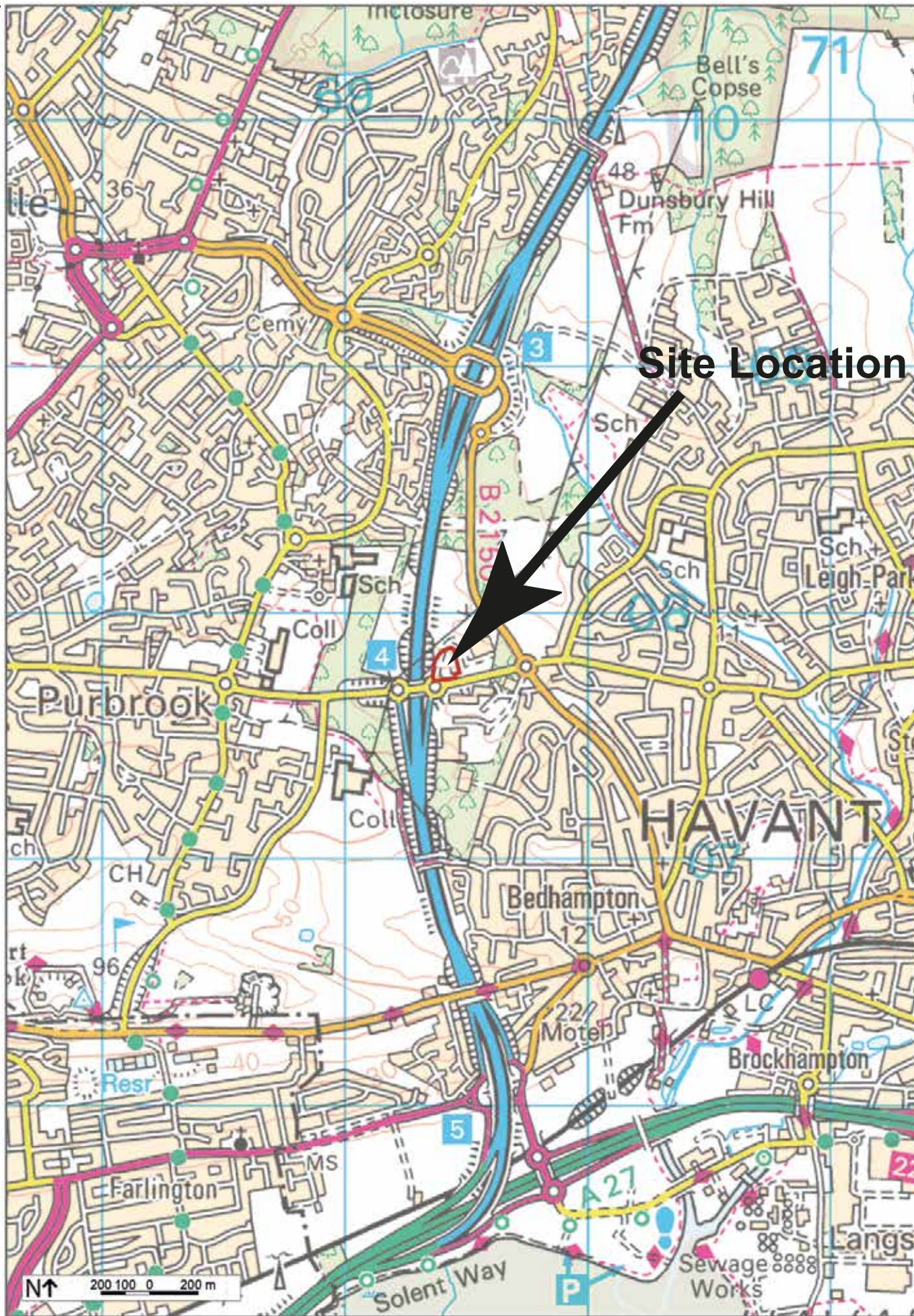




FIGURES



Site Location

Notes

Project Title
Havant, Purbrook Way

Scale
as shown

Drawn
GJ

Size
A4

Drawing Title
Site Location Plan

Date
08.07.20

Job No.
770

Drawing / Rev No.
Fig1

Client

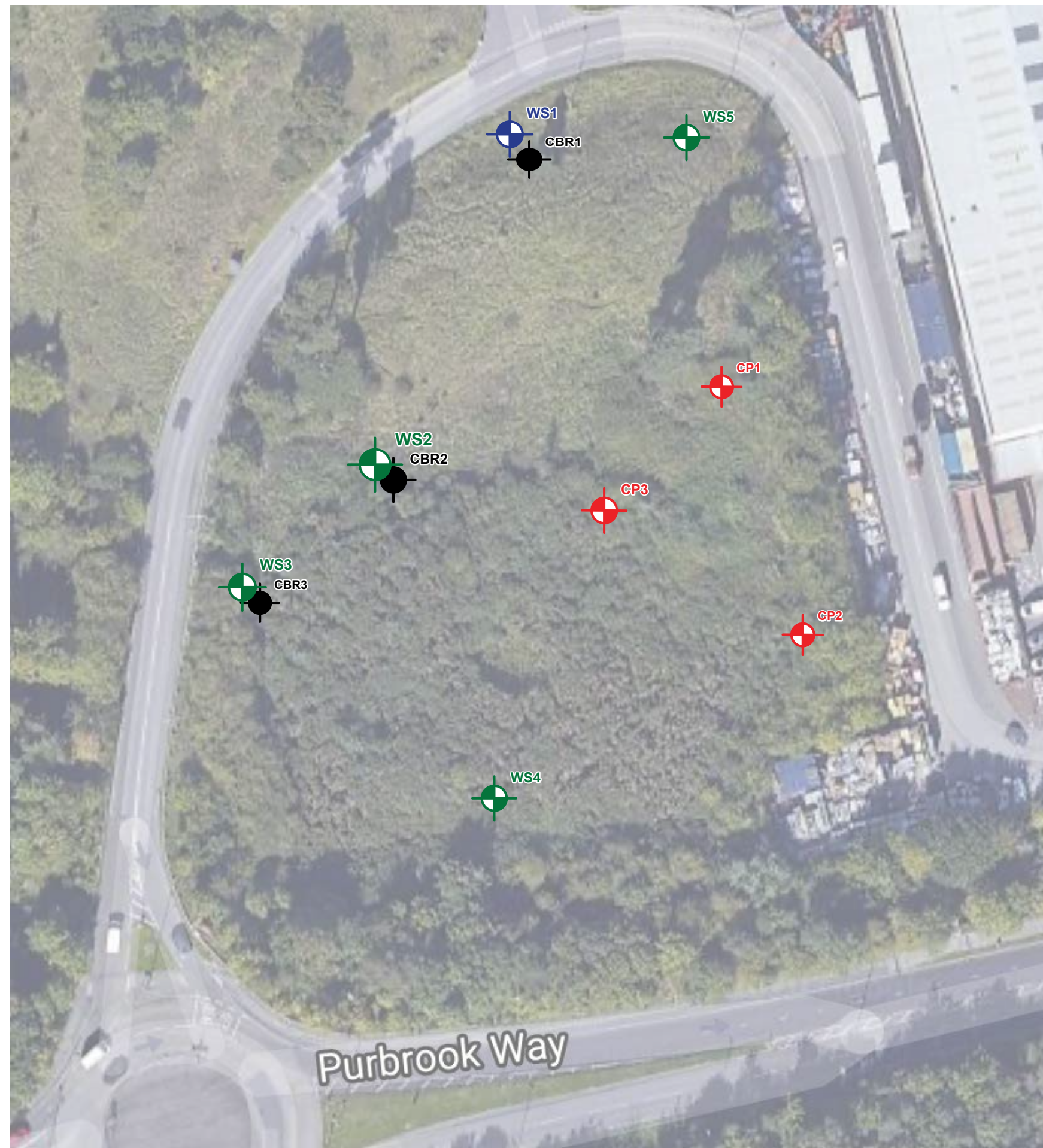
Lidl Great Britain Ltd



Remada



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Legend

-  WS1 Window Sample & Installation
-  WS2 Window Sample
-  CP1 Cabletool Borehole & Installation
-  CBR1 CBR Test

Notes

WS 4: proposed location not accessible as vegetation clearance not permitted by ecologist

Project Title

Havant, Purbrook Way

Drawing Title

Figure 2: Exploratory Locations with Existing Layout

Client	
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Lidl Great Britain Ltd



Scale As shown	Drawn GJ	Size A3
Date 20.07.20	Job No. 770	Drawing /Rev No. 02

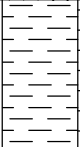
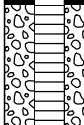
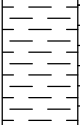
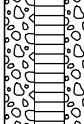
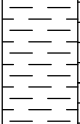
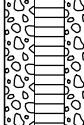
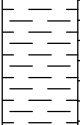
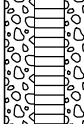
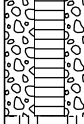
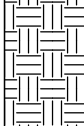
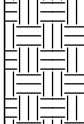
Remada



EXPLORATORY LOGS

BOREHOLE LOG

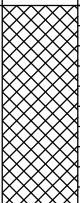
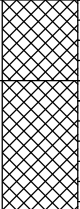
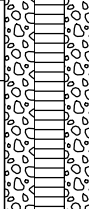
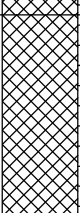
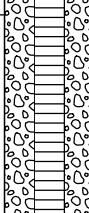
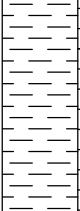
Project Havant				BOREHOLE No WS1	
Job No 770.02	Date 11-08-20	Ground Level (m) 38.18	Co-Ordinates () E 469,415.0 N 107,845.0		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			Water				STRATA	Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.00-0.25	ES						MADE GROUND: Firm to stiff ferruginous red/brown/grey silty clay with flecks of chalk (earthworks fill).		
0.25-1.00	D			37.93		0.25	Firm to stiff micaceous blue/grey CLAY (London Clay). Becoming stiff...		
1.00		N14			(5.25)	Becoming very stiff....			
2.00		N19							
3.00		N24							
4.00		N26							
5.00		N39							
				32.68		5.50			
									

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth	From	To	Hours	From	To	
											NVO - No Visual or Olfactory Evidence of Contamination
											No groundwater encountered.
											Borehole positioned on slope so working platform cut with excavator. Top of borehole approximately 0.5m below adjacent ground surface.
All dimensions in metres Scale 1:37.5			Client Lidl Great Britain Ltd			Method/ Plant Used Tracked Rig					

BOREHOLE LOG

Project Havant				BOREHOLE No WS2	
Job No 770.02	Date 11-08-20	Ground Level (m) 42.12	Co-Ordinates () E 469,396.0 N 107,796.0		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			Water				STRATA		Geology	Instrument/ Backfill	
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION				
1.00	ES	N10				(1.00)	MADE GROUND: Light brown/grey gravelly sandy clay. Gravel is chalk, brick and concrete (earthworks fill).				
				41.12		1.00	MADE GROUND: Concrete boulder with steel beam - Removed by excavator.				
40.62				1.50		MADE GROUND: Soft to firm red/brown/grey clay with black staining and a hydrocarbon odour (earthworks fill).					
1.50-1.90	D	N8		40.22		(0.40)	MADE GROUND: Firm to stiff blue/grey/brown clay (earthworks fill).				
2.00-2.75				2.00			39.37			2.75	MADE GROUND: Firm to stiff brown/grey clay (earthworks fill).
											(0.85)
3.00	N18			38.37		(1.00)	Stiff to very stiff blue/grey micaceous CLAY (LONDON CLAY).				
				3.75							
4.00				N29							(1.75)
5.00	N32			36.62	5.50						

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth	From	To	Hours	From	To	
											NVO - No Visual or Olfactory Evidence of Contamination No groundwater encountered.
All dimensions in metres Scale 1:37.5			Client Lidl Great Britain Ltd			Method/ Plant Used Tracked Rig			Logged By GJ		

BOREHOLE LOG

Project Havant				BOREHOLE No WS3	
Job No 770.02	Date 11-08-20	Ground Level (m) 42.57	Co-Ordinates () E 469,380.0 N 107,780.0		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			Water				STRATA		Geology	Instrument/ Backfill		
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION					
1.00-2.00 1.00	ES	N21				(2.25)	MADE GROUND: Stiff light brown gravelly slightly sandy clay. Gravel is brick (earthworks fill). Becoming very stiff.....					
2.00		N58/ 200 mm		40.32		2.25	MADE GROUND: Firm brown gravelly clay. Gravel is chalk (earthworks fill).					
3.00		N18		39.37		3.20	MADE GROUND: Stiff brown/blue/grey sandy clay (earthworks fill).					
4.00		N19				(2.30)						
				37.07		5.50	Stiff blue/grey micaceous clay					
				36.57		(0.50) 6.00						

