



PROPOSED DEVELOPMENT

AT YSTALYFERA SCHOOL PHASE III, SWANSEA

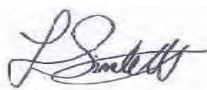
Ground Investigation Interpretive Report

Report No. Q0229

October 2020

DOCUMENT CONTROL

Contract Name: Proposed Development at Ystalyfera School Phase III
Contract Reference: Q0229
Report Type: Ground Investigation Interpretative Report
Report Reference: Q0229/IR
Date of Report Production: October 2020
Client: Andrew Scott Ltd

Version:	Date:	Prepared by:	Checked by:	Approved by:
Final Issue	16/10/20	L. Simlett	R. McDermott	J. Stark
				
		Engineering Geologist B.Sc.(Hons)., FGS	Company Manager, Chartered Geologist B.Sc.(Hons).,M.Sc., C.Geol., FGS	Technical Manager, Chartered Geologist B.Sc.(Hons)., C.Geol., FGS
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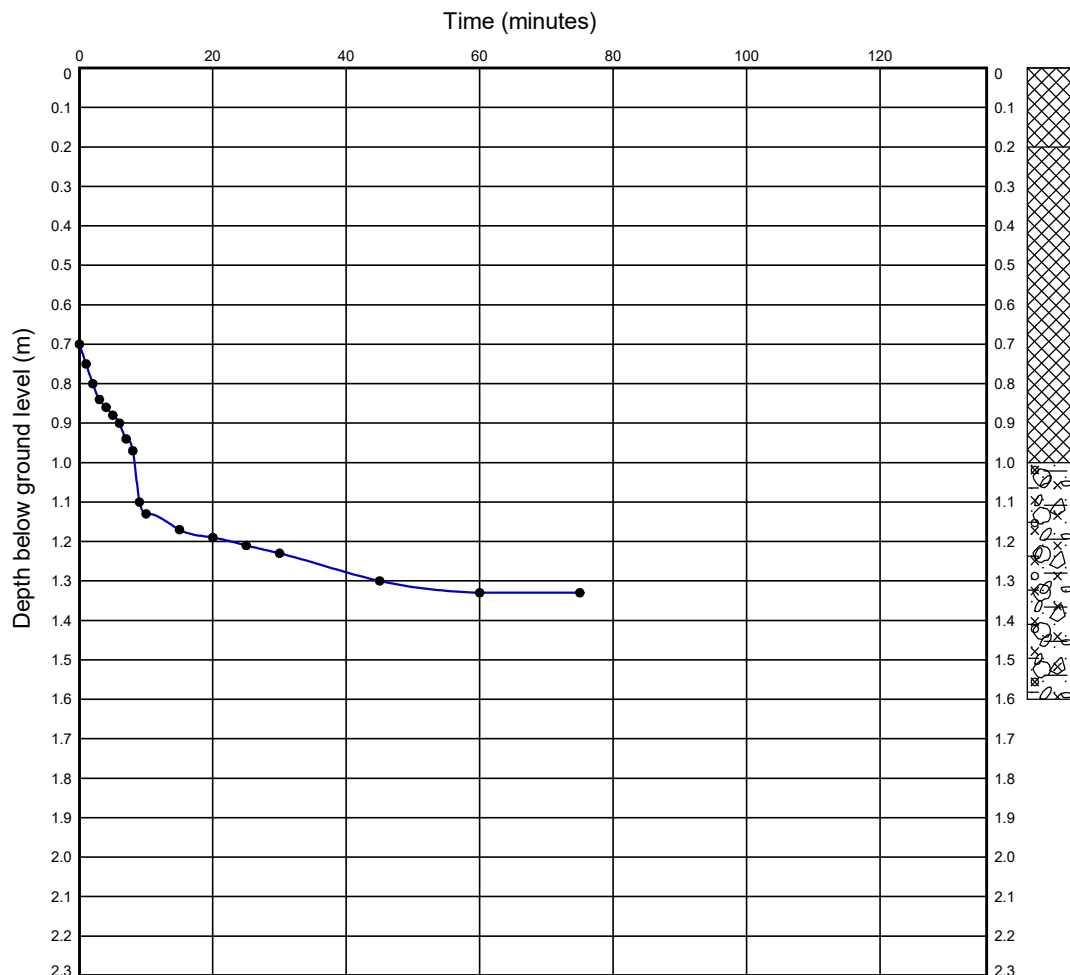


APPENDIX IV – SOAKAWAY RESULTS

SOAKAWAY TEST CALCULATION SHEET

Field Observations from soakaway trial pit

Time (Minutes)	Depth of water from ground level (m)
0.0	0.7
1.0	0.75
2.0	0.8
3.0	0.84
4.0	0.86
5.0	0.88
6.0	0.9
7.0	0.94
8.0	0.97
9.0	1.1
10.0	1.13
15.0	1.17
20.0	1.19
25.0	1.21
30.0	1.23
45.0	1.3
60.0	1.33
75.0	1.33



Remarks: Insufficient Outflow - Unable To Calculate Permeability

Soakaway test for soil infiltration rate design method based on BRE Digest 365

Permeability Test on Strata

Trial Pit Depth	1.600 m	$V_{p75-25} =$	0.810 m ³
Trial Pit Length	1.800 m	$a_{p50} =$	4.320 m ²
Trial Pit Width	1.000 m	$t_{p75-25} =$	minutes
Effective Depth	0.900 m		
Outflow Time	mins from 75% to 25% full		

