	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	160	-	37	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	220	-	92	-	-

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413033	413034	413035	413036	413037
Sample Reference				TP907	TP907	TP968	TP912	TP910A
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.80	1.90	1.30	0.70
Date Sampled				21/01/2015	21/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	22	16	17	20	15
Total mass of sample received	kg	0.001	NONE	1.6	1.4	1.3	1.5	1.1

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

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	-	-	7.9
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	0.36
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	0.16
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	0.19
Fluorene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	0.30
Phenanthrene	mg/kg	0.1	MCERTS	0.70	-	-	-	2.4
Anthracene	mg/kg	0.1	MCERTS	0.18	-	-	-	0.43
Fluoranthene	mg/kg	0.1	MCERTS	2.0	-	-	-	5.9
Pyrene	mg/kg	0.1	MCERTS	1.7	-	-	-	5.1
Benzo(a)anthracene	mg/kg	0.1	MCERTS	1.1	-	-	-	2.6
Chrysene	mg/kg	0.05	MCERTS	0.89	-	-	-	2.6
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	1.1	-	-	-	2.6
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.62	-	-	-	2.0
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.98	-	-	-	2.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.51	-	-	-	0.98
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	0.17
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.67	-	-	-	1.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	10.4	-	-	-	29.4

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	15	1.7	10	16
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.3	0.3
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	32	23	27	34	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	44	20	19	23	380
Lead (aqua regia extractable)	mg/kg	1	MCERTS	130	13	13	42	2400
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	30	36	20	50	31
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	93	49	63	86	600

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413033	413034	413035	413036	413037
Sample Reference				TP907	TP907	TP968	TP912	TP910A
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.80	1.90	1.30	0.70
Date Sampled				21/01/2015	21/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	99
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	-	220
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	-	98
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	420

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	45
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	-	120
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	-	43
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	210

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413038	413039	413040	413041	413042
Sample Reference				TP910A	TP910	TP911	TP911	TP914
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	0.40	0.30	1.00	0.80
Date Sampled				21/01/2015	21/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	20	19	16	16	31
Total mass of sample received	kg	0.001	NONE	1.2	1.2	0.78	1.3	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	Not-detected	-	-
Asbestos Quantification	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	7.7	-	-	-	-
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	-	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Fluorene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Anthracene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Pyrene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	-	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.0	14	12	4.8	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.9	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	32	25	18	46
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	44	54	17	30
Lead (aqua regia extractable)	mg/kg	1	MCERTS	45	180	120	24	46
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	22	28	12	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	89	130	84	45	110

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413038	413039	413040	413041	413042
Sample Reference				TP910A	TP910	TP911	TP911	TP914
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	0.40	0.30	1.00	0.80
Date Sampled				21/01/2015	21/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	-

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number	413043	413044	413045	413046	413047
Sample Reference	TP811	CP804	CP804	TP803	TP822
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	0.50	1.00	0.40	0.50
Date Sampled	22/01/2015	22/01/2015	22/01/2015	22/01/2015	22/01/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	15	23
Total mass of sample received	kg	0.001	NONE	1.3	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	-	Not-detected	-
Asbestos Quantification	%	0.001	ISO 17025	-	0.006	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	7.7	7.5	7.8	7.9	7.8
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.18	0.63	0.085	0.071	0.21
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	180	630	85	71	210
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.088	0.31	0.043	0.036	0.11
Organic Matter	%	0.1	MCERTS	-	-	-	4.9	2.9

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.43	< 0.05	-	0.38	1.6
Acenaphthylene	mg/kg	0.1	MCERTS	1.0	< 0.10	-	0.16	1.9
Acenaphthene	mg/kg	0.1	MCERTS	13	0.34	-	0.22	11
Fluorene	mg/kg	0.1	MCERTS	8.8	0.33	-	0.30	13
Phenanthrene	mg/kg	0.1	MCERTS	120	3.2	-	3.7	100
Anthracene	mg/kg	0.1	MCERTS	25	0.75	-	0.93	25
Fluoranthene	mg/kg	0.1	MCERTS	230	6.8	-	8.6	160
Pyrene	mg/kg	0.1	MCERTS	180	5.7	-	7.5	130
Benzo(a)anthracene	mg/kg	0.1	MCERTS	97	3.4	-	4.7	69
Chrysene	mg/kg	0.05	MCERTS	81	3.0	-	4.2	55
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	100	4.1	-	4.3	64
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	53	1.5	-	2.6	36
Benzo(a)pyrene	mg/kg	0.1	MCERTS	91	3.1	-	3.9	62
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	54	1.8	-	2.1	26
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	6.1	0.26	-	0.37	4.1
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	48	2.0	-	2.5	29