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Dia. mm	Water Depth	From	To	Hours	From	To	
											NVO - No Visual or Olfactory Evidence of Contamination No groundwater encountered.
All dimensions in metres Scale 1:37.5			Client Lidl Great Britain Ltd			Method/ Plant Used Tracked Rig			Logged By GJ		

BOREHOLE LOG

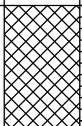
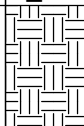
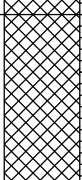
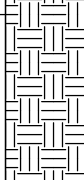
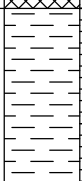
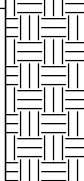
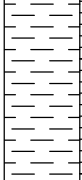
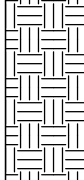
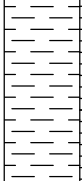
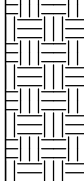
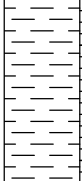
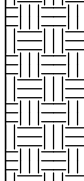
Project Havant				BOREHOLE No WS5	
Job No 770.02	Date 11-08-20	Ground Level (m) 39.12	Co-Ordinates () E 469,442.0 N 107,844.0		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			Water				STRATA	Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION		
0.60-0.80	ES						MADE GROUND: Firm to stiff ferruginous red/brown/grey clay.		
1.00		N10				(1.60)			
				37.52		1.60	Firm blue grey micaceous CLAY.		
2.00		N37					Becoming stiff...		
2.55-3.00	U						Becoming very stiff....		
3.00		N50/ 295 mm				(3.90)			
				33.62		5.50			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Dia. mm	Water Depth	From	To	Hours	From	To	
											NVO - No Visual or Olfactory Evidence of Contamination No groundwater encountered.
All dimensions in metres Scale 1:37.5			Client Lidl Great Britain Ltd			Method/ Plant Used Tracked Rig			Logged By GJ		

BOREHOLE LOG

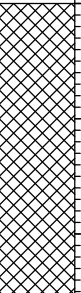
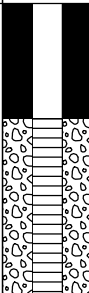
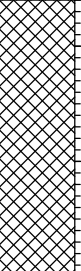
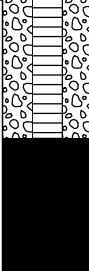
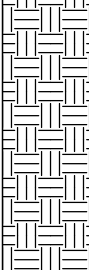
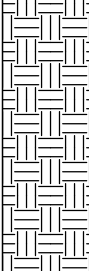
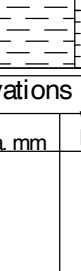
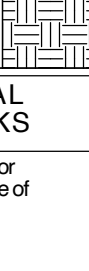
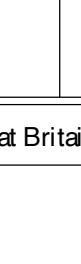
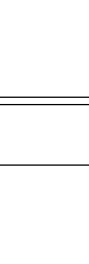
Project Havant				BOREHOLE No CP1	
Job No 770.02	Date 17-08-20 18-08-20	Ground Level (m) 41.87	Co-Ordinates () E 469,447.0 N 107,809.0		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			Water				STRATA	Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION		
0.50	ES	N22	40.77		(1.10)	MADE GROUND: Firm to stiff orange/brown very sandy slightly gravelly clay (earthworks fill).			
1.50	D ES U100				(0.90)	MADE GROUND: Firm to stiff orange / brown sandy clay (earthworks fill).			
2.00					39.37	(0.50)			MADE GROUND: Orange brown silty clayey sand (earthworks fill).
2.50						2.50			MADE GROUND: Stiff orange brown/grey clay (earthworks fill).
3.00	D	N12	37.87		(1.50)				
3.00	4.00				Stiff to very stiff blue grey slightly micacious CLAY.				
4.00	U100	N20							
4.45	D								
4.50									
5.50	D	N18							
6.00	D								
6.00									
7.00	U100	N20			(6.50)				
7.50									
9.00		N20							
10.00		N24							
			31.37		10.50				

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Dia. mm	Water Depth	From	To	Hours	From	To	
											NVO - No Visual or Olfactory Evidence of Contamination No groundwater encountered.
All dimensions in metres Scale 1:65.625			Client Lidl Great Britain Ltd			Method/ Plant Used Dando 2000			Logged By GJ		

BOREHOLE LOG

Project Havant				BOREHOLE No CP2	
Job No 770.02	Date 18-08-20 19-08-20	Ground Level (m) 40.53	Co-Ordinates () E 107,744.0 N 469,455.0		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS				STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.50	ES	N13				(2.60)	MADE GROUND: Firm to stiff orange/brown grey slightly gravelly clay (earthworks fill).		
1.50	ES								
2.20	U100			37.93		2.60			
3.00	ES	N19				(2.40)	MADE GROUND: Stiff to very stiff orange brown silty clay (earthworks fill).		
4.00	U100								
4.50	D	N19		35.53		5.00	Stiff to very stiff blue/grey slightly micaceous CLAY.		
6.00									
6.50	D	N16							
7.00	U100								
7.45	D	N18				(5.50)			
7.50									
9.00		N26							
10.00		N24		30.03		10.50			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Dia. mm	Water Depth	From	To	Hours	From	To	
											NVO - No Visual or Olfactory Evidence of Contamination No groundwater encountered
All dimensions in metres Scale 1:65.625			Client Lidl Great Britain Ltd			Method/ Plant Used Dando 2000			Logged By GJ		

BOREHOLE LOG

Project Havant				BOREHOLE No CP3A	
Job No 770.02	Date 17-08-20 17-08-20	Ground Level (m) 42.11	Co-Ordinates () E 469,424.0 N 107,791.0		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			Water				STRATA	Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION		
0.50-0.70	ES	N16				Made Ground: Stiff to very stiff orange brown slightly gravelly clay. Gravel is concrete and brick.			
1.50						(2.05)			
				40.06		2.05	Obstruction		
				39.61		2.50			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth	From	To	Hours	From	To	
											NVO - No Visual or Olfactory Evidence of Contamination No groundwater encountered
All dimensions in metres Scale 1:65.625			Client Lidl Great Britain Ltd			Method/ Plant Used Dando 2000			Logged By GJ		

BOREHOLE LOG

Project Havant				BOREHOLE No CP3B	
Job No 770.02	Date 17-08-20 17-08-20	Ground Level (m) 42.11	Co-Ordinates () E 469,424.0 N 107,792.0		
Contractor				Sheet 1 of 1	

SAMPLES & TESTS			Water	STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION			
0.50	ES	N38				(2.10)	MADE GROUND: Stiff to very stiff slightly gravelly clay. Gravel is concrete and brick.			
1.50	D ES									
1.50				40.01		2.10				
1.50				39.71		2.40	OBSTRUCTION: Concrete boulders and kerbstones removed by 8 tonne excavator and explorator hole continued as as trial pit - see photos.			
				39.21	(0.50) 2.90	MADE GROUND: Stiff to very stiff orange brown/grey gravelly clay. Gravel is concrete and brick.				
					(2.10)	MADE GROUND: Stiff to very stiff orange/brown slightly sandy CLAY.				
				37.11		5.00				
				36.61	(0.50) 5.50	Very stiff blue grey slightly micacious CLAY.				



Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Depth	Date	Time	Casing Depth	Casing Dia. mm	Water Depth	From	To	Hours	From	To	
											NVO - No Visual or Olfactory Evidence of Contamination No groundwater encountered
All dimensions in metres Scale 1:65.625			Client Lidl Great Britain Ltd			Method/ Plant Used Dando 2000			Logged By GJ		



APPENDIX A

SPT Hammer Calibration Certificates

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING (UK) LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref: AR2847
Test Date: 03/09/2019
Report Date: 03/09/2019
File Name: AR2847.spt
Test Operator: JL

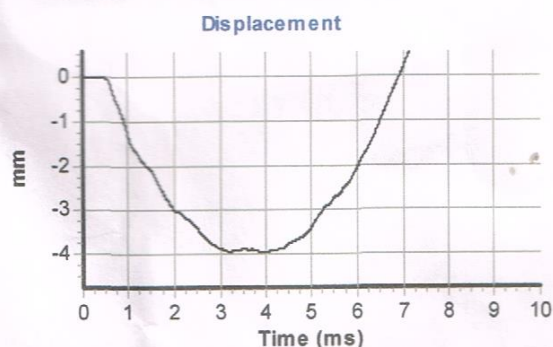
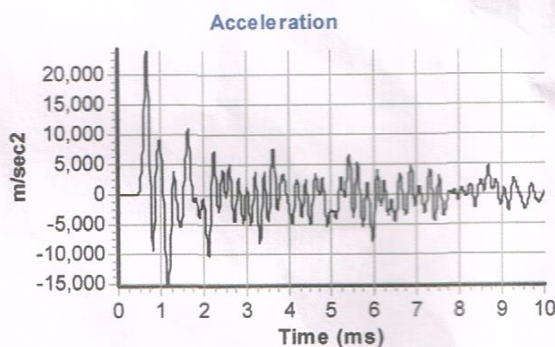
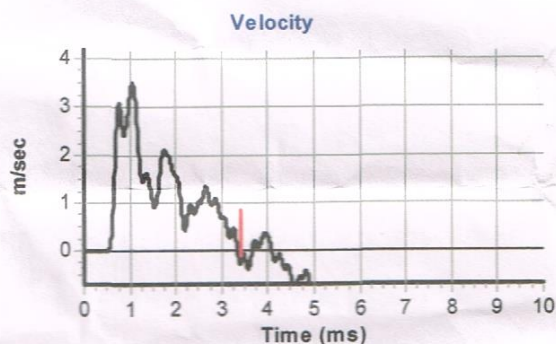
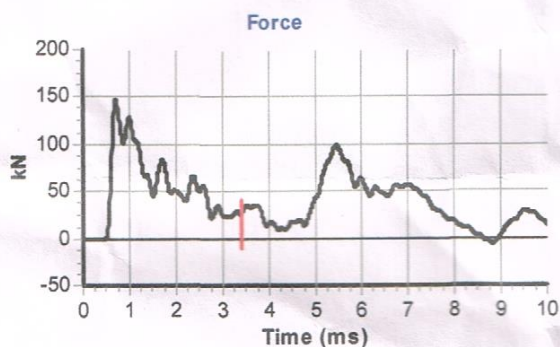
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.2
Assumed Modulus E_a (GPa): 210
Accelerometer No.1: 7080
Accelerometer No.2: 11609

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 10.0

Comments / Location



Calculations

Area of Rod A (mm²): 931
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 334

Energy Ratio E_r (%):

71

Signed: J.LOCL

Title: TRAINEE FITTER

The recommended calibration interval is 12 months



**DANDO DRILLING
INTERNATIONAL**

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Dando Drilling International
Unit G
Ford Airfield Industrial Estate
Ford
West Sussex
BN18 OHY

SPT Hammer Ref: DT16200
Test Date: 13/02/2020
Report Date: 17/02/2020
File Name: DT16200.spt
Test Operator: NICK