f = m/sec

Client : Andrew Scott

Job Number : Q0229

Engineer : Bingham Hall

Contract : Ystalyfera School Phase III

Point Plotted
SA01 (2),2

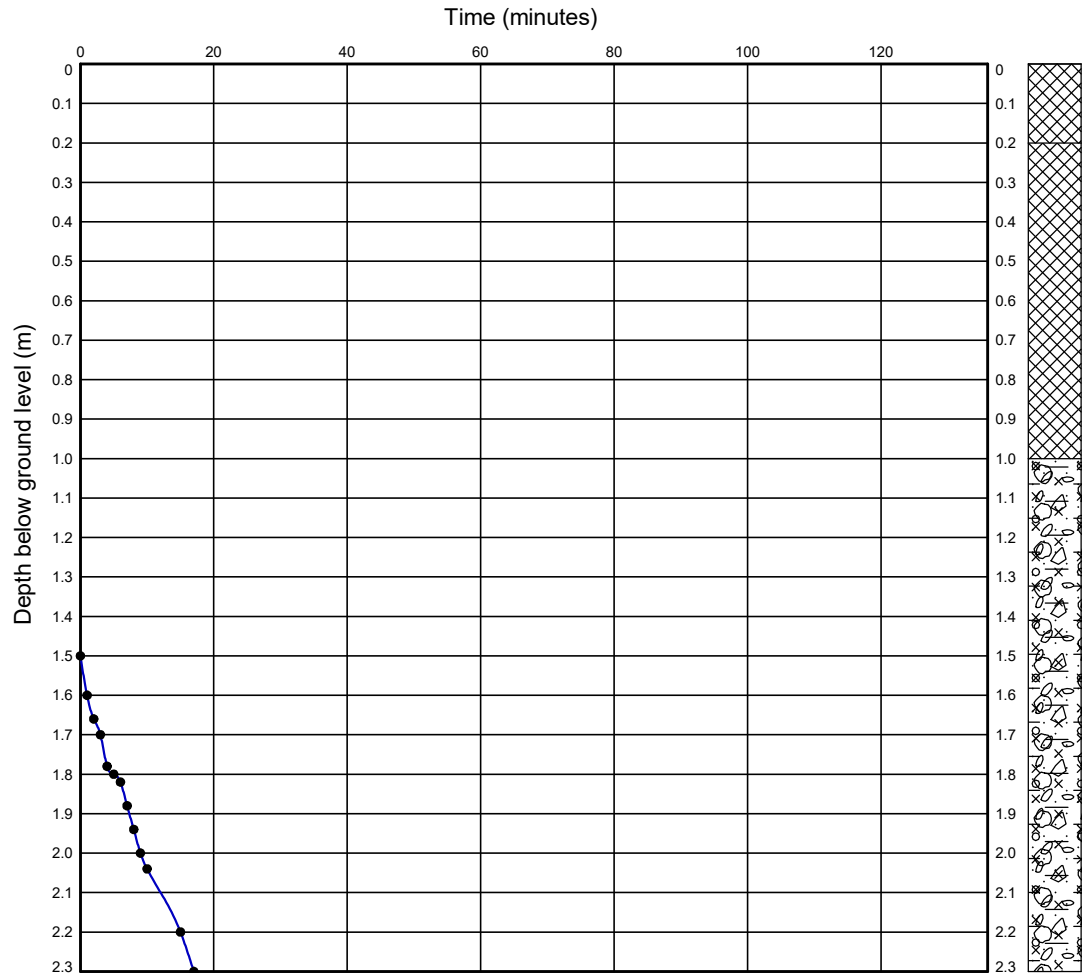
Client : Andrew Scott

Job Number : Q0229

Engineer : Bingham Hall

SOAKAWAY TEST CALCULATION SHEET**Field Observations from soakaway trial pit**

Time (Minutes)	Depth of water from ground level (m)
0.0	1.5
1.0	1.6
2.0	1.66
3.0	1.7
4.0	1.78
5.0	1.8
6.0	1.82
7.0	1.88
8.0	1.94
9.0	2
10.0	2.04
15.0	2.2
17.0	2.3



Remarks: Exploratory Holes Positioned And Dug By Andrew Scott

Soakaway test for soil infiltration rate
design method based on BRE Digest 365

Permeability Test on Strata

Trial Pit Depth	2.300 m	$V_{p75-25} =$	2.160 m ³
Trial Pit Length	2.700 m	$a_{p50} =$	9.160 m ²
Trial Pit Width	2.000 m	$t_{p75-25} =$	7.000 minutes
Effective Depth	0.800 m		
Outflow Time	7 mins from 75% to 25% full		

f = 5.6145E-4 m/sec

Plas Newydd, Tlaneli, Pontarddulais, Swansea
SA4 0FQ
Tel: 01554 744880
Tel:
email:

Date of Test: 07/10/2020

All measurements in
metres unless
otherwise stated

Figure No.

4

Project File: YSTALYFERA SCHOOL PHASE III.GPJ

Contract : Ystalyfera School Phase III

Point Plotted
SA02,1

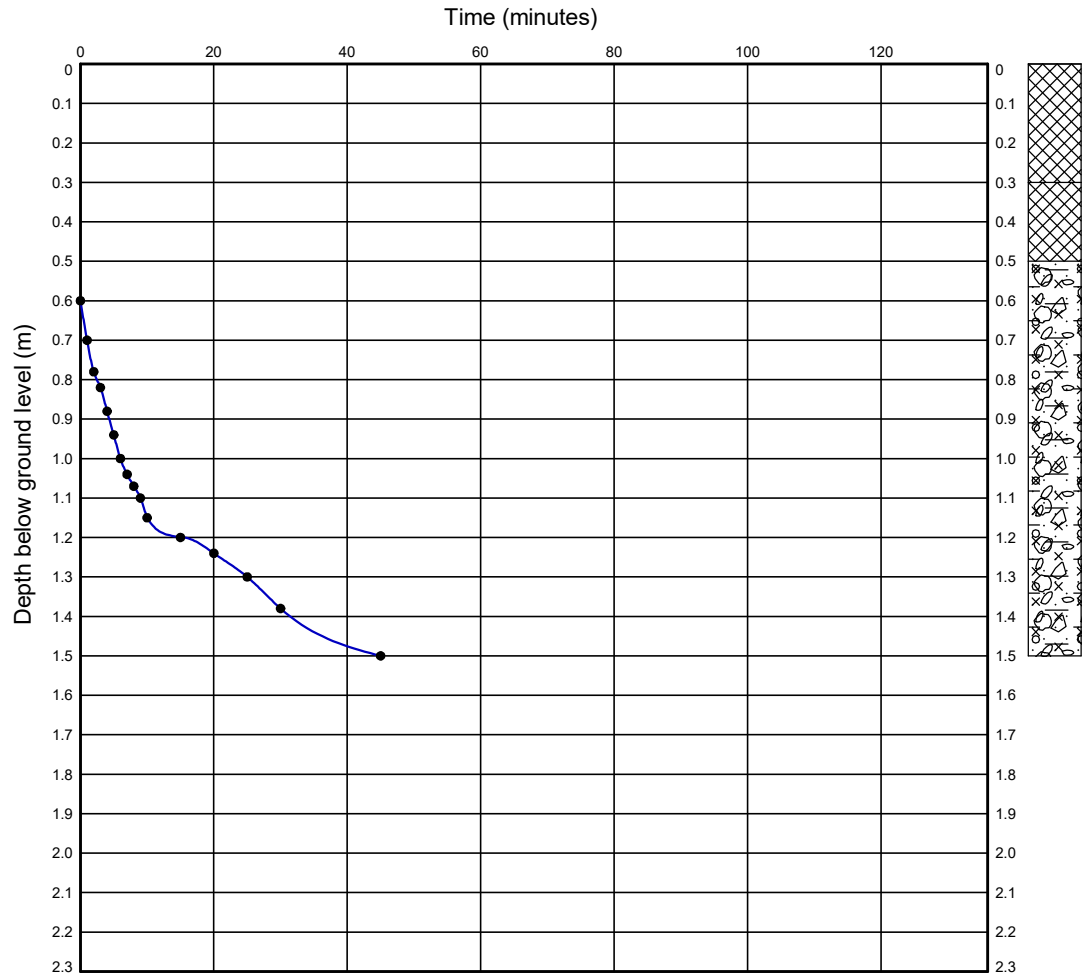
Client : Andrew Scott

Job Number : Q0229

Engineer : Bingham Hall

SOAKAWAY TEST CALCULATION SHEET**Field Observations from soakaway trial pit**

Time (Minutes)	Depth of water from ground level (m)
0.0	0.6
1.0	0.7
2.0	0.78
3.0	0.82
4.0	0.88
5.0	0.94
6.0	1
7.0	1.04
8.0	1.07
9.0	1.1
10.0	1.15
15.0	1.2
20.0	1.24
25.0	1.3
30.0	1.38
45.0	1.5



Remarks:

Soakaway test for soil infiltration rate
design method based on BRE Digest 365

Permeability Test on Strata

Trial Pit Depth	1.600 m	$V_{p75-25} =$	0.810 m ³
Trial Pit Length	1.800 m	$a_{p50} =$	4.320 m ²
Trial Pit Width	1.000 m	$t_{p75-25} =$	19.833 minutes
Effective Depth	0.900 m		
Outflow Time	19.833 mins from 75% to 25% full		

f = 1.5756E-4 m/sec

Plas Newydd, Ilanedi, Pontarddulais, Swansea
SA4 0FQ
Tel: 01554 744880
Tel:
email:

Date of Test: 10/09/2020

All measurements in
metres unless
otherwise stated

Figure No.

