

In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

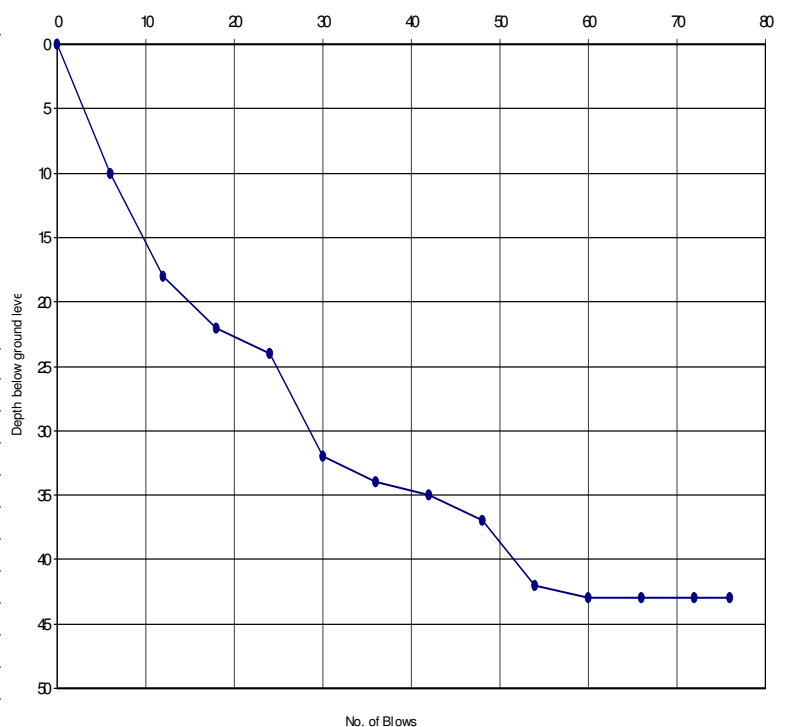
Location No. DCP01A
Project No. PC176880
Test No. 2
Test Date 23/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	0	0
6	6	1	10	10
6	12	1	18	18
6	18	1	22	22
6	24	1	24	24
6	30	1	32	32
6	36	1	34	34
6	42	1	35	35
6	48	1	37	37
6	54	1	42	42
6	60	1	43	43
6	66	1	43	43
6	72	1	43	43
4	76	1	43	43

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	0

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	18	0	12	2	196.7
18	24	12	24	1	628.3
24	32	24	30	1	222.8
32	37	30	48	0	1169.5
37	42	48	54	1	366.2
42	43	54	76	0	7923.9



Remarks
CBR estimated using correlation in Highways Agency Interim Advice Note 73/06

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP02

Project No. PC176880

Test No. 1

Test Date 23/10/2017

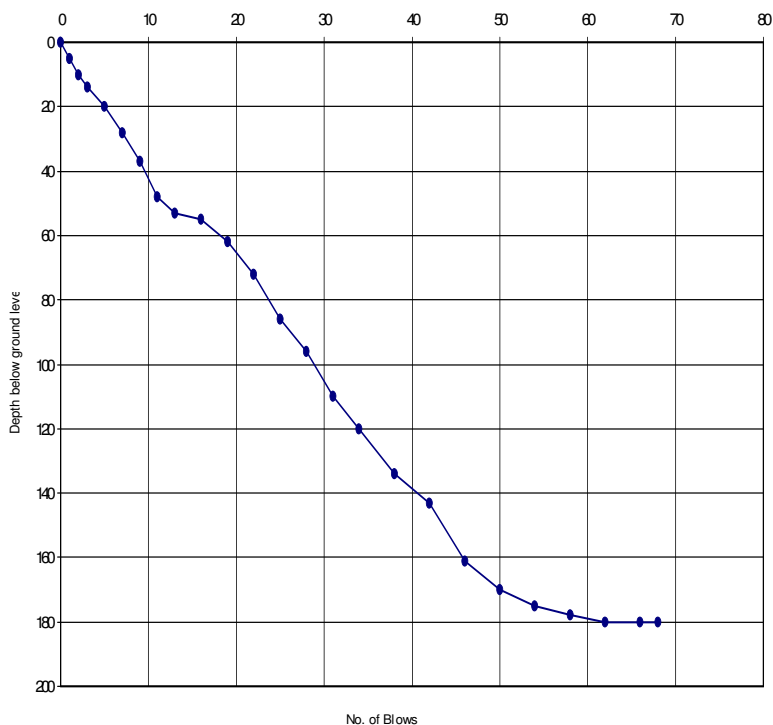
Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	0	0
1	1	1	5	5
1	2	1	10	10
1	3	1	14	14
2	5	1	20	20
2	7	1	28	28
2	9	1	37	37
2	11	1	48	48
2	13	1	53	53
3	16	1	55	55
3	19	1	62	62
3	22	1	72	72
3	25	1	86	86
3	28	1	96	96
3	31	1	110	110
3	34	1	120	120
4	38	1	134	134
4	42	1	143	143
4	46	1	161	161
4	50	1	170	170
4	54	1	175	175

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	58	1	178	178
4	62	1	180	180
4	66	1	180	180
2	68	1	180	180

Test Started at	0.00	m
Operator	AJS	
Checked by		

Rod No.	Zero Reading (mm)
1	0

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	53	0	13	4	68.4
53	55	13	16	1	463.6
55	62	16	19	2	123.3
62	134	19	38	4	73.9
134	143	38	42	2	128.2
143	161	42	46	5	61.6
161	175	46	54	2	167.2
175	180	54	62	1	496.3
180	180	62	68		



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP03
Project No. PC176880
Test No. 1
Test Date 23/10/2017

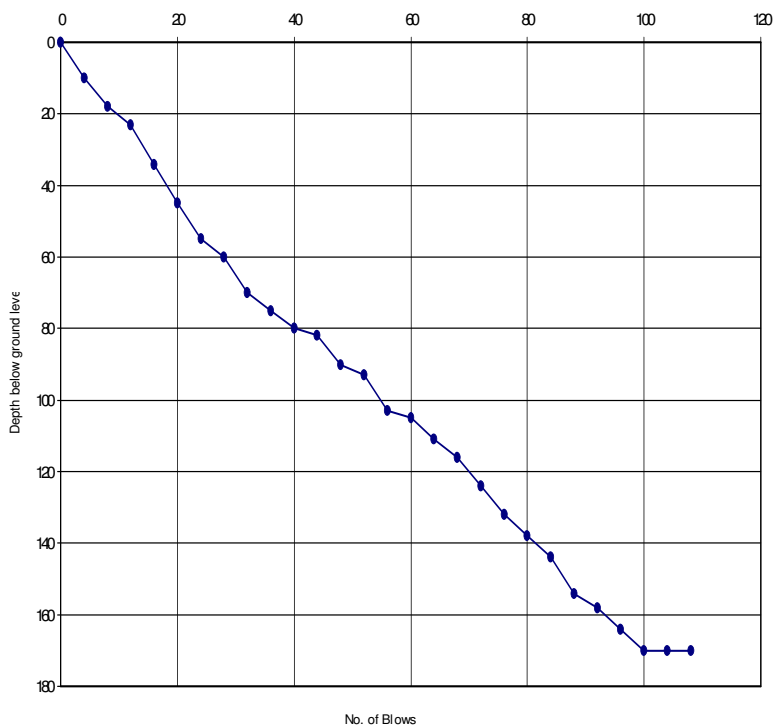
Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	0	0
4	4	1	10	10
4	8	1	18	18
4	12	1	23	23
4	16	1	34	34
4	20	1	45	45
4	24	1	55	55
4	28	1	60	60
4	32	1	70	70
4	36	1	75	75
4	40	1	80	80
4	44	1	82	82
4	48	1	90	90
4	52	1	93	93
4	56	1	103	103
4	60	1	105	105
4	64	1	111	111
4	68	1	116	116
4	72	1	124	124
4	76	1	132	132
4	80	1	138	138

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	84	1	144	144
4	88	1	154	154
4	92	1	158	158
4	96	1	164	164
4	100	1	170	170
4	104	1	170	170
4	108	1	170	170

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	0

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	23	0	12	2	151.8
23	55	12	24	3	107.1
55	70	24	32	2	155.4
70	80	32	40	1	238.5
80	82	40	44	1	628.3
82	90	44	48	2	145.1
90	93	48	52	1	409.3
93	103	52	56	3	114.7
103	105	56	60	1	628.3
105	154	60	88	2	167.2
154	170	88	100	1	222.8
170	170	100	108		



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

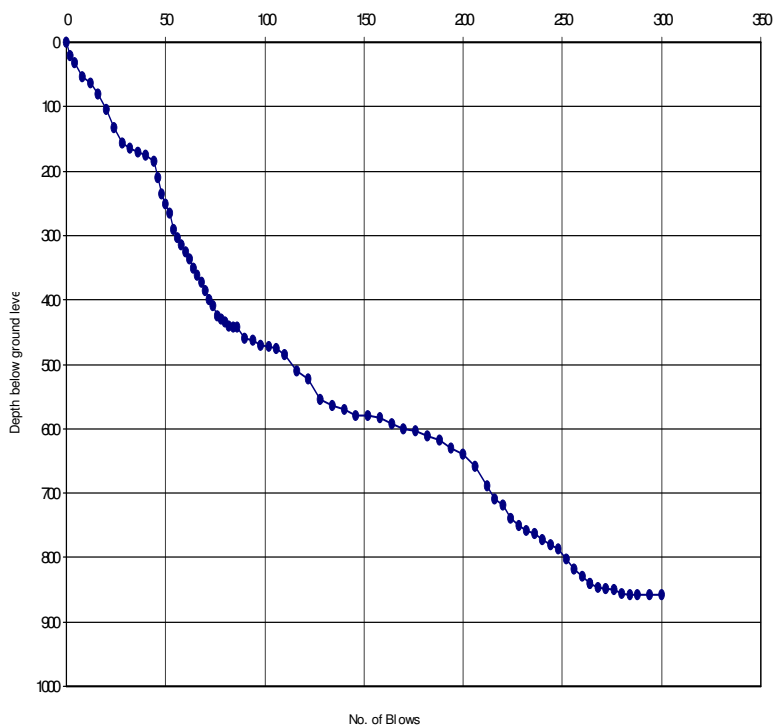
Location No. DCP04
Project No. PC176880
Test No. 1
Test Date 23/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	0	0	2	62	1	336	336	6	128	1	555	555
2	2	1	20	20	2	64	1	350	350	6	134	1	564	564
2	4	1	32	32	2	66	1	362	362	6	140	1	570	570
4	8	1	53	53	2	68	1	373	373	6	146	1	580	580
4	12	1	63	63	2	70	1	386	386	6	152	1	580	580
4	16	1	80	80	2	72	1	400	400	6	158	1	583	583
4	20	1	104	104	2	74	1	409	409	6	164	1	593	593
4	24	1	133	133	2	76	1	425	425	6	170	1	600	600
4	28	1	156	156	2	78	1	430	430	6	176	1	604	604
4	32	1	165	165	2	80	1	435	435	6	182	1	611	611
4	36	1	171	171	2	82	1	440	440	6	188	1	618	618
4	40	1	176	176	2	84	1	442	442	6	194	1	630	630
4	44	1	185	185	2	86	1	443	443	6	200	1	640	640
2	46	1	210	210	4	90	1	460	460	6	206	1	658	658
2	48	1	235	235	4	94	1	463	463	6	212	1	689	689
2	50	1	251	251	4	98	1	470	470	4	216	1	710	710
2	52	1	265	265	4	102	1	472	472	4	220	1	719	719
2	54	1	290	290	4	106	1	475	475	4	224	1	740	740
2	56	1	304	304	4	110	1	485	485	4	228	1	751	751
2	58	1	315	315	6	116	1	510	510	4	232	1	759	759
2	60	1	325	325	6	122	1	523	523	4	236	1	763	763

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	0
2	55

Depth bgl (mm)		Blows No.		DCP	CBR %
Top	Base	Top	Base	mm/blow	
0	156	0	28	6	49.1
156	185	28	44	2	161.1
185	425	44	76	8	35.9
425	485	76	110	2	165.7
485	555	110	128	4	71.9
555	618	128	188	1	286.8
618	658	188	206	0	29153.2
658	740	206	224	5	60.8
740	787	225	248	2	141.9
787	841	248	264	3	83.5
841	850	264	276	1	409.3
850	858	276	300	0	964.5



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

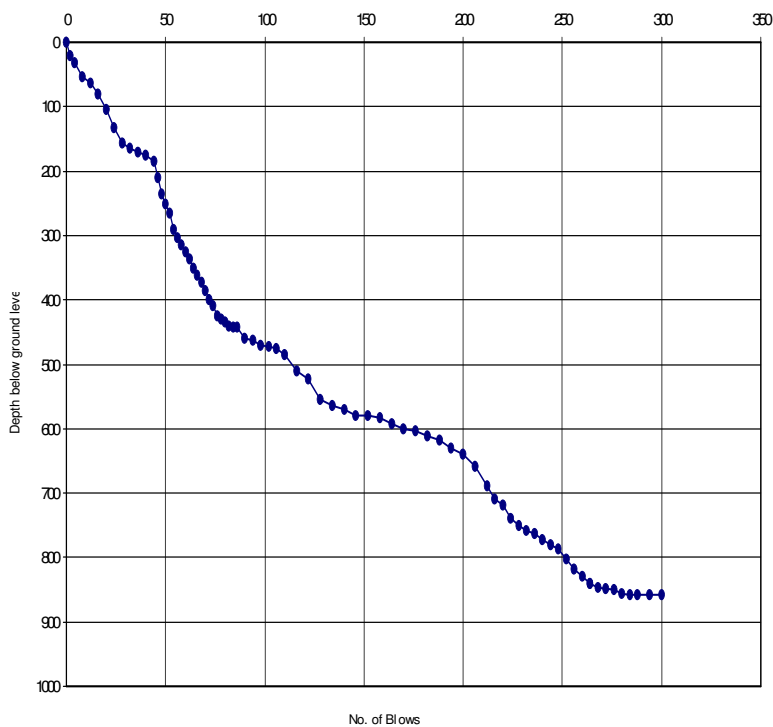
Location No. DCP04
Project No. PC176880
Test No. 1
Test Date 23/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	240	1	772	772
4	244	1	780	780
4	248	1	787	787
4	252	1	802	802
4	256	1	818	818
4	260	1	830	830
4	264	1	841	841
0	264	2	55	841
4	268	2	60	846
4	272	2	62	848
4	276	2	64	850
4	280	2	70	856
4	284	2	72	858
4	288	2	72	858
6	294	2	72	858
6	300	2	72	858

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	0
2	55

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	156	0	28	6	49.1
156	185	28	44	2	161.1
185	425	44	76	8	35.9
425	485	76	110	2	165.7
485	555	110	128	4	71.9
555	618	128	188	1	286.8
618	658	188	206	0	29153.2
658	740	206	224	5	60.8
740	787	225	248	2	141.9
787	841	248	264	3	83.5
841	850	264	276	1	409.3
850	858	276	300	0	964.5



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP05

Project No. PC176880

Test No. 1

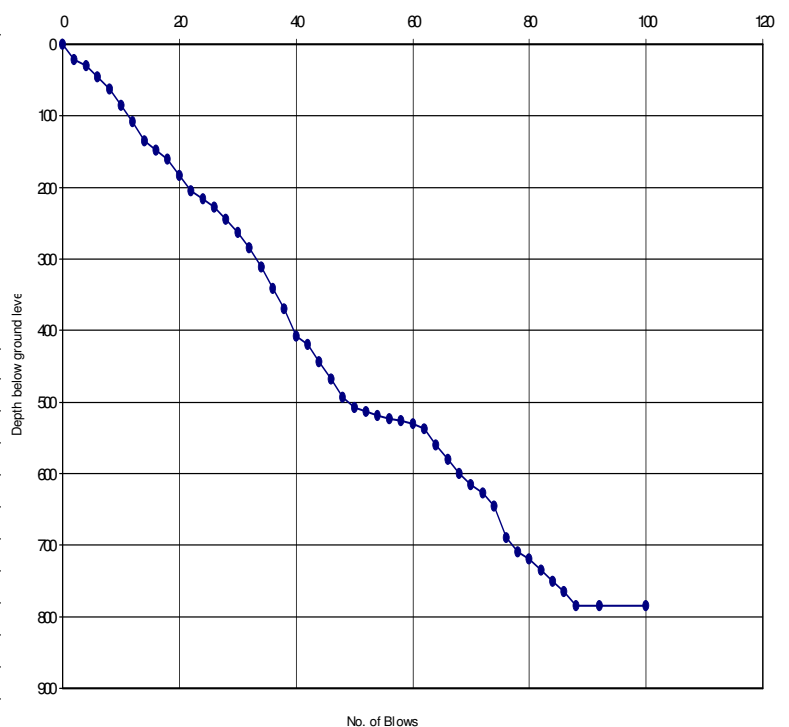
Test Date 23/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	15	0	2	42	1	435	420	2	84	1	765	750
2	2	1	36	21	2	44	1	458	443	2	86	1	780	765
2	4	1	45	30	2	46	1	483	468	2	88	1	800	785
2	6	1	60	45	2	48	1	508	493	4	92	1	800	785
2	8	1	77	62	2	50	1	522	507	8	100	1	800	785
2	10	1	101	86	2	52	1	528	513					
2	12	1	123	108	2	54	1	534	519					
2	14	1	150	135	2	56	1	538	523					
2	16	1	163	148	2	58	1	541	526					
2	18	1	175	160	2	60	1	546	531					
2	20	1	198	183	2	62	1	553	538					
2	22	1	220	205	2	64	1	575	560					
2	24	1	231	216	2	66	1	595	580					
2	26	1	243	228	2	68	1	615	600					
2	28	1	260	245	2	70	1	630	615					
2	30	1	278	263	2	72	1	642	627					
2	32	1	300	285	2	74	1	660	645					
2	34	1	326	311	2	76	1	705	690					
2	36	1	356	341	2	78	1	724	709					
2	38	1	385	370	2	80	1	735	720					
2	40	1	423	408	2	82	1	750	735					

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	15

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	135	0	14	10	27.5
135	160	14	18	6	43.5
160	205	18	22	11	23.4
205	263	22	30	7	37.2
263	420	30	42	13	19.9
420	507	42	50	11	24.2
507	531	50	60	2	119.7
531	645	60	74	8	32.9
645	690	74	76	23	11.2
690	785	76	88	8	33.9
785	785	88	100		



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

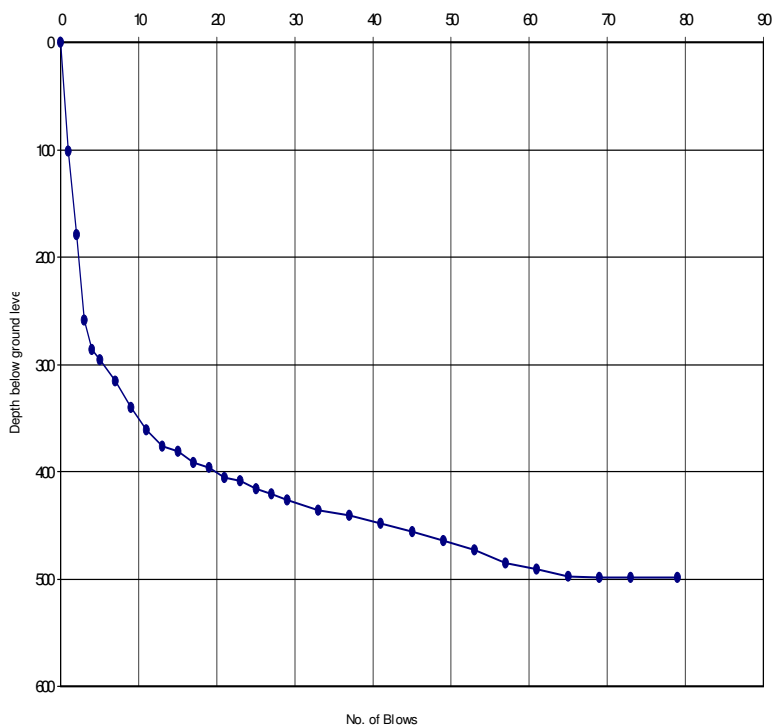
Location No. DCP06
Project No. PC176880
Test No. 1
Test Date 23/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	44	0	4	45	1	500	456
1	1	1	145	101	4	49	1	508	464
1	2	1	223	179	4	53	1	517	473
1	3	1	303	259	4	57	1	529	485
1	4	1	330	286	4	61	1	535	491
1	5	1	340	296	4	65	1	542	498
2	7	1	360	316	4	69	1	543	499
2	9	1	384	340	4	73	1	543	499
2	11	1	405	361	6	79	1	543	499
2	13	1	420	376					
2	15	1	425	381					
2	17	1	435	391					
2	19	1	440	396					
2	21	1	450	406					
2	23	1	453	409					
2	25	1	460	416					
2	27	1	465	421					
2	29	1	471	427					
4	33	1	480	436					
4	37	1	485	441					
4	41	1	492	448					

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	44

Depth bgl (mm) Top	Base	Blows No. Top	Base	DCP mm/blow	CBR %
0	259	0	3	86	2.7
259	286	3	4	27	9.3
286	376	4	13	10	26.5
376	436	13	33	3	94.6
436	473	33	53	2	157.6
473	498	53	65	2	139.0
498	499	65	79	0	4914.3



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

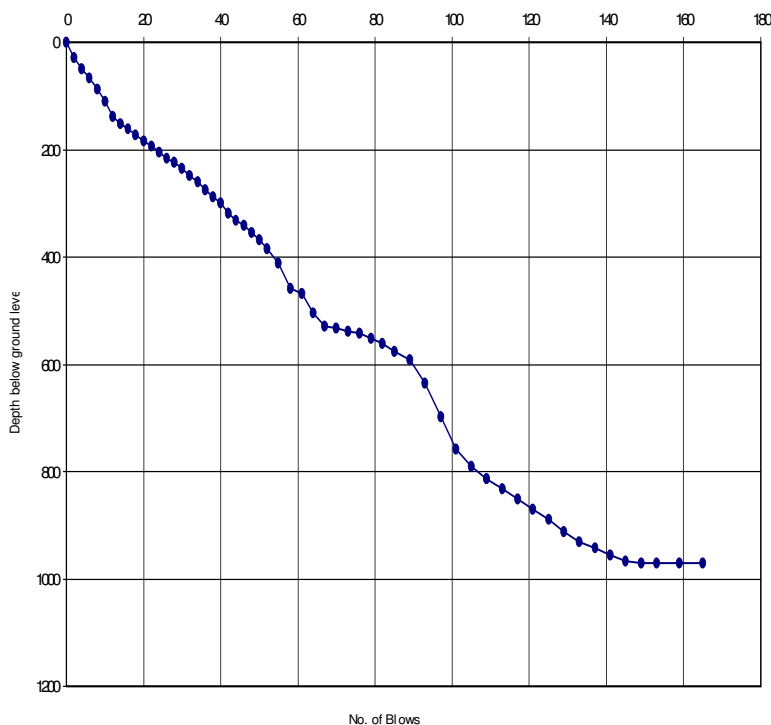
Location No. DCP07
Project No. PC176880
Test No. 1
Test Date 23/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	12	0	2	42	1	331	319	4	105	1	802	790
2	2	1	40	28	2	44	1	343	331	4	109	1	825	813
2	4	1	61	49	2	46	1	354	342	0	109	2	26	813
2	6	1	79	67	2	48	1	366	354	4	113	2	45	832
2	8	1	100	88	2	50	1	380	368	4	117	2	64	851
2	10	1	122	110	2	52	1	396	384	4	121	2	83	870
2	12	1	150	138	3	55	1	423	411	4	125	2	103	890
2	14	1	164	152	3	58	1	470	458	4	129	2	124	911
2	16	1	174	162	3	61	1	480	468	4	133	2	143	930
2	18	1	185	173	3	64	1	516	504	4	137	2	155	942
2	20	1	195	183	3	67	1	540	528	4	141	2	168	955
2	22	1	205	193	3	70	1	544	532	4	145	2	179	966
2	24	1	216	204	3	73	1	550	538	4	149	2	183	970
2	26	1	228	216	3	76	1	555	543	4	153	2	183	970
2	28	1	235	223	3	79	1	563	551	6	159	2	183	970
2	30	1	248	236	3	82	1	574	562	6	165	2	183	970
2	32	1	260	248	3	85	1	588	576					
2	34	1	272	260	4	89	1	603	591					
2	36	1	286	274	4	93	1	648	636					
2	38	1	300	288	4	97	1	710	698					
2	40	1	312	300	4	101	1	770	758					

Test Started at	0.00	m
Operator	AJS	
Checked by		

Rod No.	Zero Reading (mm)
1	12
2	26

Depth bgl (mm)		Blows No.		DCP	CBR %
Top	Base	Top	Base	mm/blow	
0	138	0	12	12	22.8
138	384	12	52	6	44.3
384	458	52	58	12	21.2
458	528	58	67	8	34.5
528	591	67	89	3	99.3
591	758	89	101	14	18.7
758	890	101	125	6	49.8
890	966	125	145	4	73.6
966	970	145	165	0	1655.1



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project	COED DARC
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Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP08

Project No. PC176880

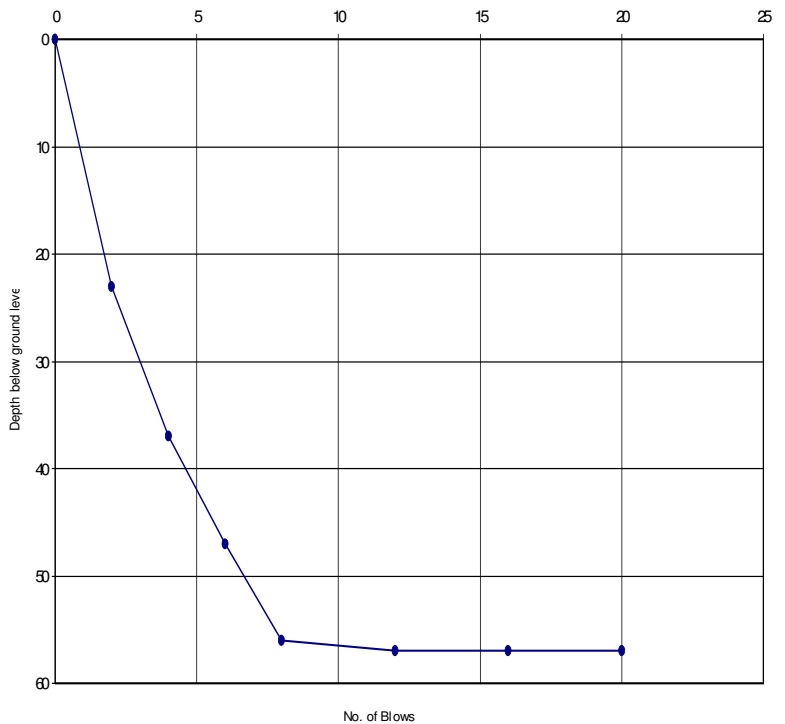
Test No. 1

Test Date 23/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	13	0
2	2	1	36	23
2	4	1	50	37
2	6	1	60	47
2	8	1	69	56
4	12	1	70	57
4	16	1	70	57
4	20	1	70	57

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	13

[illegible]

Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP08A

Project No. PC176880

Test No. 2

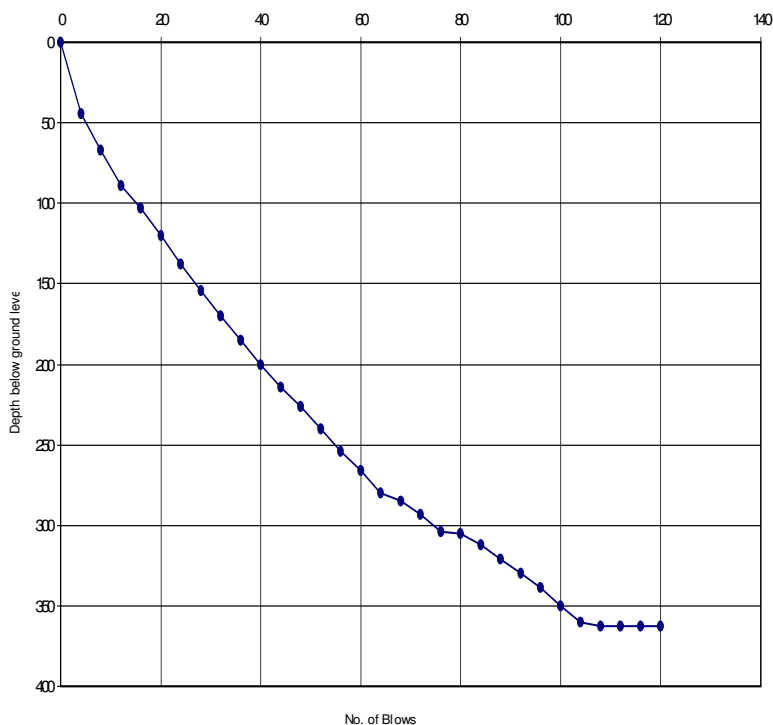
Test Date 23/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	0	0	4	84	1	312	312
4	4	1	44	44	4	88	1	321	321
4	8	1	67	67	4	92	1	330	330
4	12	1	89	89	4	96	1	339	339
4	16	1	103	103	4	100	1	350	350
4	20	1	120	120	4	104	1	360	360
4	24	1	138	138	4	108	1	363	363
4	28	1	154	154	4	112	1	363	363
4	32	1	170	170	4	116	1	363	363
4	36	1	185	185	4	120	1	363	363
4	40	1	200	200					
4	44	1	214	214					
4	48	1	226	226					
4	52	1	240	240					
4	56	1	254	254					
4	60	1	266	266					
4	64	1	280	280					
4	68	1	285	285					
4	72	1	293	293					
4	76	1	304	304					
4	80	1	305	305					

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	0

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	44	0	4	11	23.9
44	89	4	12	6	48.7
89	266	12	60	4	76.0
266	285	60	68	2	121.0
285	304	68	76	2	121.0
304	305	76	80	0	1307.3
305	360	80	104	2	125.7
360	363	104	120	0	1771.9



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

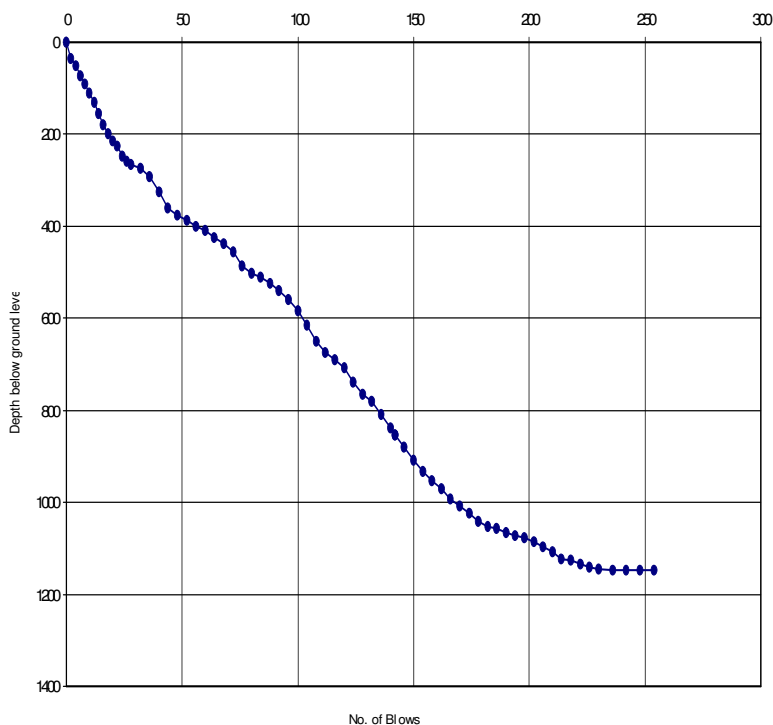
Location No. DCP09
Project No. PC176880
Test No. 1
Test Date 23/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	5	0	4	56	1	405	400	4	140	1	844	839
2	2	1	40	35	4	60	1	415	410	2	142	1	858	853
2	4	1	56	51	4	64	1	430	425	0	142	2	12	853
2	6	1	78	73	4	68	1	443	438	4	146	2	39	880
2	8	1	95	90	4	72	1	460	455	4	150	2	67	908
2	10	1	115	110	4	76	1	492	487	4	154	2	93	934
2	12	1	135	130	4	80	1	507	502	4	158	2	113	954
2	14	1	160	155	4	84	1	515	510	4	162	2	130	971
2	16	1	185	180	4	88	1	530	525	4	166	2	152	993
2	18	1	205	200	4	92	1	544	539	4	170	2	167	1008
2	20	1	220	215	4	96	1	565	560	4	174	2	183	1024
2	22	1	230	225	4	100	1	588	583	4	178	2	200	1041
2	24	1	253	248	4	104	1	619	614	4	182	2	211	1052
2	26	1	263	258	4	108	1	655	650	4	186	2	217	1058
2	28	1	270	265	4	112	1	680	675	4	190	2	226	1067
4	32	1	280	275	4	116	1	694	689	4	194	2	232	1073
4	36	1	297	292	4	120	1	712	707	4	198	2	237	1078
4	40	1	330	325	4	124	1	743	738	4	202	2	246	1087
4	44	1	365	360	4	128	1	770	765	4	206	2	256	1097
4	48	1	380	375	4	132	1	786	781	4	210	2	268	1109
4	52	1	391	386	4	136	1	814	809	4	214	2	282	1123

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	5
2	12

Depth bgl (mm)		Blows No.		DCP	CBR %
Top	Base	Top	Base	mm/blow	
0	258	0	26	10	26.7
258	292	26	36	3	82.8
292	360	36	44	9	31.4
360	455	44	72	3	83.0
455	539	72	92	4	66.3
539	675	92	112	7	39.8
675	707	112	120	4	69.8
707	954	120	158	7	41.8
954	1041	158	178	4	63.8
1041	1078	178	198	2	157.6
1078	1123	198	214	3	101.2
1123	1146	214	230	1	205.8
1146	1147	230	254	0	8687.3



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

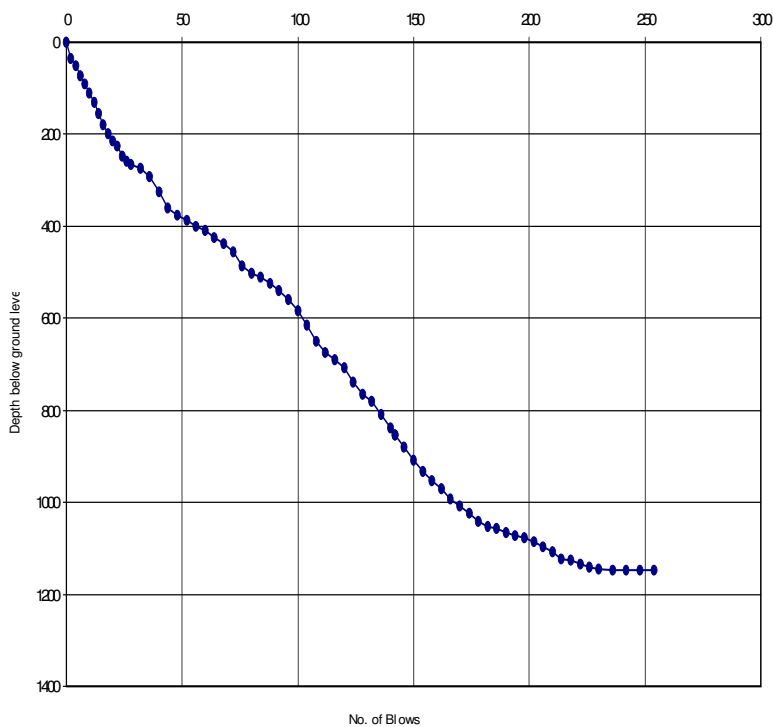
Location No. DCP09
Project No. PC176880
Test No. 1
Test Date 23/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	218	2	285	1126
4	222	2	293	1134
4	226	2	300	1141
4	230	2	305	1146
6	236	2	306	1147
6	242	2	306	1147
6	248	2	306	1147
6	254	2	306	1147

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	5
2	12

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	258	0	26	10	26.7
258	292	26	36	3	82.8
292	360	36	44	9	31.4
360	455	44	72	3	83.0
455	539	72	92	4	66.3
539	675	92	112	7	39.8
675	707	112	120	4	69.8
707	954	120	158	7	41.8
954	1041	158	178	4	63.8
1041	1078	178	198	2	157.6
1078	1123	198	214	3	101.2
1123	1146	214	230	1	205.8
1146	1147	230	254	0	8687.3



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP10

Project No. PC176880

Test No. 1

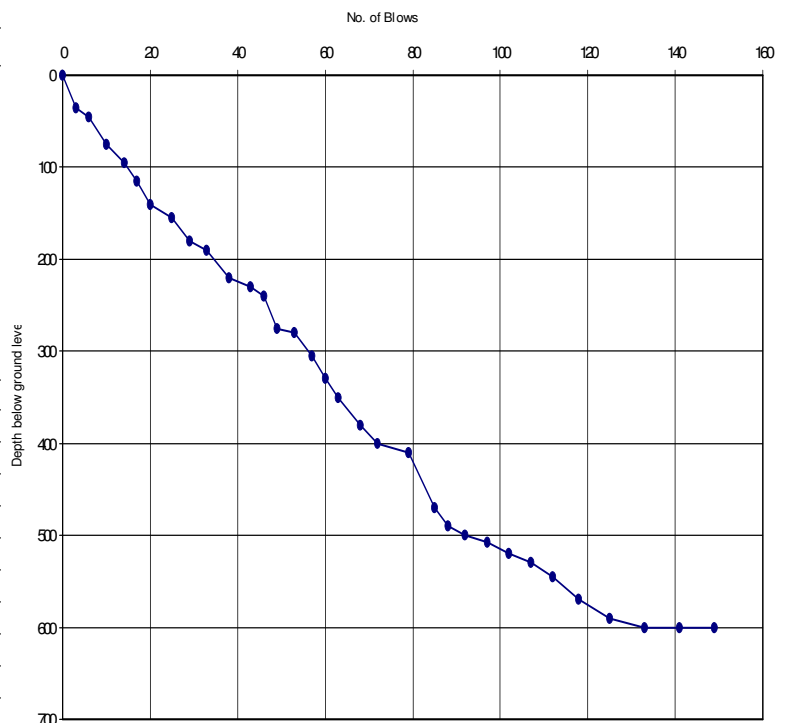
Test Date 24/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0	6	85	1	480	470
3	3	1	45	35	3	88	1	500	490
3	6	1	55	45	4	92	1	510	500
4	10	1	85	75	5	97	1	518	508
4	14	1	105	95	5	102	1	530	520
3	17	1	125	115	5	107	1	540	530
3	20	1	150	140	5	112	1	555	545
5	25	1	165	155	6	118	1	580	570
4	29	1	190	180	7	125	1	600	590
4	33	1	200	190	8	133	1	610	600
5	38	1	230	220	8	141	1	610	600
5	43	1	240	230	8	149	1	610	600
3	46	1	250	240					
3	49	1	285	275					
4	53	1	290	280					
4	57	1	315	305					
3	60	1	340	330					
3	63	1	360	350					
5	68	1	390	380					
4	72	1	410	400					
7	79	1	420	410					

Test Started at	0.00	m
Operator	SI	
Checked by		

Rod No.	Zero Reading (mm)
1	10

Depth bgl (mm)		Blows No.		DCP	CBR %
Top	Base	Top	Base	mm/blow	
0	35	0	3	12	22.5
35	45	3	6	3	84.6
45	140	6	20	7	39.9
140	220	20	38	4	62.4
220	240	38	46	3	114.7
240	275	46	49	12	22.5
275	280	49	53	1	238.5
280	400	53	72	6	43.0
400	410	72	79	1	207.1
410	490	79	88	9	30.0
490	530	88	107	2	137.5
530	590	107	125	3	84.6
590	600	125	133	1	238.5



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

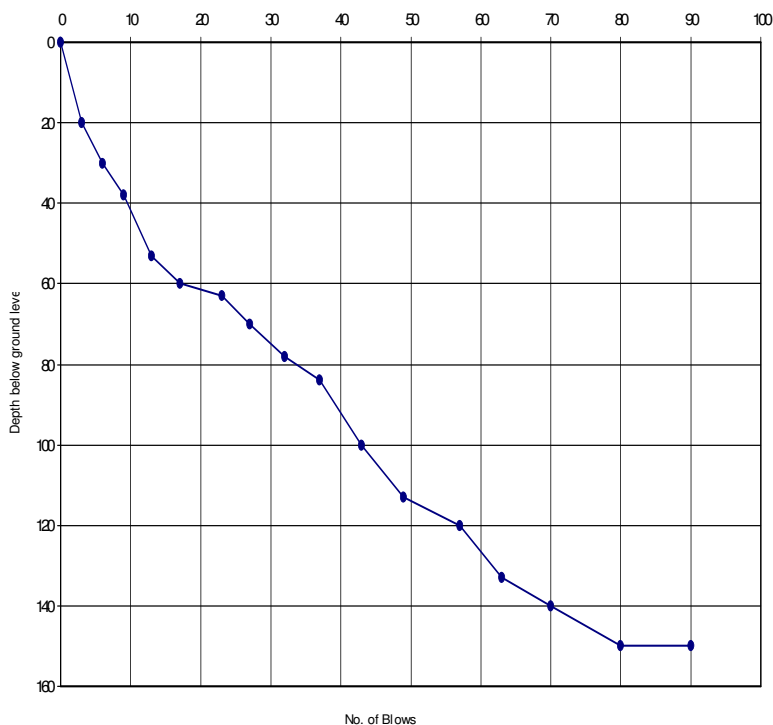
Location No. DCP11
Project No. PC176880
Test No. 1
Test Date 24/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
3	3	1	30	20
3	6	1	40	30
3	9	1	48	38
4	13	1	63	53
4	17	1	70	60
6	23	1	73	63
4	27	1	80	70
5	32	1	88	78
5	37	1	94	84
6	43	1	110	100
6	49	1	123	113
8	57	1	130	120
6	63	1	143	133
7	70	1	150	140
10	80	1	160	150
10	90	1	160	150

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	20	0	3	7	40.7
20	38	3	9	3	94.6
38	53	9	13	4	74.7
53	60	13	17	2	167.2
60	63	17	23	1	628.3
63	84	23	37	2	196.7
84	113	37	49	2	118.8
113	120	49	57	1	347.8
120	140	57	70	2	191.5
140	150	70	80	1	302.0



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

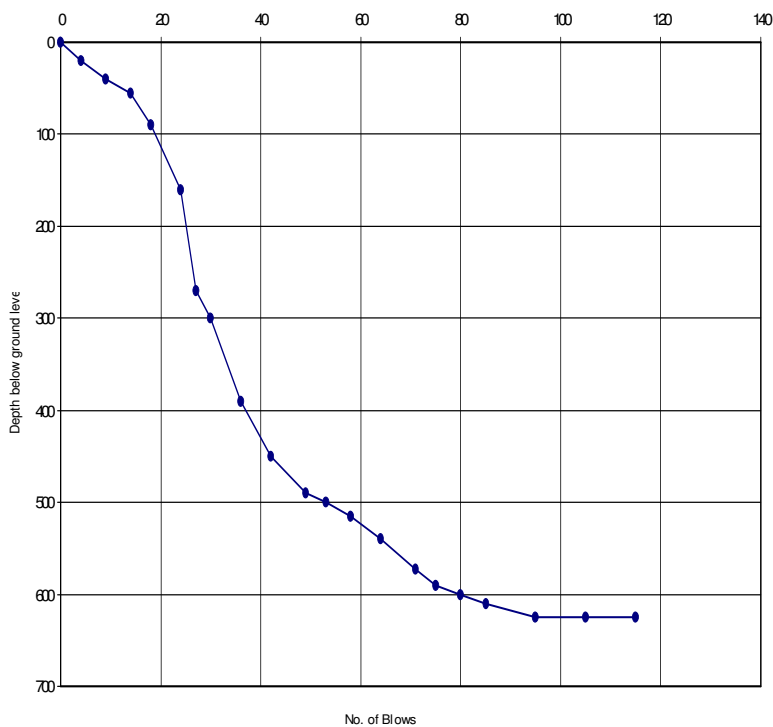
Location No. DCP12
Project No. PC176880
Test No. 1
Test Date 24/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
4	4	1	30	20
5	9	1	50	40
5	14	1	65	55
4	18	1	100	90
6	24	1	170	160
3	27	1	280	270
3	30	1	310	300
6	36	1	400	390
6	42	1	460	450
7	49	1	500	490
4	53	1	510	500
5	58	1	525	515
6	64	1	550	540
7	71	1	583	573
4	75	1	600	590
5	80	1	610	600
5	85	1	620	610
10	95	1	635	625
10	105	1	635	625
10	115	1	635	625

Test Started at	0.00	m
Operator	SI	
Checked by		

Rod No.	Zero Reading (mm)
1	10

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	55	0	14	4	71.1
55	160	14	24	11	25.2
160	270	24	27	37	6.7
270	390	27	36	13	19.5
390	490	36	49	8	34.9
490	590	49	75	4	72.7
590	625	75	95	2	167.2



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

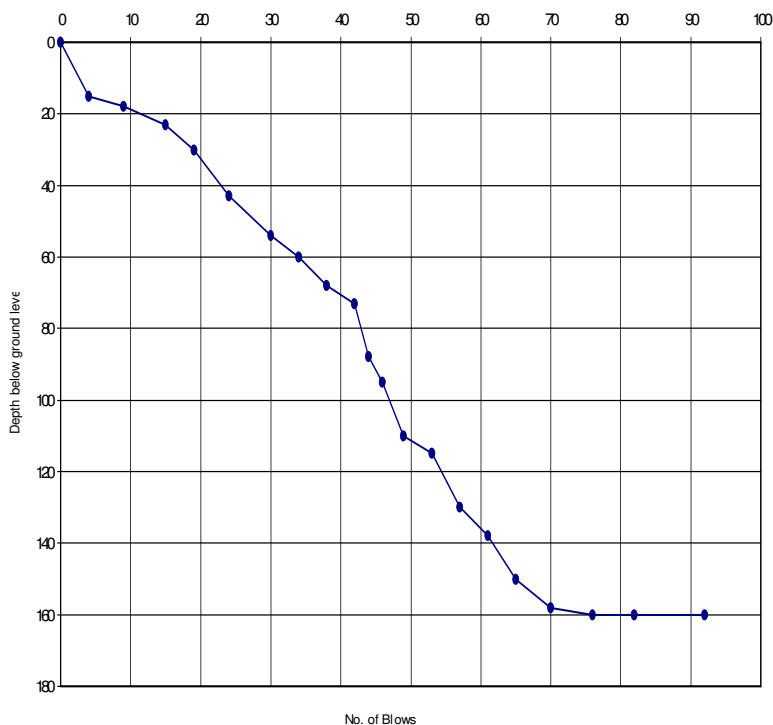
Location No. DCP13
Project No. PC176880
Test No. 1
Test Date 24/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
4	4	1	25	15
5	9	1	28	18
6	15	1	33	23
4	19	1	40	30
5	24	1	53	43
6	30	1	64	54
4	34	1	70	60
4	38	1	78	68
4	42	1	83	73
2	44	1	98	88
2	46	1	105	95
3	49	1	120	110
4	53	1	125	115
4	57	1	140	130
4	61	1	148	138
4	65	1	160	150
5	70	1	168	158
6	76	1	170	160
6	82	1	170	160
10	92	1	170	160

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	15	0	4	4	74.7
15	23	4	15	1	422.8
23	73	15	42	2	157.4
73	110	42	49	5	52.0
110	158	49	70	2	126.0



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP14

Project No. PC176880

Test No. 1

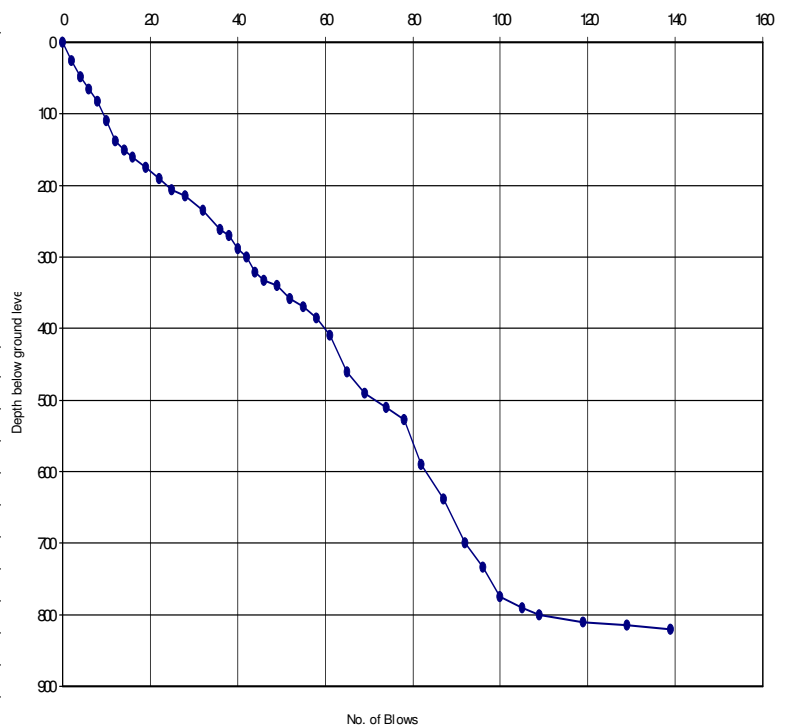
Test Date 24/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0	3	52	1	368	358
2	2	1	35	25	3	55	1	380	370
2	4	1	58	48	3	58	1	396	386
2	6	1	75	65	3	61	1	420	410
2	8	1	92	82	4	65	1	470	460
2	10	1	120	110	4	69	1	500	490
2	12	1	148	138	5	74	1	520	510
2	14	1	160	150	4	78	1	538	528
2	16	1	170	160	4	82	1	600	590
3	19	1	185	175	5	87	1	648	638
3	22	1	200	190	5	92	1	710	700
3	25	1	216	206	4	96	1	743	733
3	28	1	225	215	4	100	1	785	775
4	32	1	245	235	5	105	1	800	790
4	36	1	272	262	4	109	1	810	800
2	38	1	280	270	10	119	1	820	810
2	40	1	298	288	10	129	1	825	815
2	42	1	310	300	10	139	1	830	820
2	44	1	331	321					
2	46	1	343	333					
3	49	1	350	340					

Test Started at	0.00	m
Operator	SI	
Checked by		

Rod No.	Zero Reading (mm)
1	10

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	138	0	12	12	22.8
138	288	12	40	5	51.2
288	410	40	61	6	47.0
410	528	61	78	7	39.0
528	775	78	100	11	23.4
775	820	100	139	1	259.6



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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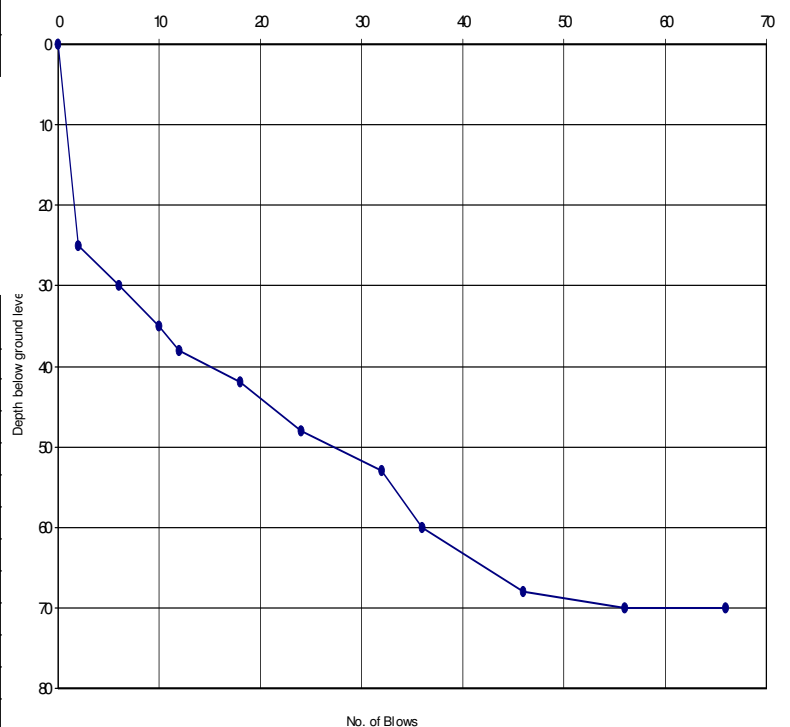


Location No.	DCP15
Project No.	PC176880
Test No.	1
Test Date	25/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
2	2	1	35	25
4	6	1	40	30
4	10	1	45	35
2	12	1	48	38
6	18	1	52	42
6	24	1	58	48
8	32	1	63	53
4	36	1	70	60
10	46	1	78	68
10	56	1	80	70
10	66	1	80	70

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10

[illegible]

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

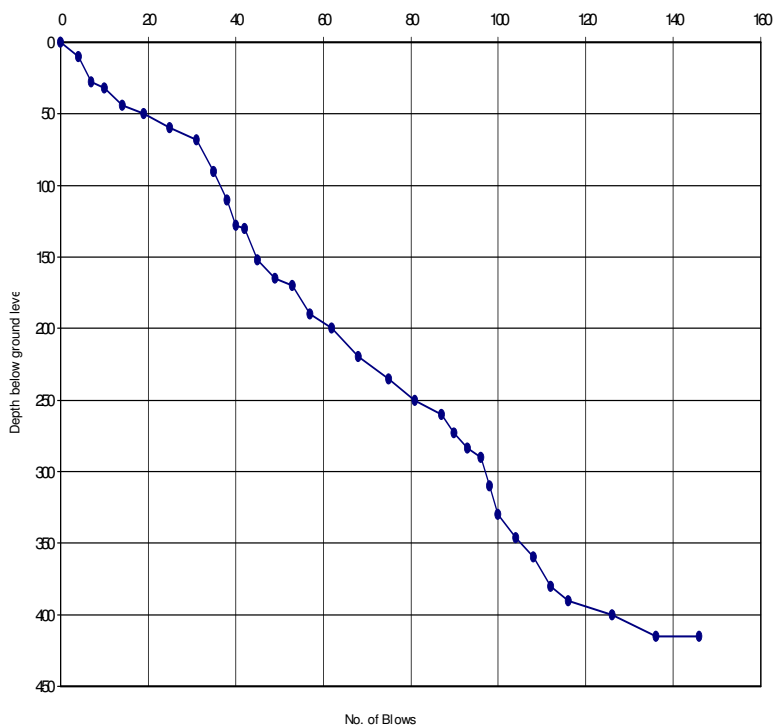
Location No. DCP16
Project No. PC176880
Test No. 1
Test Date 24/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0	3	90	1	283	273
4	4	1	20	10	3	93	1	294	284
3	7	1	38	28	3	96	1	300	290
3	10	1	42	32	2	98	1	320	310
4	14	1	54	44	2	100	1	340	330
5	19	1	60	50	4	104	1	356	346
6	25	1	70	60	4	108	1	370	360
6	31	1	78	68	4	112	1	390	380
4	35	1	100	90	4	116	1	400	390
3	38	1	120	110	10	126	1	410	400
2	40	1	138	128	10	136	1	425	415
2	42	1	140	130	10	146	1	425	415
3	45	1	162	152					
4	49	1	175	165					
4	53	1	180	170					
4	57	1	200	190					
5	62	1	210	200					
6	68	1	230	220					
7	75	1	245	235					
6	81	1	260	250					
6	87	1	270	260					

Test Started at	0.00	m
Operator	SI	
Checked by		

Rod No.	Zero Reading (mm)
1	10

Depth bgl (mm) Top	Base	Blows No. Top	Base	DCP mm/blow	CBR %
0	68	0	31	2	131.6
68	130	31	42	6	48.6
130	290	42	96	3	95.8
290	390	96	116	5	55.1
390	415	116	136	1	238.5