Instrumented Rod Data

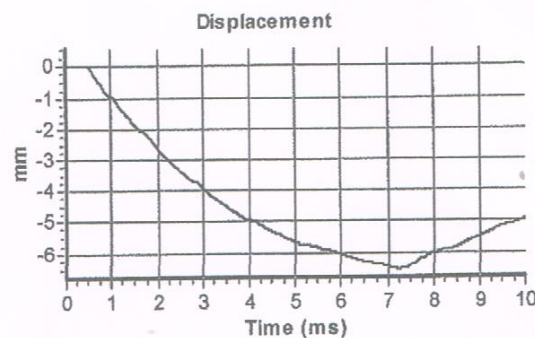
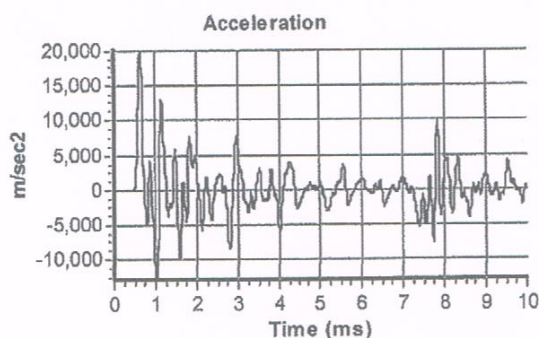
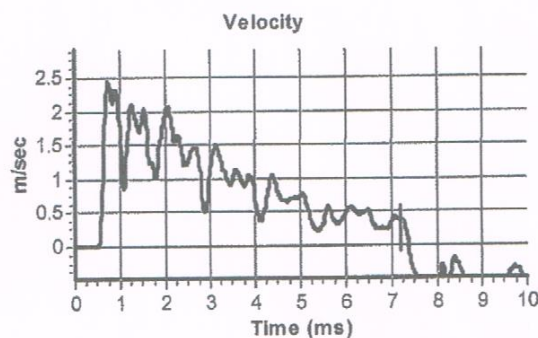
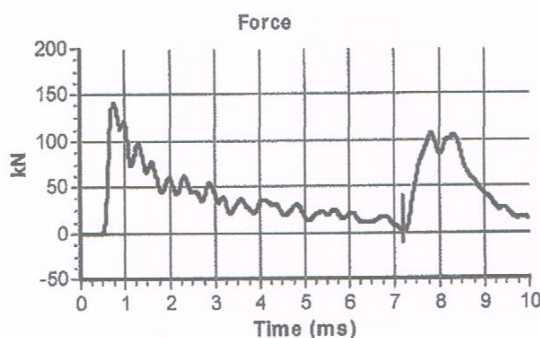
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.5
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 11855
Accelerometer No.2: 9983

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 16.5

Comments / Location

Dando MK2 Terrier



Calculations

Area of Rod A (mm^2): 970
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 373

Energy Ratio E_r (%)

79

Signed: Nick Jacobs-smith

Title: Fitter

The recommended calibration interval is 12 months



Appendix B

CBR Test Results

TRL Dynamic Cone Penetrometer Test Results

Remada

Client:	Lidl GB Ltd	Struct' Eng':		Test No:	CBR1	Location:	
Project No:	770.02	Date:	16.09.2020	Start Depth:		Test Strata:	MADEGROUND
$\text{Log}_{10}(\text{CBR}) = 2.480 - 1.057 \times \text{Log}_{10}(\text{mm/blow})$						Weather:	Dry Sunny

No of Blows	Depth Reading mm	Penetration/Blow mm	CBR %	Estimated CBR %
0	50	0		
1	90	40.0	6.1	
2	130	40.0	6.1	
3	170	40.0	6.1	
4	195	25.0	10.1	
5	219	24.0	10.5	
6	252	33.0	7.5	
7	289	37.0	6.6	
8	340	51.0	4.7	
9	390	50.0	4.8	
10	422	32.0	7.7	
11	450	28.0	8.9	
12	484	34.0	7.3	
13	510	26.0	9.6	
14	534	24.0	10.5	
15	550	16.0	16.1	
16	555	5.0	55.1	
17	560	5.0	55.1	
18	561	1.0	302.0	
19	565	4.0	69.8	
20	567	2.0	145.1	
21	577	10.0	26.5	
22	584	7.0	38.6	
23	600	16.0	16.1	
24	625	25.0	10.1	
25	635	10.0	26.5	
26	642	7.0	38.6	
27	650	8.0	33.5	
28	660	10.0	26.5	
29	668	8.0	33.5	
30	674	6.0	45.4	
31	680	6.0	45.4	
32	690	10.0	26.5	
33	702	12.0	21.8	
34	705	3.0	94.6	
35	710	5.0	55.1	
36	720	10.0	26.5	
37	725	5.0	55.1	
38	735	10.0	26.5	
39	745	10.0	26.5	
40	770	25.0	10.1	
41	790	20.0	12.7	
42	810	20.0	12.7	
43	820	10.0	26.5	
44	830	10.0	26.5	
45	865	35.0	7.0	
46	883	18.0	14.2	
47	910	27.0	9.3	
48	920	10.0	26.5	
49	930	10.0	26.5	
50	936	6.0	45.4	
51	938	2.0	145.1	
52	948	10.0	26.5	
53	949	1.0	302.0	
54	950	1.0	302.0	

Notes:

Tested by I Shafqat
Date: 16.09.2020

Checked by: G Jones
Date: 16.09.2020

TRL Dynamic Cone Penetrometer Test Results

Remada

Client:	Lidl GB Ltd	Struct' Eng':		Test No:	CBR2	Location:	
Project No:	770.02	Date:	16.09.2020	Start Depth:	Formation	Test Strata:	MADE GROUND
$Log10(CBR) = 2.480 - 1.057 \times Log10(mm/blow)$						Weather:	Dry Sunny

No of Blows	Depth Reading mm	Penetration/Blow mm	CBR %	Estimated CBR %
0	50	0		
1	130	80.0	2.9	
2	170	40.0	6.1	
3	200	30.0	8.3	
4	235	35.0	7.0	
5	272	37.0	6.6	
6	305	33.0	7.5	
7	343	38.0	6.5	
8	370	27.0	9.3	
9	395	25.0	10.1	
10	420	25.0	10.1	
11	435	15.0	17.3	
12	450	15.0	17.3	
13	460	10.0	26.5	
14	470	10.0	26.5	
15	480	10.0	26.5	
16	490	10.0	26.5	
17	500	10.0	26.5	
18	501	1.0	302.0	
19	502	1.0	302.0	
20	503	1.0	302.0	

Notes:	
Tested by I Shafqat	Checked by: G Jones
Date: 16.09.2020	Date: 16.09.2020

TRL Dynamic Cone Penetrometer Test Results

Remada

Client:	Lidl GB Ltd	Struct' Eng':		Test No:	CBR3	Location:	
Project No:	770.02	Date:	16.09.2020	Start Depth:	Formation	Test Strata:	MADEGROUND
$\text{Log10(CBR)} = 2.480 - 1.057 \times \text{Log10(mm/blow)}$						Weather:	Dry Sunny

No of Blows	Depth Reading mm	Penetration/Blow mm	CBR %	Estimated CBR %
0	40	0		
1	70	30.0	8.3	
2	105	35.0	7.0	
3	150	45.0	5.4	
4	188	38.0	6.5	
5	210	22.0	11.5	
6	240	30.0	8.3	
7	264	24.0	10.5	
8	280	16.0	16.1	
9	296	16.0	16.1	
10	312	16.0	16.1	
11	350	38.0	6.5	
12	390	40.0	6.1	
13	430	40.0	6.1	
14	448	18.0	14.2	
15	454	6.0	45.4	
16	455	1.0	302.0	
17	459	4.0	69.8	
18	460	1.0	302.0	
19	461	1.0	302.0	

Notes:

Tested by: I Shafqat
Date: 16.09.2020

Checked by: G Jones
Date: 16.09.2020



Appendix C

Plate Bearing Test Results

Plate Bearing Test Report

Remada

In-house Plate Bearing Test procedure based on BS1377 Part 9:1990 and IAN 73/06

Client :	Lidl Great Britain LTD
Job Name:	Lidl Havant
Job Number	770.01
Site	Purbrook Way, Hampshire, PO93QJ

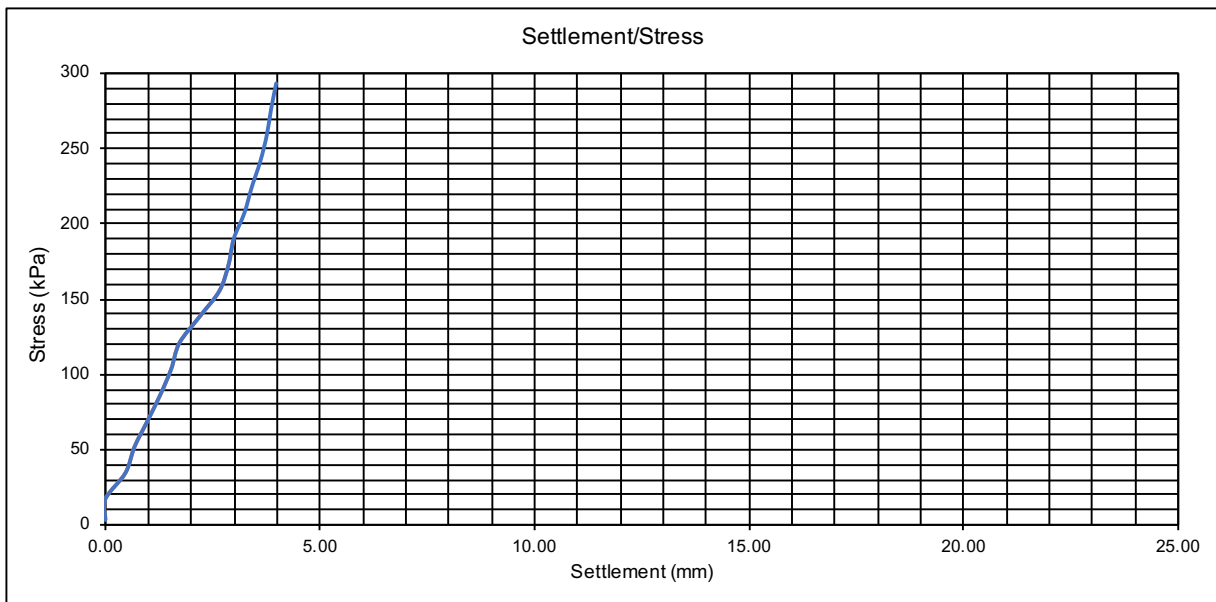
Report Date:	11.08.2020
Reaction Load	14 Tonne Excavator
Plate Diameter (mm)	607
Test Depth in layer of material (mm)	Surface

Test Location	PBT1
Test Strata	MADEGROUND
Ground Condition	Dry
Weather	Sunny, warm

Equivalent CBR Value (%)	11.15
Maximum Applied Stress (kPa)	293.35
Maximum Settlement (mm)	3.98
Bearing Pressure at 1.25mm Settlement	90.0
K762 (at 1.25mm settlement) kN/m2/m	58.53

Time (s)	Stress (kPa)	Settlement (mm)
0	3	0.00
0	17	0.00
30	35	0.47
60	52	0.68
150	69	0.98
210	86	1.28
300	104	1.53
390	121	1.72
450	138	2.19
510	155	2.65
570	173	2.87
630	190	2.99
690	207	3.24
750	224	3.41
810	242	3.61
870	259	3.76
930	276	3.86
1000	293	3.98

Remarks:



Report Prepared By: I Shafqat

Date: 11.08.20

Approved By: G S Jones

Date: 11.08.20

Plate Bearing Test Report

Remada

In-house Plate Bearing Test procedure based on BS1377 Part 9:1990 and IAN 73/06

Client :	Lidl Great Britain LTD
Job Name:	Lidl Havant
Job Number	770.01
Site	Purbrook Way, Hampshire, PO93QJ

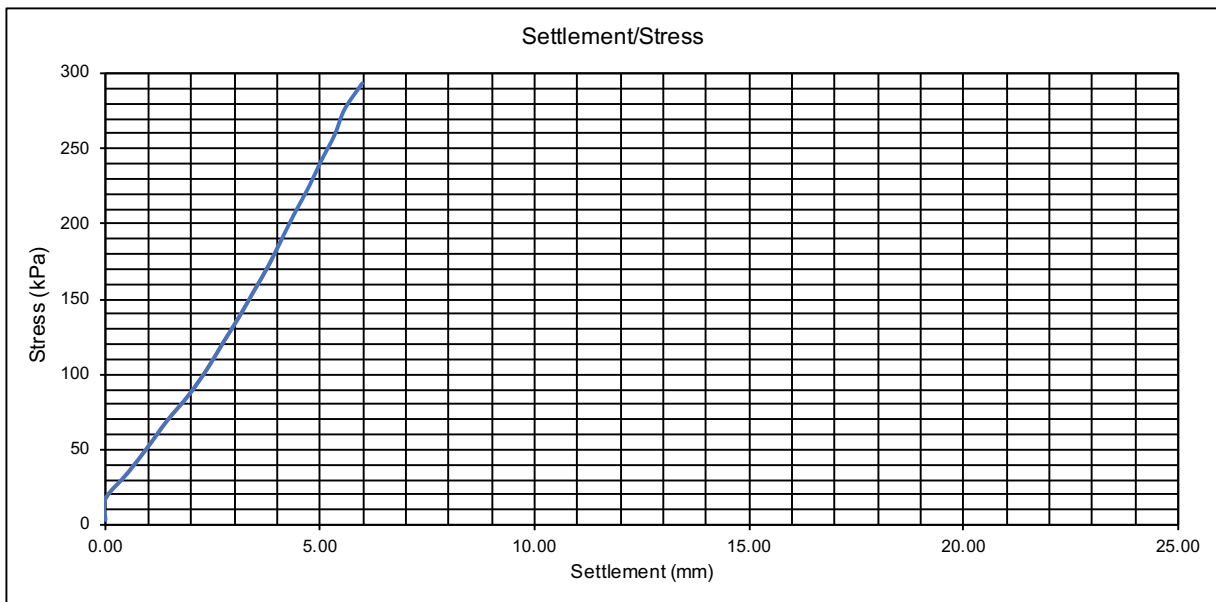
Report Date:	11.08.2020
Reaction Load	14 Tonne Excavator
Plate Diameter (mm)	607
Test Depth in layer of material (mm)	Surface