6

Project File: YSTALYFERA SCHOOL PHASE III.GPJ

Contract : Ystalyfera School Phase III

Point Plotted
SA05,2

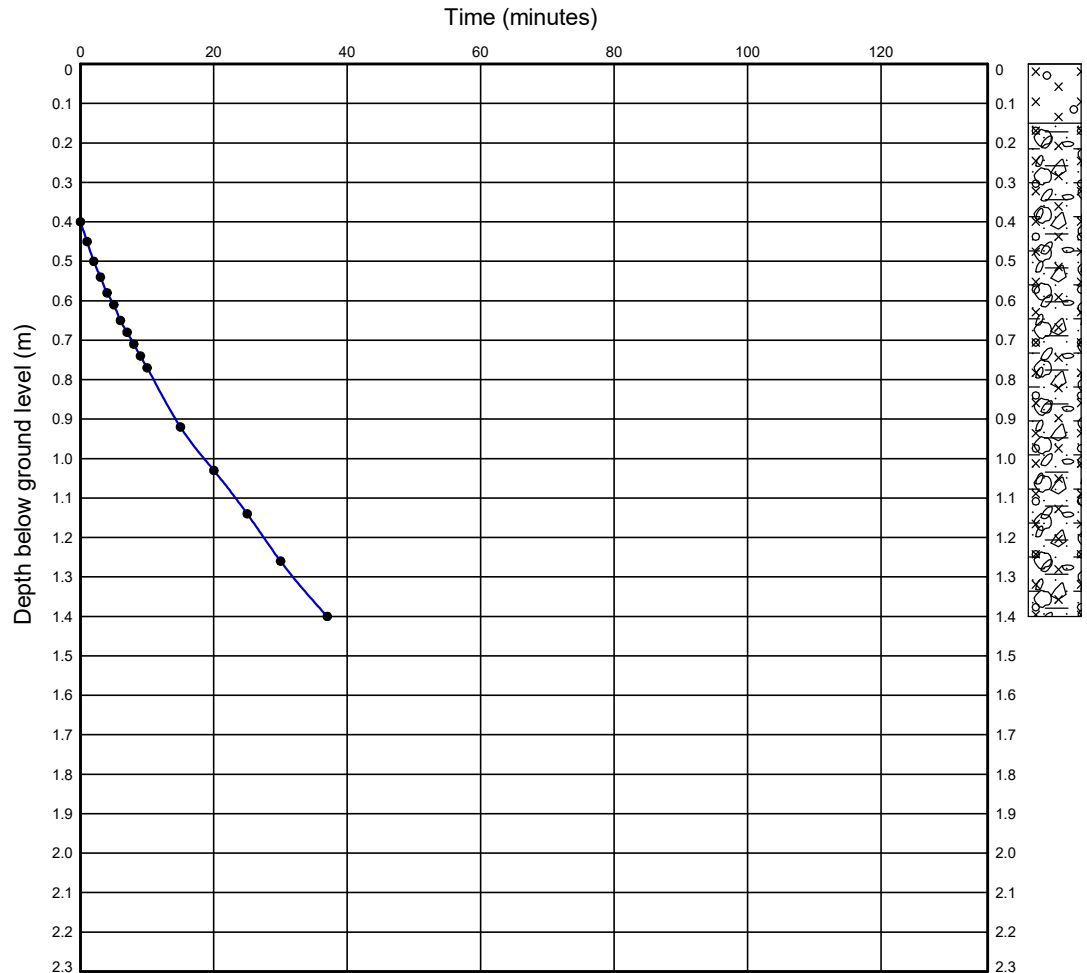
Client : Andrew Scott

Job Number : Q0229

Engineer : Bingham Hall

SOAKAWAY TEST CALCULATION SHEET**Field Observations from soakaway trial pit**

Time (Minutes)	Depth of water from ground level (m)
0.0	0.4
1.0	0.45
2.0	0.5
3.0	0.54
4.0	0.58
5.0	0.61
6.0	0.65
7.0	0.68
8.0	0.71
9.0	0.74
10.0	0.77
15.0	0.92
20.0	1.03
25.0	1.14
30.0	1.26
37.0	1.4



Remarks:

Soakaway test for soil infiltration rate
design method based on BRE Digest 365

Permeability Test on Strata

Trial Pit Depth	1.400 m	$V_{p75-25} =$	0.595 m ³
Trial Pit Length	1.700 m	$a_{p50} =$	3.590 m ²
Trial Pit Width	0.700 m	$t_{p75-25} =$	19.417 minutes
Effective Depth	1.000 m		
Outflow Time	19.417 mins from 75% to 25% full		

f = 1.4226E-4 m/sec

Plas Newydd, Tlaneli, Pontarddulais, Swansea
SA4 0FQ
Tel: 01554 744880
Tel:
email:

Date of Test: 13/10/2020

All measurements in
metres unless
otherwise stated

Figure No.

15

Project File: YSTALYFERA SCHOOL PHASE III.GPJ



APPENDIX V – GEOTECHNICAL LABORATORY RESULTS



Laboratory Report



GEO Site & Testing Services Ltd

Contract Number: 50278

Client Ref: **Q0229**

Report Date: **12-10-2020**

Client PO:

Client **Quantum Geotechnic Ltd**
Ty Berwig
Bynea
Llanelli.
Carmarthenshire.
SA14 9ST

Contract Title: **Ystalyfera School Phase 3**
For the attention of: **Ross Mcdermott**

Date Received: **16-09-2020**

Date Completed: **12-10-2020**

Test Description	Qty
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	4
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	1
PSD Wet Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	5
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:

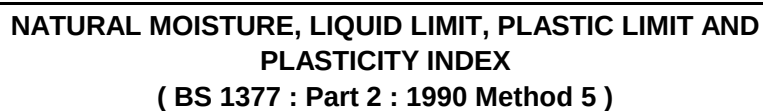
Emma Sharp (Office Manager/Director) - Paul Evans (Quality/Technical Manager) - Richard John (Advanced Testing Manager)