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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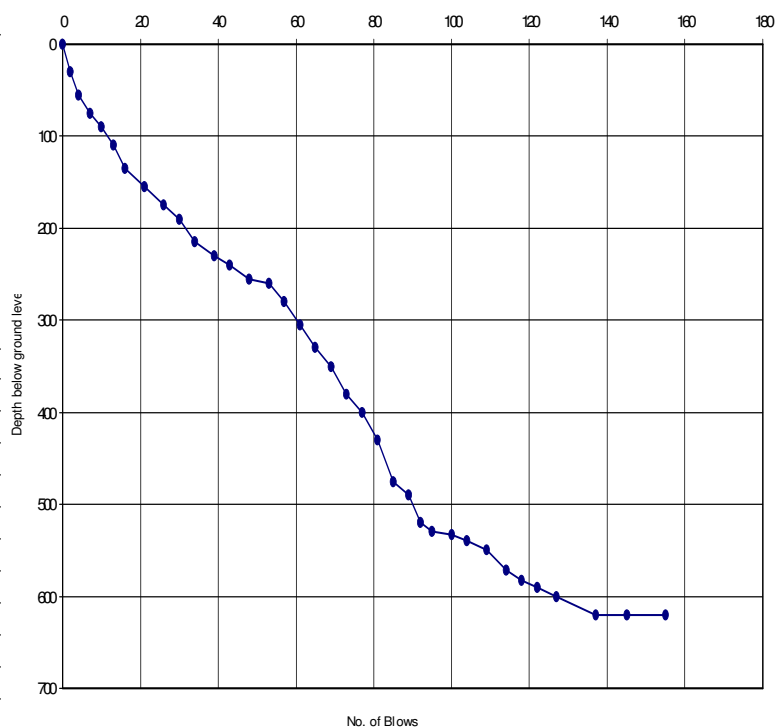
Location No.	DCP17
Project No.	PC176880
Test No.	1
Test Date	24/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
2	2	1	40	30
2	4	1	65	55
3	7	1	85	75
3	10	1	100	90
3	13	1	120	110
3	16	1	145	135
5	21	1	165	155
5	26	1	185	175
4	30	1	200	190
4	34	1	225	215
5	39	1	240	230
4	43	1	250	240
5	48	1	265	255
5	53	1	270	260
4	57	1	290	280
4	61	1	315	305
4	65	1	340	330
4	69	1	360	350
4	73	1	390	380
4	77	1	410	400

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	81	1	440	430
4	85	1	485	475
4	89	1	500	490
3	92	1	530	520
3	95	1	540	530
5	100	1	543	533
4	104	1	550	540
5	109	1	560	550
5	114	1	582	572
4	118	1	593	583
4	122	1	600	590
5	127	1	610	600
10	137	1	630	620
8	145	1	630	620
10	155	1	630	620

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10

[illegible]

Printed: 08/12/2017

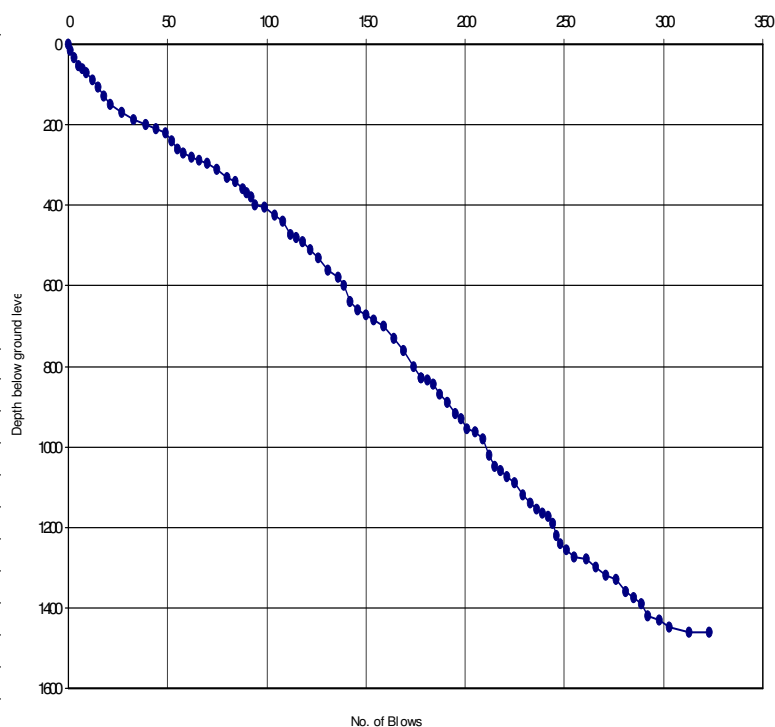
Location No.	DCP18
Project No.	PC176880
Test No.	1
Test Date	24/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	229	2	300	1120
4	233	2	320	1140
3	236	2	335	1155
3	239	2	345	1165
3	242	2	352	1172
2	244	2	370	1190
2	246	2	400	1220
2	248	2	420	1240
3	251	2	435	1255
4	255	2	453	1273
6	261	2	460	1280
5	266	2	480	1300
5	271	2	500	1320
5	276	2	510	1330
5	281	2	541	1361
4	285	2	556	1376
4	289	2	570	1390
3	292	2	600	1420
6	298	2	610	1430
5	303	2	628	1448
10	313	2	640	1460

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
10	323	2	640	1460

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10
2	10

[illegible]

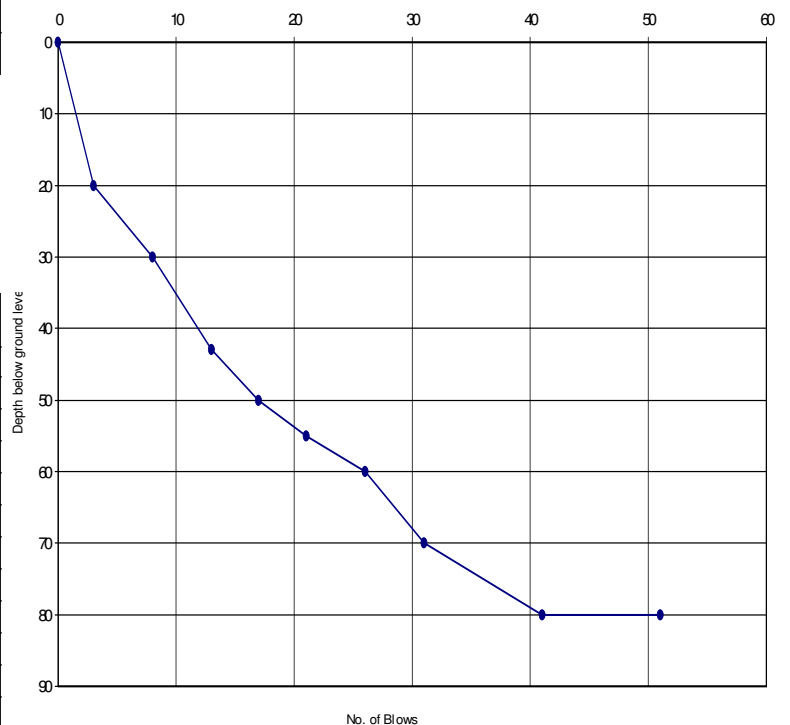
Printed: 08/12/2017

Location No.	DCP19
Project No.	PC176880
Test No.	1
Test Date	24/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
3	3	1	30	20
5	8	1	40	30
5	13	1	53	43
4	17	1	60	50
4	21	1	65	55
5	26	1	70	60
5	31	1	80	70
10	41	1	90	80
10	51	1	90	80

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10

[illegible]

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project	COED DARC
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Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP20

Project No. PC176880

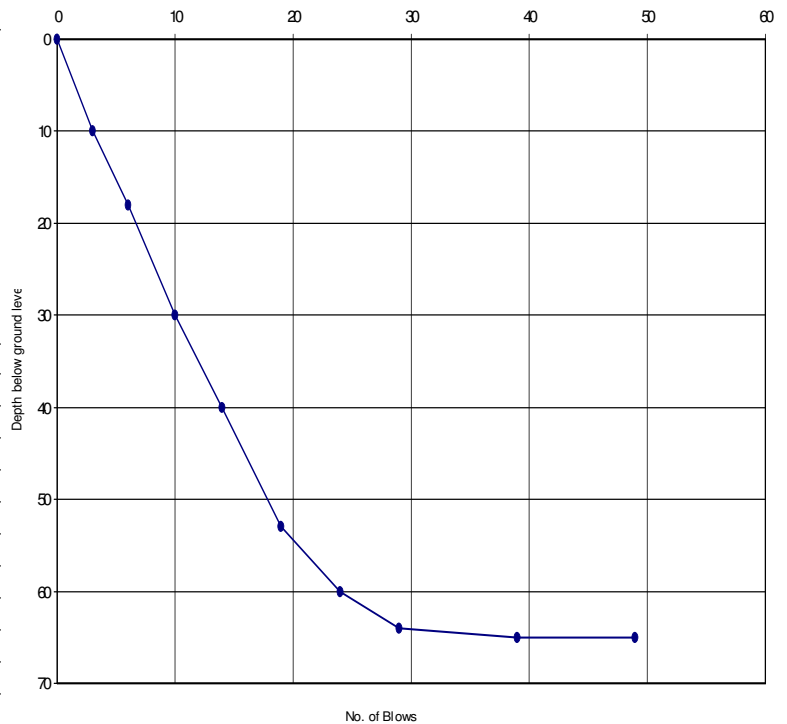
Test No. 1

Test Date 20/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
3	3	1	20	10
3	6	1	28	18
4	10	1	40	30
4	14	1	50	40
5	19	1	63	53
5	24	1	70	60
5	29	1	74	64
10	39	1	75	65
10	49	1	75	65

Test Started at	0.00	m
Operator	SI	
Checked by		

Rod No.	Zero Reading (mm)
1	10

[illegible]

Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

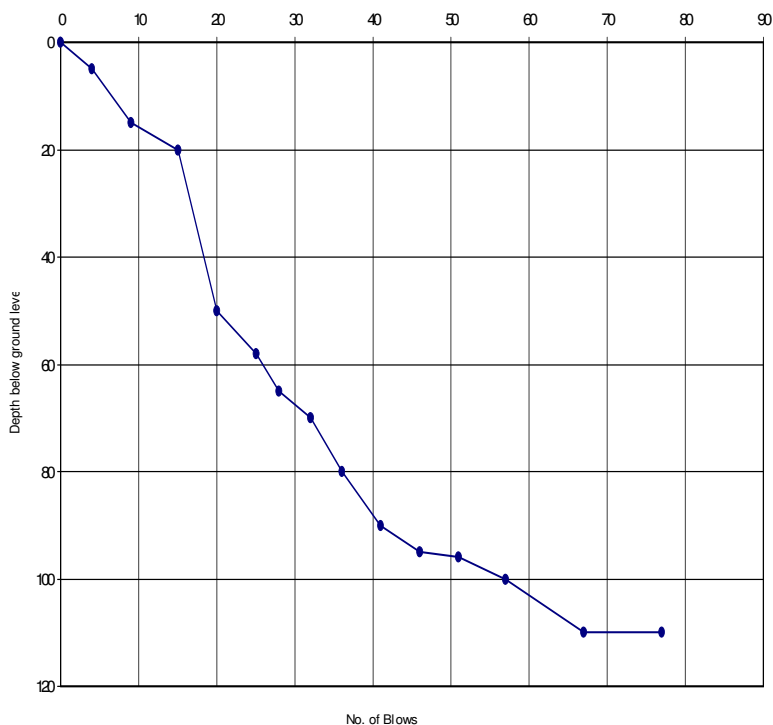
Location No. DCP21
Project No. PC176880
Test No. 1
Test Date 24/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
4	4	1	15	5
5	9	1	25	15
6	15	1	30	20
5	20	1	60	50
5	25	1	68	58
3	28	1	75	65
4	32	1	80	70
4	36	1	90	80
5	41	1	100	90
5	46	1	105	95
5	51	1	106	96
6	57	1	110	100
10	67	1	120	110
10	77	1	120	110

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	20	0	15	1	222.8
20	50	15	20	6	45.4
50	70	20	32	2	176.0
70	95	32	46	2	163.6
95	110	46	67	1	431.0



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP22

Project No. PC176880

Test No. 1

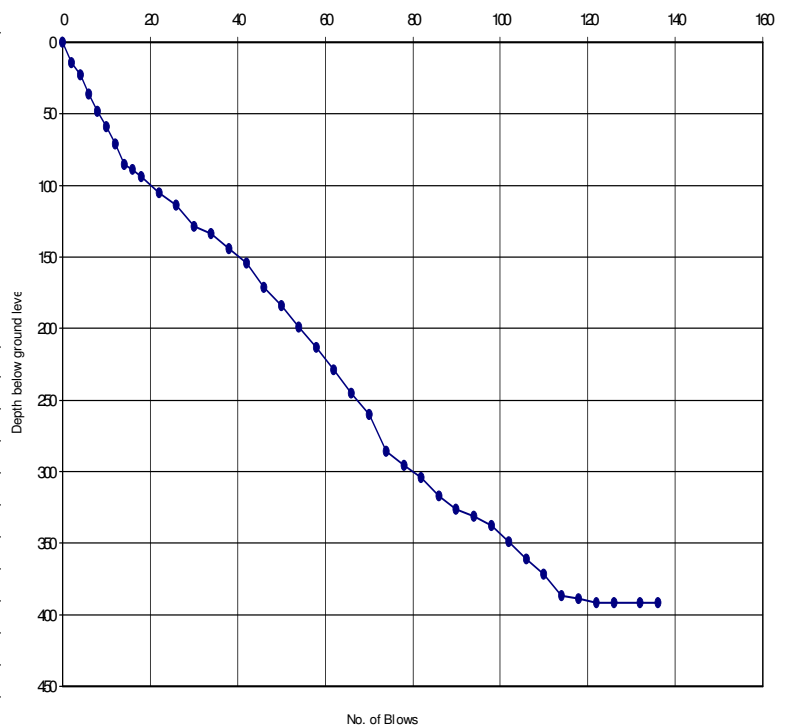
Test Date 24/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	11	0	4	66	1	256	245
2	2	1	25	14	4	70	1	271	260
2	4	1	34	23	4	74	1	297	286
2	6	1	47	36	4	78	1	307	296
2	8	1	59	48	4	82	1	315	304
2	10	1	70	59	4	86	1	328	317
2	12	1	82	71	4	90	1	337	326
2	14	1	96	85	4	94	1	342	331
2	16	1	100	89	4	98	1	349	338
2	18	1	105	94	4	102	1	360	349
4	22	1	116	105	4	106	1	372	361
4	26	1	125	114	4	110	1	383	372
4	30	1	140	129	4	114	1	398	387
4	34	1	145	134	4	118	1	400	389
4	38	1	155	144	4	122	1	403	392
4	42	1	165	154	4	126	1	403	392
4	46	1	182	171	6	132	1	403	392
4	50	1	195	184	6	136	1	403	392
4	54	1	210	199					
4	58	1	224	213					
4	62	1	240	229					

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	11

Depth bgl (mm) Top	Base	Blows No. Top	Base	DCP mm/blow	CBR %
0	85	0	14	6	44.9
85	154	14	42	2	116.4
154	260	42	70	4	73.9
260	286	70	74	7	41.8
286	387	74	114	3	113.5
387	392	114	136	0	1445.9



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP23

Project No. PC176880

Test No. 1

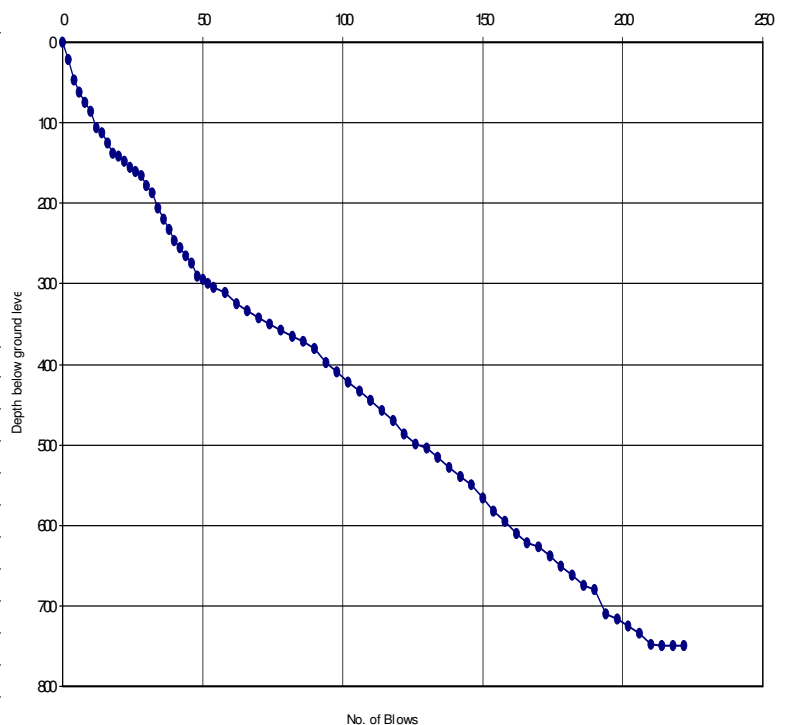
Test Date 25/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	0	0	2	42	1	255	255	4	114	1	457	457
2	2	1	21	21	2	44	1	265	265	4	118	1	470	470
2	4	1	47	47	2	46	1	274	274	4	122	1	486	486
2	6	1	62	62	2	48	1	291	291	4	126	1	499	499
2	8	1	75	75	2	50	1	295	295	4	130	1	504	504
2	10	1	86	86	2	52	1	299	299	4	134	1	516	516
2	12	1	106	106	2	54	1	304	304	4	138	1	528	528
2	14	1	113	113	4	58	1	311	311	4	142	1	540	540
2	16	1	125	125	4	62	1	325	325	4	146	1	550	550
2	18	1	138	138	4	66	1	334	334	4	150	1	566	566
2	20	1	142	142	4	70	1	342	342	4	154	1	582	582
2	22	1	148	148	4	74	1	350	350	4	158	1	595	595
2	24	1	155	155	4	78	1	358	358	4	162	1	610	610
2	26	1	160	160	4	82	1	365	365	4	166	1	622	622
2	28	1	166	166	4	86	1	372	372	4	170	1	627	627
2	30	1	178	178	4	90	1	380	380	4	174	1	638	638
2	32	1	187	187	4	94	1	398	398	4	178	1	651	651
2	34	1	206	206	4	98	1	410	410	4	182	1	662	662
2	36	1	220	220	4	102	1	422	422	4	186	1	675	675
2	38	1	232	232	4	106	1	434	434	4	190	1	680	680
2	40	1	246	246	4	110	1	445	445	4	194	1	710	710

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	0

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	138	0	18	8	35.1
138	166	18	28	3	101.7
166	291	28	48	6	43.5
291	304	48	54	2	133.4
304	380	54	90	2	137.1
380	680	90	190	3	94.6
680	710	190	194	8	35.9
710	750	194	222	1	207.1



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

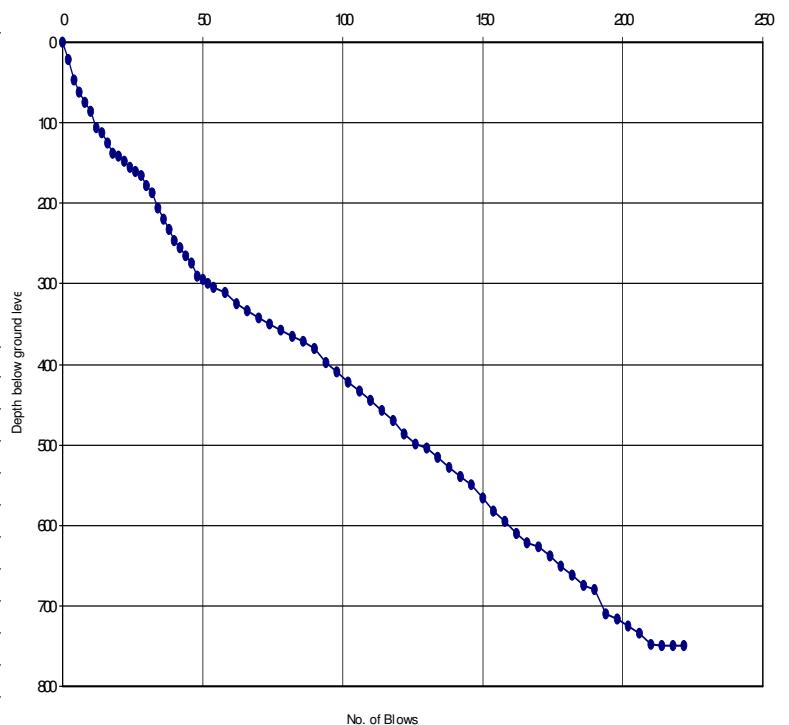
Location No. DCP23
Project No. PC176880
Test No. 1
Test Date 25/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	198	1	717	717
4	202	1	725	725
4	206	1	734	734
4	210	1	748	748
4	214	1	750	750
4	218	1	750	750
6	222	1	750	750

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	0

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	138	0	18	8	35.1
138	166	18	28	3	101.7
166	291	28	48	6	43.5
291	304	48	54	2	133.4
304	380	54	90	2	137.1
380	680	90	190	3	94.6
680	710	190	194	8	35.9
710	750	194	222	1	207.1



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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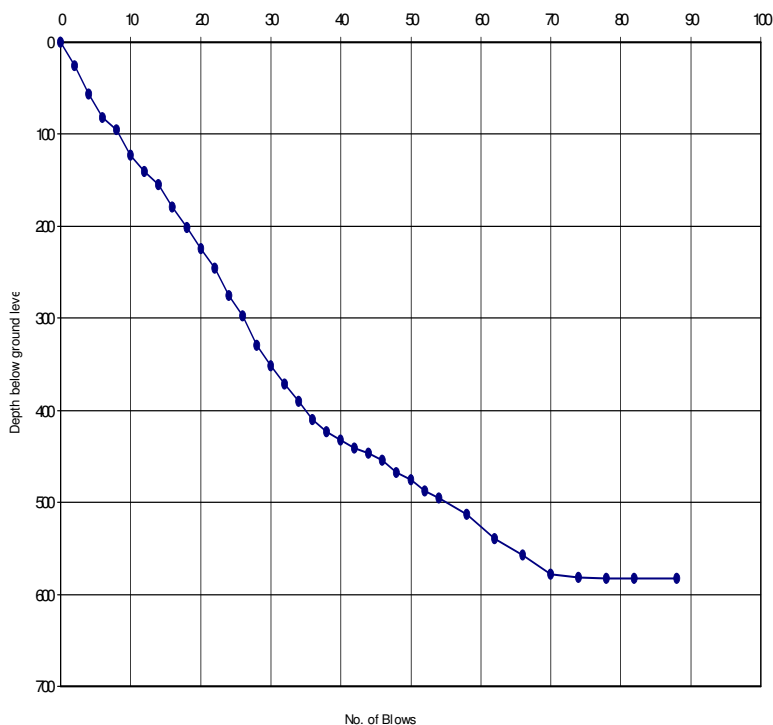
Location No.	DCP26
Project No.	PC176880
Test No.	1
Test Date	25/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	5	0
2	2	1	30	25
2	4	1	61	56
2	6	1	87	82
2	8	1	100	95
2	10	1	128	123
2	12	1	145	140
2	14	1	160	155
2	16	1	184	179
2	18	1	206	201
2	20	1	229	224
2	22	1	250	245
2	24	1	280	275
2	26	1	302	297
2	28	1	334	329
2	30	1	357	352
2	32	1	377	372
2	34	1	395	390
2	36	1	415	410
2	38	1	428	423
2	40	1	437	432

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
2	42	1	446	441
2	44	1	452	447
2	46	1	460	455
2	48	1	473	468
2	50	1	481	476
2	52	1	493	488
2	54	1	500	495
4	58	1	518	513
4	62	1	545	540
4	66	1	562	557
4	70	1	583	578
4	74	1	587	582
4	78	1	588	583
4	82	1	588	583
6	88	1	588	583

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	5

[illegible]

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP29
Project No. PC176880
Test No. 1
Test Date 03/10/2017

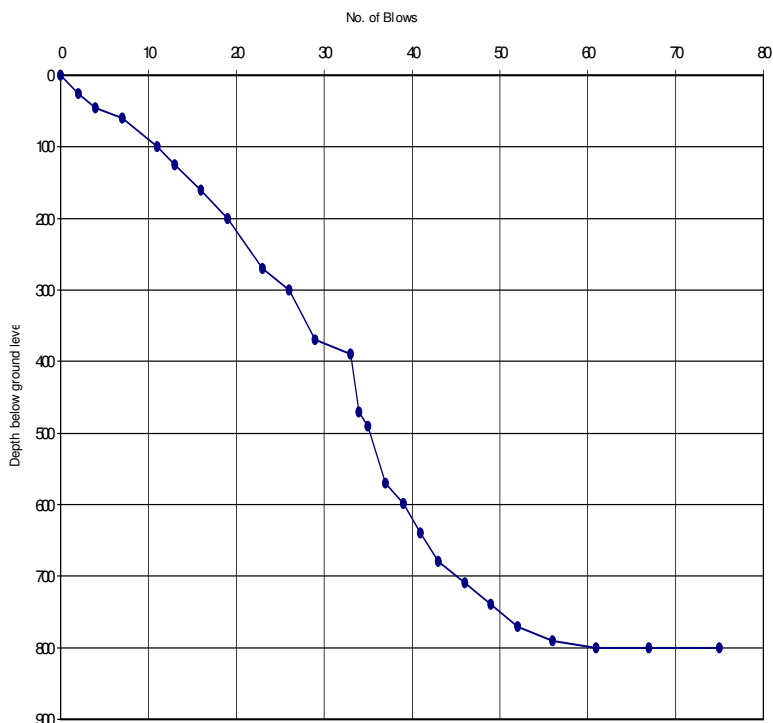
Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
2	2	1	35	25
2	4	1	55	45
3	7	1	70	60
4	11	1	110	100
2	13	1	135	125
3	16	1	170	160
3	19	1	210	200
4	23	1	280	270
3	26	1	310	300
3	29	1	380	370
4	33	1	400	390
1	34	1	480	470
1	35	1	500	490
2	37	1	580	570
2	39	1	608	598
2	41	1	650	640
2	43	1	690	680
3	46	1	720	710
3	49	1	750	740
3	52	1	780	770

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	56	1	800	790
5	61	1	810	800
6	67	1	811	801
8	75	1	811	801

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	45	0	4	11	23.4
45	60	4	7	5	55.1
60	160	7	16	11	23.7
160	300	16	26	14	18.6
300	370	26	29	23	10.8
370	390	29	33	5	55.1
390	680	33	43	29	8.6
680	770	43	52	10	26.5
770	801	52	61	3	81.7



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

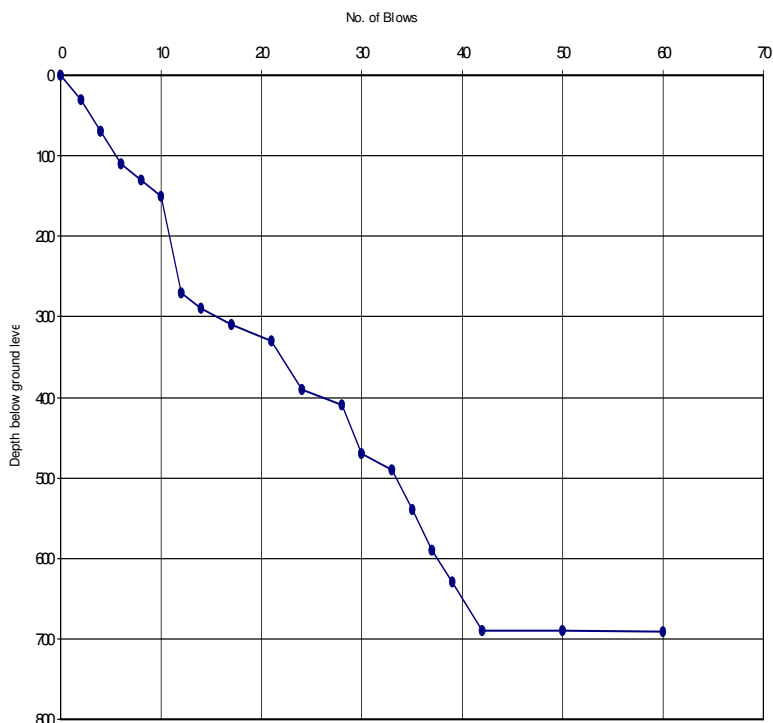
Location No. DCP29A
Project No. PC176880
Test No. 1
Test Date 03/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
2	2	1	40	30
2	4	1	80	70
2	6	1	120	110
2	8	1	140	130
2	10	1	160	150
2	12	1	280	270
2	14	1	300	290
3	17	1	320	310
4	21	1	340	330
3	24	1	400	390
4	28	1	420	410
2	30	1	480	470
3	33	1	500	490
2	35	1	550	540
2	37	1	600	590
2	39	1	640	630
3	42	1	700	690
8	50	1	700	690
10	60	1	701	691

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10

Depth bgl (mm) Top	Base	Blows No. Top	Base	DCP mm/blow	CBR %
0	150	0	10	15	17.3
150	270	10	12	60	4.0
270	330	12	21	7	40.7
330	390	21	24	20	12.7
390	410	24	28	5	55.1
410	470	28	30	30	8.3
470	490	30	33	7	40.7
490	690	33	42	22	11.4
690	691	42	60	0	6409.5



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06

Printed: 08/12/2017

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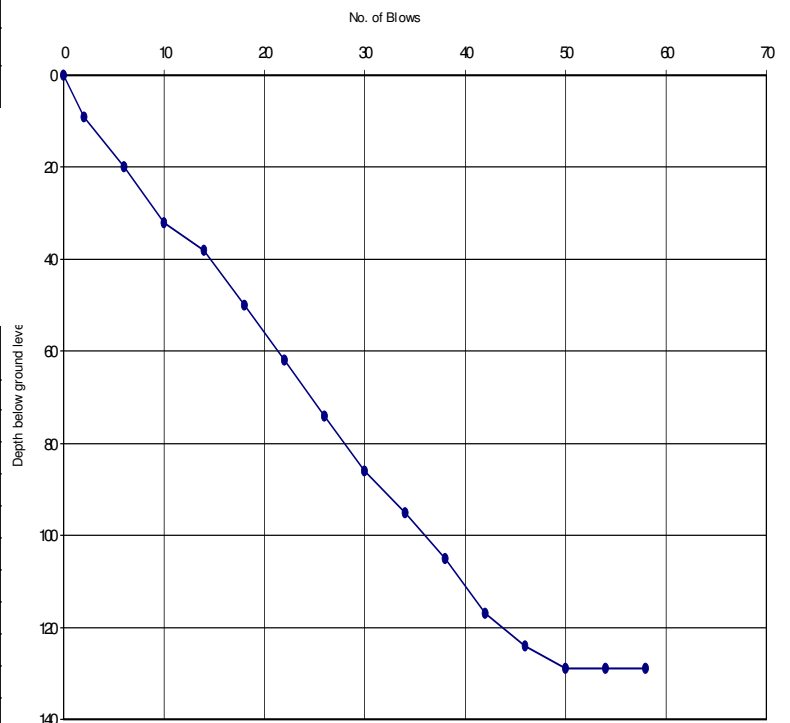


Location No.	DCP30
Project No.	PC176880
Test No.	1
Test Date	25/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	0	0
2	2	1	9	9
4	6	1	20	20
4	10	1	32	32
4	14	1	38	38
4	18	1	50	50
4	22	1	62	62
4	26	1	74	74
4	30	1	86	86
4	34	1	95	95
4	38	1	105	105
4	42	1	117	117
4	46	1	124	124
4	50	1	129	129
4	54	1	129	129
4	58	1	129	129

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	0

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

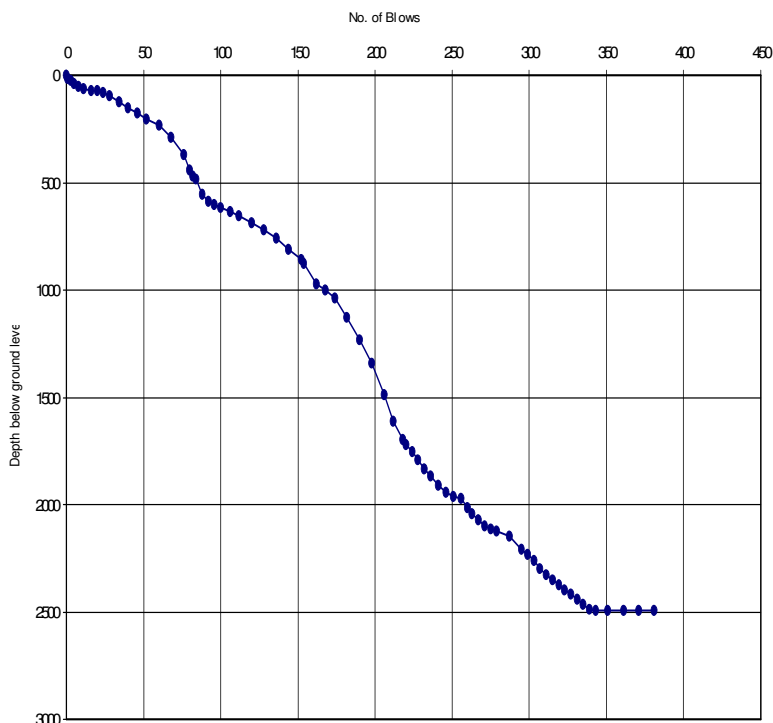
Location No. DCP32
Project No. PC176880
Test No. 1
Test Date 05/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	0	0	4	92	1	586	586	4	224	3	132	1755
1	1	1	15	15	4	96	1	602	602	4	228	3	167	1790
2	3	1	26	26	4	100	1	614	614	4	232	3	210	1833
2	5	1	40	40	6	106	1	635	635	4	236	3	245	1868
3	8	1	54	54	6	112	1	656	656	5	241	3	286	1909
3	11	1	60	60	8	120	1	687	687	5	246	3	322	1945
5	16	1	70	70	8	128	1	721	721	5	251	3	340	1963
4	20	1	73	73	8	136	1	760	760	5	256	3	350	1973
4	24	1	82	82	8	144	1	810	810	4	260	3	391	2014
4	28	1	94	94	8	152	1	860	860	3	263	3	420	2043
6	34	1	122	122	2	154	1	879	879	4	267	3	446	2069
6	40	1	150	150	8	162	2	147	970	4	271	3	476	2099
6	46	1	176	176	6	168	2	177	1000	4	275	3	491	2114
6	52	1	203	203	6	174	2	214	1037	4	279	3	502	2125
8	60	1	234	234	8	182	2	306	1129	8	287	3	522	2145
8	68	1	287	287	8	190	2	411	1234	8	295	3	586	2209
8	76	1	371	371	8	198	2	519	1342	4	299	3	610	2233
4	80	1	440	440	8	206	2	663	1486	4	303	3	640	2263
2	82	1	468	468	6	212	2	788	1611	4	307	3	676	2299
2	84	1	483	483	6	218	2	873	1696	4	311	3	705	2328
4	88	1	556	556	2	220	3	98	1721	4	315	3	730	2353

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	0
2	56
3	73
4	52

Depth bgl (mm)		Blows No.		DCP	CBR %
Top	Base	Top	Base	mm/blow	
0	60	0	11	5	50.3
60	82	11	24	2	173.2
82	234	24	60	4	65.9
234	371	60	76	9	31.2
371	586	76	92	13	19.4
586	687	92	120	4	77.8
687	860	120	152	5	50.7
860	970	152	162	11	23.9
970	1037	162	174	6	49.0
1037	1611	174	212	15	17.1
1611	1945	212	246	10	27.0
1945	1973	246	256	3	101.7
1973	2125	256	279	7	41.0
2125	2493	279	351	5	53.8



Remarks
CBR estimated using correlation in Highways Agency Interim Advice Note 73/06

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

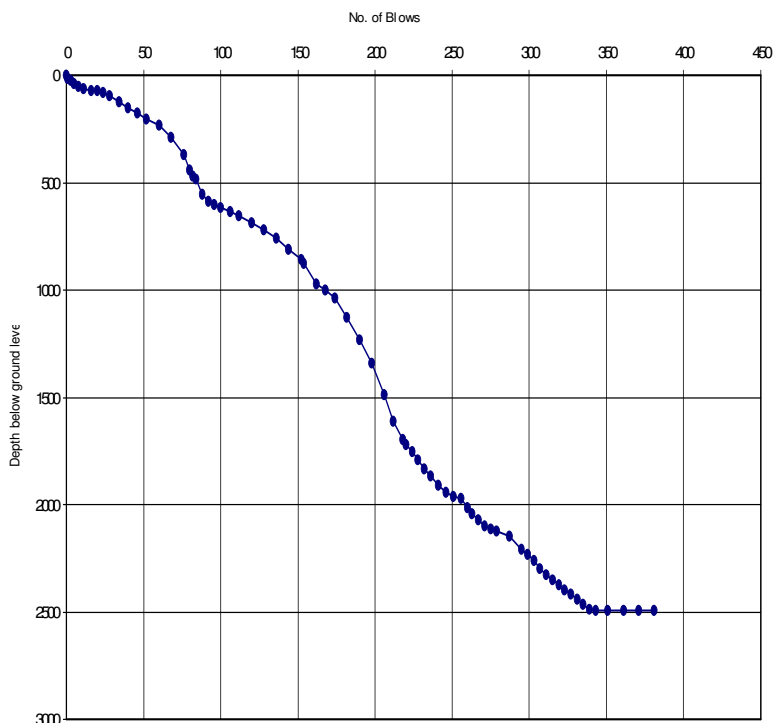
Location No. DCP32
Project No. PC176880
Test No. 1
Test Date 05/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	319	3	753	2376
4	323	3	773	2396
4	327	3	793	2416
4	331	3	820	2443
4	335	3	842	2465
4	339	3	863	2486
4	343	4	57	2491
8	351	4	59	2493
10	361	4	59	2493
10	371	4	59	2493
10	381	4	59	2493

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	0
2	56
3	73
4	52

Depth bgl (mm)		Blows No.		DCP	CBR %
Top	Base	Top	Base	mm/blow	
0	60	0	11	5	50.3
60	82	11	24	2	173.2
82	234	24	60	4	65.9
234	371	60	76	9	31.2
371	586	76	92	13	19.4
586	687	92	120	4	77.8
687	860	120	152	5	50.7
860	970	152	162	11	23.9
970	1037	162	174	6	49.0
1037	1611	174	212	15	17.1
1611	1945	212	246	10	27.0
1945	1973	246	256	3	101.7
1973	2125	256	279	7	41.0
2125	2493	279	351	5	53.8



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP34

Project No. PC176880

Test No. 1

Test Date 04/10/2017

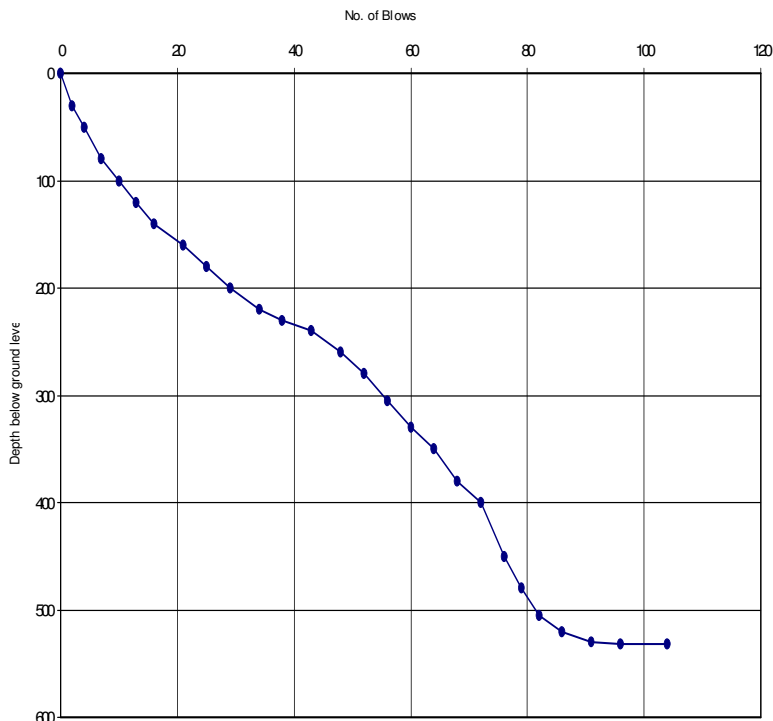
Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
2	2	1	40	30
2	4	1	60	50
3	7	1	90	80
3	10	1	110	100
3	13	1	130	120
3	16	1	150	140
5	21	1	170	160
4	25	1	190	180
4	29	1	210	200
5	34	1	230	220
4	38	1	240	230
5	43	1	250	240
5	48	1	270	260
4	52	1	290	280
4	56	1	315	305
4	60	1	340	330
4	64	1	360	350
4	68	1	390	380
4	72	1	410	400
4	76	1	460	450

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
3	79	1	490	480
3	82	1	515	505
4	86	1	530	520
5	91	1	540	530
5	96	1	542	532
8	104	1	542	532

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10

Depth bgl (mm)		Blows No.		DCP	CBR %
Top	Base	Top	Base	mm/blow	
0	50	0	4	13	20.9
50	100	4	10	8	32.1
100	140	10	16	7	40.7
140	220	10	34	2	118.4
220	240	34	43	2	129.9
240	280	43	52	4	62.4
280	400	52	72	6	45.4
400	505	72	82	11	25.2
505	530	82	91	3	102.6
530	532	91	104	0	2184.0



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP34A

Project No. PC176880

Test No. 1

Test Date 04/10/2017

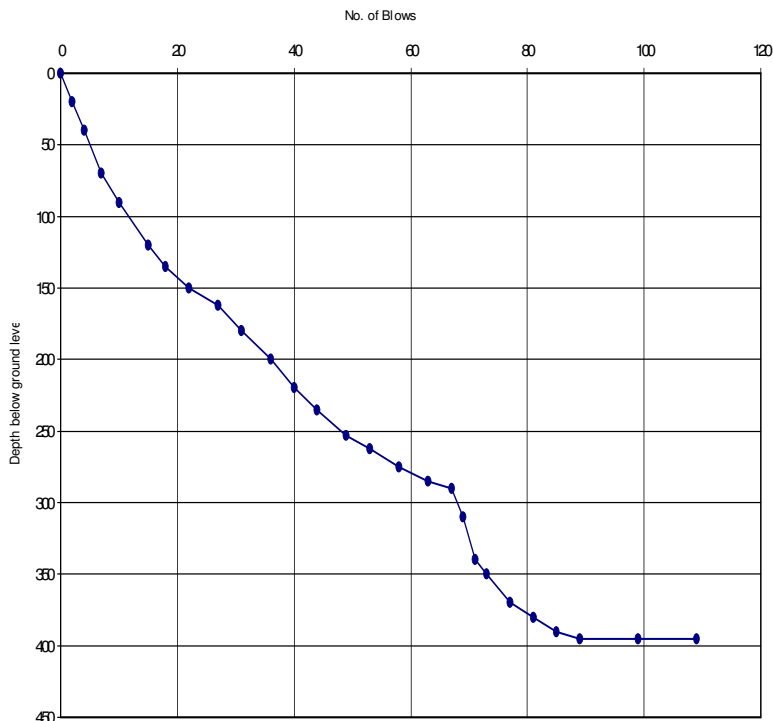
Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
2	2	1	30	20
2	4	1	50	40
3	7	1	80	70
3	10	1	100	90
5	15	1	130	120
3	18	1	145	135
4	22	1	160	150
5	27	1	172	162
4	31	1	190	180
5	36	1	210	200
4	40	1	230	220
4	44	1	245	235
5	49	1	263	253
4	53	1	272	262
5	58	1	285	275
5	63	1	295	285
4	67	1	300	290
2	69	1	320	310
2	71	1	350	340
2	73	1	360	350

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	77	1	380	370
4	81	1	390	380
4	85	1	400	390
4	89	1	405	395
10	99	1	405	395
10	109	1	405	395

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	70	0	7	10	26.5
70	135	7	18	6	46.2
135	162	18	27	3	94.6
162	253	27	49	4	67.3
253	290	49	67	2	141.0
290	340	67	71	13	20.9
340	370	71	77	5	55.1
370	395	77	89	2	139.0



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06

Printed: 08/12/2017

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

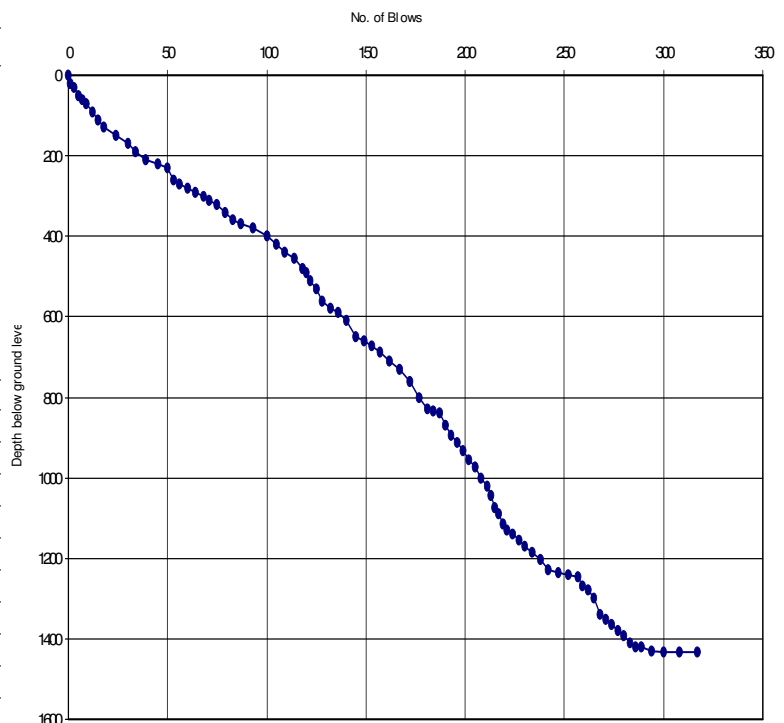
Location No. DCP35
Project No. PC176880
Test No. 1
Test Date 04/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0	4	75	1	330	320	5	162	1	720	710
1	1	1	30	20	4	79	1	350	340	5	167	1	740	730
2	3	1	40	30	4	83	1	370	360	5	172	1	770	760
2	5	1	60	50	4	87	1	380	370	5	177	1	810	800
2	7	1	70	60	6	93	1	390	380	4	181	1	840	830
2	9	1	80	70	7	100	1	410	400	3	184	2	15	835
3	12	1	100	90	5	105	1	430	420	3	187	2	20	840
3	15	1	120	110	4	109	1	450	440	3	190	2	50	870
3	18	1	140	130	5	114	1	465	455	3	193	2	75	895
6	24	1	160	150	4	118	1	490	480	3	196	2	93	913
6	30	1	180	170	2	120	1	500	490	3	199	2	112	932
4	34	1	200	190	2	122	1	520	510	3	202	2	135	955
5	39	1	220	210	3	125	1	540	530	3	205	2	153	973
6	45	1	230	220	3	128	1	570	560	3	208	2	180	1000
5	50	1	240	230	4	132	1	590	580	3	211	2	200	1020
3	53	1	270	260	4	136	1	598	588	2	213	2	225	1045
3	56	1	281	271	4	140	1	620	610	2	215	2	253	1073
4	60	1	290	280	5	145	1	660	650	2	217	2	270	1090
4	64	1	300	290	4	149	1	670	660	2	219	2	294	1114
4	68	1	310	300	4	153	1	683	673	2	221	2	310	1130
3	71	1	320	310	4	157	1	698	688	3	224	2	320	1140

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10
2	10

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	130	0	18	7	37.4
130	260	18	53	4	75.4
260	400	53	100	3	95.3
400	480	100	118	4	62.4
480	650	118	145	6	43.2
650	760	145	172	4	68.4
760	830	172	181	8	34.5
830	840	181	187	2	176.0
840	1130	187	221	9	31.3
1130	1228	221	242	5	59.3
1228	1245	242	257	1	264.6
1245	1340	257	268	9	30.9
1340	1420	268	286	4	62.4
1420	1433	286	317	0	756.7



Remarks
CBR estimated using correlation in Highways Agency Interim Advice Note 73/06

Printed: 08/12/2017

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP35

Project No. PC176880

Test No. 1

Test Date 04/10/2017

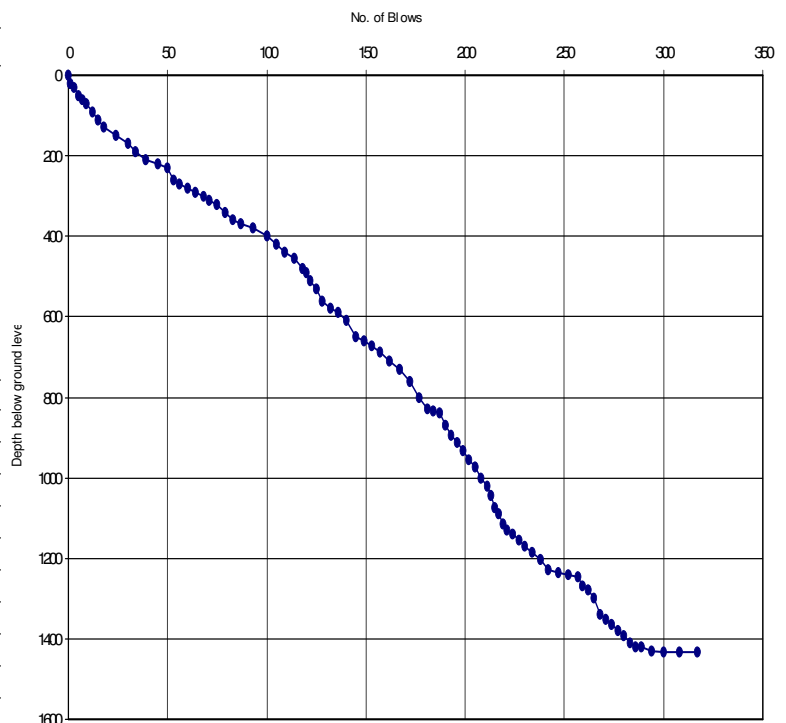
Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
3	227	2	335	1155
3	230	2	350	1170
4	234	2	365	1185
4	238	2	383	1203
4	242	2	408	1228
5	247	2	415	1235
5	252	2	420	1240
5	257	2	425	1245
2	259	2	450	1270
3	262	2	460	1280
3	265	2	480	1300
3	268	2	520	1340
3	271	2	533	1353
3	274	2	544	1364
3	277	2	560	1380
3	280	2	572	1392
3	283	2	590	1410
3	286	2	600	1420
3	289	2	600	1420
5	294	2	610	1430
6	300	2	612	1432

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
8	308	2	613	1433
9	317	2	613	1433

Test Started at	0.00	m
Operator	SI	
Checked by		

Rod No.	Zero Reading (mm)
1	10
2	10

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	130	0	18	7	37.4
130	260	18	53	4	75.4
260	400	53	100	3	95.3
400	480	100	118	4	62.4
480	650	118	145	6	43.2
650	760	145	172	4	68.4
760	830	172	181	8	34.5
830	840	181	187	2	176.0
840	1130	187	221	9	31.3
1130	1228	221	242	5	59.3
1228	1245	242	257	1	264.6
1245	1340	257	268	9	30.9
1340	1420	268	286	4	62.4
1420	1433	286	317	0	756.7



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06

Printed: 08/12/2017

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In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY
Client ST MODWEN DEVELOPMENTS LIMITED

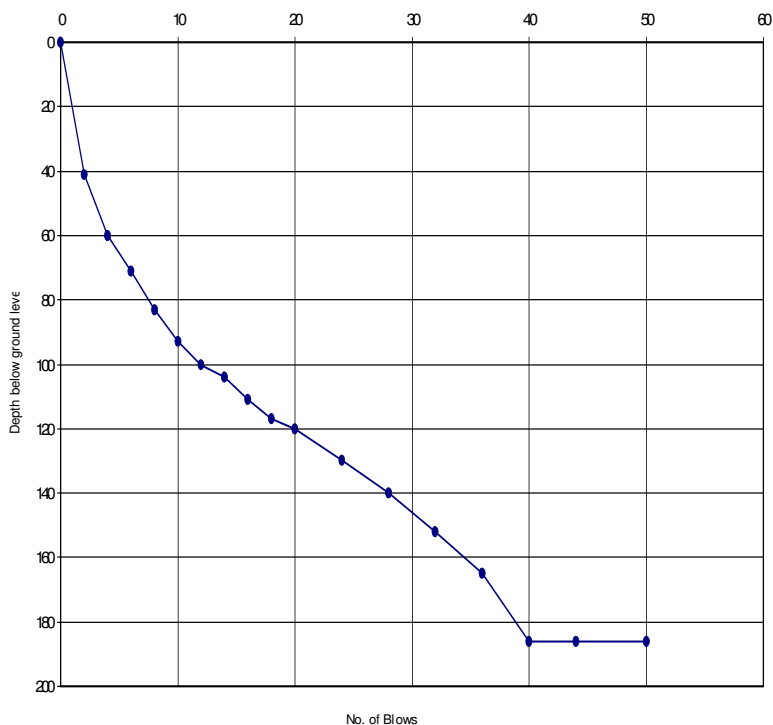
Location No. DCP36
Project No. PC176880
Test No. 1
Test Date 25/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	0	0
2	2	1	41	41
2	4	1	60	60
2	6	1	71	71
2	8	1	83	83
2	10	1	93	93
2	12	1	100	100
2	14	1	104	104
2	16	1	111	111
2	18	1	117	117
2	20	1	120	120
4	24	1	130	130
4	28	1	140	140
4	32	1	152	152
4	36	1	165	165
4	40	1	186	186
4	44	1	186	186
6	50	1	186	186

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	0

Depth bgl (mm) Top	Base	Blows No. Top	Base	DCP mm/blow	CBR %
0	60	0	4	15	17.3
60	120	4	20	4	74.7
120	165	20	36	3	101.2
165	186	36	40	5	52.3



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

GEOTECHNICS



In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP36A

Project No. PC176880

Test No. 2

Test Date 25/10/2017

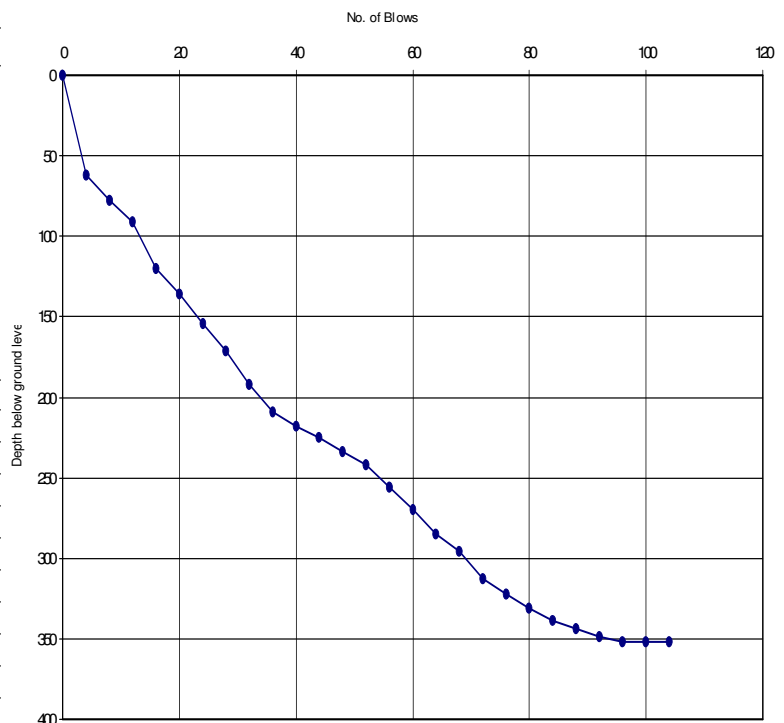
Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	1	0
4	4	1	63	62
4	8	1	79	78
4	12	1	92	91
4	16	1	121	120
4	20	1	137	136
4	24	1	155	154
4	28	1	172	171
4	32	1	193	192
4	36	1	210	209
4	40	1	219	218
4	44	1	226	225
4	48	1	235	234
4	52	1	243	242
4	56	1	257	256
4	60	1	271	270
4	64	1	286	285
4	68	1	297	296
4	72	1	314	313
4	76	1	323	322
4	80	1	332	331

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	84	1	340	339
4	88	1	345	344
4	92	1	350	349
4	96	1	353	352
4	100	1	353	352
6	104	1	353	352

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	1

Depth bgl (mm)		Blows No.		DCP	CBR %
Top	Base	Top	Base	mm/blow	
0	62	0	4	16	16.7
62	91	4	12	4	77.4
91	209	12	36	5	56.1
209	242	36	52	2	140.5
242	296	52	68	3	83.5
296	352	68	96	2	145.1