Test Location	PBT2
Test Strata	MADEGROUND
Ground Condition	Dry
Weather	Sunny, warm

Equivalent CBR Value (%)	7.21
Maximum Applied Stress (kPa)	293.35
Maximum Settlement (mm)	5.98
Bearing Pressure at 1.25mm Settlement	70.0
K762 (at 1.25mm settlement) kN/m2/m	45.52

Time (s)	Stress (kPa)	Settlement (mm)
0	3	0.00
0	17	0.00
30	35	0.52
60	52	0.99
90	69	1.43
150	86	1.94
210	104	2.37
270	121	2.74
330	138	3.11
400	155	3.46
490	173	3.81
580	190	4.11
640	207	4.41
780	224	4.74
700	242	5.02
780	259	5.34
840	276	5.57
900	293	5.98

Remarks:



Report Prepared By: I Shafqat

Date: 11.08.20

Approved By: G S Jones

Date: 11.08.20



APPENDIX D

Laboratory Chemical Analysis



Final Report

Report No.:	20-21350-1		
Initial Date of Issue:	24-Aug-2020		
Client	Remada Ltd		
Client Address:	Forward House 17 High Street Henley in Arden B95 5AA		
Contact(s):	Greg Jones Peter Dickinson		
Project	770.02 Havant		
Quotation No.:		Date Received:	13-Aug-2020
Order No.:		Date Instructed:	13-Aug-2020
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	19-Aug-2020
Date Approved:	24-Aug-2020		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Soil

Project: 770.02 Havant

Client: Remada Ltd	Chemtest Job No.:				20-21350	20-21350	20-21350	20-21350
Quotation No.:	Chemtest Sample ID.:				1048003	1048004	1048005	1048006
	Client Sample ID.:				1.00	2.00	3.00	4.00
	Sample Location:				WS1	WS2	WS3	WS5
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.00	1.50	0.50	0.50
	Bottom Depth (m):				0.20	2.00	1.00	1.00
	Date Sampled:				11-Aug-2020	11-Aug-2020	11-Aug-2020	11-Aug-2020
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-	-	-
Moisture	N	2030	%	0.020	9.0	18	9.4	14
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand
Chromatogram (TPH)	N			N/A	See Attached	See Attached	See Attached	See Attached
pH	M	2010		4.0	5.7	7.7	8.6	6.2
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.61	< 0.40	< 0.40	< 0.40
Arsenic	M	2450	mg/kg	1.0	8.7	8.5	11	7.6
Beryllium	U	2450	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium	M	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Copper	M	2450	mg/kg	0.50	11	6.3	14	8.5
Mercury	M	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	17	6.3	19	18
Lead	M	2450	mg/kg	0.50	12	4.6	17	8.5
Selenium	M	2450	mg/kg	0.20	0.64	0.41	0.60	0.43
Vanadium	U	2450	mg/kg	5.0	28	23	40	26
Zinc	M	2450	mg/kg	0.50	58	28	57	46
Chromium (Trivalent)	N	2490	mg/kg	1.0	23	15	31	21
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.0049	0.0025	0.0044	0.0034
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	32	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	8.5	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	24	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	21	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	36	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	4.1	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	130	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	3.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	5.4	< 1.0	< 1.0

Results - Soil

Project: 770.02 Havant

Client: Remada Ltd	Chemtest Job No.:				20-21350	20-21350	20-21350	20-21350
Quotation No.:	Chemtest Sample ID.:				1048003	1048004	1048005	1048006
	Client Sample ID.:				1.00	2.00	3.00	4.00
	Sample Location:				WS1	WS2	WS3	WS5
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.00	1.50	0.50	0.50
	Bottom Depth (m):				0.20	2.00	1.00	1.00
	Date Sampled:				11-Aug-2020	11-Aug-2020	11-Aug-2020	11-Aug-2020
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	20	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	26	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	120	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	7.5	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	190	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	310	< 10	< 10
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30

TPH Chromatogram on Soil Sample: 1048003

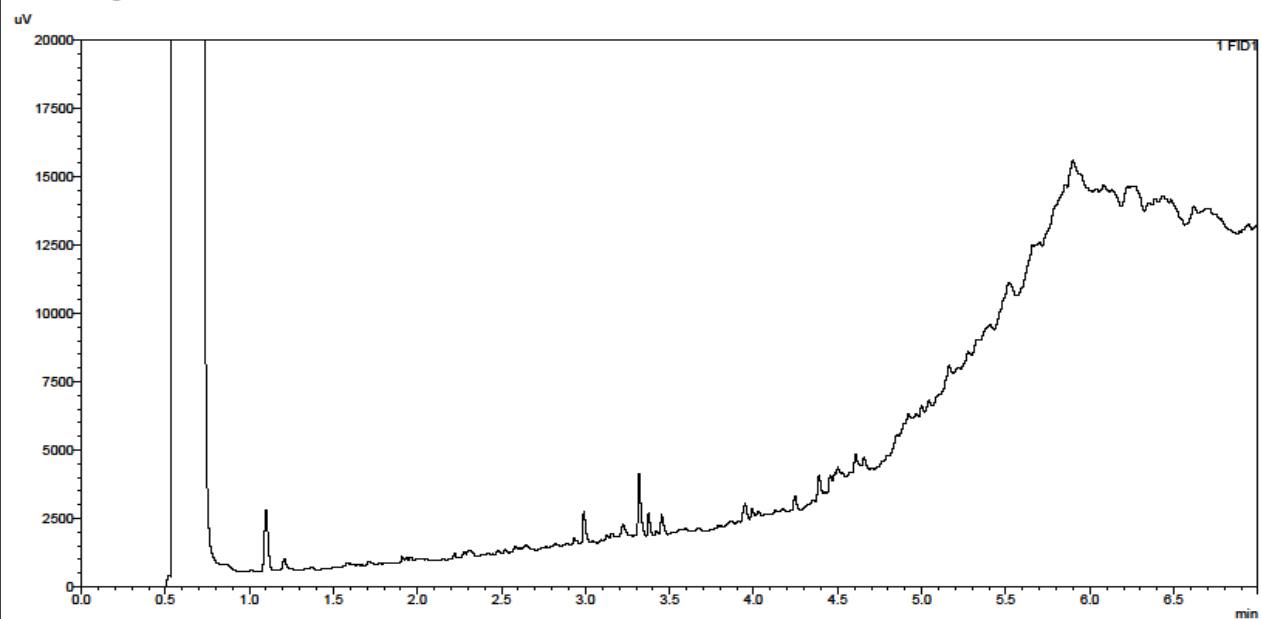
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Date Processed : 17/08/2020



Chemtest

<Chromatogram>



TPH Chromatogram on Soil Sample: 1048004

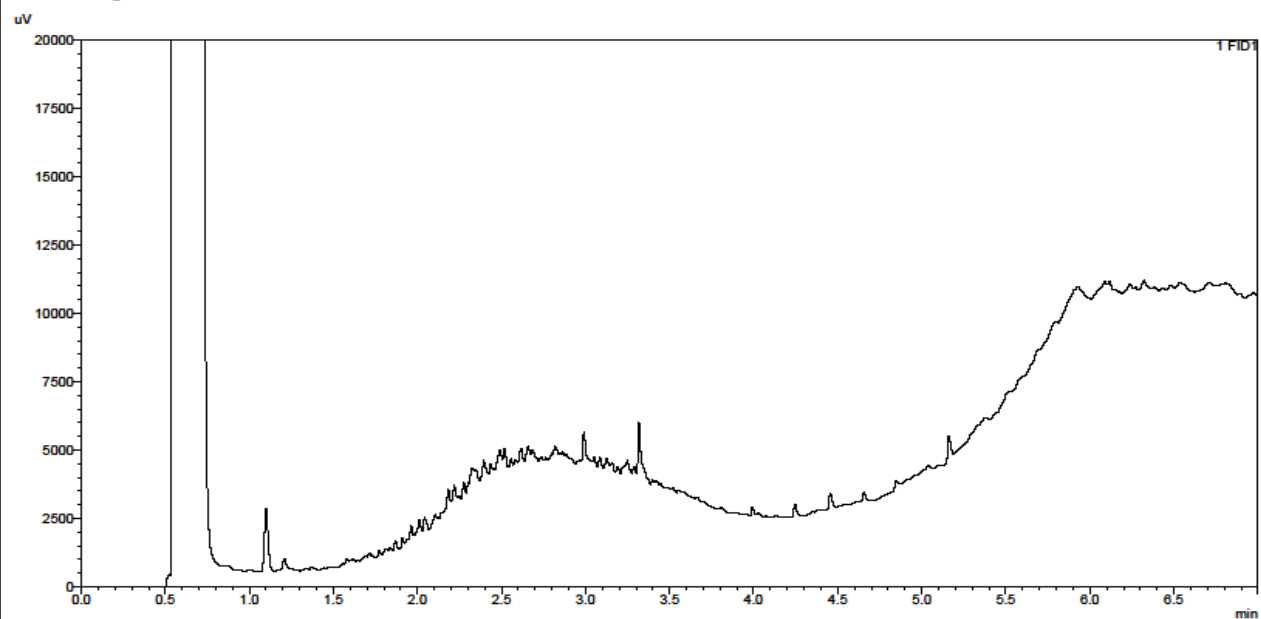
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Date Processed : 17/08/2020



Chemtest

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TPH Chromatogram on Soil Sample: 1048005

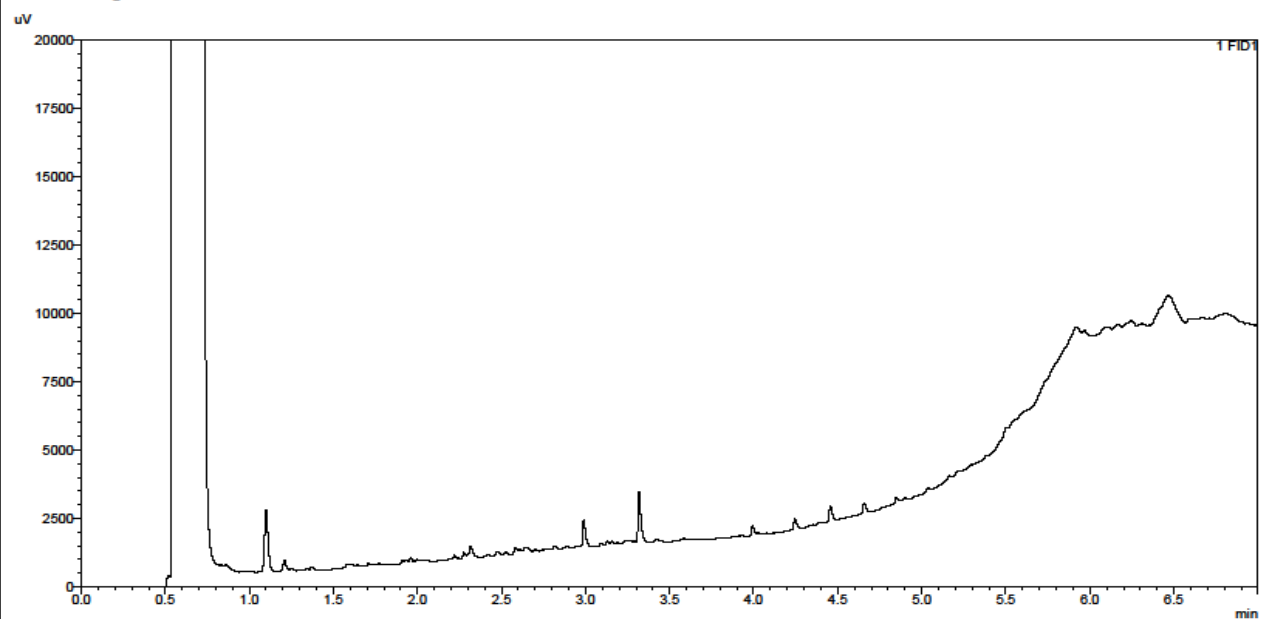
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Chemtest