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1110	36.2	-	46.4	783

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	13	14	43	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.3	0.2	< 0.2	0.4	0.3
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	30	40	27	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	80	79	32	100	57
Lead (aqua regia extractable)	mg/kg	1	MCERTS	120	110	14	160	130
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	69	28	41	47	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	1400	120	68	130	120

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413043	413044	413045	413046	413047
Sample Reference				TP811	CP804	CP804	TP803	TP822
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.50	1.00	0.40	0.50
Date Sampled				22/01/2015	22/01/2015	22/01/2015	22/01/2015	22/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	20	< 2.0	-	< 2.0	9.2
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	49	18	-	< 8.0	32
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	130	960	-	< 8.0	90
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	200	980	-	< 10	130

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	3.3
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	130	5.6	-	3.4	110
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	860	21	-	42	750
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	1200	12	-	37	720
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	2200	38	-	82	1600

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413048	413049	413050	413051	413052
Sample Reference				TP822A	TP821	TP801	TP808	TP806
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.20	1.20	0.20
Date Sampled				22/01/2015	22/01/2015	22/01/2015	22/01/2015	22/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	17	12	26	16	9.4
Total mass of sample received	kg	0.001	NONE	1.2	1.1	1.1	1.3	0.99

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	-	Not-detected
Asbestos Quantification	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	7.1	7.1	8.9
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	0.88	0.041	2.2	3.8
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-	880	41	2200	3800
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	-	0.44	0.020	1.1	1.9
Organic Matter	%	0.1	MCERTS	-	3.9	4.1	1.6	0.9

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	0.86	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	-	4.1	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	-	9.6	< 0.10	0.28	0.67
Fluorene	mg/kg	0.1	MCERTS	-	12	< 0.10	0.26	0.75
Phenanthrene	mg/kg	0.1	MCERTS	-	110	0.42	3.1	9.4
Anthracene	mg/kg	0.1	MCERTS	-	26	0.11	0.91	1.9
Fluoranthene	mg/kg	0.1	MCERTS	-	170	1.3	5.9	14
Pyrene	mg/kg	0.1	MCERTS	-	150	1.0	4.7	10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	83	0.68	2.9	4.6
Chrysene	mg/kg	0.05	MCERTS	-	71	0.56	2.4	4.7
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	88	0.78	2.8	4.1
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	42	0.39	1.7	3.3
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	81	0.63	2.6	4.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	31	0.39	1.3	2.4
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	4.9	< 0.10	0.21	0.43
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	36	0.44	1.5	2.6

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	917	6.70	30.5	63.6

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	44	12	16	13
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	1.1	< 0.2	0.3	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	58	27	32	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	70	200	51	70	31
Lead (aqua regia extractable)	mg/kg	1	MCERTS	470	930	300	150	200
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	49	17	26	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	1300	110	160	260

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413048	413049	413050	413051	413052
Sample Reference				TP822A	TP821	TP801	TP808	TP806
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.20	1.20	0.20
Date Sampled				22/01/2015	22/01/2015	22/01/2015	22/01/2015	22/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	5.8	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	26	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	97	< 8.0	< 8.0	33
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	130	< 10	< 10	33

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	98	< 2.0	2.2	5.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	840	< 10	23	57
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	1200	< 10	15	67
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	2200	< 10	40	130

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413053	413054	413055	413056	413057
Sample Reference				TP807	TP805	TP809	TP826	TP825
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.20	0.60	0.70	0.70
Date Sampled				22/01/2015	22/01/2015	23/01/2015	23/01/2015	23/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	15	14	17	17	17
Total mass of sample received	kg	0.001	NONE	1.2	1.2	0.94	1.3	1.6

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Crocidolite	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	-	Not-detected
Asbestos Quantification	%	0.001	ISO 17025	-	-	< 0.001	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	8.3	8.1	8.4	7.8	7.2
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.99	1.7	1.9	1.2	0.19
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	990	1700	1900	1200	190
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.49	0.85	0.95	0.59	0.095
Organic Matter	%	0.1	MCERTS	1.4	0.8	2.4	-	0.7