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

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GEOTECHNICS

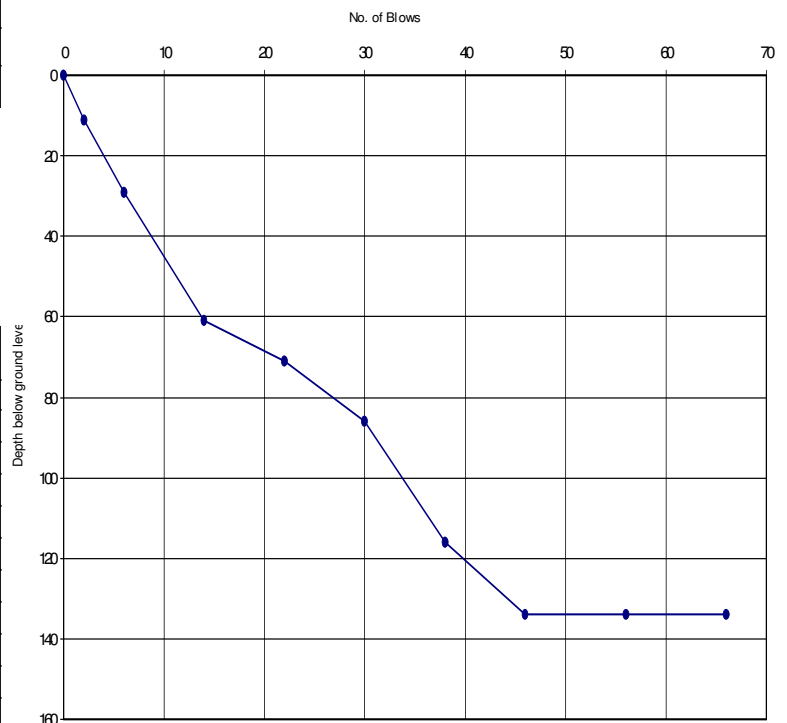


Location No.	DCP43
Project No.	PC176880
Test No.	1
Test Date	05/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	4	0
2	2	1	15	11
4	6	1	33	29
8	14	1	65	61
8	22	1	75	71
8	30	1	90	86
8	38	1	120	116
8	46	1	138	134
10	56	1	138	134
10	66	1	138	134

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	4

[illegible]

Printed: 08/12/2017

GEOTECHNICS

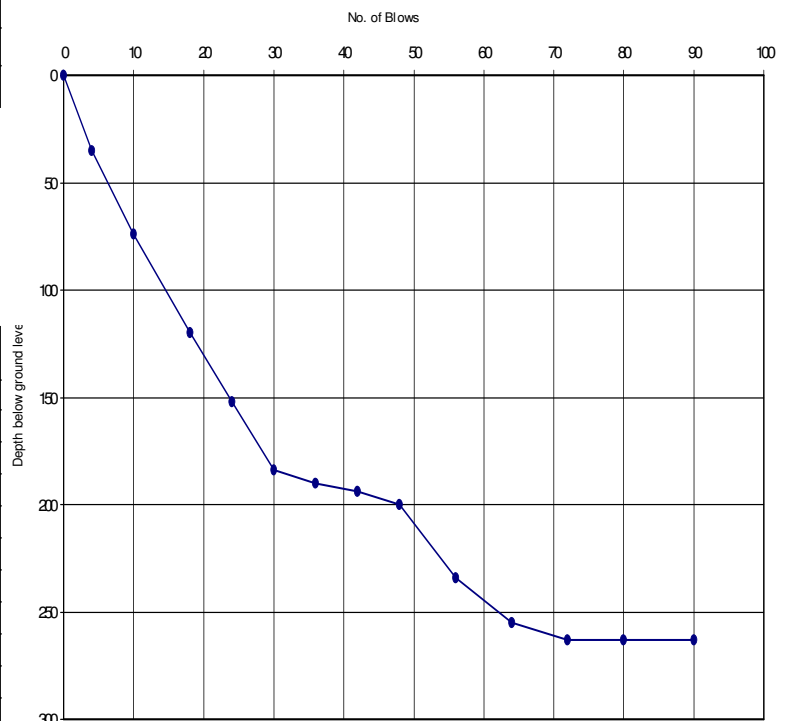


Location No.	DCP43A
Project No.	PC176880
Test No.	1
Test Date	05/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
4	4	1	45	35
6	10	1	84	74
8	18	1	130	120
6	24	1	162	152
6	30	1	194	184
6	36	1	200	190
6	42	1	204	194
6	48	1	210	200
8	56	1	244	234
8	64	1	265	255
8	72	1	273	263
8	80	1	273	263
10	90	1	273	263

Test Started at	0.00 m
Operator	SI
Checked by	

Rod No.	Zero Reading (mm)
1	10

[illegible]

Printed: 08/12/2017

GEOTECHNICS

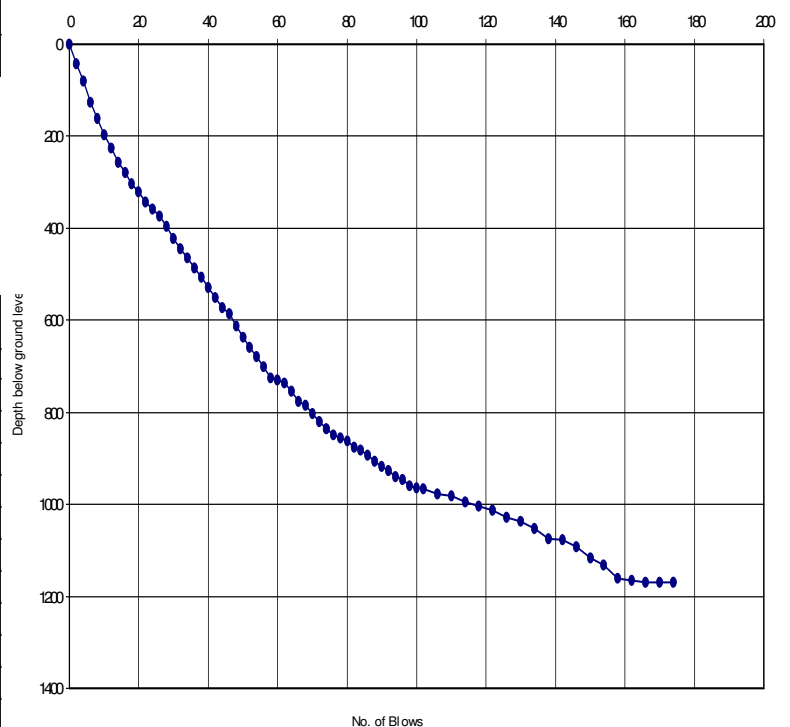


Location No.	DCP46
Project No.	PC176880
Test No.	1
Test Date	25/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	146	2	280	1092
4	150	2	304	1116
4	154	2	320	1132
4	158	2	350	1162
4	162	2	354	1166
4	166	2	358	1170
4	170	2	359	1171
4	174	2	359	1171

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	20
2	25

[illegible]

Printed: 08/12/2017

GEOTECHNICS

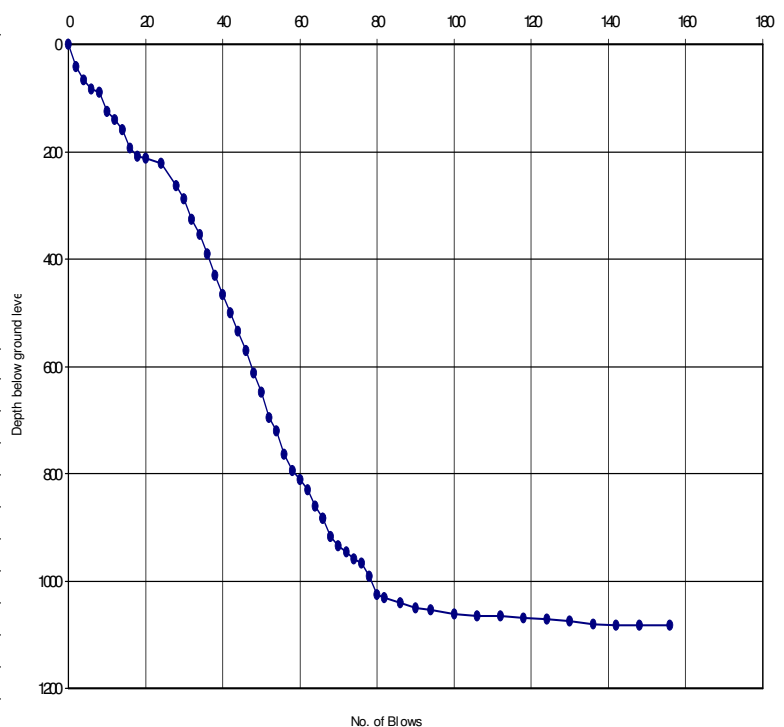


Location No.	DCP47
Project No.	PC176880
Test No.	1
Test Date	26/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	0	0	2	46	1	570	570	4	90	2	210	1051
2	2	1	42	42	2	48	1	612	612	4	94	2	213	1054
2	4	1	67	67	2	50	1	648	648	6	100	2	221	1062
2	6	1	84	84	2	52	1	695	695	6	106	2	224	1065
2	8	1	90	90	2	54	1	720	720	6	112	2	224	1065
2	10	1	125	125	2	56	1	764	764	6	118	2	228	1069
2	12	1	141	141	2	58	1	795	795	6	124	2	230	1071
2	14	1	160	160	2	60	1	811	811	6	130	2	233	1074
2	16	1	194	194	2	62	1	830	830	6	136	2	240	1081
2	18	1	209	209	2	64	1	860	860	6	142	2	242	1083
2	20	1	212	212	2	66	1	883	883	6	148	2	242	1083
4	24	1	222	222	0	66	2	42	883	8	156	2	242	1083
4	28	1	263	263	2	68	2	76	917					
2	30	1	289	289	2	70	2	93	934					
2	32	1	326	326	2	72	2	105	946					
2	34	1	355	355	2	74	2	118	959					
2	36	1	391	391	2	76	2	125	966					
2	38	1	430	430	2	78	2	150	991					
2	40	1	467	467	2	80	2	185	1026					
2	42	1	500	500	2	82	2	190	1031					
2	44	1	534	534	4	86	2	200	1041					

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	0
2	42

[illegible]

Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06 Refusal on cobble.

Printed: 08/12/2017

GEOTECHNICS

In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP48

Project No. PC176880

Test No. 1

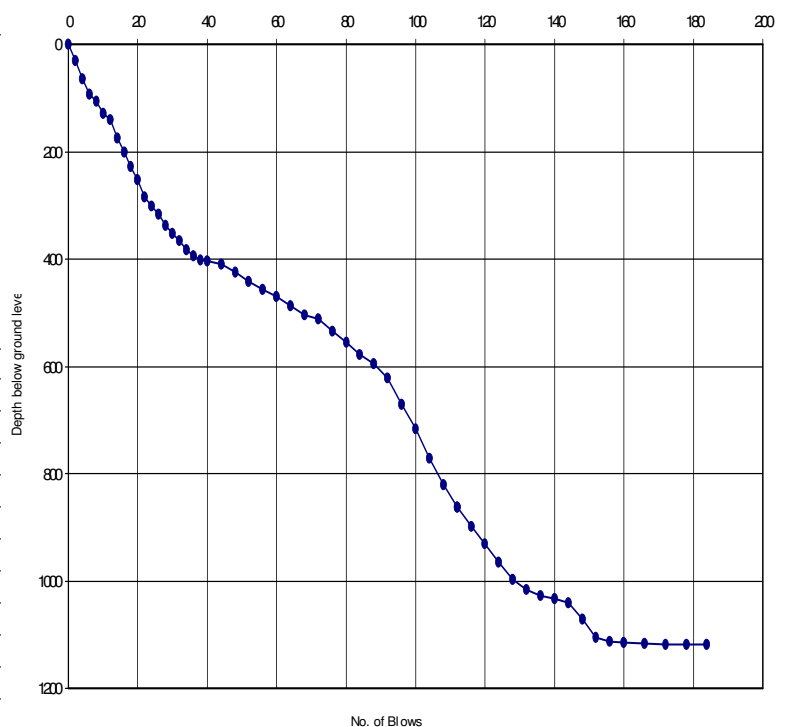
Test Date 26/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)	Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	8	0	4	44	1	418	410	4	124	2	155	965
2	2	1	39	31	4	48	1	433	425	4	128	2	187	997
2	4	1	72	64	4	52	1	450	442	4	132	2	206	1016
2	6	1	100	92	4	56	1	465	457	4	136	2	218	1028
2	8	1	115	107	4	60	1	478	470	4	140	2	224	1034
2	10	1	137	129	4	64	1	495	487	4	144	2	230	1040
2	12	1	148	140	4	68	1	512	504	4	148	2	261	1071
2	14	1	182	174	4	72	1	520	512	4	152	2	295	1105
2	16	1	208	200	4	76	1	543	535	4	156	2	302	1112
2	18	1	235	227	4	80	1	564	556	4	160	2	305	1115
2	20	1	260	252	4	84	1	587	579	6	166	2	307	1117
2	22	1	292	284	4	88	1	604	596	6	172	2	308	1118
2	24	1	310	302	4	92	1	630	622	6	178	2	308	1118
2	26	1	325	317	4	96	1	680	672	6	184	2	308	1118
2	28	1	345	337	4	100	1	725	717					
2	30	1	361	353	4	104	1	780	772					
2	32	1	374	366	4	108	1	828	820					
2	34	1	391	383	4	112	1	870	862					
2	36	1	402	394	0	112	2	52	862					
2	38	1	410	402	4	116	2	89	899					
2	40	1	412	404	4	120	2	120	930					

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	8
2	52

Depth bgl (mm) Top	Base	Blows No. Top	Base	DCP mm/blow	CBR %
0	404	0	40	10	26.2
404	622	40	92	4	66.4
622	1034	92	140	9	31.1
1034	1105	140	152	6	46.1
1105	1118	172	166	1	326.6



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

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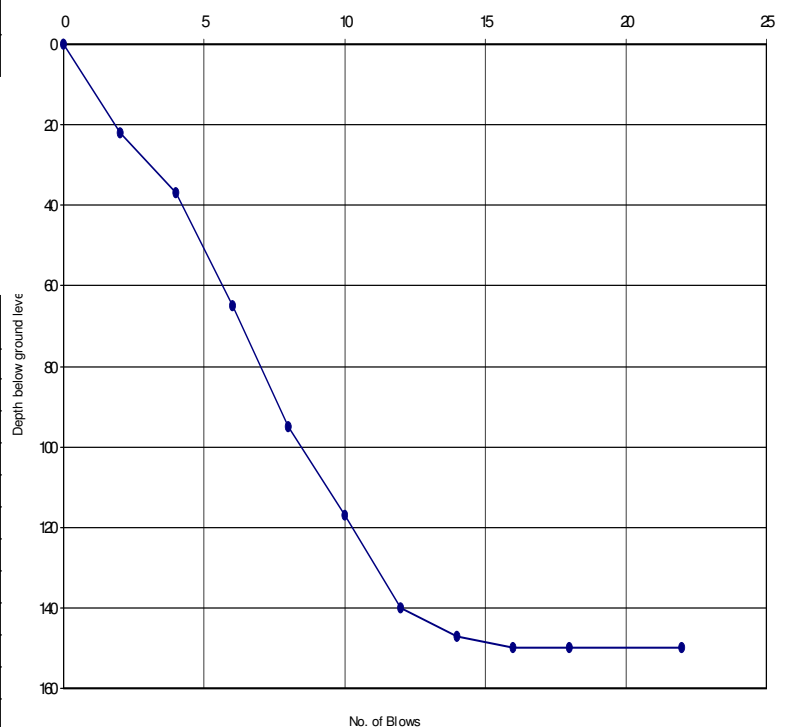


Location No.	DCP49
Project No.	PC176880
Test No.	1
Test Date	26/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	5	0
2	2	1	27	22
2	4	1	42	37
2	6	1	70	65
2	8	1	100	95
2	10	1	122	117
2	12	1	145	140
2	14	1	152	147
2	16	1	155	150
2	18	1	155	150
4	22	1	155	150

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	5

[illegible]

Printed: 08/12/2017

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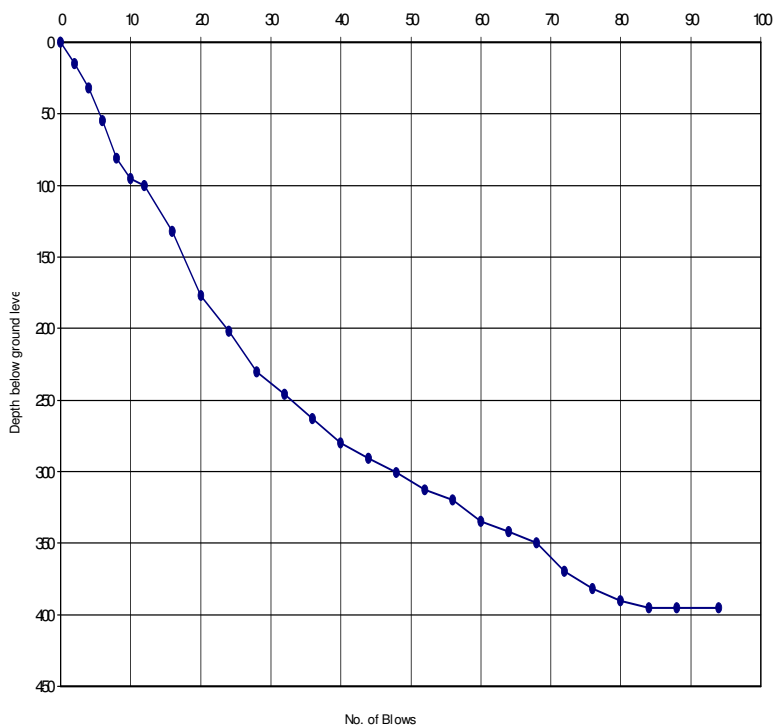
Location No.	DCP49A
Project No.	PC176880
Test No.	2
Test Date	26/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	10	0
2	2	1	25	15
2	4	1	42	32
2	6	1	65	55
2	8	1	91	81
2	10	1	105	95
2	12	1	110	100
4	16	1	142	132
4	20	1	187	177
4	24	1	212	202
4	28	1	240	230
4	32	1	256	246
4	36	1	273	263
4	40	1	290	280
4	44	1	301	291
4	48	1	311	301
4	52	1	323	313
4	56	1	330	320
4	60	1	345	335
4	64	1	352	342
4	68	1	360	350

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	72	1	380	370
4	76	1	392	382
4	80	1	400	390
4	84	1	405	395
4	88	1	405	395
6	94	1	405	395

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	10

[illegible]

Printed: 08/12/2017

In Situ Testing - Dynamic Cone Penetration Test

Project COED DARCY

Client ST MODWEN DEVELOPMENTS LIMITED

Location No. DCP51

Project No. PC176880

Test No. 1

Test Date 25/10/2017

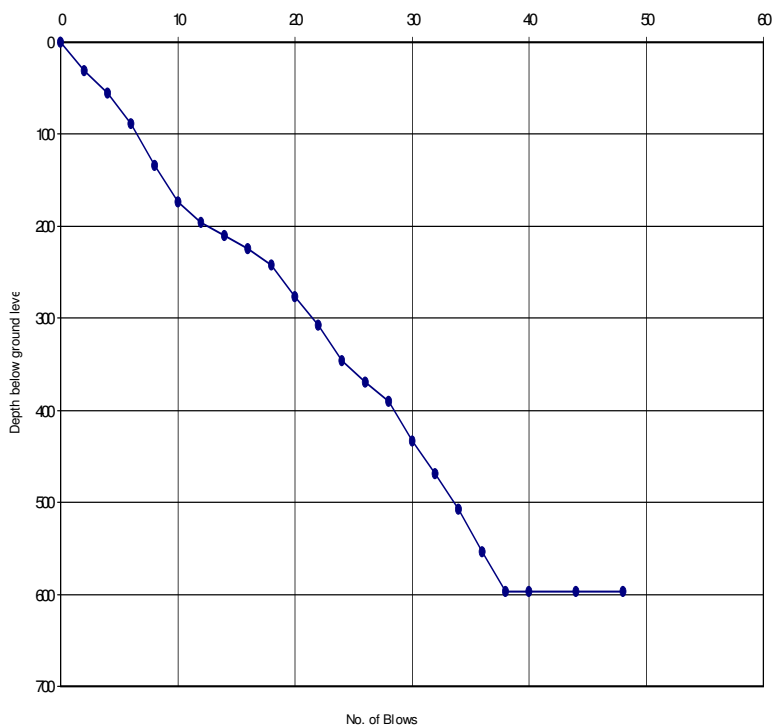
Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	6	0
2	2	1	37	31
2	4	1	61	55
2	6	1	95	89
2	8	1	140	134
2	10	1	180	174
2	12	1	202	196
2	14	1	216	210
2	16	1	230	224
2	18	1	248	242
2	20	1	282	276
2	22	1	313	307
2	24	1	352	346
2	26	1	375	369
2	28	1	396	390
2	30	1	439	433
2	32	1	475	469
2	34	1	514	508
2	36	1	560	554
2	38	1	603	597
2	40	1	603	597

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
4	44	1	603	597
4	48	1	603	597

Test Started at	0.00	m
Operator	AJS	
Checked by		

Rod No.	Zero Reading (mm)
1	6

Depth bgl (mm)		Blows No.		DCP mm/blow	CBR %
Top	Base	Top	Base		
0	89	0	6	15	17.5
89	196	6	12	18	14.4
196	242	12	18	8	35.1
242	346	18	24	17	14.8
346	390	24	28	11	23.9
390	597	28	38	21	12.3



Remarks

CBR estimated using correlation in Highways Agency Interim Advice Note 73/06Refusal on cobble.

Printed: 08/12/2017

GEOTECHNICS

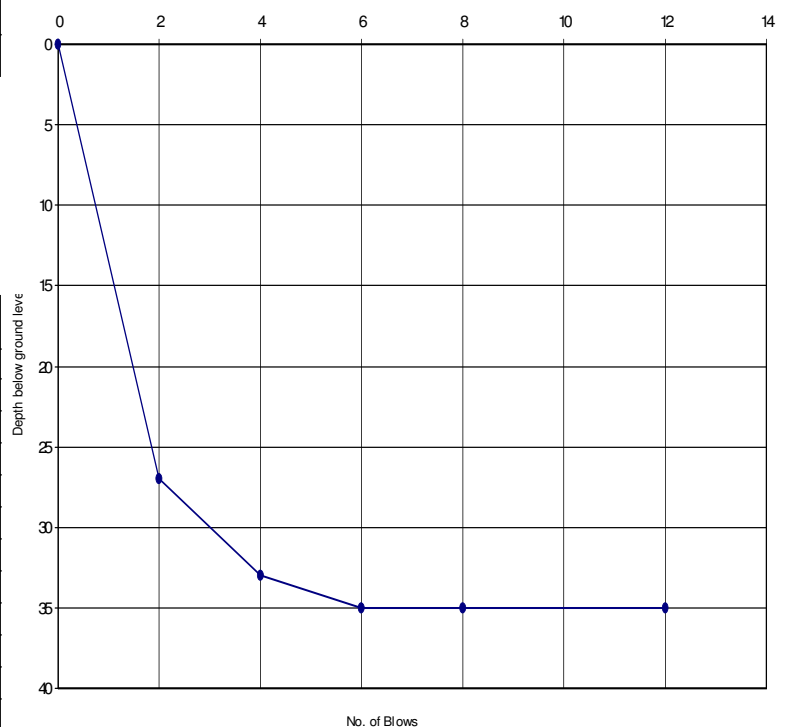


Location No.	DCP53
Project No.	PC176880
Test No.	1
Test Date	23/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	5	0
2	2	1	32	27
2	4	1	38	33
2	6	1	40	35
2	8	1	40	35
4	12	1	40	35

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	5

[illegible]

Printed: 08/12/2017

GEOTECHNICS

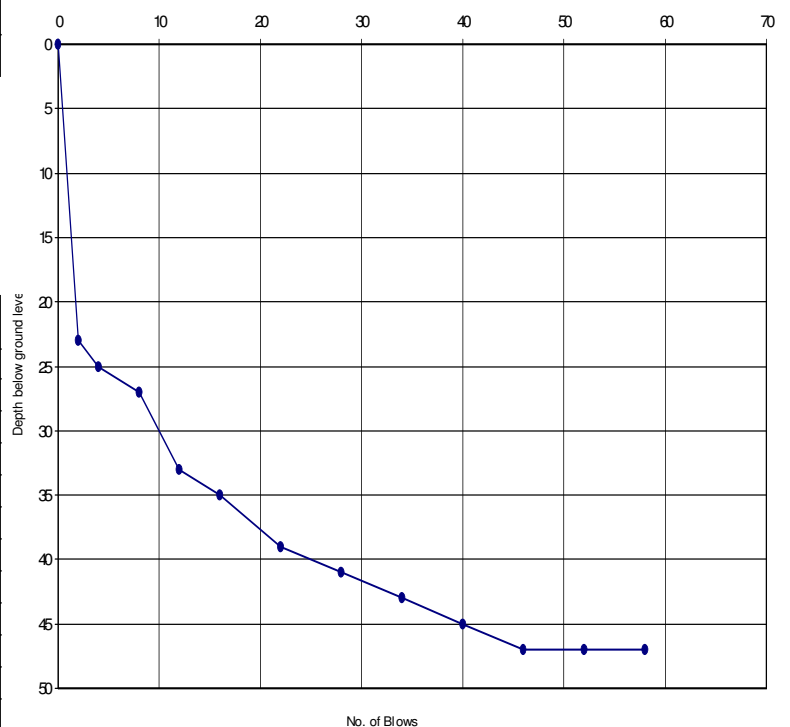


Location No.	DCP53A
Project No.	PC176880
Test No.	2
Test Date	23/10/2017

Blows No.	Blows Total	Rod No.	Reading (mm)	Corrected Depth (mm)
0	0	1	15	0
2	2	1	38	23
2	4	1	40	25
4	8	1	42	27
4	12	1	48	33
4	16	1	50	35
6	22	1	54	39
6	28	1	56	41
6	34	1	58	43
6	40	1	60	45
6	46	1	62	47
6	52	1	62	47
6	58	1	62	47

Test Started at	0.00 m
Operator	AJS
Checked by	

Rod No.	Zero Reading (mm)
1	15

[illegible]

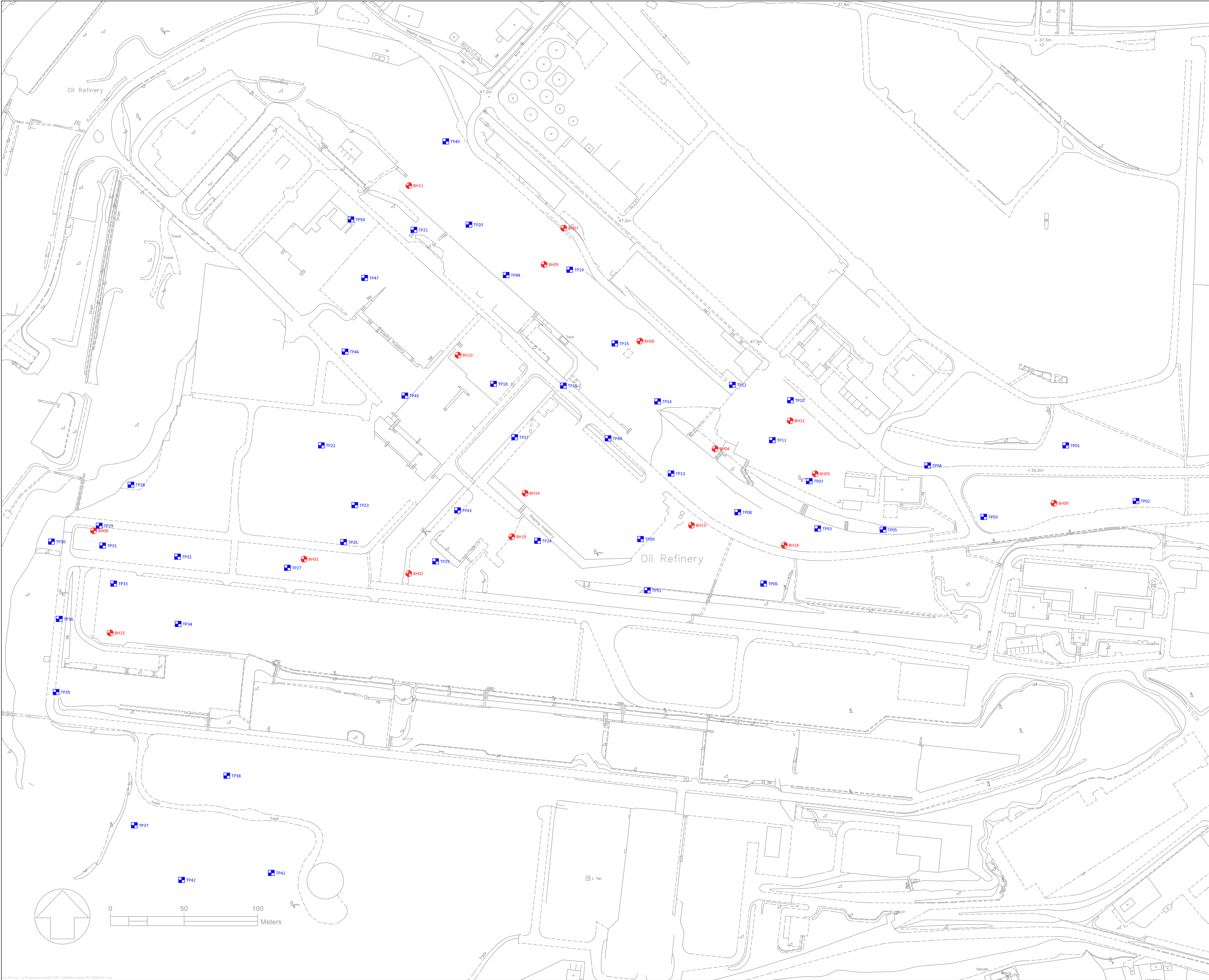
Printed: 08/12/2017

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APPENDIX 7

Exploratory Hole Location Plan



- Key
- Borehole
 - Trial Pit

Hole ID	Easting (mE)	Northing (mN)	Level (mOD)
TP01	271575.0	195866.2	48.56
TP02	271622.7	195828.5	51.34
TP03	271519.4	195817.8	53.79
TP04	271481.3	195852.6	49.53
TP05	271451.0	195809.0	51.82
TP06	271370.0	195772.5	57.24
TP07	271400.9	195842.0	49.27
TP08	271352.4	195820.9	52.24
TP09	271286.4	195802.7	56.80
TP10	271388.2	195896.9	47.79
TP11	271375.9	195869.8	48.37
TP12	271348.7	195907.4	49.42
TP13	271307.1	195847.2	51.60
TP14	271298.0	195896.1	51.36
TP15	271268.9	195935.5	50.83
TP16	271234.0	195906.8	54.48
TP17	271201.0	195871.8	56.68
TP18	271186.7	195908.0	56.12
TP19	271238.3	195985.5	51.32
TP20	271170.0	196016.2	50.95
TP21	271132.6	196012.6	54.58
TP22	271069.8	195866.3	66.62
TP23	271092.5	195825.7	67.20
TP24	271216.5	195801.5	58.01
TP25	271147.3	195787.5	64.10
TP26	271084.9	195800.7	65.53
TP27	271046.7	195783.2	66.91
TP28	270940.5	195839.6	66.34
TP29	270919.0	195811.7	65.93
TP30	270886.6	195801.0	66.48
TP31	270921.3	195798.3	66.13
TP32	270972.2	195790.7	66.23
TP33	270928.8	195772.4	66.45
TP34	270972.6	195745.0	66.39
TP35	270889.7	195686.9	67.86
TP36	270891.8	195748.5	66.90
TP37	270942.9	195608.4	74.25
TP38	271005.6	195642.0	73.21
TP41	271035.8	195576.0	76.29
TP42	270975.0	195571.3	75.70
TP43	271162.2	195822.1	61.49
TP44	271264.4	195871.0	54.21
TP45	271126.4	195900.0	60.12
TP46	271085.9	195929.9	60.33
TP47	271099.1	195980.0	59.06
TP48	271195.2	195981.9	51.59
TP49	271154.2	196072.6	50.14
TP50	271089.9	196019.6	59.18
TP51	271291.0	195767.9	61.49
TP53	271406.7	195809.8	51.27
BH01	271058.0	195789.0	66.85
BH02	271129.1	195779.2	65.95
BH03	271405.0	195847.0	50.97
BH04	271337.0	195864.0	52.72
BH05	271221.0	195989.0	53.82
BH06	271286.0	195937.0	52.46
BH07	271234.4	196013.7	48.14
BH08	270915.2	195808.3	65.86
BH09	271567.0	195827.0	54.31
BH10	271162.5	195927.5	60.38
BH11	271129.2	196042.6	51.65
BH12	271388.0	195883.0	49.76
BH13	271321.0	195812.0	56.67
BH14	271208.1	195833.8	58.00
BH15	270926.5	195738.9	67.06
BH18	271384.0	195798.5	52.87
BH19	271199.0	195804.2	59.59
BH20	270365.2	194749.2	37.77
BH21	270478.8	194796.4	43.58
BH22	270621.0	194855.6	29.77
BH23	270551.3	194770.4	43.10
BH24	270536.5	194885.3	35.70

GEOTECHNICS
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Engineer:

Atkins Ltd

Client:

St Modwen Properties

Project:

Coed Darcy

Drawing Title:

EXPLORATORY HOLE LOCATION PLAN

Scale: 1:1200@A1

Date:

December 2017

Project No:

PCI76880

File Name:

Geo-PCI76880-001(I)

APPENDIX 8

Laboratory Test Results - Geotechnical

Classification and Strength

Symbol	C - Clay (0 - containing organic matter) Plasticity	M - Silt L - Low I - Intermediate H - High V - Very High E - Extremely High
I _p	Plasticity Index	
%	% Retained on 425 µm sieve, shown under I _p value	
w _L	Liquid Limit	
w _p	Plastic Limit	
NP	Non-Plastic	
NAT	Sample tested in natural state	
w	Water Content	
p _d	Particle Density	
Test	Quick undrained triaxial tests	
	SS	Single stage - 102mm diameter.
	S3	Single stage - set of 3 38mm diameter.
	MS	Multistage - 102mm diameter.
	D	Drained Test
	HV	Hand Vane
	PP	Pocket Penetrometer (kg/cm ²)
	NST	Not suitable for test
γ _b	Bulk Density	
σ ₃	Triaxial Cell Pressure	
σ ₁ - σ ₃	Deviator Stress	
###	Excessive Strain	
c _u	Undrained Cohesion	
c	Cohesion Intercept	
φ	Angle of Shearing Resistance	
Linear Shrink	Linear Shrinkage	

Consolidation

m _v	Coefficient of Volume Compressibility
c _{v50}	Coefficient of Consolidation - Log t
c _{v90}	Coefficient of Consolidation - √t

Rock

UF	Unacceptable Failure
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Chemical Analysis

Acid Soluble	Total sulphate in specimen, expressed as SO ₃ %, value in brackets expressed as SO ₄ %
Water Soluble	Soluble sulphate in 2:1 water : soil extract, expressed as SO ₃ g/l, value in brackets expressed as SO ₄ g/l
In Water	Sulphate content of groundwater, expressed as SO ₃ g/l, value in brackets expressed as SO ₄ g/l
pH	pH value
Organic content	Organic content expressed as a percentage of dry weight
Chloride	Chloride Ion content expressed as a percentage of dry weight

MCV, Compaction, CBR

MCV	Moisture Condition Value at natural water content
MCC	Moisture Condition Calibration
CCV	Chalk Crushing Value

Compaction

Type	2.5	=	BS 2.5 kg Rammer
	4.5	=	BS 4.5 kg Rammer
	V	=	BS Vibrating Hammer

γ_b Bulk Density

γ_d Dry Density

CBR California Bearing Ratio

Type	2.5	=	Test on Specimen Recompacted using BS 2.5 kg Rammer
	4.5	=	As above but using BS 4.5 kg Rammer
	V	=	As above but using BS Vibrating Hammer
	M	=	Test on open drive mould specimen cut in field
	S	=	Soaked Specimen

Top CBR at top of mould

Bottom CBR at bottom of mould

ND None Detected

* In the Sample Description denotes a laboratory only description

Tests performed in accordance with
BS 1377: Parts 1-9:1990 incorporating amendments where appropriate and BS EN ISO 17892: Parts 1-2:2014; Part 3:2015; Part 4:2016; Part 5:2017

LABORATORY RESULTS - Classification and Strength

Project COED DARCY

Project No: PC176880

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m ³	σ_3 kN/m ²	$\sigma_1 - \sigma_3$ kN/m ²	c_u kN/m ²	c_{Avg} kN/m ²
TP01	0.00- 1.20 (0.00)	B	C76936	MADE GROUND: Dark brown sandy slightly clayey gravel					11.7						
TP02	0.00- 0.70 (0.00)	B	C76925	MADE GROUND: Dark brown sandy slightly clayey gravel					8.1						
TP03	0.00- 1.20 (0.00)	B	C76917	MADE GROUND: Greyish brown sandy slightly clayey gravel					9.4						
TP04	0.00- 0.90 (0.00)	B	C76940	MADE GROUND: Light grey silty sandy slightly clayey gravel					11.7						
TP06	0.00- 0.30 (0.00)	B	C76977	MADE GROUND: Greyish brown slightly sandy gravelly clay	CH	37 (12%)	60	23	34.3						
TP08	0.00- 0.80 (0.00)	B	C76919	MADE GROUND: Brown and dark brown slightly sandy clayey gravel					15.0						
TP08	0.80- 1.50 (0.80)	B	C76915	MADE GROUND: Brown and dark brown slightly sandy clayey gravel		(44%)	28	NP	19.5						
TP08	1.50- 2.20 (1.50)	B	C76980	MADE GROUND: Brown and dark brown slightly sandy clayey gravel					18.6						
TP08	2.20- 3.00 (2.20)	B	C76964	MADE GROUND: Reddish brown mottled brown slightly sandy gravelly clay	CI	17 (27%)	40	23	23.4						
TP09	0.00- 0.80 (0.00)	B	C76942	MADE GROUND: Brown and dark brown sandy slightly clayey gravel					15.5						
TP09	2.00- 4.00 (2.00)	B	C76974	MADE GROUND: Brown and dark brown sandy slightly clayey gravel		(41%)	29	NP	16.8						
TP10	0.00- 0.80 (0.00)	B	C76988	MADE GROUND: Brown slightly sandy clayey gravel					15.9						
TP13	0.00- 2.20 (0.00)	B	C76953	MADE GROUND: Brown and dark brown slightly sandy clayey gravel					14.1						
TP14	0.00- 1.00 (0.00)	B	C76912	MADE GROUND: Orangish brown slightly sandy gravelly clay		(36%)	28	NP	17.6						
Remarks															
					NST - Not suitable for Test Water Content Test/Bulk Density Test/Particle Density Test performed in accordance with BS EN ISO 17892-1:2014/BS EN ISO 17892-2:2014/BS EN ISO 17892-3:2015 All other Tests performed in accordance with BS1377: 1990										

LABORATORY RESULTS - Classification and Strength

Project COED DARCY

Project No: PC176880

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m ³	σ_3 kN/m ²	$\sigma_1 - \sigma_3$ kN/m ²	c_u kN/m ²	c_{Avg} kN/m ²
TP14	1.00- 2.50 (1.00)	B	C76931	MADE GROUND: Orangish brown slightly sandy gravelly clay		(24%)	21	NP	10.7						
TP14	2.50- 5.00 (2.50)	B	C76951	MADE GROUND: Dark brown slightly sandy gravelly clay		(28%)	22	NP	10.0						
TP16	0.00- 1.20 (0.00)	B	C80004	MADE GROUND: Brown slightly sandy gravelly clay		(45%)	25	NP	14.0						
TP16	1.20- 2.00 (1.20)	B	C80026	MADE GROUND: Dark grey slightly sandy gravelly clay		(41%)	21	NP	14.7						
TP17	0.00- 1.50 (0.00)	B	C76904	MADE GROUND: Brown and dark brown slightly sandy clayey gravel					12.6						
TP18	3.50- 5.00 (3.50)	B	C80022	MADE GROUND: Brown slightly sandy gravelly clay		(28%)	22	NP	10.4						
TP19	0.00- 0.50 (0.00)	B	C76900	MADE GROUND: Brown and greyish brown sandy very clayey gravel and slightly gravelly sandy clay					12.8						
TP20	0.00- 0.60 (0.00)	B	C76985	MADE GROUND: Brown and dark brown slightly sandy gravelly clay	CL	9 (30%)	26	17	11.8						
TP20	2.50- 3.50 (2.50)	B	C80032	MADE GROUND: Dark grey and dark brown slightly sandy gravelly clay	CL	10 (27%)	24	14	9.2						
TP21	0.70- 1.30 (0.70)	B	C76916	MADE GROUND: Brown and greyish brown slightly sandy gravelly clay		(30%)	26	NP	16.4						
TP22	0.00- 1.30 (0.00)	B	C80025	MADE GROUND: Dark brown sandy gravel					12.4						
TP24	0.00- 1.70 (0.00)	B	C76897	MADE GROUND: Dark brown and brown slightly gravelly sandy clay		(33%)	28	NP	18.5						
TP25	0.00- 1.50 (0.00)	B	C80040	MADE GROUND: Dark brown and brown sandy slightly clayey gravel					15.3						
TP26	0.00- 1.20 (0.00)	B	C76970	MADE GROUND: Dark brown slightly sandy gravelly clay		(39%)	29	NP	17.5						
Remarks  NST - Not suitable for Test Water Content Test/Bulk Density Test/Particle Density Test performed in accordance with BS EN ISO 17892-1:2014/BS EN ISO 17892-2:2014/BS EN ISO 17892-3:2015 All other Tests performed in accordance with BS1377: 1990															

LABORATORY RESULTS - Classification and Strength

Project COED DARCY

Project No: PC176880

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m ³	σ_3 kN/m ²	$\sigma_1 - \sigma_3$ kN/m ²	c_u kN/m ²	c_{Avg} kN/m ²
TP27	0.00- 0.90 (0.00)	B	C76932	MADE GROUND: Brown and greyish brown sandy slightly clayey gravel					15.3						
TP28	0.00- 0.80 (0.00)	B	C76989	MADE GROUND: Brown and greyish brown sandy gravelly clay		(55%)	27	NP	13.3						
TP29	1.00- 2.80 (1.00)	B	C76976	MADE GROUND: Dark brown sandy slightly clayey gravel					19.5						
TP31	0.00- 1.60 (0.00)	B	C76922	MADE GROUND: Brown and dark brown sandy slightly clayey gravel					13.8						
TP33	0.00- 1.30 (0.00)	B	C80035	MADE GROUND: Dark brown sandy gravel					10.5						
TP34	0.00- 1.00 (0.00)	B	C76941	MADE GROUND: Dark brown sandy slightly clayey gravel					8.7						
TP35	0.00- 1.20 (0.00)	B	C80036	MADE GROUND: Dark brown sandy slightly clayey gravel					10.4						
TP35	1.60- 2.60 (1.60)	B	C76961	MADE GROUND: Dark brown sandy slightly clayey gravel					12.2						
TP36	0.00- 1.10 (0.00)	B	C76962	MADE GROUND: Brown and dark brown slightly sandy clayey gravel					12.2						
TP36	3.00- 4.20 (3.00)	B	C76924	MADE GROUND: Brown and dark brown sandy slightly clayey gravel					14.2						
TP38	0.00- 0.30 (0.00)	B	C76982	MADE GROUND: Dark brown sandy slightly clayey gravel					17.6						
TP42	0.00- 0.20 (0.00)	B	C76986	MADE GROUND: Dark brown sandy slightly clayey gravel					9.6						
TP43	0.50- 1.50 (0.50)	B	C76907	MADE GROUND: Brown sandy clayey gravel					12.8						
TP44	0.00- 1.00 (0.00)	B	C80042	MADE GROUND: Brown and dark brown slightly sandy clayey gravel					18.7						
Remarks															
					NST - Not suitable for Test Water Content Test/Bulk Density Test/Particle Density Test performed in accordance with BS EN ISO 17892-1:2014/BS EN ISO 17892-2:2014/BS EN ISO 17892-3:2015 All other Tests performed in accordance with BS1377: 1990										

LABORATORY RESULTS - Classification and Strength

Project COED DARCY

Project No: PC176880

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m ³	σ_3 kN/m ²	$\sigma_1 - \sigma_3$ kN/m ²	c_u kN/m ²	c_{Avg} kN/m ²
TP45	0.00-0.40 (0.00)	B	C76913	MADE GROUND: Brown and dark brown sandy gravelly clay	CL	9 (28%)	24	15	12.8						
TP45	0.40-1.50 (0.40)	B	C76899	MADE GROUND: Dark brown slightly gravelly sandy clay		(28%)	22	NP	10.9						
TP45	1.50-3.10 (1.50)	B	C80000	MADE GROUND: Dark brown slightly gravelly sandy clay		(3%)	21	NP	10.7						
TP47	0.00-1.10 (0.00)	B	C76929	MADE GROUND: Dark brown and grey slightly gravelly sandy clay					11.2						
TP48	0.60-1.20 (0.60)	B	C80030	MADE GROUND: Grey and brownish grey slightly gravelly sandy clay		(30%)	22	NP	11.7						
TP48	1.20-3.00 (1.20)	B	C76969	MADE GROUND: Dark grey and grey slightly gravelly sandy clay		(26%)	22	NP	9.4						
TP48	3.00-4.70 (3.00)	B	C76949	MADE GROUND: Dark grey and grey slightly gravelly sandy clay		(26%)	22	NP	10.2						
TP49	0.00-0.80 (0.00)	B	C76937	MADE GROUND: Grey sandy slightly clayey gravel					13.3						
TP49	0.80-2.20 (0.80)	B	C76908	MADE GROUND: Brownish grey and brown slightly gravelly sandy clay	CL	11 (33%)	26	15	16.3						
TP49	3.00-4.00 (3.00)	B	C76981	MADE GROUND: Dark grey and grey slightly gravelly sandy clay	CL	14 (35%)	28	14	10.6						
TP49	4.00-5.00 (4.00)	B	C76991	MADE GROUND: Dark grey and grey slightly gravelly sandy clay		(32%)	28	NP	11.7						
TP50	0.50-2.00 (0.50)	B	C76955	MADE GROUND: Greyish brown and dark grey slightly sandy gravelly clay		(32%)	24	NP	13.5						
TP50	2.00-2.60 (2.00)	B	C76914	MADE GROUND: Greyish brown and dark grey slightly sandy gravelly clay	CL	11 (18%)	26	15	12.7						
TP50	2.60-3.50 (2.60)	B	C76935	MADE GROUND: Grey and dark grey slightly sandy gravelly clay		(29%)	25	NP	13.1						
Remarks															
					NST - Not suitable for Test Water Content Test/Bulk Density Test/Particle Density Test performed in accordance with BS EN ISO 17892-1:2014/BS EN ISO 17892-2:2014/BS EN ISO 17892-3:2015 All other Tests performed in accordance with BS1377: 1990										

LABORATORY RESULTS - Classification and Strength

Project COED DARC

Project No: PC176880

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m ³	σ_3 kN/m ²	$\sigma_1 - \sigma_3$ kN/m ²	c_u kN/m ²	c_{Avg} kN/m ²
TP51	0.00-0.55 (0.00)	B	C76926	MADE GROUND: Brown slightly sandy gravelly clay	CI	17 (26%)	39	22	25.1						
TP53	0.00-0.70 (0.00)	B	C76933	MADE GROUND: Brown and dark brown sandy slightly clayey gravel					16.9						

Remarks

AGS

NST - Not suitable for Test

Water Content Test/Bulk Density Test/Particle Density Test performed in accordance with BS EN ISO 17892-1:2014/BS EN ISO 17892-2:2014/BS EN ISO 17892-3:2015

All other Tests performed in accordance with BS1377: 1990

GEOTECHNICS

geotechnical and geoenvironmental specialists

LABORATORY RESULTS - MCV, Compaction, CBR

Project COED DARCY

Project No: PC176880

Sample					MCV		Compaction					CBR				
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	MCV	w	Type	w (Opt) %	ρ_d Mg/m ³	γ_b Mg/m ³	γ_d (Max) Mg/m ³	Type	Top		Bottom	
						%							CBR %	w %	CBR %	w %
TP02	0.00- 0.70 (0.00)	B	C76925	MADE GROUND: Dark brown sandy slightly clayey gravel			4.5kg	(5.5) 7.5* 3.3 4.6 11.3 15.3	2.75a	*2.34 2.18 2.28 2.28 2.18	(2.21) *2.18 2.11 2.18 2.05 1.89					
TP04	0.00- 0.90 (0.00)	B	C76940	MADE GROUND: Light grey silty sandy slightly clayey gravel			4.5kg	(5.0) 10.2* 3.7 16.0 20.6 2.3	2.65a	*2.28 2.11 2.11 2.03 2.04	(2.05) *2.07 2.03 1.82 1.69 2.00					
TP08	0.80- 1.50 (0.80- 1.50)	B	C76915	MADE GROUND: Brown and dark brown slightly sandy clayey gravel			4.5kg	(11.0) 16.7* 4.4 9.2 13.6 18.8	2.65a	*2.08 1.85 2.06 2.09 1.99	(1.91) *1.78 1.77 1.89 1.84 1.68					
TP09	0.00- 0.80 (0.00)	B	C76942	MADE GROUND: Brown and dark brown sandy slightly clayey gravel			4.5kg	(8.0) 14.5* 2.9 6.9 10.3 17.5	2.65a	*2.16 1.97 2.19 2.17 2.06	(2.06) *1.89 1.92 2.05 1.97 1.75					
TP13	0.00- 2.20 (0.00)	B	C76953	MADE GROUND: Brown and dark brown slightly sandy clayey gravel			4.5kg	(8.8) 13.2* 2.4 6.9 11.1	2.75a	*2.23 1.98 2.14 2.20	(2.02) *1.97 1.93 2.00 1.98					
TP16	0.00- 1.20 (0.00)	B	C80004	MADE GROUND: Brown slightly sandy gravelly clay			4.5kg	(7.3) 13.2* 3.1 5.9 11.4 17.9	2.65a	*2.22 2.01 2.18 2.23 2.07	(2.09) *1.96 1.95 2.05 2.00 1.75					
TP19	0.00- 0.50 (0.00)	B	C76900	MADE GROUND: Brown and greyish brown sandy very clayey gravel and slightly gravelly sandy clay			4.5kg	(7.7) 12.2* 3.3 6.4 12.3 11.2	2.73a	*2.13 2.14 2.28 2.23 2.31	(2.16) *1.90 2.07 2.14 1.99 2.08					
TP20	0.00- 0.60 (0.00)	B	C76985	MADE GROUND: Brown and dark brown slightly sandy gravelly clay			4.5kg	(9.0) 11.2* 3.4 6.7 17.2 21.8	2.83a	*2.27 1.91 2.10 2.19 2.12	(2.04) *2.04 1.85 1.97 1.87 1.74					

Remarks  Particle Density - a=assumed, m=measured * = at natural moisture content
 NST - Not suitable for Test
 Water Content Test performed in accordance with BS EN ISO 17892 - 1: 2014
 All other Tests performed in accordance with BS1377: 1990

GEOTECHNICS
 geotechnical and geoenvironmental specialists

LABORATORY RESULTS - MCV, Compaction, CBR

Project COED DARCY

Project No: PC176880

Sample					MCV		Compaction					CBR				
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	MCV	w %	Type	w (Opt) %	ρ _d Mg/m³	γ _b Mg/m³	γ _d (Max) Mg/m³	Type	Top		Bottom	
													CBR %	w %	CBR %	w %
TP24	0.00- 1.70 (0.00)	B	C76897	MADE GROUND: Dark brown and brown slightly gravelly sandy clay			4.5kg	(7.3) 12.2* 3.0 6.5 10.1 17.5	2.65a	*2.24 2.05 2.17 2.22 2.11	(2.05) *2.00 1.99 2.04 2.02 1.80					
TP27	0.00- 0.90 (0.00)	B	C76932	MADE GROUND: Brown and greyish brown sandy slightly clayey gravel			4.5kg	(4.9) 15.5* 2.8 7.5 13.6 21.3 2.3	2.65a	*2.21 2.04 2.20 2.15 2.01 2.01	(2.08) *1.91 1.99 2.04 1.89 1.66 1.97					
TP31	0.00- 1.60 (0.00)	B	C76922	MADE GROUND: Brown and dark brown sandy slightly clayey gravel			4.5kg	(8.0) 13.7* 3.5 7.4 10.3 19.3	2.65a	*2.16 2.00 2.14 2.16 2.02	(2.01) *1.90 1.93 2.00 1.96 1.69					
TP38	0.00- 0.30 (0.00)	B	C76982	MADE GROUND: Dark brown sandy slightly clayey gravel			4.5kg	(5.5) 7.2* 0.9 3.7 12.0 13.8	2.83a	*2.39 2.23 2.31 2.35 2.31	(2.25) *2.23 2.21 2.23 2.10 2.03					
TP44	0.00- 1.00 (0.00)	B	C80042	MADE GROUND: Brown and dark brown slightly sandy clayey gravel			4.5kg	(7.5) 15.9* 3.8 6.5 13.2 16.9	2.65a	*2.18 2.03 2.17 2.12 2.03	(2.06) *1.88 1.95 2.03 1.87 1.74					
TP45	0.00- 0.40 (0.00)	B	C76913	MADE GROUND: Brown and dark brown sandy gravelly clay			4.5kg	(7.8) 12.0* 3.8 7.0 9.4 16.6	2.70a	*2.25 2.09 2.19 2.22 2.12	(2.06) *2.01 2.01 2.05 2.03 1.82					
TP48	0.60- 1.20 (0.60- 1.20)	B	C80030	MADE GROUND: Grey and brownish grey slightly gravelly sandy clay			4.5kg	(4.8) 10.5* 2.9 7.6 3.1 14.6	2.65a	*2.26 2.11 2.26 2.14 2.11	(2.17) *2.05 2.05 2.10 2.07 1.84					
TP50	0.50- 2.00 (0.50- 2.00)	B	C76955	MADE GROUND: Greyish brown and dark grey slightly sandy gravelly clay			4.5kg	(7.9) 14.8* 3.0 6.9 10.9	2.70a	*2.18 2.02 2.13 2.21	(2.04) *1.90 1.96 1.99 2.00					

Remarks  Particle Density - a=assumed, m=measured * = at natural moisture content
 NST - Not suitable for Test
 Water Content Test performed in accordance with BS EN ISO 17892 - 1: 2014
 All other Tests performed in accordance with BS1377: 1990

GEOTECHNICS
 geotechnical and geoenvironmental specialists

LABORATORY RESULTS - MCV, Compaction, CBR

Project COED DARCY

Project No: PC176880

Sample					MCV		Compaction					CBR				
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	MCV	w %	Type	w (Opt) %	ρ_d Mg/m³	γ_b Mg/m³	γ_d (Max) Mg/m³	Type	Top		Bottom	
													CBR %	w %	CBR %	w %
								18.5		2.10	1.77					
TP53	0.00- 0.70 (0.00)	B	C76933	MADE GROUND: Brown and dark brown sandy slightly clayey gravel			4.5kg	(7.7) 9.0* 3.7 6.7 12.8 16.1	2.65a	*2.19 1.99 2.17 2.11 2.15	(2.04) *2.01 1.92 2.04 1.87 1.85					

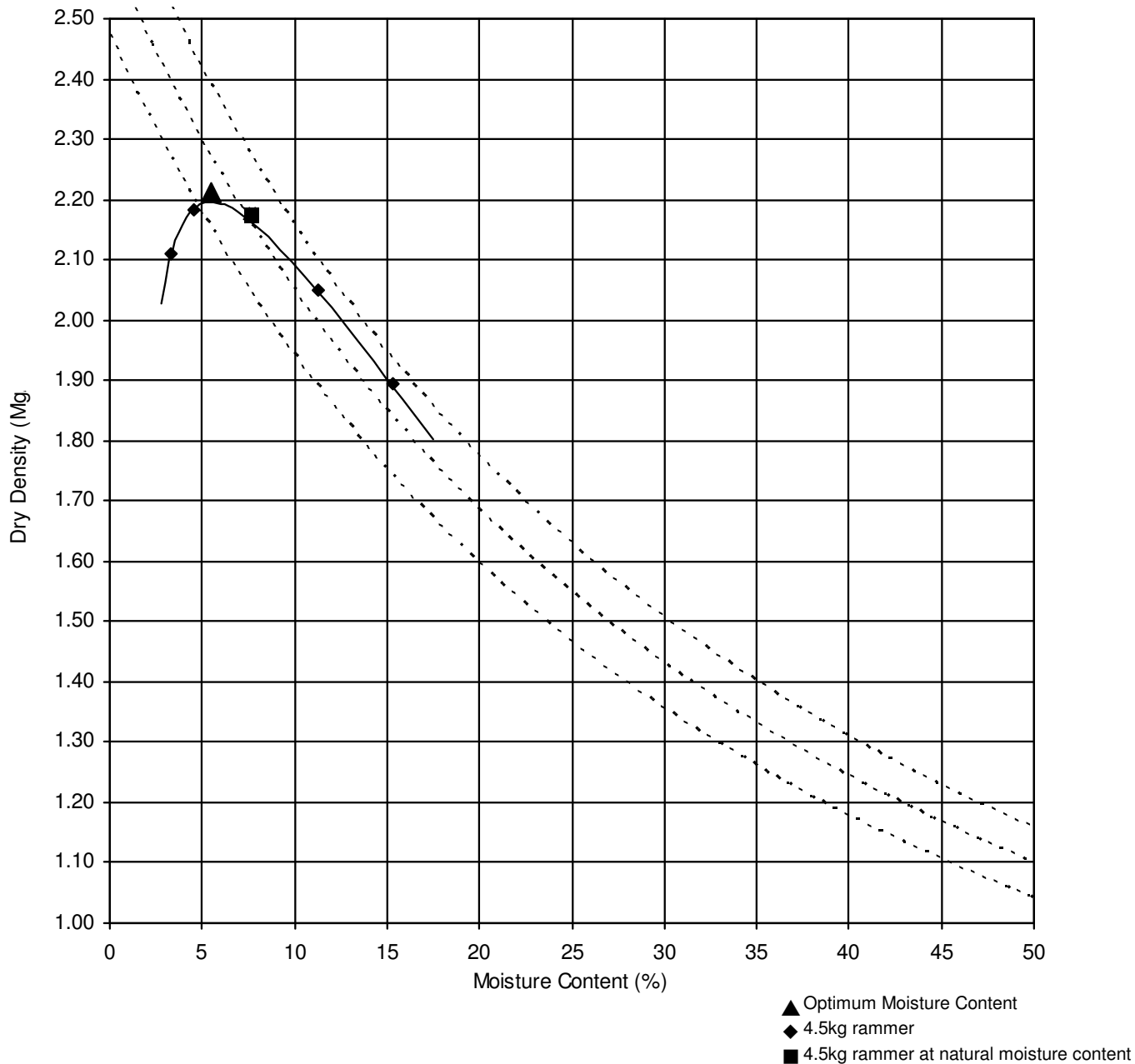
Remarks  Particle Density - a=assumed, m=measured * = at natural moisture content
NST - Not suitable for Test
Water Content Test performed in accordance with BS EN ISO 17892 - 1: 2014
All other Tests performed in accordance with BS1377: 1990