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TPH Chromatogram on Soil Sample: 1048006

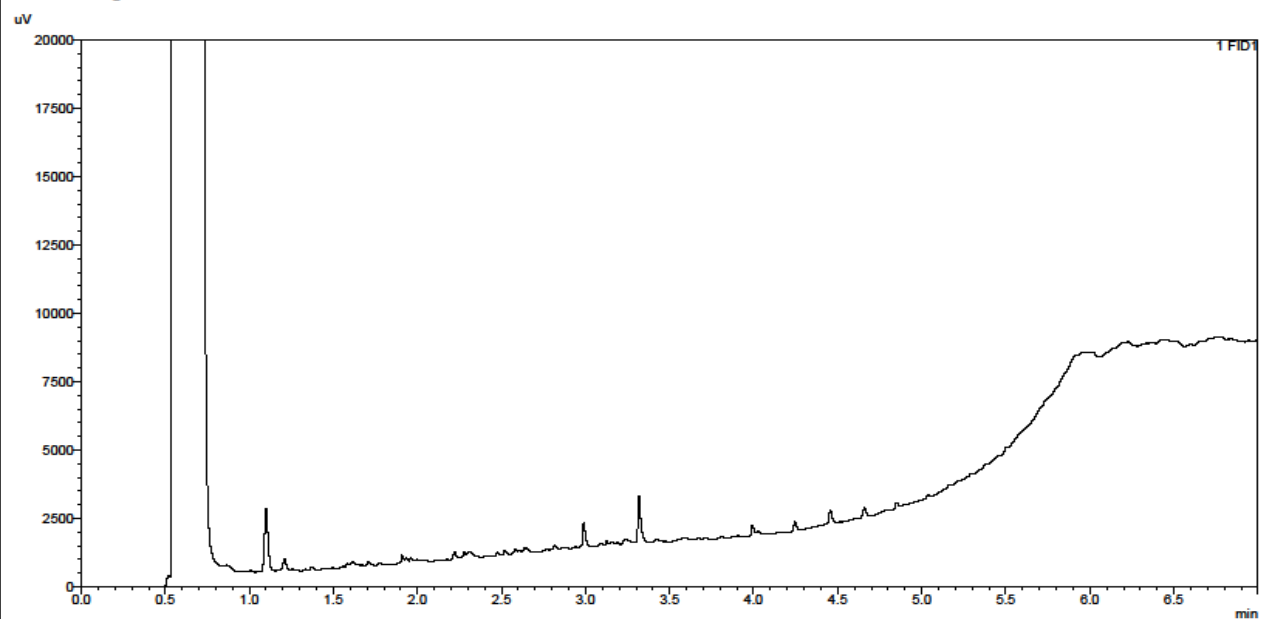
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Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 41
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Date Processed : 17/08/2020



Chemtest

<Chromatogram>



Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
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>	"greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

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Uncertainty of measurement for the determinands tested are available upon request

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

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- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

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

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

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com



Final Report

Report No.:	20-22074-1		
Initial Date of Issue:	27-Aug-2020		
Client	Remada Ltd		
Client Address:	Forward House 17 High Street Henley in Arden B95 5AA		
Contact(s):	Greg Jones		
Project	770.02 Havant		
Quotation No.:		Date Received:	20-Aug-2020
Order No.:		Date Instructed:	20-Aug-2020
No. of Samples:	7		
Turnaround (Wkdays):	5	Results Due:	26-Aug-2020
Date Approved:	27-Aug-2020		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Soil

Project: 770.02 Havant

Client: Remada Ltd	Chemtest Job No.:				20-22074	20-22074	20-22074	20-22074	20-22074	20-22074	20-22074	20-22074
Quotation No.:	Chemtest Sample ID.:				1051524	1051525	1051526	1051527	1051528	1051529	1051530	
	Sample Location:				CP3B	CP3B	CP2	CP2	CP2	CP1	CP1	
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
	Top Depth (m):				0.50	1.50	0.50	1.50	3.00	0.50	2.00	
	Bottom Depth (m):				0.70	2.00	0.70	2.00	3.50	0.70	2.50	
	Date Sampled:				17-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020	
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD								
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-	-	-	-	-	-	-
Moisture	N	2030	%	0.020	8.0	13	11	14	15	8.5	9.3	
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	None	Stones	Stones	
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Clay	Sand	Sand	
Chromatogram (TPH)	N			N/A	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	
pH	M	2010		4.0	8.5	8.4	8.5	8.2	6.4	8.0	6.3	
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.56	0.50	0.68	< 0.40	0.51	0.55	< 0.40	
Arsenic	M	2450	mg/kg	1.0	13	9.2	13	10	12	10	6.3	
Beryllium	U	2450	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.3	< 1.0	< 1.0	
Cadmium	M	2450	mg/kg	0.10	0.36	0.10	0.17	< 0.10	< 0.10	0.14	< 0.10	
Copper	M	2450	mg/kg	0.50	13	12	14	9.9	22	12	6.9	
Mercury	M	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Nickel	M	2450	mg/kg	0.50	20	21	23	13	41	19	6.2	
Lead	M	2450	mg/kg	0.50	27	18	24	16	31	20	6.6	
Selenium	M	2450	mg/kg	0.20	0.30	0.42	0.41	0.41	0.60	0.33	0.31	
Vanadium	U	2450	mg/kg	5.0	40	35	43	30	33	36	20	
Zinc	M	2450	mg/kg	0.50	57	49	66	42	89	54	29	
Chromium (Trivalent)	N	2490	mg/kg	1.0	28	25	29	24	30	25	13	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Fraction of Organic Carbon	M	2625		0.0010	0.015	0.0057	0.0073	0.0019	0.0027	0.010	0.0089	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	

Results - Soil

Project: 770.02 Havant

Client: Remada Ltd	Chemtest Job No.:				20-22074	20-22074	20-22074	20-22074	20-22074	20-22074	20-22074
Quotation No.:	Chemtest Sample ID.:				1051524	1051525	1051526	1051527	1051528	1051529	1051530
	Sample Location:				CP3B	CP3B	CP2	CP2	CP2	CP1	CP1
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.50	1.50	0.50	1.50	3.00	0.50	2.00
	Bottom Depth (m):				0.70	2.00	0.70	2.00	3.50	0.70	2.50
	Date Sampled:				17-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020	17-Aug-2020
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD							
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.55	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.44	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30

TPH Chromatogram on Soil Sample: 1051524

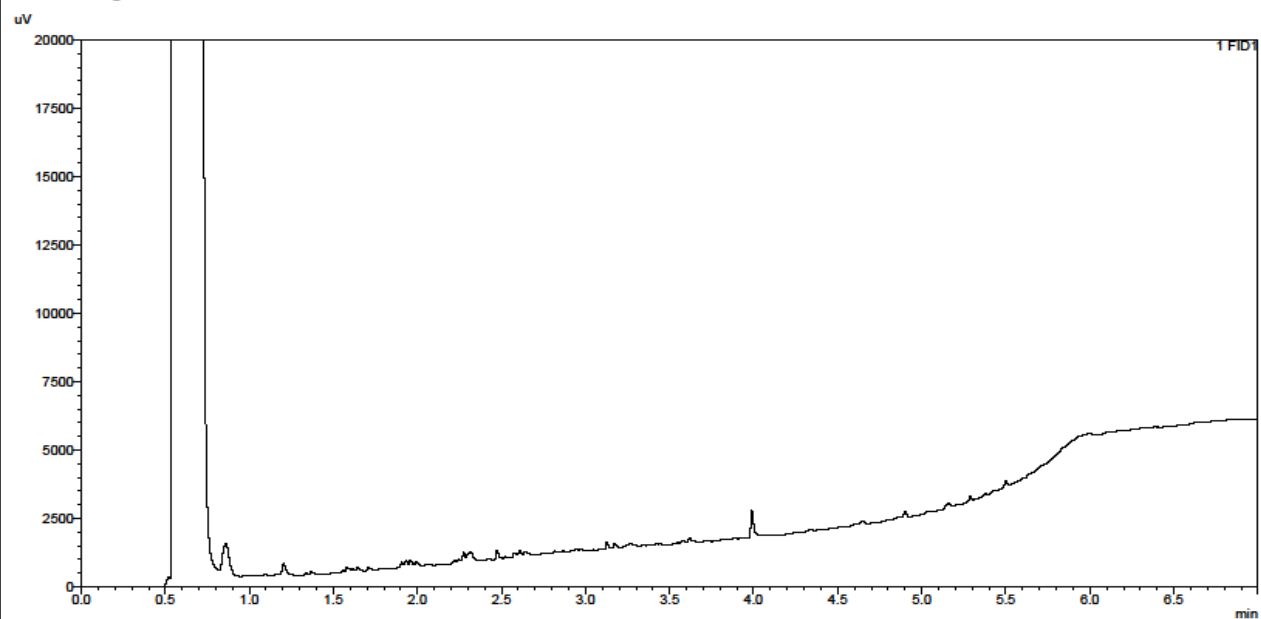
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Sample Name : 1051524 20-22074
Data Filename : 21 August 2020_21082020_1051524 20-22074_071.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 36
Date Acquired : 21/08/2020 20:58:59
Date Processed : 21/08/2020



Chemtest

<Chromatogram>



TPH Chromatogram on Soil Sample: 1051525

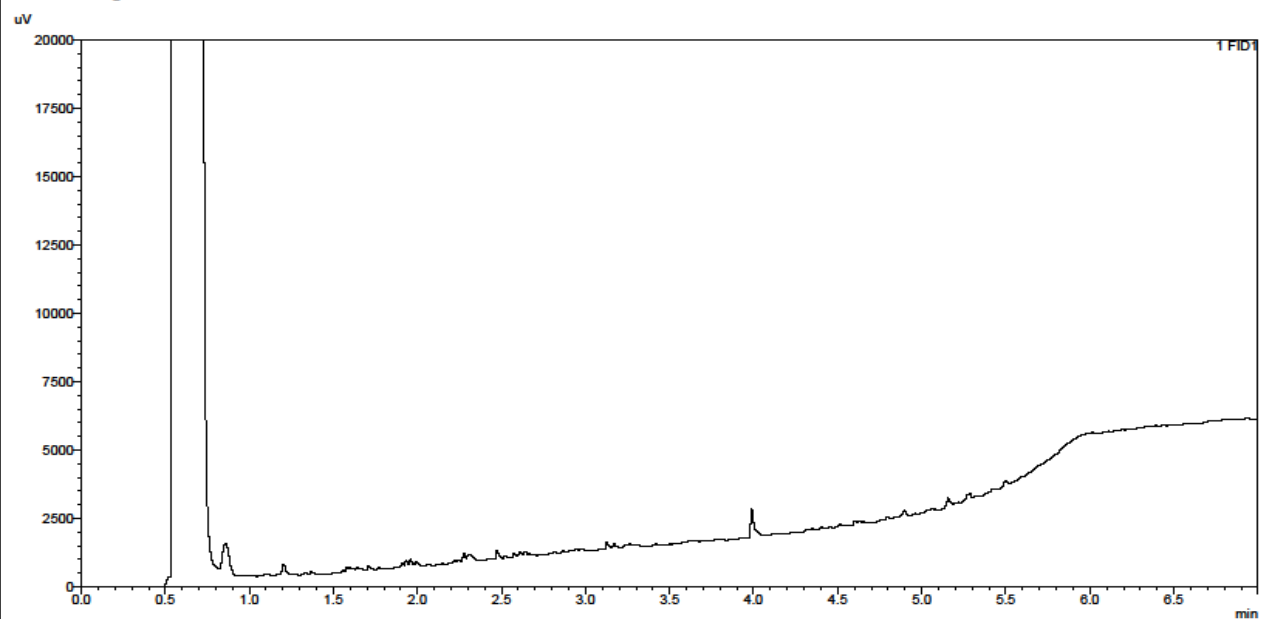
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Sample Name : 1051525 20-22074
Data Filename : 21 August 2020_21082020_1051525 20-22074_073.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 37
Date Acquired : 21/08/2020 21:11:53
Date Processed : 21/08/2020