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.22	0.77	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.63	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.28	1.5	8.8	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.34	1.5	14	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	0.20	3.0	13	83	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.76	4.2	24	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	0.35	4.2	37	87	< 0.10
Pyrene	mg/kg	0.1	MCERTS	0.27	3.5	32	69	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.16	1.7	20	36	< 0.10
Chrysene	mg/kg	0.05	MCERTS	0.18	1.7	14	25	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.15	1.3	20	28	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.14	1.3	9.1	16	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.13	1.4	18	27	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	0.78	8.5	11	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	0.13	1.7	3.0	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.90	9.5	12	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	21.3	191	444	< 1.60

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.7	16	14	15	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.3	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	32	26	25	30
Copper (aqua regia extractable)	mg/kg	1	MCERTS	22	38	54	48	20
Lead (aqua regia extractable)	mg/kg	1	MCERTS	49	100	160	110	38
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	27	21	21	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	51	110	190	110	50

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413053	413054	413055	413056	413057
Sample Reference				TP807	TP805	TP809	TP826	TP825
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.20	0.60	0.70	0.70
Date Sampled				22/01/2015	22/01/2015	23/01/2015	23/01/2015	23/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	28	18	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	49	54	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	8.2	18	130	110	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	18	210	180	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	1.1	2.4	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	27	79	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	12	170	390	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	240	220	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	12	440	690	< 10

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413058	413059	413060	413061	413062
Sample Reference				TP824	WS806	WS809	WS809	WS801
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.40	0.70	1.00	0.70
Date Sampled				23/01/2015	26/01/2015	26/01/2015	26/01/2015	26/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	19	17	13	18	15
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.1	1.5	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Amosite	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	-	-
Asbestos Quantification	%	0.001	ISO 17025	-	-	0.006	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	6.3	7.3	7.5	7.4	7.3
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.44	0.83	0.19	0.031	0.14
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	440	830	190	31	140
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.22	0.41	0.096	0.015	0.069
Organic Matter	%	0.1	MCERTS	1.2	0.2	2.6	1.9	1.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.22	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.21	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	0.54	3.9	2.8	< 0.10	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.79	0.47	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	0.78	7.9	5.4	< 0.10	< 0.10
Pyrene	mg/kg	0.1	MCERTS	0.64	6.2	4.5	< 0.10	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.39	2.9	2.1	< 0.10	< 0.10
Chrysene	mg/kg	0.05	MCERTS	0.37	3.0	2.4	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.30	2.6	2.2	< 0.10	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.23	2.2	1.6	< 0.10	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.31	2.6	2.2	< 0.10	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	1.4	1.1	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	0.25	0.19	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	1.6	1.3	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	3.56	35.6	26.3	< 1.60	< 1.60

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.3	11	12	11	11
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.3	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	26	37	23	28	30
Copper (aqua regia extractable)	mg/kg	1	MCERTS	37	21	56	24	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	80	37	110	43	24
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	28	18	18	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	52	55	99	62	45

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413058	413059	413060	413061	413062
Sample Reference				TP824	WS806	WS809	WS809	WS801
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.40	0.70	1.00	0.70
Date Sampled				23/01/2015	26/01/2015	26/01/2015	26/01/2015	26/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	11	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	11	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	2.1	2.4	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	19	21	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	21	35	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	42	58	< 10	< 10

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413063	413064	413065	413066	413067
Sample Reference				WS808	WS808	HP812	HP811	HP813
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.60	0.30	0.20	0.40
Date Sampled				26/01/2015	26/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	24	21	22	17	14
Total mass of sample received	kg	0.001	NONE	1.2	1.0	1.1	1.3	1.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile & Crocidolite	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	-	Detected	Not-detected	Not-detected	Detected
Asbestos Quantification	%	0.001	ISO 17025	-	< 0.001	-	-	< 0.001

