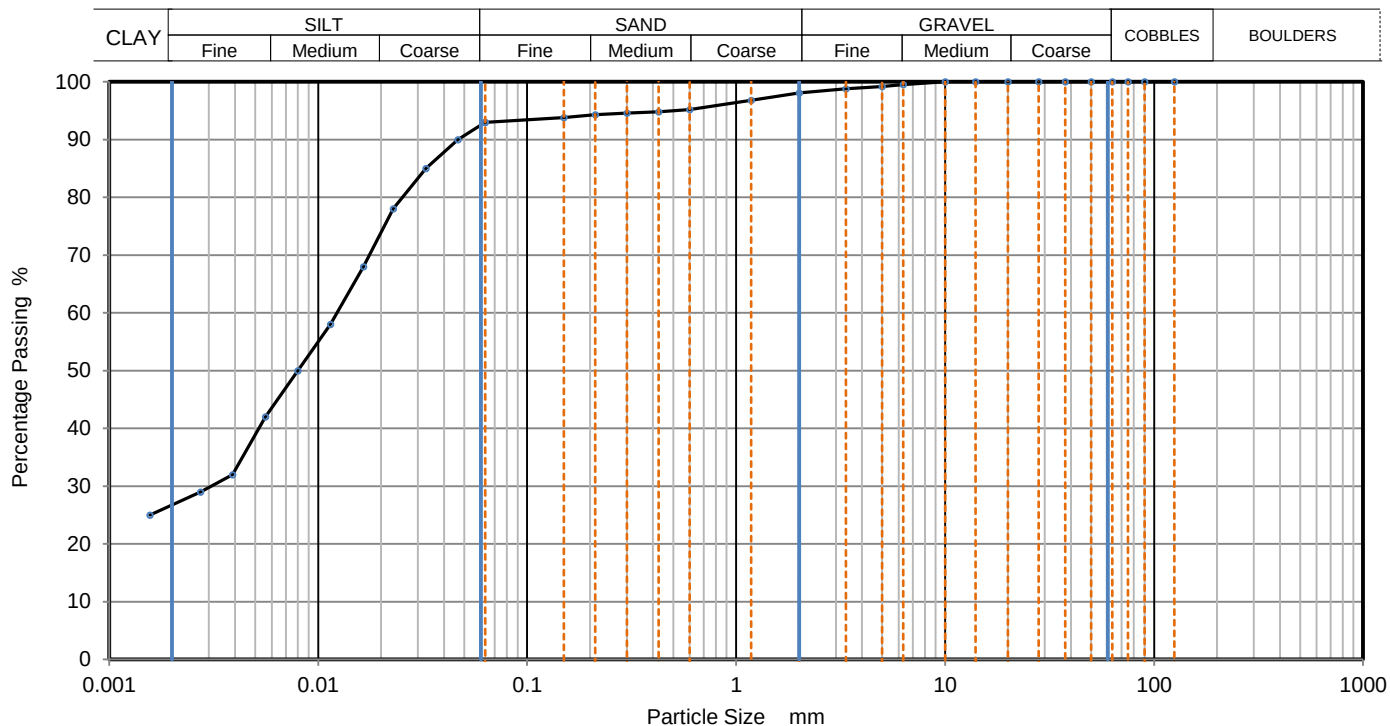




PARTICLE SIZE DISTRIBUTION

Job Ref	25827
Borehole/Pit No.	WS17
Sample No.	4
Depth Top	1.40 m
Depth Base	- m
Sample Type	D
Samples received	15-21/01/2019
Schedules received	22/01/2019
Project started	23/01/2019
Date tested	08/02/2019

Site Name	Southwater Phase V		
Project No.	GE17902	Client	GESL
Soil Description	Greyish brown slightly shaley slightly sandy silty CLAY		
Test Method	BS1377:Part 2: 1990, clause 9.0		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	93
90	100	0.0467	90
75	100	0.0327	85
63	100	0.0229	78
50	100	0.0165	68
37.5	100	0.0115	58
28	100	0.0080	50
20	100	0.0056	42
14	100	0.0039	32
10	100	0.0027	29
6.3	100	0.0016	25
5	99		
3.35	99		
2	98		
1.18	97		
0.6	95	Particle density (assumed) 2.70 Mg/m3	
0.425	95		
0.3	95		
0.212	94		
0.15	94		
0.063	93		

Dry Mass of sample, g 28

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	1.9
Sand	5.0
Silt	66.5
Clay	26.6

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377 unless noted below



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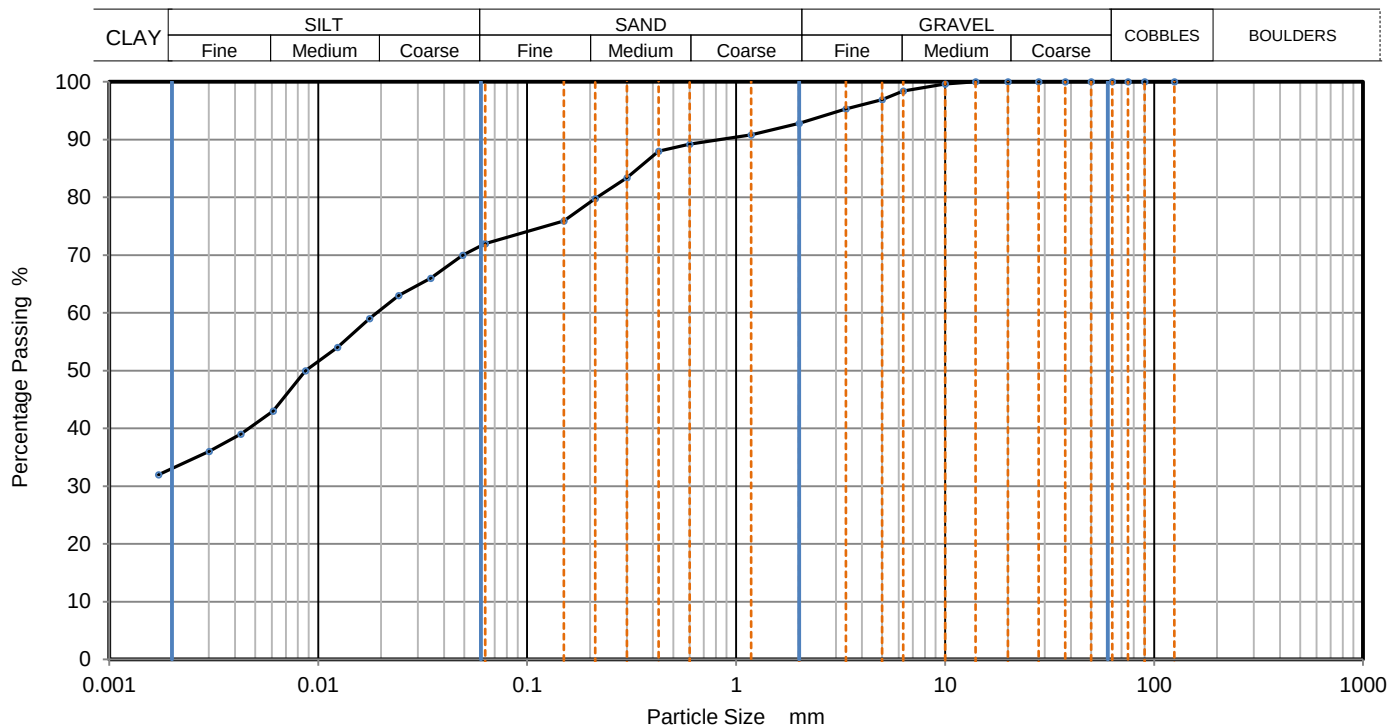
Checked and Approved

Initials: J.P
Date: 13/02/2019



PARTICLE SIZE DISTRIBUTION

Job Ref	25827
Borehole/Pit No.	WS17
Sample No.	7
Depth Top	3.00 m
Depth Base	- m
Sample Type	D
Samples received	15-21/01/2019
Schedules received	22/01/2019
Project started	23/01/2019
Date tested	05/02/2019



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	72
90	100	0.0491	70
75	100	0.0345	66
63	100	0.0243	63
50	100	0.0176	59
37.5	100	0.0124	54
28	100	0.0087	50
20	100	0.0061	43
14	100	0.0043	39
10	100	0.0030	36
6.3	98	0.0017	32
5	97		
3.35	95		
2	93		
1.18	91		
0.6	89	Particle density (assumed) 2.70 Mg/m3	
0.425	88		
0.3	83		
0.212	80		
0.15	76		
0.063	72		

Dry Mass of sample, g 104

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	7.2
Sand	20.8
Silt	38.9
Clay	33.1

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377 unless noted below



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Checked and Approved

Initials: J.P
Date: 13/02/2019



California Bearing Ratio (CBR)

Job Ref 25827

Borehole/Pit No. HP01

Site Name Southwater Phase V

Sample No. 1

Project No. GE17902

Client

GESL

Depth Top 0.50 m

Soil Description

Light brown slightly sandy silty CLAY with occasional fmc elongated mudstone fragments and rare fine roots

Depth Base - m

Sample Type B

Samples received 15-21/01/2019

Schedules received 22/01/2019

Test Method BS1377 : Part 4 : 1990, clause 7

Project Started 23/01/2019

Date Tested 06/02/2019

Specimen Preparation

Condition REMOULDED

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking 4 days

Time to surface 4 days

Amount of swell recorded -0.07 mm

Material retained on 20mm sieve removed 1.3 %

Initial Specimen details Bulk density 1.78 Mg/m³

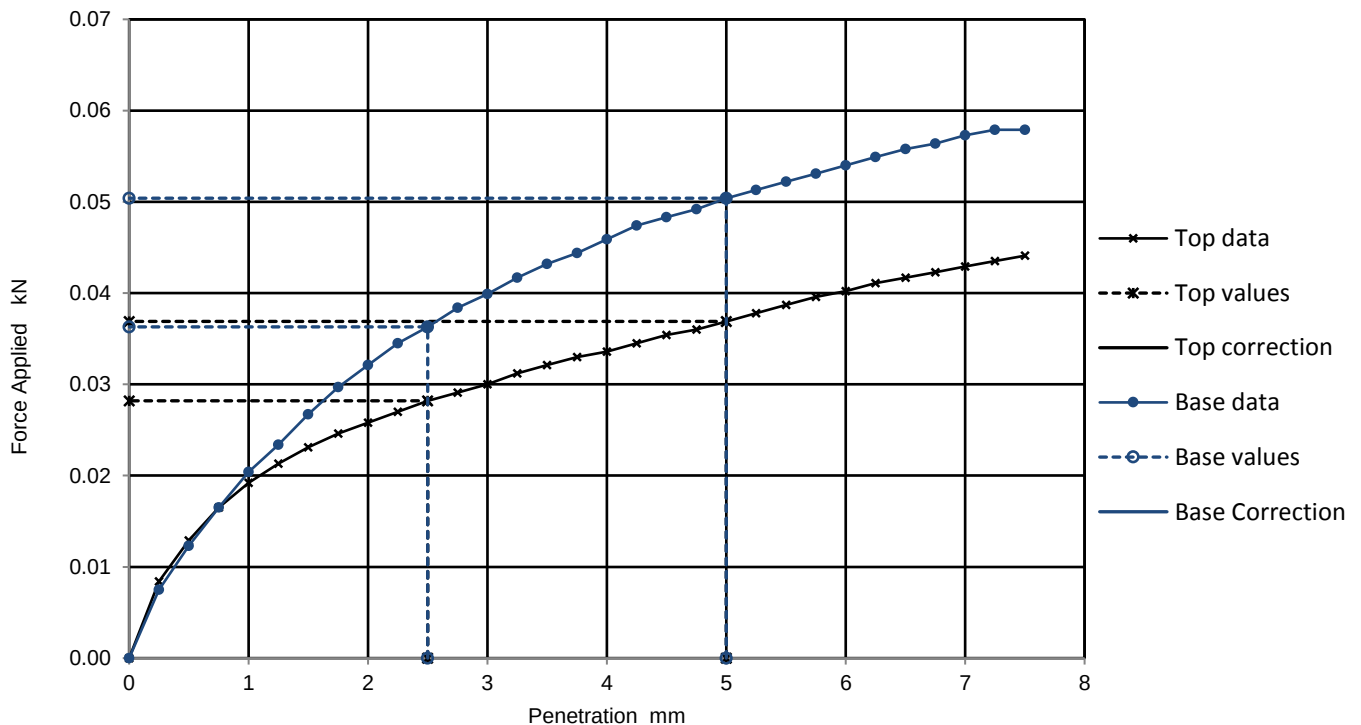
Dry density 1.29 Mg/m³

Moisture content 38 %

Surcharge applied 6 kg

4 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	0.21	0.18	0.21	N/A
No	0.28	0.25	0.28	

Moisture Content %
37
40

Remarks

1



Test Report by K4 SOILS LABORATORY
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Checked and Approved

Initials: J.P

Date: 13/02/2019

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R16



California Bearing Ratio (CBR)

Job Ref 25827

Borehole/Pit No. HP02

Site Name Southwater Phase V

Sample No. 1

Project No. GE17902

Client

GESL

Depth Top 0.50 m

Soil Description

Light greyish brown slightly sandy silty CLAY with grass, roots and rare elongated mudstone fragments

Depth Base - m

Sample Type B

Samples received 15-21/01/2019

Schedules received 22/01/2019

Test Method BS1377 : Part 4 : 1990, clause 7

Project Started 23/01/2019

Date Tested 05/02/2019

Specimen Preparation

Condition REMOULDED

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking 4 days

Time to surface 4 days

Amount of swell recorded 0.15 mm

Material retained on 20mm sieve removed 0.0 %

Initial Specimen details Bulk density 1.89 Mg/m³

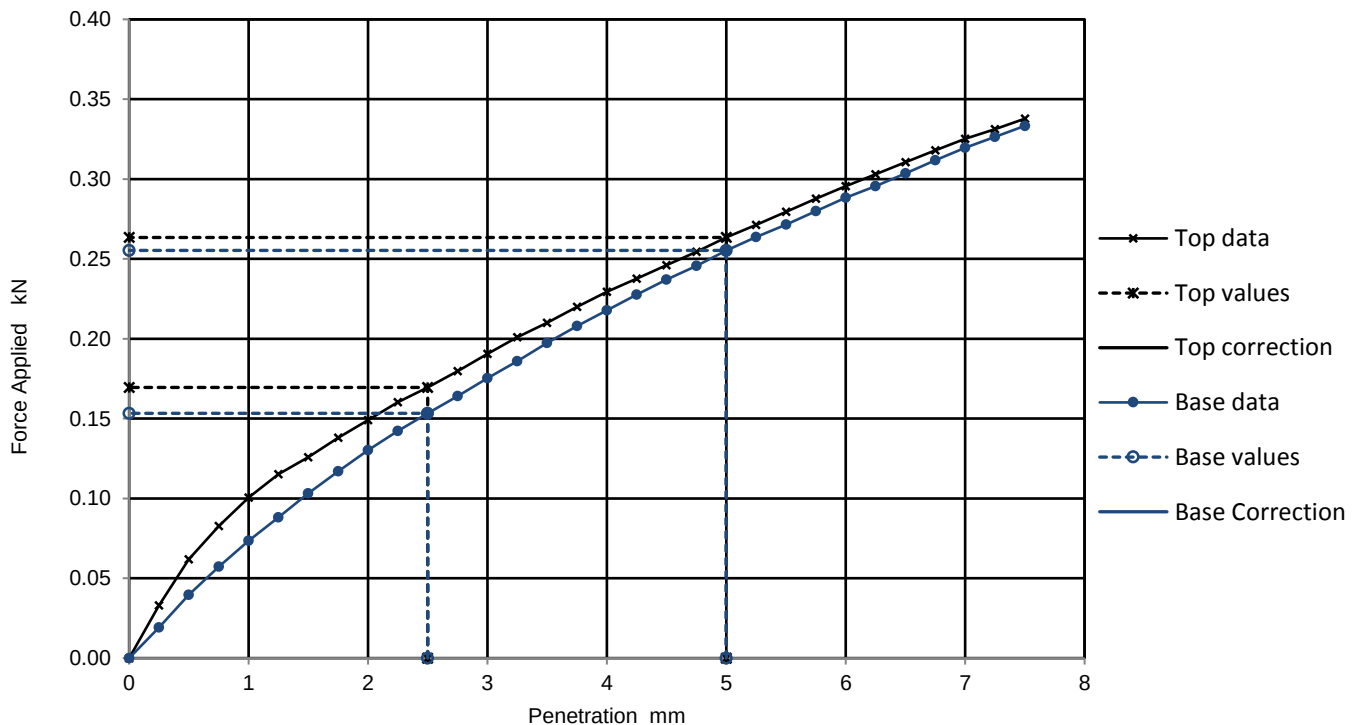
Dry density 1.46 Mg/m³

Moisture content 30 %

Surcharge applied 6 kg

4 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	1.3	1.3	1.3	1.3
No	1.2	1.3	1.3	

Moisture Content %
31
31

Remarks

2



Test Report by K4 SOILS LABORATORY
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Checked and Approved

Initials: J.P

Date: 13/02/2019



California Bearing Ratio (CBR)