Chemtest

<Chromatogram>



TPH Chromatogram on Soil Sample: 1051526

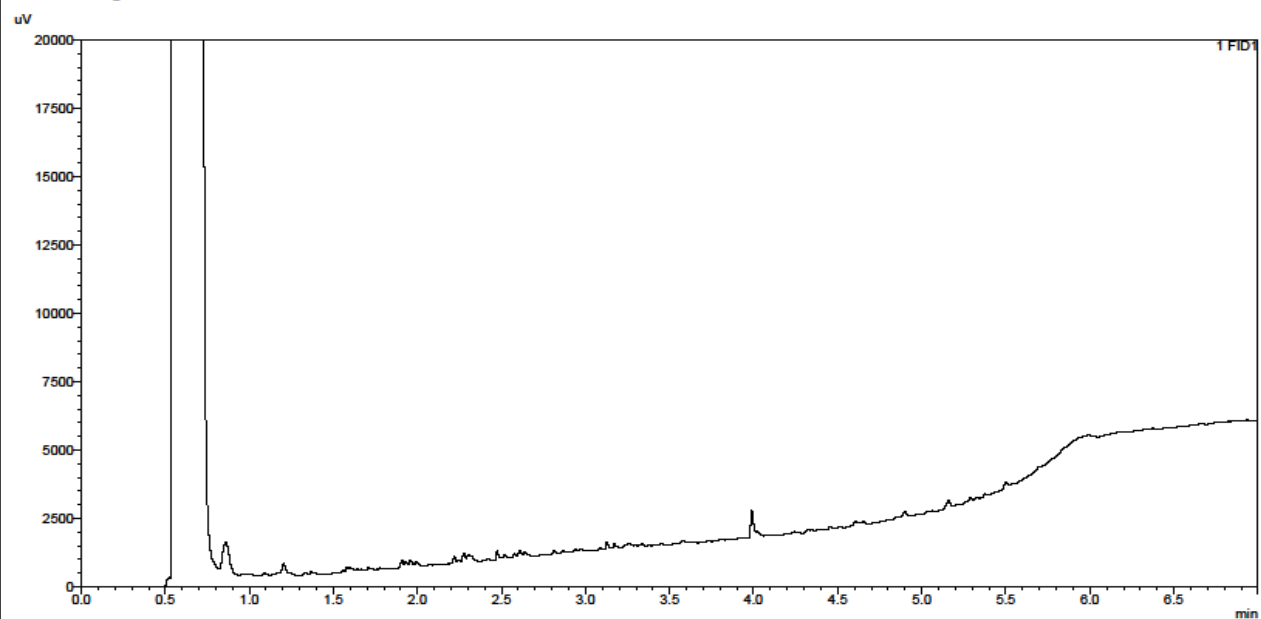
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Sample Name : 1051526 20-22074
Data Filename : 21 August 2020_21082020_1051526 20-22074_075.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 38
Date Acquired : 21/08/2020 21:24:50
Date Processed : 21/08/2020



Chemtest

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TPH Chromatogram on Soil Sample: 1051527

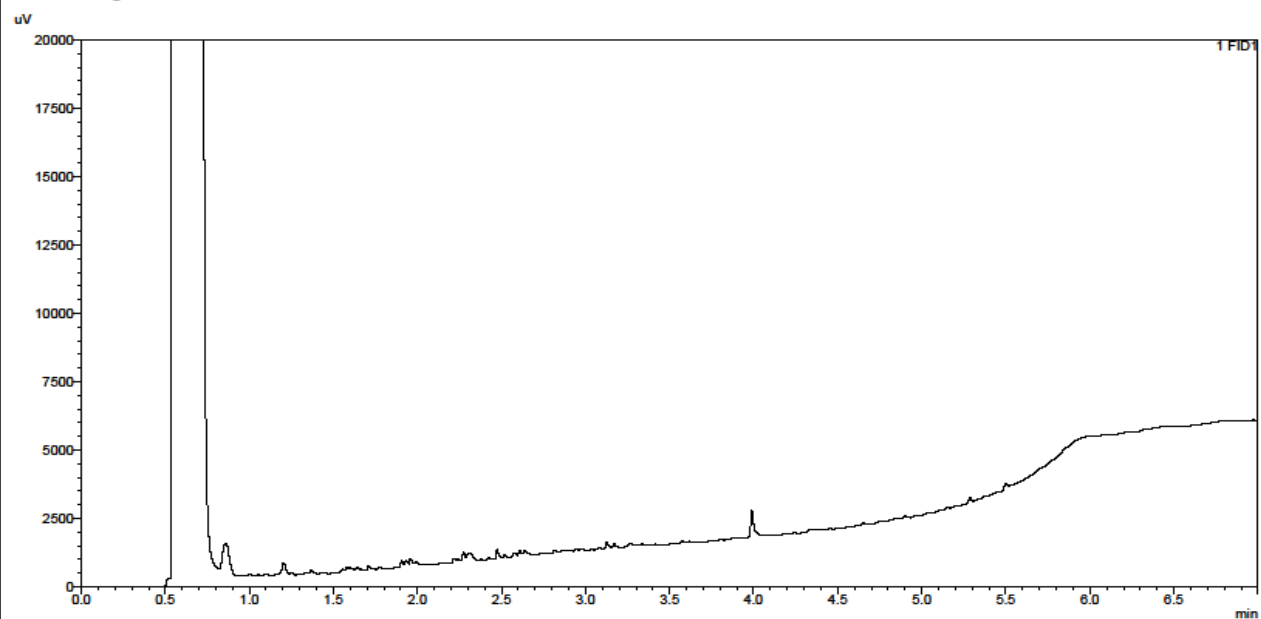
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Sample Name : 1051527 20-22074
Data Filename : 21 August 2020_21082020_1051527 20-22074_077.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 39
Date Acquired : 21/08/2020 21:37:41
Date Processed : 21/08/2020



Chemtest

<Chromatogram>



TPH Chromatogram on Soil Sample: 1051528

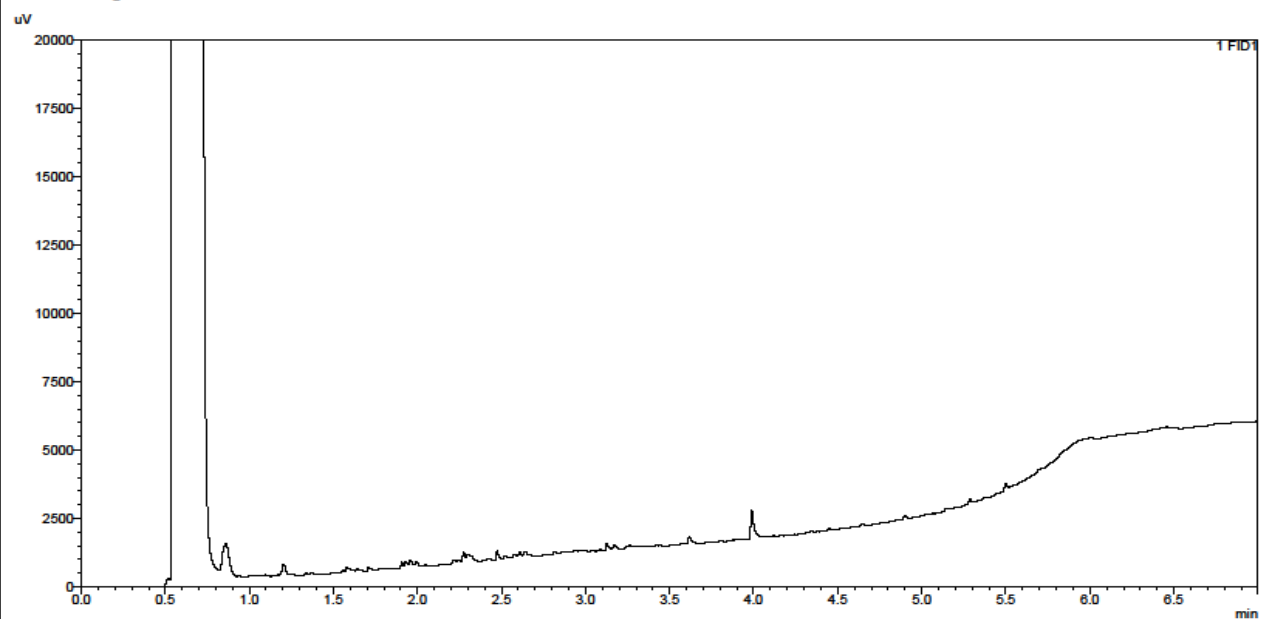
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Sample Name : 1051528 20-22074
Data Filename : 21 August 2020_21082020_1051528 20-22074_079.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 40
Date Acquired : 21/08/2020 21:50:31
Date Processed : 21/08/2020



Chemtest

<Chromatogram>



TPH Chromatogram on Soil Sample: 1051529

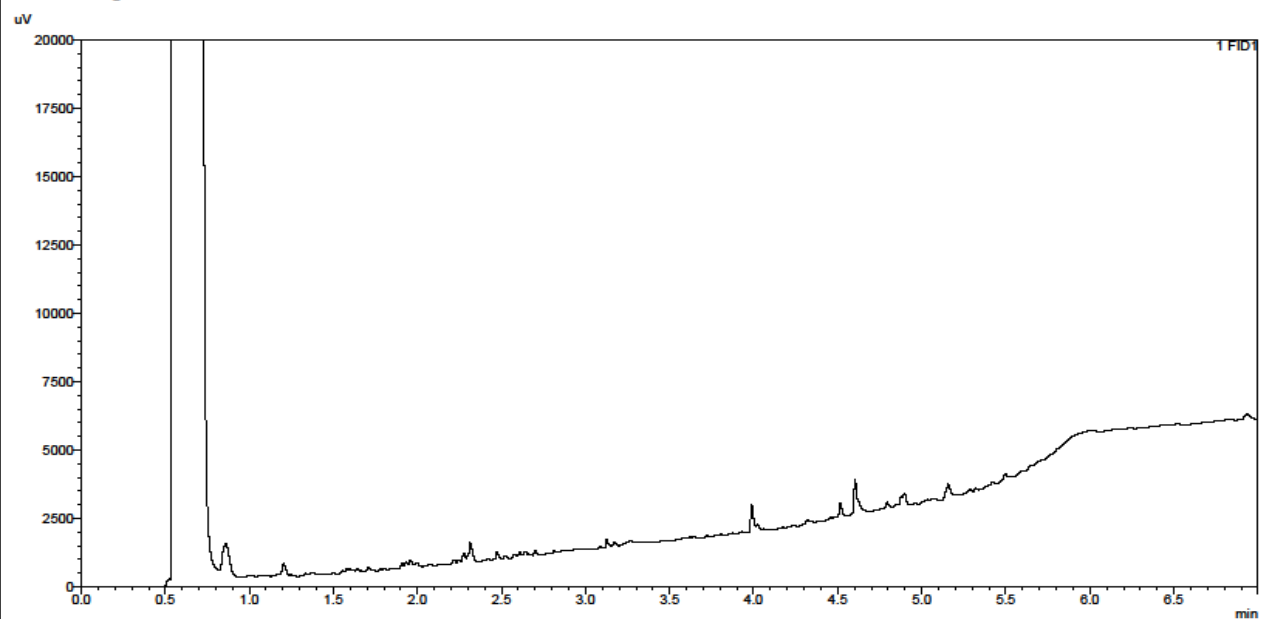
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Sample Name : 1051529 20-22074
Data Filename : 21 August 2020_21082020_1051529 20-22074_081.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 41
Date Acquired : 21/08/2020 22:03:20
Date Processed : 21/08/2020



Chemtest

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TPH Chromatogram on Soil Sample: 1051530