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP02
Sample Depth 0.00-0.70m
Sample Type B
Sample Ref C76925



Optimum Moisture Content	5.5	Particle Density	2.75 (Assumed)
Maximum Dry Density	2.21 Mg/m ³	Preparation	4.5kg
Gravel retained on		Description	MADE GROUND: Dark brown sandy slightly clayey gravel
37.5mm sieve	20 %		
20mm sieve	12 %		

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

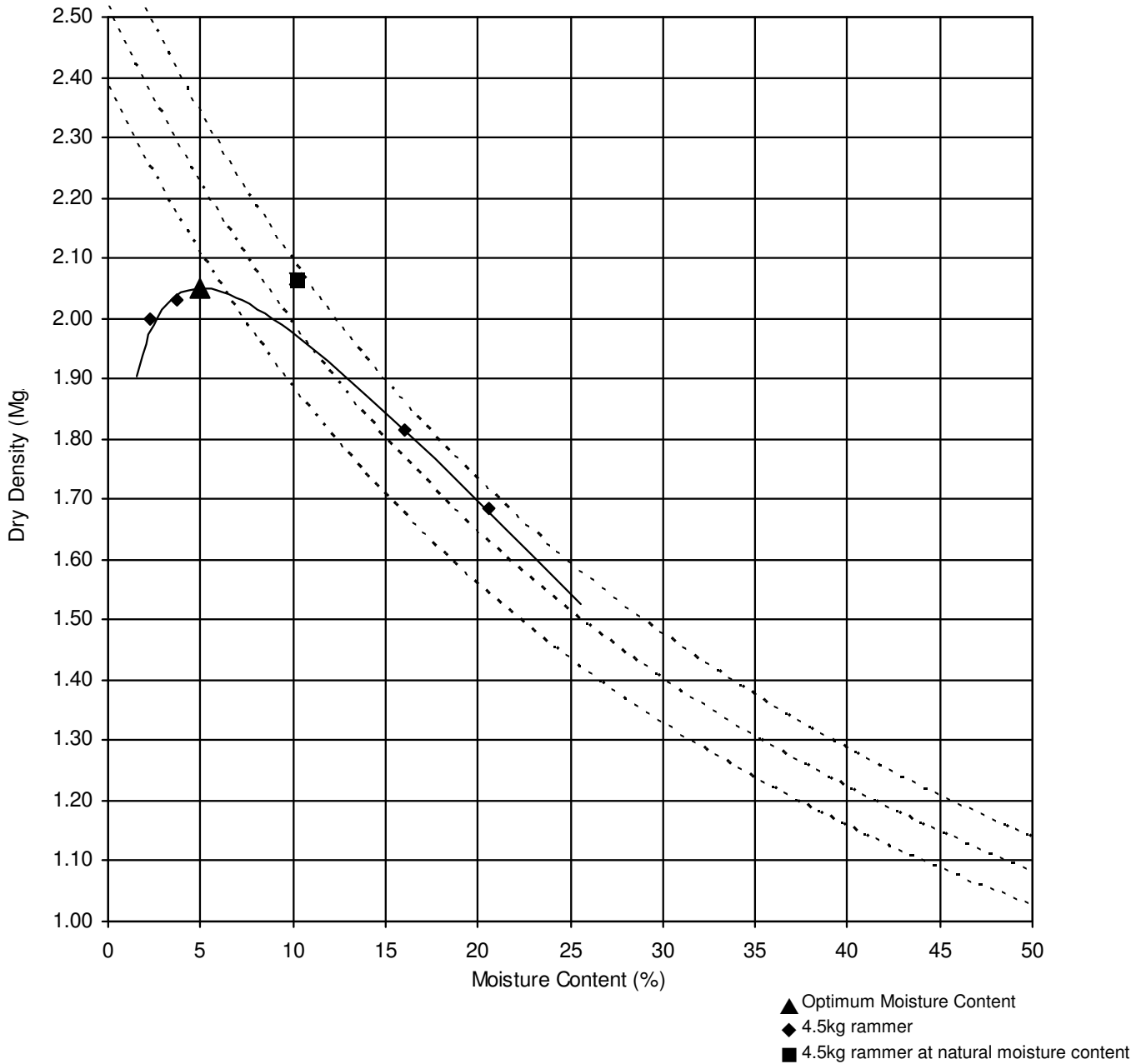
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP04
Sample Depth 0.00-0.90m
Sample Type B
Sample Ref C76940



Optimum Moisture Content	5.0
Maximum Dry Density	2.05 Mg/m ³
Gravel retained on	
37.5mm sieve	27 %
20mm sieve	11 %

Particle Density 2.65 (Assumed)
Preparation 4.5kg
Description MADE GROUND: Light grey silty sandy slightly clayey gravel

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

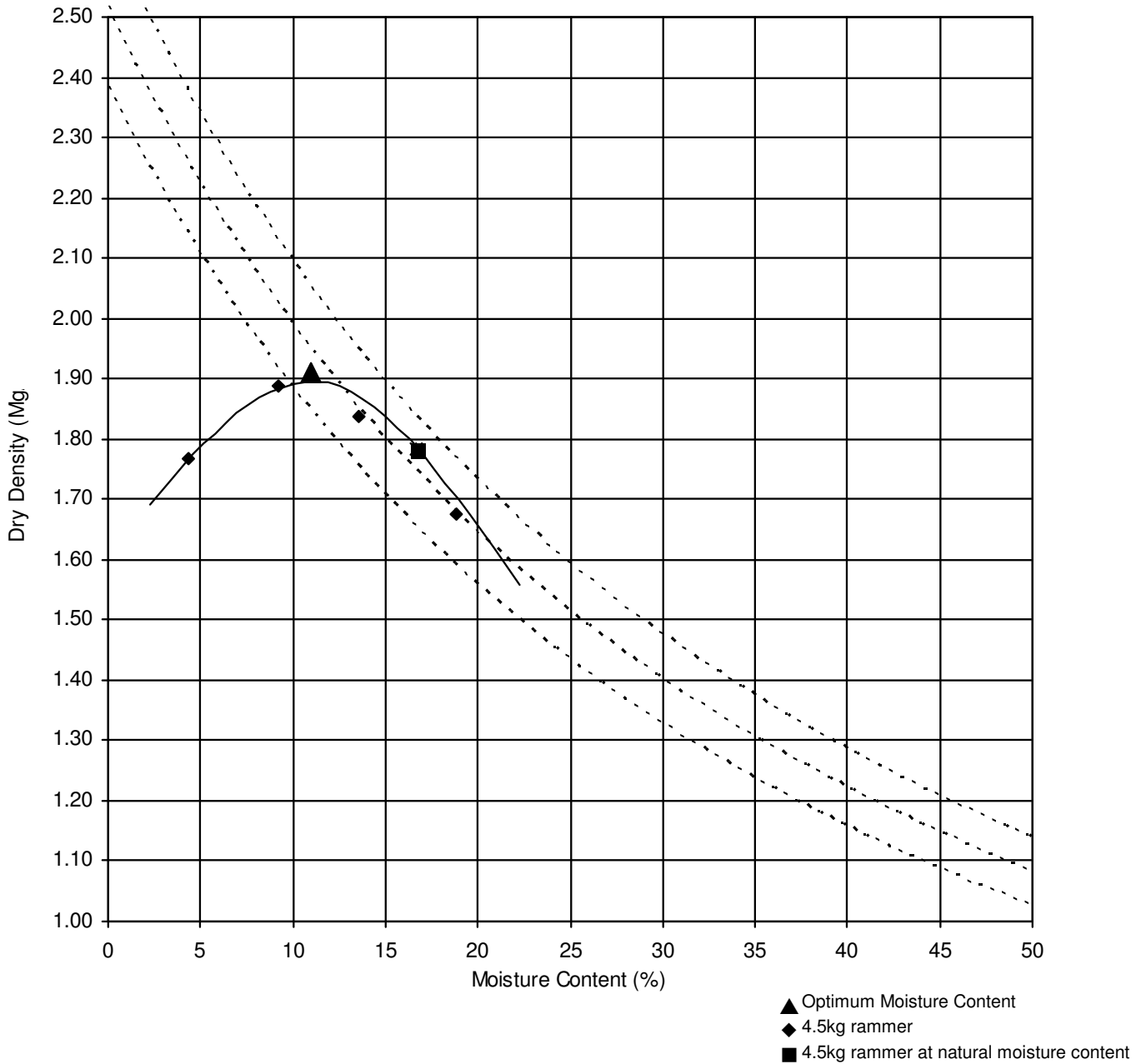
08/12/2017

LABORATORY RESULTS - *Compaction*

Project: COED DARCY

Project No: PC176880

Hole TP08
Sample Depth 0.80-1.50m
Sample Type B
Sample Ref C76915



Optimum Moisture Content	11.0
Maximum Dry Density	1.91 Mg/m ³
Gravel retained on	
37.5mm sieve	15 %
20mm sieve	8 %

Particle Density 2.65 (Assumed)
Preparation 4.5kg
Description MADE GROUND: Brown and dark brown slightly sandy clayey gravel

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

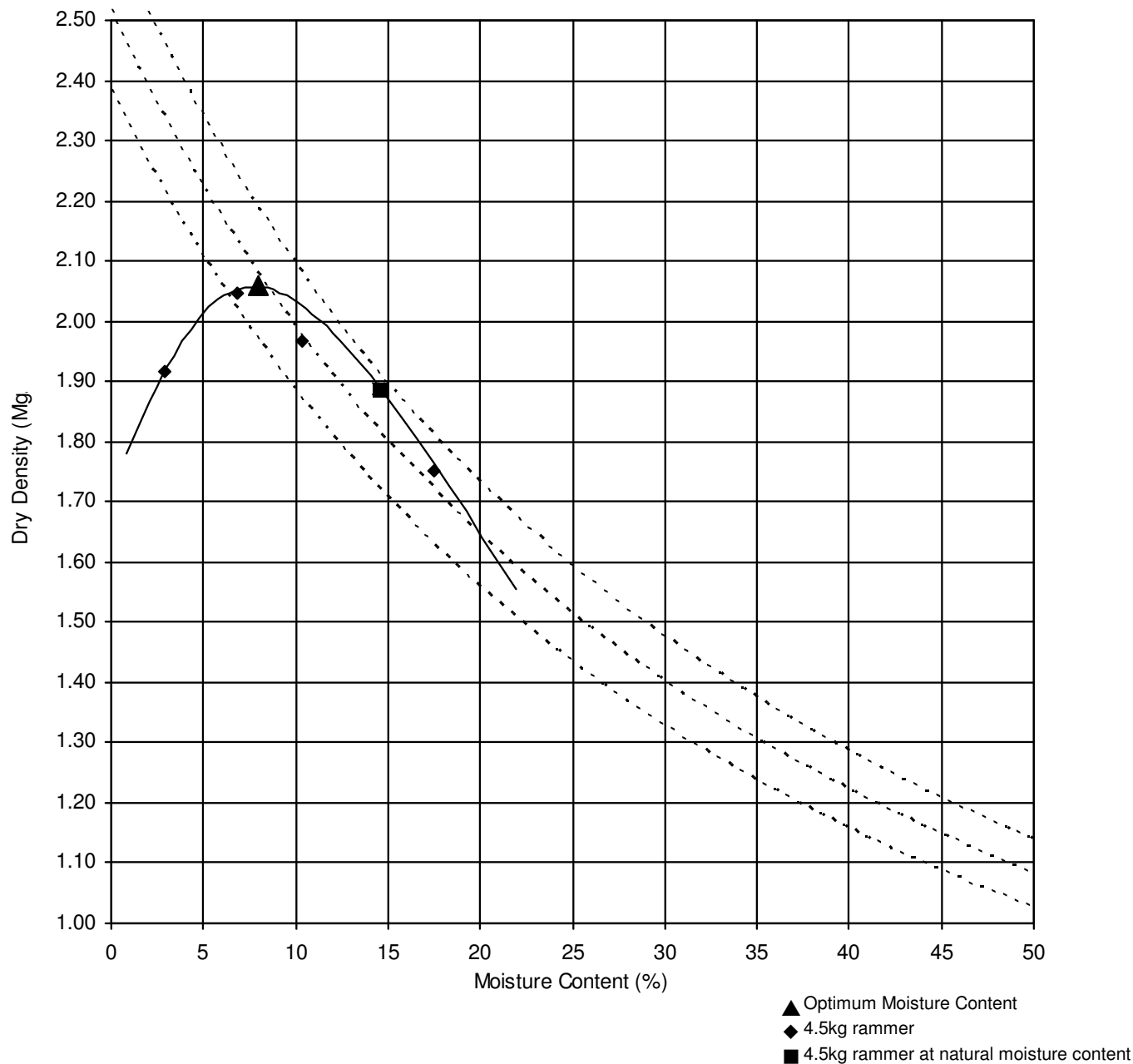
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP09
Sample Depth 0.00-0.80m
Sample Type B
Sample Ref C76942



Optimum Moisture Content 8.0
Maximum Dry Density 2.06 Mg/m³

Particle Density 2.65 (Assumed)
Preparation 4.5kg

Gravel retained on
37.5mm sieve 29 %
20mm sieve 14 %

Description MADE GROUND: Brown and dark brown sandy slightly clayey gravel

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

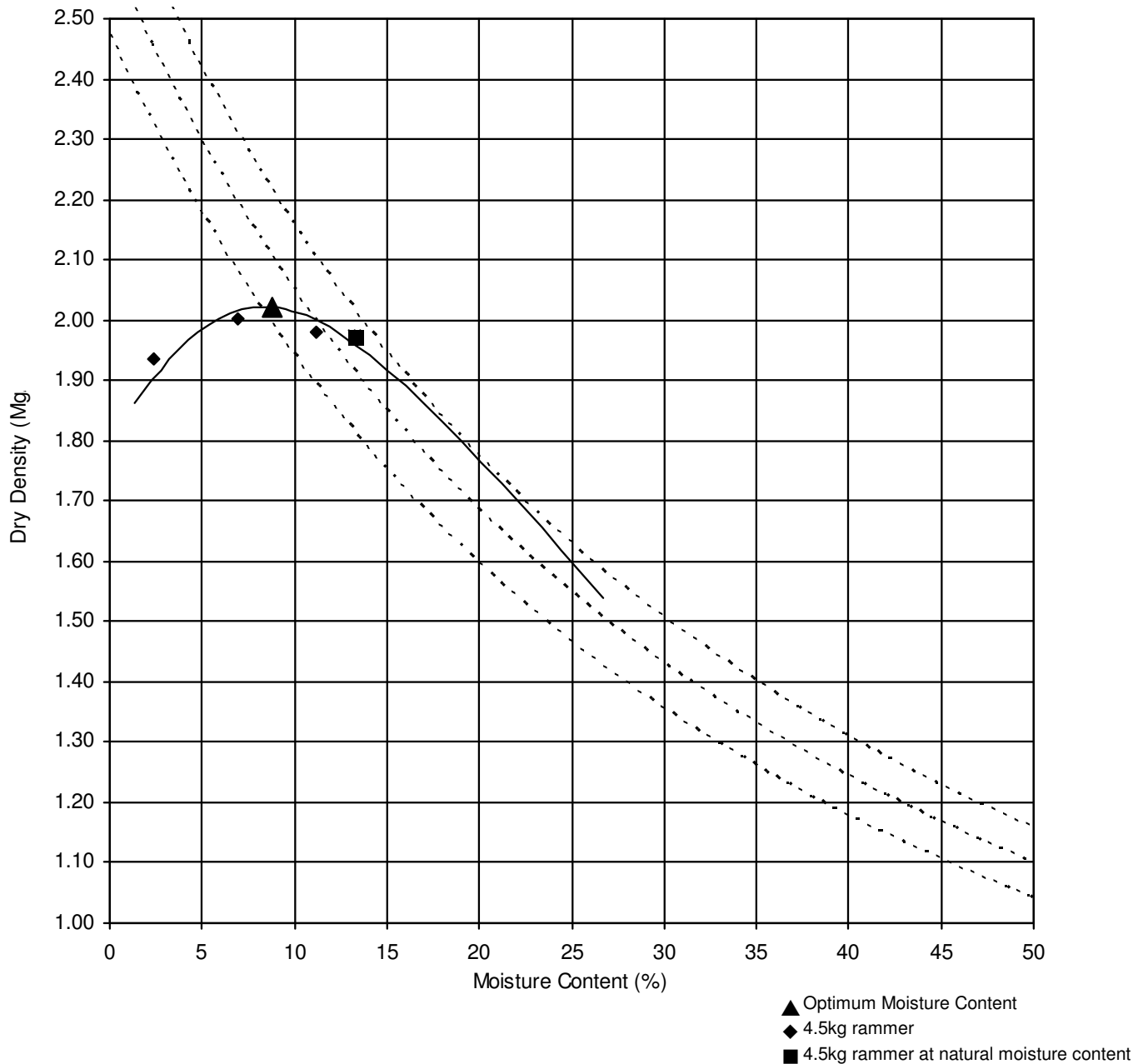
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP13
Sample Depth 0.00-2.20m
Sample Type B
Sample Ref C76953



Optimum Moisture Content 8.8
Maximum Dry Density 2.02 Mg/m³

Particle Density 2.75 (Assumed)
Preparation 4.5kg

Gravel retained on
37.5mm sieve 4 %
20mm sieve 1 %

Description MADE GROUND: Brown and dark brown slightly sandy clayey gravel

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

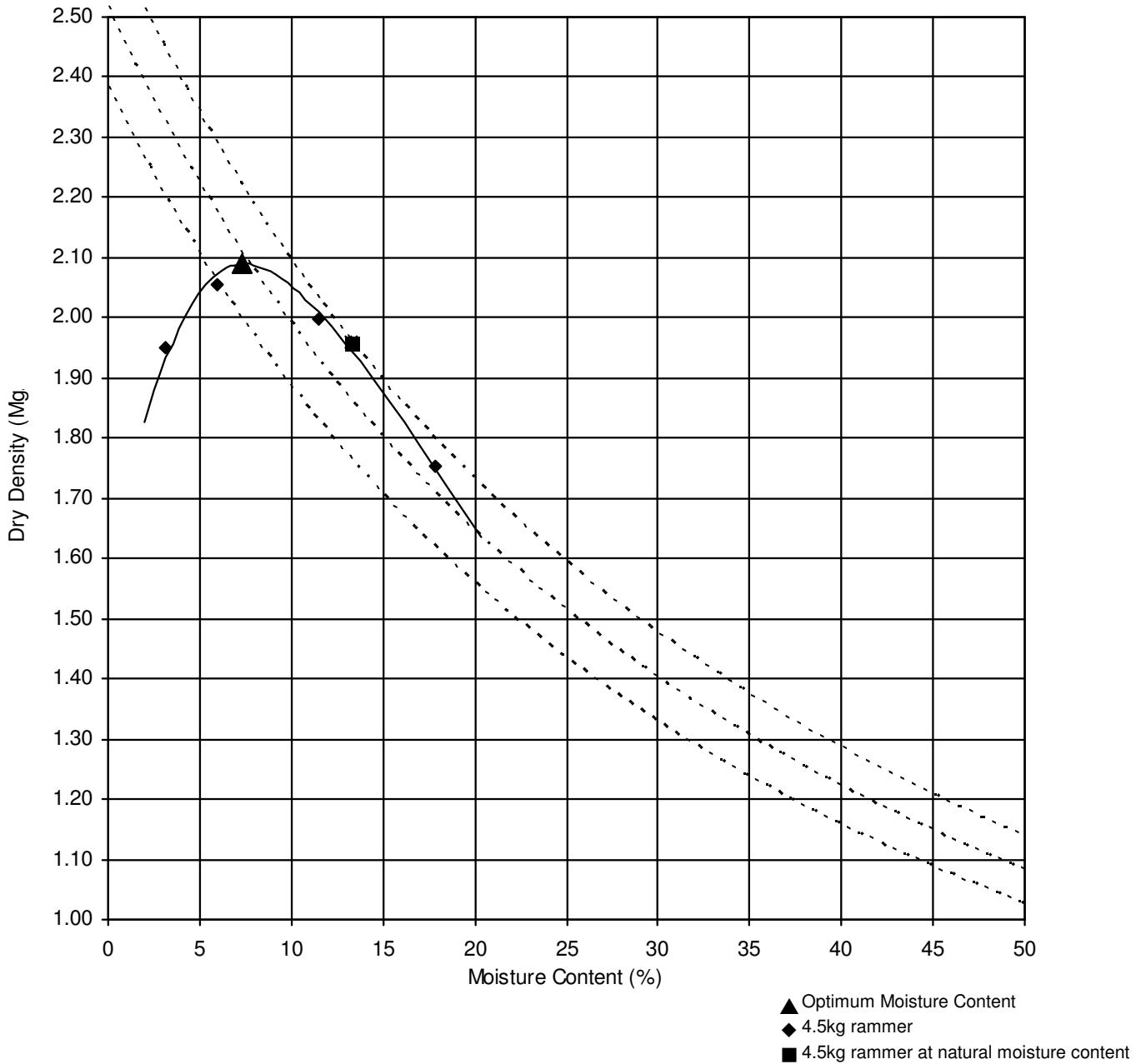
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP16
Sample Depth 0.00-1.20m
Sample Type B
Sample Ref C80004



Optimum Moisture Content	7.3
Maximum Dry Density	2.09 Mg/m ³
Gravel retained on	
37.5mm sieve	31 %
20mm sieve	10 %

Particle Density 2.65 (Assumed)
Preparation 4.5kg
Description MADE GROUND: Brown slightly sandy gravelly clay

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

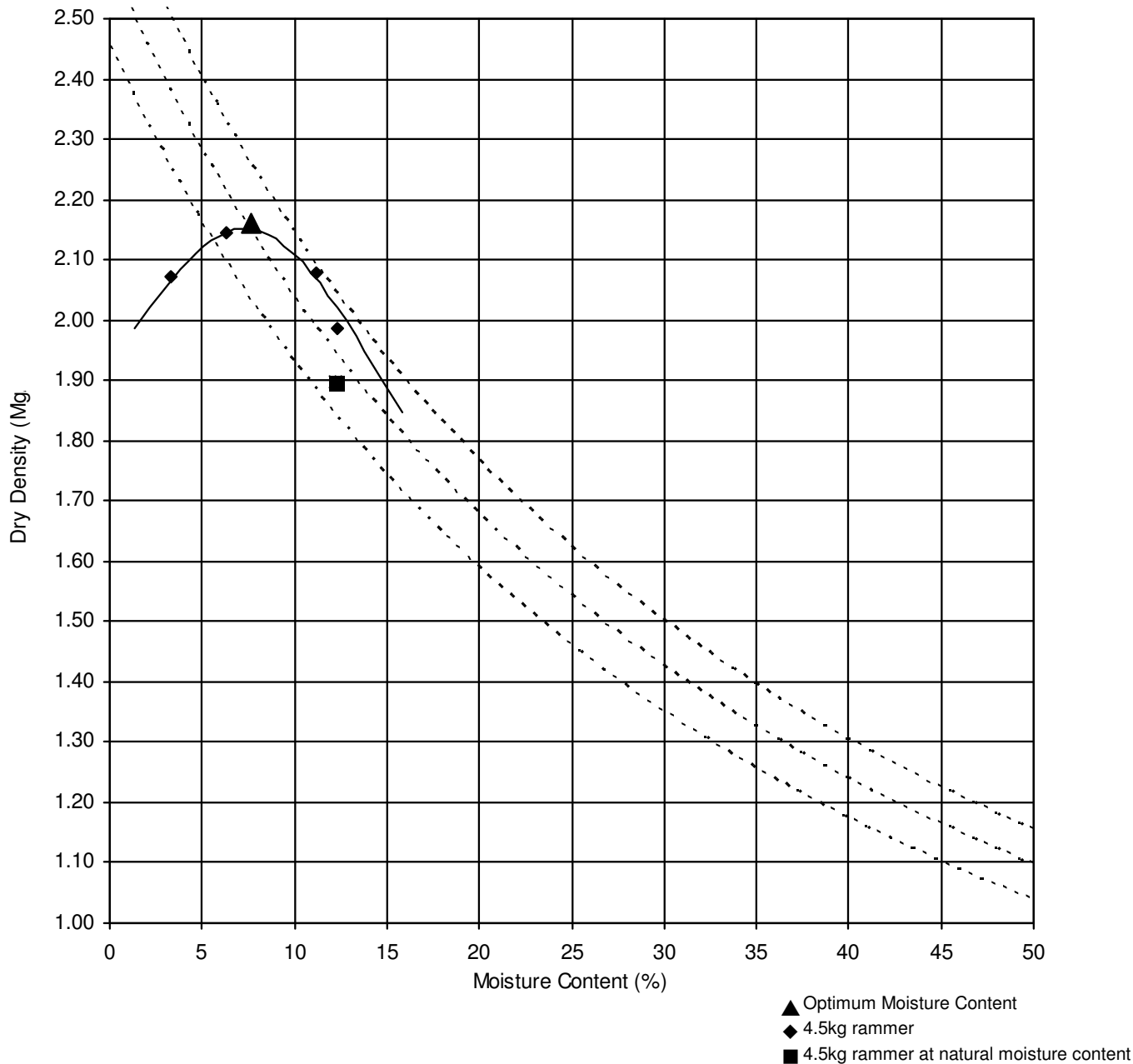
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP19
Sample Depth 0.00-0.50m
Sample Type B
Sample Ref C76900



Optimum Moisture Content 7.7
Maximum Dry Density 2.16 Mg/m³

Particle Density 2.73 (Assumed)
Preparation 4.5kg

Gravel retained on
37.5mm sieve 122 %
20mm sieve 52 %

Description MADE GROUND: Brown and greyish brown sandy
very clayey gravel and slightly gravelly sandy clay

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

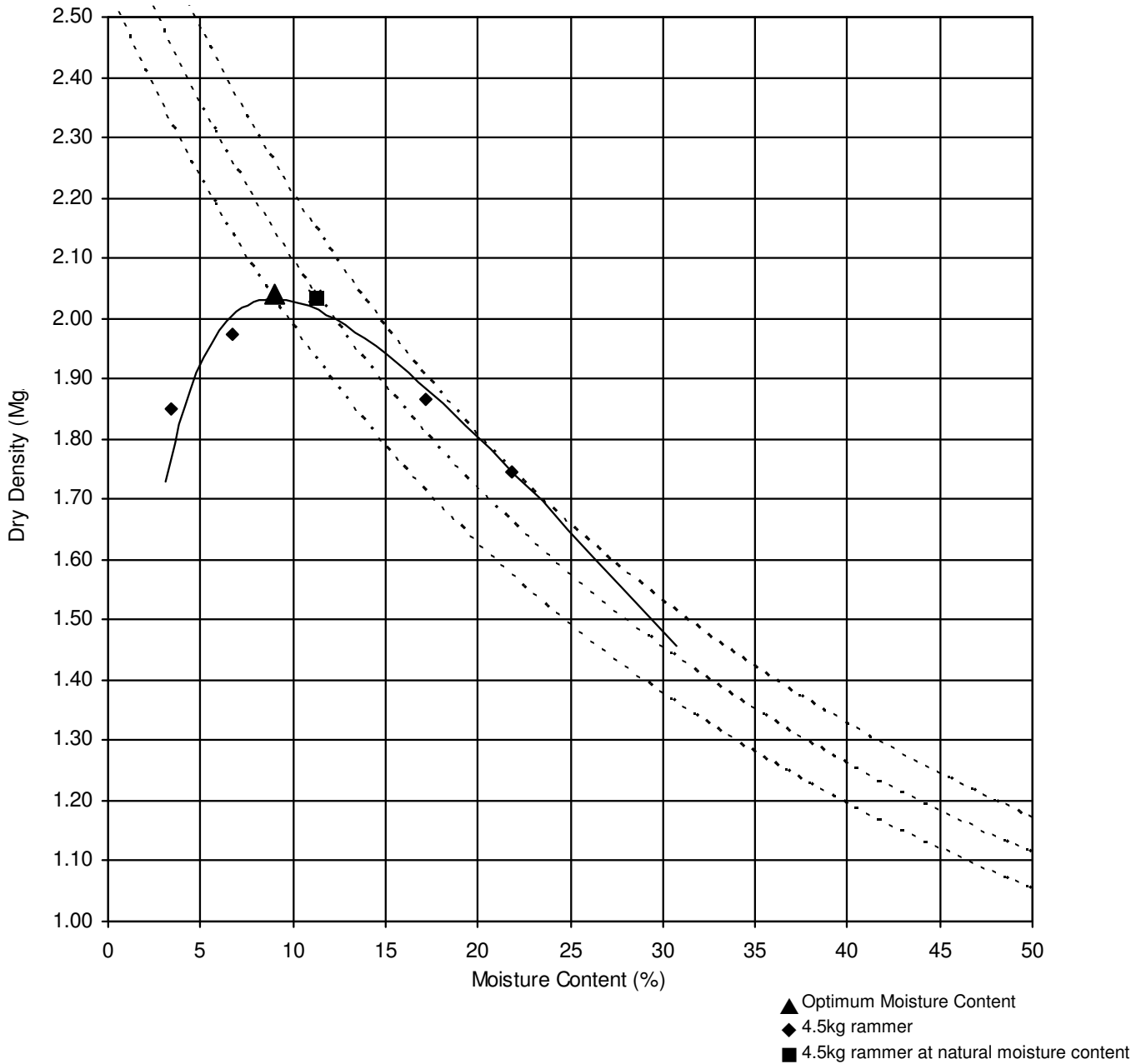
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP20
Sample Depth 0.00-0.60m
Sample Type B
Sample Ref C76985



Optimum Moisture Content	9.0
Maximum Dry Density	2.04 Mg/m ³
Gravel retained on	
37.5mm sieve	26 %
20mm sieve	8 %

Particle Density 2.83 (Assumed)
Preparation 4.5kg
Description MADE GROUND: Brown and dark brown slightly sandy gravelly clay

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

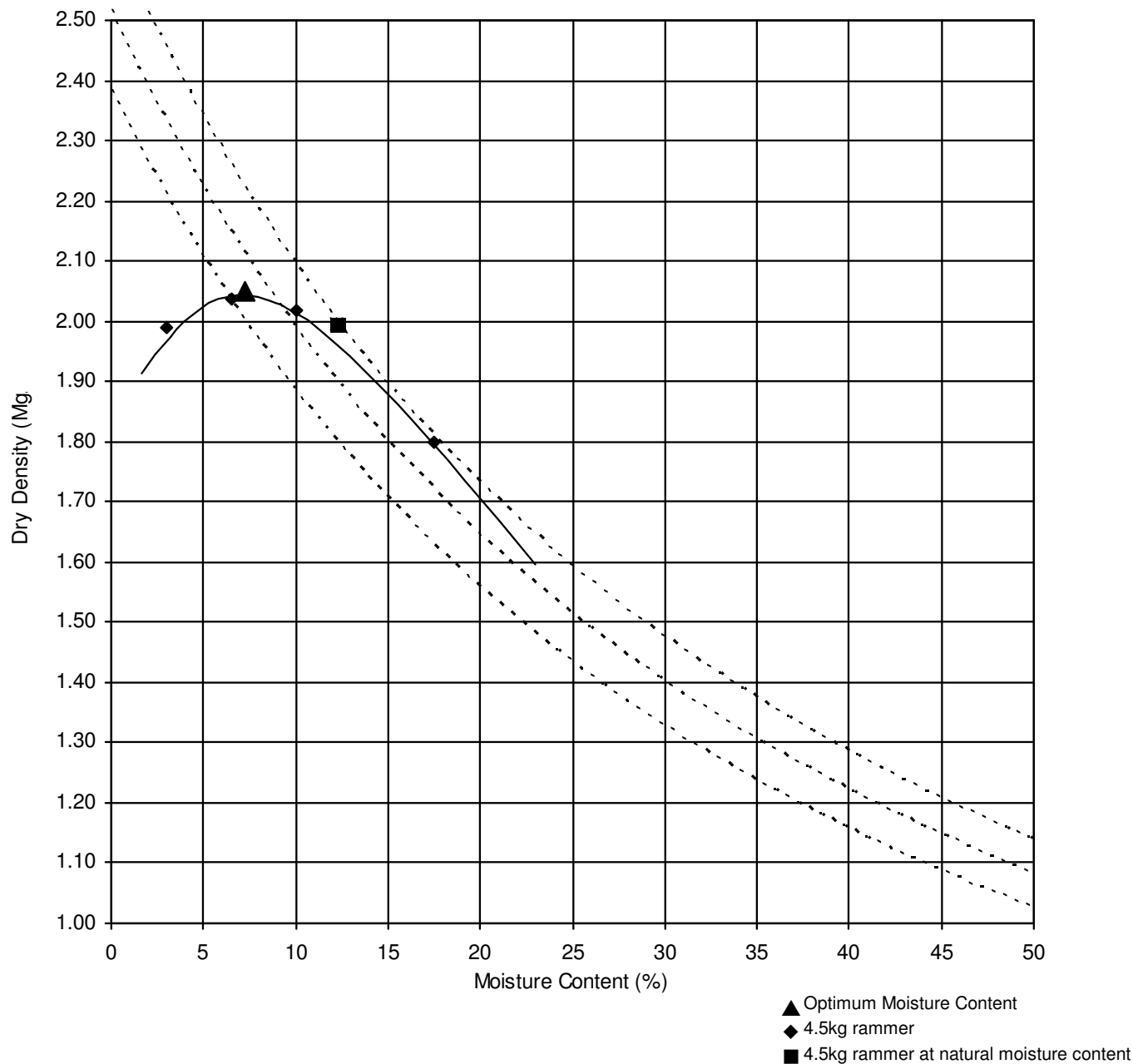
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP24
Sample Depth 0.00-1.70m
Sample Type B
Sample Ref C76897



Optimum Moisture Content	7.3
Maximum Dry Density	2.05 Mg/m ³

Particle Density 2.65 (Assumed)
Preparation 4.5kg

Description MADE GROUND: Dark brown and brown slightly
gravelly sandy clay

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

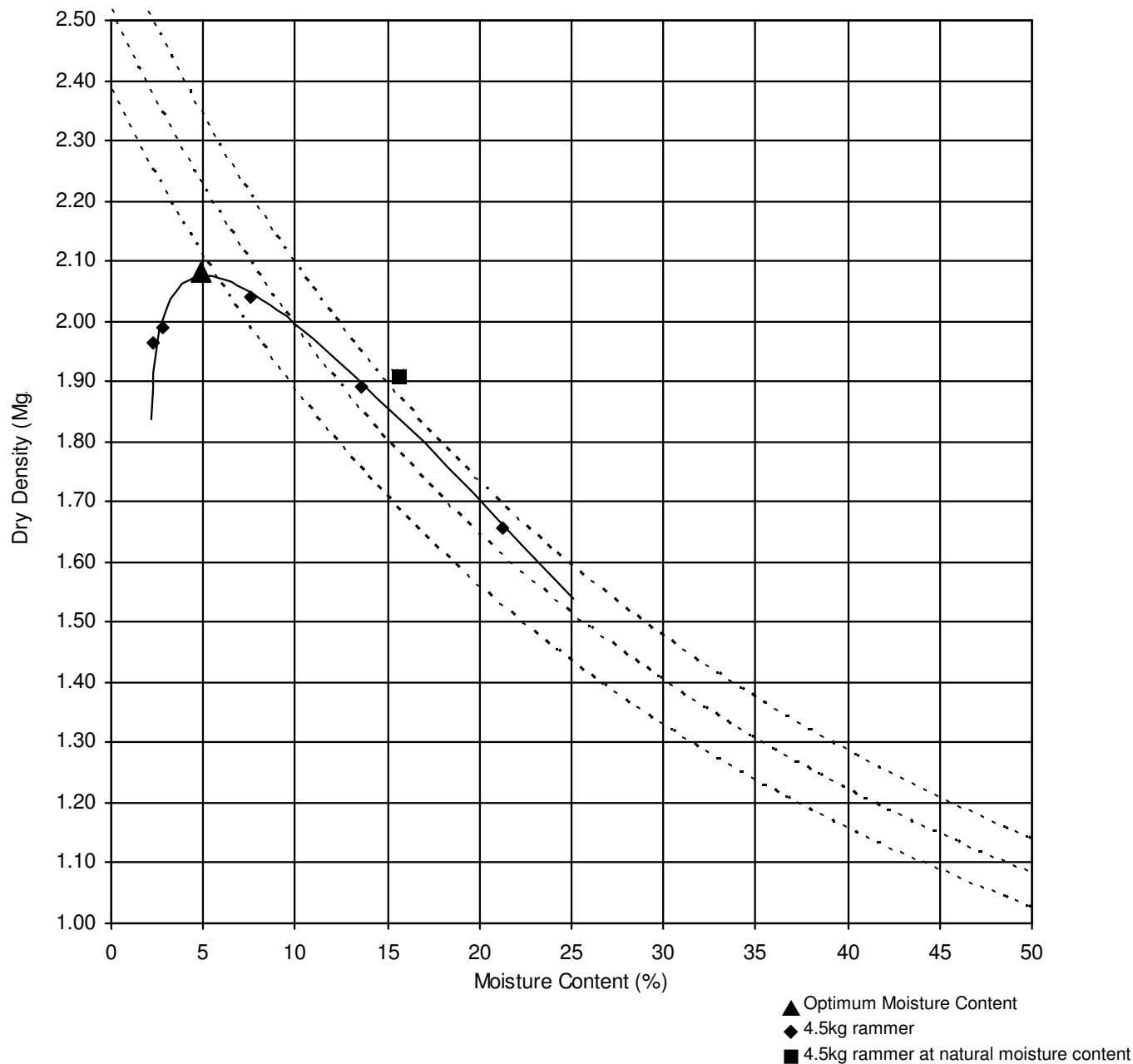
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP27
Sample Depth 0.00-0.90m
Sample Type B
Sample Ref C76932



Optimum Moisture Content	4.9	Particle Density	2.65 (Assumed)
Maximum Dry Density	2.08 Mg/m ³	Preparation	4.5kg
Gravel retained on		Description	MADE GROUND: Brown and greyish brown sandy slightly clayey gravel
37.5mm sieve	38 %		
20mm sieve	10 %		

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

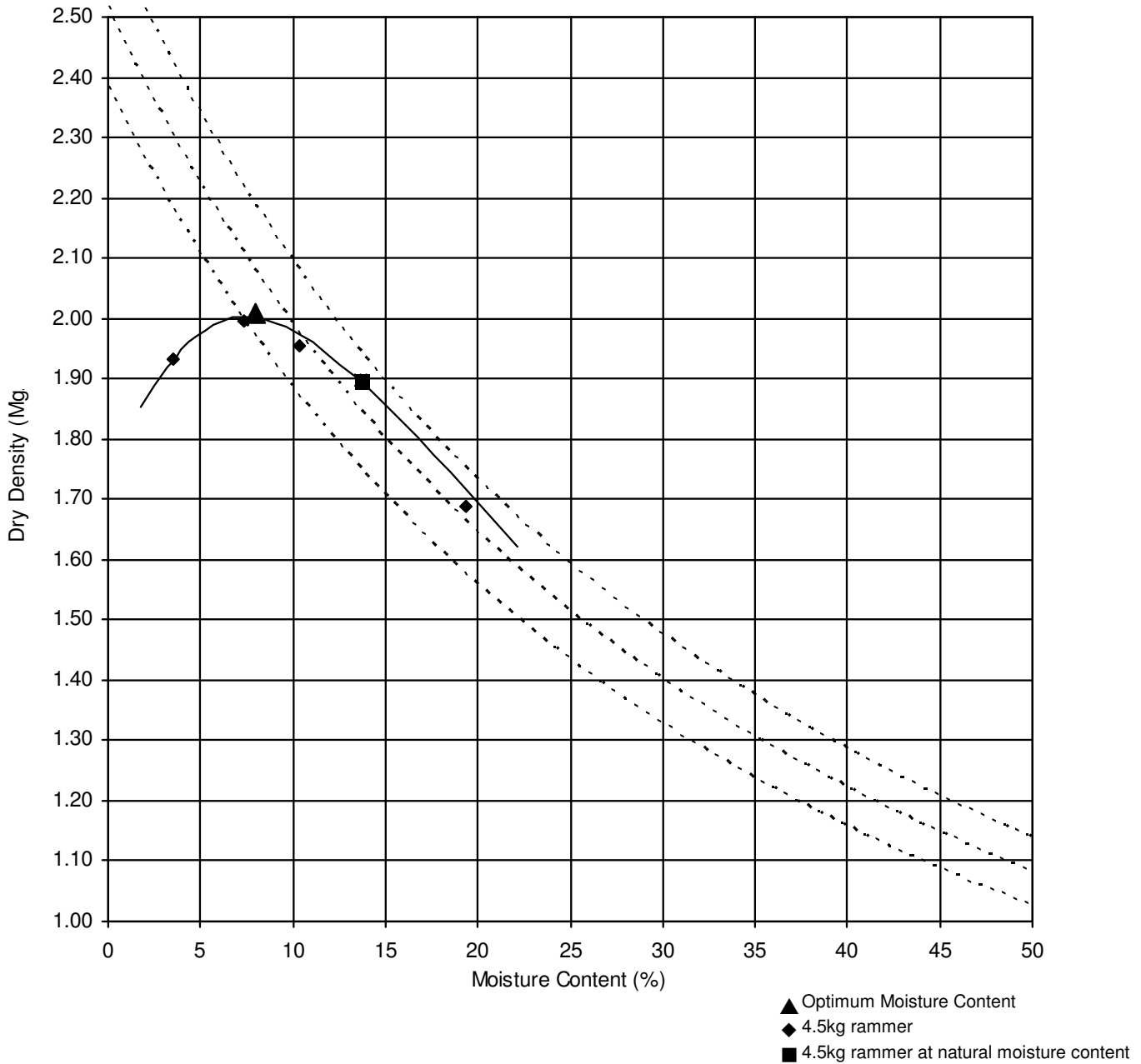
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP31
Sample Depth 0.00-1.60m
Sample Type B
Sample Ref C76922



Optimum Moisture Content	8.0	Particle Density	2.65 (Assumed)
Maximum Dry Density	2.01 Mg/m ³	Preparation	4.5kg
Gravel retained on		Description	MADE GROUND: Brown and dark brown sandy slightly clayey gravel
37.5mm sieve	241 %		
20mm sieve	112 %		

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

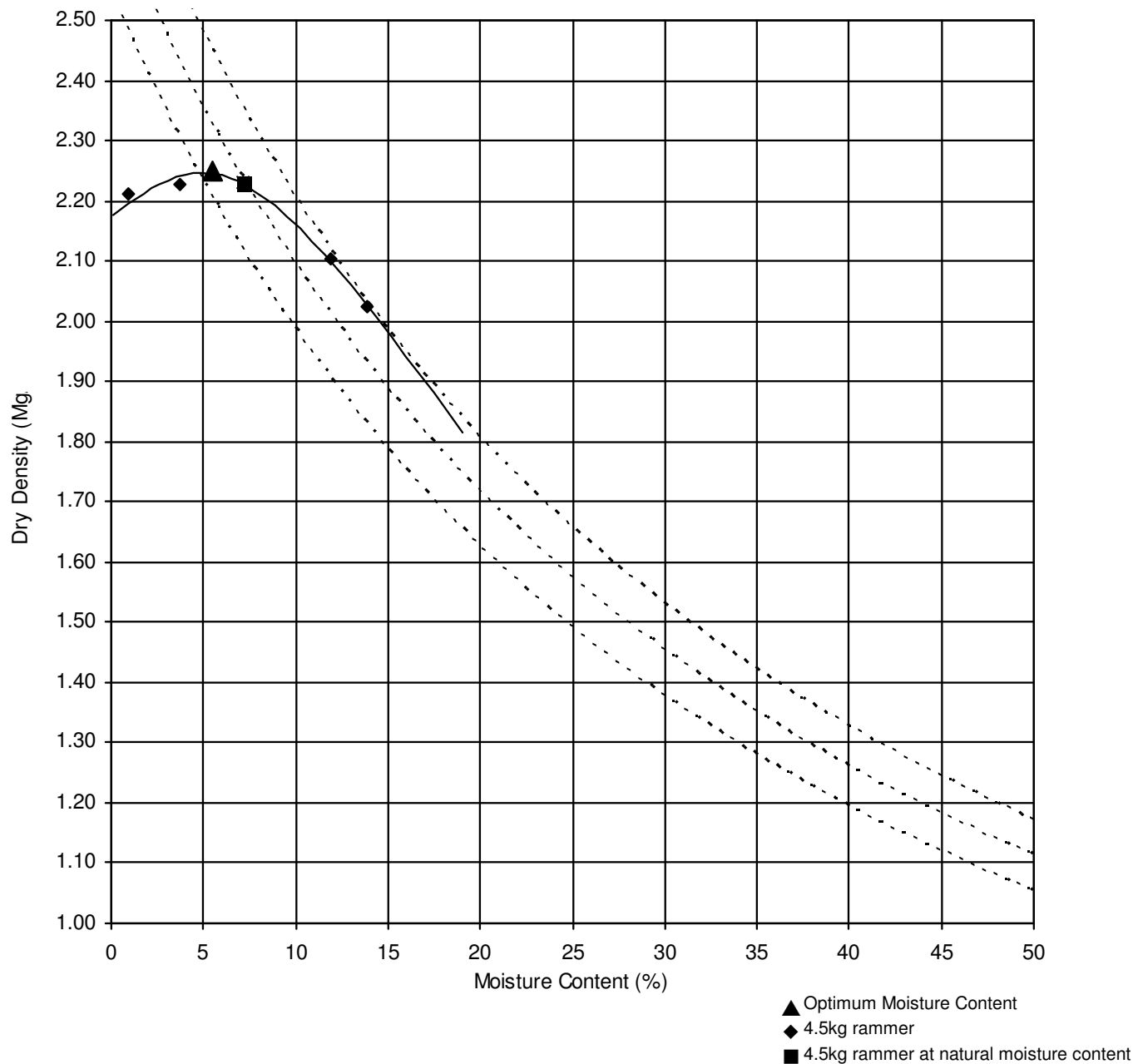
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP38
Sample Depth 0.00-0.30m
Sample Type B
Sample Ref C76982



Optimum Moisture Content	5.5
Maximum Dry Density	2.25 Mg/m ³
Gravel retained on	
37.5mm sieve	20 %
20mm sieve	30 %

Particle Density 2.83 (Assumed)

Preparation 4.5kg

Description MADE GROUND: Dark brown sandy slightly clayey gravel

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

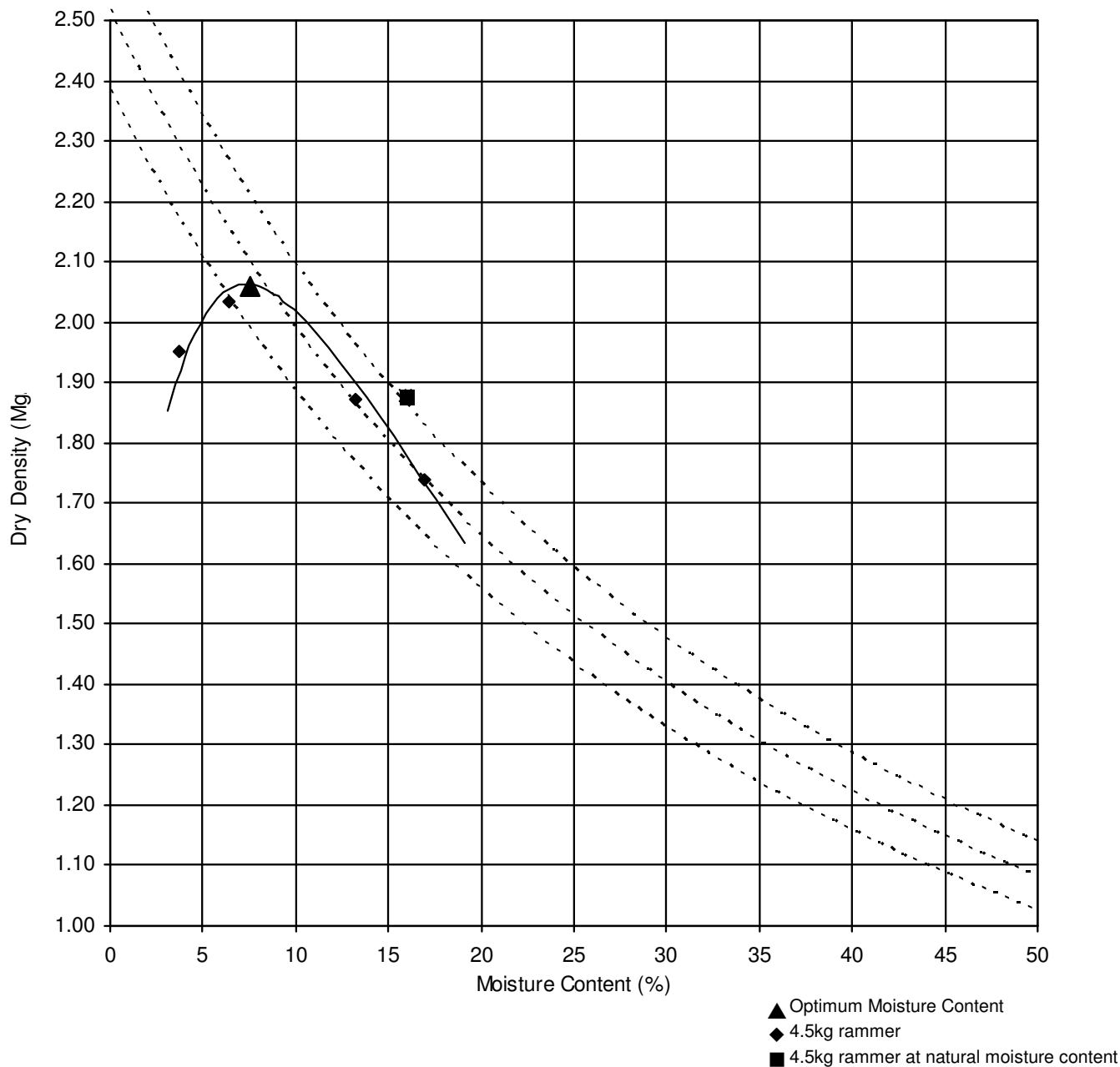
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP44
Sample Depth 0.00-1.00m
Sample Type B
Sample Ref C80042



Optimum Moisture Content	7.5
Maximum Dry Density	2.06 Mg/m ³
Gravel retained on	
37.5mm sieve	26 %
20mm sieve	7 %

Particle Density 2.65 (Assumed)

Preparation 4.5kg

Description MADE GROUND: Brown and dark brown slightly sandy clayey gravel

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

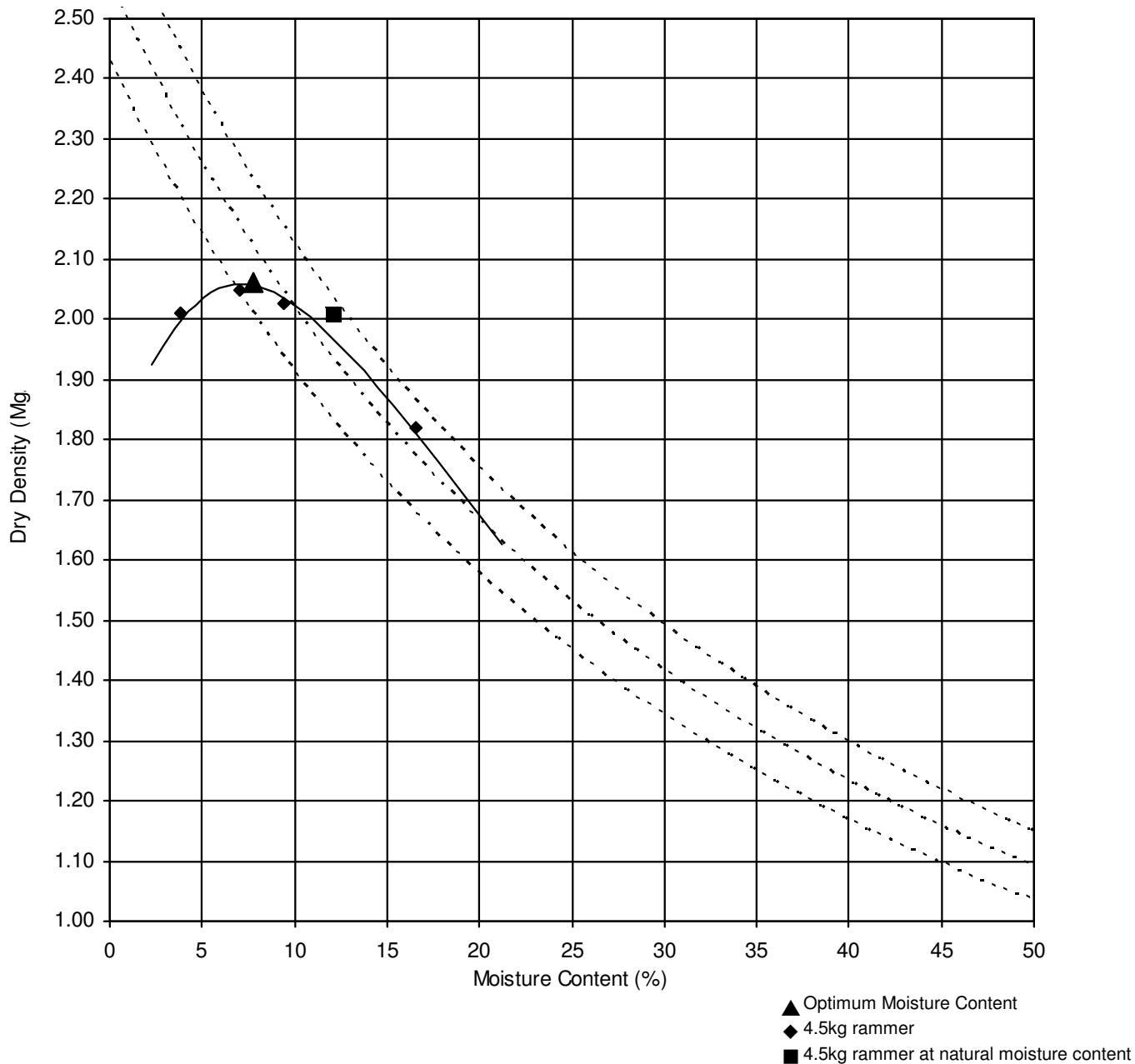
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP45
Sample Depth 0.00-0.40m
Sample Type B
Sample Ref C76913