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	7.3	7.6	-
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	-
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	0.32	0.77	0.66	-
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-	320	770	660	-
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	-	0.16	0.38	0.33	-
Organic Matter	%	0.1	MCERTS	-	-	0.1	1.3	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	0.21	0.26
Acenaphthylene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	0.15	0.79
Acenaphthene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	0.42	2.3
Fluorene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	0.50	2.6
Phenanthrene	mg/kg	0.1	MCERTS	-	0.49	0.60	4.8	27
Anthracene	mg/kg	0.1	MCERTS	-	< 0.10	0.14	1.3	7.7
Fluoranthene	mg/kg	0.1	MCERTS	-	1.3	1.1	8.8	50
Pyrene	mg/kg	0.1	MCERTS	-	1.1	0.93	7.2	44
Benzo(a)anthracene	mg/kg	0.1	MCERTS	-	0.76	0.52	4.1	24
Chrysene	mg/kg	0.05	MCERTS	-	0.71	0.53	3.6	24
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	-	0.64	0.48	3.7	24
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	-	0.64	0.33	2.2	19
Benzo(a)pyrene	mg/kg	0.1	MCERTS	-	0.64	0.47	3.8	27
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	-	0.32	0.23	1.8	13
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	-	< 0.10	< 0.10	0.31	2.6
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.37	0.29	2.0	15

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	-	6.95	5.60	44.8	283

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	8.7	12	12	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	0.2	-
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	48	25	42	29	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	41	98	34	39	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21	130	23	69	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	59	32	62	25	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	78	63	76	90	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413063	413064	413065	413066	413067
Sample Reference				WS808	WS808	HP812	HP811	HP813
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.60	0.30	0.20	0.40
Date Sampled				26/01/2015	26/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	< 8.0	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	< 8.0	32	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	32	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	5.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	< 10	32	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	< 10	41	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	78	-

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413068	413069	413070	413071	413072
Sample Reference				HP807	HP808	HP809	HP810	HP804
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.50	0.15	0.20	0.20
Date Sampled				27/01/2015	27/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	20	17	18	20	12
Total mass of sample received	kg	0.001	NONE	1.5	1.4	1.1	1.2	1.3

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Not-detected	Detected
Asbestos Quantification	%	0.001	ISO 17025	-	< 0.001	-	-	0.002

General Inorganics

pH	pH Units	N/A	MCERTS	7.5	-	7.8	7.8	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1	-	< 1	< 1	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.71	-	0.67	0.36	0.84
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	710	-	670	360	840
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.36	-	0.33	0.18	0.42
Organic Matter	%	0.1	MCERTS	1.0	-	2.3	1.6	2.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.37	0.29	< 0.05	0.57	0.23
Acenaphthylene	mg/kg	0.1	MCERTS	0.22	0.19	0.25	0.18	0.59
Acenaphthene	mg/kg	0.1	MCERTS	0.90	0.71	0.21	0.30	0.84
Fluorene	mg/kg	0.1	MCERTS	1.3	1.1	< 0.10	0.41	0.79
Phenanthrene	mg/kg	0.1	MCERTS	8.3	8.5	3.4	4.0	8.2
Anthracene	mg/kg	0.1	MCERTS	2.5	2.7	0.81	0.98	3.1
Fluoranthene	mg/kg	0.1	MCERTS	13	13	10	9.4	32
Pyrene	mg/kg	0.1	MCERTS	11	11	8.7	8.2	31
Benzo(a)anthracene	mg/kg	0.1	MCERTS	6.6	5.6	4.7	4.5	20
Chrysene	mg/kg	0.05	MCERTS	4.9	5.5	4.4	4.1	17
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	5.4	5.4	3.8	4.1	26
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	3.9	2.3	3.8	3.1	14
Benzo(a)pyrene	mg/kg	0.1	MCERTS	5.8	5.0	4.1	4.1	25
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	2.8	2.3	1.8	1.9	13
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.43	0.43	0.51	0.52	3.2
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	3.0	2.6	2.1	2.3	14

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	70.3	66.6	48.7	48.5	209

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	-	53	14	9.0
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	0.4	0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	36	-	46	37	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	42	-	440	47	34
Lead (aqua regia extractable)	mg/kg	1	MCERTS	46	-	360	66	110
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	29	-	120	36	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	81	-	450	96	72

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413068	413069	413070	413071	413072
Sample Reference				HP807	HP808	HP809	HP810	HP804
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.50	0.15	0.20	0.20
Date Sampled				27/01/2015	27/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	< 2.0	13
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	< 8.0	< 8.0	34
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	11	-	< 8.0	< 8.0	130
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	11	-	< 10	< 10	180

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	8.3	-	2.6	5.5	14
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	37	-	36	23	180
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	40	-	41	31	440
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	85	-	79	59	630

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413073	413074	413075	413076	413077
Sample Reference				HP805	HP806	HP801	HP802	HP803
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.50	0.50	0.40	0.30
Date Sampled				27/01/2015	27/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	16	15	16	17	22
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Detected
Asbestos Quantification	%	0.001	ISO 17025	-	-	-	-	0.002