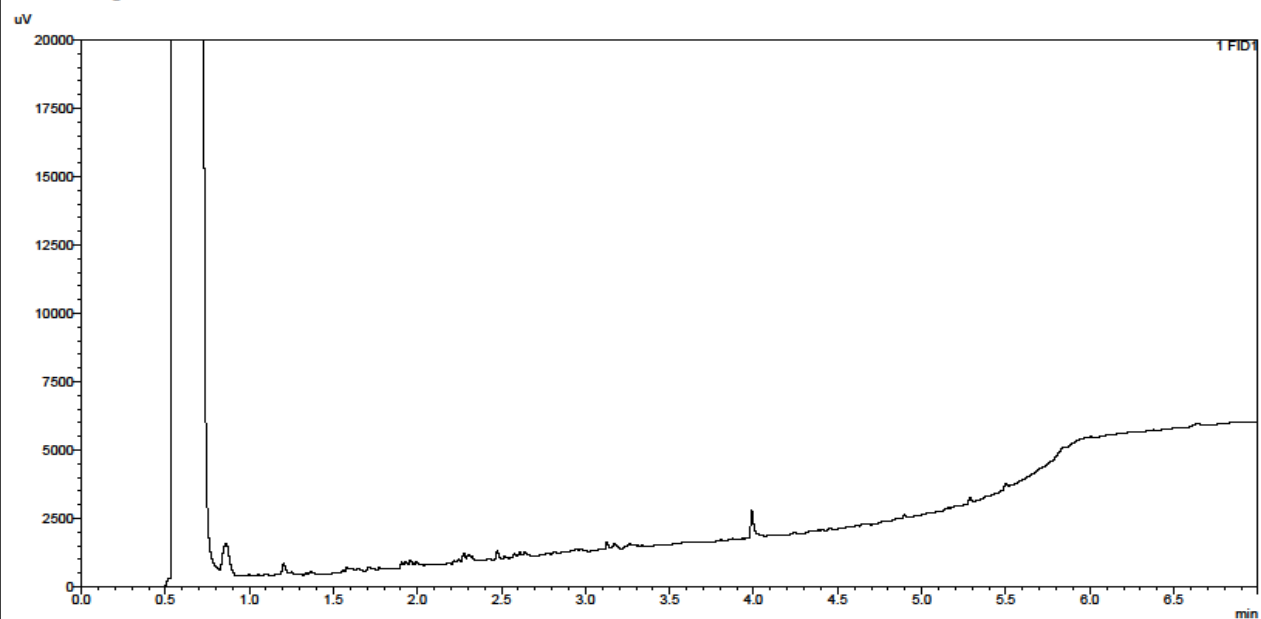
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Sample Name : 1051530 20-22074
Data Filename : 21 August 2020_21082020_1051530 20-22074_083.gcd
Method Filename : TPH 12m Fast OSv2.gcm
Sample # : 42
Date Acquired : 21/08/2020 22:16:06
Date Processed : 21/08/2020



Chemtest

<Chromatogram>



Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

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I/S	Insufficient Sample
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N/E	not evaluated
<	"less than"
>	"greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

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

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

All Asbestos testing is performed at the indicated laboratory

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

Sample Deviation Codes

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

Sample Retention and Disposal

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

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

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com



Final Report

Report No.:	20-22121-1		
Initial Date of Issue:	28-Aug-2020		
Client	Remada Ltd		
Client Address:	Forward House 17 High Street Henley in Arden B95 5AA		
Contact(s):	Greg Jones		
Project	770.02 Havant		
Quotation No.:		Date Received:	20-Aug-2020
Order No.:		Date Instructed:	20-Aug-2020
No. of Samples:	3		
Turnaround (Wkdays):	7	Results Due:	28-Aug-2020
Date Approved:	28-Aug-2020		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - 2 Stage WAC

Project: 770.02 Havant

Chemtest Job No: 20-22121							Landfill Waste Acceptance Criteria			
Chemtest Sample ID: 1051757							Limits			
Sample Ref:							Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID:										
Sample Location: CP38										
Top Depth(m): 1.50										
Bottom Depth(m): 2.00										
Sampling Date: 17-Aug-2020										
Determinand	SOP	Accred.	Units							
Total Organic Carbon	2625	M	%				4.9	3	5	6
Loss On Ignition	2610	M	%				3.9	--	--	10
Total BTEX	2760	M	mg/kg				< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg				< 0.10	1	--	--
TPH Total WAC (Mineral Oil)	2670	M	mg/kg				< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg				< 2.0	100	--	--
pH	2010	M					8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.040	--	To evaluate	To evaluate			
Eluate Analysis			2:1 mg/l	8:1 mg/l	2:1 mg/kg	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg			
Arsenic	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	2	25	
Barium	1450	U	0.0086	0.0045	< 0.50	< 0.50	20	100	300	
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5	
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70	
Copper	1450	U	0.0032	0.0021	< 0.050	< 0.050	2	50	100	
Mercury	1450	U	0.0011	0.00083	0.0022	0.0085	0.01	0.2	2	
Molybdenum	1450	U	0.0011	0.0023	< 0.050	< 0.050	0.5	10	30	
Nickel	1450	U	0.0012	0.0011	< 0.050	< 0.050	0.4	10	40	
Lead	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.5	10	50	
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5	
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7	
Zinc	1450	U	0.0044	0.0018	< 0.50	< 0.50	4	50	200	
Chloride	1220	U	7.7	5.5	15	56	800	15000	25000	
Fluoride	1220	U	0.70	0.75	1.4	7.5	10	150	500	
Sulphate	1220	U	24	6.2	47	73	1000	20000	50000	
Total Dissolved Solids	1020	N	200	91	400	980	4000	60000	100000	
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-	
Dissolved Organic Carbon	1610	U	9.7	4.2	< 50	< 50	500	800	1000	

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	14

Leachate Test Information	
Leachant volume 1st extract/l	0.322
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.112

Waste Acceptance Criteria

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

Results - 2 Stage WAC

Project: 770.02 Havant

Chemtest Job No: 20-22121							Landfill Waste Acceptance Criteria			
Chemtest Sample ID: 1051758							Limits			
Sample Ref:							Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID:										
Sample Location: CP2										
Top Depth(m): 0.50										
Bottom Depth(m): 0.70										
Sampling Date: 18-Aug-2020										
Determinand	SOP	Accred.	Units							
Total Organic Carbon	2625	M	%				3.0	3	5	6
Loss On Ignition	2610	M	%				4.7	--	--	10
Total BTEX	2760	M	mg/kg				< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg				< 0.10	1	--	--
TPH Total WAC (Mineral Oil)	2670	M	mg/kg				< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg				< 2.0	100	--	--
pH	2010	M					8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.011	--	To evaluate	To evaluate			
Eluate Analysis			2:1 mg/l	8:1 mg/l	2:1 mg/kg	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg			
Arsenic	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	2	25	
Barium	1450	U	0.0038	0.0017	< 0.50	< 0.50	20	100	300	
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5	
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70	
Copper	1450	U	0.0051	0.0018	< 0.050	< 0.050	2	50	100	
Mercury	1450	U	0.00060	< 0.00050	0.0012	< 0.0050	0.01	0.2	2	
Molybdenum	1450	U	0.0033	0.0027	< 0.050	< 0.050	0.5	10	30	
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40	
Lead	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.5	10	50	
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5	
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7	
Zinc	1450	U	0.0082	0.0015	< 0.50	< 0.50	4	50	200	
Chloride	1220	U	4.7	1.0	< 10	12	800	15000	25000	
Fluoride	1220	U	1.3	1.1	2.6	11	10	150	500	
Sulphate	1220	U	6.9	< 1.0	14	< 10	1000	20000	50000	
Total Dissolved Solids	1020	N	140	78	280	820	4000	60000	100000	
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-	
Dissolved Organic Carbon	1610	U	14	5.0	< 50	55	500	800	1000	

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	10

Leachate Test Information	
Leachant volume 1st extract/l	0.330
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.114

Waste Acceptance Criteria

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

Results - 2 Stage WAC

Project: 770.02 Havant

Chemtest Job No: 20-22121							Landfill Waste Acceptance Criteria			
Chemtest Sample ID: 1051759							Limits			
Sample Ref:							Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID:										
Sample Location: CP1										
Top Depth(m): 0.50										
Bottom Depth(m): 0.70										
Sampling Date: 18-Aug-2020										
Determinand	SOP	Accred.	Units							
Total Organic Carbon	2625	M	%				5.2	3	5	6
Loss On Ignition	2610	M	%				4.4	--	--	10
Total BTEX	2760	M	mg/kg				< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg				< 0.10	1	--	--
TPH Total WAC (Mineral Oil)	2670	M	mg/kg				< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg				< 2.0	100	--	--
pH	2010	M					8.9	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.022	--	To evaluate	To evaluate			
Eluate Analysis			2:1 mg/l	8:1 mg/l	2:1 mg/kg	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg			
Arsenic	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	2	25	
Barium	1450	U	0.0034	0.0014	< 0.50	< 0.50	20	100	300	
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5	
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70	
Copper	1450	U	0.0042	0.0013	< 0.050	< 0.050	2	50	100	
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2	
Molybdenum	1450	U	0.0031	0.0026	< 0.050	< 0.050	0.5	10	30	
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40	
Lead	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.5	10	50	
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5	
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7	
Zinc	1450	U	0.0021	< 0.0010	< 0.50	< 0.50	4	50	200	
Chloride	1220	U	3.8	1.2	< 10	14	800	15000	25000	
Fluoride	1220	U	1.3	1.2	2.6	12	10	150	500	
Sulphate	1220	U	25	< 1.0	50	17	1000	20000	50000	
Total Dissolved Solids	1020	N	140	78	290	820	4000	60000	100000	
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-	
Dissolved Organic Carbon	1610	U	14	5.9	< 50	64	500	800	1000	

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	9.0

Leachate Test Information	
Leachant volume 1st extract/l	0.333
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.119

Waste Acceptance Criteria

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

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

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

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

All Asbestos testing is performed at the indicated laboratory

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

Sample Deviation Codes

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

Sample Retention and Disposal

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

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

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com



APPENDIX E

Laboratory Geotechnical Tests



Laboratory Report



GEO Site & Testing Services Ltd

Contract Number: 49960

Client Ref: **770.02**

Report Date: **30-09-2020**

Client PO:

Client **Remada Limited**

**Forward house, 17 high street, Henley in Arden
B95 5AA**

Contract Title: **Havant, Purbrook Way**
For the attention of: **Greg Jones**

Date Received: **26-08-2020**

Date Completed: **30-09-2020**

Test Description	Qty
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	9
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	9
BRE Reduced Suite includes pH, water & acid soluble sulphate and total sulphur BRE - BR279 - @ Non Accredited Test	2
Quick Undrained Triaxial Compression test - set of 3 - 38mm diameter specimens BS 1377:1990 - Part 7 : 8 - * UKAS	3
Disposal of samples for job	1

Notes: **Observations and Interpretations are outside the UKAS Accreditation**

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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

Approved Signatories:

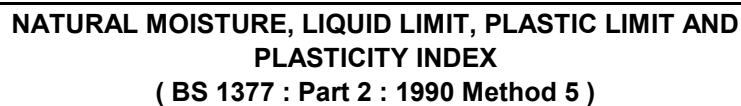
Emma Sharp (Office Manager/Director) - Paul Evans (Quality/Technical Manager) - Richard John (Advanced Testing Manager)

Sean Penn (Administrative/Accounts Assistant) - Shaun Jones (Laboratory manager) - Wayne Honey (Administrative/Quality Assistant)

GEO Site & Testing Services Ltd

Unit 3-4, Heol Aur, Dafen Ind Estate, Dafen, Llanelli, Carmarthenshire SA14 8QN

Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk

[illegible]



**Undrained Shear Strength in Triaxial Compression
BS1377 : Part 7 : Clause 8 : 1991 Set of Three 38 mm
without the measurement of Pore Pressure**

Contract Number 49960

Borehole/Pit No. CP1

Site Name Havant, Purbrook Way

Sample No.