Job Ref 25827

Borehole/Pit No. HP03

Site Name Southwater Phase V

Sample No. 1

Project No. GE17902

Client

GESL

Depth Top 0.50 m

Soil Description

Pale brown slightly sandy silty CLAY with grass and occasional rootlets

Depth Base - m

Sample Type B

Samples received 15-21/01/2019

Schedules received 22/01/2019

Test Method BS1377 : Part 4 : 1990, clause 7

Project Started 23/01/2019

Date Tested 05/02/2019

Specimen Preparation

Condition REMOULDED

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking 4 days

Time to surface 4 days

Amount of swell recorded -0.18 mm

Material retained on 20mm sieve removed 0.0 %

Initial Specimen details Bulk density 1.77 Mg/m³

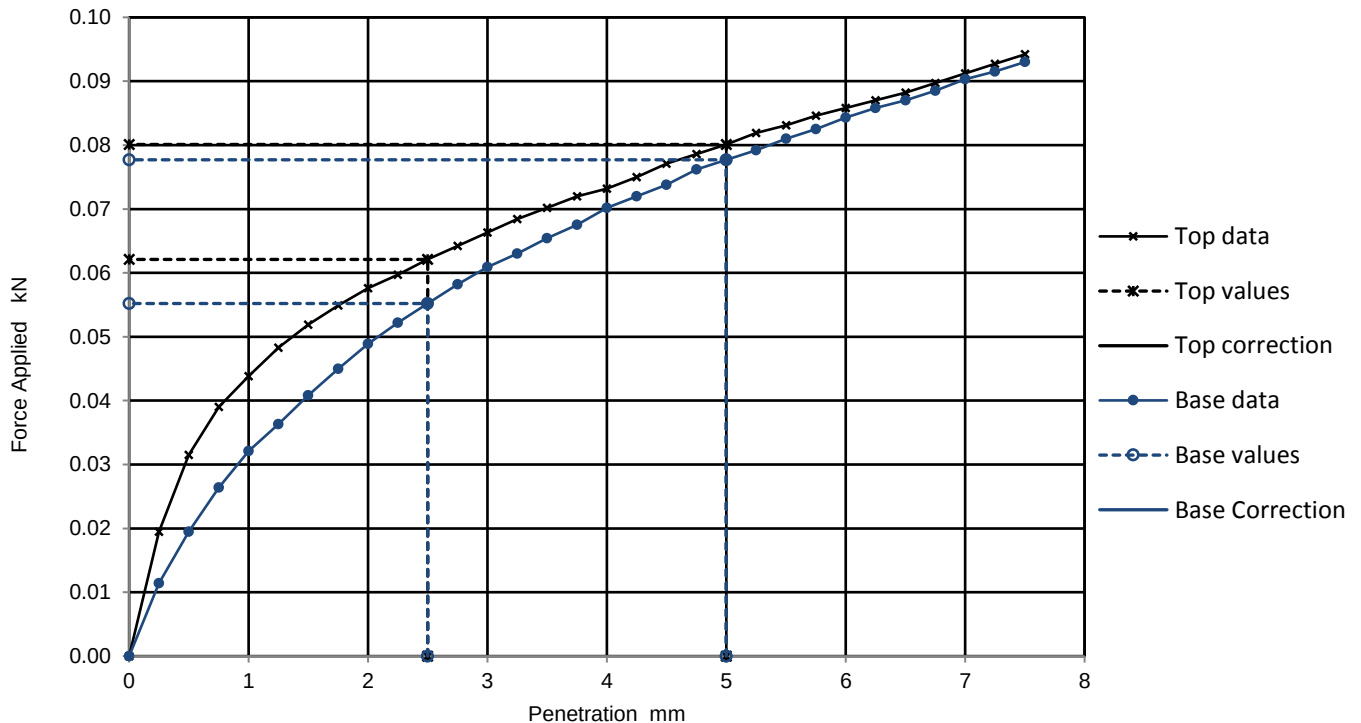
Dry density 1.27 Mg/m³

Moisture content 40 %

Surcharge applied 6 kg

4 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	0.47	0.40	0.47	0.44
No	0.42	0.39	0.42	

Moisture Content
%

42
42

Remarks

3



Test Report by K4 SOILS LABORATORY
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Checked and Approved

Initials: J.P

Date: 13/02/2019

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Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R16



California Bearing Ratio (CBR)

Job Ref 25827

Borehole/Pit No. HP04

Site Name Southwater Phase V

Sample No. 1

Project No. GE17902

Client

GESL

Depth Top 0.50 m

Soil Description

Pale brown slightly sandy silty CLAY with occasional grass and rootlets

Depth Base - m

Sample Type B

Samples received 15-21/01/2019

Schedules received 22/01/2019

Test Method BS1377 : Part 4 : 1990, clause 7

Project Started 23/01/2019

Date Tested 05/02/2019

Specimen Preparation

Condition REMOULDED

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking 4 days

Time to surface 4 days

Amount of swell recorded 0.26 mm

Material retained on 20mm sieve removed 0.0 %

Initial Specimen details Bulk density 1.87 Mg/m³

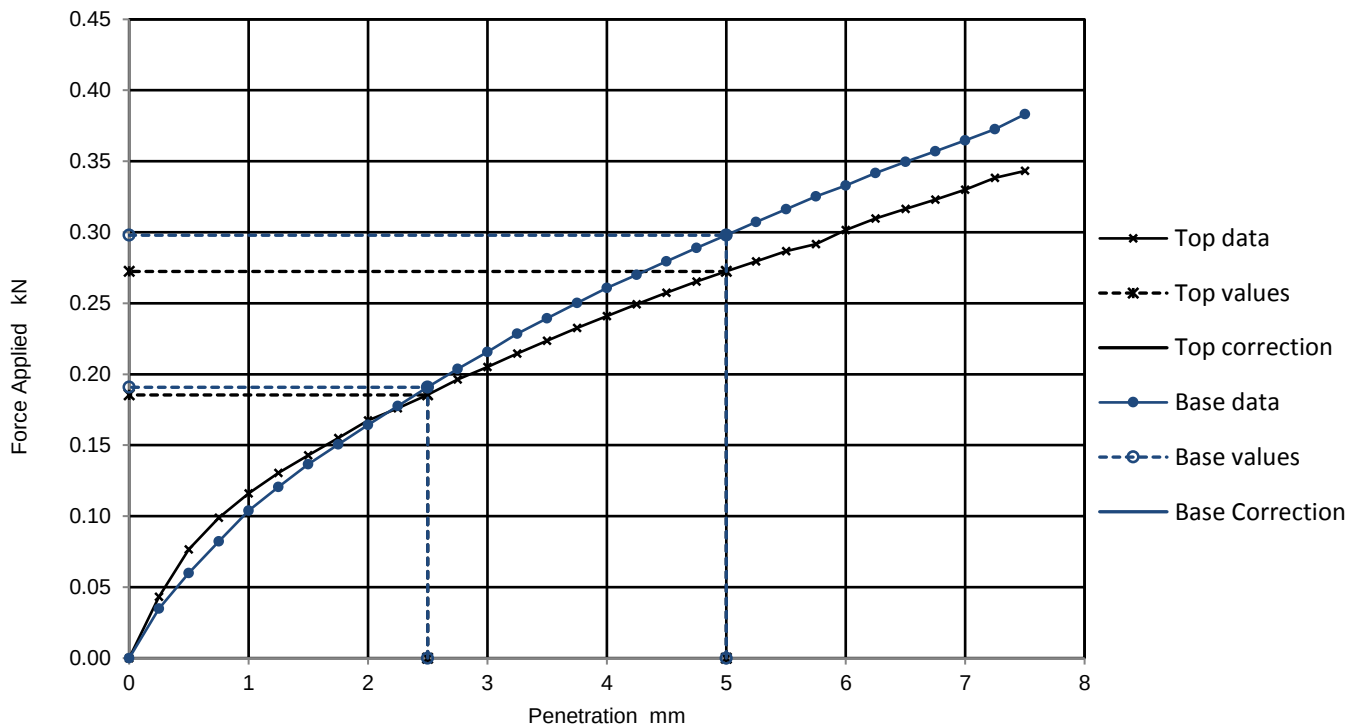
Dry density 1.39 Mg/m³

Moisture content 34 %

Surcharge applied 6 kg

4 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	1.4	1.4	1.4	1.4
No	1.4	1.5	1.5	

Moisture Content %
32
33

Remarks

4



Test Report by K4 SOILS LABORATORY
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Date: 13/02/2019



California Bearing Ratio (CBR)

Job Ref 25827

Borehole/Pit No. HP05

Site Name Southwater Phase V

Sample No. 1

Project No. GE17902

Client

GESL

Depth Top 0.50 m

Soil Description

Brown slightly sandy silty CLAY with numerous grass and roots

Depth Base - m

Sample Type B

Samples received 15-21/01/2019

Schedules received 22/01/2019

Test Method BS1377 : Part 4 : 1990, clause 7

Project Started 23/01/2019

Date Tested 05/02/2019

Specimen Preparation

Condition REMOULDED

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking 6 days

Time to surface 6 days

Amount of swell recorded 0.05 mm

Material retained on 20mm sieve removed 0.0 %

Initial Specimen details Bulk density 1.85 Mg/m³

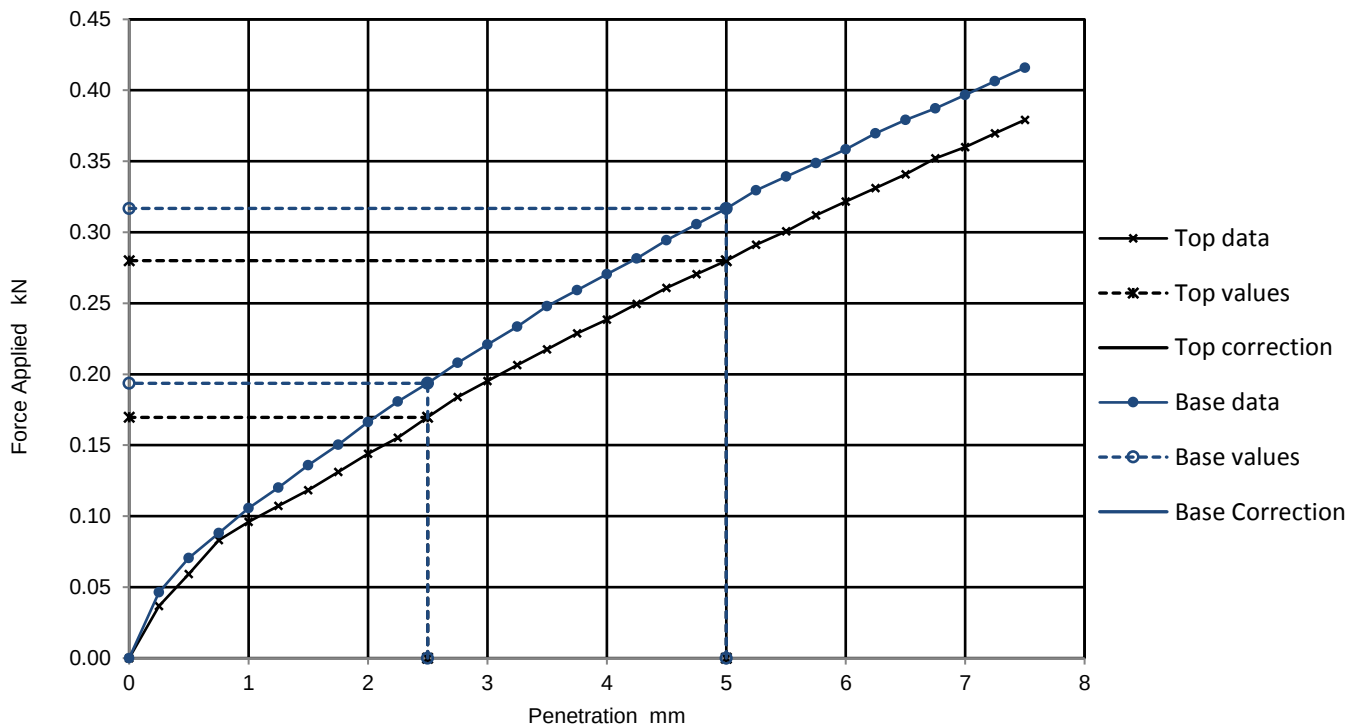
Dry density 1.40 Mg/m³

Moisture content 33 %

Surcharge applied 5.89 kg

4 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	1.3	1.4	1.4	1.5
No	1.5	1.6	1.6	

Moisture Content %
33
32

Remarks

5



Test Report by K4 SOILS LABORATORY
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Date: 13/02/2019



California Bearing Ratio (CBR)

Job Ref 25827

Borehole/Pit No. HP06

Site Name Southwater Phase V

Sample No. 1

Project No. GE17902

Client

GESL

Depth Top 0.50 m

Soil Description

Pale brown slightly gravelly slightly sandy silty CLAY with occasional rootlets (gravel is fm and sub-angular)

Depth Base - m

Sample Type B

Samples received 15-21/01/2019

Schedules received 22/01/2019

Test Method BS1377 : Part 4 : 1990, clause 7

Project Started 23/01/2019

Date Tested 06/02/2019

Specimen Preparation

Condition REMOULDED

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking 6 days

Time to surface 6 days

Amount of swell recorded 0.00 mm

Material retained on 20mm sieve removed 0.0 %

Initial Specimen details Bulk density 1.86 Mg/m³

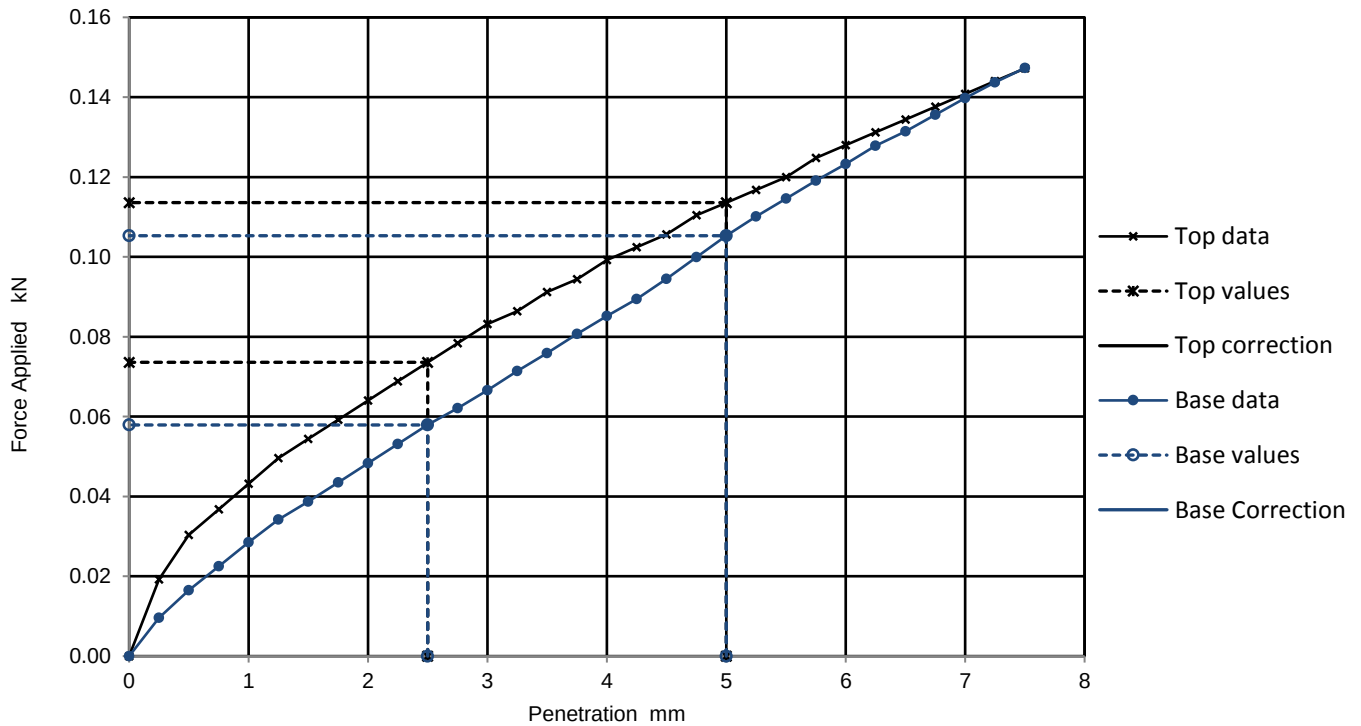
Dry density 1.40 Mg/m³

Moisture content 33 %

Surcharge applied 5.75 kg

3 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	0.56	0.57	0.57	0.55
No	0.44	0.53	0.53	

Moisture Content %
34
31

Remarks

6



Test Report by K4 SOILS LABORATORY
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Initials: J.P

Date: 13/02/2019



California Bearing Ratio (CBR)

Job Ref 25827

Borehole/Pit No. HP07

Site Name Southwater Phase V

Sample No. 1

Project No. GE17902

Client

GESL

Depth Top 0.50 m

Soil Description

Pale brown slightly gravelly slightly sandy silty CLAY with occasional grass and rootlets (gravel is fmc and sub-angular to sub-rounded)

Depth Base - m

Sample Type B

Samples received 15-21/01/2019

Schedules received 22/01/2019

Test Method BS1377 : Part 4 : 1990, clause 7

Project Started 23/01/2019

Date Tested 06/02/2019

Specimen Preparation

Condition REMOULDED

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking 6 days

Time to surface 6 days

Amount of swell recorded -0.17 mm

Material retained on 20mm sieve removed 0.2 %

Initial Specimen details Bulk density 1.79 Mg/m³

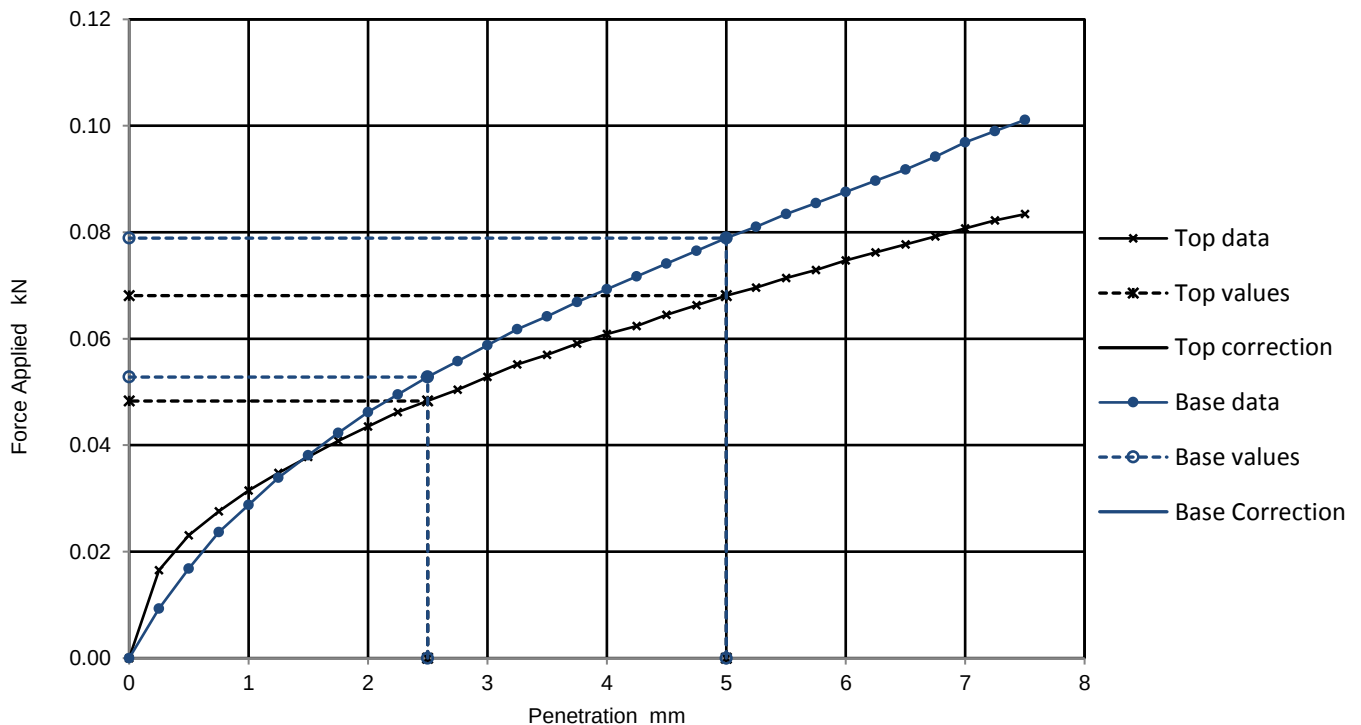
Dry density 1.30 Mg/m³

Moisture content 38 %

Surcharge applied 6 kg

4 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	0.37	0.34	0.37	0.38
No	0.40	0.39	0.40	