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

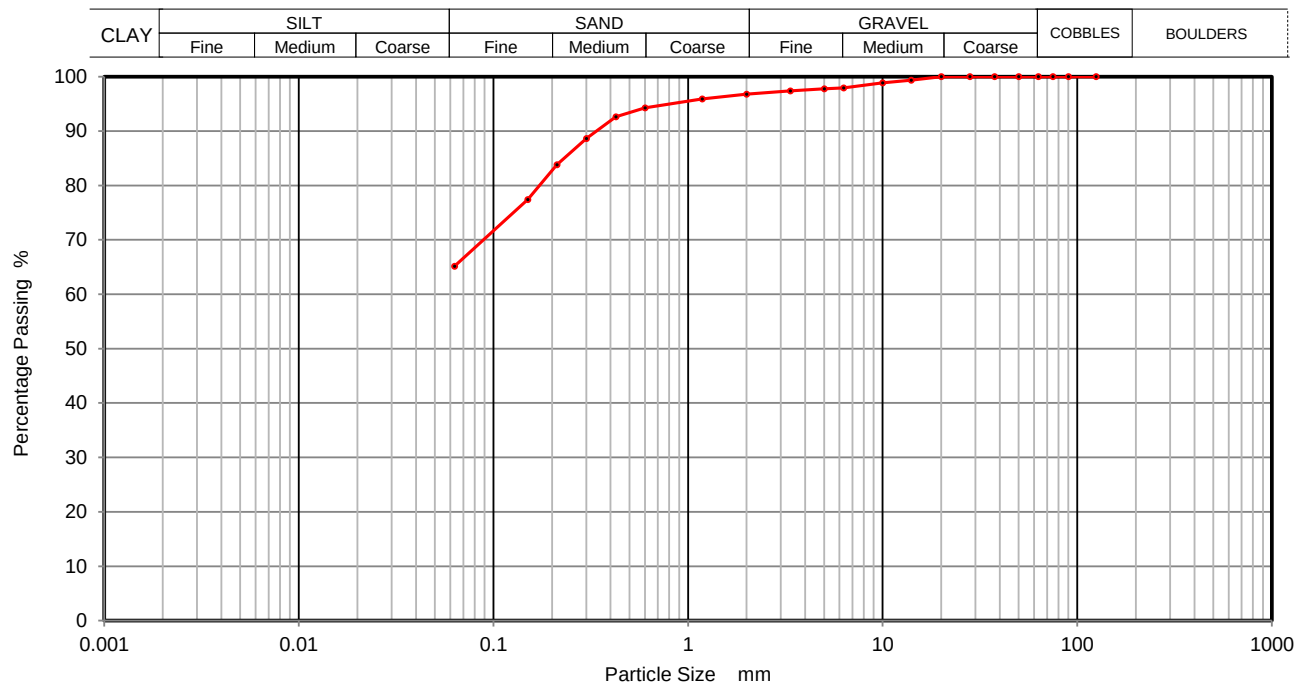
Tel: 01554 784040 Fax: 01554 784041 info@gstl.co.uk gstl.co.uk





**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2**

	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	50278
		Borehole/Pit No.	TP01
Site Name	Ystalyfera School Phase 3	Sample No.	2
Soil Description	Brown fine slightly gravelly fine to coarse sandy silty CLAY.	Depth Top	0.50
		Depth Base	1.40
Date Tested	10/10/2020	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	99		
6.3	98		
5	98		
3.35	97		
2	97		
1.18	96		
0.6	94		
0.425	93		
0.3	89		
0.212	84		
0.15	77		
0.063	65		

Sample Proportions	% dry mass
Cobbles	0
Gravel	3
Sand	32
Silt and Clay	65

Remarks
Preparation and testing in accordance with BS1377 unless noted below

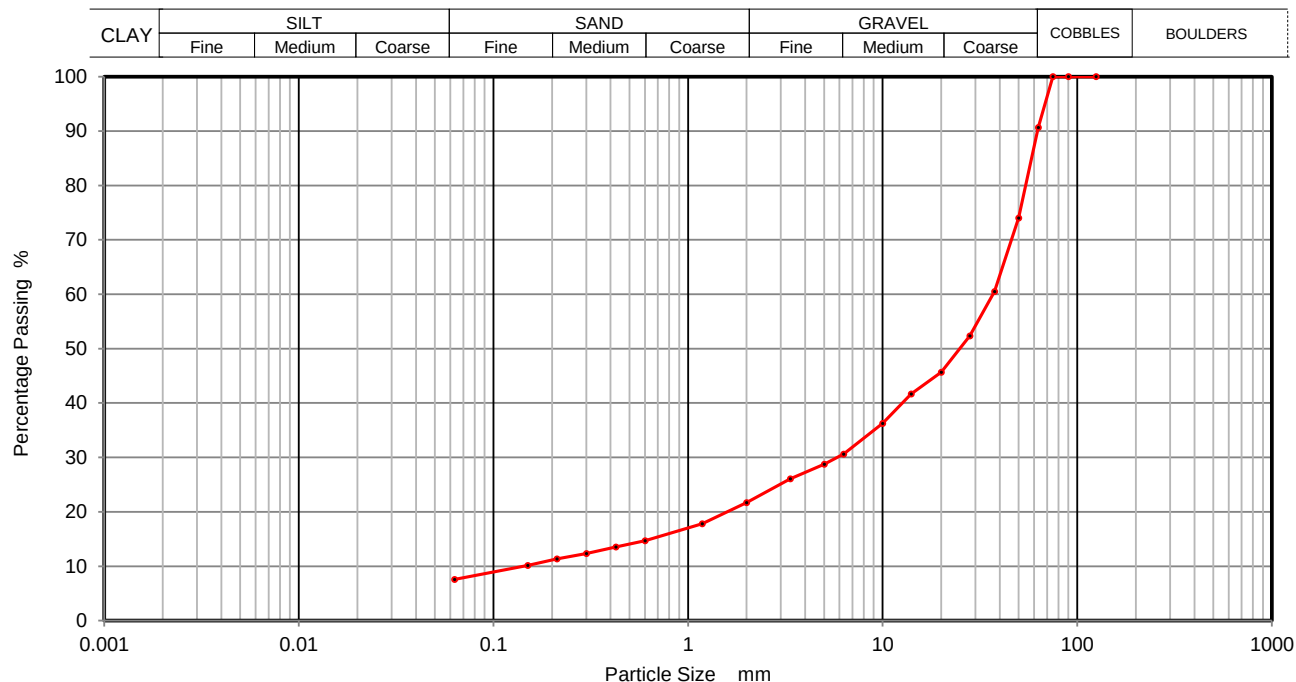
Operators	Checked	11/10/2020	Wayne Honey	<i>W. Honey</i>
RO/MH	Approved	12/10/2020	Paul Evans	<i>P. Evans</i>





PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2

	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	50278
		Borehole/Pit No.	TP02
Site Name	Ystalyfera School Phase 3	Sample No.	3
Soil Description	Brown silty fine to coarse sandy GRAVEL with few cobbles.	Depth Top	1.00
		Depth Base	1.20
Date Tested	10/10/2020	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	91		
50	74		
37.5	61		
28	52		
20	46		
14	42		
10	36		
6.3	31		
5	29		
3.35	26		
2	22		
1.18	18		
0.6	15		
0.425	14		
0.3	12		
0.212	11		
0.15	10		
0.063	8		

MC in accordance with BS1377 Part 2 1990 Clause 3.2	
Moisture Content %	11

Sample Proportions	% dry mass
Cobbles	9
Gravel	69
Sand	14
Silt and Clay	8

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operators	Checked	11/10/2020	Wayne Honey	<i>W. Honey</i>
RO/MH	Approved	12/10/2020	Paul Evans	<i>P. Evans</i>





PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2

Contract Number **50278**

Borehole/Pit No. **TP03**

Site Name **Ystalyfera School Phase 3**

Sample No. **3**

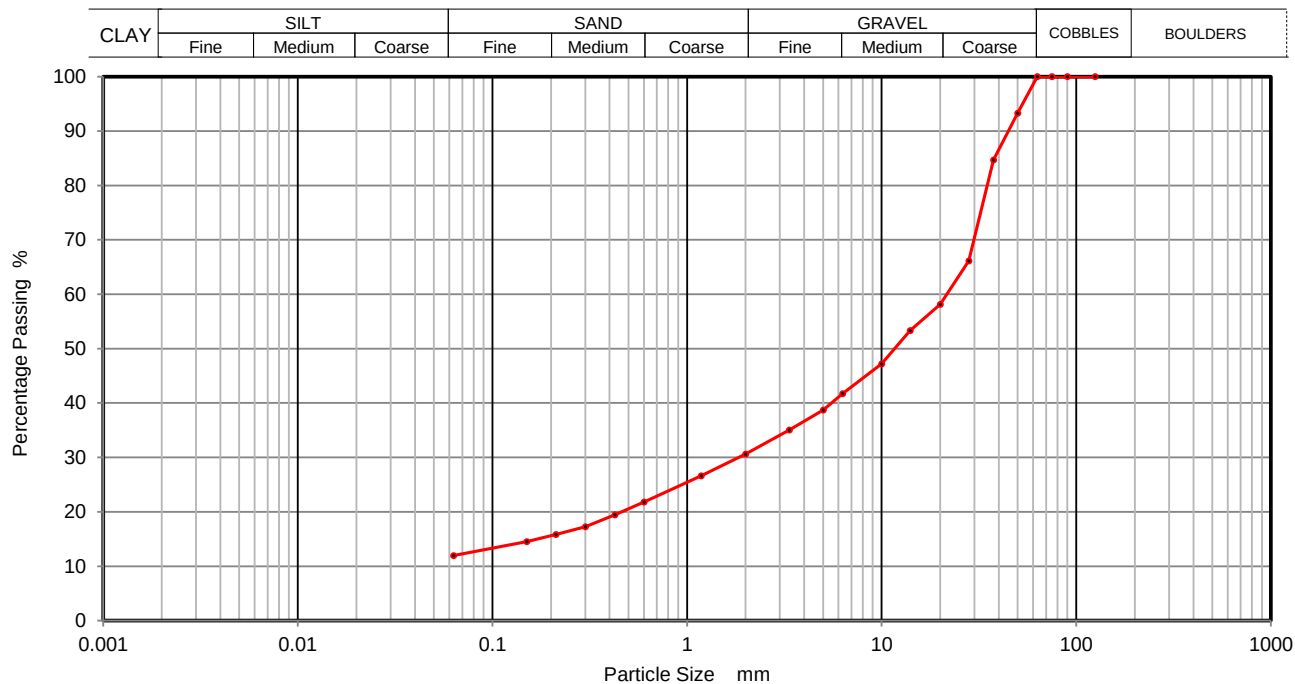
Soil Description **Brown silty clayey fine to coarse sandy GRAVEL.**

Depth Top **1.30**

Depth Base **1.50**

Date Tested **10/10/2020**

Sample Type **B**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	93		
37.5	85		
28	66		
20	58		
14	53		
10	47		
6.3	42		
5	39		
3.35	35		
2	31		
1.18	27		
0.6	22		
0.425	19		
0.3	17		
0.212	16		
0.15	15		
0.063	12		

Sample Proportions	% dry mass
Cobbles	0
Gravel	69
Sand	19
Silt and Clay	12

Remarks
 Preparation and testing in accordance with BS1377 unless noted below

Operators	Checked	11/10/2020	Wayne Honey	<i>W. Honey</i>
RO/MH	Approved	12/10/2020	Paul Evans	<i>P. Evans</i>

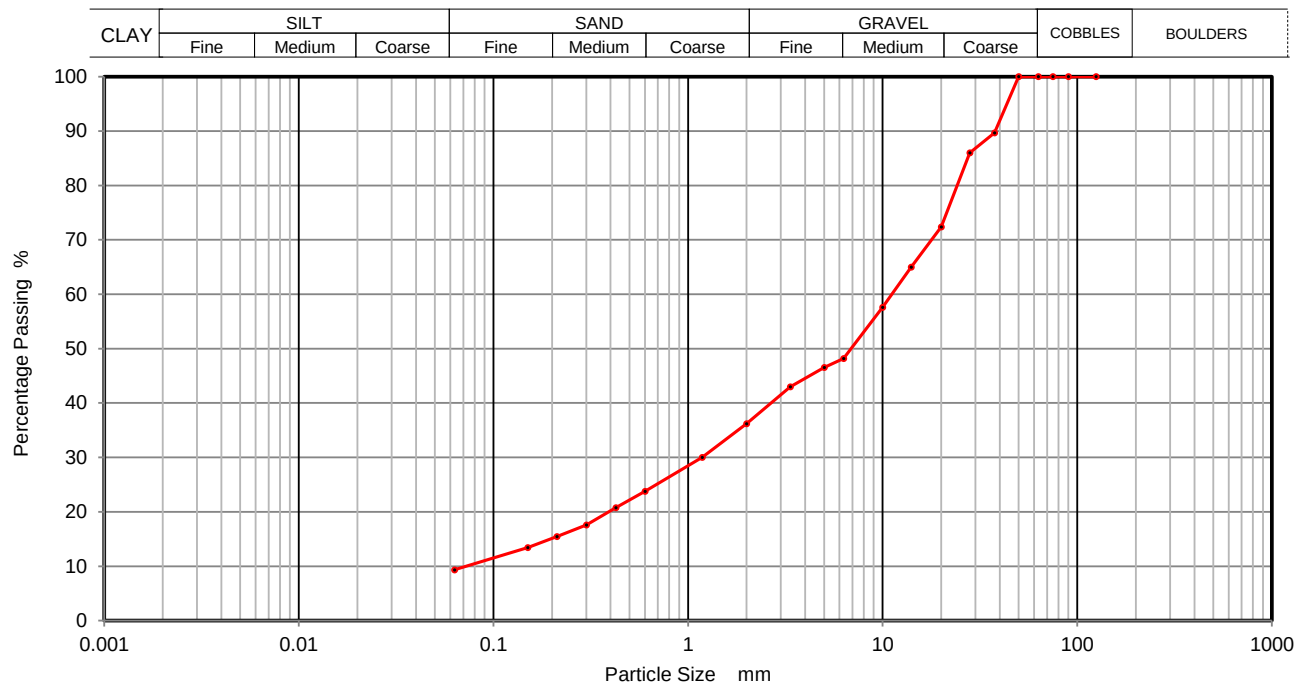


2788



**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2**

	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	50278
		Borehole/Pit No.	TP05
Site Name	Ystalyfera School Phase 3	Sample No.	3
Soil Description	Brown silty fine to coarse sandy GRAVEL.	Depth Top	1.00
		Depth Base	1.20
Date Tested	10/10/2020	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	90		
28	86		
20	72		
14	65		
10	58		
6.3	48		
5	47		
3.35	43		
2	36		
1.18	30		
0.6	24		
0.425	21		
0.3	18		
0.212	15		
0.15	13		
0.063	9		