General Inorganics

pH	pH Units	N/A	MCERTS	-	-	-	-	7.7
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	< 1
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	-	-	-	-	0.50
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	500
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	0.25
Organic Matter	%	0.1	MCERTS	-	-	-	-	1.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.13	0.29	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	0.21	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.53	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	0.29	0.90	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	2.8	7.3	1.3	0.73	1.3
Anthracene	mg/kg	0.1	MCERTS	0.79	2.2	0.30	0.15	0.29
Fluoranthene	mg/kg	0.1	MCERTS	6.5	11	2.9	1.6	2.6
Pyrene	mg/kg	0.1	MCERTS	5.7	9.0	2.4	1.4	2.1
Benzo(a)anthracene	mg/kg	0.1	MCERTS	3.5	5.1	1.5	0.88	1.1
Chrysene	mg/kg	0.05	MCERTS	2.6	3.8	1.4	1.0	1.1
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	3.3	3.9	1.3	0.90	1.1
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.6	3.5	1.3	0.93	0.75
Benzo(a)pyrene	mg/kg	0.1	MCERTS	3.0	4.3	1.5	1.0	1.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	1.4	2.0	0.67	0.49	0.47
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.36	0.50	0.20	0.12	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.5	2.2	0.84	0.58	0.55

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	33.4	56.8	15.7	9.86	12.4

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	10
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	-	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	36
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	37
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	71
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	84

Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413073	413074	413075	413076	413077
Sample Reference				HP805	HP806	HP801	HP802	HP803
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.50	0.50	0.40	0.30
Date Sampled				27/01/2015	27/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	< 10

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-



Analytical Report Number: **15-66395**
Project / Site name: **Rifle Range St Andrews Park , Uxbridge**
Your Order No: **20243**

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

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

Quantitative Analysis

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

Any material greater than 16mm is considered as Bulk sample and reported separately, asbestos content (if any) is not included in the final Quantitative analysis. The limit of detection (reporting limit) of this method is 0.001 %.

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

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
413023	TP812	0.30	100	Loose Fibres	Chrysotile	< 0.001	< 0.001
413033	TP907	0.50	132	Loose Fibres	Chrysotile	< 0.001	< 0.001
413044	CP804	0.50	94	Loose Fibres	Chrysotile	0.006	0.006
413055	TP809	0.60	96	Loose Fibres	Crocidolite	< 0.001	< 0.001
413060	WS809	0.70	98	Insulation Lagging	Amosite	0.006	0.006
413064	WS808	0.60	88	Loose Fibres	Chrysotile & Crocidolite	< 0.001	< 0.001
413067	HP813	0.40	94	Loose Fibres	Chrysotile	< 0.001	< 0.001
413069	HP808	0.50	90	Insulation Lagging	Chrysotile	< 0.001	< 0.001
413072	HP804	0.20	93	Insulation Board/Tile	Chrysotile	0.002	0.002
413077	HP803	0.30	93	Insulation Lagging	Chrysotile	0.002	0.002

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



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413078	413079	413080	413081	413082
Sample Reference				TP820	TP820	TP819	TP829	TP834
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.50	0.20	0.40	0.50
Date Sampled				19/01/2015	19/01/2015	19/01/2015	20/01/2015	20/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	7.6	3.7	4.2	5.5	1.9
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.9	1.8	1.9	< 0.4	0.6
Copper (dissolved)	µg/l	0.7	ISO 17025	15	17	12	3.5	12
Lead (dissolved)	µg/l	1	ISO 17025	5.9	21	7.6	1.1	4.8
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.6	2.9	3.1	1.7	2.4
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	15	8.8	7.1	3.3	3.3



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413083	413084	413085	413086	413087
Sample Reference				TP908	TP907	TP907	TP968	TP912
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	0.50	1.80	1.90	1.30
Date Sampled				21/01/2015	21/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	3.3	< 1.1	< 1.1	1.9
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.8	0.9	2.7	1.5	2.2
Copper (dissolved)	µg/l	0.7	ISO 17025	1.9	14	1.6	3.5	3.0
Lead (dissolved)	µg/l	1	ISO 17025	4.6	5.4	3.4	4.3	5.6
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.2	2.6	1.9	1.7	2.1
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	3.4	1.9	4.4	2.7	3.7