Moisture Content %
39
40

Remarks

7



Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
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Checked and Approved

Initials: J.P

Date: 13/02/2019



California Bearing Ratio (CBR)

Job Ref 25827

Borehole/Pit No. HP08

Site Name Southwater Phase V

Sample No. 1

Project No. GE17902

Client

GESL

Depth Top 0.50 m

Soil Description

Pale brown slightly sandy silty CLAY with occasional grass and rootlets

Depth Base - m

Sample Type B

Samples received 15-21/01/2019

Schedules received 22/01/2019

Test Method BS1377 : Part 4 : 1990, clause 7

Project Started 23/01/2019

Date Tested 05/02/2019

Specimen Preparation

Condition REMOULDED

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking 4 days

Time to surface 4 days

Amount of swell recorded -0.26 mm

Material retained on 20mm sieve removed 0.0 %

Initial Specimen details Bulk density 1.87 Mg/m³

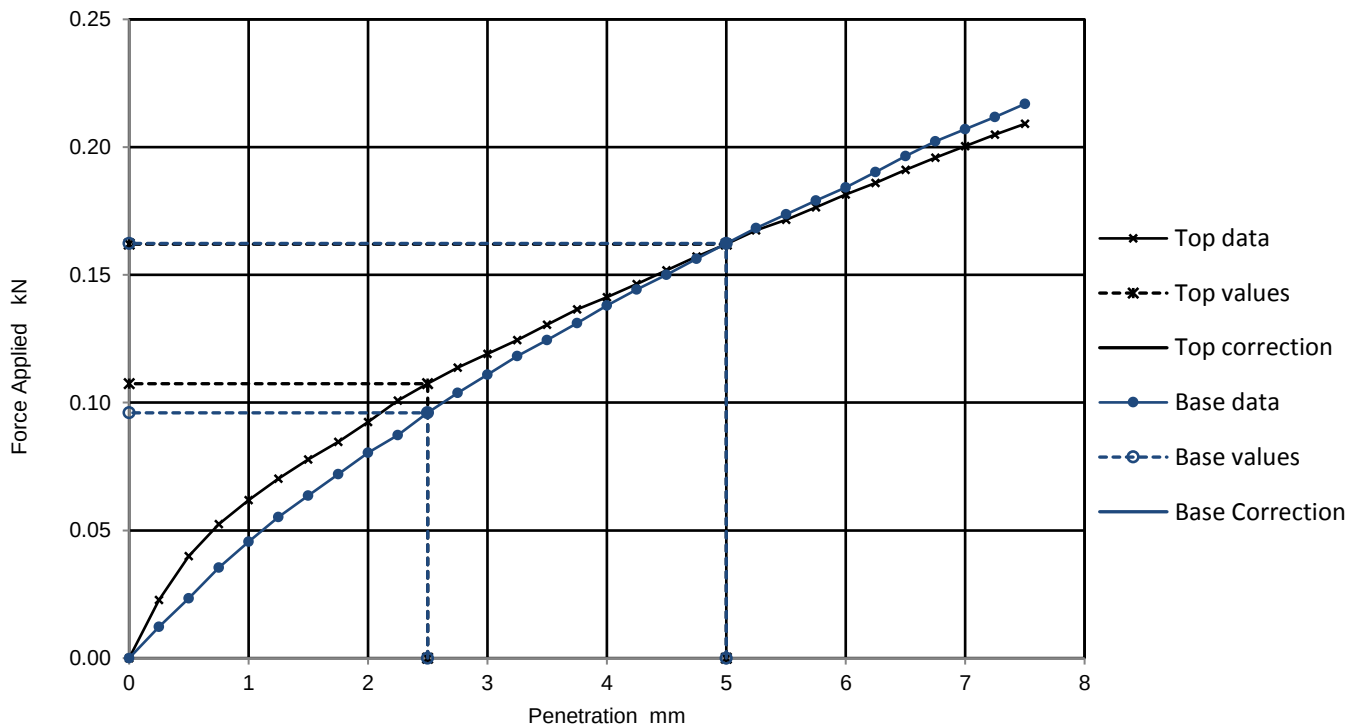
Dry density 1.41 Mg/m³

Moisture content 32 %

Surcharge applied 6 kg

4 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	0.81	0.81	0.81	0.81
No	0.73	0.81	0.81	

Moisture Content %
33
32

Remarks

8



Test Report by K4 SOILS LABORATORY
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Date: 13/02/2019

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R16

					Sulphate Content (Gravimetric Method) for 2:1 Soil: Water Extract and pH Value - Summary of Results Tested in accordance with BS1377 : Part 3 : 1990, clause 5.3 and clause 9						
Job No. 25827		Project Name Southwater Phase V							Programme		
									Samples received	15-21/01/2019	
Project No. GE17902		Client GESL							Schedule received	22/01/2019	
									Project started	23/01/2019	
									Testing Started	01/02/2019	
Hole No.	Sample				Soil description	Dry Mass passing 2mm %	SO3 Content g/l	SO4 Content g/l	pH	Remarks	
	Ref	Top m	Base m	Type							
BH01	3	3.45	-	D	Light brown slightly shaley slightly sandy silty CLAY	100	0.22	0.27	7.68		
BH01	14	12.00	-	D	Grey slightly shaley slightly sandy silty CLAY	100	0.66	0.79	7.60		
BH02	6	6.00	-	D	Grey slightly shaley slightly sandy silty CLAY	100	0.32	0.38	7.68		
BH02	22	18.00	-	D	Grey slightly sandy silty CLAY	100	0.54	0.65	7.66		
WS02	4	0.75	-	D	Orangish brown slightly mottled bluish grey silty CLAY with occasional dark grey carbonaceous pockets and scattered fine rootlets	100	0.26	0.31	6.10		
WS03	7	1.75	-	D	Reddish brown and greyish brown with occasional dark grey stains slightly sandy silty CLAY	100	0.55	0.66	7.22		
WS05	3	0.75	-	D	Bluish grey slightly mottled orangish brown silty CLAY	100	0.25	0.30	6.59		
WS06	3	0.50	-	D	Yellowish brown with orangish brown and bluish grey silty CLAY with occasional dark grey carbonaceous deposits	100	0.24	0.28	7.29		
WS07	5	1.25	-	D	Greenish brown and yellowish brown slightly shaley slightly sandy silty CLAY	100	0.24	0.29	7.40		
WS08	4	0.75	-	D	Orangish brown and bluish grey slightly shaley slightly sandy silty CLAY	100	0.14	0.17	7.20		
WS09	7	1.50	-	D	Greyish brown, bluish grey and orangish brown slightly shaley slightly sandy silty CLAY	100	0.11	0.13	6.75		
		Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: James@k4soils.com								Checked and Approved Initials J.P Date: 13/02/2019	
2519		Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)								MSF-5-R29	

					Sulphate Content (Gravimetric Method) for 2:1 Soil: Water Extract and pH Value - Summary of Results Tested in accordance with BS1377 : Part 3 : 1990, clause 5.3 and clause 9					
Job No. 25827		Project Name Southwater Phase V							Programme Samples received 15-21/01/2019 Schedule received 22/01/2019	
Project No. GE17902		Client GESL							Project started 23/01/2019 Testing Started 01/02/2019	
Hole No.	Sample				Soil description	Dry Mass passing 2mm %	SO3 Content g/l	SO4 Content g/l	pH	Remarks
	Ref	Top m	Base m	Type						
WS10	3	0.50	-	D	Orangish brown and bluish grey silty CLAY with traces of fine rootlets and occasional black stains	100	0.20	0.24	7.30	
WS11	5	1.25	-	D	Orangish brown slightly mottled bluish grey slightly shaley slightly sandy silty CLAY	100	0.19	0.23	7.00	
WS12	7	0.75	-	D	Reddish brown, orangish brown and bluish grey mottled slightly shaley slightly sandy silty CLAY	100	0.16	0.19	7.16	
WS13	3	1.00	-	D	Bluish grey and orangish brown mottled silty CLAY	100	0.13	0.16	7.70	
WS13	5	2.00	-	D	Dark reddish brown and greyish brown mottled slightly shaley slightly sandy silty CLAY with traces of fine rootlets	100	0.13	0.15	7.11	
WS14	3	1.00	-	D	Orangish brown and bluish grey slightly shaley slightly sandy silty CLAY	100	0.22	0.27	6.60	
WS15	4	1.00	-	D	Orangish brown and bluish grey slightly shaley slightly sandy silty CLAY with traces of fine rootlets	100	0.12	0.14	6.93	
WS16	2	0.50	-	D	Yellowish brown and orangish brown mottled slightly shaley slightly sandy silty CLAY	100	0.18	0.22	7.20	
WS16	4	1.50	-	D	Orangish brown slightly mottled bluish grey silty CLAY with scattered grey flecks	100	0.38	0.45	7.33	
WS17	4	1.40	-	D	Greyish brown slightly shaley slightly sandy silty CLAY	98	0.23	0.27	7.18	
		Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: James@k4soils.com							Checked and Approved Initials J.P Date: 13/02/2019	
2519		Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)							MSF-5-R29	

	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	25827
				Borehole/Pit No.	BH01
Site Name	Southwater Phase V			Sample No.	2
Project No.	GE17902	Client	GESL	Depth Top	5.00 m
Soil Description	High strength brownish grey mottled grey and orangish brown silty CLAY with occasional fm siltstone fragments			Depth Base	- m
				Sample Type	U
				Samples received	15-21/01/2019
				Schedules received	22/01/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	04/02/2019

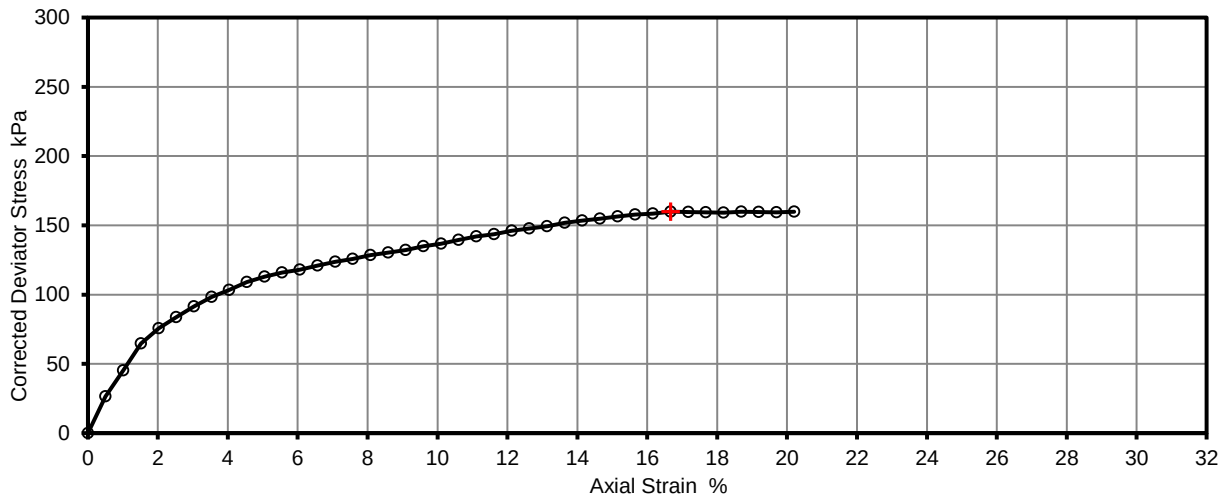
Remarks

Sample very disturbed

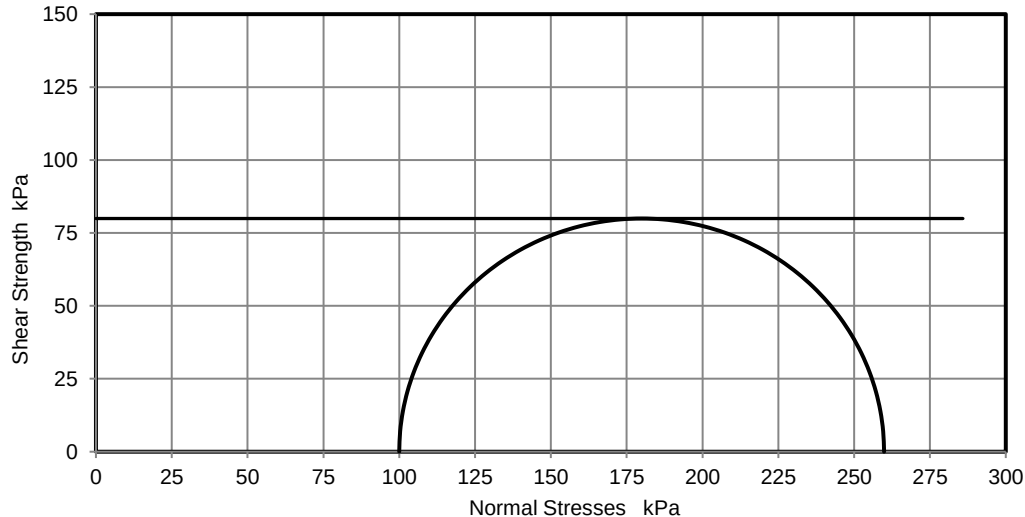
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.89	Mg/m3
Moisture Content	19	%
Dry Density	1.59	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	100	kPa
Axial Strain	17	%
Deviator Stress, ($\sigma_1 - \sigma_3$)f	160	kPa
Undrained Shear Strength, cu	80	kPa $\frac{1}{2}(\sigma_1 - \sigma_3)$ f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.



2519

Test Report by K4 SOILS LABORATORY
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Checked and Approved

Initials: J.P

Date 13/02/2019

MSF-5 R7

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	25827
				Borehole/Pit No.	BH02
Site Name	Southwater Phase V			Sample No.	2
Project No.	GE17902	Client	GESL	Depth Top	3.00 m
Soil Description	High strength brownish grey mottled orangish brown silty CLAY with occasional fmc siltstone fragments			Depth Base	- m
				Sample Type	U
				Samples received	15-21/01/2019
				Schedules received	22/01/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	04/02/2019

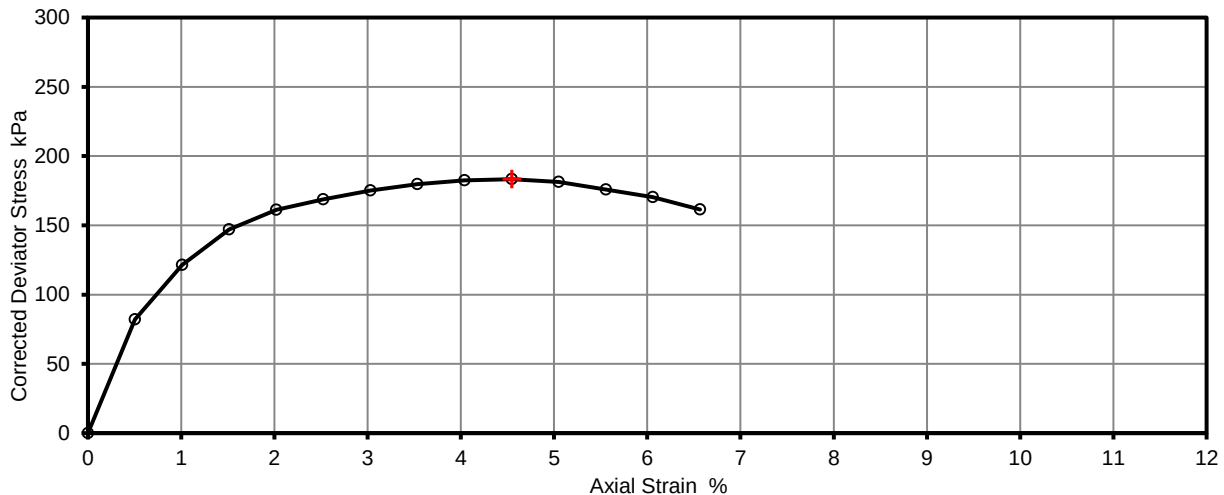
Remarks

Sample slightly disturbed

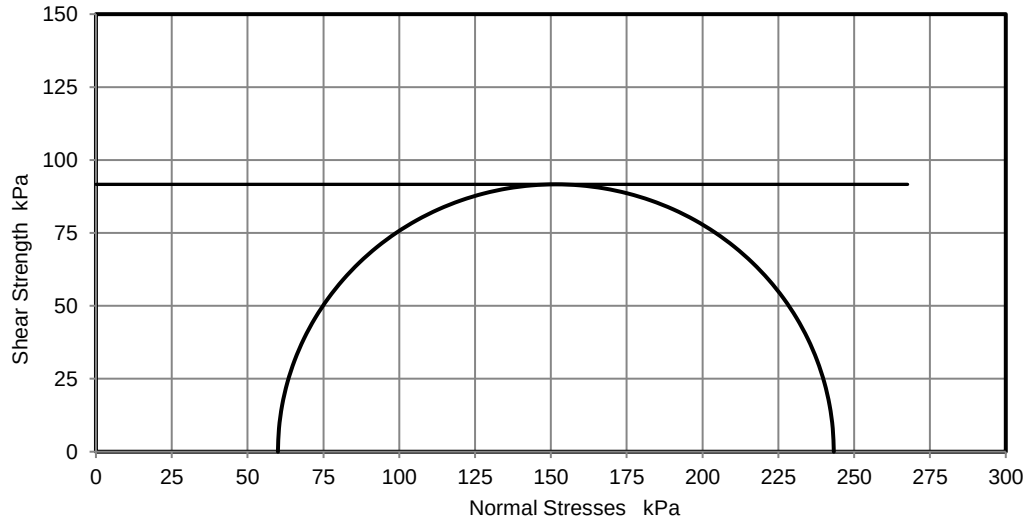
Position within sample

Test Number	1
Length	198.0 mm
Diameter	102.0 mm
Bulk Density	1.91 Mg/m ³
Moisture Content	21 %
Dry Density	1.57 Mg/m ³
Rate of Strain	2.0 %/min
Cell Pressure	60 kPa
Axial Strain	4.5 %
Deviator Stress, ($\sigma_1 - \sigma_3$)f	183 kPa
Undrained Shear Strength, cu	92 kPa $\frac{1}{2}(\sigma_1 - \sigma_3)$ f
Mode of Failure	Brittle

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.