Optimum Moisture Content	7.8
Maximum Dry Density	2.06 Mg/m ³

Particle Density 2.70 (Assumed)
Preparation 4.5kg

Description MADE GROUND: Brown and dark brown sandy
gravelly clay

Gravel retained on	
37.5mm sieve	9 %
20mm sieve	9 %

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

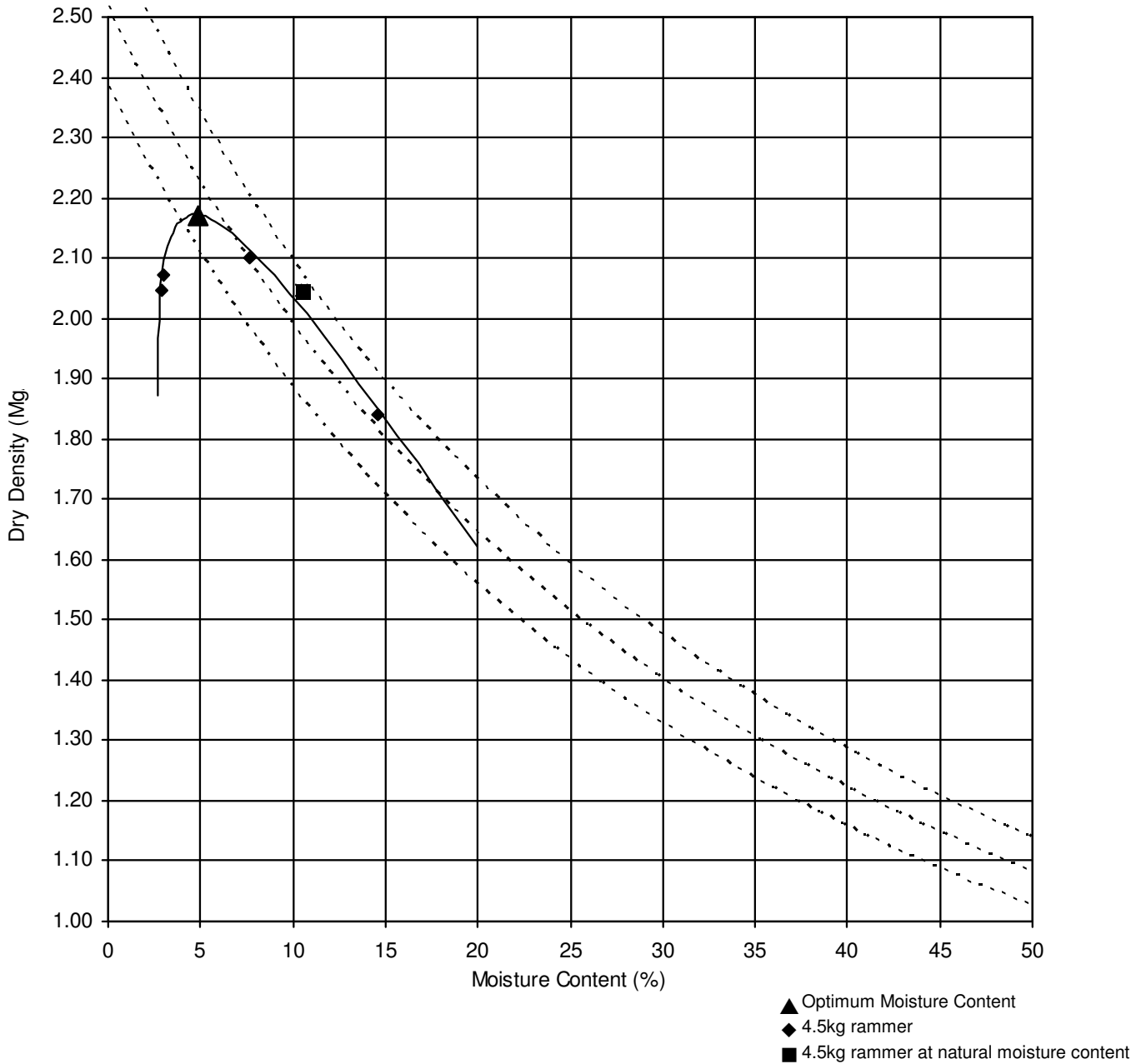
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP48
Sample Depth 0.60-1.20m
Sample Type B
Sample Ref C80030



Optimum Moisture Content	4.8
Maximum Dry Density	2.17 Mg/m ³
Gravel retained on	
37.5mm sieve	9 %
20mm sieve	7 %

Particle Density 2.65 (Assumed)
Preparation 4.5kg

Description MADE GROUND: Grey and brownish grey slightly gravelly sandy clay

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

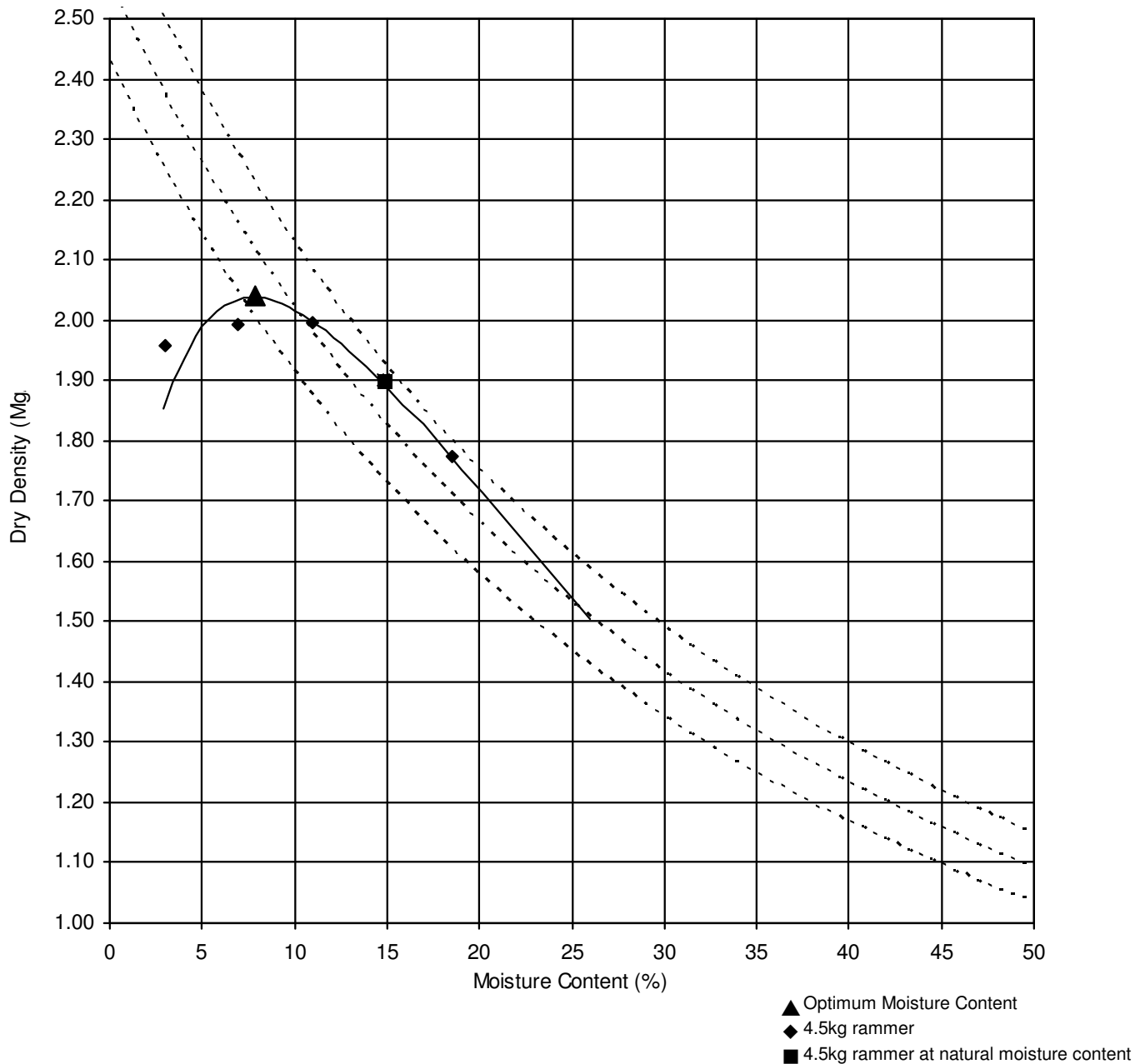
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP50
Sample Depth 0.50-2.00m
Sample Type B
Sample Ref C76955



Optimum Moisture Content 7.9
Maximum Dry Density 2.04 Mg/m³

Particle Density 2.70 (Assumed)
Preparation 4.5kg

Gravel retained on
37.5mm sieve 34 %
20mm sieve 7 %

Description MADE GROUND: Greyish brown and dark grey slightly sandy gravelly clay

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

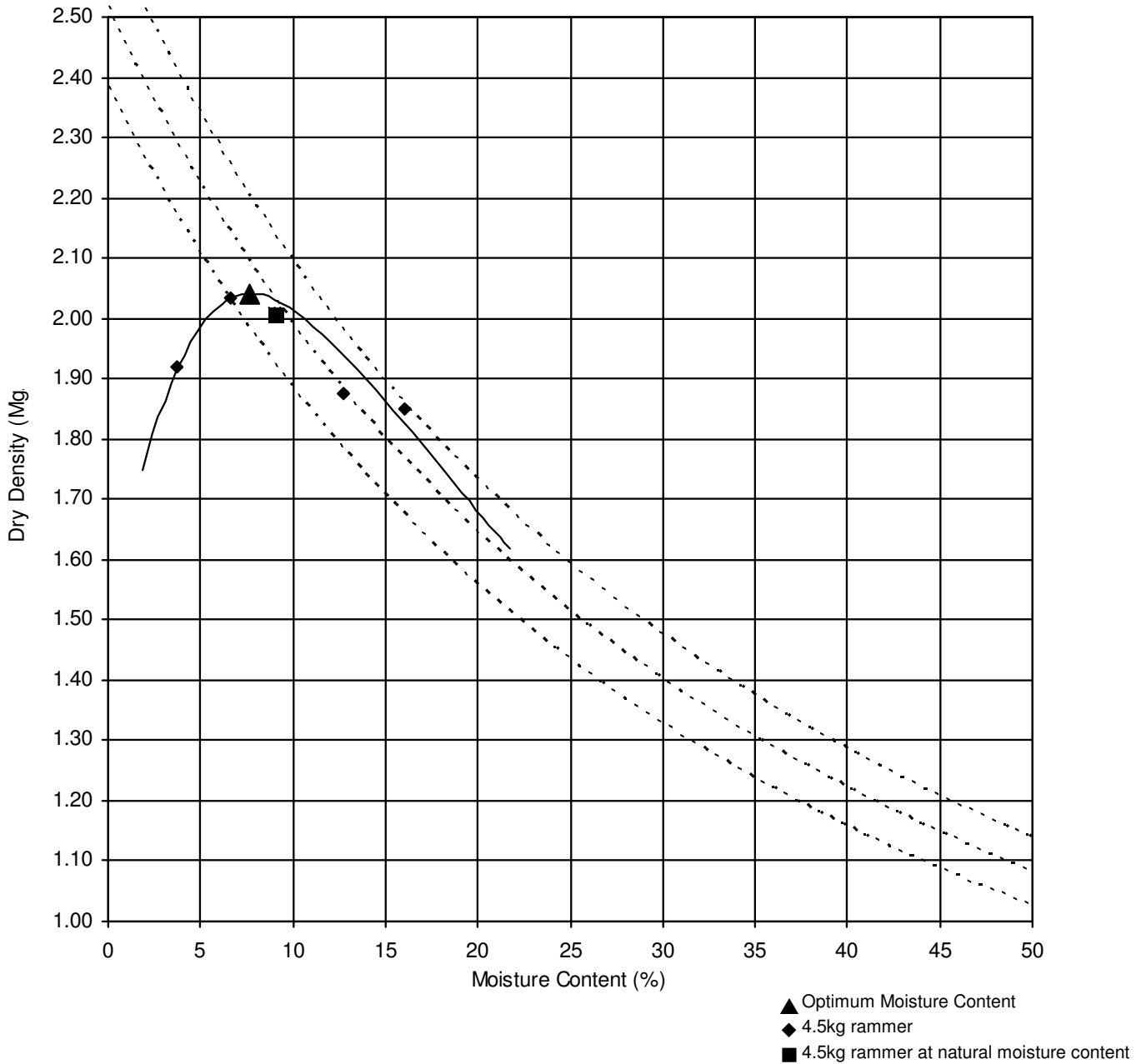
08/12/2017

LABORATORY RESULTS - Compaction

Project: COED DARCY

Project No: PC176880

Hole TP53
Sample Depth 0.00-0.70m
Sample Type B
Sample Ref C76933



Optimum Moisture Content	7.7	Particle Density	2.65 (Assumed)
Maximum Dry Density	2.04 Mg/m ³	Preparation	4.5kg
Gravel retained on		Description	MADE GROUND: Brown and dark brown sandy slightly clayey gravel
37.5mm sieve	41 %		
20mm sieve	13 %		

Remarks  BS1377 Part 4 1990 : Clause 3.5 and 3.6

08/12/2017



Certificate of Analysis

Certificate Number 17-15649

20-Nov-17

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 17-15649

Client Reference PC176880

Order No OC17468

Contract Title Coed Darcy

Description 10 Soil samples.

Date Received 14-Nov-17

Date Started 14-Nov-17

Date Completed 20-Nov-17

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

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

Approved By

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis Soil Samples

Our Ref 17-15649
Client Ref PC176880
Contract Title Coed Darcy

Lab No	1257999	1258000	1258001	1258002	1258003	1258004	1258005	1258006	1258007	1258008
Sample ID	TP1	TP2	TP3	TP4	TP5	TP6	TP7	TP10	TP11	TP16
Depth	0.00-1.20	0.00-0.70	0.00-1.20	0.00-0.90	0.00-1.00	0.00-0.30	0.00-1.00	0.00-0.80	0.00-0.90	0.00-1.20
Other ID										
Sample Type	B	B	B	B	B	B	B	B	B	B
Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units										
Inorganics													
pH	DETSC 2008#			11.5	10.4	11.7	8.8	8.6	8.1	9.1	8.5	8.3	8.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	110	94	160	< 10	29	87	120	190	59	64
Sulphur as S, Total	DETSC 2320	0.01	%	0.04	0.05	0.13	0.03	0.01	0.06	0.03	0.03	0.02	0.02
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.08	0.07	0.18	0.04	0.02	0.07	0.06	0.05	0.03	0.03

Information in Support of the Analytical Results

Our Ref 17-15649
 Client Ref PC176880
 Contract Coed Darcy

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1257999	TP1 0.00-1.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258000	TP2 0.00-0.70 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258001	TP3 0.00-1.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258002	TP4 0.00-0.90 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258003	TP5 0.00-1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258004	TP6 0.00-0.30 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258005	TP7 0.00-1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258006	TP10 0.00-0.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258007	TP11 0.00-0.90 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258008	TP16 0.00-1.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Information in Support of the Analytical Results

Our Ref 17-15649
Client Ref PC176880
Contract Coed Darcy

Soil Analysis Notes

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

Disposal

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



Certificate of Analysis

Certificate Number 17-15650

20-Nov-17

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 17-15650

Client Reference PC176880

Order No OC17469

Contract Title Coed Darcy

Description 10 Soil samples.

Date Received 14-Nov-17

Date Started 14-Nov-17

Date Completed 20-Nov-17

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

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

Approved By

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 17-15650
 Client Ref PC176880
 Contract Title Coed Darcy

Lab No	1258009	1258010	1258011	1258012	1258013	1258014	1258015	1258016	1258017	1258018
Sample ID	TP25	TP26	TP27	TP33	TP34	TP38	TP42	TP49	TP51	TP53
Depth	0.00-1.50	0.00-1.20	0.00-0.90	0.00-1.30	0.00-1.00	0.00-0.30	0.00-0.20	0.00-0.80	0.00-0.55	0.00-0.70
Other ID										
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units										
Inorganics													
pH	DETSC 2008#			7.8	8.0	12.3	10.4	9.7	8.9	8.1	11.5	8.2	9.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	33	72	< 10	85	170	26	19	63	26	57
Sulphur as S, Total	DETSC 2320	0.01	%	0.01	0.03	0.08	0.04	0.03	0.01	0.01	0.05	0.03	0.06
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.02	0.04	0.27	0.08	0.05	0.02	0.01	0.15	0.06	0.04

Information in Support of the Analytical Results

Our Ref 17-15650
 Client Ref PC176880
 Contract Coed Darcy

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1258009	TP25 0.00-1.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258010	TP26 0.00-1.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258011	TP27 0.00-0.90 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258012	TP33 0.00-1.30 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258013	TP34 0.00-1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258014	TP38 0.00-0.30 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258015	TP42 0.00-0.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258016	TP49 0.00-0.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258017	TP51 0.00-0.55 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1258018	TP53 0.00-0.70 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Information in Support of the Analytical Results

Our Ref 17-15650
Client Ref PC176880
Contract Coed Darcy

Soil Analysis Notes

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

Disposal

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



LABORATORY REPORT REPORT



4043

Contract Number: PSL17/5671

Report Date: 14 December 2017
Client's Reference: OC17512
Client Name: Geotechnics Limited
Unit 1, Borders Industrial Park
River Lane
Saltney
Chester
CH4 8RJ

For the attention of: Jon Hutchinson

Contract Title: Coed Darcy
Date Received: 23/11/2017
Date Commenced: 23/11/2017
Date Completed: 14/12/2017

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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

Checked and Approved Signatories:

R Gunson
(Director)

A Watkins
(Director)

R Berriman
(Quality Manager)

L Knight
(Senior Technician)

C Marshall
(Laboratory Manager)

A Fry
(Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
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e-mail: rgunson@prosoils.co.uk
awatkins@prosoils.co.uk

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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

[illegible]

PSL
Professional Soils Laboratory

Coed Darcy

Contract No:

PSL17/5671

Client Ref:

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

[illegible]

SYMBOLS : NP : Non Plastic

*** : Liquid Limit and Plastic Limit Wet Sieved.**



PSL
Professional Soils Laboratory

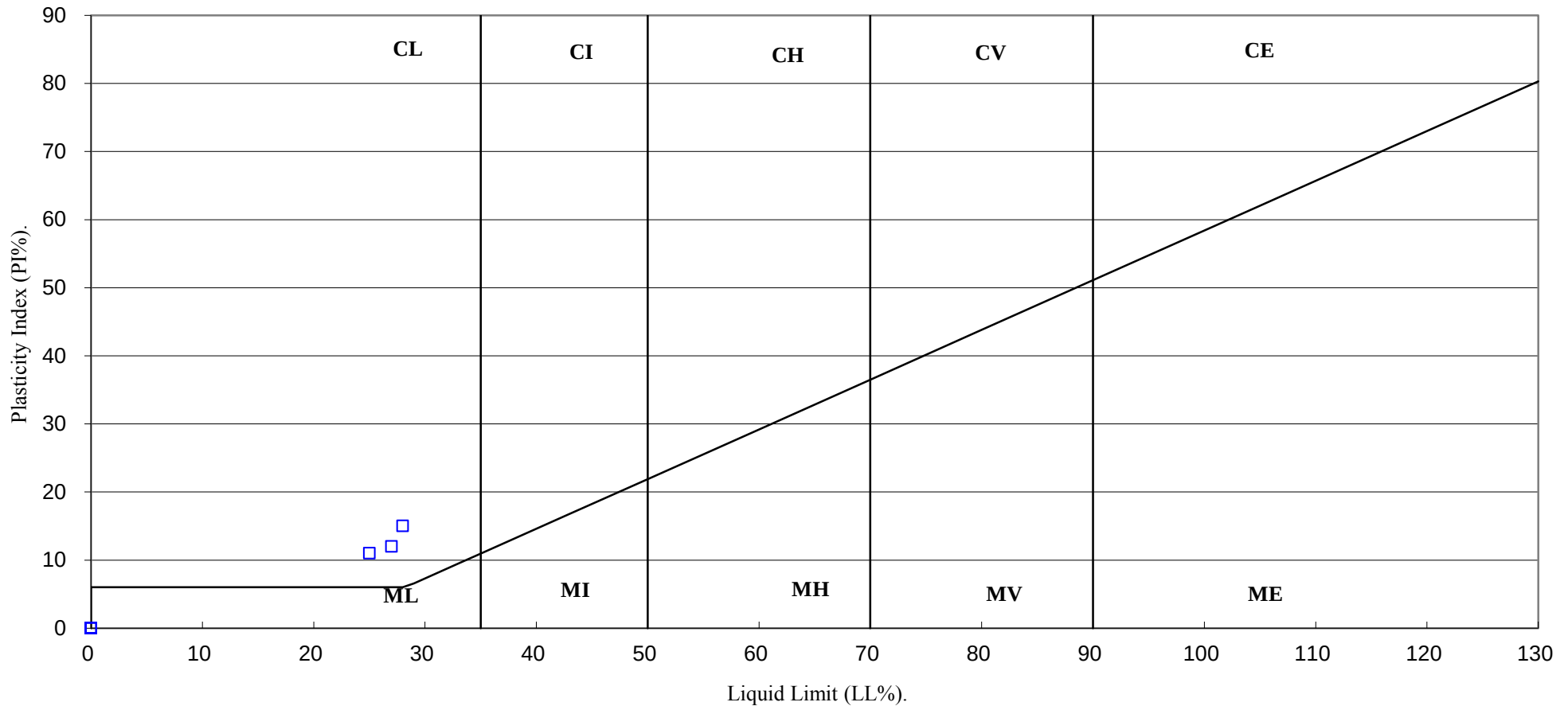
Coed Darcy

Contract No:

PSL17/5671

Client Ref:

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



PSL
Professional Soils Laboratory

Coed Darcy

Contract No:

PSL17/5671

Client Ref:

PARTICLE SIZE DISTRIBUTION TEST

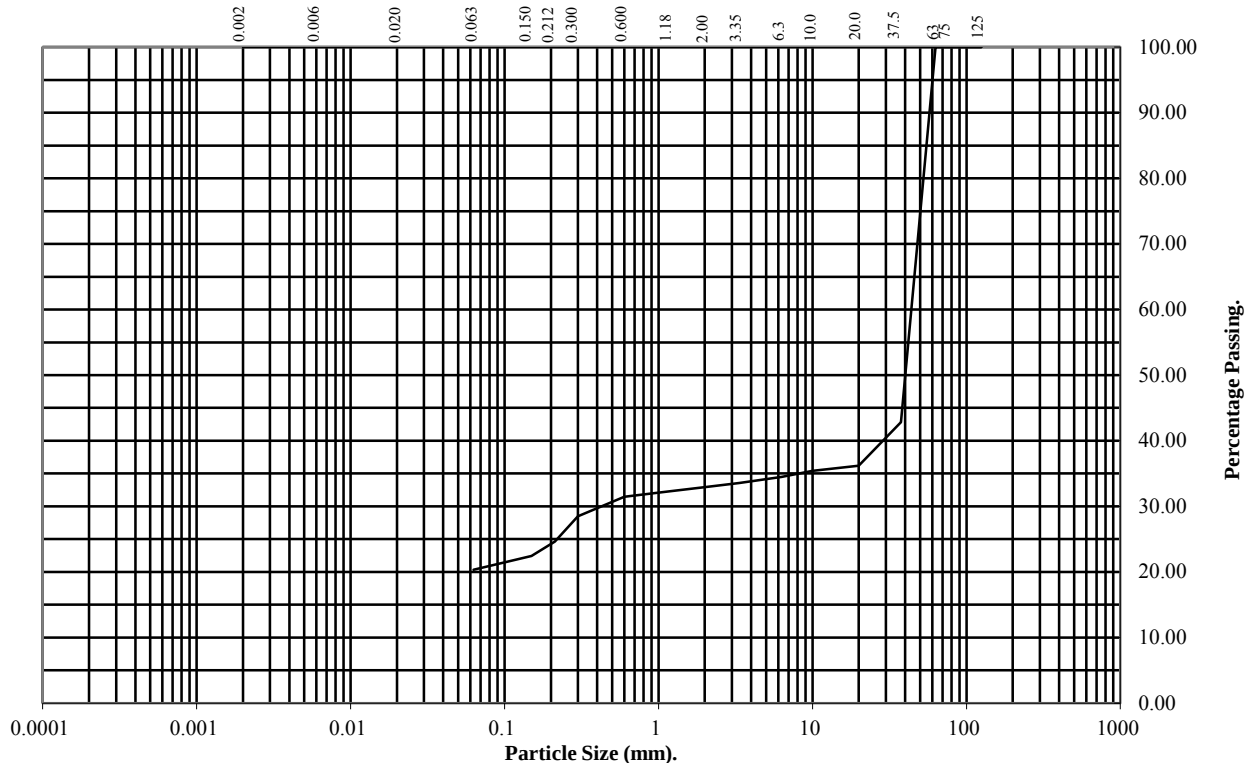
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: BH07 Top Depth (m): 0.00

Sample Number: Base Depth(m): 1.20

Sample Type:



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	43
20	36
10	35
6.3	34
3.35	34
2	33
1.18	32
0.6	31
0.3	28
0.212	25
0.15	22
0.063	20

Soil Fraction	Total Percentage
Cobbles	0
Gravel	67
Sand	13
Silt/Clay	20

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5671
Client Ref:

PARTICLE SIZE DISTRIBUTION TEST

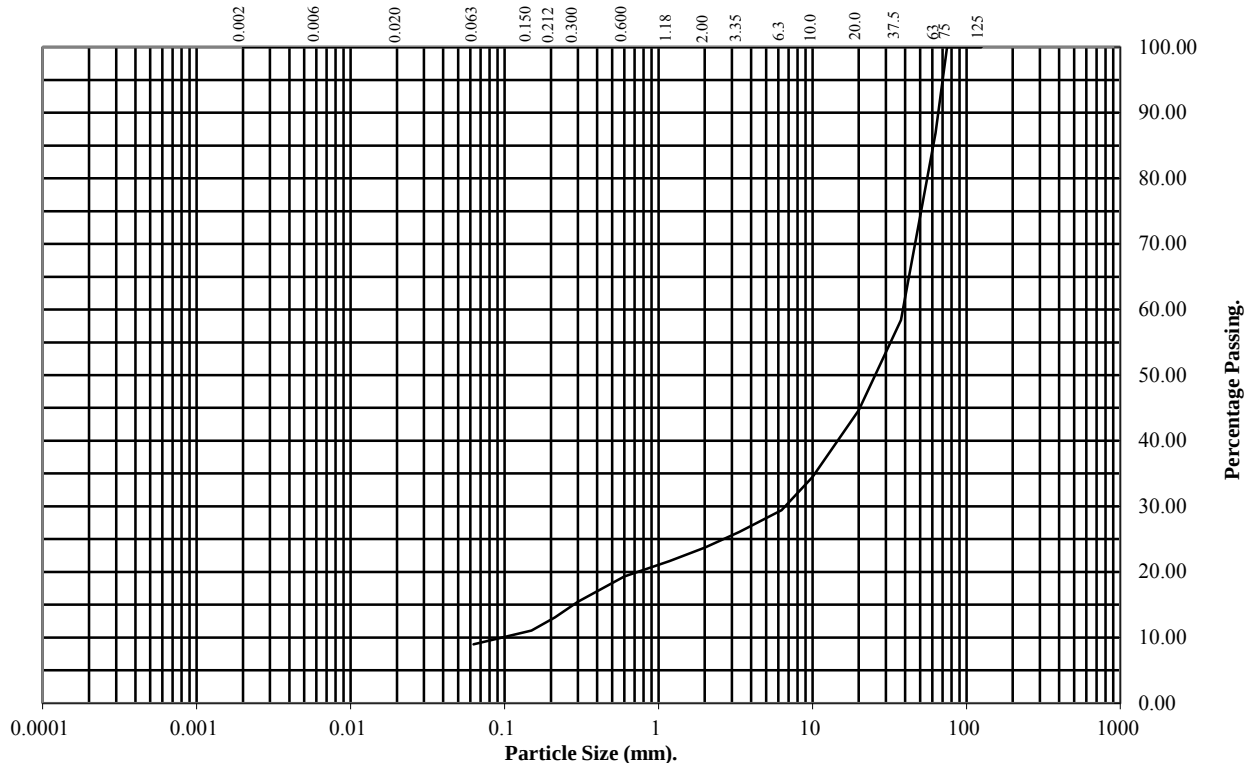
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: BH08 Top Depth (m): 0.00

Sample Number: Base Depth(m): 1.20

Sample Type:



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	87
37.5	58
20	45
10	34
6.3	29
3.35	26
2	24
1.18	22
0.6	19
0.3	15
0.212	13
0.15	11
0.063	9

Soil Fraction	Total Percentage
Cobbles	13
Gravel	63
Sand	15
Silt/Clay	9

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5671
Client Ref:

PARTICLE SIZE DISTRIBUTION TEST

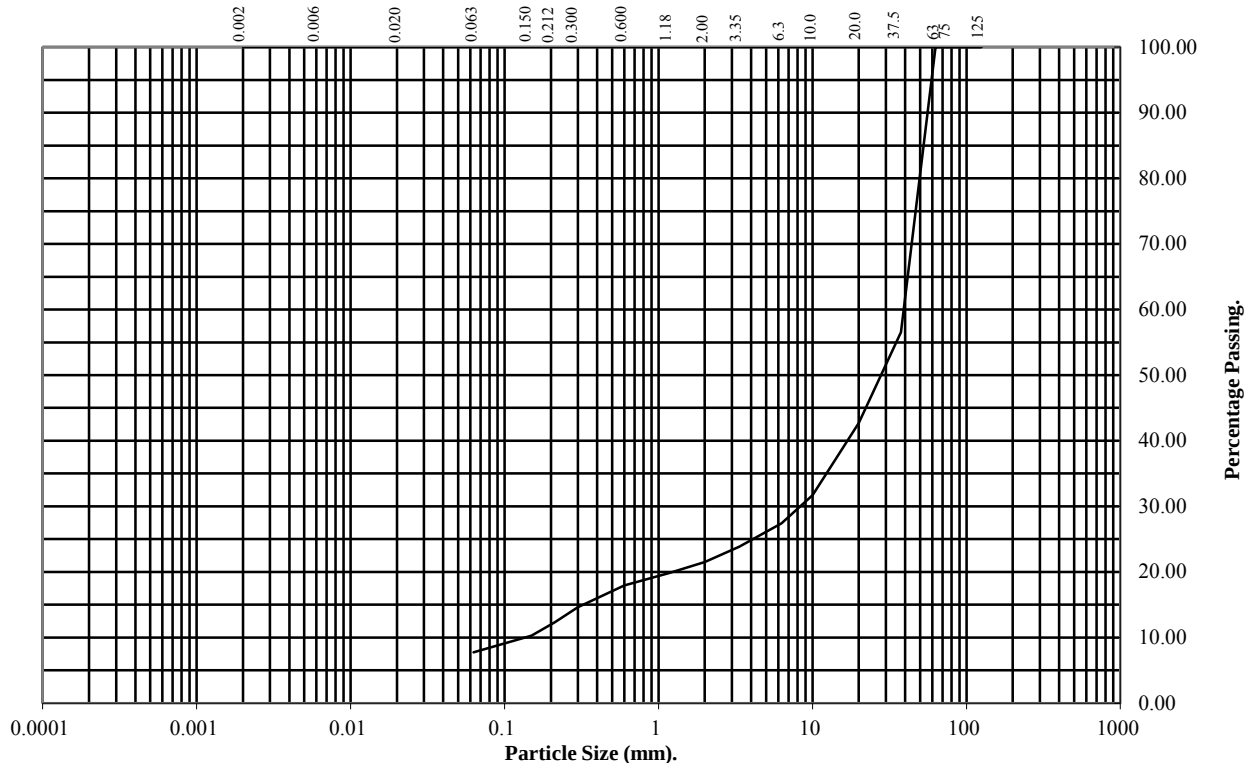
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: BH09 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.20

Sample Type:



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	57
20	43
10	32
6.3	27
3.35	24
2	21
1.18	20
0.6	18
0.3	15
0.212	12
0.15	10
0.063	8

Soil Fraction	Total Percentage
Cobbles	0
Gravel	79
Sand	13
Silt/Clay	8

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5671
Client Ref:

PARTICLE SIZE DISTRIBUTION TEST

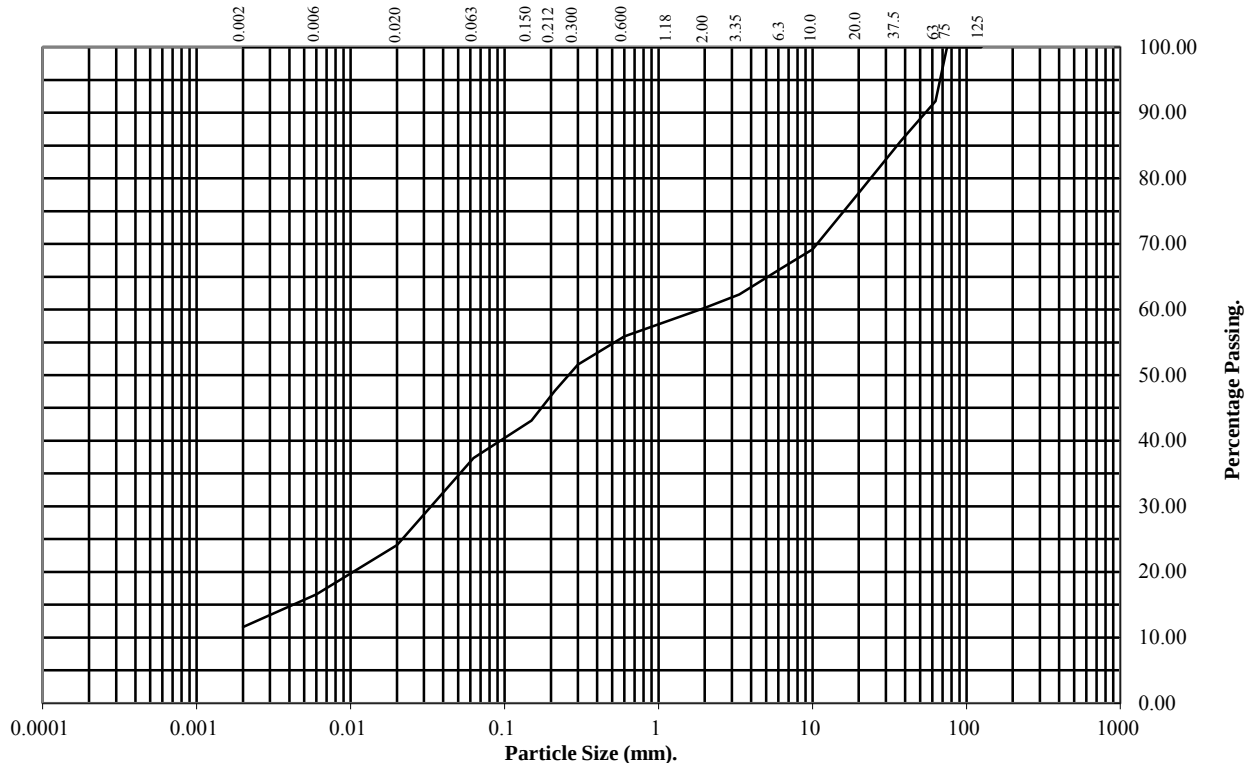
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: BH10 Top Depth (m): 0.00

Sample Number: Base Depth(m): 1.20

Sample Type:



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	92
37.5	86
20	78
10	69
6.3	66
3.35	62
2	60
1.18	58
0.6	56
0.3	52
0.212	48
0.15	43
0.063	37

Particle Diameter	Percentage Passing
0.02	24
0.006	17
0.002	12

Soil Fraction	Total Percentage
Cobbles	8
Gravel	32
Sand	23
Silt	25
Clay	12

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5671
Client Ref:

PARTICLE SIZE DISTRIBUTION TEST

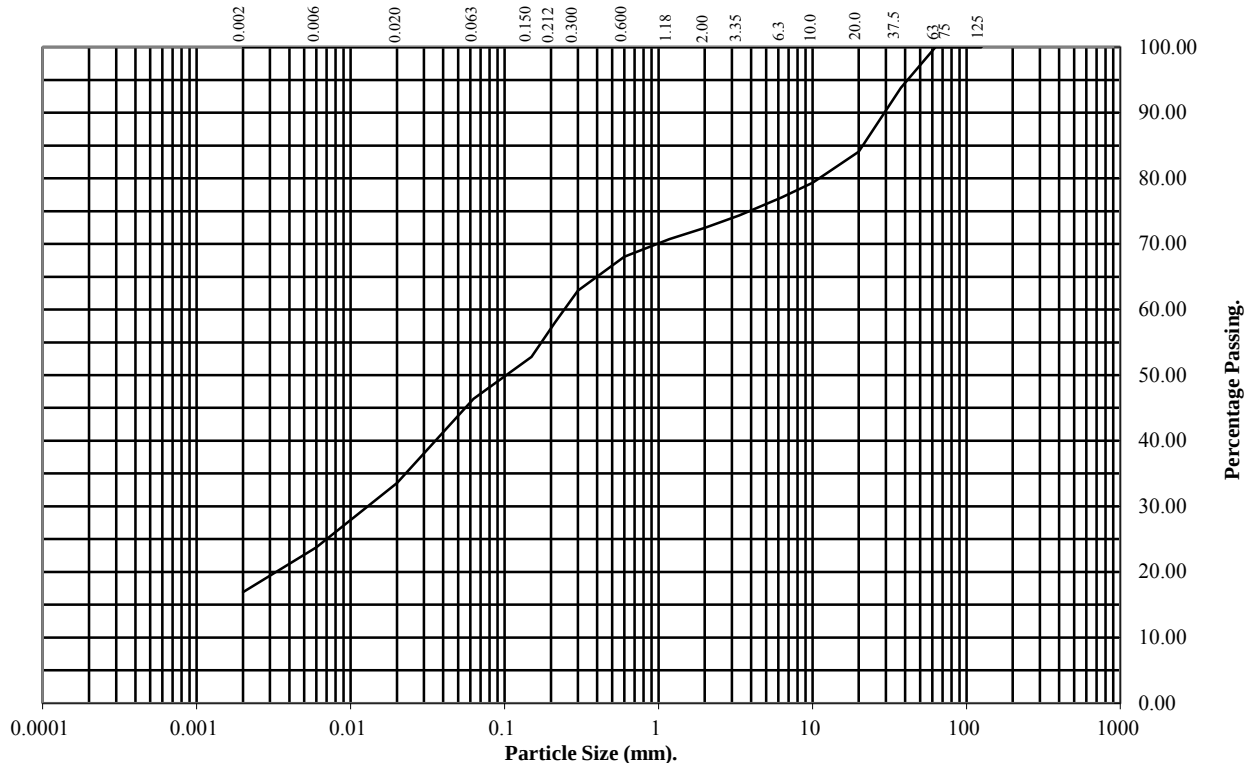
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: BH10 Top Depth (m): 2.00

Sample Number: Base Depth(m): 4.00

Sample Type:



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	94
20	84
10	79
6.3	77
3.35	74
2	72
1.18	71
0.6	68
0.3	63
0.212	58
0.15	53
0.063	46

Particle Diameter	Percentage Passing
0.02	34
0.006	24
0.002	17

Soil Fraction	Total Percentage
Cobbles	0
Gravel	28
Sand	26
Silt	29
Clay	17

Remarks:
See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5671
Client Ref:

PARTICLE SIZE DISTRIBUTION TEST

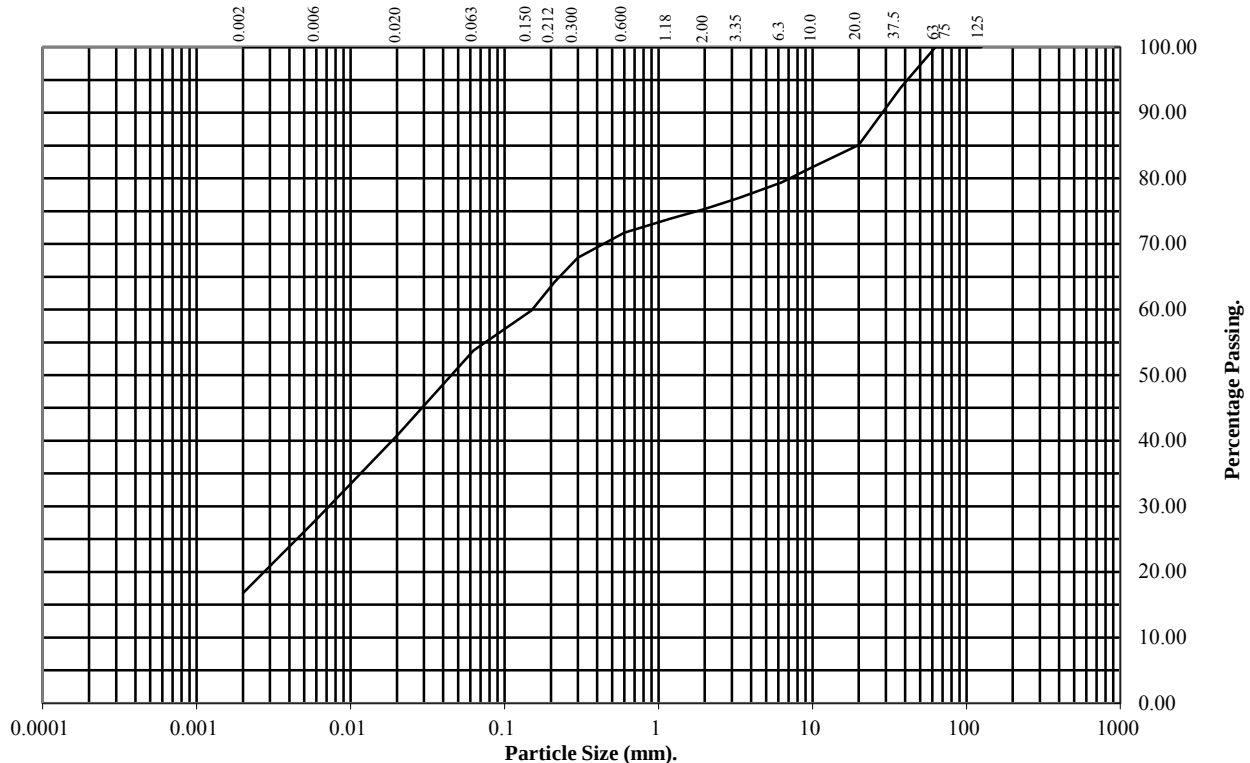
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: BH10 Top Depth (m): 1.20

Sample Number: Base Depth(m): 2.90

Sample Type:



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	94
20	85
10	82
6.3	79
3.35	77
2	75
1.18	74
0.6	72
0.3	68
0.212	64
0.15	60
0.063	54

Particle Diameter	Percentage Passing
0.02	41
0.006	28
0.002	17

Soil Fraction	Total Percentage
Cobbles	0
Gravel	25
Sand	21
Silt	37
Clay	17

Remarks:
See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5671
Client Ref:

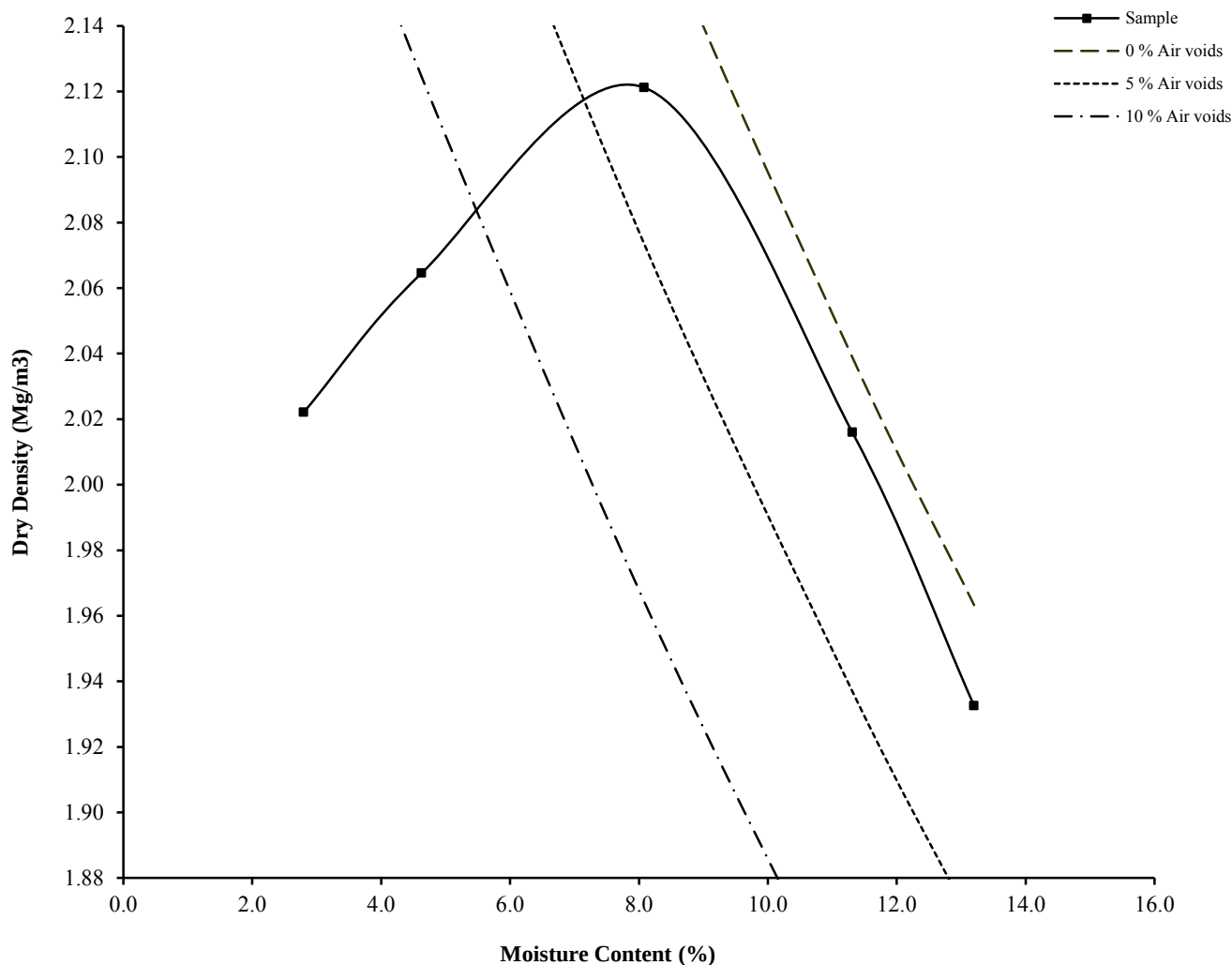
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: BH10 Top Depth (m) : 0.00

Sample Number: Base Depth (m) : 1.20

Sample Type:



Initial Moisture Content:	11	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	14
Maximum Dry Density (Mg/m ³):	2.12		Material Retained on 20.0 mm Test Sieve (%):	8
Optimum Moisture Content (%):	8			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5671
			Client Ref



LABORATORY REPORT



4043

Contract Number: PSL17/5672

Report Date: 15 December 2017
Client's Reference: OC17514
Client Name: Geotechnics Limited
Unit 1, Borders Industrial Park
River Lane
Saltney
Chester
CH4 8RJ

For the attention of: Jon Hutchinson

Contract Title: Coed Darcy
Date Received: 23/11/2017
Date Commenced: 23/11/2017
Date Completed: 15/12/2017

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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

Checked and Approved Signatories:

R Gunson
(Director)

L Knight
(Senior Technician)

A Watkins
(Director)

S Eyre
(Senior Technician)

R Berriman
(Quality Manager)

A Fry
(Senior Technician)

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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP01	C76936	B	0.00	1.20	Greyish brown sandy slightly clayey GRAVEL with cobbles.
TP01	C80015	B	1.50	2.50	Dark brown sandy slightly clayey silty GRAVEL with cobbles.
TP01	C80033	B	2.50	3.40	Dark brown slightly sandy slightly clayey GRAVEL with cobbles.
TP03	C76917	B	0.00	1.20	MADE GROUND brown sandy slightly clayey gravel.
TP04	C76934	B	1.10	1.50	MADE GROUND brown sandy slightly clayey slightly silty GRAVEL with cobbles.
TP04	C76956	B	1.70	3.00	MADE GROUND brown slightly sandy slightly silty gravel.
TP05	C76965	B	1.00	2.30	MADE GROUND brown very sandy clayey silty gravel with cobbles.
TP06	C80017	B	0.30	1.20	Brown mottled grey very gravelly very sandy CLAY.
TP09	C76979	B	0.80	2.00	Brown sandy very clayey GRAVEL.
TP10	C76988	B	0.00	0.80	Brown very sandy very clayey GRAVEL with cobbles.
TP10	C76973	B	0.80	4.00	Brown COBBLE.
TP13	C76971	B	2.20	3.80	Brown mottled grey very sandy very clayey silty GRAVEL with cobbles.
TP14	C76912	B	0.00	1.00	Brown very gravelly very sandy CLAY.
TP15	C800001	B	1.40	3.50	Brown very gravelly very sandy CLAY.
TP15	C80029	B	3.50	5.00	Grey very gravelly very sandy CLAY.
TP16	C80021	B	2.00	3.50	Grey very gravelly very sandy CLAY.
TP16	C80011	B	3.50	5.00	Grey very gravelly very sandy CLAY.
TP17	C76904	B	0.00	1.50	Brown very gravelly very sandy CLAY.
TP17	C76983	B	1.50	2.50	Brown very gravelly very sandy CLAY.

		Coed Darcy	Contract No:
			PSL17/5672
			Client Ref:
			PC176880

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP17	C76946	B	2.50	3.50	Grey sandy clayey GRAVEL with cobbles.
TP18	C80019	B	0.00	0.20	MADE GROUND brown very gravelly very sandy CLAY.
TP18	C76954	B	0.20	1.50	Grey very gravelly very sandy CLAY.
TP18	C80010	B	1.50	3.50	Grey very gravelly very sandy CLAY.
TP19	C80027	B	0.50	2.00	Brown very sandy clayey silty GRAVEL with cobbles.
TP19	C80034	B	2.00	4.00	Brown mottled grey very sandy clayey GRAVEL with cobbles.
TP20	C76985	B	0.00	0.60	Grey very gravelly very sandy CLAY.
TP21	C80007	B	0.00	0.70	Brown sandy clayey GRAVEL with cobbles.
TP21	C80009	B	1.30	3.70	Grey gravelly very sandy CLAY.
TP22	C80025	B	0.00	1.30	Brown slightly sandy slightly silty GRAVEL with cobbles.
TP24	C76978	B	1.70	3.10	MADE GROUND dark grey very gravelly slightly clayey very silty sand.
TP25	C80040	B	0.00	1.50	Brown very sandy very clayey GRAVEL with cobbles.
TP25	C80038	B	1.50	1.90	Brown slightly sandy GRAVEL of cobbles.
TP26	C76970	B	0.00	1.20	Brown mottled grey very gravelly sandy CLAY.
TP27	C76945	B	0.90	3.20	Brown sandy slightly clayey slightly silty GRAVEL with cobbles.
TP28	C76989	B	0.00	0.80	MADE GROUND dark brown very sandy clayey gravel with cobbles.
TP28	C76998	B	0.80	2.00	Brown sandy clayey GRAVEL with cobbles.
TP29	C80012	B	0.00	1.00	MADE GROUND sandy clayey gravel.
TP29	C76976	B	1.00	2.80	Brown sandy clayey GRAVEL.

		Coed Darcy	Contract No:
			PSL17/5672
			Client Ref:
			PC176880

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP29	C76943	B	2.80	4.00	Brown & grey very sandy very clayey GRAVEL.
TP31	595584	B	1.00	3.50	Brown slightly sandy slightly clayey silty GRAVEL with cobbles.
TP32	C80020	B	0.00	0.40	Brown sandy silty GRAVEL of cobbles.
TP32	C76952	B	0.40	2.00	Brown mottled grey very sandy very clayey silty GRAVEL.
TP33		B	0.00	1.30	Greyish brown slightly clayey SAND & GRAVEL.
TP34	C76944	B	1.00	1.80	Brown sandy silty GRAVEL with cobbles.
TP35	C80036	B	0.00	1.20	MADE GROUND brown sandy clayey GRAVEL with cobbles.
TP35	C76961	B	1.60	2.60	MADE GROUND brown very sandy very clayey GRAVEL.
TP35	C76959	B	2.60	4.00	Brown sandy silty GRAVEL with cobbles.
TP36	C76962	B	0.00	1.10	Brown sandy slightly clayey silty GRAVEL with cobbles.
TP36	C80003	B	1.10	3.00	Brown slightly sandy slightly clayey GRAVEL with cobbles.
TP43	C76938	B	0.00	0.50	MADE GROUND brown very gravelly very sandy CLAY.
TP43	C76907	B	0.50	1.50	Brown very gravelly very sandy CLAY.
TP44	C80028	B	1.00	2.50	Brown very sandy very clayey silty GRAVEL with cobbles.
TP44	C80039	B	2.50	4.00	Brown mottled grey very gravelly very sandy CLAY.
TP45	C80008	B	3.10	5.00	Grey very gravelly very clayey SAND.
TP46	C80041	B	0.00	0.80	MADE GROUND brown mottled grey very sandy very clayey silty GRAVEL with cobbles.
TP46	C80005	B	0.80	2.00	MADE GROUND brown very gravelly very sandy CLAY.
TP46	C80024	B	2.00	2.90	Brown very gravelly very sandy CLAY.

		Coed Darcy	Contract No:
			PSL17/5672
			Client Ref:
			PC176880

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

[illegible]

PSL
Professional Soils Laboratory

Coed Darcy

Contract No:

PSL17/5672

Client Ref:

PC176880

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m ³ Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP01	C76936	B	0.00	1.20	8.1							
TP01	C80015	B	1.50	2.50	6.2							
TP01	C80033	B	2.50	3.40	6.1							
TP03	C76917	B	0.00	1.20	6.4							
TP04	C76934	B	1.10	1.50	8.1							
TP04	C76956	B	1.70	3.00	4.5							
TP05	C76965	B	1.00	2.30	11							
TP06	C80017	B	0.30	1.20	13							
TP09	C76979	B	0.80	2.00	12							
TP10	C76988	B	0.00	0.80	8.1							
TP10	C76973	B	0.80	4.00	0.2							
TP13	C76971	B	2.20	3.80	10							
TP14	C76912	B	0.00	1.00	15			33	17	16	51	Low plasticity CL.
TP15	C800001	B	1.40	3.50	11			29	14	15	63	Low plasticity CL.
TP15	C80029	B	3.50	5.00	21			30	15	15	63	Low plasticity CL.
TP16	C80021	B	2.00	3.50	12			27	13	14	68	Low plasticity CL.
TP16	C80011	B	3.50	5.00	31			28	13	15	63	Low plasticity CL.
TP17	C76904	B	0.00	1.50	13							
TP17	C76983	B	1.50	2.50	9.5							

SYMBOLS : NP : Non Plastic

* : Liquid Limit and Plastic Limit Wet Sieved.



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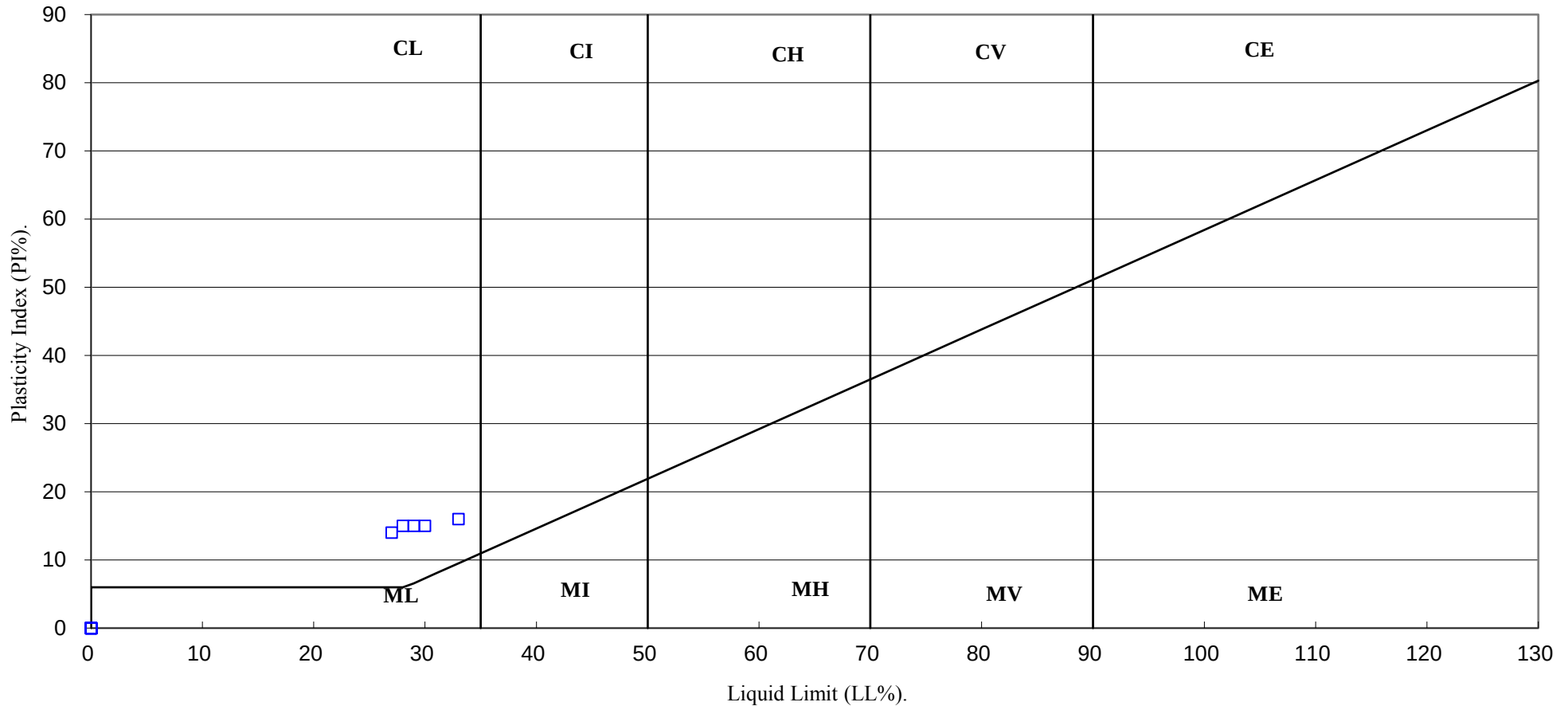
Contract No:

PSL17/5672

Client Ref:

PC176880

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



PSL
Professional Soils Laboratory

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Contract No:

PSL17/5672

Client Ref:

PC176880

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m ³ Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP17	C76946	B	2.50	3.50	5.8							
TP18	C80019	B	0.00	0.20	14			31	15	16	61	Low plasticity CL.
TP18	C76954	B	0.20	1.50	10			28	13	15	73	Low plasticity CL.
TP18	C80010	B	1.50	3.50	8.4			27	13	14	56	Low plasticity CL.
TP19	C80027	B	0.50	2.00	12			30	15	15	34	Low plasticity CL.
TP19	C80034	B	2.00	4.00	13			29	15	14	39	Low plasticity CL.
TP20	C76985	B	0.00	0.60	8.7			29	14	15	60	Low plasticity CL.
TP21	C80007	B	0.00	0.70	10							
TP21	C80009	B	1.30	3.70	9.5			28	14	14	75	Low plasticity CL.
TP22	C80025	B	0.00	1.30	6.9							
TP24	C76978	B	1.70	3.10	24							
TP25	C80040	B	0.00	1.50	7.9							
TP25	C80038	B	1.50	1.90	1							
TP26	C76970	B	0.00	1.20	16			35	18	17	59	Intermediate plasticity CL.
TP27	C76945	B	0.90	3.20	5.9							
TP28	C76989	B	0.00	0.80	10							
TP28	C76998	B	0.80	2.00	7.3							
TP31	595584	B	1.00	3.50	9.0							
TP32	C80020	B	0.00	0.40	9.3							

SYMBOLS : NP : Non Plastic

* : Liquid Limit and Plastic Limit Wet Sieved.