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413088	413089	413090	413091	413092
Sample Reference				TP910A	TP910A	TP910	TP911	TP911
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	1.20	0.40	0.30	1.00
Date Sampled				21/01/2015	21/01/2015	21/01/2015	21/01/2015	21/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	< 1.1	6.0	2.0	2.6
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.3	1.9	2.2	1.1	2.4
Copper (dissolved)	µg/l	0.7	ISO 17025	7.5	3.1	21	13	5.7
Lead (dissolved)	µg/l	1	ISO 17025	7.7	5.4	6.3	3.3	8.9
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.3	1.4	5.9	3.8	1.5
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	17	5.7	6.0	1.3	5.8



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413093	413094	413095	413096	413097
Sample Reference				TP914	TP811	TP803	TP822	TP821
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.20	0.40	0.50	0.50
Date Sampled				21/01/2015	21/01/2015	22/01/2015	22/01/2015	22/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	3.5	14	5.7	4.8	7.6
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.3	6.2	2.5	2.7	5.4
Copper (dissolved)	µg/l	0.7	ISO 17025	1.5	5.0	11	8.5	7.4
Lead (dissolved)	µg/l	1	ISO 17025	3.5	9.5	11	11	16
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.6	1.5	2.0	1.6	1.9
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	2.0	74	13	8.8	59



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413098	413099	413100	413101	413102
Sample Reference				TP808	TP805	WS806	WS809	WS801
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	0.20	0.40	0.70	0.70
Date Sampled				22/01/2015	22/01/2015	26/01/2015	26/01/2015	26/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	3.6	4.0	4.6	9.9	2.7
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	5.2	7.7	16	0.7	2.7
Copper (dissolved)	µg/l	0.7	ISO 17025	8.7	9.9	6.7	9.6	15
Lead (dissolved)	µg/l	1	ISO 17025	2.7	2.7	2.9	4.0	9.7
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.3	1.5	1.3	3.4	7.5
Selenium (dissolved)	µg/l	4	ISO 17025	5.7	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	4.1	2.3	2.1	5.5	6.3



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413103	413104	413105	413106	413107
Sample Reference				WS808	WS808	HP812	HP811	HP807
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	0.60	0.30	0.20	0.30
Date Sampled				26/01/2015	26/01/2015	27/01/2015	27/01/2015	27/01/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	3.3	< 1.1	1.6	4.5	2.7
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1.6	< 0.4	1.1	0.8
Copper (dissolved)	µg/l	0.7	ISO 17025	1.9	9.3	2.8	12	4.7
Lead (dissolved)	µg/l	1	ISO 17025	1.7	9.1	1.6	4.8	5.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	0.6	4.0	1.3	2.5	1.8
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	0.9	4.8	4.2	2.1	1.4



Analytical Report Number: 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

Your Order No: 20243

Lab Sample Number				413108	413109	413110	413111	
Sample Reference				HP809	HP810	HP804	HP803	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				0.15	0.20	0.20	0.30	
Date Sampled				27/01/2015	27/01/2015	27/01/2015	27/01/2015	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	6.3	3.6	4.4	4.6	
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	
Chromium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1.2	1.9	0.5	
Copper (dissolved)	µg/l	0.7	ISO 17025	10	12	9.4	6.8	
Lead (dissolved)	µg/l	1	ISO 17025	6.5	2.4	9.2	4.2	
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.9	2.7	1.6	2.7	
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	
Zinc (dissolved)	µg/l	0.4	ISO 17025	2.9	5.7	2.6	2.0	