2519

Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
Watford Herts WD18 9RU
Tel: 01923 711 288
Email: James@k4soils.com

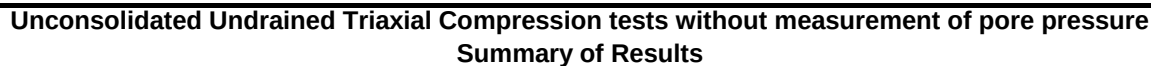
Checked and Approved

Initials: J.P

Date 13/02/2019

MSF-5 R7

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)



Job No.	Project Name	Programme	
25827	Southwater Phase V	Samples received	15-21/01/2019
		Schedule received	22/01/2019
Project No.	Client	Project started	23/01/2019
GE17902	GESL	Testing Started	04/02/2019

Legend	UU - single stage test (single and multiple specimens)	σ_3	Cell pressure	Mode of failure ;	B - Brittle
	UUM - Multistage test on a single specimen	$\sigma_1 - \sigma_3$	Maximum corrected deviator stress		P - Plastic
	suffix R - remoulded or recompacted	cu	Undrained shear strength, $\frac{1}{2} (\sigma_1 - \sigma_3)$		C - Compound



Initials:	J.P
Date:	13/02/2019

DCP Layer Strength Analysis Report

Project Name: DCP1

Chainage (km): 0.000

Direction:

Location/Offset: Carriageway

Cone Angle: 60 degrees

Zero Error (mm): 95

Test Date: 22/01/2019

Surface Type:

Unpaved

Thickness (mm):

0

Base Type:

Thickness (mm):

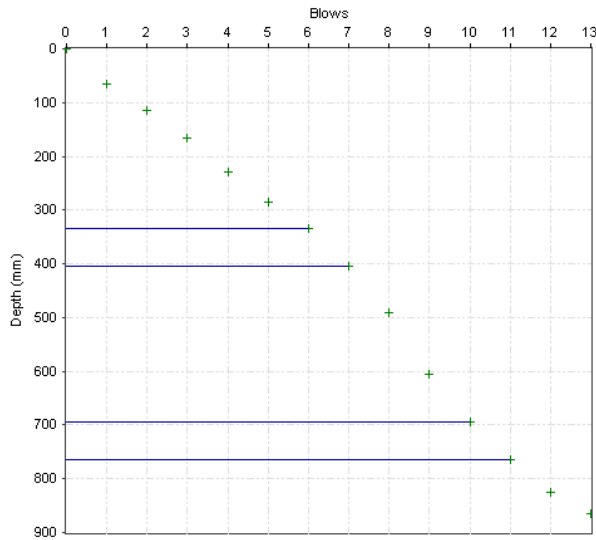
Surface Moisture:

Unknown

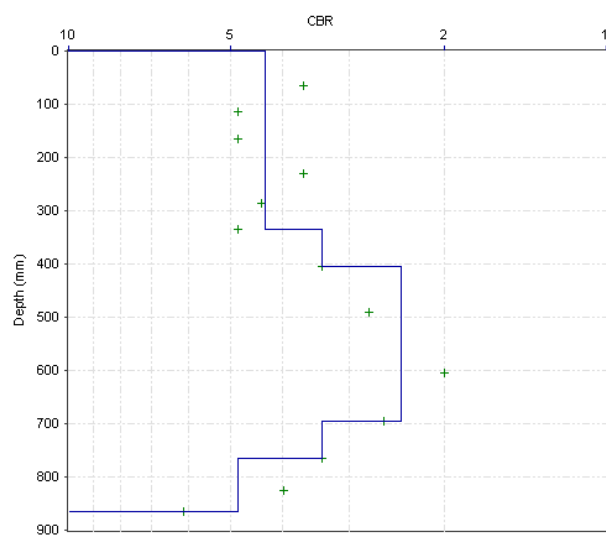
Moisture adjustment factor:

Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	55.83	4	335	335
2	70.00	3	70	405
3	96.67	2	290	695
4	70.00	3	70	765
5	50.00	5	100	865

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP1

Chainage (km):	0.000
Direction:	
Location/Offset:	Carriageway
Cone Angle:	60 degrees
Zero Error (mm):	95
Test Date:	22/01/2019

Surface Type:	Unpaved
Thickness (mm):	0
Base Type:	
Thickness (mm):	
Surface Moisture:	Unknown
Moisture adjustment factor:	Not adjusted

[illegible]

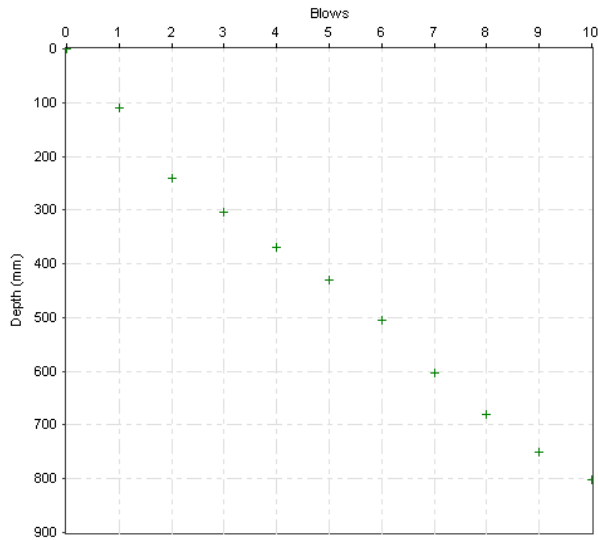
DCP Layer Strength Analysis Report

Project Name: DCP2

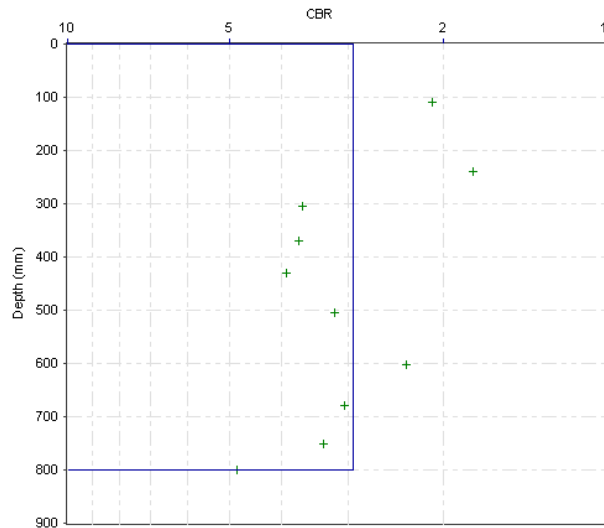
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 140
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	80.10	3	801	801

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP2

Chainage (km):	0.000
Direction:	
Location/Offset:	Carriageway
Cone Angle:	60 degrees
Zero Error (mm):	140
Test Date:	22/01/2019

Surface Type:	Unpaved
Thickness (mm):	0
Base Type:	
Thickness (mm):	
Surface Moisture:	Unknown
Moisture adjustment factor:	Not adjusted

[illegible]

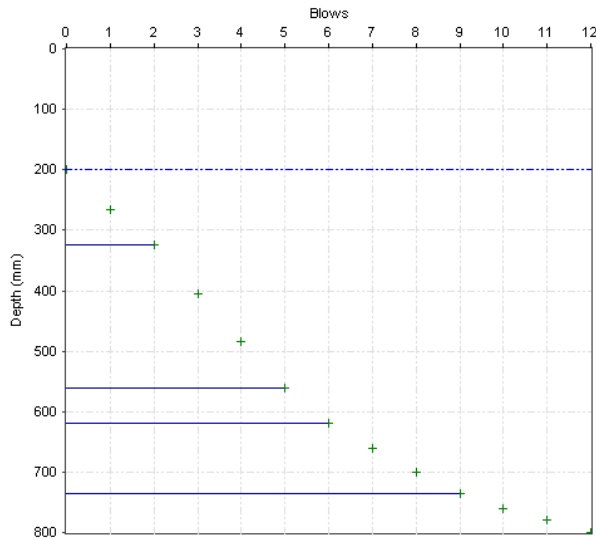
DCP Layer Strength Analysis Report

Project Name: DCP3

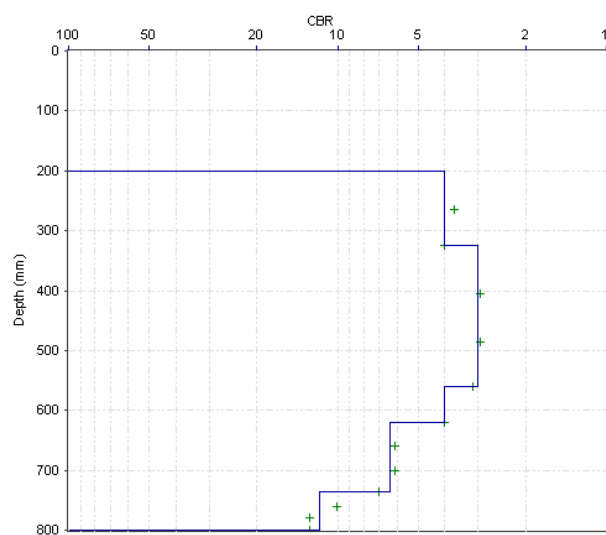
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 130
 Test Date: 22/01/2019

Surface Type: Other
 Thickness (mm): 200
 Strength Coeff.: 0.05
 Base Type:
 Thickness (mm):
 Strength Coeff.:

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	60.00	4	125	325
2	78.33	3	235	560
3	60.00	4	60	620
4	38.33	6	115	735
5	21.67	12	65	800

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP3

Chainage (km): 0.000

Direction:

Location/Offset: Carriageway

Cone Angle: 60 degrees

Zero Error (mm): 130

Test Date: 22/01/2019

Surface Type:

Other

Thickness (mm):

200

Strength Coeff.:

0.05

Base Type:

Thickness (mm):

Strength Coeff.:

[illegible]

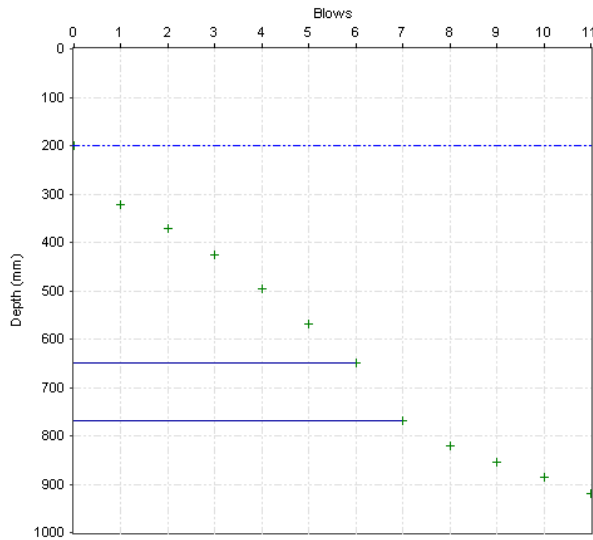
DCP Layer Strength Analysis Report

Project Name: DCP4

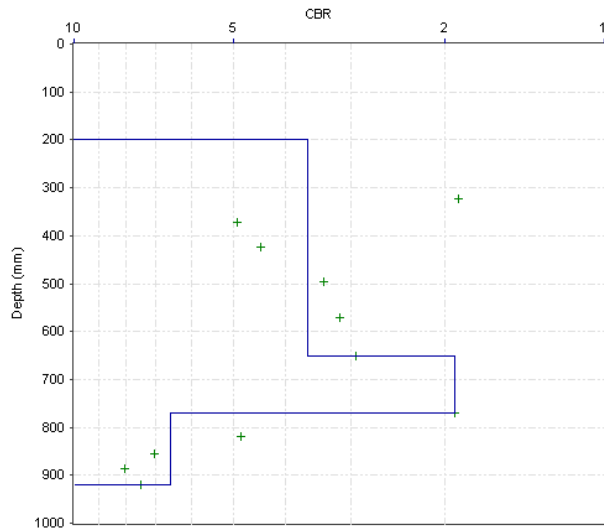
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 20
 Test Date: 22/01/2019

Surface Type: Other
 Thickness (mm): 200
 Strength Coeff.: 0.05
 Base Type:
 Thickness (mm):
 Strength Coeff.:

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	65.60	4	450	650
2	120.00	2	120	770
3	37.25	7	149	919

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP4

Chainage (km): 0.000

Direction:

Location/Offset: Carriageway

Cone Angle: 60 degrees

Zero Error (mm): 20

Test Date: 22/01/2019

Surface Type:

Thickness (mm):

Strength Coeff.:

Base Type:

Thickness (mm):

Strength Coeff.:

Other

200

0.05

[illegible]

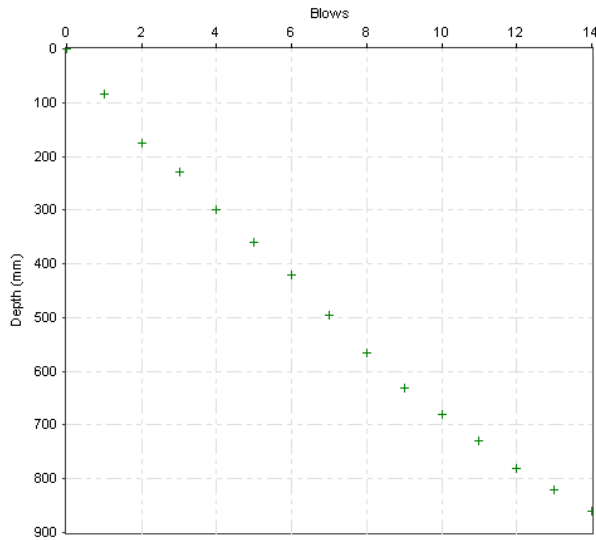
DCP Layer Strength Analysis Report

Project Name: DCP5

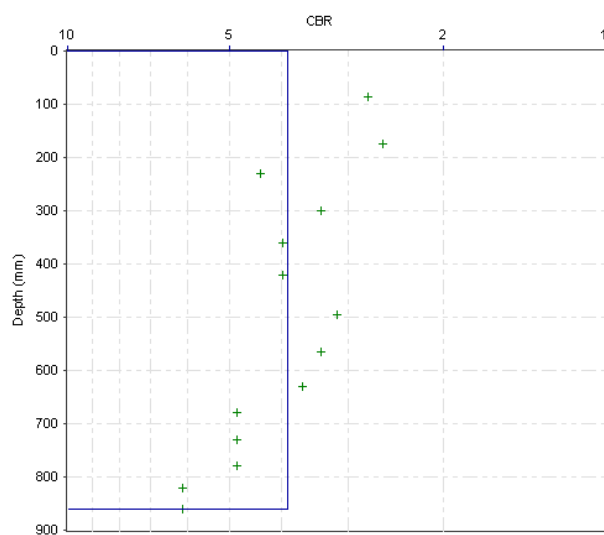
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 80
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	61.43	4	860	860

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP5

Chainage (km):	0.000
Direction:	
Location/Offset:	Carriageway
Cone Angle:	60 degrees
Zero Error (mm):	80
Test Date:	22/01/2019

Surface Type:	Unpaved
Thickness (mm):	0
Base Type:	
Thickness (mm):	
Surface Moisture:	Unknown
Moisture adjustment factor:	Not adjusted

[illegible]

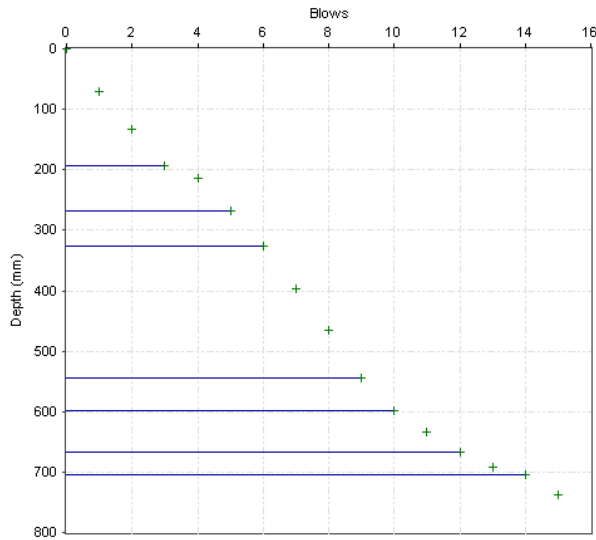
DCP Layer Strength Analysis Report

Project Name: DCP6

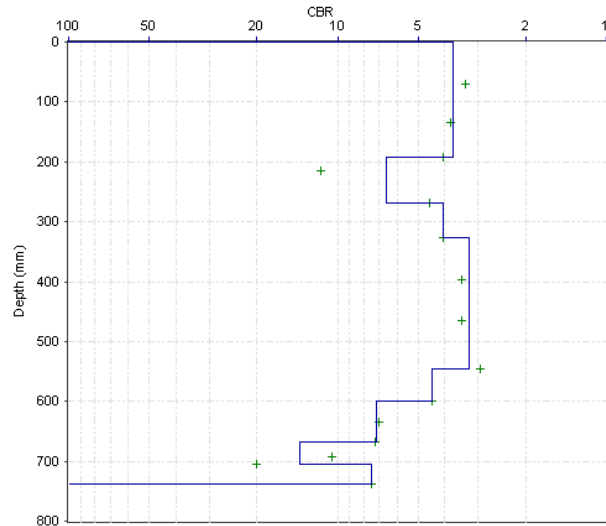
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 195
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	64.33	4	193	193
2	37.50	7	75	268
3	59.00	4	59	327
4	72.67	3	218	545
5	54.00	4	54	599
6	34.50	7	69	668
7	18.50	14	37	705
8	33.00	7	33	738