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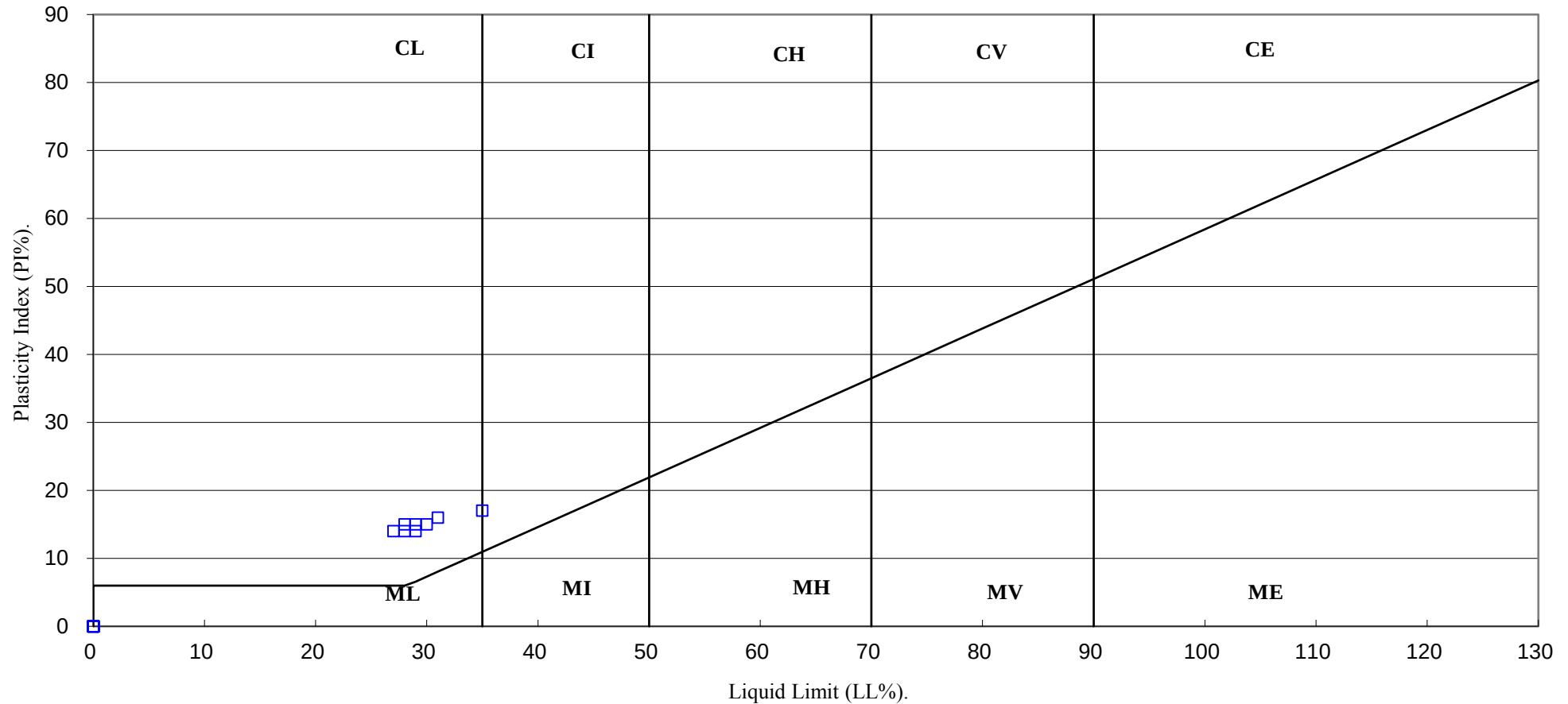
Contract No:

PSL17/5672

Client Ref:

PC176880

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



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Professional Soils Laboratory

Coed Darcy

Contract No:

PSL17/5672

Client Ref:

PC176880

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m ³ Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP32	C76952	B	0.40	2.00	16							
TP34	C76944	B	1.00	1.80	5.8							
TP35	C80036	B	0.00	1.20	7.4							
TP35	C76961	B	1.60	2.60	11							
TP35	C76959	B	2.60	4.00	5.4							
TP36	C76962	B	0.00	1.10	6.9							
TP36	C80003	B	1.10	3.00	7.1							
TP43	C76938	B	0.00	0.50	13							
TP43	C76907	B	0.50	1.50	10.0							
TP44	C80028	B	1.00	2.50	6.9							
TP44	C80039	B	2.50	4.00	9.2							
TP45	C80008	B	3.10	5.00	9.3			27	13	14	40	Low plasticity CL.
TP46	C80041	B	0.00	0.80	11			30	15	15	37	Low plasticity CL.
TP46	C80005	B	0.80	2.00	7.8			29	14	15	59	Low plasticity CL.
TP46	C80024	B	2.00	2.90	8.1			28	13	15	63	Low plasticity CL.
TP49	C76937	B	0.00	0.80	10							
TP49	C80014	B	2.20	3.00	11			32	16	16	57	Low plasticity CL.
TP50	C76950	B	0.00	0.50	8.3							
TP51	C76926	B	0.00	0.55	23			36	19	17	89	Intermediate plasticity CI.

SYMBOLS : NP : Non Plastic

* : Liquid Limit and Plastic Limit Wet Sieved.



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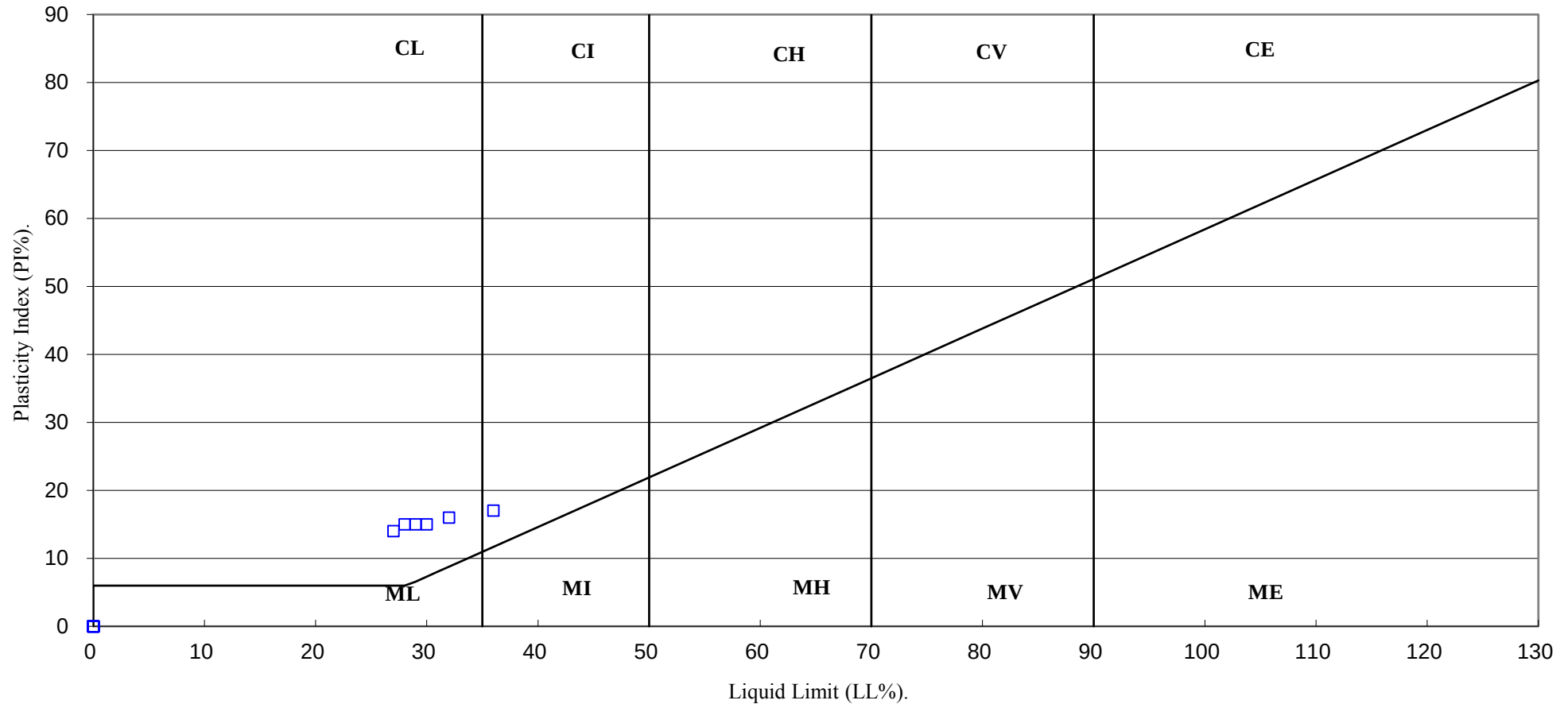
Contract No:

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Client Ref:

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PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



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Contract No:

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Client Ref:

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SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

[illegible]

SYMBOLS : NP : Non Plastic

*** : Liquid Limit and Plastic Limit Wet Sieved.**



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Contract No:

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Client Ref:

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PARTICLE SIZE DISTRIBUTION TEST

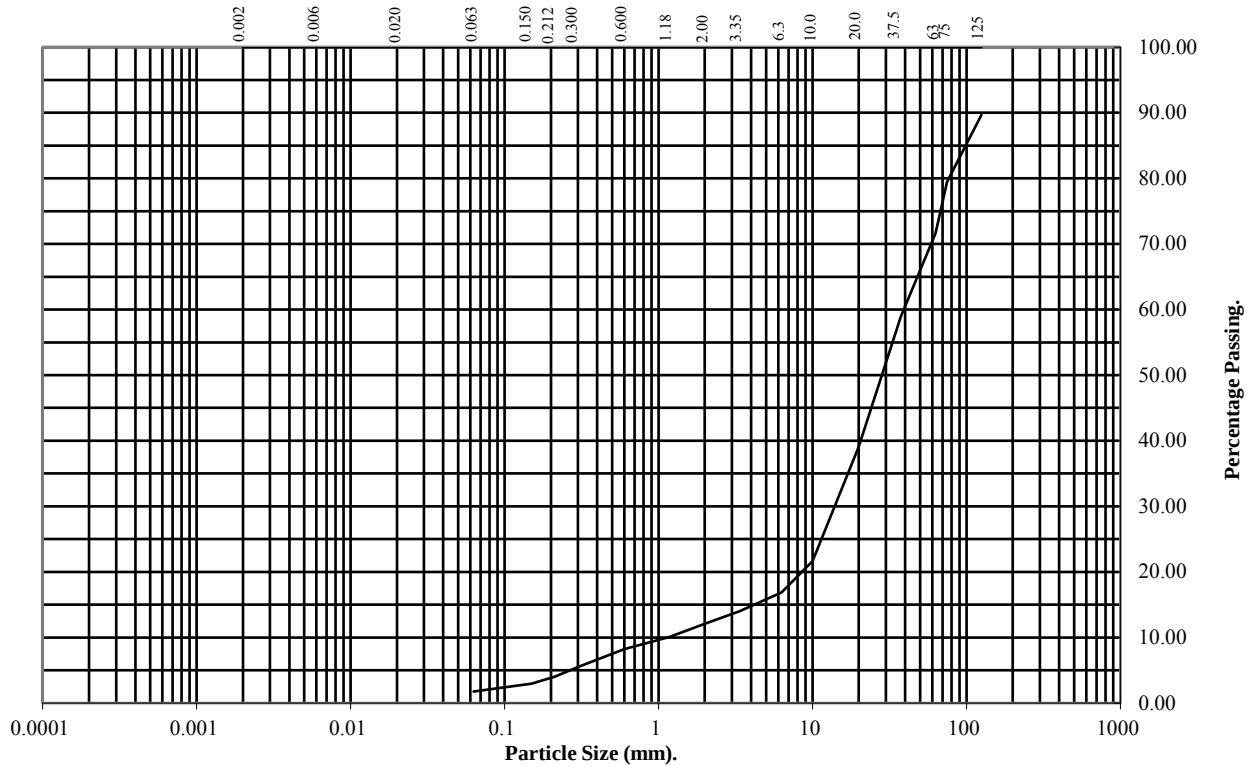
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP01 Top Depth (m): 0.00

Sample Number: C76936 Base Depth(m): 1.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	90
75	79
63	72
37.5	59
20	39
10	22
6.3	17
3.35	14
2	12
1.18	10
0.6	8
0.3	6
0.212	4
0.15	3
0.063	2

Soil Fraction	Total Percentage
Cobbles	28
Gravel	60
Sand	10
Silt/Clay	2

Remarks:

See Summary of Soil Descriptions



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Contract No:
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PARTICLE SIZE DISTRIBUTION TEST

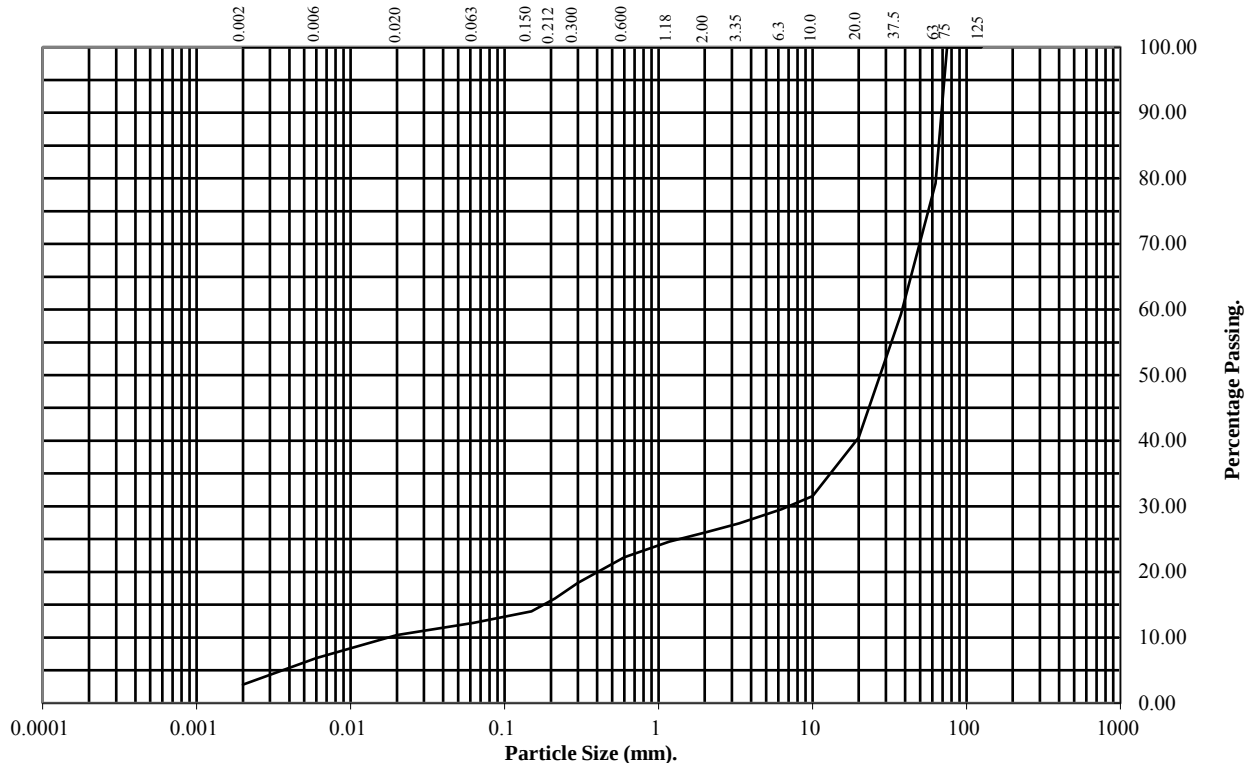
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP01 Top Depth (m): 1.50

Sample Number: C80015 Base Depth(m): 2.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	79
37.5	59
20	41
10	32
6.3	30
3.35	27
2	26
1.18	25
0.6	22
0.3	18
0.212	16
0.15	14
0.063	12

Particle Diameter	Percentage Passing
0.02	10
0.006	7
0.002	3

Soil Fraction	Total Percentage
Cobbles	21
Gravel	53
Sand	14
Silt	9
Clay	3

Remarks:
See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

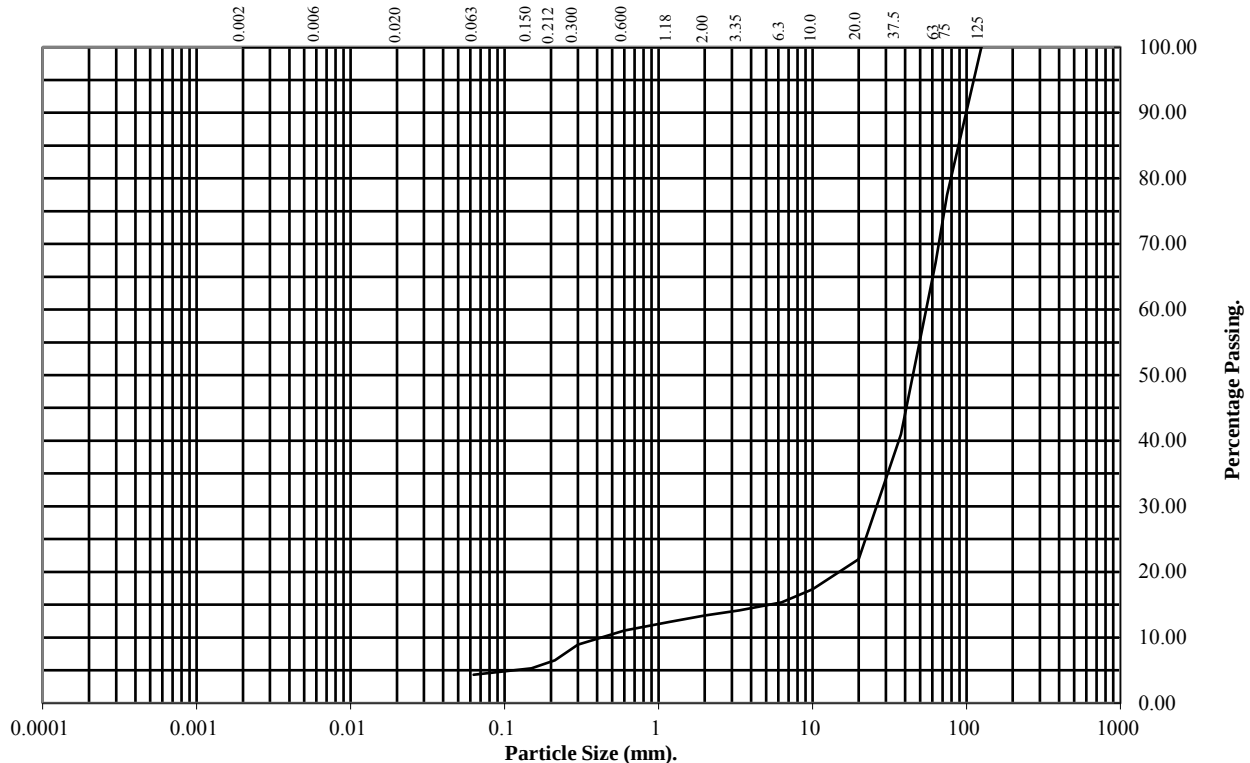
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP01 Top Depth (m): 2.50

Sample Number: C80033 Base Depth(m): 3.40

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	77
63	67
37.5	41
20	22
10	17
6.3	15
3.35	14
2	13
1.18	12
0.6	11
0.3	9
0.212	7
0.15	5
0.063	4

Soil Fraction	Total Percentage
Cobbles	33
Gravel	54
Sand	9
Silt/Clay	4

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

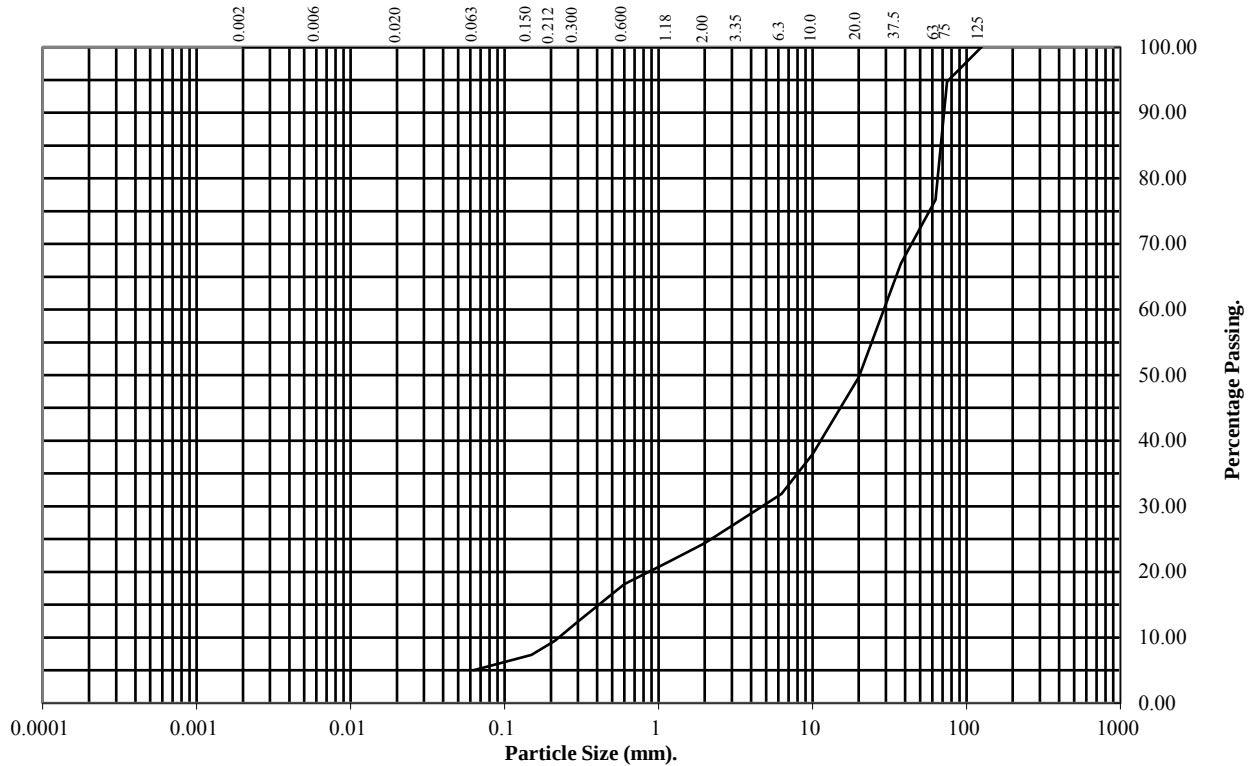
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP03 Top Depth (m): 0.00

Sample Number: C76917 Base Depth(m): 1.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	95
63	77
37.5	67
20	50
10	38
6.3	32
3.35	28
2	24
1.18	22
0.6	18
0.3	12
0.212	9
0.15	7
0.063	5

Soil Fraction	Total Percentage
Cobbles	23
Gravel	53
Sand	19
Silt/Clay	5

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

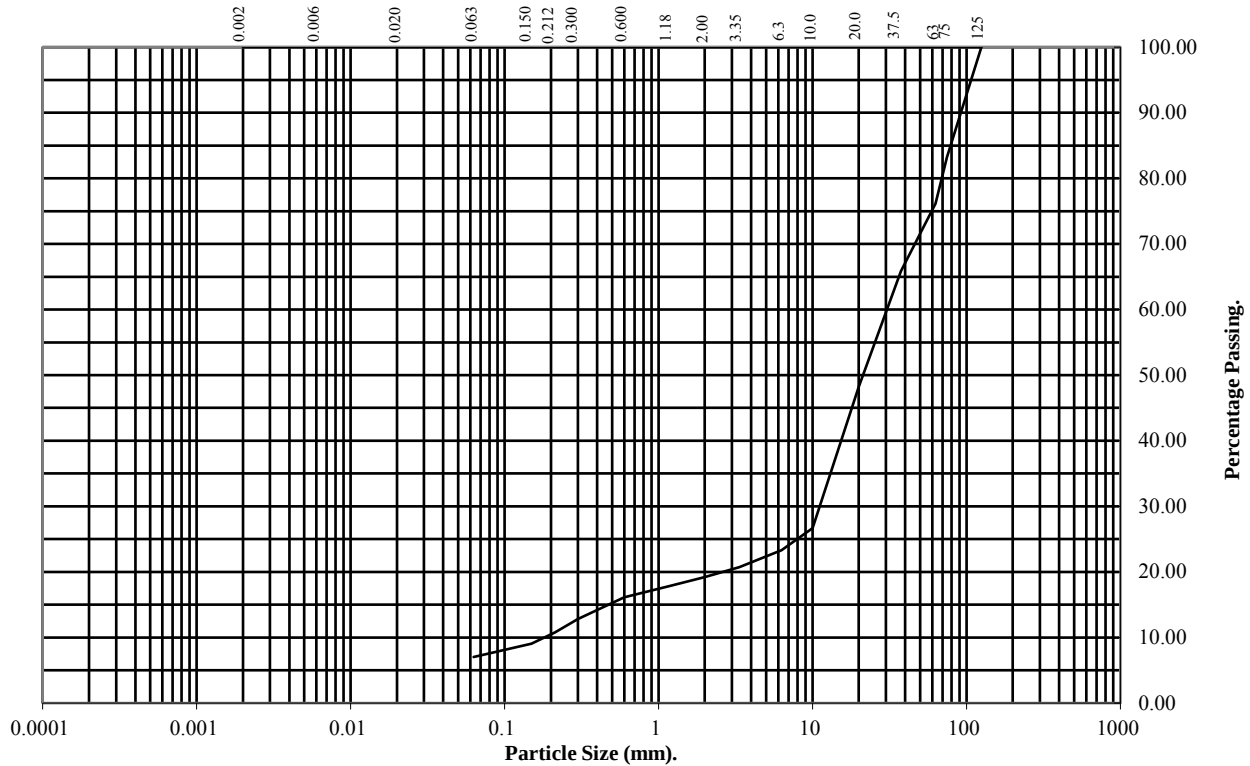
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP04 Top Depth (m): 1.10

Sample Number: C76934 Base Depth(m): 1.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	83
63	76
37.5	66
20	48
10	27
6.3	23
3.35	21
2	19
1.18	18
0.6	16
0.3	13
0.212	11
0.15	9
0.063	7

Soil Fraction	Total Percentage
Cobbles	24
Gravel	57
Sand	12
Silt/Clay	7

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

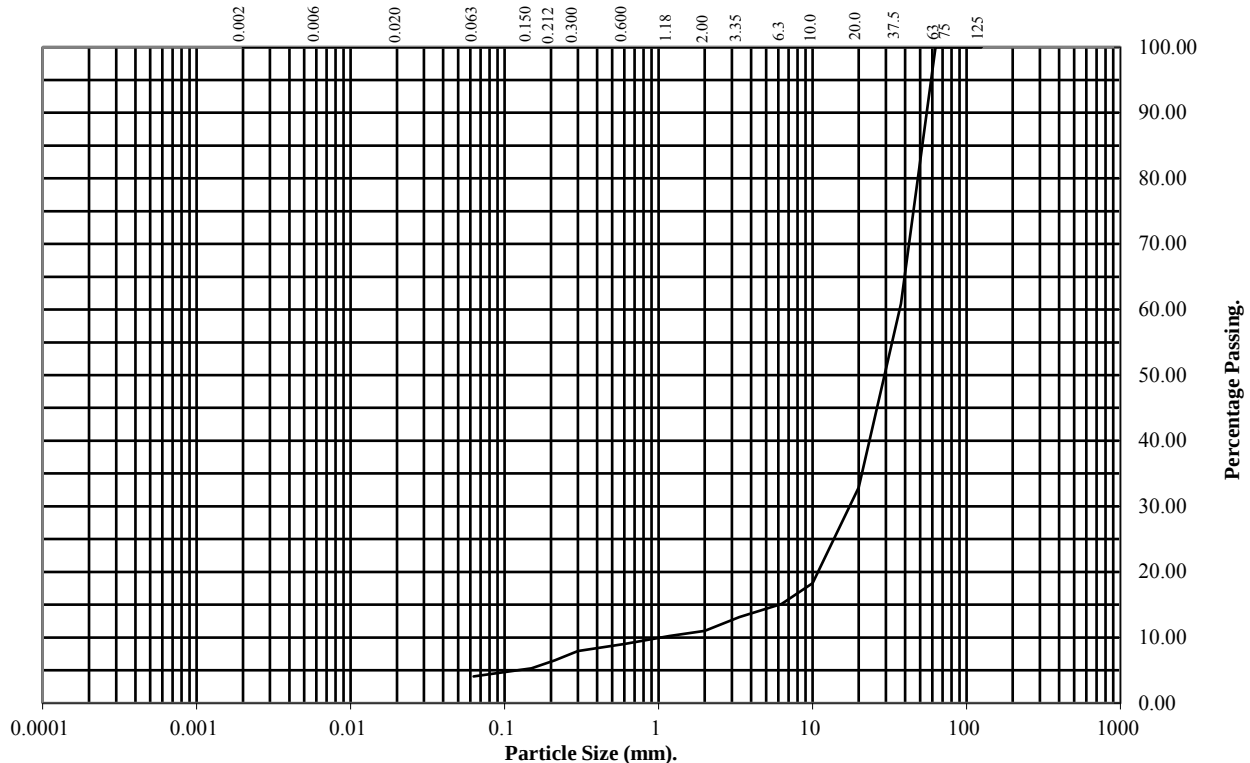
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP04 Top Depth (m): 1.70

Sample Number: C76956 Base Depth(m): 3.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	61
20	33
10	18
6.3	15
3.35	13
2	11
1.18	10
0.6	9
0.3	8
0.212	7
0.15	5
0.063	4

Soil Fraction	Total Percentage
Cobbles	0
Gravel	89
Sand	7
Silt/Clay	4

Remarks:
See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

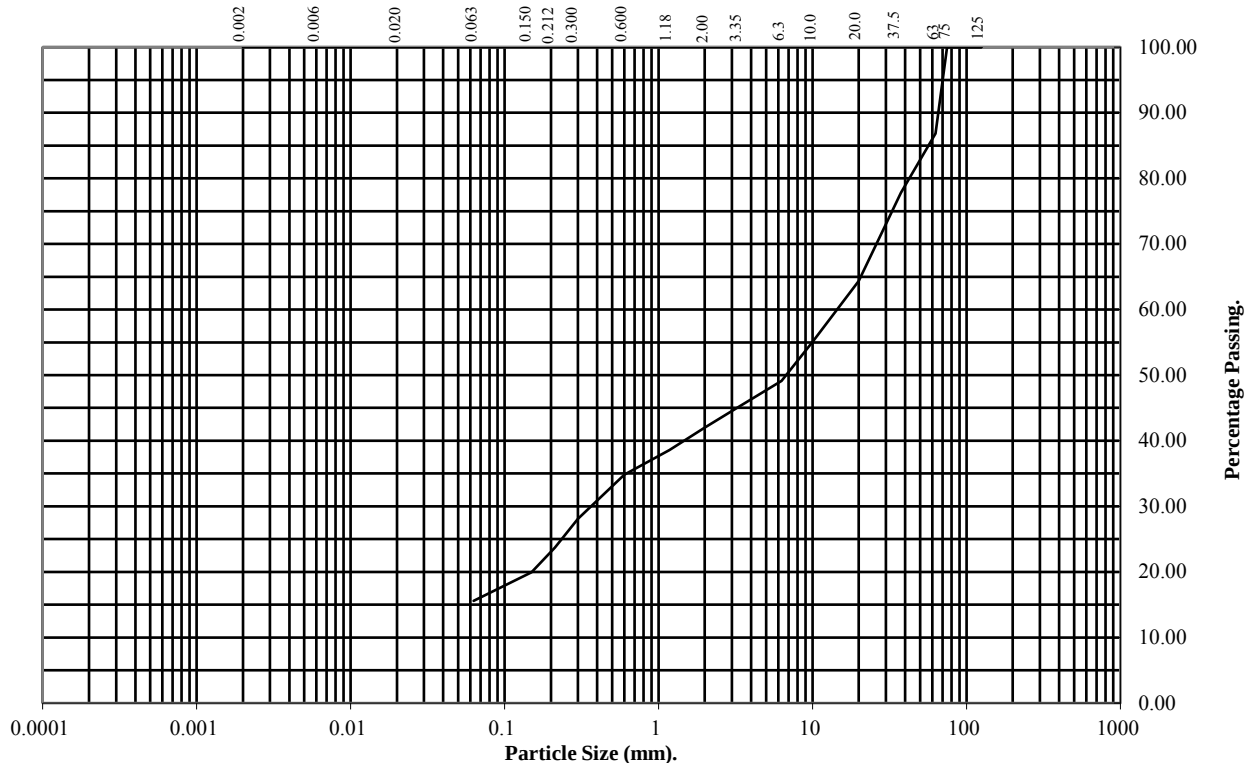
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP05 Top Depth (m): 1.00

Sample Number: C76965 Base Depth(m): 2.30

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	87
37.5	78
20	64
10	55
6.3	49
3.35	45
2	42
1.18	39
0.6	35
0.3	28
0.212	24
0.15	20
0.063	16

Soil Fraction	Total Percentage
Cobbles	13
Gravel	45
Sand	26
Silt/Clay	16

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

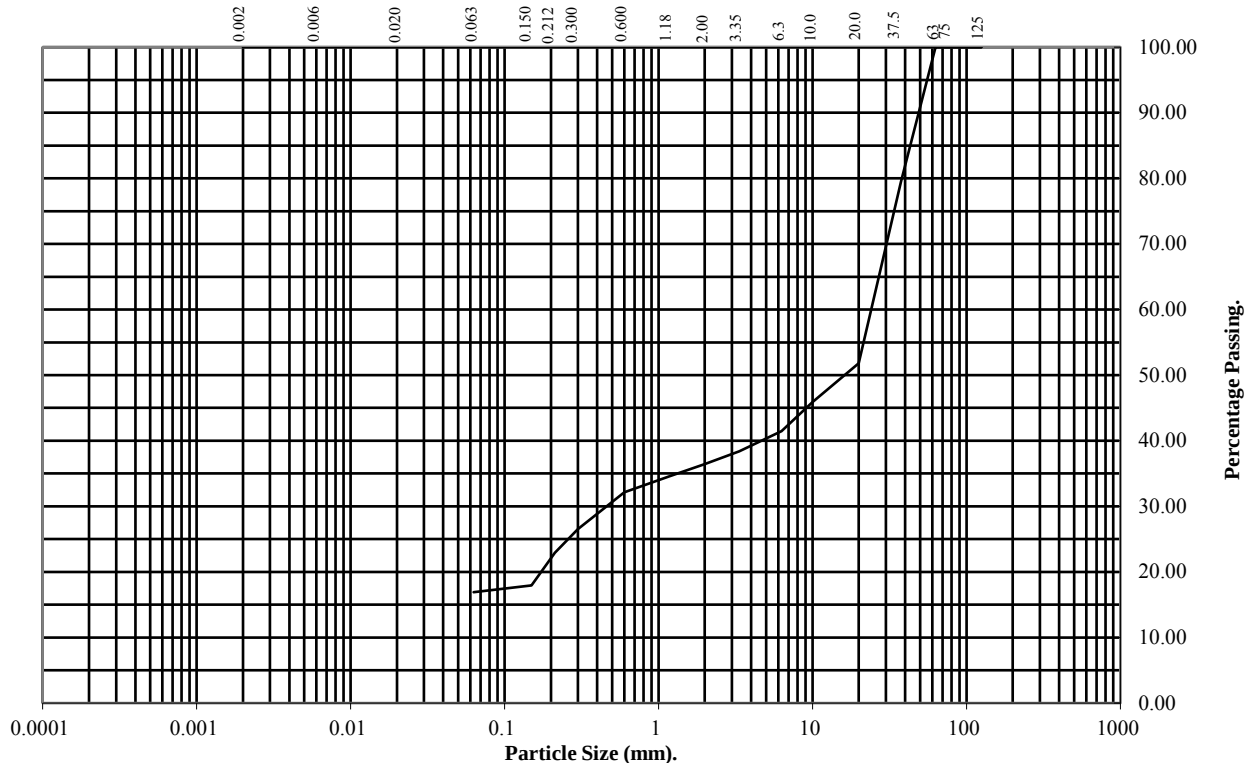
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP09 Top Depth (m): 0.80

Sample Number: C76979 Base Depth(m): 2.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	79
20	52
10	46
6.3	41
3.35	38
2	36
1.18	35
0.6	32
0.3	27
0.212	23
0.15	18
0.063	17

Soil Fraction	Total Percentage
Cobbles	0
Gravel	64
Sand	19
Silt/Clay	17

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

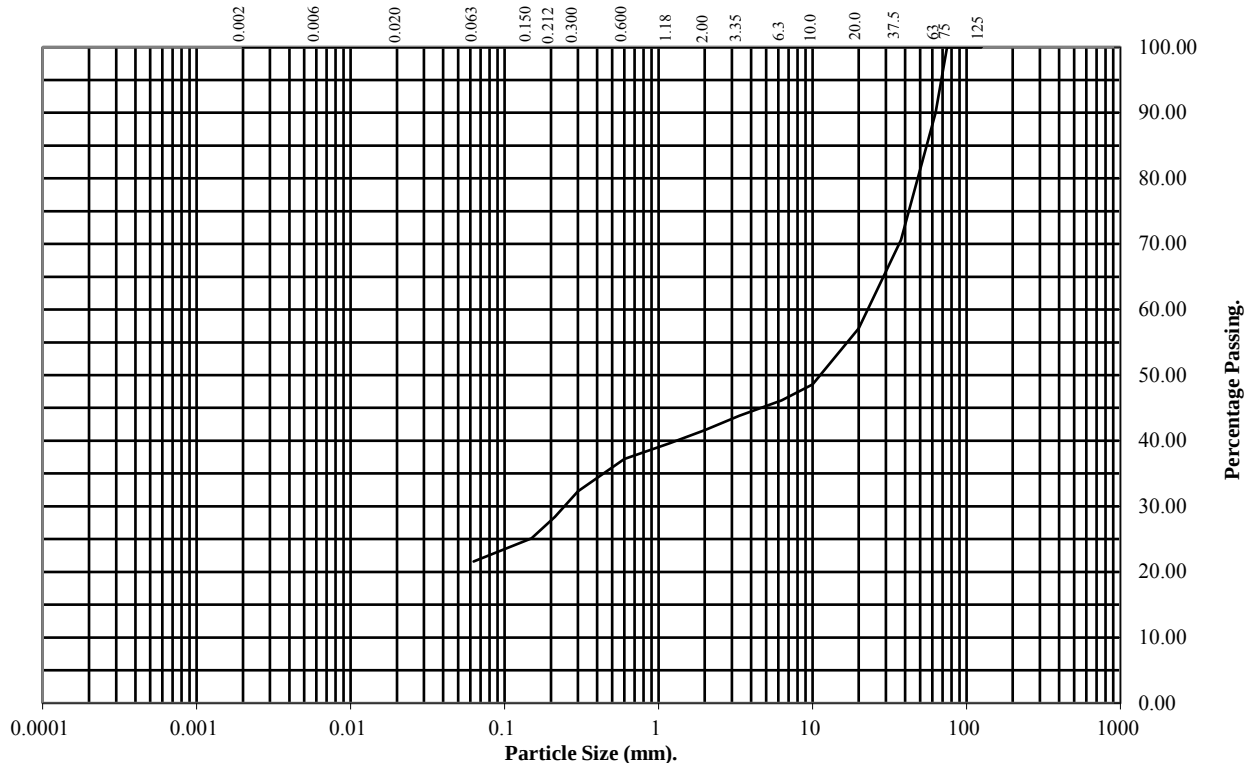
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP10 Top Depth (m): 0.00

Sample Number: C76988 Base Depth(m): 0.80

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	90
37.5	71
20	57
10	49
6.3	46
3.35	44
2	42
1.18	40
0.6	37
0.3	32
0.212	28
0.15	25
0.063	22

Soil Fraction	Total Percentage
Cobbles	10
Gravel	48
Sand	20
Silt/Clay	22

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

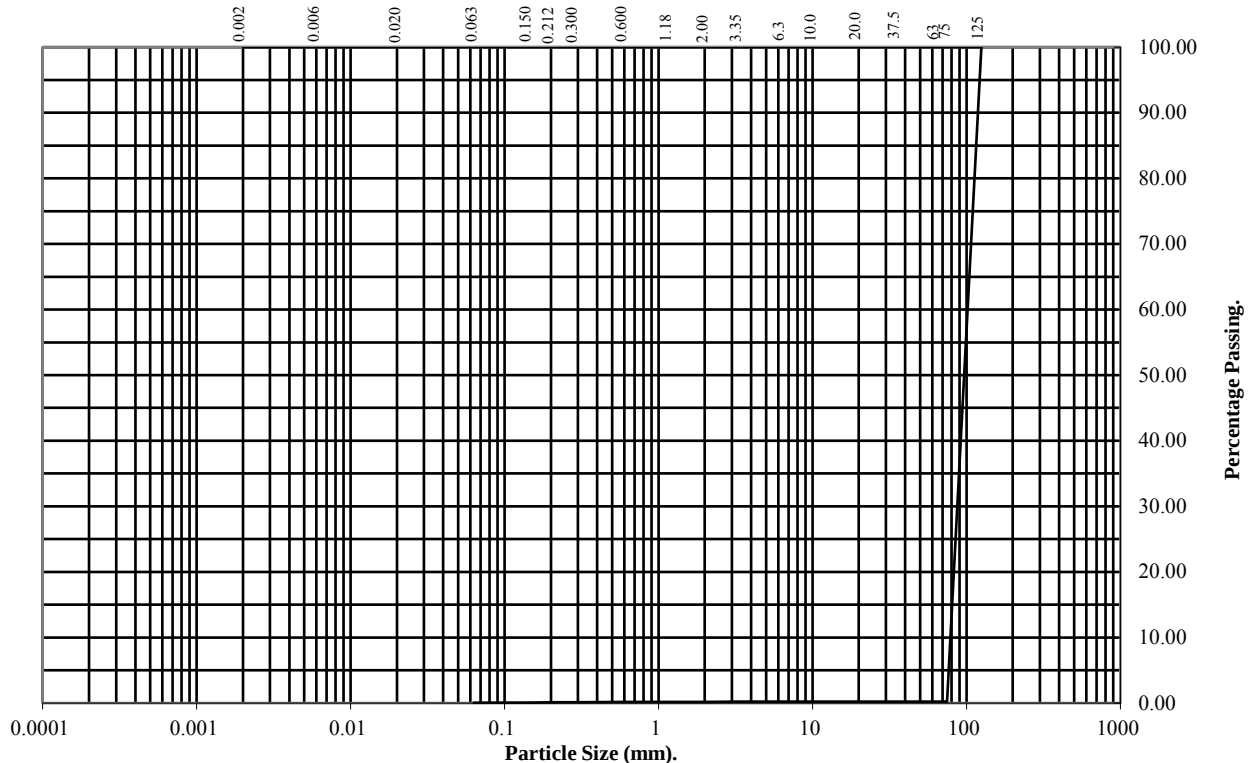
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP10 Top Depth (m): 0.80

Sample Number: C76973 Base Depth(m): 4.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	0
63	0
37.5	0
20	0
10	0
6.3	0
3.35	0
2	0
1.18	0
0.6	0
0.3	0
0.212	0
0.15	0
0.063	0

Soil Fraction	Total Percentage
Cobbles	100
Gravel	0
Sand	0
Silt/Clay	0

Remarks:
See Summary of Soil Descriptions



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Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

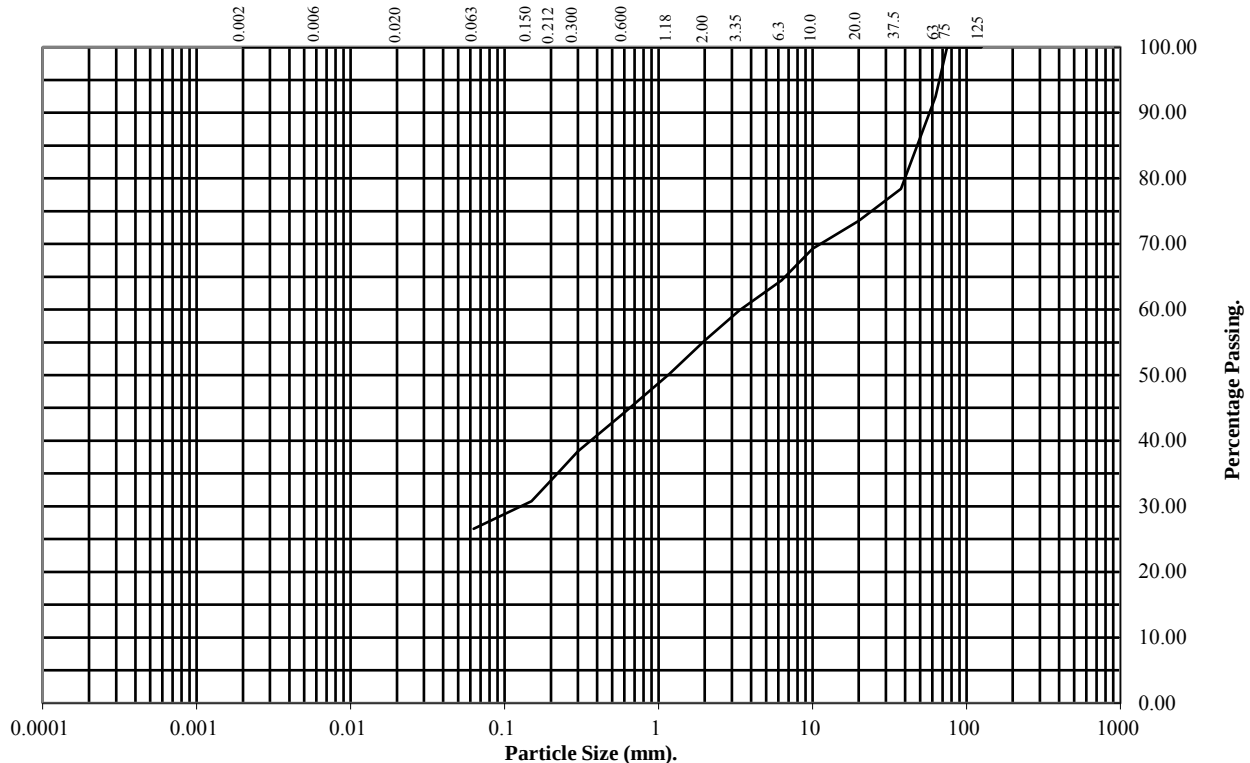
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP13 Top Depth (m): 2.20

Sample Number: C76971 Base Depth(m): 3.80

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	92
37.5	78
20	74
10	69
6.3	64
3.35	60
2	55
1.18	50
0.6	44
0.3	38
0.212	35
0.15	31
0.063	27

Soil Fraction	Total Percentage
Cobbles	8
Gravel	37
Sand	28
Silt/Clay	27

Remarks:

See Summary of Soil Descriptions



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Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

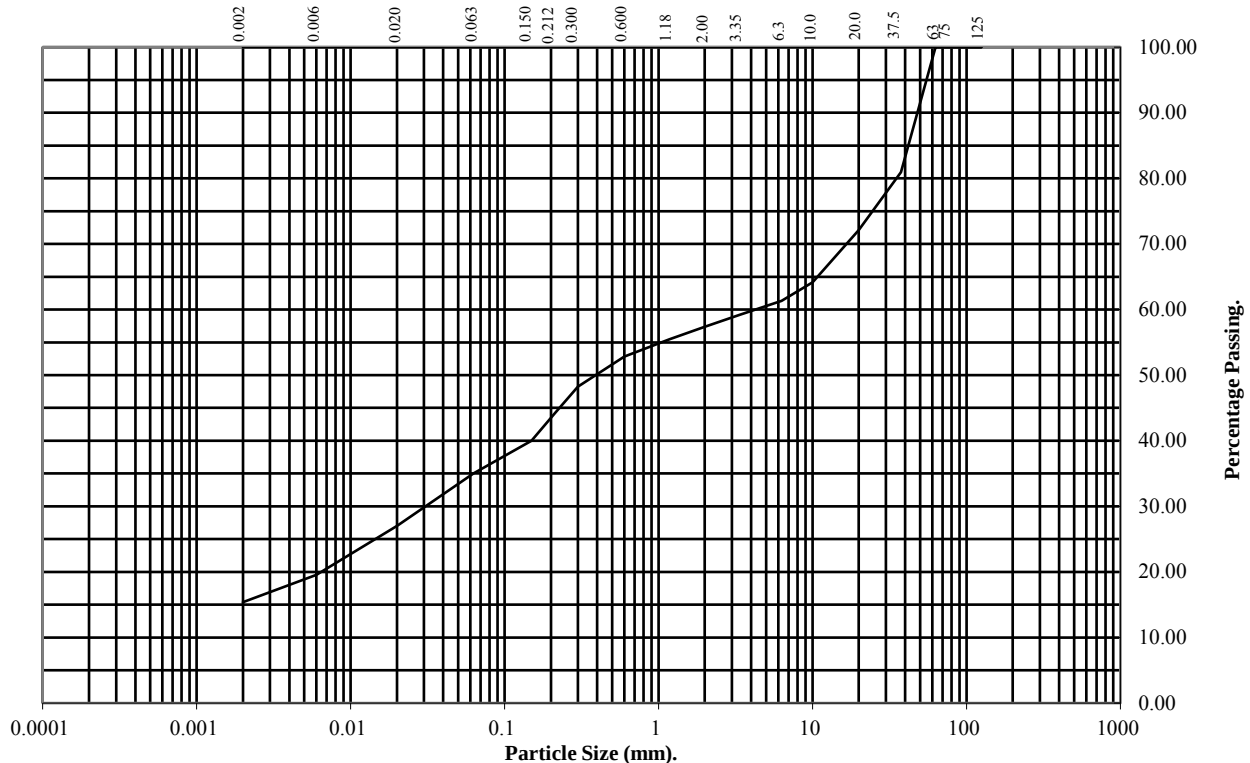
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP14 Top Depth (m): 0.00

Sample Number: C76912 Base Depth(m): 1.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	81
20	72
10	64
6.3	61
3.35	59
2	57
1.18	55
0.6	53
0.3	48
0.212	44
0.15	40
0.063	35

Particle Diameter	Percentage Passing
0.02	27
0.006	20
0.002	15

Soil Fraction	Total Percentage
Cobbles	0
Gravel	43
Sand	22
Silt	20
Clay	15

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

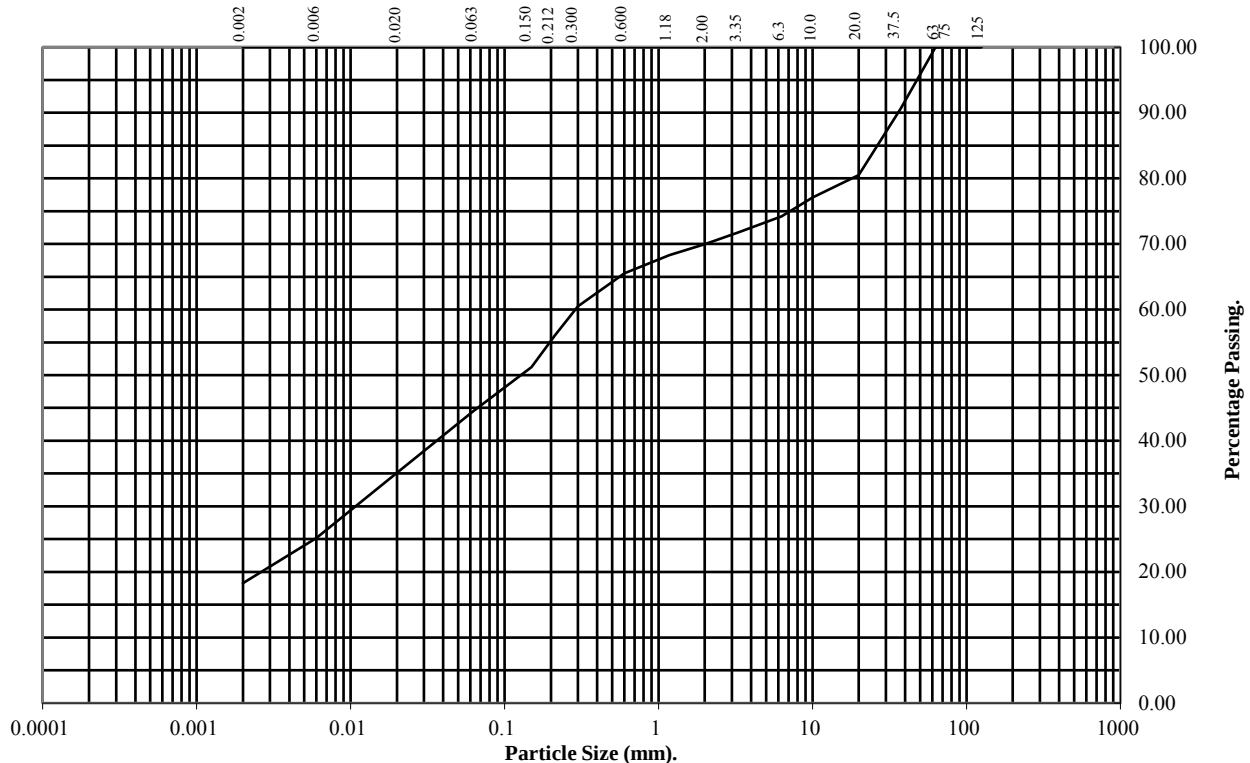
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP15 Top Depth (m): 1.40

Sample Number: C800001 Base Depth(m): 3.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	91
20	81
10	77
6.3	74
3.35	72
2	70
1.18	68
0.6	66
0.3	60
0.212	56
0.15	51
0.063	45