MC in accordance with BS1377 Part 2 1990 Clause 3.2	
Moisture Content %	11

Sample Proportions	% dry mass
Cobbles	0
Gravel	64
Sand	27
Silt and Clay	9

Remarks
Preparation and testing in accordance with BS1377 unless noted below

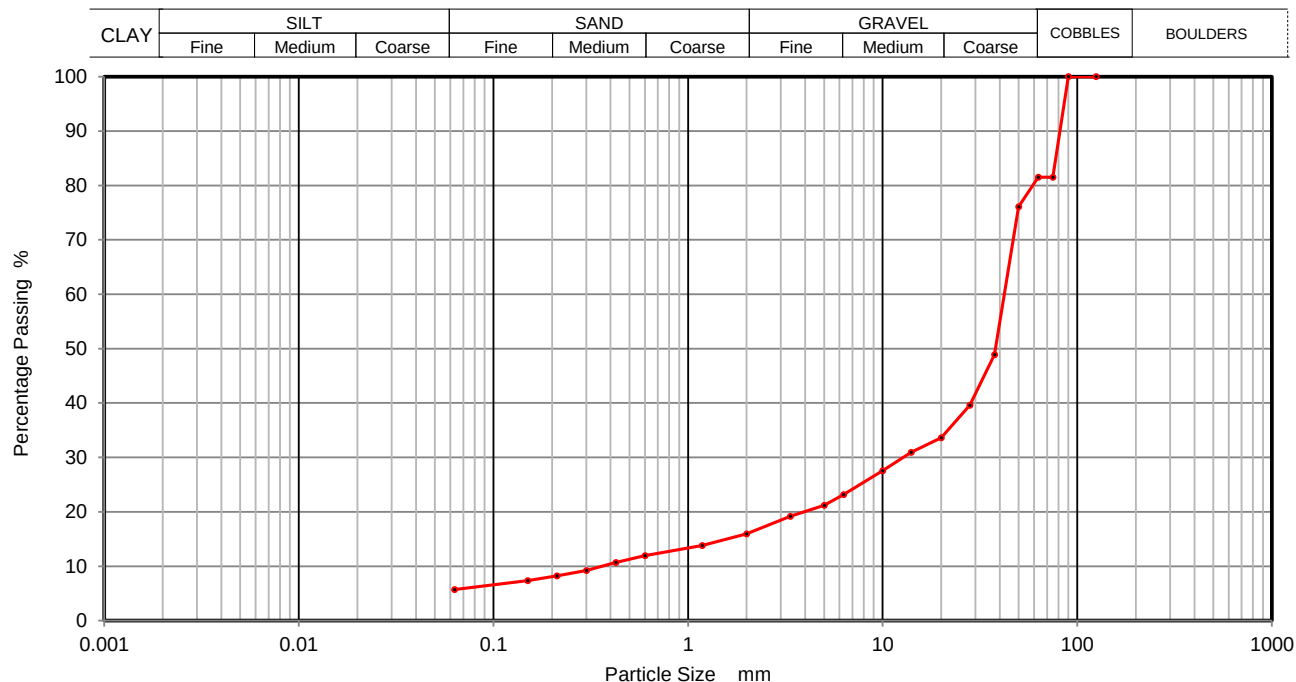
Operators	Checked	11/10/2020	Wayne Honey	<i>W. Honey</i>
RO/MH	Approved	12/10/2020	Paul Evans	<i>P. Evans</i>





**PARTICLE SIZE DISTRIBUTION
BS 1377 Part 2:1990
Wet Sieve, Clause 9.2**

	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	50278
		Borehole/Pit No.	BH02
Site Name	Ystalyfera School Phase 3	Sample No.	4
Soil Description	Brown silty fine to coarse sandy GRAVEL with many cobbles.	Depth Top	1.20
		Depth Base	1.50
Date Tested	10/10/2020	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	81		
63	81		
50	76		
37.5	49		
28	40		
20	34		
14	31		
10	28		
6.3	23		
5	21		
3.35	19		
2	16		
1.18	14		
0.6	12		
0.425	11		
0.3	9		
0.212	8		
0.15	7		
0.063	6		

MC in accordance with BS1377 Part 2 1990 Clause 3.2	
Moisture Content %	8.7

Sample Proportions	% dry mass
Cobbles	19
Gravel	65
Sand	10
Silt and Clay	6

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operators	Checked	11/10/2020	Wayne Honey	<i>W. Honey</i>
RO/MH	Approved	12/10/2020	Paul Evans	<i>P. Evans</i>





APPENDIX VI – GEOENVIRONMENTAL LABORATORY RESULTS



Final Report

Report No.: 20-24604-1
Initial Date of Issue: 23-Sep-2020
Client Quantum Geotechnic Ltd
Client Address: Plas Newydd Llanedi
Pontarddulais Swansea SA4
0FQ
Lee Simlett
Contact(s): Q0229 Ystalyfera School Phase III
Project Q20-21345
Quotation No.:
Order No.:
No. of Samples: 4
Turnaround (Wkdays): 5
Date Approved: 23-Sep-2020
Approved By:

Date Received: 15-Sep-2020

Date Instructed: 17-Sep-2020

Results Due: 23-Sep-2020

Details: Glynn Harvey, Technical Manager

Results - Leachate

Project: Q0229 Ystelynfera School Phase III

Client: Quantum Geotechnic Ltd	Chemtest Job No.:		20-24604			
Quotation No.: Q20-21345	Chemtest Sample ID.:		1064035			
Order No.:	Client Sample Ref.:		ES1			
	Sample Location:		TP02			
	Sample Type:		SOIL			
	Top Depth (m):		0.20			
	Date Sampled:		10-Sep-2020			
Determinand	Accred.	SOP	Type	Units	LOD	
pH	U	1010	10:1		N/A	8.6
Sulphate	U	1220	10:1	mg/l	1.0	68
Cyanide (Total)	U	1300	10:1	mg/l	0.050	< 0.050
Hardness	U	1415	10:1	mg/l	15	51
Total TPH >C6-C40	U	1670	10:1	µg/l	10	< 10
Naphthalene	U	1700	10:1	µg/l	0.10	< 0.10
Acenaphthylene	U	1700	10:1	µg/l	0.10	< 0.10
Acenaphthene	U	1700	10:1	µg/l	0.10	< 0.10
Fluorene	U	1700	10:1	µg/l	0.10	< 0.10
Phenanthrene	U	1700	10:1	µg/l	0.10	< 0.10
Anthracene	U	1700	10:1	µg/l	0.10	< 0.10
Fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10
Pyrene	U	1700	10:1	µg/l	0.10	< 0.10
Benzo[a]anthracene	U	1700	10:1	µg/l	0.10	< 0.10
Chrysene	N	1700	10:1	µg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	10:1	µg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	10:1	µg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	10:1	µg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	10:1	µg/l	0.10	< 0.10
Total Of 16 PAH's	N	1700	10:1	µg/l	2.0	< 2.0
Total Phenols	U	1920	10:1	mg/l	0.030	< 0.030