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP6

Chainage (km):	0.000
Direction:	
Location/Offset:	Carriageway
Cone Angle:	60 degrees
Zero Error (mm):	195
Test Date:	22/01/2019

Surface Type:	Unpaved
Thickness (mm):	0
Base Type:	
Thickness (mm):	
Surface Moisture:	Unknown
Moisture adjustment factor:	Not adjusted

[illegible]

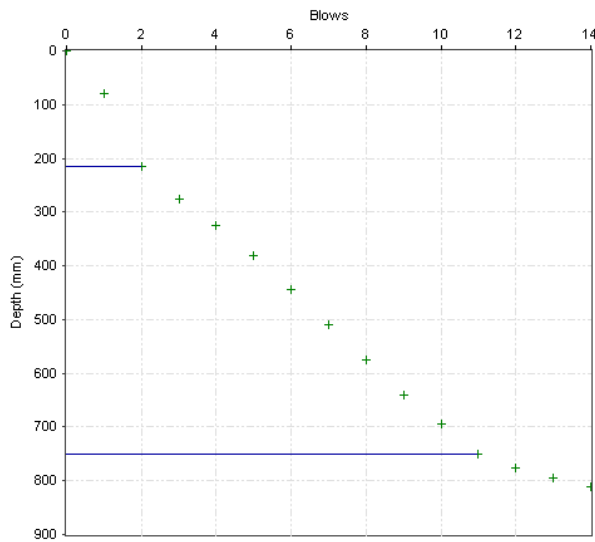
DCP Layer Strength Analysis Report

Project Name: DCP7

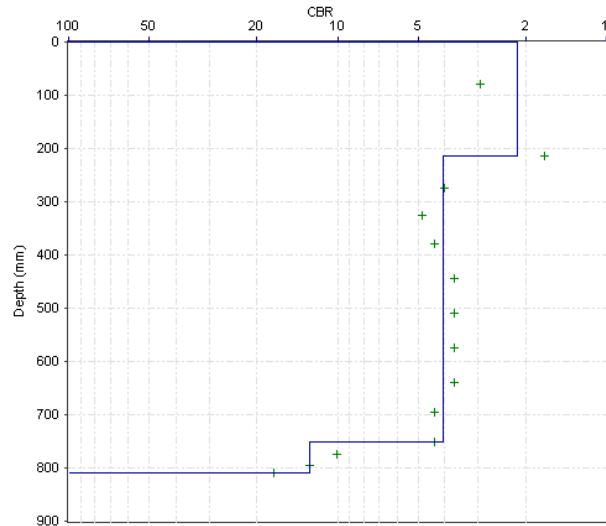
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 125
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	107.50	2	215	215
2	59.44	4	535	750
3	20.00	13	60	810

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP7

Chainage (km):	0.000
Direction:	
Location/Offset:	Carriageway
Cone Angle:	60 degrees
Zero Error (mm):	125
Test Date:	22/01/2019

Surface Type:	Unpaved
Thickness (mm):	0
Base Type:	
Thickness (mm):	
Surface Moisture:	Unknown
Moisture adjustment factor:	Not adjusted

[illegible]

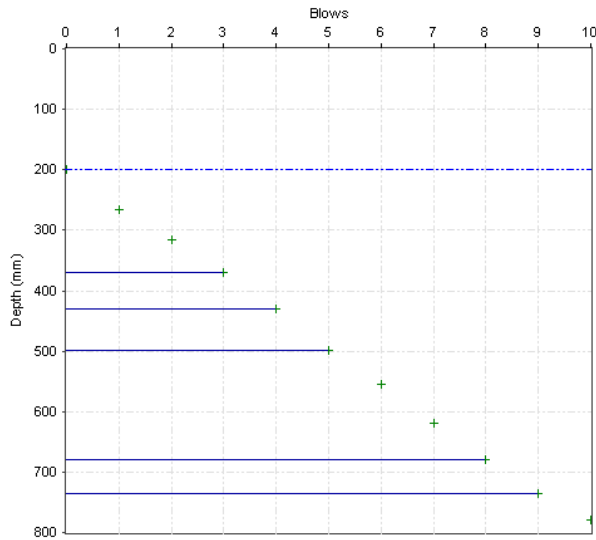
DCP Layer Strength Analysis Report

Project Name: DCP8

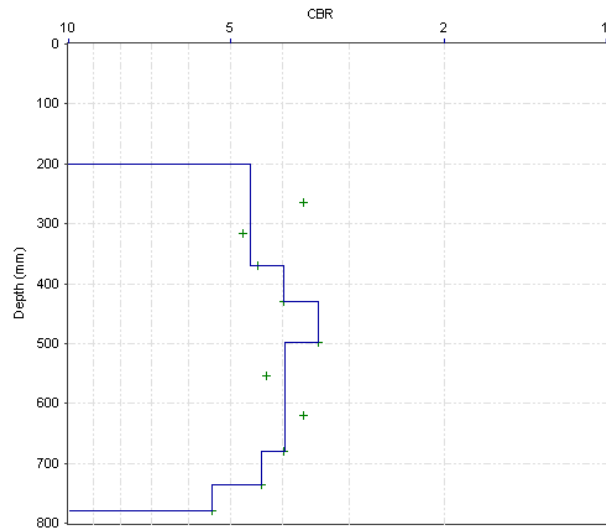
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 160
 Test Date: 22/01/2019

Surface Type: Other
 Thickness (mm): 200
 Strength Coeff.: 0.05
 Base Type:
 Thickness (mm):
 Strength Coeff.:

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	52.50	5	170	370
2	60.00	4	60	430
3	69.00	3	69	499
4	60.33	4	181	680
5	55.00	4	55	735
6	45.00	5	45	780

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP8

Chainage (km): 0.000

Direction:

Location/Offset: Carriageway

Cone Angle: 60 degrees

Zero Error (mm): 160

Test Date: 22/01/2019

Surface Type:

Other

Thickness (mm):

200

Strength Coeff.:

0.05

Base Type:

Thickness (mm):

Strength Coeff.:

[illegible]

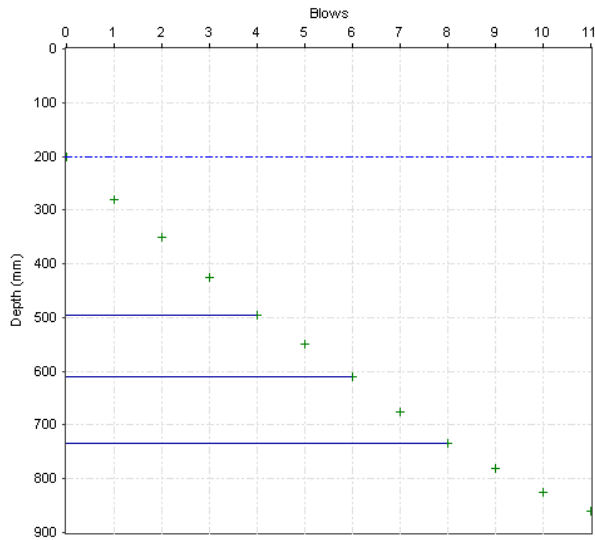
DCP Layer Strength Analysis Report

Project Name: DCP9

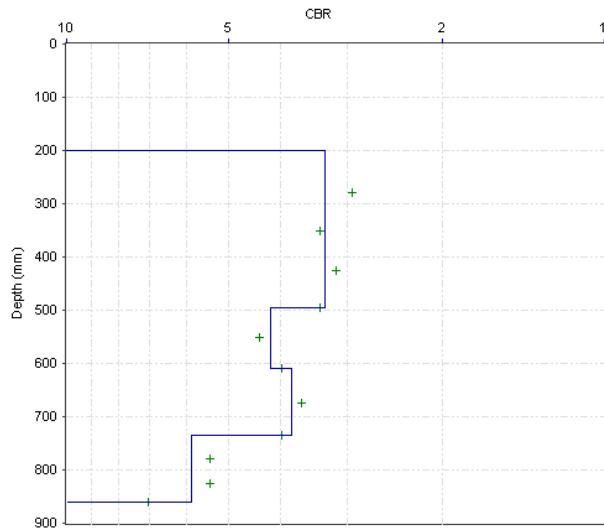
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 75
 Test Date: 22/01/2019

Surface Type: Other
 Thickness (mm): 200
 Strength Coeff.: 0.05
 Base Type:
 Thickness (mm):
 Strength Coeff.:

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	71.67	3	295	495
2	57.50	4	115	610
3	62.50	4	125	735
4	41.67	6	125	860

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP9

Chainage (km): 0.000

Direction:

Location/Offset: Carriageway

Cone Angle: 60 degrees

Zero Error (mm): 75

Test Date: 22/01/2019

Surface Type:

Other

Thickness (mm):

200

Strength Coeff.:

0.05

Base Type:

Thickness (mm):

Strength Coeff.:

[illegible]

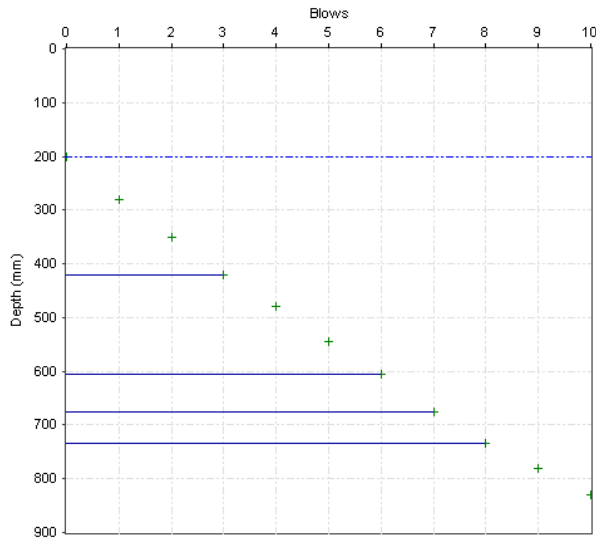
DCP Layer Strength Analysis Report

Project Name: DCP10

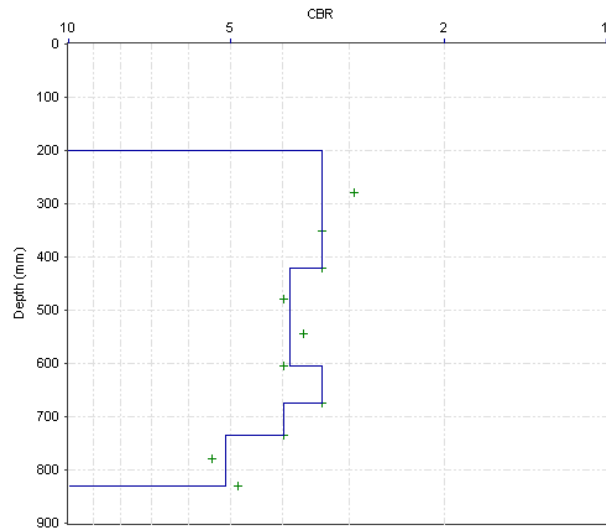
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 105
 Test Date: 22/01/2019

Surface Type: Other
 Thickness (mm): 200
 Strength Coeff.: 0.05
 Base Type:
 Thickness (mm):
 Strength Coeff.:

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	70.00	3	220	420
2	61.67	4	185	605
3	70.00	3	70	675
4	60.00	4	60	735
5	47.50	5	95	830

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP10

Chainage (km): 0.000

Direction:

Location/Offset: Carriageway

Cone Angle: 60 degrees

Zero Error (mm): 105

Test Date: 22/01/2019

Surface Type:

Other

Thickness (mm):

200

Strength Coeff.:

0.05

Base Type:

Thickness (mm):

Strength Coeff.:

[illegible]

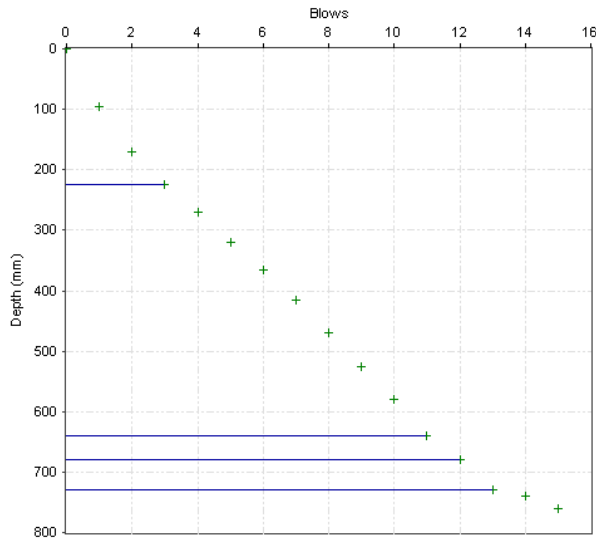
DCP Layer Strength Analysis Report

Project Name: DCP11

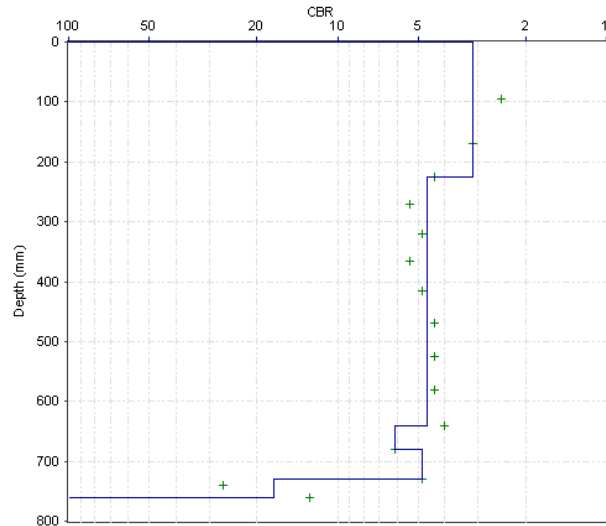
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 160
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	75.00	3	225	225
2	51.88	5	415	640
3	40.00	6	40	680
4	50.00	5	50	730
5	15.00	17	30	760

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP11

Chainage (km): 0.000
Direction:
Location/Offset: Carriageway
Cone Angle: 60 degrees
Zero Error (mm): 160
Test Date: 22/01/2019

Surface Type:	Unpaved
Thickness (mm):	0
Base Type:	
Thickness (mm):	
Surface Moisture:	Unknown
Moisture adjustment factor:	Not adjusted

[illegible]

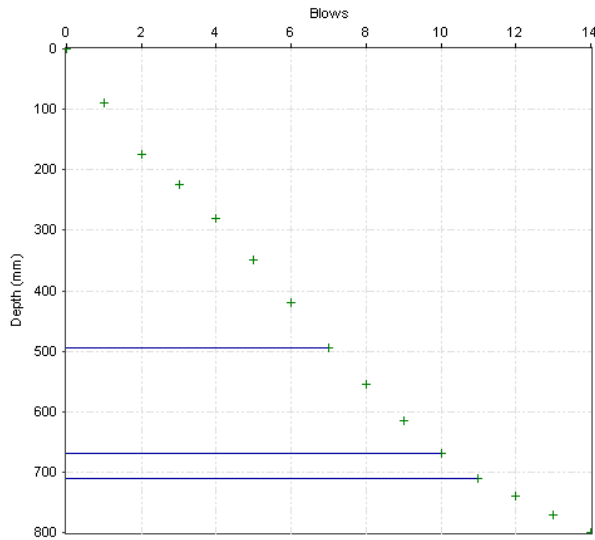
DCP Layer Strength Analysis Report

Project Name: DCP12

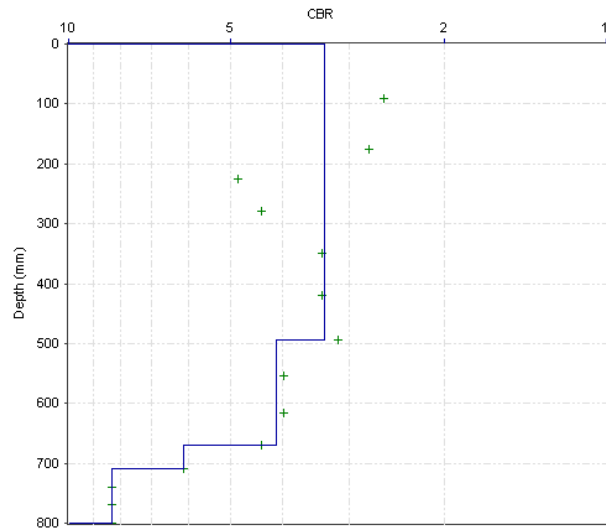
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 130
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	70.71	3	495	495
2	58.33	4	175	670
3	40.00	6	40	710
4	30.00	8	90	800

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP12

Chainage (km):	0.000
Direction:	
Location/Offset:	Carriageway
Cone Angle:	60 degrees
Zero Error (mm):	130
Test Date:	22/01/2019

Surface Type:	Unpaved
Thickness (mm):	0
Base Type:	
Thickness (mm):	
Surface Moisture:	Unknown
Moisture adjustment factor:	Not adjusted

[illegible]