Analytical Report Number : 15-66395

Project / Site name: Rifle Range St Andrews Park , Uxbridge

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
413013	TP823	None Supplied	0.60	Light brown gravelly sand with rubble.
413014	TP820	None Supplied	0.30	Brown sandy topsoil with gravel and glass.
413015	TP820	None Supplied	0.50	Brown topsoil and clay with vegetation.
413016	TP819	None Supplied	0.20	Brown topsoil and clay with gravel and vegetation.
413017	TP819	None Supplied	0.80	Light brown topsoil and clay with vegetation.
413018	TP813	None Supplied	0.30	Light brown clay and sand with rubble.
413019	TP813	None Supplied	0.50	Brown gravelly clay with oil / petroleum.
413020	TP813	None Supplied	1.40	Light brown clay and sand.
413021	TP810	None Supplied	0.50	Brown topsoil and sand with gravel.
413022	TP810	None Supplied	0.80	Light brown sandy clay.
413023	TP812	None Supplied	0.30	Brown topsoil and clay.
413024	TP829	None Supplied	0.40	Grey clay and topsoil.
413025	TP829	None Supplied	0.60	Grey clay and sand.
413026	TP834	None Supplied	0.50	Brown topsoil and clay with gravel and vegetation.
413027	TP828	None Supplied	0.60	Light brown sandy clay with gravel.
413028	CP807	None Supplied	0.50	Light brown clay and topsoil.
413029	CP807	None Supplied	1.00	Light brown clay and topsoil.
413030	CP802A	None Supplied	0.50	Light brown clay and sand with rubble and brick.
413031	CP802A	None Supplied	1.00	Brown clay and sand.
413032	TP908	None Supplied	0.70	Light brown sandy clay.
413033	TP907	None Supplied	0.50	Light brown clay and sand with vegetation.
413034	TP907	None Supplied	1.80	Light brown clay.
413035	TP968	None Supplied	1.90	Light grey clay.
413036	TP912	None Supplied	1.30	Grey clay.
413037	TP910A	None Supplied	0.70	Black sandy clay with vegetation and coal.
413038	TP910A	None Supplied	1.20	Grey clay and sand with vegetation.
413039	TP910	None Supplied	0.40	Brown sandy topsoil with vegetation.
413040	TP911	None Supplied	0.30	Light brown clay and sand.
413041	TP911	None Supplied	1.00	Light brown clay and sand.
413042	TP914	None Supplied	0.80	Grey clay.
413043	TP811	None Supplied	0.20	Black sandy gravel with rubble and brick.
413044	CP804	None Supplied	0.50	Light brown clay and sand with rubble and brick.
413045	CP804	None Supplied	1.00	Light brown clay.
413046	TP803	None Supplied	0.40	Black topsoil and sand with gravel and vegetation.
413047	TP822	None Supplied	0.50	Brown topsoil and clay with gravel and vegetation.
413048	TP822A	None Supplied	0.50	Brown topsoil and clay with gravel and vegetation.
413049	TP821	None Supplied	0.50	Brown topsoil and sand with gravel and brick.
413050	TP801	None Supplied	0.20	Brown topsoil and clay with vegetation.
413051	TP808	None Supplied	1.20	Light brown clay and topsoil with rubble.
413052	TP806	None Supplied	0.20	Light brown sand with rubble and brick.
413053	TP807	None Supplied	0.60	Light brown clay and sand with gravel.
413054	TP805	None Supplied	0.20	Light brown clay and sand with gravel.
413055	TP809	None Supplied	0.60	Brown clay and topsoil with gravel.
413056	TP826	None Supplied	0.70	Brown clay and topsoil with gravel.
413057	TP825	None Supplied	0.70	Light brown clay.
413058	TP824	None Supplied	0.40	Light brown sandy clay.
413059	WS806	None Supplied	0.40	Light brown clay and sand.
413060	WS809	None Supplied	0.70	Brown topsoil and clay with gravel and rubble.
413061	WS809	None Supplied	1.00	Light brown topsoil and clay.
413062	WS801	None Supplied	0.70	Light brown clay and sand with gravel.
413063	WS808	None Supplied	1.00	Light brown clay.
413064	WS808	None Supplied	0.60	Brown topsoil and clay with gravel and brick.
413065	HP812	None Supplied	0.30	Light brown clay.
413066	HP811	None Supplied	0.20	Brown clay and topsoil with gravel and brick.
413067	HP813	None Supplied	0.40	Brown clay and topsoil with gravel and brick.
413068	HP807	None Supplied	0.30	Light brown clay and topsoil.
413069	HP808	None Supplied	0.50	Light brown clay and sand with gravel.
413070	HP809	None Supplied	0.15	Black topsoil and clay with gravel and vegetation.
413071	HP810	None Supplied	0.20	Light brown clay and topsoil.
413072	HP804	None Supplied	0.20	Brown topsoil and clay with gravel.
413073	HP805	None Supplied	0.40	Light brown clay and topsoil with gravel and vegetation.
413074	HP806	None Supplied	0.50	Light brown clay and topsoil with gravel and vegetation.
413075	HP801	None Supplied	0.50	Light brown clay and topsoil with gravel and vegetation.
413076	HP802	None Supplied	0.40	Light brown clay and topsoil with gravel and vegetation.
413077	HP803	None Supplied	0.30	Light brown clay and topsoil with gravel and vegetation.