Results - Soil

Project: Q0229 Ystelynfera School Phase III

Client: Quantum Geotechnic Ltd	Chemtest Job No.:				20-24604	20-24604	20-24604	20-24604
Quotation No.: Q20-21345	Chemtest Sample ID.:				1064032	1064034	1064035	1064037
Order No.:	Client Sample Ref.:				ES1	ES3	ES1	ES3
	Sample Location:				TP05	TP05	TP02	TP02
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.20	1.00	0.20	1.00
	Date Sampled:				11-Sep-2020	11-Sep-2020	10-Sep-2020	10-Sep-2020
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	
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	
ACM Detection Stage	U	2192		N/A	-	-	-	
Moisture	N	2030	%	0.020	12	7.0	8.9	11
pH	U	2010		4.0	9.6	8.7	8.3	
pH (2.5:1)	N	2010		4.0				7.4
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	1.3	0.56	0.69	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.99	0.15	0.51	0.25
Total Sulphur	U	2175	%	0.010				0.085
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	
Sulphate (Acid Soluble)	U	2430	%	0.010				0.19
Arsenic	U	2450	mg/kg	1.0	17	13	13	
Cadmium	U	2450	mg/kg	0.10	0.48	0.27	0.12	
Chromium	U	2450	mg/kg	1.0	15	11	17	
Copper	U	2450	mg/kg	0.50	32	22	31	
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Nickel	U	2450	mg/kg	0.50	15	19	39	
Lead	U	2450	mg/kg	0.50	120	36	23	
Zinc	U	2450	mg/kg	0.50	160	77	65	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		< 0.50	
Organic Matter	U	2625	%	0.40	4.8	2.6	12	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	28	< 1.0	< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	15	< 1.0	< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	13	< 1.0	< 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	8.4	< 1.0	< 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	85	< 1.0	< 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	16	< 1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	160	< 5.0	< 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	4.0	< 1.0	< 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	5.0	< 1.0	< 1.0	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	7.2	< 1.0	< 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	18	< 1.0	< 1.0	
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	270	< 1.0	< 1.0	

Results - Soil

Project: Q0229 Ystelynfera School Phase III

Client: Quantum Geotechnic Ltd	Chemtest Job No.:				20-24604	20-24604	20-24604	20-24604
Quotation No.: Q20-21345	Chemtest Sample ID.:				1064032	1064034	1064035	1064037
Order No.:	Client Sample Ref.:				ES1	ES3	ES1	ES3
	Sample Location:				TP05	TP05	TP02	TP02
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.20	1.00	0.20	1.00
	Date Sampled:				11-Sep-2020	11-Sep-2020	10-Sep-2020	10-Sep-2020
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD				
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	48	< 1.0	< 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	350	< 5.0	< 5.0	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	510	< 10	< 10	
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Fluoranthene	U	2700	mg/kg	0.10	0.60	< 0.10	< 0.10	
Pyrene	U	2700	mg/kg	0.10	0.83	< 0.10	< 0.10	
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1670	Total Petroleum Hydrocarbons (TPH) in Waters by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO	Pentane extraction / GC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters 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)
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazine.
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
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

Test Methods

SOP	Title	Parameters included	Method summary
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)
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.
640	Characterisation of Waste (Leaching C10)	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



Final Report

Report No.: 20-24610-1
Initial Date of Issue: 23-Sep-2020
Client Quantum Geotechnic Ltd
Client Address: Plas Newydd Llanedi
Pontarddulais Swansea SA4
0FQ
Lee Simlett
Contact(s): Q0229 Ystalyfera School Phase III
Project Q20-21345
Quotation No.:
Order No.:
No. of Samples: 1
Turnaround (Wkdays): 5
Date Approved: 23-Sep-2020
Approved By:

Date Received: 15-Sep-2020

Date Instructed: 17-Sep-2020

Results Due: 23-Sep-2020

Details: Glynn Harvey, Technical Manager

Results - Soil

Project: Q0229 Ystelynfera School Phase III

Client: Quantum Geotechnic Ltd	Chemtest Job No.:		20-24610		
Quotation No.: Q20-21345	Chemtest Sample ID.:		1064062		
Order No.:	Client Sample Ref.:		ES3		
	Sample Location:		SA01		
	Sample Type:		SOIL		
	Top Depth (m):		1.30		
	Date Sampled:		15-Sep-2020		
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.020	15
pH (2.5:1)	N	2010		4.0	7.8
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.036
Total Sulphur	U	2175	%	0.010	0.032
Sulphate (Acid Soluble)	U	2430	%	0.010	0.052

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

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



Final Report

Report No.: 20-24605-1
Initial Date of Issue: 23-Sep-2020
Client Quantum Geotechnic Ltd
Client Address: Plas Newydd Llanedi
Pontarddulais Swansea SA4
0FQ
Lee Simlett
Contact(s): Q0229 Ystalyfera School Phase III
Project Q20-21345
Quotation No.:
Order No.:
No. of Samples: 4
Turnaround (Wkdays): 5
Date Approved: 23-Sep-2020
Approved By:

Date Received: 15-Sep-2020

Date Instructed: 17-Sep-2020

Results Due: 23-Sep-2020

Details: Glynn Harvey, Technical Manager

Results - Leachate

Project: Q0229 Ystelynfera School Phase III

Client: Quantum Geotechnic Ltd	Chemtest Job No.:		20-24605			
Quotation No.: Q20-21345	Chemtest Sample ID.:		1064039			
Order No.:	Client Sample Ref.:		ES2			
	Sample Location:		TP04			
	Sample Type:		SOIL			
	Top Depth (m):		0.40			
	Date Sampled:		10-Sep-2020			
Determinand	Accred.	SOP	Type	Units	LOD	
pH	U	1010	10:1		N/A	8.6
Sulphate	U	1220	10:1	mg/l	1.0	6.4
Cyanide (Total)	U	1300	10:1	mg/l	0.050	< 0.050
Hardness	U	1415	10:1	mg/l	15	< 15
Total TPH >C6-C40	U	1670	10:1	µg/l	10	< 10
Naphthalene	U	1700	10:1	µg/l	0.10	< 0.10
Acenaphthylene	U	1700	10:1	µg/l	0.10	< 0.10
Acenaphthene	U	1700	10:1	µg/l	0.10	< 0.10
Fluorene	U	1700	10:1	µg/l	0.10	< 0.10
Phenanthrene	U	1700	10:1	µg/l	0.10	< 0.10
Anthracene	U	1700	10:1	µg/l	0.10	< 0.10
Fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10
Pyrene	U	1700	10:1	µg/l	0.10	< 0.10
Benzo[a]anthracene	U	1700	10:1	µg/l	0.10	< 0.10
Chrysene	N	1700	10:1	µg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	10:1	µg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	10:1	µg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	10:1	µg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	10:1	µg/l	0.10	< 0.10
Total Of 16 PAH's	N	1700	10:1	µg/l	2.0	< 2.0
Total Phenols	U	1920	10:1	mg/l	0.030	< 0.030