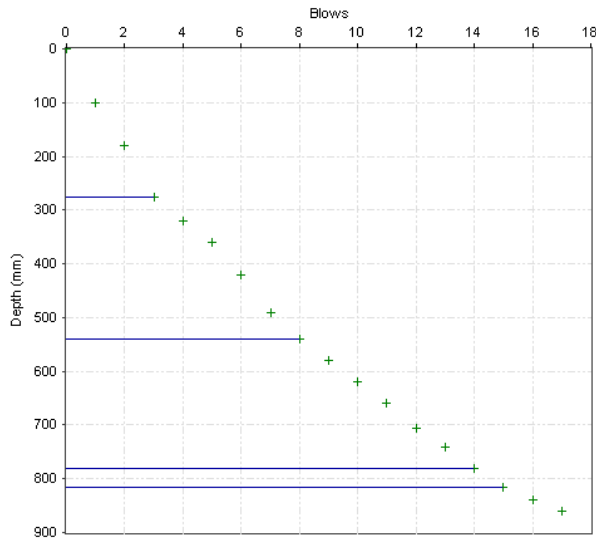
DCP Layer Strength Analysis Report

Project Name: DCP13

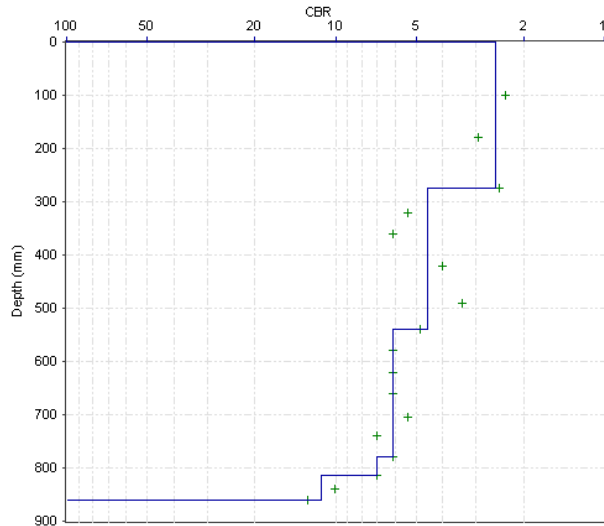
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 70
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	91.67	3	275	275
2	53.00	5	265	540
3	40.00	6	240	780
4	35.00	7	35	815
5	22.50	11	45	860

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP13

Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 70
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)
1	0	0	70	0.00					
2	1	1	170	100.00					
3	1	2	250	80.00					
4	1	3	345	95.00					
5	1	4	390	45.00					
6	1	5	430	40.00					
7	1	6	490	60.00					
8	1	7	560	70.00					
9	1	8	610	50.00					
10	1	9	650	40.00					
11	1	10	690	40.00					
12	1	11	730	40.00					
13	1	12	775	45.00					
14	1	13	810	35.00					
15	1	14	850	40.00					
16	1	15	885	35.00					
17	1	16	910	25.00					
18	1	17	930	20.00					

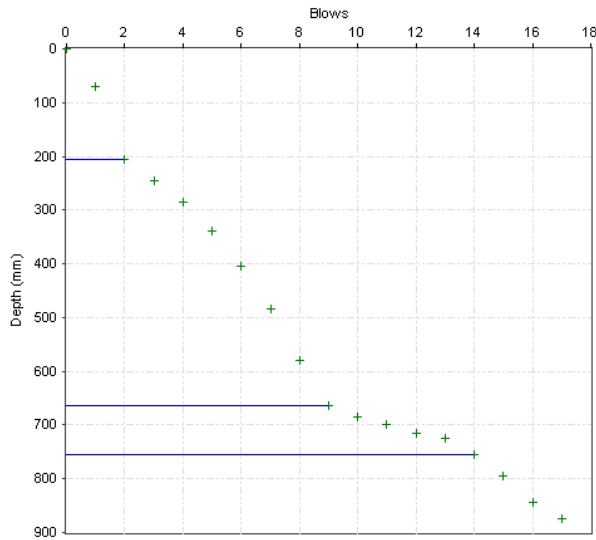
DCP Layer Strength Analysis Report

Project Name: DCP14

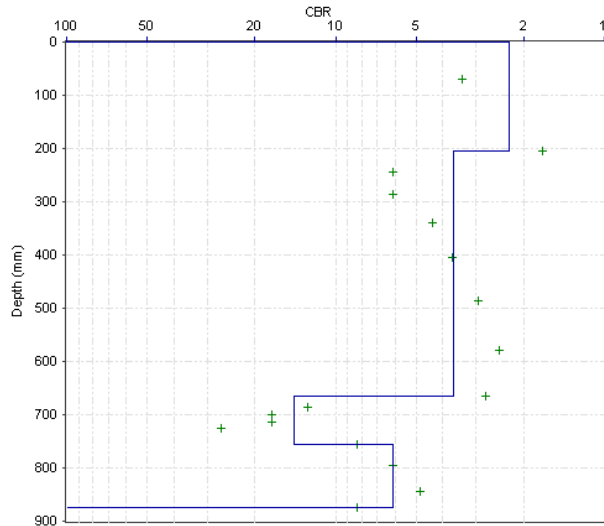
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 85
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	102.50	2	205	205
2	65.71	4	460	665
3	18.00	14	90	755
4	40.00	6	120	875

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP14

Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 85
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)
1	0	0	85	0.00					
2	1	1	155	70.00					
3	1	2	290	135.00					
4	1	3	330	40.00					
5	1	4	370	40.00					
6	1	5	425	55.00					
7	1	6	490	65.00					
8	1	7	570	80.00					
9	1	8	665	95.00					
10	1	9	750	85.00					
11	1	10	770	20.00					
12	1	11	785	15.00					
13	1	12	800	15.00					
14	1	13	810	10.00					
15	1	14	840	30.00					
16	1	15	880	40.00					
17	1	16	930	50.00					
18	1	17	960	30.00					

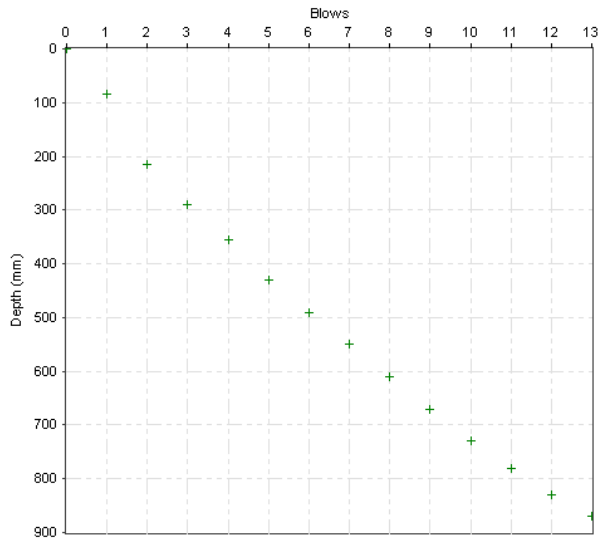
DCP Layer Strength Analysis Report

Project Name: DCP15

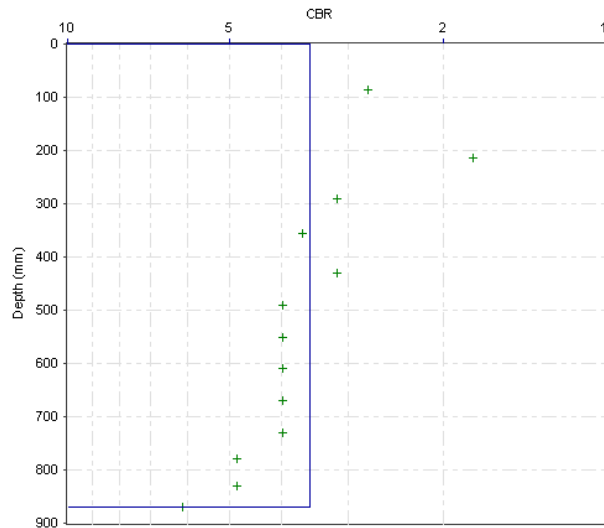
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 90
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	66.92	4	870	870

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP15

Chainage (km):	0.000
Direction:	
Location/Offset:	Carriageway
Cone Angle:	60 degrees
Zero Error (mm):	90
Test Date:	22/01/2019

Surface Type:	Unpaved
Thickness (mm):	0
Base Type:	
Thickness (mm):	
Surface Moisture:	Unknown
Moisture adjustment factor:	Not adjusted

[illegible]

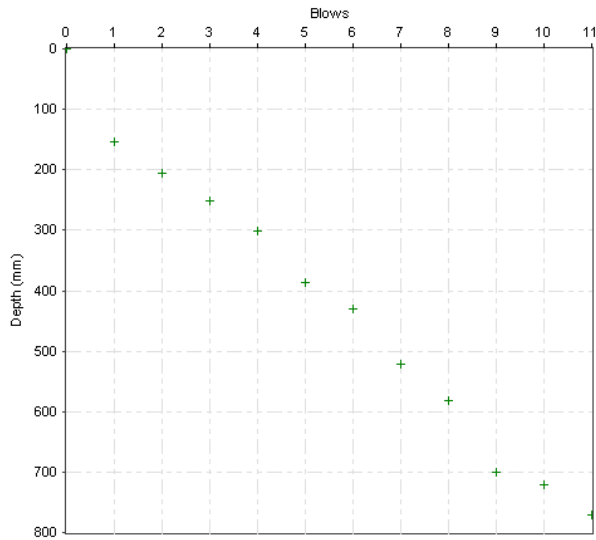
DCP Layer Strength Analysis Report

Project Name: DCP16

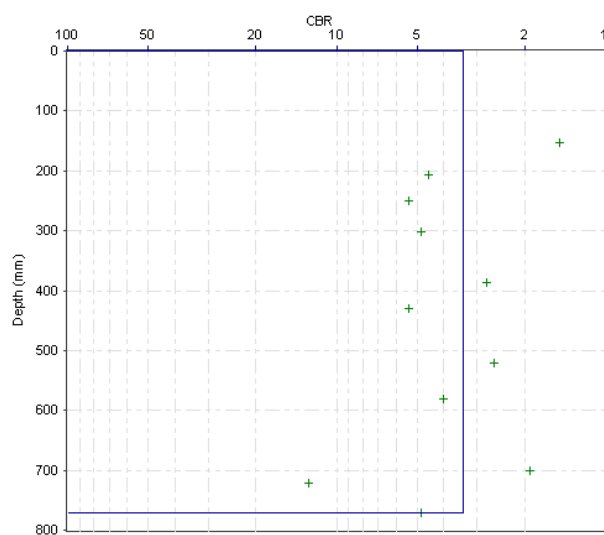
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 169
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	70.09	3	771	771

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP16

Chainage (km):	0.000
Direction:	
Location/Offset:	Carriageway
Cone Angle:	60 degrees
Zero Error (mm):	169
Test Date:	22/01/2019

Surface Type:	Unpaved
Thickness (mm):	0
Base Type:	
Thickness (mm):	
Surface Moisture:	Unknown
Moisture adjustment factor:	Not adjusted

[illegible]

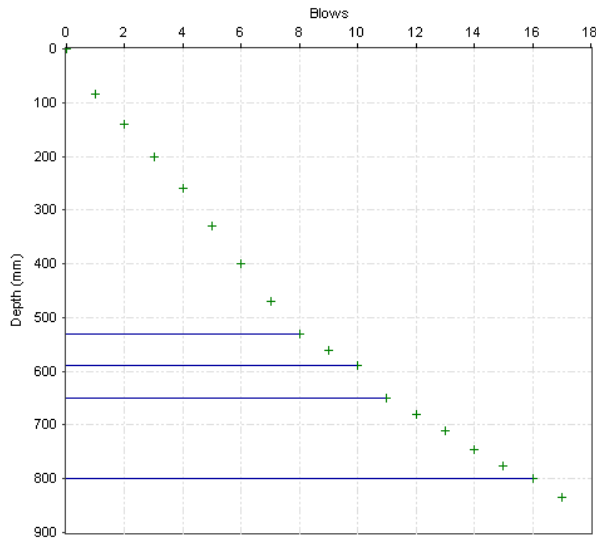
DCP Layer Strength Analysis Report

Project Name: DCP17

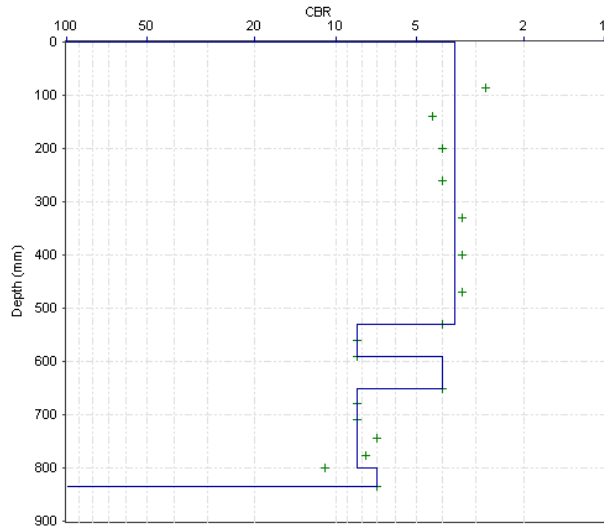
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 120
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	66.25	4	530	530
2	30.00	8	60	590
3	60.00	4	60	650
4	30.00	8	150	800
5	35.00	7	35	835

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP17

Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 120
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)
1	0	0	120	0.00					
2	1	1	205	85.00					
3	1	2	260	55.00					
4	1	3	320	60.00					
5	1	4	380	60.00					
6	1	5	450	70.00					
7	1	6	520	70.00					
8	1	7	590	70.00					
9	1	8	650	60.00					
10	1	9	680	30.00					
11	1	10	710	30.00					
12	1	11	770	60.00					
13	1	12	800	30.00					
14	1	13	830	30.00					
15	1	14	865	35.00					
16	1	15	897	32.00					
17	1	16	920	23.00					
18	1	17	955	35.00					

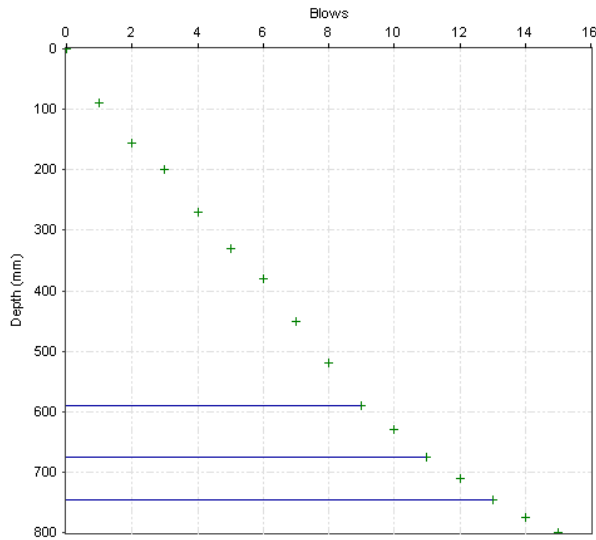
DCP Layer Strength Analysis Report

Project Name: DCP18

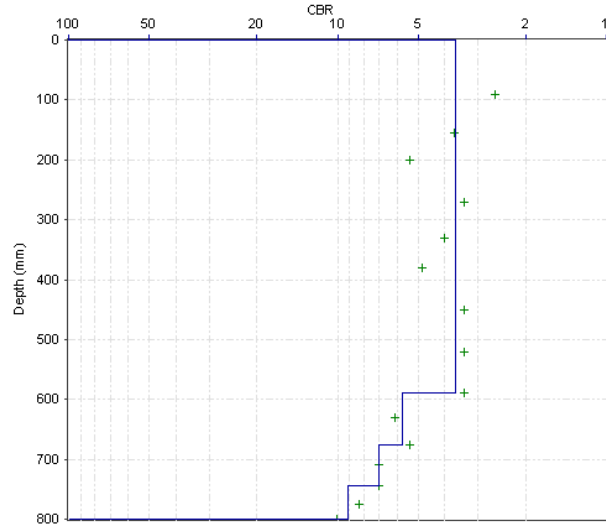
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 150
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	65.56	4	590	590
2	42.50	6	85	675
3	35.00	7	70	745
4	27.50	9	55	800

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP18

Chainage (km): 0.000

Direction:

Location/Offset: Carriageway

Cone Angle: 60 degrees

Zero Error (mm): 150

Test Date: 22/01/2019

Surface Type:

Unpaved

Thickness (mm):

0

Base Type:

Thickness (mm):

Surface Moisture:

Unknown

Moisture adjustment factor: Not adjusted

[illegible]

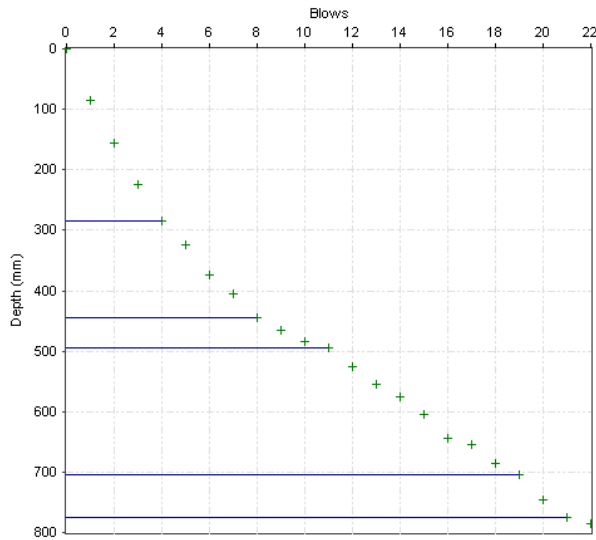
DCP Layer Strength Analysis Report

Project Name: DCP19

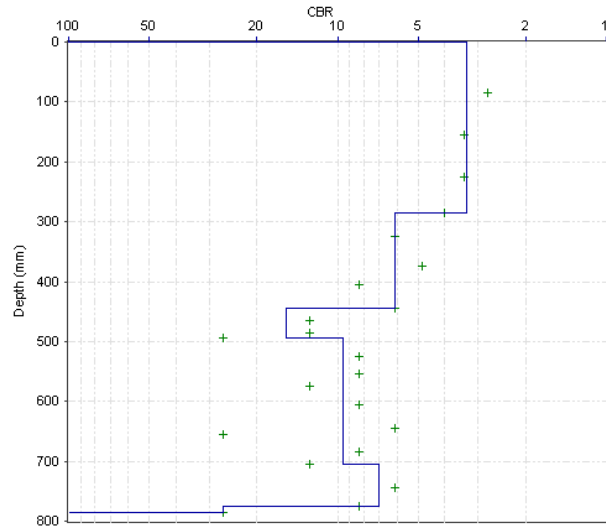
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 145
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	71.25	3	285	285
2	40.00	6	160	445
3	16.67	15	50	495
4	26.25	10	210	705
5	35.00	7	70	775
6	10.00	26	10	785