Particle Diameter	Percentage Passing
0.02	35
0.006	25
0.002	18

Soil Fraction	Total Percentage
Cobbles	0
Gravel	30
Sand	25
Silt	27
Clay	18

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

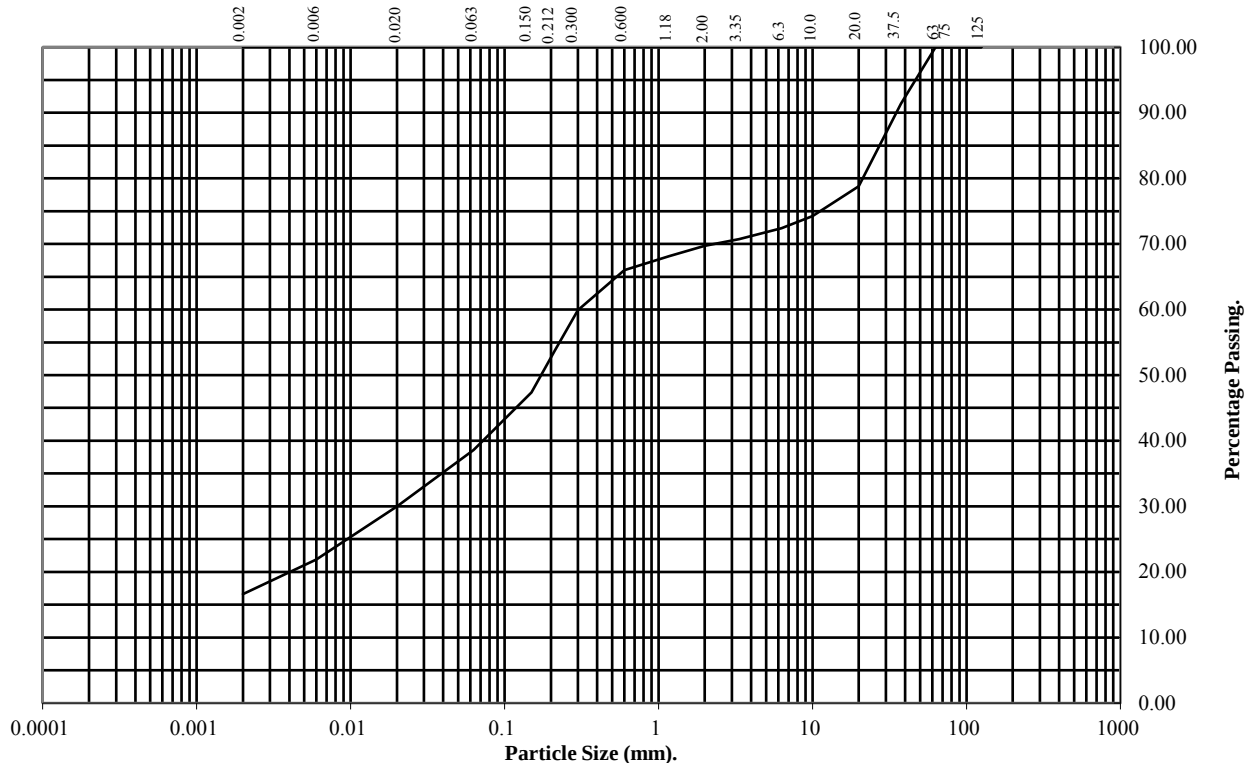
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP15 Top Depth (m): 3.50

Sample Number: C80029 Base Depth(m): 5.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	91
20	79
10	74
6.3	72
3.35	71
2	70
1.18	68
0.6	66
0.3	60
0.212	54
0.15	47
0.063	39

Particle Diameter	Percentage Passing
0.02	30
0.006	22
0.002	17

Soil Fraction	Total Percentage
Cobbles	0
Gravel	30
Sand	31
Silt	22
Clay	17

Remarks:

See Summary of Soil Descriptions



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Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

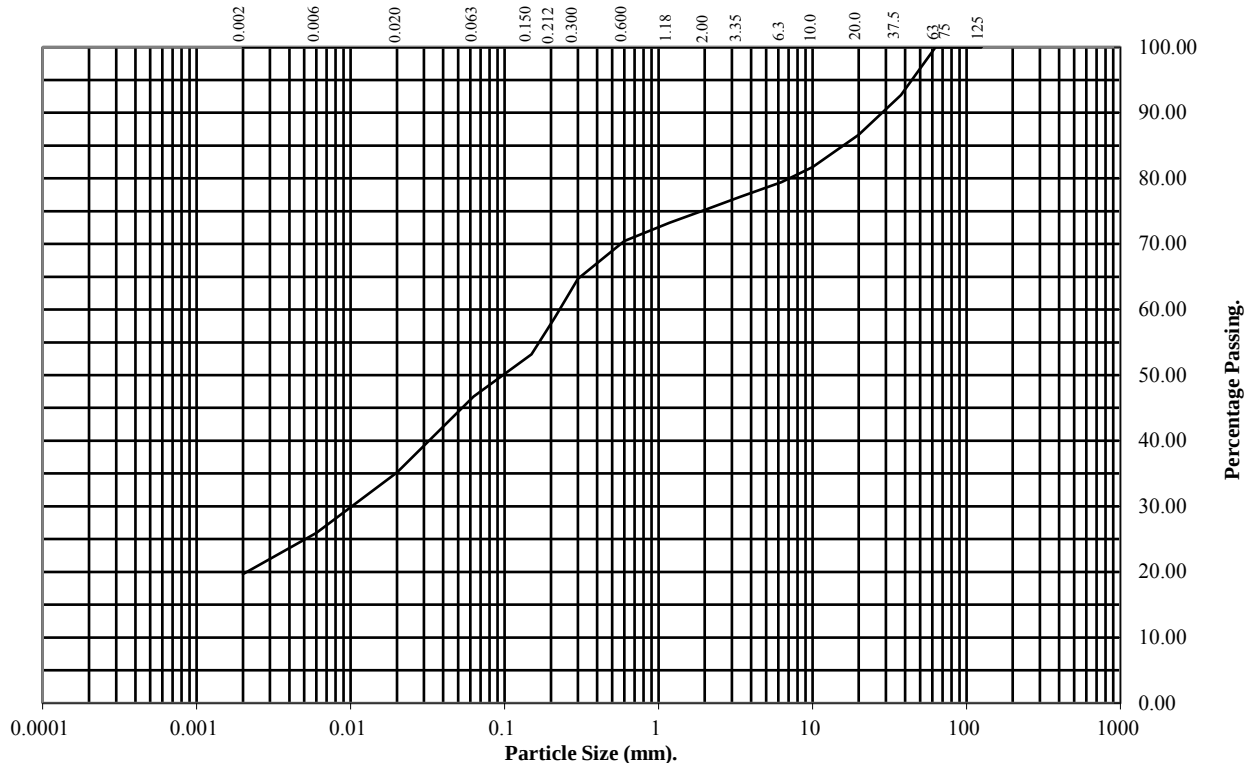
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP16 Top Depth (m): 2.00

Sample Number: C80021 Base Depth(m): 3.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	93
20	87
10	82
6.3	79
3.35	77
2	75
1.18	73
0.6	70
0.3	65
0.212	59
0.15	53
0.063	47

Particle Diameter	Percentage Passing
0.02	35
0.006	26
0.002	20

Soil Fraction	Total Percentage
Cobbles	0
Gravel	25
Sand	28
Silt	27
Clay	20

Remarks:
See Summary of Soil Descriptions



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Contract No:
PSL17/5672
Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

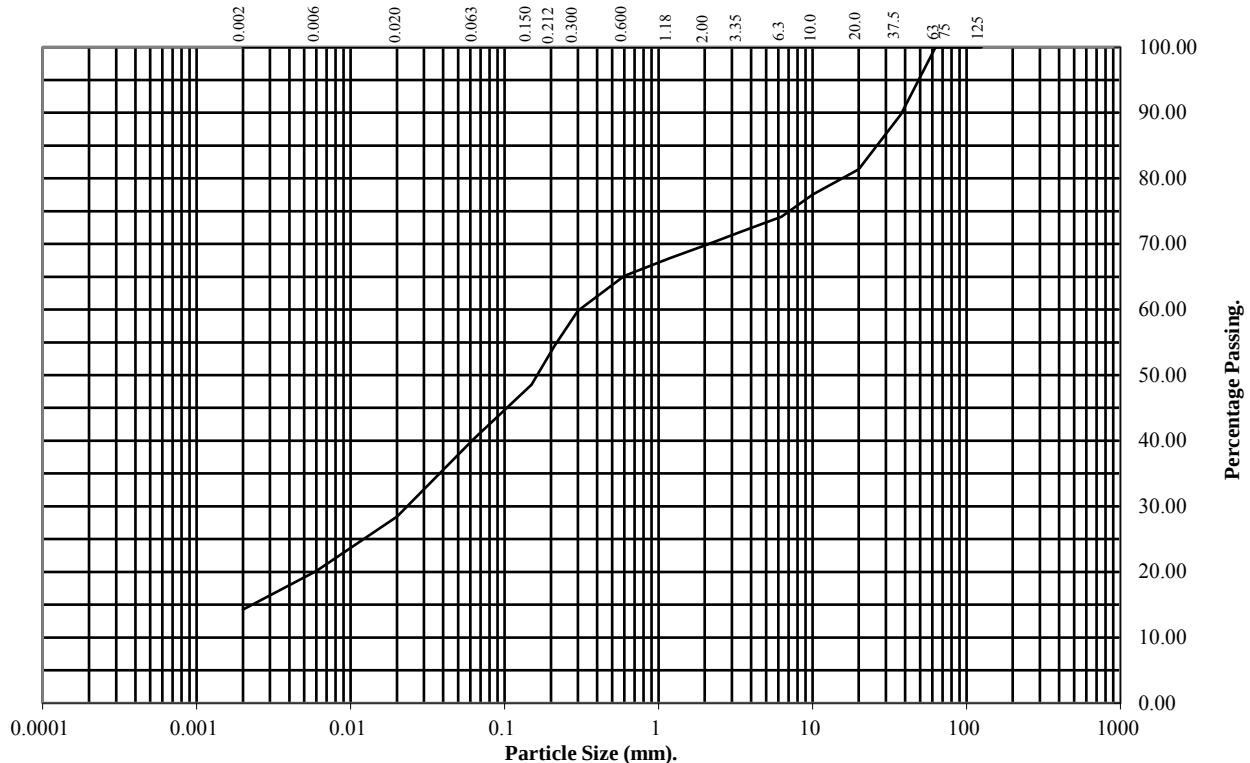
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP16 Top Depth (m): 3.50

Sample Number: C80011 Base Depth(m): 5.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	90
20	81
10	78
6.3	74
3.35	72
2	70
1.18	68
0.6	65
0.3	60
0.212	55
0.15	49
0.063	40

Particle Diameter	Percentage Passing
0.02	28
0.006	20
0.002	14

Soil Fraction	Total Percentage
Cobbles	0
Gravel	30
Sand	30
Silt	26
Clay	14

Remarks:
See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

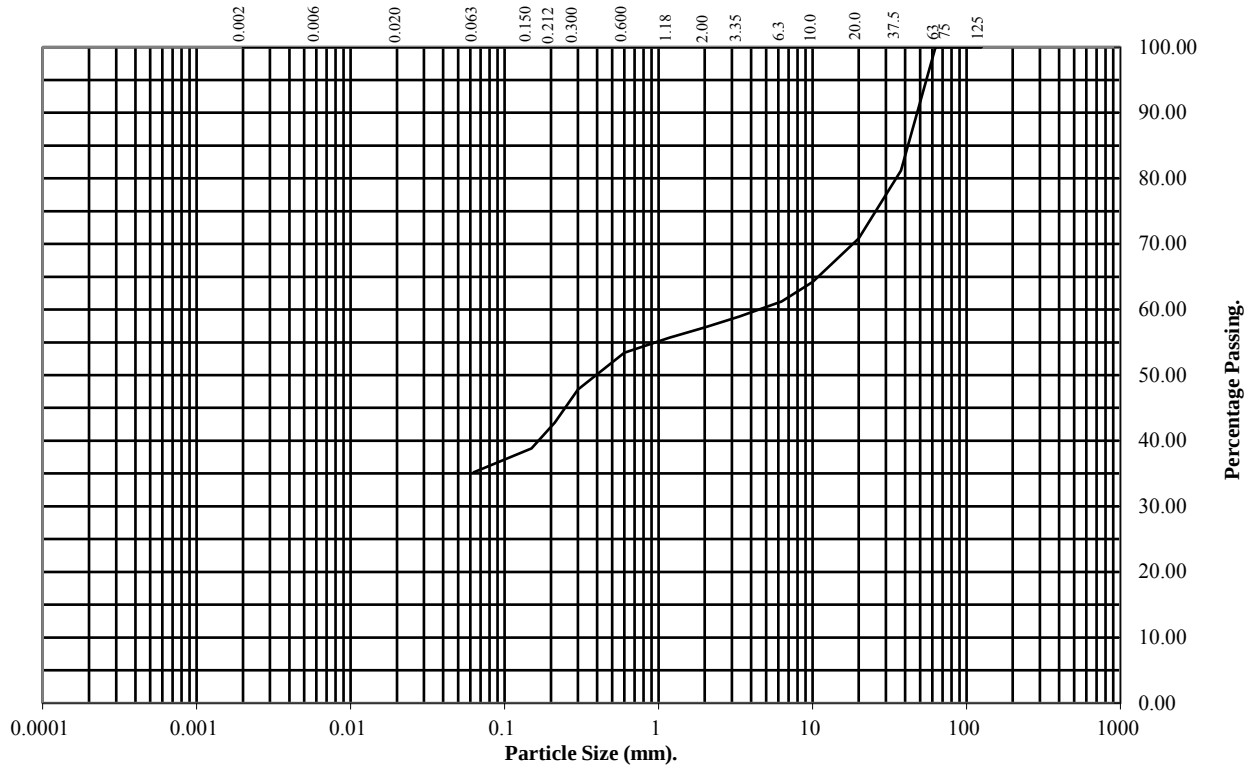
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP17 Top Depth (m): 0.00

Sample Number: C76904 Base Depth(m): 1.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	81
20	71
10	64
6.3	61
3.35	59
2	57
1.18	56
0.6	53
0.3	48
0.212	43
0.15	39
0.063	35

Soil Fraction	Total Percentage
Cobbles	0
Gravel	43
Sand	22
Silt/Clay	35

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

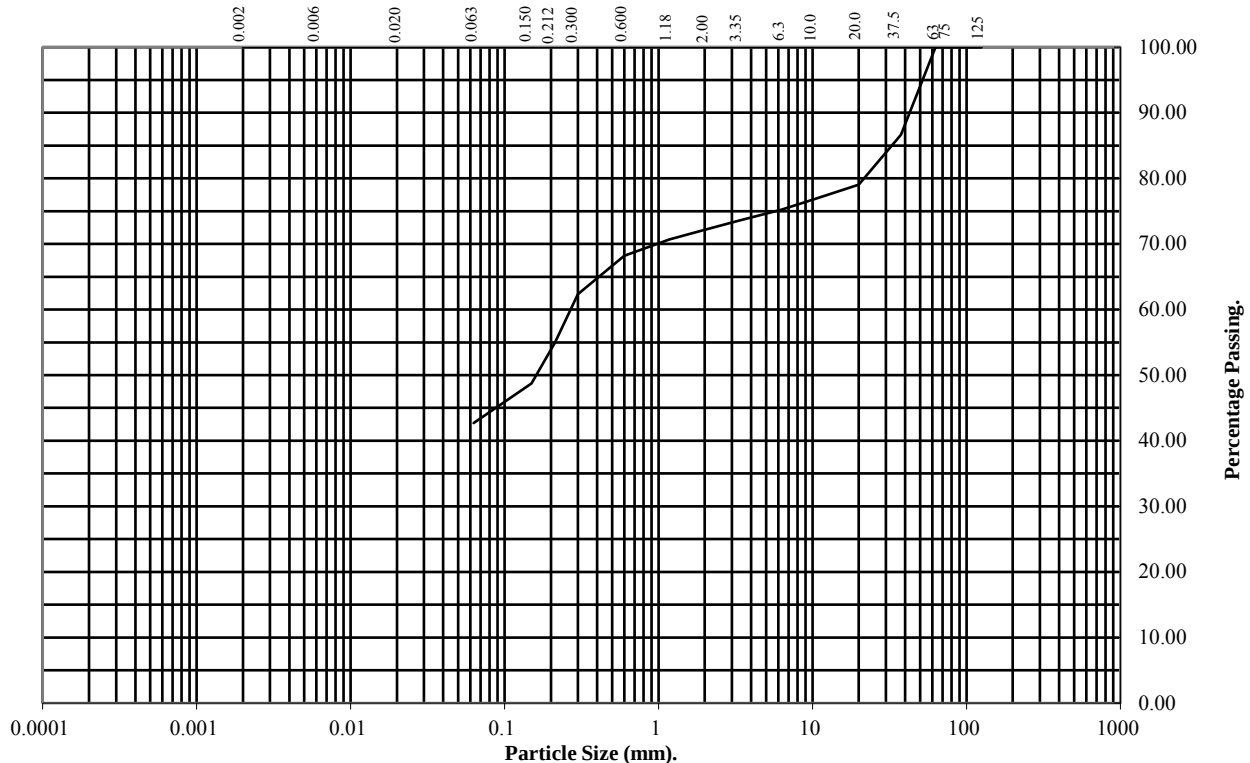
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP17 Top Depth (m): 1.50

Sample Number: C76983 Base Depth(m): 2.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	87
20	79
10	77
6.3	75
3.35	74
2	72
1.18	71
0.6	68
0.3	62
0.212	55
0.15	49
0.063	43

Soil Fraction	Total Percentage
Cobbles	0
Gravel	28
Sand	29
Silt/Clay	43

Remarks:

See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

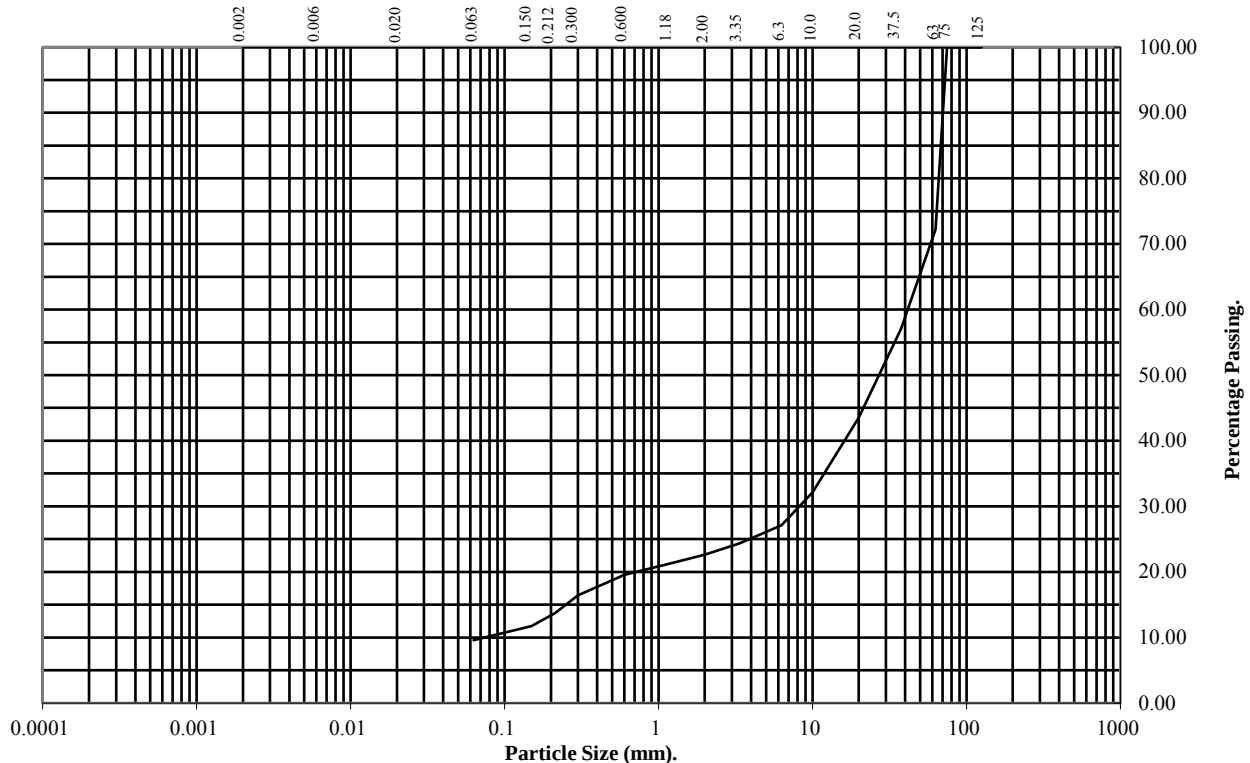
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP17 Top Depth (m): 2.50

Sample Number: C76946 Base Depth(m): 3.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	72
37.5	57
20	44
10	32
6.3	27
3.35	24
2	23
1.18	21
0.6	20
0.3	16
0.212	14
0.15	12
0.063	10

Soil Fraction	Total Percentage
Cobbles	28
Gravel	49
Sand	13
Silt/Clay	10

Remarks:

See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

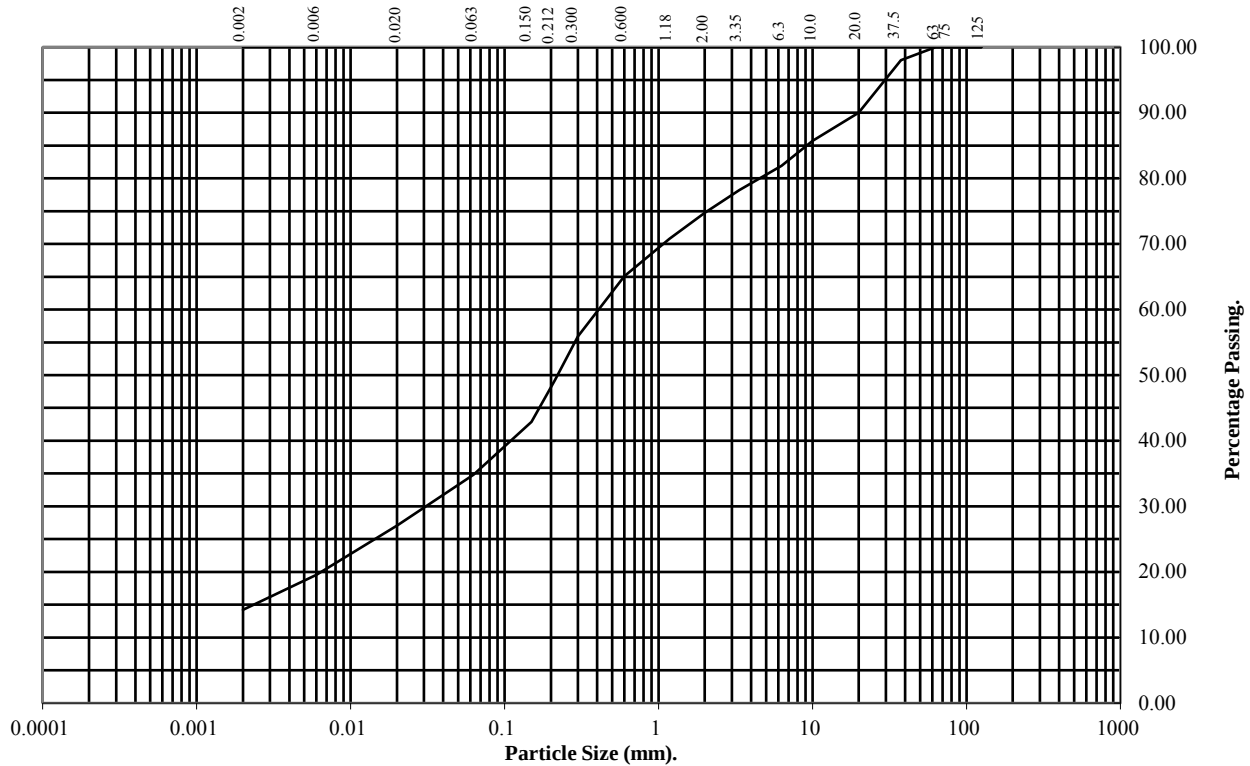
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP18 Top Depth (m): 0.00

Sample Number: C80019 Base Depth(m): 0.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	98
20	90
10	86
6.3	82
3.35	78
2	75
1.18	71
0.6	65
0.3	56
0.212	49
0.15	43
0.063	35

Particle Diameter	Percentage Passing
0.02	27
0.006	20
0.002	14

Soil Fraction	Total Percentage
Cobbles	0
Gravel	25
Sand	40
Silt	21
Clay	14

Remarks:
See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

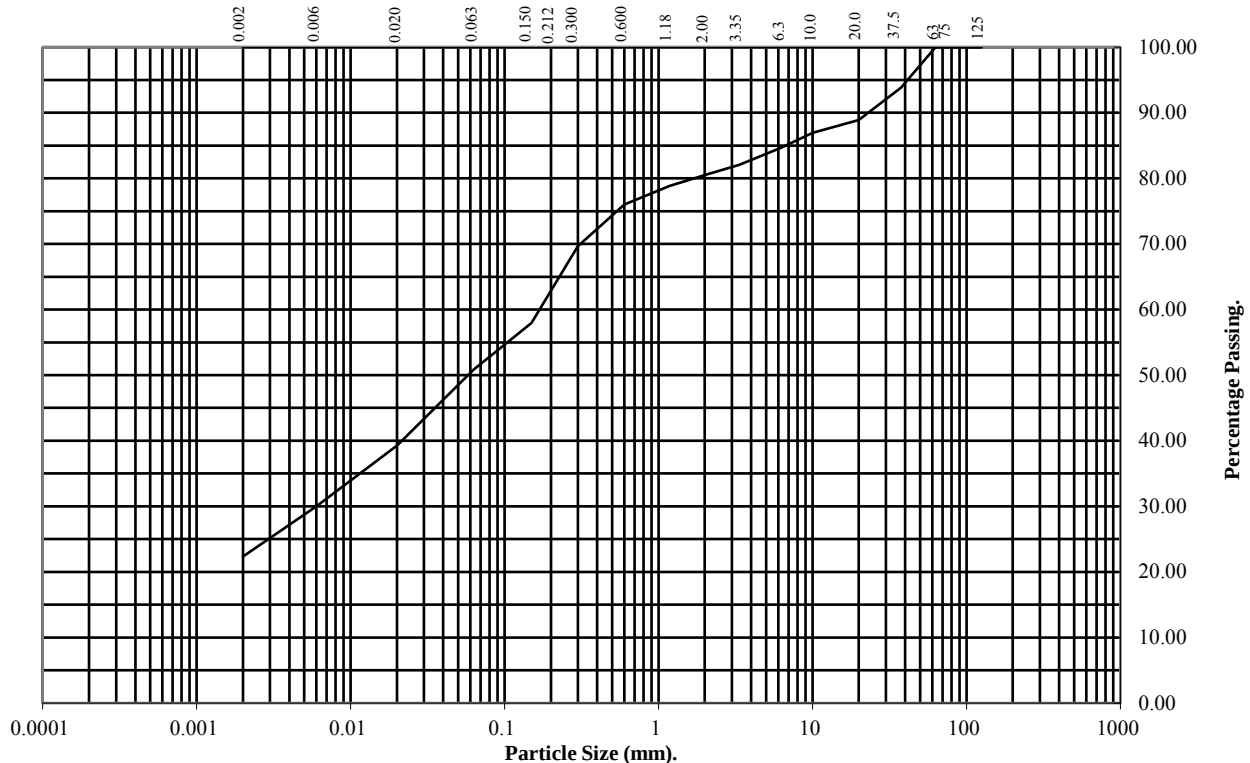
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP18 Top Depth (m): 0.20

Sample Number: C76954 Base Depth(m): 1.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	94
20	89
10	87
6.3	85
3.35	82
2	80
1.18	79
0.6	76
0.3	70
0.212	64
0.15	58
0.063	51

Particle Diameter	Percentage Passing
0.02	39
0.006	30
0.002	22

Soil Fraction	Total Percentage
Cobbles	0
Gravel	20
Sand	29
Silt	29
Clay	22

Remarks:
See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

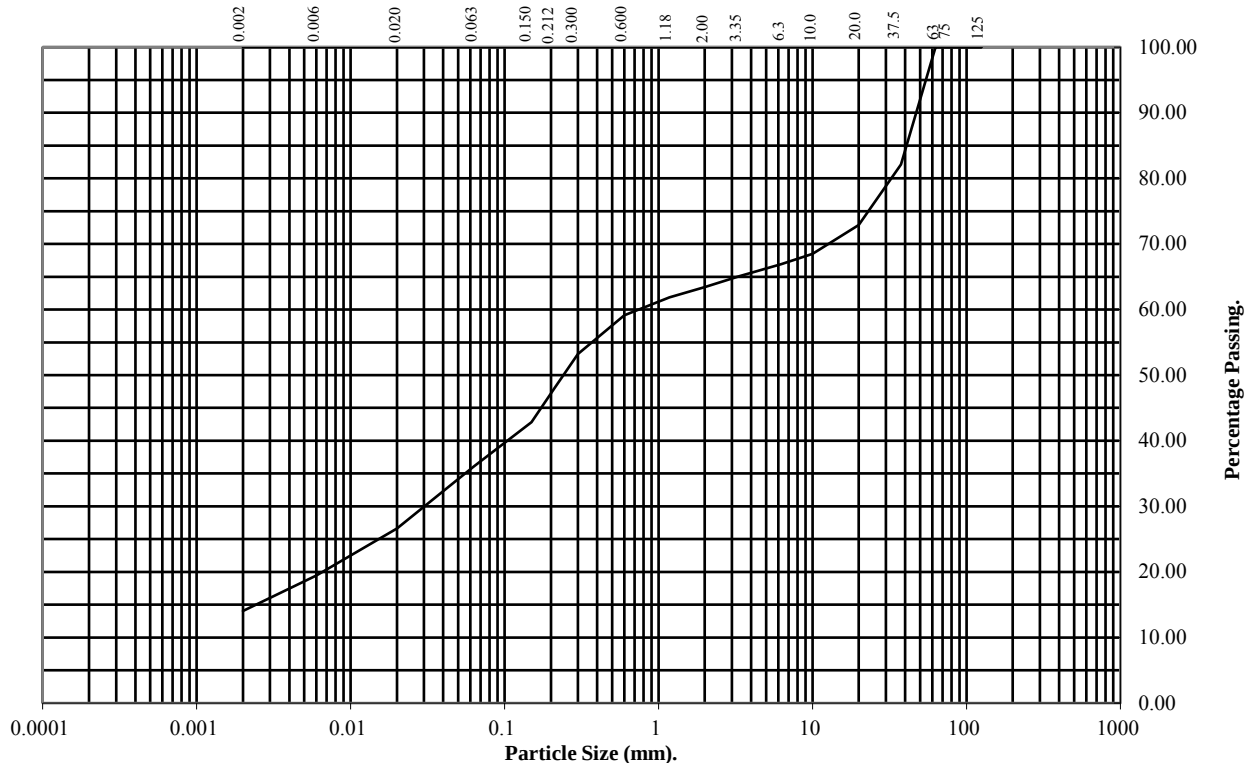
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP18 Top Depth (m): 1.50

Sample Number: C80010 Base Depth(m): 3.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	82
20	73
10	69
6.3	67
3.35	65
2	63
1.18	62
0.6	59
0.3	53
0.212	48
0.15	43
0.063	36

Particle Diameter	Percentage Passing
0.02	27
0.006	19
0.002	14

Soil Fraction	Total Percentage
Cobbles	0
Gravel	37
Sand	27
Silt	22
Clay	14

Remarks:

See Summary of Soil Descriptions



Coed Darcy

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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

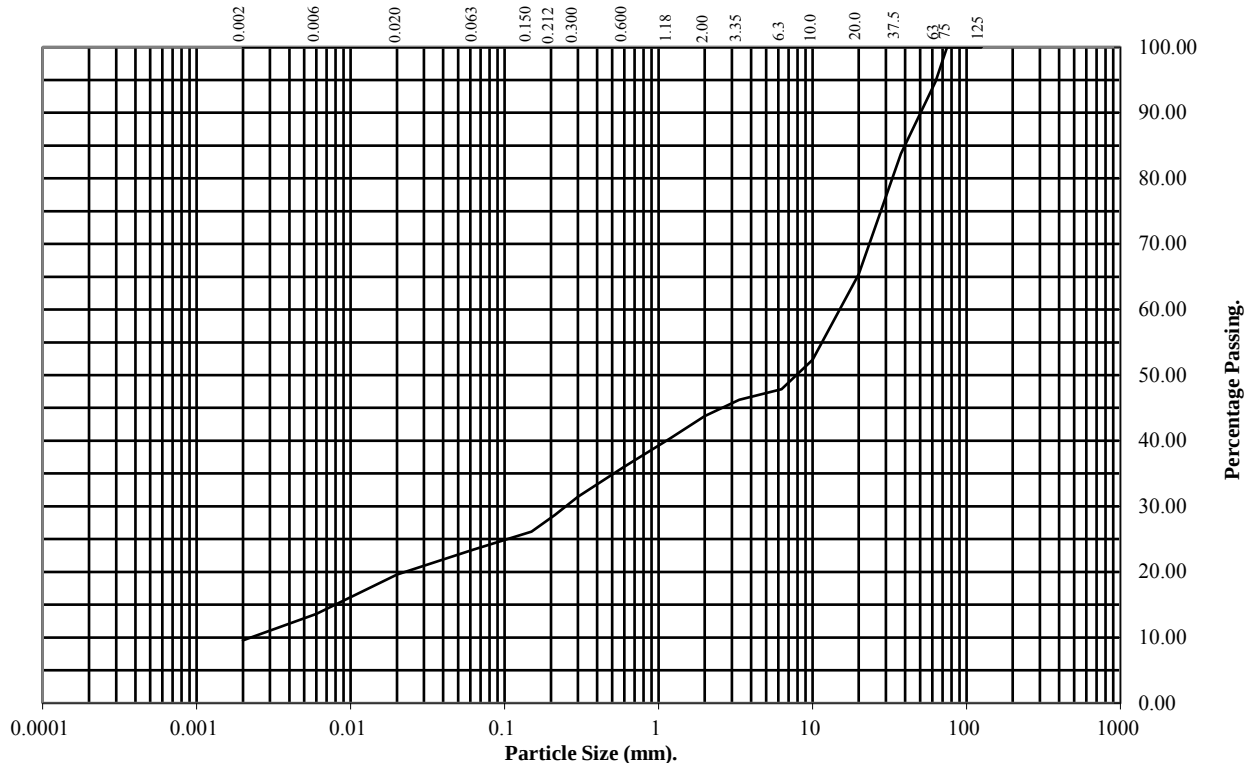
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP19 Top Depth (m): 0.50

Sample Number: C80027 Base Depth(m): 2.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	95
37.5	84
20	65
10	52
6.3	48
3.35	46
2	44
1.18	40
0.6	36
0.3	31
0.212	29
0.15	26
0.063	23

Particle Diameter	Percentage Passing
0.02	20
0.006	14
0.002	10

Soil Fraction	Total Percentage
Cobbles	5
Gravel	51
Sand	21
Silt	13
Clay	10

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

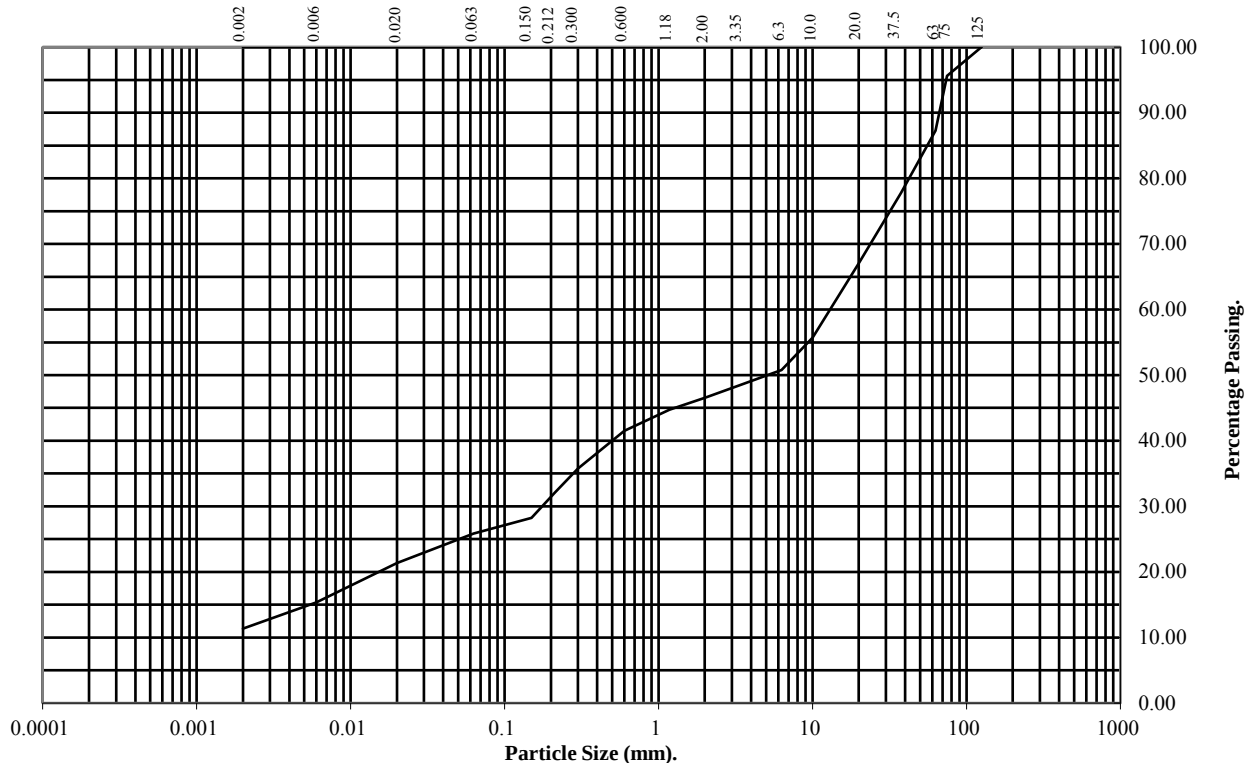
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP19 Top Depth (m): 2.00

Sample Number: C80034 Base Depth(m): 4.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	96
63	87
37.5	78
20	67
10	56
6.3	51
3.35	48
2	47
1.18	45
0.6	42
0.3	36
0.212	32
0.15	28
0.063	26

Particle Diameter	Percentage Passing
0.02	21
0.006	15
0.002	11

Soil Fraction	Total Percentage
Cobbles	13
Gravel	40
Sand	21
Silt	15
Clay	11

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

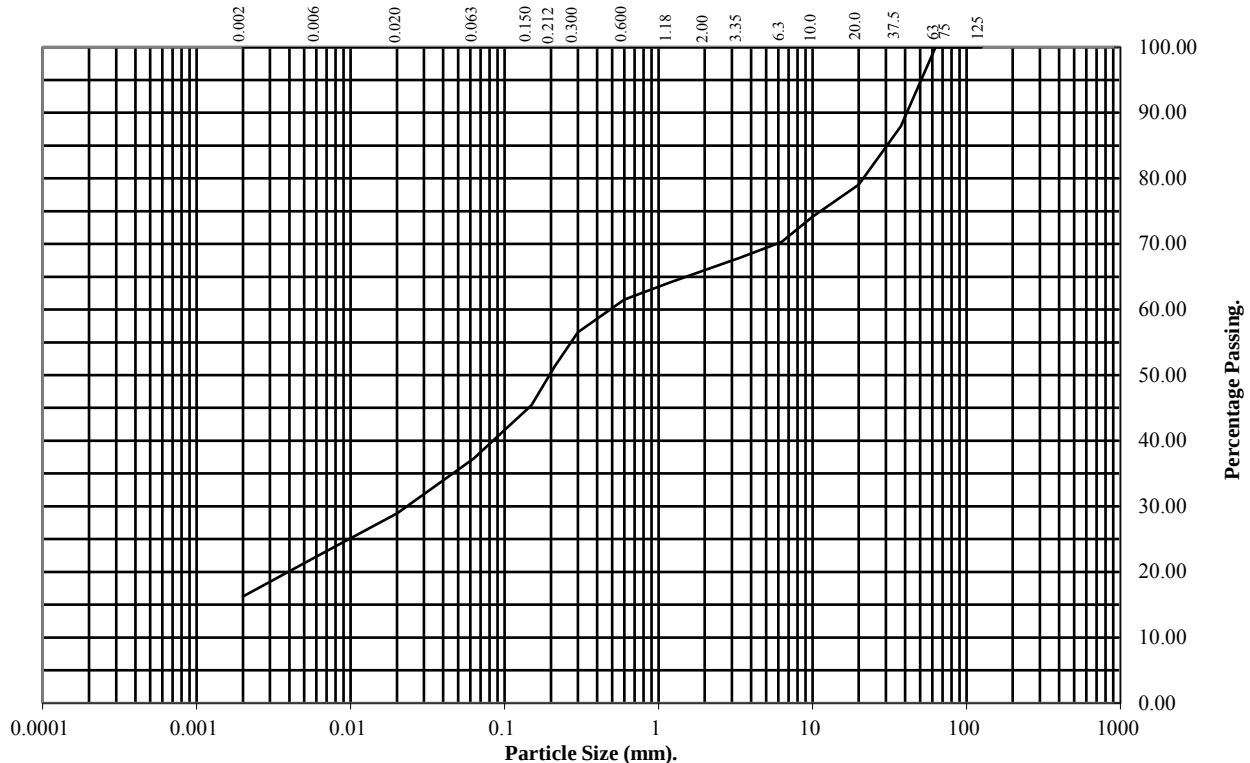
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP20 Top Depth (m): 0.00

Sample Number: C76985 Base Depth(m): 0.60

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	88
20	79
10	74
6.3	70
3.35	68
2	66
1.18	64
0.6	62
0.3	57
0.212	51
0.15	45
0.063	37

Particle Diameter	Percentage Passing
0.02	29
0.006	22
0.002	16

Soil Fraction	Total Percentage
Cobbles	0
Gravel	34
Sand	29
Silt	21
Clay	16

Remarks:
See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

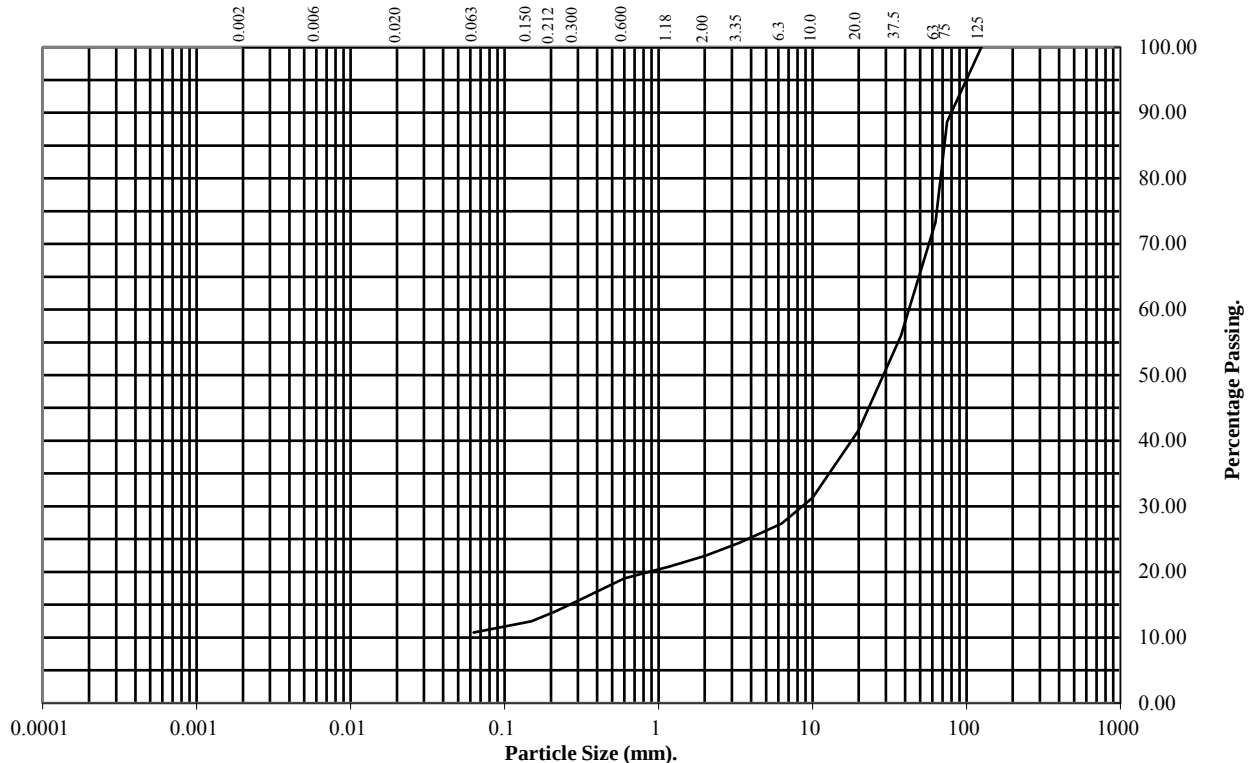
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP21 Top Depth (m): 0.00

Sample Number: C80007 Base Depth(m): 0.70

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	89
63	73
37.5	56
20	42
10	31
6.3	27
3.35	24
2	22
1.18	21
0.6	19
0.3	16
0.212	14
0.15	12
0.063	11

Soil Fraction	Total Percentage
Cobbles	27
Gravel	51
Sand	11
Silt/Clay	11

Remarks:

See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

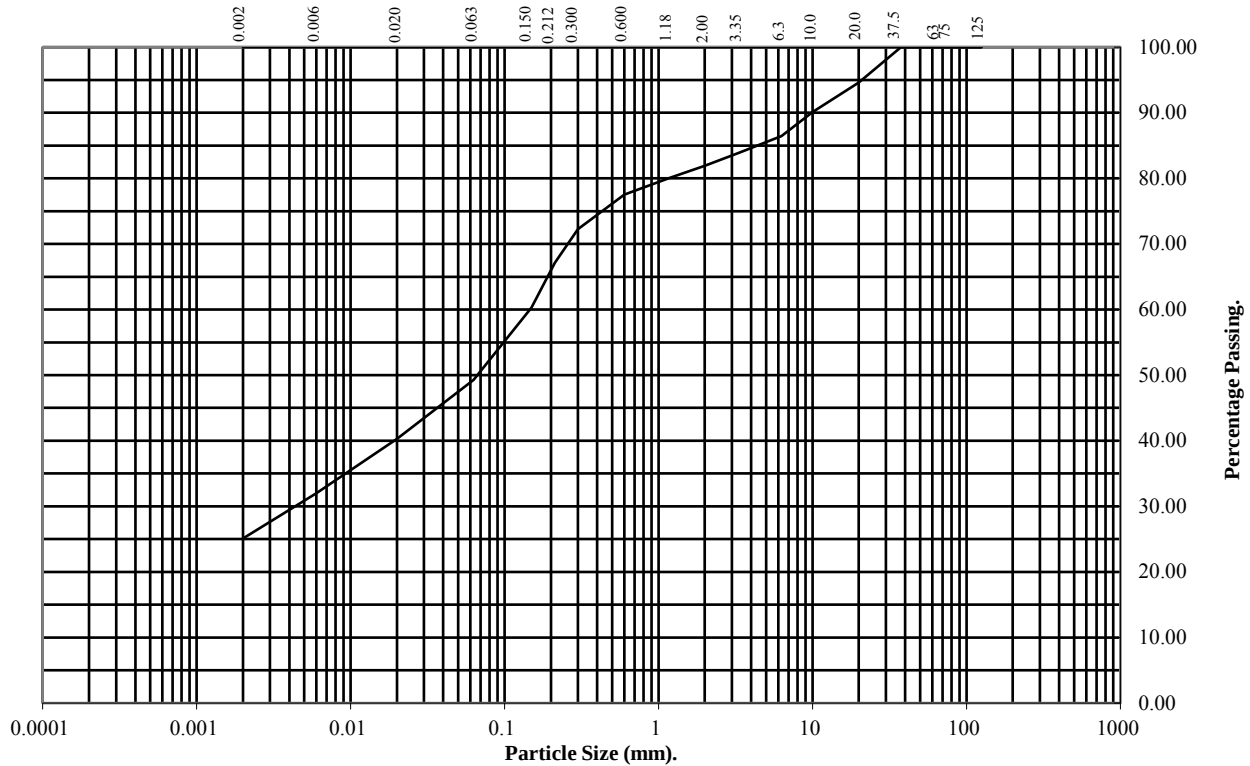
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP21 Top Depth (m): 1.30

Sample Number: C80009 Base Depth(m): 3.70

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	95
10	90
6.3	86
3.35	84
2	82
1.18	80
0.6	78
0.3	72
0.212	67
0.15	60
0.063	49

Particle Diameter	Percentage Passing
0.02	40
0.006	32
0.002	25

Soil Fraction	Total Percentage
Cobbles	0
Gravel	18
Sand	33
Silt	24
Clay	25

Remarks:

See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

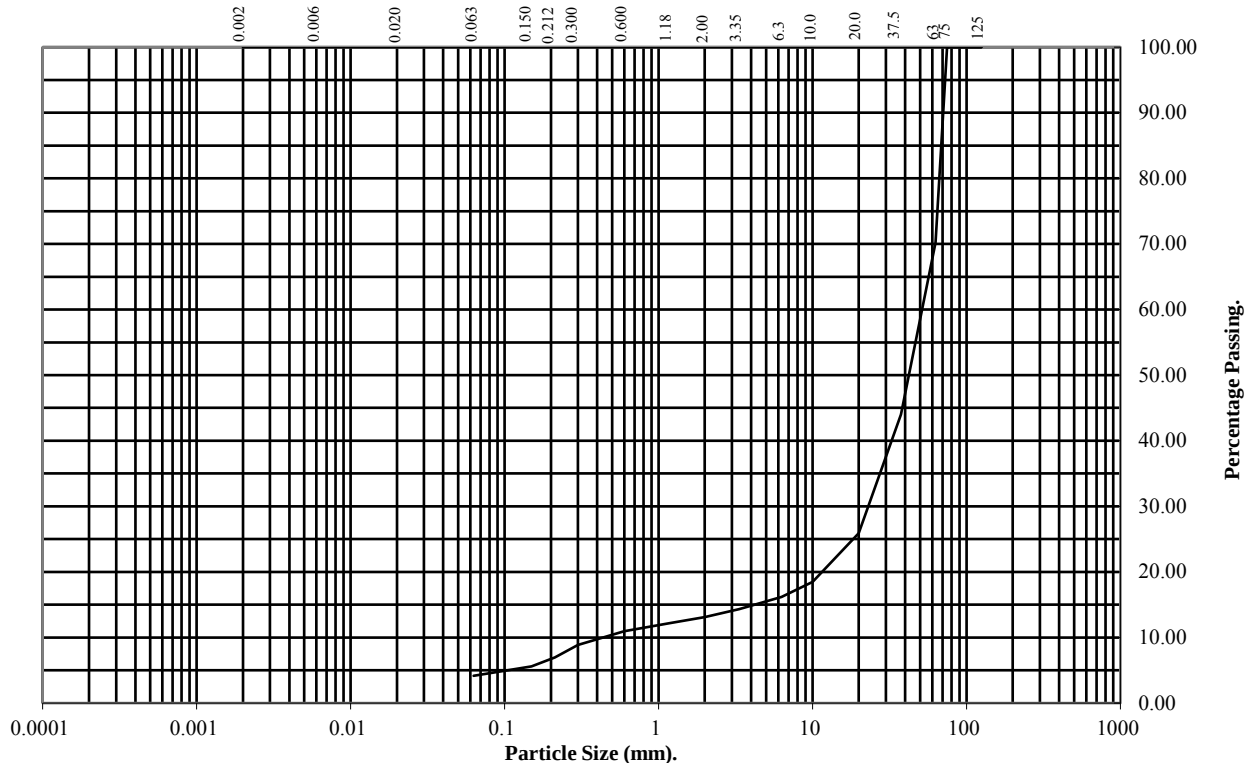
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP22 Top Depth (m): 0.00

Sample Number: C80025 Base Depth(m): 1.30

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	70
37.5	44
20	26
10	18
6.3	16
3.35	14
2	13
1.18	12
0.6	11
0.3	9
0.212	7
0.15	6
0.063	4

Soil Fraction	Total Percentage
Cobbles	30
Gravel	57
Sand	9
Silt/Clay	4

Remarks:

See Summary of Soil Descriptions



Coed Darcy

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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

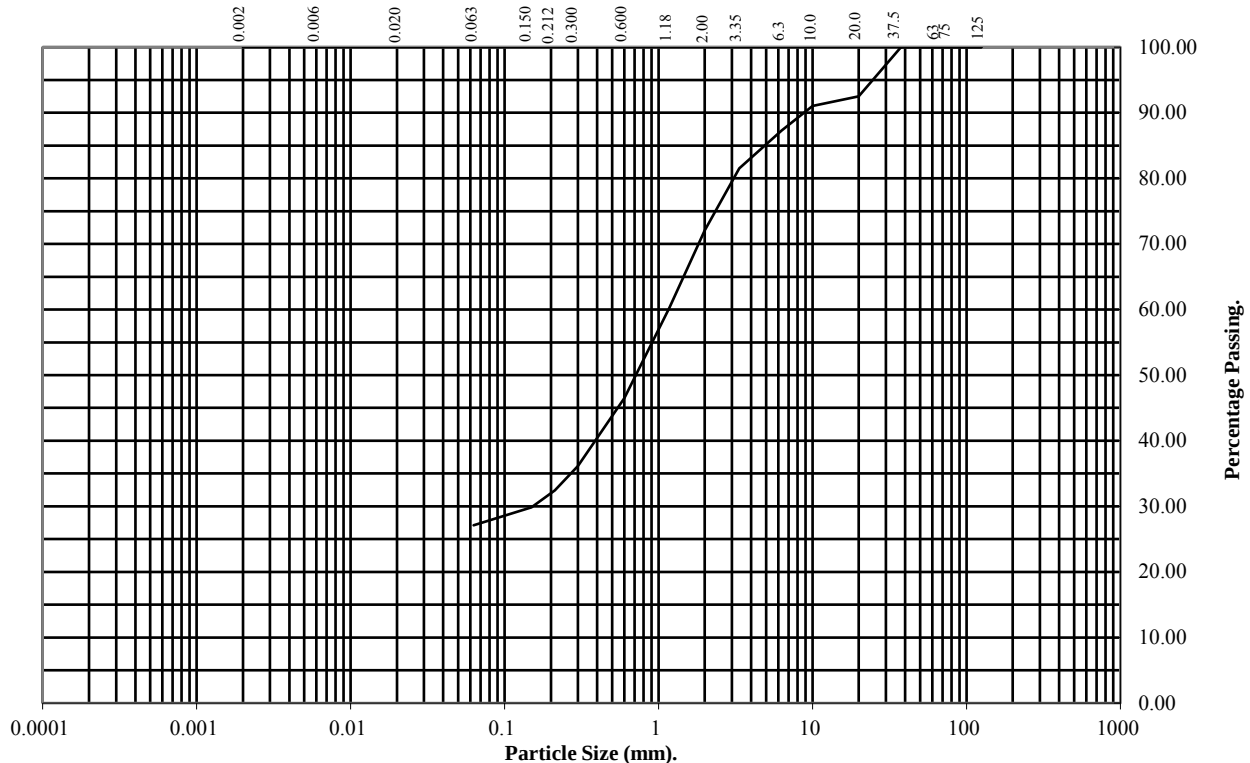
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP24 Top Depth (m): 1.70

Sample Number: C76978 Base Depth(m): 3.10

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	93
10	91
6.3	87
3.35	82
2	72
1.18	60
0.6	46
0.3	36
0.212	32
0.15	30
0.063	27

Soil Fraction	Total Percentage
Cobbles	0
Gravel	28
Sand	45
Silt/Clay	27

Remarks:

See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

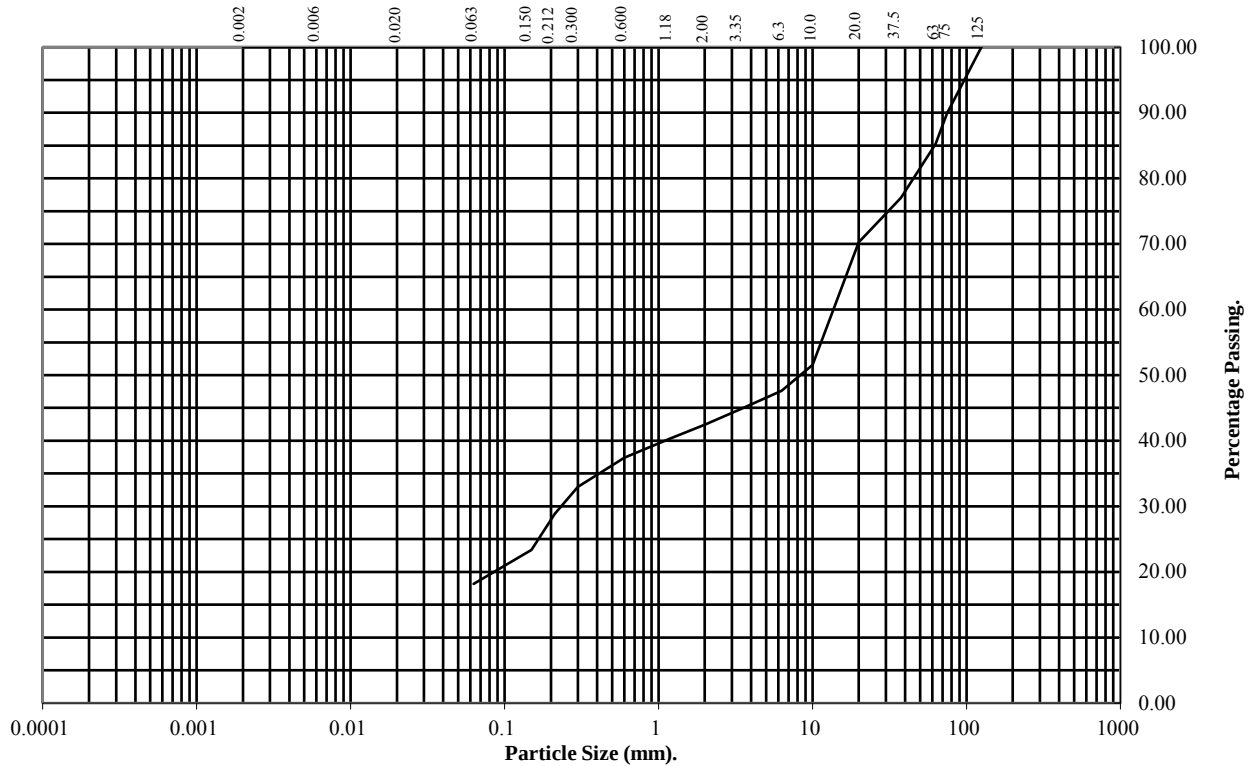
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP25 Top Depth (m): 0.00