Results - Soil

Project: Q0229 Ystelynfera School Phase III

Client: Quantum Geotechnic Ltd	Chemtest Job No.:				20-24605	20-24605	20-24605
Quotation No.: Q20-21345	Chemtest Sample ID.:				1064038	1064042	1064043
Order No.:	Client Sample Ref.:				ES1	ES2	ES3
	Sample Location:				TP04	SA02	SA02
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.50	1.00
	Date Sampled:				10-Sep-2020	10-Sep-2020	10-Sep-2020
	Asbestos Lab:				DURHAM	DURHAM	DURHAM
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
ACM Detection Stage	U	2192		N/A	-	-	-
Moisture	N	2030	%	0.020	15	11	11
pH	U	2010		4.0	8.4	8.1	7.5
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.88	0.53	0.48
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.68	0.084	0.025
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Arsenic	U	2450	mg/kg	1.0	36	130	16
Cadmium	U	2450	mg/kg	0.10	0.98	0.14	0.11
Chromium	U	2450	mg/kg	1.0	13	15	18
Copper	U	2450	mg/kg	0.50	35	840	82
Mercury	U	2450	mg/kg	0.10	0.13	0.27	< 0.10
Nickel	U	2450	mg/kg	0.50	21	52	24
Lead	U	2450	mg/kg	0.50	81	210	34
Zinc	U	2450	mg/kg	0.50	160	520	97
Chromium (Hexavalent)	N	2490	mg/kg	0.50			< 0.50
Organic Matter	U	2625	%	0.40	11	3.6	2.9
Total TPH >C6-C40	U	2670	mg/kg	10	380	< 10	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0			< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0			< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0			< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0			< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0			< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0			< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0			< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0			< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0			< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0			< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0			< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0			< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0			< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0			< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0			< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0			< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0			< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0			< 5.0

Results - Soil

Project: Q0229 Ystelynfera School Phase III

Client: Quantum Geotechnic Ltd	Chemtest Job No.:				20-24605	20-24605	20-24605
Quotation No.: Q20-21345	Chemtest Sample ID.:				1064038	1064042	1064043
Order No.:	Client Sample Ref.:				ES1	ES2	ES3
	Sample Location:				TP04	SA02	SA02
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.50	1.00
	Date Sampled:				10-Sep-2020	10-Sep-2020	10-Sep-2020
	Asbestos Lab:				DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD			
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0			< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0		< 1.0
Chloromethane	U	2760	µg/kg	1.0	< 1.0		< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0		< 1.0
Bromomethane	U	2760	µg/kg	20	< 20		< 20
Chloroethane	U	2760	µg/kg	2.0	< 2.0		< 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0	24		< 1.0
1,1-Dichloroethene	U	2760	mg/kg	1.0	< 1.0		< 1.0
Trans 1,2-Dichloroethene	U	2760	mg/kg	1.0	< 1.0		< 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0		< 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0		< 1.0
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0		< 5.0
Trichloromethane	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	< 1.0		< 1.0
Tetrachloromethane	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0		< 1.0
Benzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	< 2.0		< 2.0
Trichloroethene	N	2760	µg/kg	1.0	< 1.0		< 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0		< 1.0
Dibromomethane	U	2760	µg/kg	1.0	< 1.0		< 1.0

Results - Soil

Project: Q0229 Ystelynfera School Phase III

Client: Quantum Geotechnic Ltd	Chemtest Job No.:				20-24605	20-24605	20-24605
Quotation No.: Q20-21345	Chemtest Sample ID.:				1064038	1064042	1064043
Order No.:	Client Sample Ref.:				ES1	ES2	ES3
	Sample Location:				TP04	SA02	SA02
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.50	1.00
	Date Sampled:				10-Sep-2020	10-Sep-2020	10-Sep-2020
	Asbestos Lab:				DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD			
Bromodichloromethane	U	2760	µg/kg	5.0	< 5.0		< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10		< 10
Toluene	U	2760	µg/kg	1.0	< 1.0		< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10		< 10
1,1,2-Trichloroethane	U	2760	µg/kg	10	< 10		< 10
Tetrachloroethene	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0		< 2.0
Dibromochloromethane	U	2760	µg/kg	10	< 10		< 10
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0		< 5.0
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0		< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0		< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0		< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0		< 1.0
Tribromomethane	U	2760	µg/kg	1.0	< 1.0		< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
Bromobenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50		< 50
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0		< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50		< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0		< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0		< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50		< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50		< 0.50

Results - Soil

Project: Q0229 Ystelynfera School Phase III

Client: Quantum Geotechnic Ltd	Chemtest Job No.:				20-24605	20-24605	20-24605
Quotation No.: Q20-21345	Chemtest Sample ID.:				1064038	1064042	1064043
Order No.:	Client Sample Ref.:				ES1	ES2	ES3
	Sample Location:				TP04	SA02	SA02
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.50	1.00
	Date Sampled:				10-Sep-2020	10-Sep-2020	10-Sep-2020
	Asbestos Lab:				DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD			
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50		< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50		< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50		< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50		< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50		< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50		< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50		< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50		< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50		< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50		< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50		< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50		< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50		< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50		< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50		< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50		< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50		< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50		< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50		< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50		< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50		< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50		< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50		< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50

Results - Soil

Project: Q0229 Ystelynfera School Phase III

Client: Quantum Geotechnic Ltd	Chemtest Job No.:				20-24605	20-24605	20-24605
Quotation No.: Q20-21345	Chemtest Sample ID.:				1064038	1064042	1064043
Order No.:	Client Sample Ref.:				ES1	ES2	ES3
	Sample Location:				TP04	SA02	SA02
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				0.20	0.50	1.00
	Date Sampled:				10-Sep-2020	10-Sep-2020	10-Sep-2020
	Asbestos Lab:				DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD			
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50		< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50		< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50		< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50		< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50
Fluoranthene	U	2790	mg/kg	0.50	0.73		< 0.50
Pyrene	U	2790	mg/kg	0.50	0.66		< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50		< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50		< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50		< 0.50
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1670	Total Petroleum Hydrocarbons (TPH) in Waters by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO	Pentane extraction / GC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters 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)
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
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.
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
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

Test Methods

SOP	Title	Parameters included	Method summary
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.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	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



Final Report

Report No.: 20-24615-1
Initial Date of Issue: 23-Sep-2020
Client Quantum Geotechnic Ltd
Client Address: Plas Newydd Llanedi
Pontarddulais Swansea SA4
0FQ
Lee Simlett
Contact(s): Q0229 Ystalyfera School Phase III
Project Q20-21345
Quotation No.:
Order No.:
No. of Samples: 1
Turnaround (Wkdays): 5
Date Approved: 23-Sep-2020
Approved By:

Date Received: 15-Sep-2020

Date Instructed: 17-Sep-2020

Results Due: 23-Sep-2020

Details: Glynn Harvey, Technical Manager

Results - Soil

Project: Q0229 Ystelynfera School Phase III

Client: Quantum Geotechnic Ltd	Chemtest Job No.:		20-24615		
Quotation No.: Q20-21345	Chemtest Sample ID.:		1064110		
Order No.:	Client Sample Ref.:		ES5		
	Sample Location:		BH01		
	Sample Type:		SOIL		
	Top Depth (m):		1.00		
	Date Sampled:		10-Sep-2020		
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.020	12
pH (2.5:1)	N	2010		4.0	7.4
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.14
Total Sulphur	U	2175	%	0.010	0.039
Sulphate (Acid Soluble)	U	2430	%	0.010	0.089

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

Report Information

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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

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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

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- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
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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



Quantum Geotechnic Ltd
Plas Newydd
Pontardulais
Swansea
SA4 0FQ

T: 01554 744880
E: enquiries@quantumgeotech.co.uk
W: <http://www.quantumgeotech.co.uk>