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP19

Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 145
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)
1	0	0	145	0.00					
2	1	1	230	85.00					
3	1	2	300	70.00					
4	1	3	370	70.00					
5	1	4	430	60.00					
6	1	5	470	40.00					
7	1	6	520	50.00					
8	1	7	550	30.00					
9	1	8	590	40.00					
10	1	9	610	20.00					
11	1	10	630	20.00					
12	1	11	640	10.00					
13	1	12	670	30.00					
14	1	13	700	30.00					
15	1	14	720	20.00					
16	1	15	750	30.00					
17	1	16	790	40.00					
18	1	17	800	10.00					
19	1	18	830	30.00					
20	1	19	850	20.00					
21	1	20	890	40.00					
22	1	21	920	30.00					
23	1	22	930	10.00					

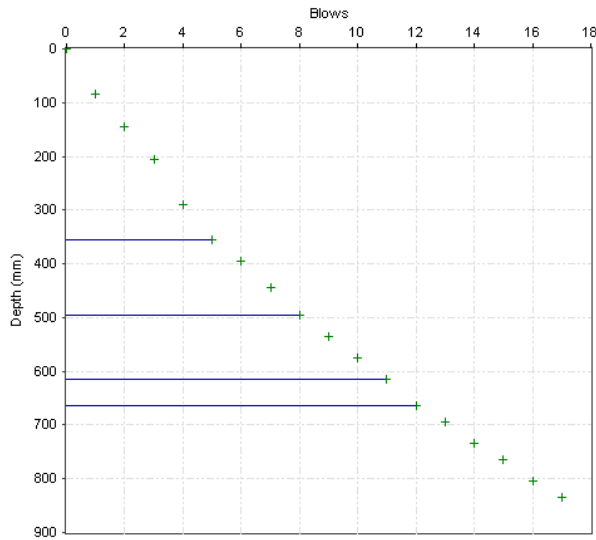
DCP Layer Strength Analysis Report

Project Name: DCP20

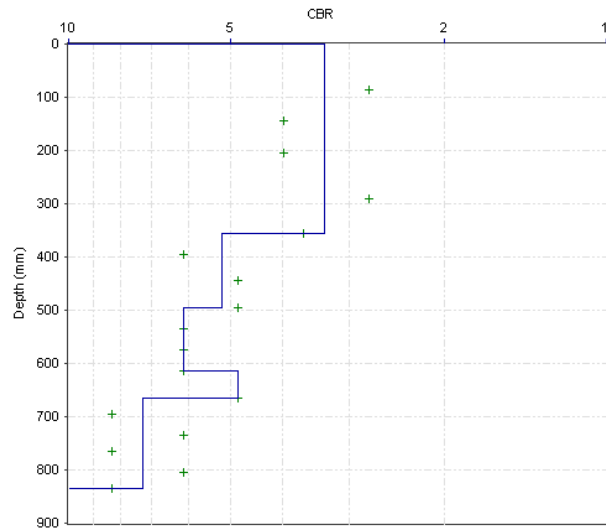
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 105
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	71.00	3	355	355
2	46.67	5	140	495
3	40.00	6	120	615
4	50.00	5	50	665
5	34.00	7	170	835

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP20

Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 105
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)
1	0	0	105	0.00					
2	1	1	190	85.00					
3	1	2	250	60.00					
4	1	3	310	60.00					
5	1	4	395	85.00					
6	1	5	460	65.00					
7	1	6	500	40.00					
8	1	7	550	50.00					
9	1	8	600	50.00					
10	1	9	640	40.00					
11	1	10	680	40.00					
12	1	11	720	40.00					
13	1	12	770	50.00					
14	1	13	800	30.00					
15	1	14	840	40.00					
16	1	15	870	30.00					
17	1	16	910	40.00					
18	1	17	940	30.00					

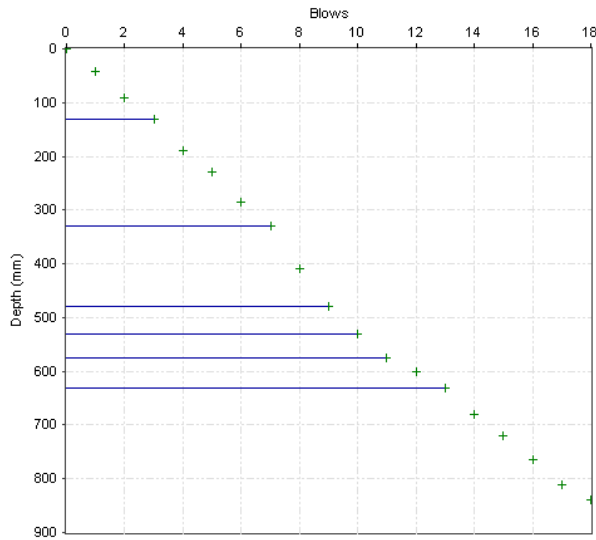
DCP Layer Strength Analysis Report

Project Name: DCP21

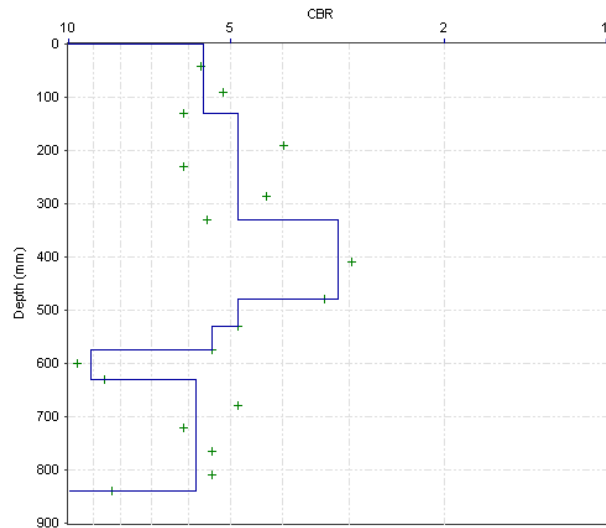
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 100
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	43.33	6	130	130
2	50.00	5	200	330
3	75.00	3	150	480
4	50.00	5	50	530
5	45.00	5	45	575
6	27.50	9	55	630
7	42.00	6	210	840

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Penetration Data Report

Project Name: DCP21

Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 100
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)
1	0	0	100	0.00					
2	1	1	143	43.00					
3	1	2	190	47.00					
4	1	3	230	40.00					
5	1	4	290	60.00					
6	1	5	330	40.00					
7	1	6	386	56.00					
8	1	7	430	44.00					
9	1	8	509	79.00					
10	1	9	580	71.00					
11	1	10	630	50.00					
12	1	11	675	45.00					
13	1	12	701	26.00					
14	1	13	730	29.00					
15	1	14	780	50.00					
16	1	15	820	40.00					
17	1	16	865	45.00					
18	1	17	910	45.00					
19	1	18	940	30.00					

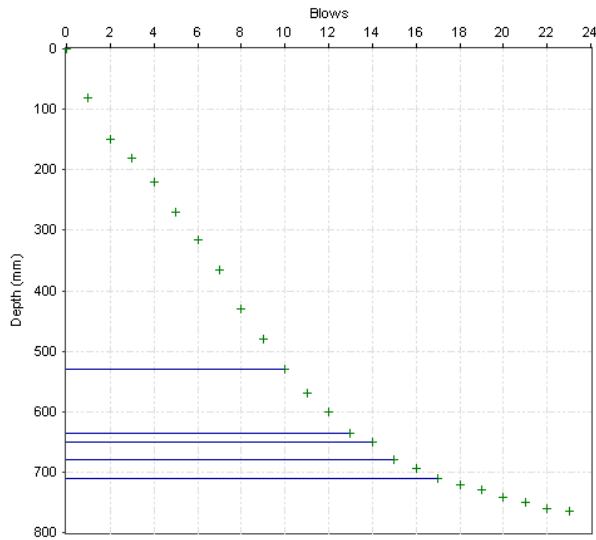
DCP Layer Strength Analysis Report

Project Name: DCP22

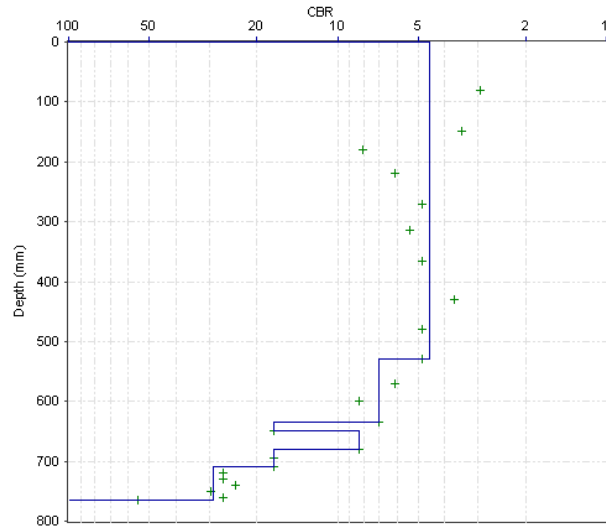
Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 160
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 0.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	53.00	5	530	530
2	35.00	7	105	635
3	15.00	17	15	650
4	30.00	8	30	680
5	15.00	17	30	710
6	9.17	29	55	765

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

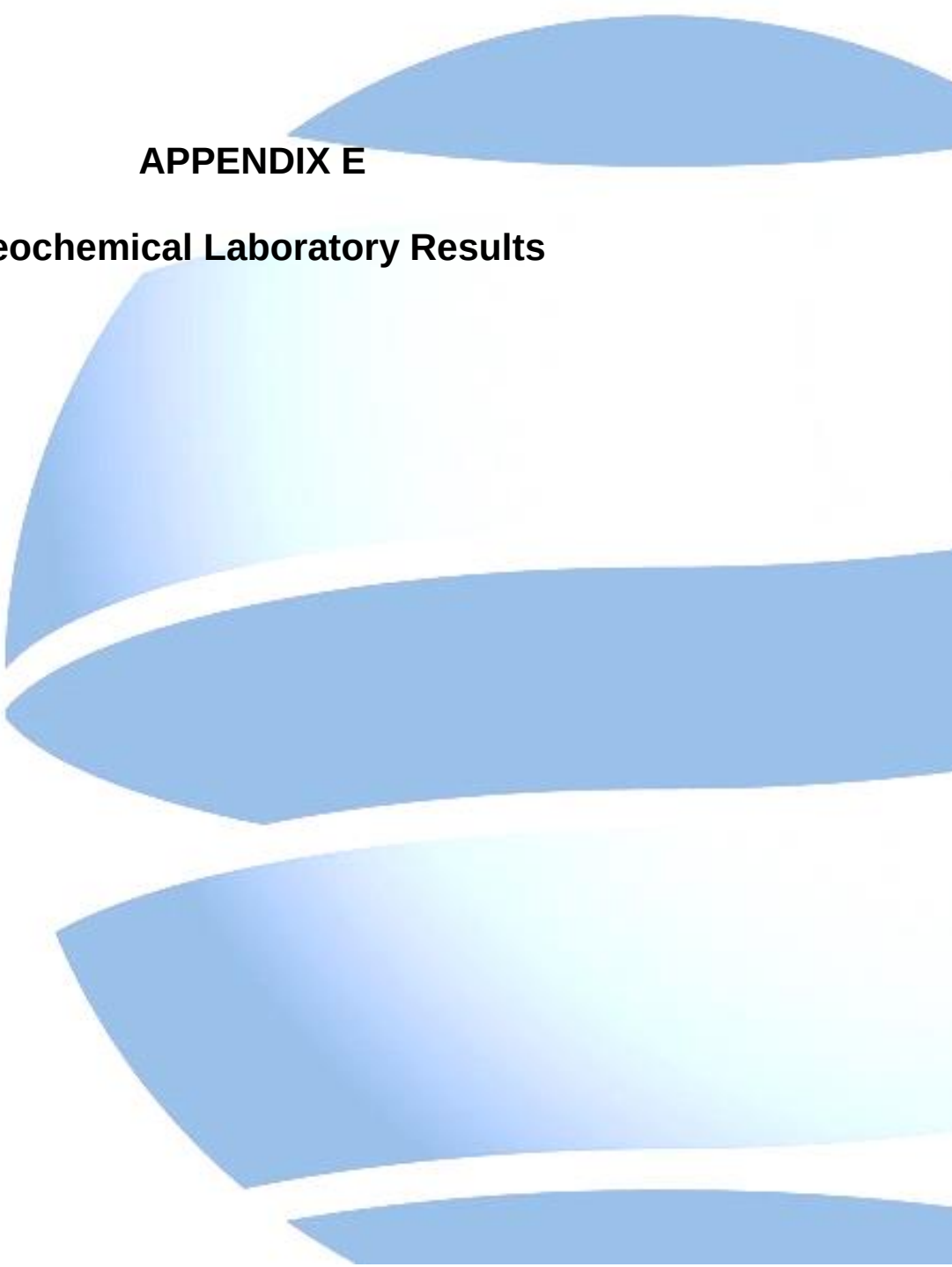
Penetration Data Report

Project Name: DCP22

Chainage (km): 0.000
 Direction:
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 160
 Test Date: 22/01/2019

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)	No.	Blows	Cumulative Blows	Penetration Depth (mm)	Penetration Rate (mm/blow)
1	0	0	160	0.00					
2	1	1	240	80.00					
3	1	2	309	69.00					
4	1	3	340	31.00					
5	1	4	380	40.00					
6	1	5	430	50.00					
7	1	6	475	45.00					
8	1	7	525	50.00					
9	1	8	590	65.00					
10	1	9	640	50.00					
11	1	10	690	50.00					
12	1	11	730	40.00					
13	1	12	760	30.00					
14	1	13	795	35.00					
15	1	14	810	15.00					
16	1	15	840	30.00					
17	1	16	855	15.00					
18	1	17	870	15.00					
19	1	18	880	10.00					
20	1	19	890	10.00					
21	1	20	901	11.00					
22	1	21	910	9.00					
23	1	22	920	10.00					
24	1	23	925	5.00					



APPENDIX E

Geochemical Laboratory Results



Unit A2
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Ponswood Industrial Estate
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East Sussex
TN38 9BY
Telephone: (01424) 718618

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info@elab-uk.co.uk

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 19-21358

Issue: 2. Replaces Analytical Report number 19-21358; issue no.1

Date of Issue: 28/01/2019

Contact: Jason Kanellis

Customer Details: GESL
Unit 7
Danworth Farm
Hurstpierpoint
West Sussex
BN6 9GL

Quotation No: Q14-00021

Order No: PO-1225

Customer Reference: Not Supplied

Date Received: 16/01/2019

Date Approved: 28/01/2019

Details: Southwater Phase V

Approved by:

Mike Varley, Technical Ma

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)



Sample Summary

Report No.: 19-21358

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
162383	WS01 0.07 - 0.20	10/01/2019	16/01/2019	Silty loam	
162384	WS02 0.15	10/01/2019	16/01/2019	Silty loam	
162385	WS04 0.10 - 0.15	10/01/2019	16/01/2019	Silty loam	
162386	WS06 0.15	10/01/2019	16/01/2019	Silty loam	
162387	WS08 0.15	10/01/2019	16/01/2019	Silty loam	
162388	WS09 0.15	10/01/2019	16/01/2019	Silty loam	
162389	WS10 0.15	10/01/2019	16/01/2019	Silty loam	
162390	WS11 0.10 - 0.25	10/01/2019	16/01/2019	Silty loam	
162391	WS12 0.05 - 0.20	10/01/2019	16/01/2019	Silty loam	
162392	WS13 0.20	10/01/2019	16/01/2019	Silty loam	
162393	WS14 0.20	10/01/2019	16/01/2019	Silty loam	
162394	WS15 0.15	10/01/2019	16/01/2019	Silty loam	
162395	WS15 0.50	10/01/2019	16/01/2019	Silty loam	
162396	WS16 0.20	10/01/2019	16/01/2019	Silty loam	
162397	WS17 0.20	10/01/2019	16/01/2019	Silty loam	
162398	WS01 0.50	10/01/2019	16/01/2019		
162399	WS03 0.15	10/01/2019	16/01/2019		
162400	WS05 0.15	10/01/2019	16/01/2019		
162401	WS05 0.50	10/01/2019	16/01/2019		
162402	WS07 0.15	10/01/2019	16/01/2019		

Results Summary

Report No.: 19-21358

ELAB Reference	162383	162384	162385	162386	162387
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS01	WS02	WS04	WS06	WS08
Sample Depth (m)	0.07 - 0.20	0.15	0.10 - 0.15	0.15	0.15
Sampling Date	10/01/2019	10/01/2019	10/01/2019	10/01/2019	10/01/2019

Determinand	Codes	Units	LOD					
Metals								
Arsenic	M	mg/kg	1	11.8	14.3	9.6	9.3	10.2
Barium	U	mg/kg	10	80.5	100	61.3	68.5	71.5
Beryllium	U	mg/kg	1	< 1.0	1.2	< 1.0	< 1.0	1.1
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	28.8	30.2	31.2	32.1	29.6
Copper	M	mg/kg	5	18.8	17.0	17.7	18.3	15.3
Lead	M	mg/kg	5	43.4	36.3	27.3	32.0	26.2
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	12.9	14.8	15.3	14.7	14.1
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5	31.1	40.5	39.6	42.4	39.2
Zinc	M	mg/kg	5	71.6	72.7	75.5	73.1	72.0
Anions								
Water Soluble Chloride	M	mg/kg	40	41	< 40	46	83	< 40
Water Soluble Sulphate	M	g/l	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Inorganics								
Carbonate	N	%	0.1	n/t	2.0	n/t	n/t	0.5
Elemental Sulphur	M	mg/kg	20	< 20	< 20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.07	0.07	0.04	0.06	0.06
Water Soluble Boron	N	mg/kg	0.5	1.1	1.1	1.1	1.1	1.0
Miscellaneous								
Electrical Conductivity (CaSO4 extract)	N	uS/cm	1	n/t	2250	n/t	n/t	2300
Carbon Nitrogen Ratio	N	ratio	0.01	n/t	19.7	n/t	n/t	17.9
Loss On Ignition (450°C)	M	%	0.01	n/t	7.28	n/t	n/t	6.61
pH	M	pH units	0.1	7.8	7.5	7.2	7.3	7.3
Total Carbon	N	%	0.01	n/t	4.2	n/t	n/t	3.8
Total Organic Carbon	N	%	0.01	1.7	1.6	1.5	1.6	1.6
Total Nitrogen	N	%	0.01	n/t	0.21	n/t	n/t	0.21
Extractable Potassium	N	mg/l	20	n/t	369	n/t	n/t	375
Extractable Magnesium	N	mg/l	20	n/t	130	n/t	n/t	113
Extractable Phosphate	N	mg/l	1	n/t	48	n/t	n/t	38
Sand content	NS	%	1	n/t	20	n/t	n/t	12
Silt content	NS	%	1	n/t	50	n/t	n/t	68
Clay content	NS	%	1	n/t	30	n/t	n/t	20
Stones > 2mm	NS	%	1	n/t	4	n/t	n/t	2
Stones > 20mm	NS	%	1	n/t	< 1	n/t	n/t	< 1
Stones > 50mm	NS	%	1	n/t	< 1	n/t	n/t	< 1
Total Visible Contaminants	N	%	0.01	n/t	< 0.01	n/t	n/t	< 0.01
Plastics	N	%	0.01	n/t	< 0.01	n/t	n/t	< 0.01
Sharps	N	n/kg	0	n/t	0	n/t	n/t	0