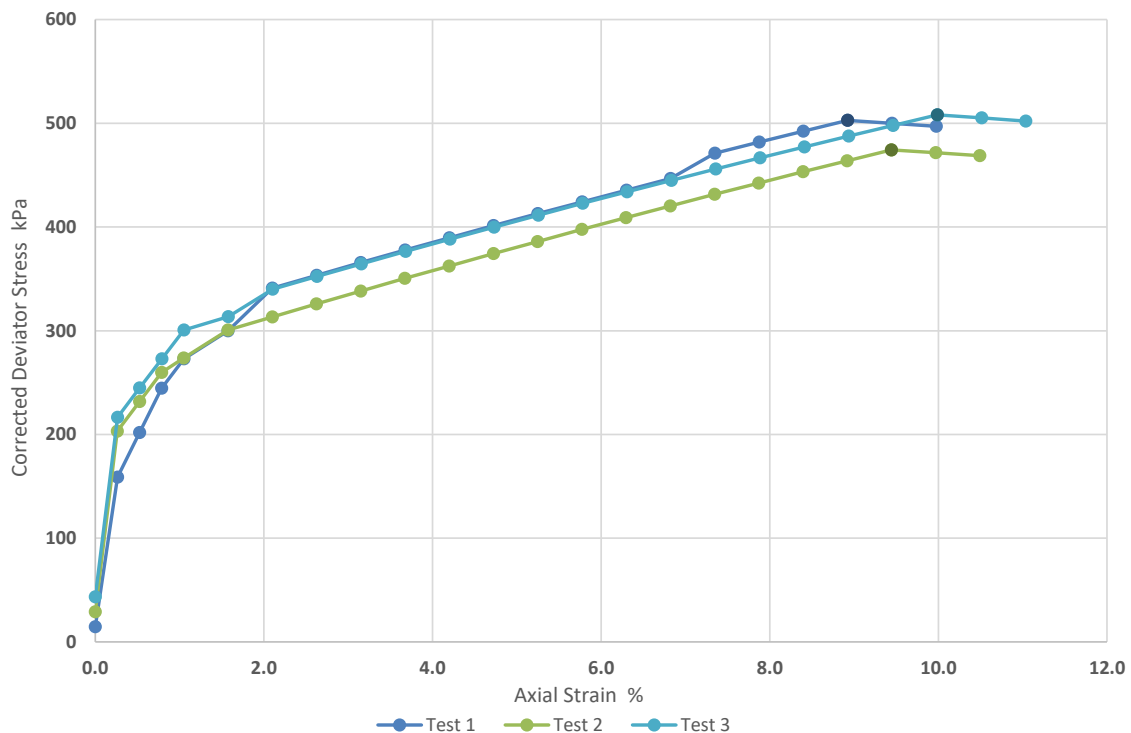
Soil Description Brown silty CLAY

Depth Top 4.00

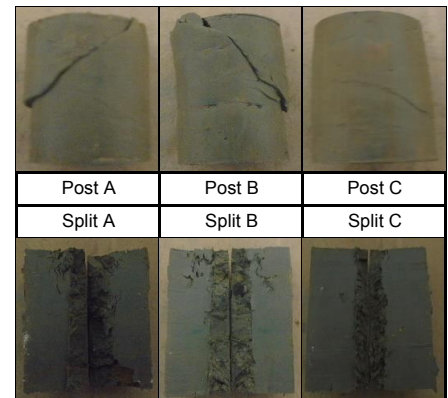
Depth Base 4.50

Date Tested 25/09/2020

Sample Type UT



	Specimen 1	Specimen 2	Specimen 3
Moisture Content (%)	24	24	24
Bulk Density (Mg/m ³)	2.05	1.97	1.96
Dry Density (Mg/m ³)	1.65	1.59	1.58
Specimen Length (mm)	76	76	76
Specimen Diameter (mm)	38	38	38
Cell Pressures (kPa)	50	100	200
Deviator Stress (kPa)	503	474	508
Undrained Shear Strength (kPa)	251	237	254
Failure Strain (%)	8.9	9.4	10.0
Mode Of Failure	Brittle	Brittle	Brittle
Membrane Used/Thickness	Rubber/0.3mm	Rubber/0.3mm	Rubber/0.3mm
Rate of Strain (%/min)	1.97	1.97	1.97



Checked	29/09/2020	Emma Sharp	
Approved	30/09/2020	Paul Evans	





**Undrained Shear Strength in Triaxial Compression
BS1377 : Part 7 : Clause 8 : 1991 Set of Three 38 mm
without the measurement of Pore Pressure**

Contract Number 49960

Borehole/Pit No. CP1

Site Name Havant, Purbrook Way

Sample No.

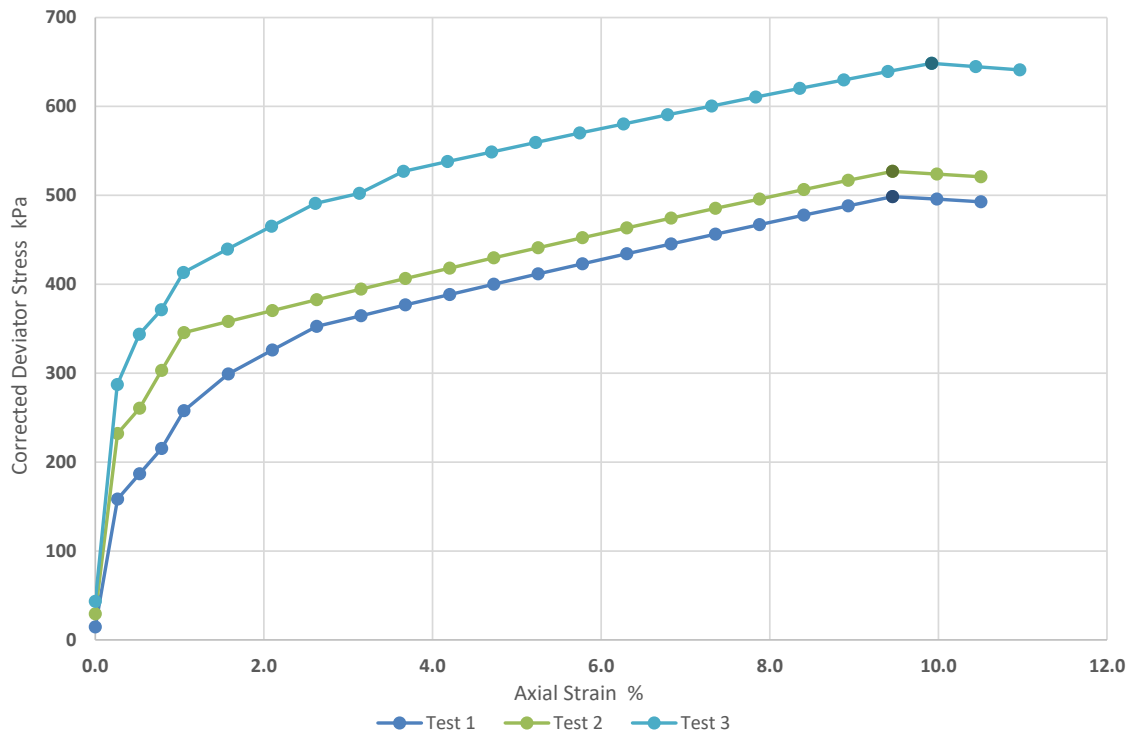
Soil Description Brown silty CLAY

Depth Top 7.00

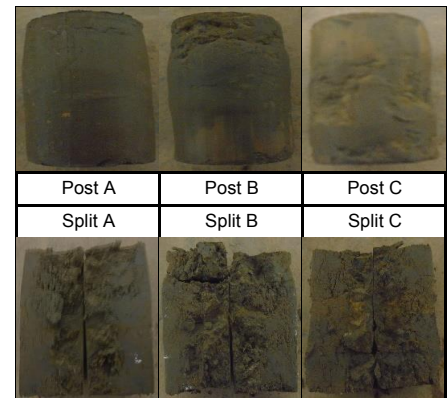
Depth Base 7.50

Date Tested 25/09/2020

Sample Type UT



	Specimen 1	Specimen 2	Specimen 3
Moisture Content (%)	21	21	21
Bulk Density (Mg/m ³)	2.01	1.91	1.86
Dry Density (Mg/m ³)	1.66	1.58	1.53
Specimen Length (mm)	76	76	77
Specimen Diameter (mm)	38	38	38
Cell Pressures (kPa)	100	200	400
Deviator Stress (kPa)	499	527	648
Undrained Shear Strength (kPa)	249	263	324
Failure Strain (%)	9.5	9.5	9.9
Mode Of Failure	Plastic	Plastic	Plastic
Membrane Used/Thickness	Rubber/0.3mm	Rubber/0.3mm	Rubber/0.3mm
Rate of Strain (%/min)	1.97	1.97	1.96



Checked	29/09/2020	Emma Sharp	
Approved	30/09/2020	Paul Evans	





**Undrained Shear Strength in Triaxial Compression
BS1377 : Part7 : Clause 8 : 1991 Set of Three 38 mm
without the measurement of Pore Pressure**

Contract Number 49960

Borehole/Pit No. CP2

Site Name Havant, Purbrook Way

Sample No.

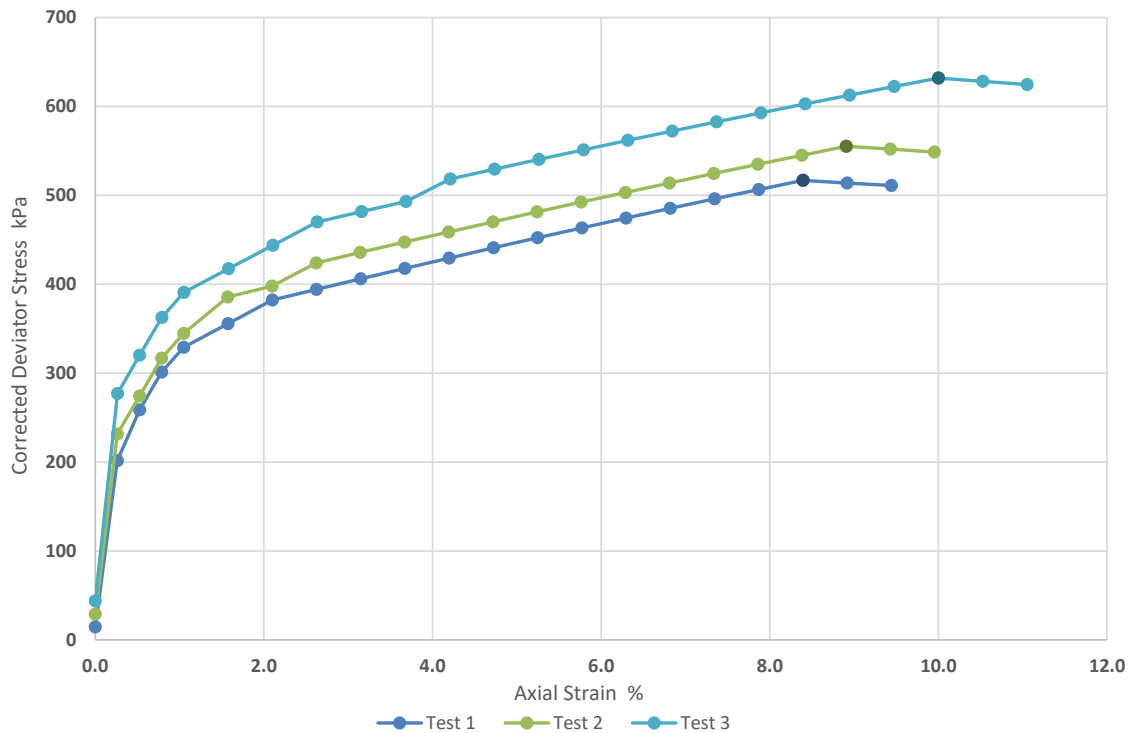
Soil Description Brown silty CLAY

Depth Top 2.20

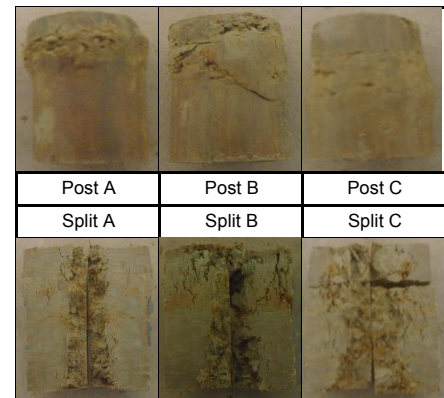
Depth Base 2.60

Date Tested 25/09/2020

Sample Type UT



	Specimen 1	Specimen 2	Specimen 3
Moisture Content (%)	19	19	19
Bulk Density (Mg/m ³)	1.95	1.89	1.90
Dry Density (Mg/m ³)	1.63	1.58	1.59
Specimen Length (mm)	76	76	76
Specimen Diameter (mm)	38	38	38
Cell Pressures (kPa)	50	100	200
Deviator Stress (kPa)	517	555	632
Undrained Shear Strength (kPa)	258	278	316
Failure Strain (%)	8.4	8.9	10
Mode Of Failure	Plastic	Plastic	Plastic
Membrane Used/Thickness	Rubber/0.3mm	Rubber/0.3mm	Rubber/0.3mm
Rate of Strain (%/min)	1.97	1.96	1.97



Checked	29/09/2020	Emma Sharp	
Approved	30/09/2020	Paul Evans	