Results Summary

Report No.: 19-21358

ELAB Reference	162383	162384	162385	162386	162387
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS01	WS02	WS04	WS06	WS08
Sample Depth (m)	0.07 - 0.20	0.15	0.10 - 0.15	0.15	0.15
Sampling Date	10/01/2019	10/01/2019	10/01/2019	10/01/2019	10/01/2019

Determinand	Codes	Units	LOD					
Phenols								
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons								
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
BTEX								
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH CWG								
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Results Summary

Report No.: 19-21358

ELAB Reference	162383	162384	162385	162386	162387
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS01	WS02	WS04	WS06	WS08
Sample Depth (m)	0.07 - 0.20	0.15	0.10 - 0.15	0.15	0.15
Sampling Date	10/01/2019	10/01/2019	10/01/2019	10/01/2019	10/01/2019

Determinand	Codes	Units	LOD					
OrganoChlorine Pesticides								
alpha-HCH	M	ug/kg	10	n/t	n/t	n/t	< 10	n/t
beta_HCH	M	ug/kg	10	n/t	n/t	n/t	< 10	n/t
gamma-HCH	M	ug/kg	10	n/t	n/t	n/t	< 10	n/t
delta-HCH	N	ug/kg	10	n/t	n/t	n/t	< 10	n/t
Heptachlor	N	ug/kg	10	n/t	n/t	n/t	< 10	n/t
Aldrin	M	ug/kg	10	n/t	n/t	n/t	< 10	n/t
Heptachlor expoxide	N	ug/kg	10	n/t	n/t	n/t	< 10	n/t
trans-Chlordane	N	ug/kg	10	n/t	n/t	n/t	< 10	n/t
alpha cis-Chlordane	N	ug/kg	10	n/t	n/t	n/t	< 10	n/t
p,p-DDE	M	ug/kg	10	n/t	n/t	n/t	< 10	n/t
Dieldrin	M	ug/kg	10	n/t	n/t	n/t	< 10	n/t
Endrin	N	ug/kg	10	n/t	n/t	n/t	< 10	n/t
p,p-DDD	M	ug/kg	10	n/t	n/t	n/t	< 10	n/t
Endosulfan II	N	ug/kg	10	n/t	n/t	n/t	< 10	n/t
Endrin aldehyde	N	ug/kg	10	n/t	n/t	n/t	< 10	n/t
p,p-DDT	M	ug/kg	10	n/t	n/t	n/t	< 10	n/t
Endosulphan sulphate	M	ug/kg	10	n/t	n/t	n/t	< 10	n/t
Methoxychlor	N	ug/kg	10	n/t	n/t	n/t	< 10	n/t
Endrin ketone	N	ug/kg	10	n/t	n/t	n/t	< 10	n/t

Results Summary

Report No.: 19-21358

ELAB Reference	162388	162389	162390	162391	162392
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS09	WS10	WS11	WS12	WS13
Sample Depth (m)	0.15	0.15	0.10 - 0.25	0.05 - 0.20	0.20
Sampling Date	10/01/2019	10/01/2019	10/01/2019	10/01/2019	10/01/2019

Determinand	Codes	Units	LOD					
Metals								
Arsenic	M	mg/kg	1	7.8	7.9	9.0	8.8	15.1
Barium	U	mg/kg	10	58.6	70.2	57.3	58.8	71.2
Beryllium	U	mg/kg	1	< 1.0	1.1	< 1.0	< 1.0	1.1
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	25.6	26.2	24.8	24.8	31.4
Copper	M	mg/kg	5	14.1	14.7	14.6	15.8	17.4
Lead	M	mg/kg	5	22.9	23.8	23.6	25.3	27.6
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	11.2	13.5	10.6	10.5	12.9
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5	34.7	35.2	31.0	32.2	39.7
Zinc	M	mg/kg	5	60.8	66.9	65.7	64.7	72.9
Anions								
Water Soluble Chloride	M	mg/kg	40	< 40	47	107	105	207
Water Soluble Sulphate	M	g/l	0.02	< 0.02	< 0.02	< 0.02	0.05	0.03
Inorganics								
Carbonate	N	%	0.1	n/t	n/t	n/t	n/t	n/t
Elemental Sulphur	M	mg/kg	20	< 20	< 20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.06	0.05	0.05	0.07	0.06
Water Soluble Boron	N	mg/kg	0.5	0.9	0.9	1.5	1.1	1.1
Miscellaneous								
Electrical Conductivity (CaSO4 extract)	N	uS/cm	1	n/t	n/t	n/t	n/t	n/t
Carbon Nitrogen Ratio	N	ratio	0.01	n/t	n/t	n/t	n/t	n/t
Loss On Ignition (450°C)	M	%	0.01	n/t	n/t	n/t	n/t	n/t
pH	M	pH units	0.1	7.5	7.2	7.0	7.1	7.0
Total Carbon	N	%	0.01	n/t	n/t	n/t	n/t	n/t
Total Organic Carbon	N	%	0.01	1.6	1.3	2.2	1.8	1.5
Total Nitrogen	N	%	0.01	n/t	n/t	n/t	n/t	n/t
Extractable Potassium	N	mg/l	20	n/t	n/t	n/t	n/t	n/t
Extractable Magnesium	N	mg/l	20	n/t	n/t	n/t	n/t	n/t
Extractable Phosphate	N	mg/l	1	n/t	n/t	n/t	n/t	n/t
Sand content	NS	%	1	n/t	n/t	n/t	n/t	n/t
Silt content	NS	%	1	n/t	n/t	n/t	n/t	n/t
Clay content	NS	%	1	n/t	n/t	n/t	n/t	n/t
Stones > 2mm	NS	%	1	n/t	n/t	n/t	n/t	n/t
Stones > 20mm	NS	%	1	n/t	n/t	n/t	n/t	n/t
Stones > 50mm	NS	%	1	n/t	n/t	n/t	n/t	n/t
Total Visible Contaminants	N	%	0.01	n/t	n/t	n/t	n/t	n/t
Plastics	N	%	0.01	n/t	n/t	n/t	n/t	n/t
Sharps	N	n/kg	0	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 19-21358

ELAB Reference	162388	162389	162390	162391	162392
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS09	WS10	WS11	WS12	WS13
Sample Depth (m)	0.15	0.15	0.10 - 0.25	0.05 - 0.20	0.20
Sampling Date	10/01/2019	10/01/2019	10/01/2019	10/01/2019	10/01/2019

Determinand	Codes	Units	LOD					
Phenols								
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons								
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
BTEX								
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH CWG								
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Results Summary

Report No.: 19-21358

ELAB Reference	162388	162389	162390	162391	162392
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS09	WS10	WS11	WS12	WS13
Sample Depth (m)	0.15	0.15	0.10 - 0.25	0.05 - 0.20	0.20
Sampling Date	10/01/2019	10/01/2019	10/01/2019	10/01/2019	10/01/2019

Determinand	Codes	Units	LOD					
OrganoChlorine Pesticides								
alpha-HCH	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
beta_HCH	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
gamma-HCH	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
delta-HCH	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Heptachlor	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Aldrin	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Heptachlor expoxide	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
trans-Chlordane	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
alpha cis-Chlordane	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
p,p-DDE	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Dieldrin	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endrin	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
p,p-DDD	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endosulfan II	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endrin aldehyde	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
p,p-DDT	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endosulphan sulphate	M	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Methoxychlor	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t
Endrin ketone	N	ug/kg	10	n/t	n/t	n/t	n/t	n/t

Results Summary

Report No.: 19-21358

ELAB Reference	162393	162394	162395	162396	162397
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS14	WS15	WS15	WS16	WS17
Sample Depth (m)	0.20	0.15	0.50	0.20	0.20
Sampling Date	10/01/2019	10/01/2019	10/01/2019	10/01/2019	10/01/2019

Determinand	Codes	Units	LOD					
Metals								
Arsenic	M	mg/kg	1	17.9	18.9	20.7	12.7	18.5
Barium	U	mg/kg	10	74.3	70.4	86.4	69.5	93.5
Beryllium	U	mg/kg	1	1.2	1.2	1.6	< 1.0	1.3
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	35.2	37.8	36.5	31.9	35.6
Copper	M	mg/kg	5	18.2	18.2	17.7	15.8	20.5
Lead	M	mg/kg	5	28.3	25.2	17.7	24.3	26.4
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	14.9	15.5	17.9	14.0	15.5
Selenium	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium	M	mg/kg	5	43.4	44.8	41.1	39.0	42.6
Zinc	M	mg/kg	5	76.9	70.3	78.7	69.4	69.7
Anions								
Water Soluble Chloride	M	mg/kg	40	101	91	93	106	119
Water Soluble Sulphate	M	g/l	0.02	< 0.02	< 0.02	0.02	< 0.02	< 0.02
Inorganics								
Carbonate	N	%	0.1	n/t	n/t	n/t	0.5	n/t
Elemental Sulphur	M	mg/kg	20	< 20	< 20	< 20	< 20	< 20
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Acid Soluble Sulphate (SO4)	U	%	0.02	0.07	0.05	0.04	0.06	0.06
Water Soluble Boron	N	mg/kg	0.5	1.1	1.0	0.6	1.1	1.1
Miscellaneous								
Electrical Conductivity (CaSO4 extract)	N	uS/cm	1	n/t	n/t	n/t	2180	n/t
Carbon Nitrogen Ratio	N	ratio	0.01	n/t	n/t	n/t	18.9	n/t
Loss On Ignition (450°C)	M	%	0.01	n/t	n/t	n/t	8.00	n/t
pH	M	pH units	0.1	7.0	6.9	7.4	7.2	6.9
Total Carbon	N	%	0.01	n/t	n/t	n/t	4.6	n/t
Total Organic Carbon	N	%	0.01	2.0	1.8	0.21	1.9	1.9
Total Nitrogen	N	%	0.01	n/t	n/t	n/t	0.25	n/t
Extractable Potassium	N	mg/l	20	n/t	n/t	n/t	313	n/t
Extractable Magnesium	N	mg/l	20	n/t	n/t	n/t	94	n/t
Extractable Phosphate	N	mg/l	1	n/t	n/t	n/t	22	n/t
Sand content	NS	%	1	n/t	n/t	n/t	14	n/t
Silt content	NS	%	1	n/t	n/t	n/t	68	n/t
Clay content	NS	%	1	n/t	n/t	n/t	18	n/t
Stones > 2mm	NS	%	1	n/t	n/t	n/t	6	n/t
Stones > 20mm	NS	%	1	n/t	n/t	n/t	< 1	n/t
Stones > 50mm	NS	%	1	n/t	n/t	n/t	< 1	n/t
Total Visible Contaminants	N	%	0.01	n/t	n/t	n/t	< 0.01	n/t
Plastics	N	%	0.01	n/t	n/t	n/t	< 0.01	n/t
Sharps	N	n/kg	0	n/t	n/t	n/t	0	n/t

Results Summary

Report No.: 19-21358

ELAB Reference	162393	162394	162395	162396	162397
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS14	WS15	WS15	WS16	WS17
Sample Depth (m)	0.20	0.15	0.50	0.20	0.20
Sampling Date	10/01/2019	10/01/2019	10/01/2019	10/01/2019	10/01/2019

Determinand	Codes	Units	LOD					
Phenols								
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons								
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	0.9	< 0.4	< 0.4	< 0.4	< 0.4
BTEX								
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH CWG								
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Results Summary

Report No.: 19-21358

ELAB Reference	162393	162394	162395	162396	162397
Customer Reference					
Sample ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	WS14	WS15	WS15	WS16	WS17
Sample Depth (m)	0.20	0.15	0.50	0.20	0.20
Sampling Date	10/01/2019	10/01/2019	10/01/2019	10/01/2019	10/01/2019

Determinand	Codes	Units	LOD					
OrganoChlorine Pesticides								
alpha-HCH	M	ug/kg	10	< 10	n/t	n/t	n/t	n/t
beta-HCH	M	ug/kg	10	< 10	n/t	n/t	n/t	n/t
gamma-HCH	M	ug/kg	10	< 10	n/t	n/t	n/t	n/t
delta-HCH	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t
Heptachlor	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t
Aldrin	M	ug/kg	10	< 10	n/t	n/t	n/t	n/t
Heptachlor expoxide	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t
trans-Chlordane	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t
alpha cis-Chlordane	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t
p,p-DDE	M	ug/kg	10	< 10	n/t	n/t	n/t	n/t
Dieldrin	M	ug/kg	10	< 10	n/t	n/t	n/t	n/t
Endrin	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t
p,p-DDD	M	ug/kg	10	< 10	n/t	n/t	n/t	n/t
Endosulfan II	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t
Endrin aldehyde	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t
p,p-DDT	M	ug/kg	10	< 10	n/t	n/t	n/t	n/t
Endosulphan sulphate	M	ug/kg	10	< 10	n/t	n/t	n/t	n/t
Methoxychlor	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t
Endrin ketone	N	ug/kg	10	< 10	n/t	n/t	n/t	n/t

Results Summary

Report No.: 19-21358

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
162383	0.07 - 0.20	WS01	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162384	0.15	WS02	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162385	0.10 - 0.15	WS04	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162386	0.15	WS06	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162387	0.15	WS08	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162388	0.15	WS09	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162389	0.15	WS10	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162390	0.10 - 0.25	WS11	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162391	0.05 - 0.20	WS12	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162392	0.20	WS13	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162393	0.20	WS14	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162394	0.15	WS15	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162395	0.50	WS15	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162396	0.20	WS16	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t
162397	0.20	WS17	Brown soil	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 19-21358

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Acid neutralisation capacity	N	Air dried sample	21/01/2019		
Extractable cations - BS3882	N	Air dried sample	22/01/2019		ICPMS
Visible Contaminants	N		18/01/2019		
Sulphide	N	As submitted sample	18/01/2019	109	Colorimetry
Hexavalent chromium	N	As submitted sample	18/01/2019	110	Colorimetry
pH	M	Air dried sample	21/01/2019	113	Electromeric
Electrical conductivity of soil	N	Air dried sample.	23/01/2019	114	Electromeric
Acid Soluble Sulphate	U	Air dried sample	21/01/2019	115	Ion Chromatography
Aqua regia extractable metals	M	Air dried sample	18/01/2019	118	ICPMS
Phenols in solids	N	As submitted sample	18/01/2019	121	HPLC
Elemental Sulphur	M	Air dried sample	18/01/2019	122	HPLC
Loss on ignition at 450 deg C	M	Air dried sample	23/01/2019	129	Gravimetry
PAH (GC-FID)	M	As submitted sample	21/01/2019	133	GC-FID
Extr. Phos	N	Air dried sample	22/01/2019	140	ICPMS
Water soluble anions	M	Air dried sample	18/01/2019	172	Ion Chromatography
Organochlorine Pesticides in solids	M	As submitted sample	18/01/2019	173	GC-MS
Low range Aliphatic hydrocarbons soil	N	As submitted sample	18/01/2019	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	18/01/2019	181	GC-MS
BTEX in solids	M	As submitted sample	18/01/2019	181A	GC-MS
Water soluble boron	N	Air dried sample	18/01/2019	202	Colorimetry
Total cyanide	M	As submitted sample	18/01/2019	204	Colorimetry
Total organic carbon/Total sulphur	N	Air dried sample	21/01/2019	210	IR
Aliphatic hydrocarbons in soil	N	As submitted sample	18/01/2019	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	N	As submitted sample	21/01/2019	214	GC-FID
Aromatic hydrocarbons in soil	N	As submitted sample	18/01/2019	214	GC-FID
Asbestos identification	U	Air dried sample	18/01/2019	PMAN	Microscopy

Tests marked N are not UKAS accredited

Report Information

Report No.: 19-21358

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"

Soil sample results are expressed on an air dried basis (dried at < 30°C)

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the items tested

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Deviation Codes

-
- | | |
|---|--|
| a | No date of sampling supplied |
| b | No time of sampling supplied (Waters Only) |
| c | Sample not received in appropriate containers |
| d | Sample not received in cooled condition |
| e | The container has been incorrectly filled |
| f | Sample age exceeds stability time (sampling to receipt) |
| g | Sample age exceeds stability time (sampling to analysis) |

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

Site Name	Southwater Phase V
Location	Southwater
Site ID	GE17902
Job Number	GE17902
Date	2/7/2019
User Name	Jonathan.Tingley@gesl.net
Company Name	Geo-Environmental Services Limited

Hole ID	Sample Depth	Hazardous Waste Y/N	HP1	HP2	HP3	HP4	HP5	HP6	HP7	HP8	HP9	HP10	HP11	HP12	HP13	HP14	HP15	HP16
WS01	0.07 - 0.20	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS02	0.15	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS04	0.10 - 0.15	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS06	0.15	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS08	0.15	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS09	0.15	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS10	0.15	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS11	0.10 - 0.25	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS12	0.05 - 0.20	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS13	0.20	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS14	0.20	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS15	0.15	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS15	0.50	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS16	0.20	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
WS17	0.20	N	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No