Sample Number: C80040 Base Depth(m): 1.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	90
63	85
37.5	77
20	70
10	52
6.3	48
3.35	45
2	42
1.18	40
0.6	37
0.3	33
0.212	29
0.15	23
0.063	18

Soil Fraction	Total Percentage
Cobbles	15
Gravel	43
Sand	24
Silt/Clay	18

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

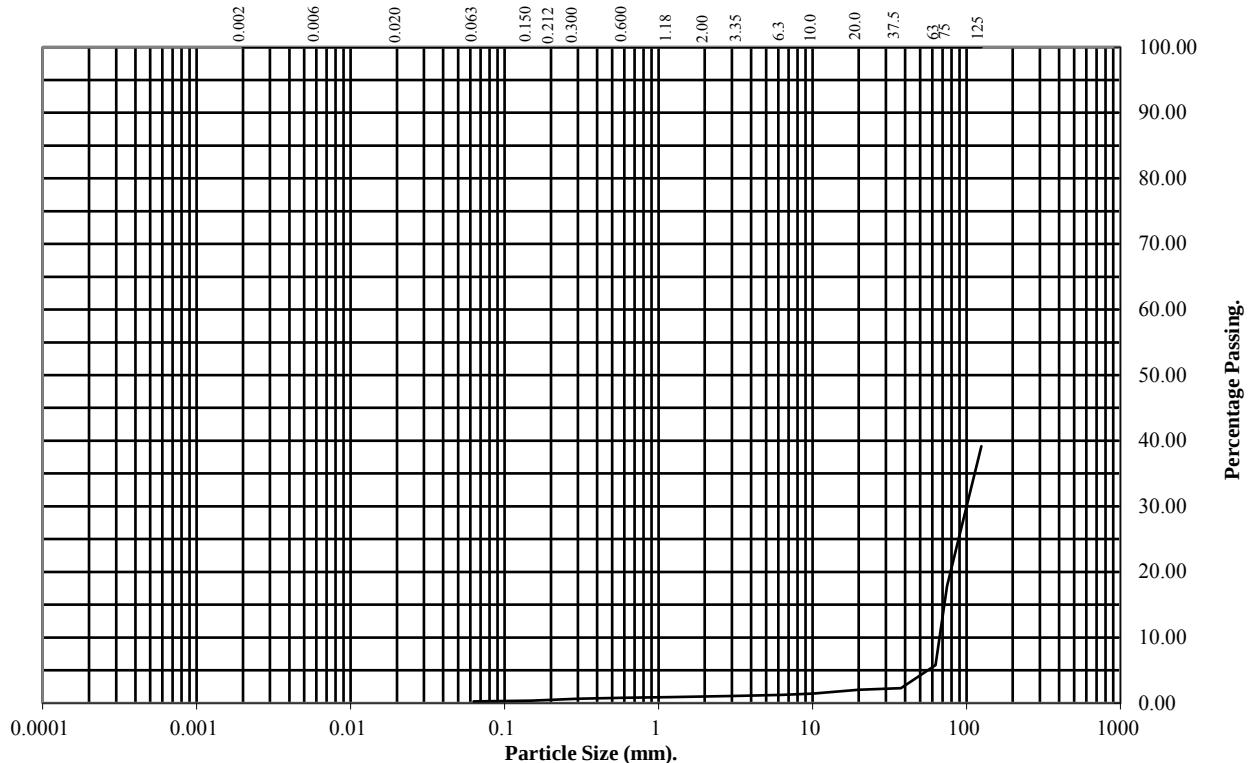
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP25 Top Depth (m): 1.50

Sample Number: C80038 Base Depth(m): 1.90

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	39
75	18
63	6
37.5	2
20	2
10	1
6.3	1
3.35	1
2	1
1.18	1
0.6	1
0.3	1
0.212	1
0.15	0
0.063	0

Soil Fraction	Total Percentage
Cobbles	94
Gravel	5
Sand	1
Silt/Clay	0

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

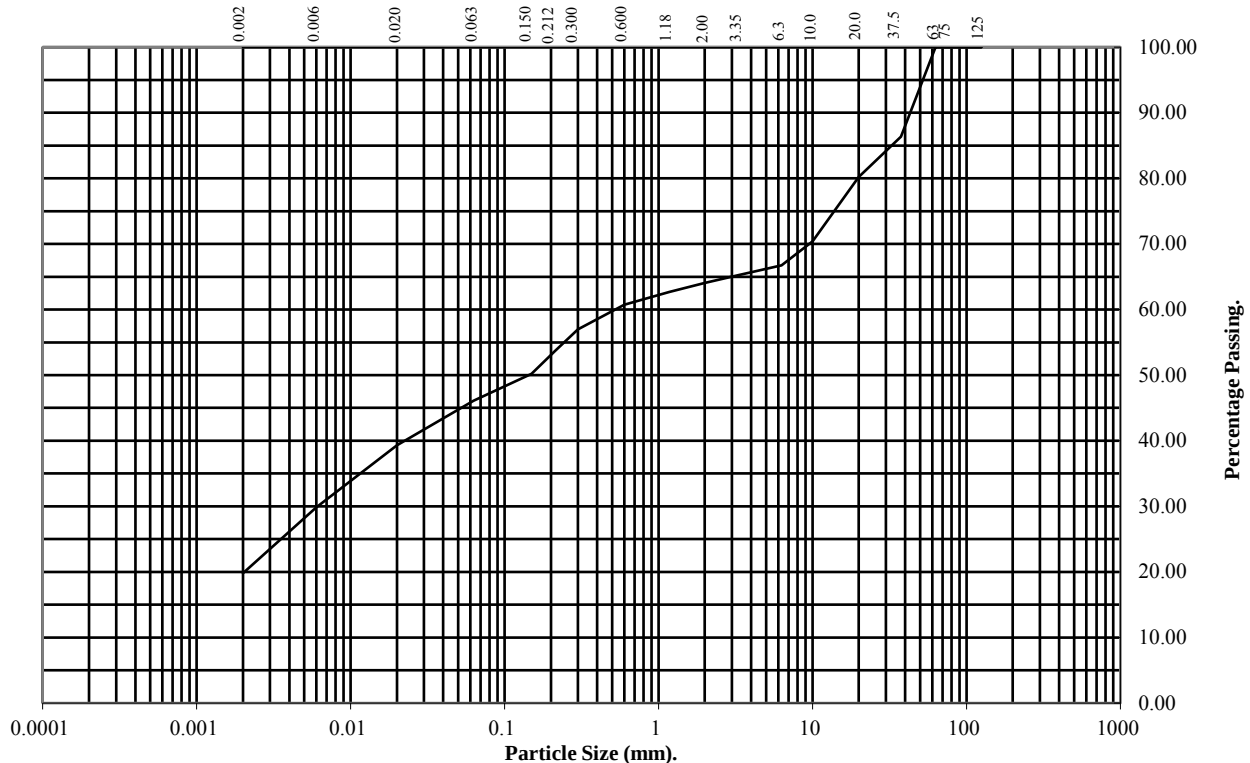
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP26 Top Depth (m): 0.00

Sample Number: C76970 Base Depth(m): 1.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	86
20	80
10	70
6.3	67
3.35	65
2	64
1.18	63
0.6	61
0.3	57
0.212	54
0.15	50
0.063	46

Particle Diameter	Percentage Passing
0.02	39
0.006	30
0.002	20

Soil Fraction	Total Percentage
Cobbles	0
Gravel	36
Sand	18
Silt	26
Clay	20

Remarks:
See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

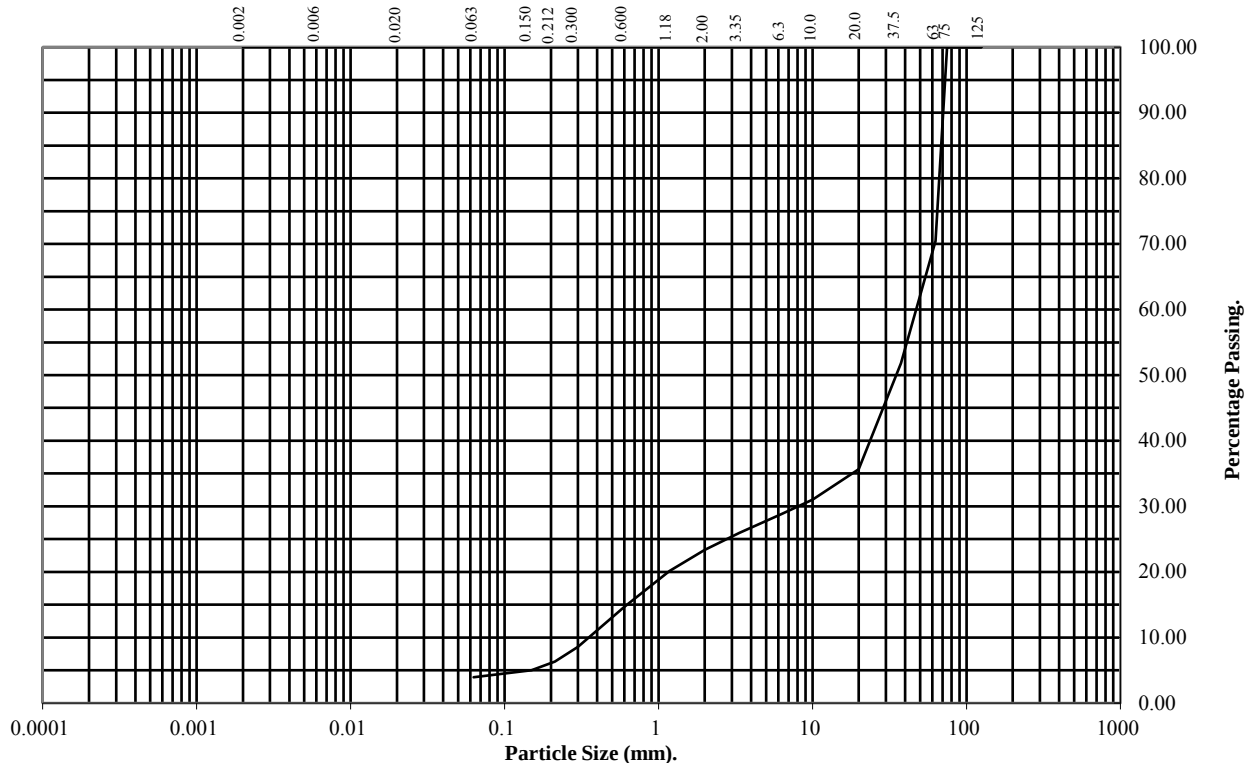
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP27 Top Depth (m): 0.90

Sample Number: C76945 Base Depth(m): 3.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	70
37.5	52
20	36
10	31
6.3	29
3.35	26
2	23
1.18	20
0.6	15
0.3	9
0.212	6
0.15	5
0.063	4

Soil Fraction	Total Percentage
Cobbles	30
Gravel	47
Sand	19
Silt/Clay	4

Remarks:

See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

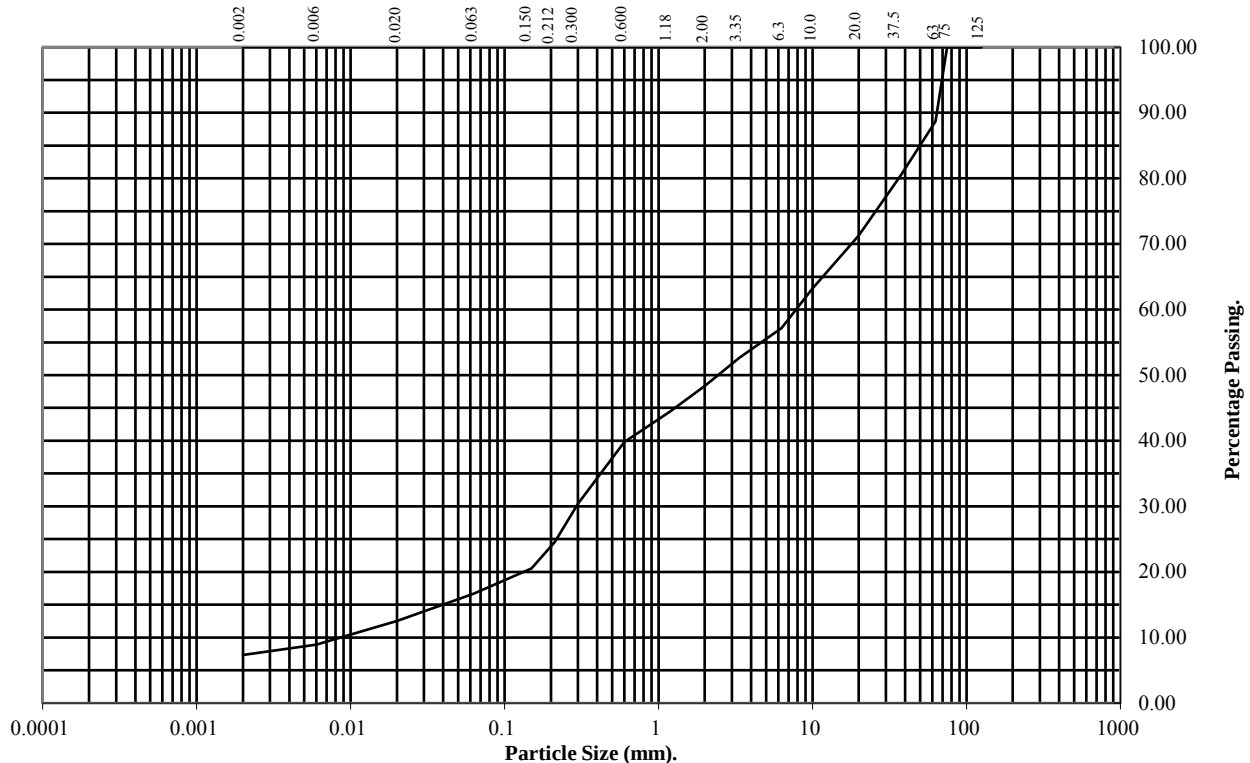
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP28 Top Depth (m): 0.00

Sample Number: C76989 Base Depth(m): 0.80

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	89
37.5	81
20	71
10	63
6.3	57
3.35	53
2	48
1.18	44
0.6	40
0.3	30
0.212	25
0.15	21
0.063	17

Particle Diameter	Percentage Passing
0.02	13
0.006	9
0.002	7

Soil Fraction	Total Percentage
Cobbles	11
Gravel	41
Sand	31
Silt	10
Clay	7

Remarks:
See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

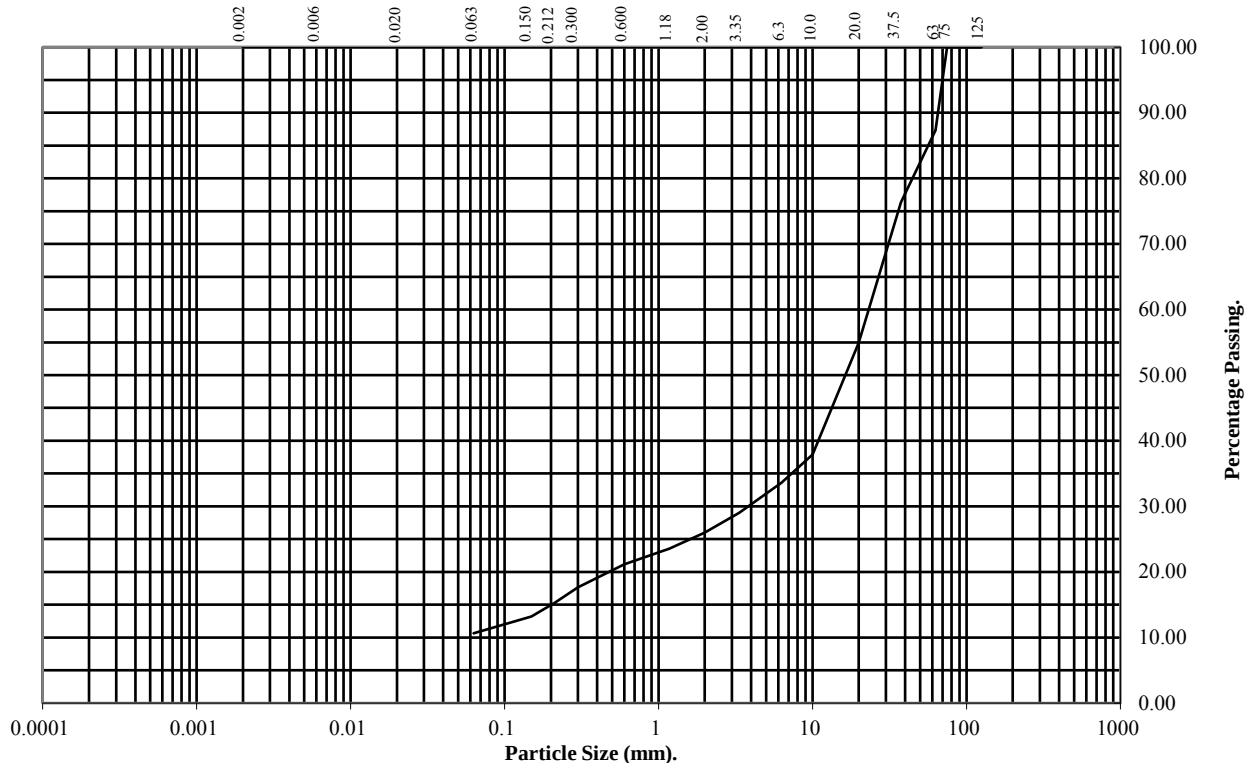
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP28 Top Depth (m): 0.80

Sample Number: C76998 Base Depth(m): 2.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	87
37.5	76
20	55
10	38
6.3	34
3.35	29
2	26
1.18	24
0.6	21
0.3	18
0.212	15
0.15	13
0.063	11

Soil Fraction	Total Percentage
Cobbles	13
Gravel	61
Sand	15
Silt/Clay	11

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
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PARTICLE SIZE DISTRIBUTION TEST

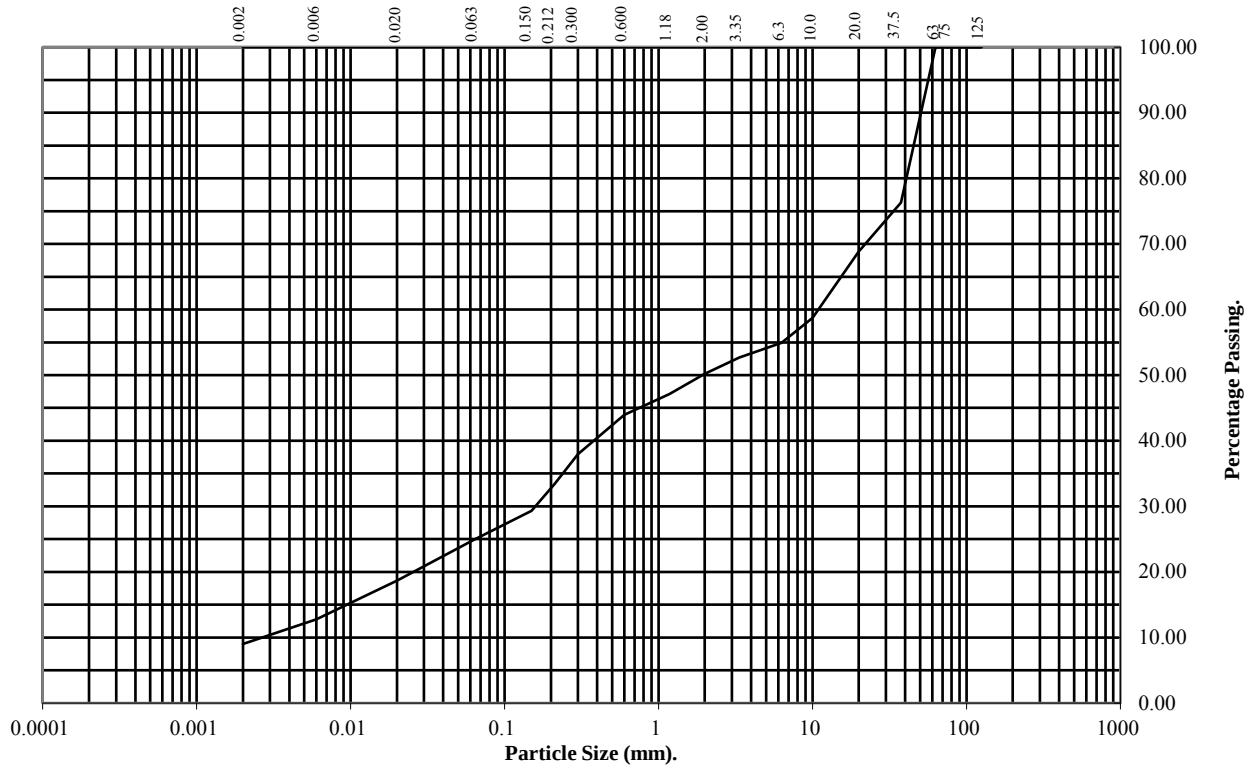
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP29 Top Depth (m): 2.80

Sample Number: C76943 Base Depth(m): 4.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	76
20	69
10	59
6.3	55
3.35	53
2	50
1.18	47
0.6	44
0.3	38
0.212	33
0.15	29
0.063	25

Particle Diameter	Percentage Passing
0.02	19
0.006	13
0.002	9

Soil Fraction	Total Percentage
Cobbles	0
Gravel	50
Sand	25
Silt	16
Clay	9

Remarks:
See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

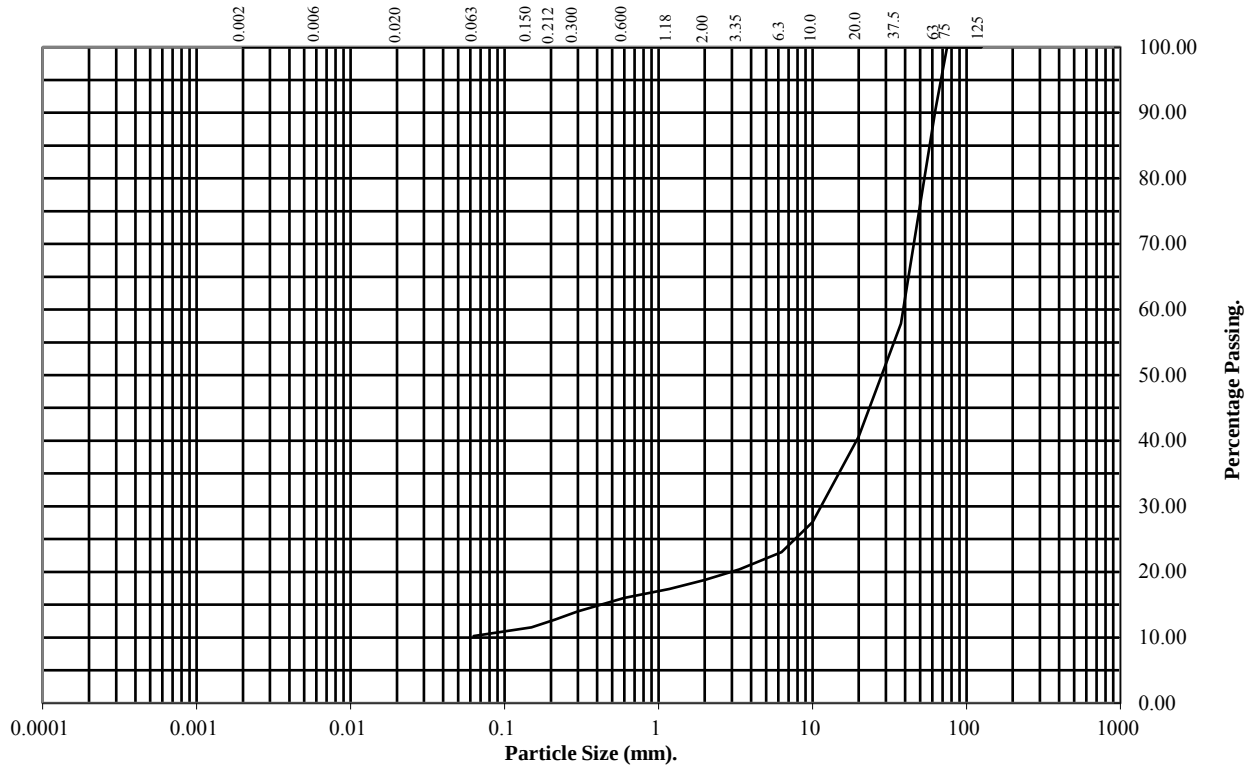
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP31 Top Depth (m): 1.00

Sample Number: 595584 Base Depth(m): 3.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	91
37.5	58
20	41
10	28
6.3	23
3.35	20
2	19
1.18	17
0.6	16
0.3	14
0.212	13
0.15	12
0.063	10

Soil Fraction	Total Percentage
Cobbles	9
Gravel	72
Sand	9
Silt/Clay	10

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

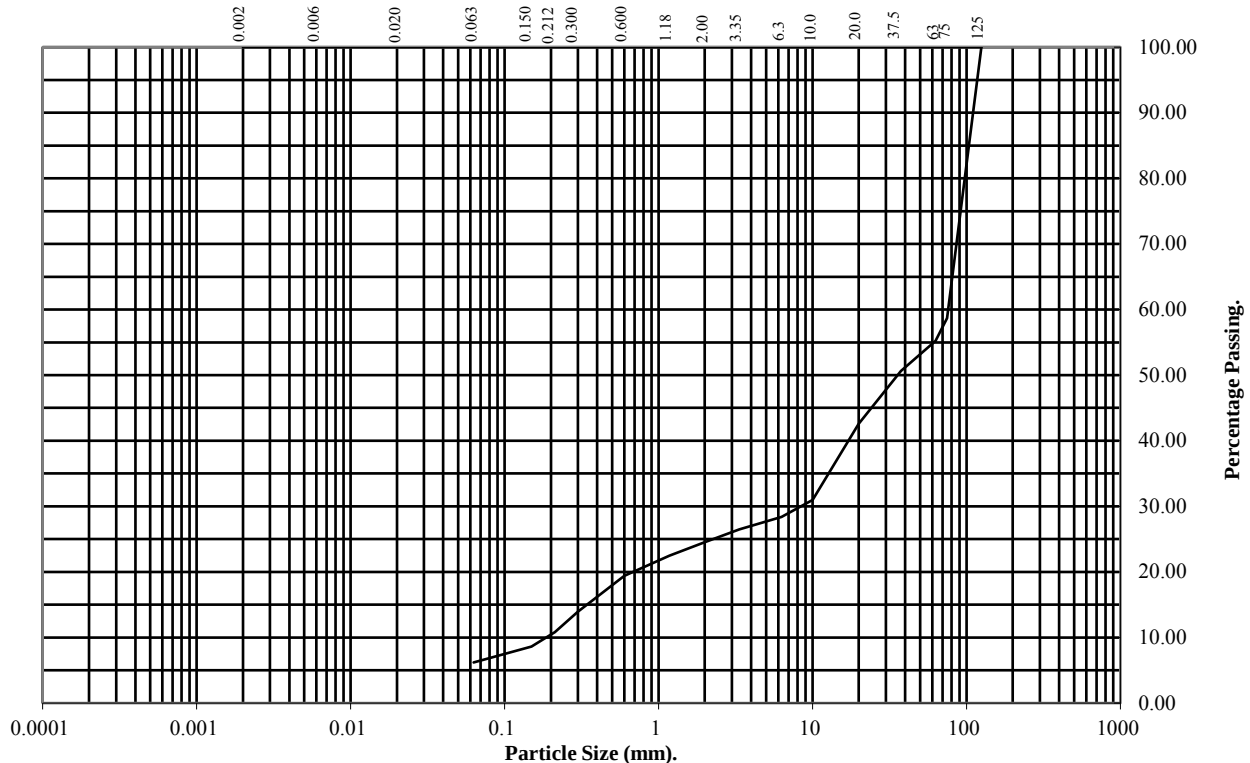
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP32 Top Depth (m): 0.00

Sample Number: C80020 Base Depth(m): 0.40

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	59
63	55
37.5	51
20	43
10	31
6.3	28
3.35	26
2	25
1.18	22
0.6	19
0.3	14
0.212	11
0.15	9
0.063	6

Soil Fraction	Total Percentage
Cobbles	45
Gravel	30
Sand	19
Silt/Clay	6

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

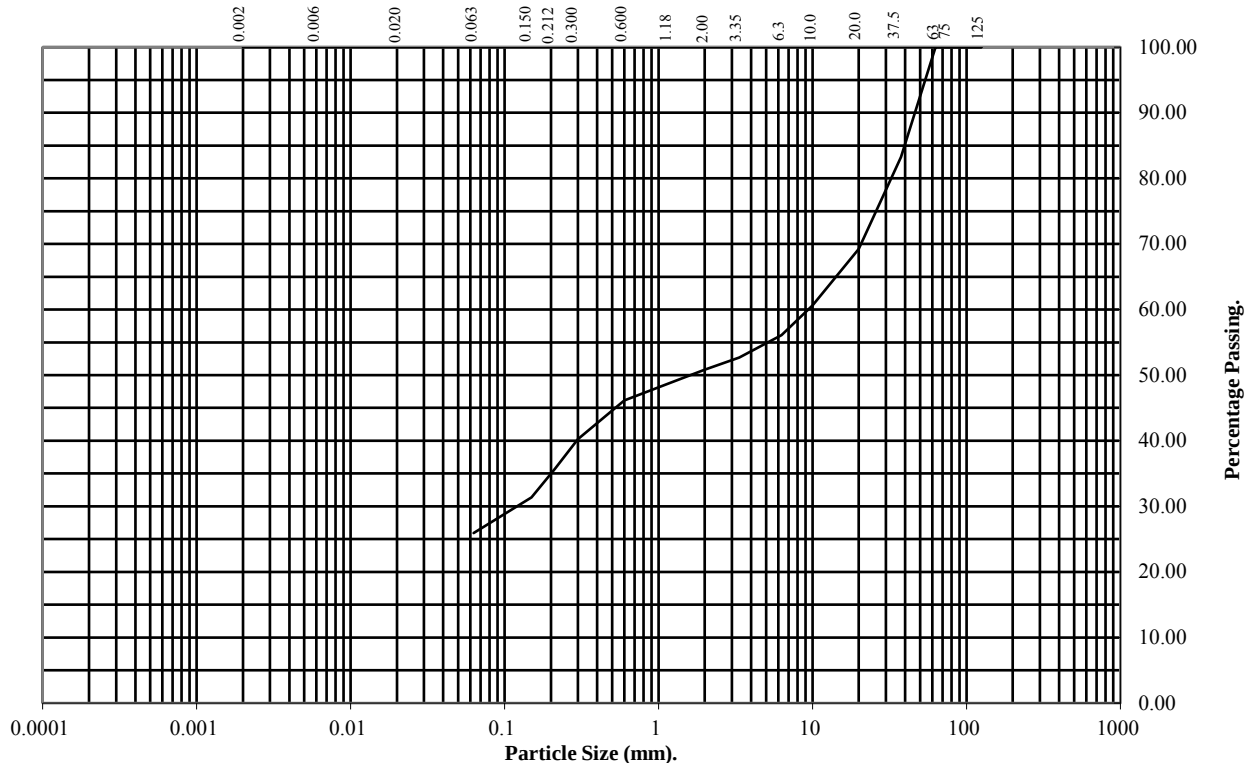
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP32 Top Depth (m): 0.40

Sample Number: C76952 Base Depth(m): 2.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	83
20	69
10	61
6.3	56
3.35	53
2	51
1.18	49
0.6	46
0.3	40
0.212	36
0.15	31
0.063	26

Soil Fraction	Total Percentage
Cobbles	0
Gravel	49
Sand	25
Silt/Clay	26

Remarks:
See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

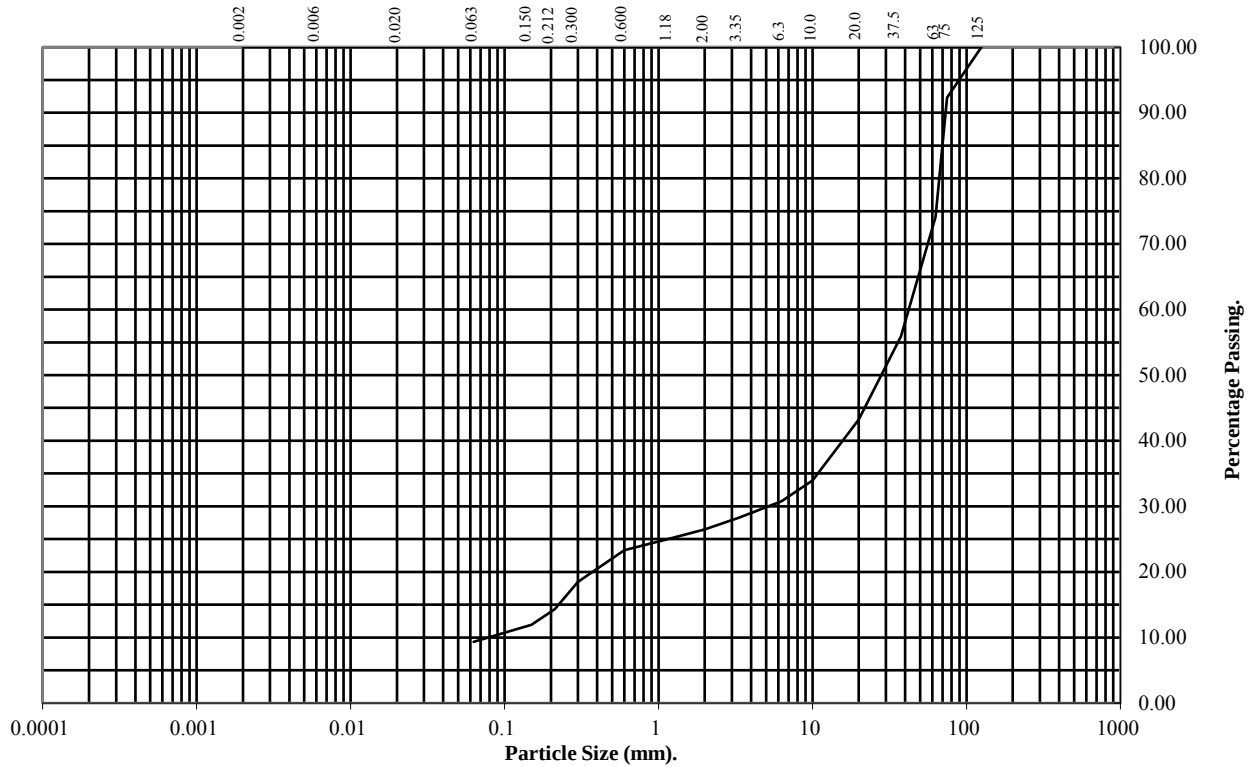
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP34 Top Depth (m): 1.00

Sample Number: C76944 Base Depth(m): 1.80

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	92
63	74
37.5	56
20	43
10	34
6.3	31
3.35	28
2	26
1.18	25
0.6	23
0.3	18
0.212	14
0.15	12
0.063	9

Soil Fraction	Total Percentage
Cobbles	26
Gravel	48
Sand	17
Silt/Clay	9

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

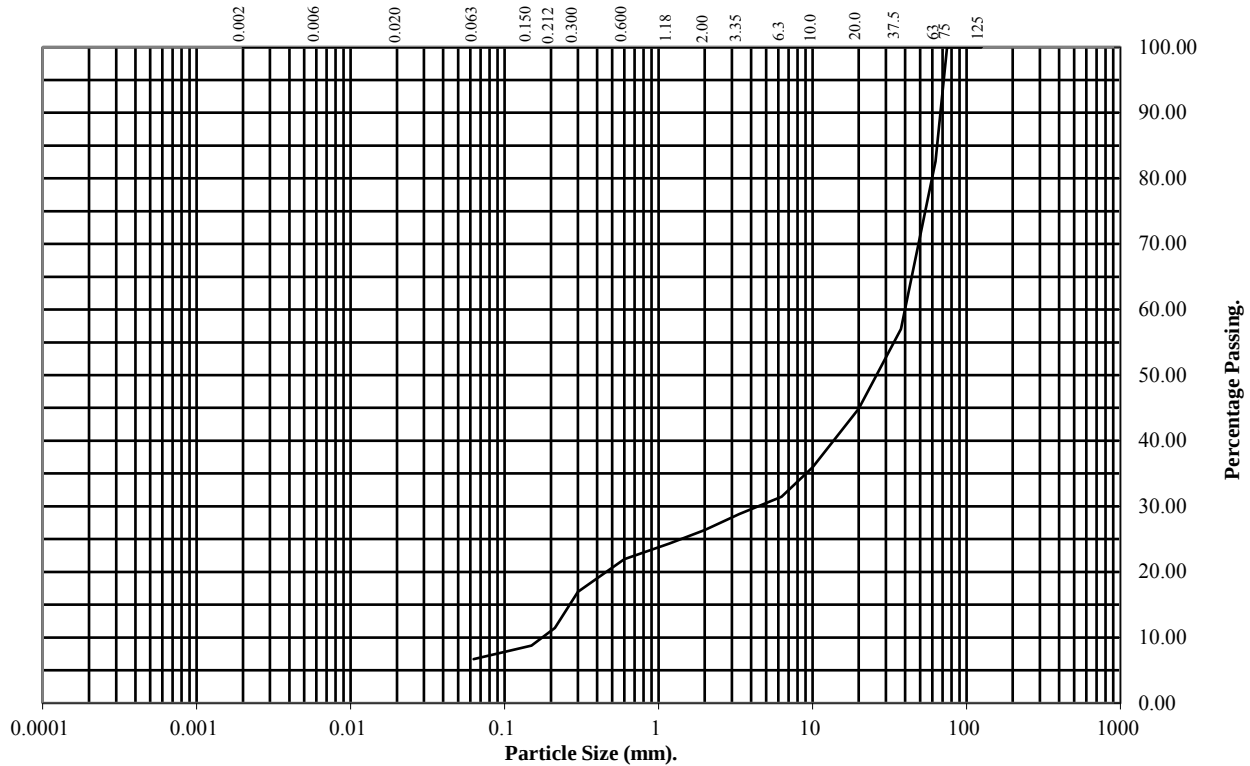
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP35 Top Depth (m): 0.00

Sample Number: C80036 Base Depth(m): 1.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	83
37.5	57
20	45
10	36
6.3	31
3.35	29
2	26
1.18	24
0.6	22
0.3	17
0.212	11
0.15	9
0.063	7

Soil Fraction	Total Percentage
Cobbles	17
Gravel	57
Sand	19
Silt/Clay	7

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

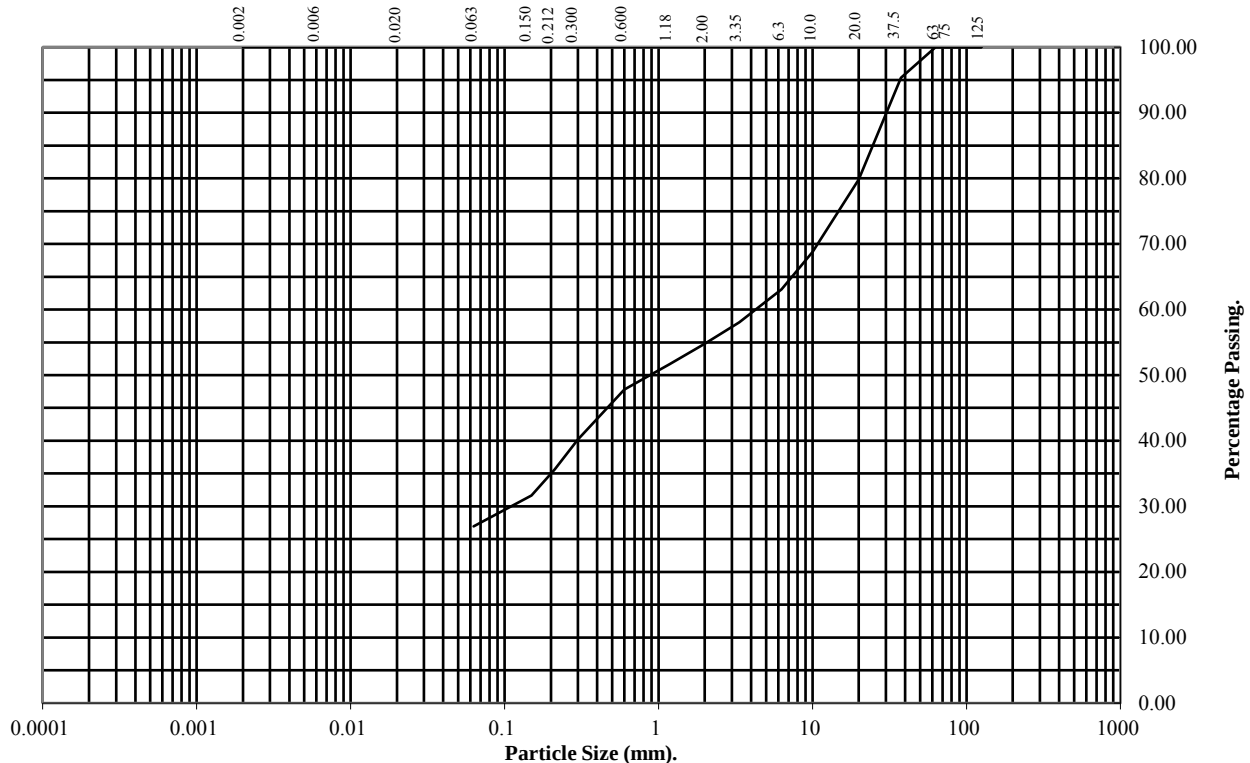
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP35 Top Depth (m): 1.60

Sample Number: C76961 Base Depth(m): 2.60

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	95
20	80
10	69
6.3	63
3.35	58
2	55
1.18	52
0.6	48
0.3	40
0.212	36
0.15	32
0.063	27

Soil Fraction	Total Percentage
Cobbles	0
Gravel	45
Sand	28
Silt/Clay	27

Remarks:
See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

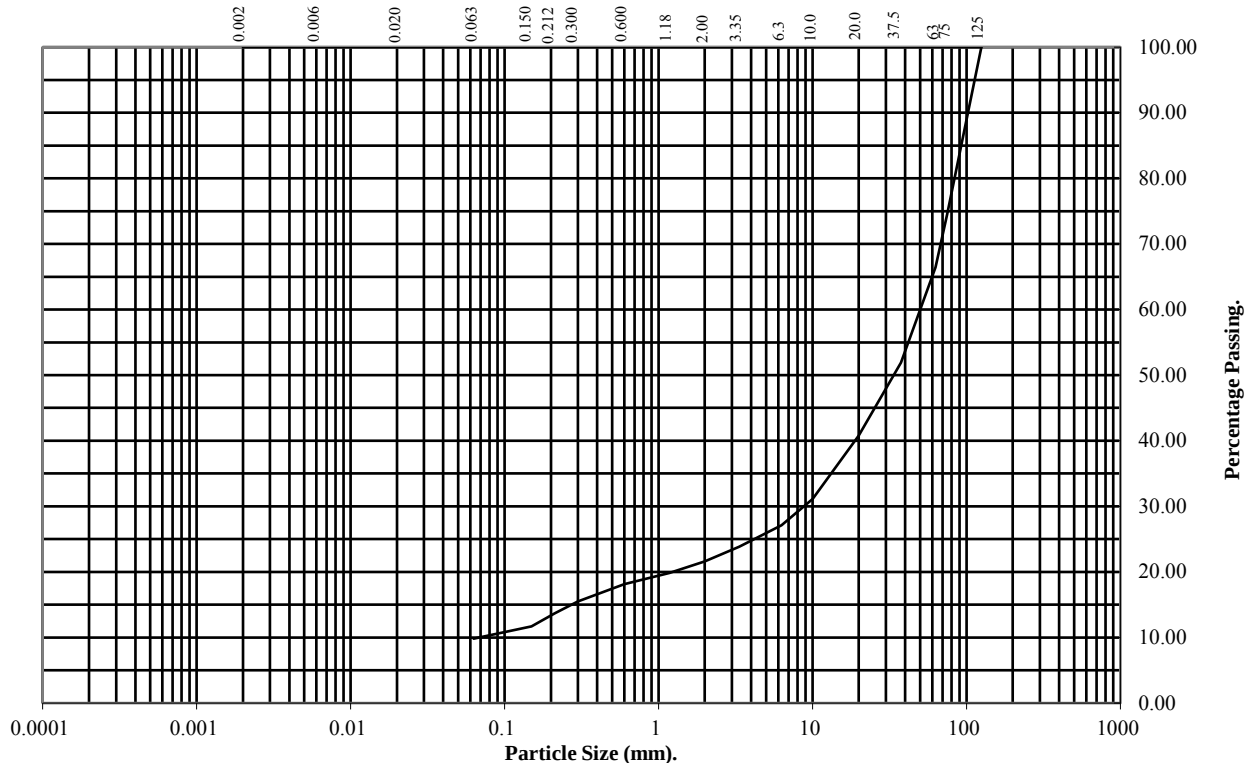
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP35 Top Depth (m): 2.60

Sample Number: C76959 Base Depth(m): 4.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	74
63	66
37.5	52
20	41
10	31
6.3	27
3.35	24
2	22
1.18	20
0.6	18
0.3	16
0.212	14
0.15	12
0.063	10

Soil Fraction	Total Percentage
Cobbles	34
Gravel	44
Sand	12
Silt/Clay	10

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

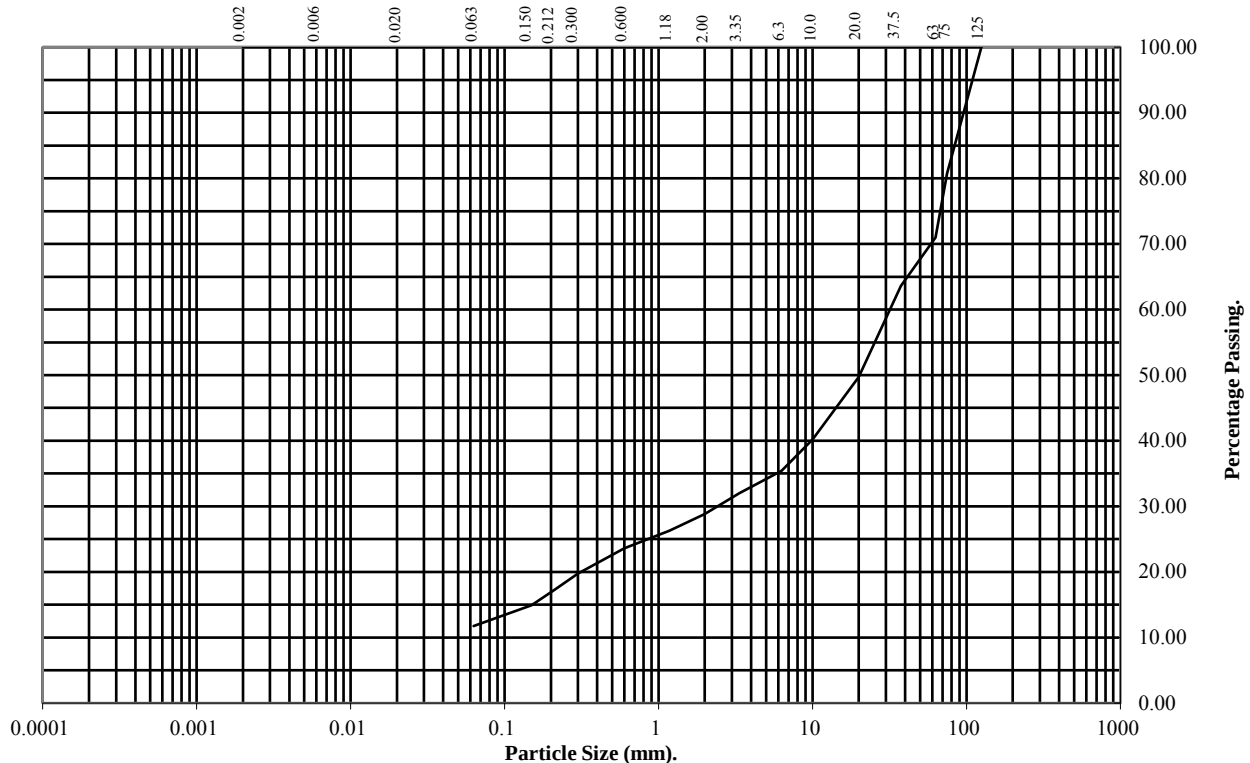
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP36 Top Depth (m): 0.00

Sample Number: C76962 Base Depth(m): 1.10

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	81
63	71
37.5	64
20	50
10	40
6.3	35
3.35	32
2	29
1.18	26
0.6	24
0.3	20
0.212	17
0.15	15
0.063	12

Soil Fraction	Total Percentage
Cobbles	29
Gravel	42
Sand	17
Silt/Clay	12

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

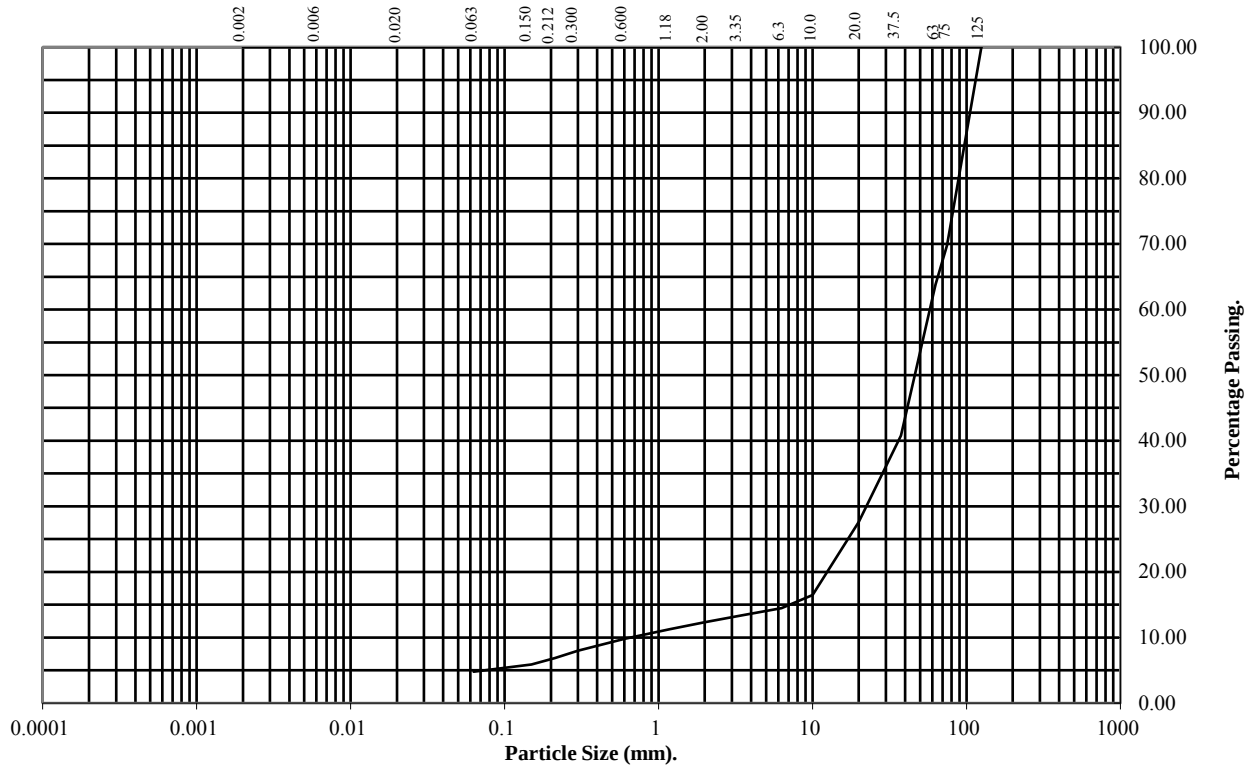
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP36 Top Depth (m): 1.10

Sample Number: C80003 Base Depth(m): 3.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	70
63	64
37.5	41
20	28
10	16
6.3	14
3.35	13
2	12
1.18	11
0.6	10
0.3	8
0.212	7
0.15	6
0.063	5

Soil Fraction	Total Percentage
Cobbles	36
Gravel	52
Sand	7
Silt/Clay	5

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

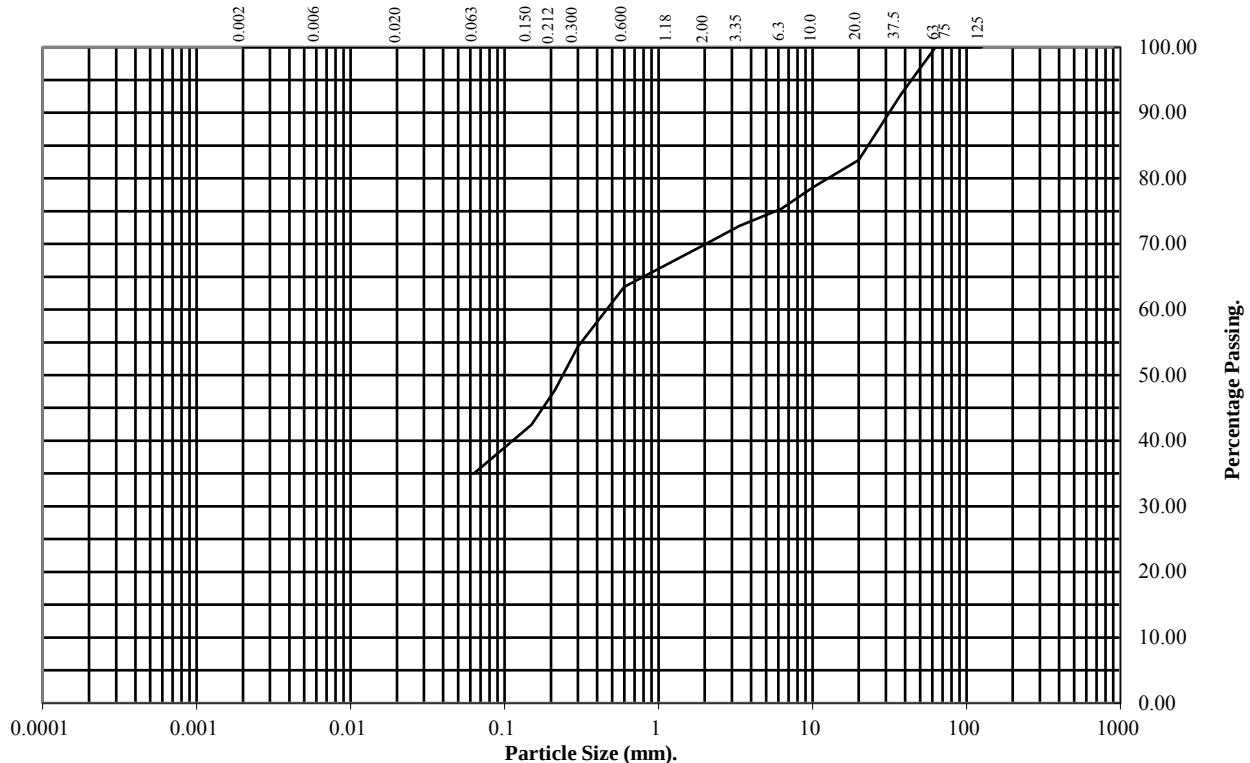
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP43 Top Depth (m): 0.00

Sample Number: C76938 Base Depth(m): 0.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	93
20	83
10	79
6.3	75
3.35	73
2	70
1.18	67
0.6	63
0.3	54
0.212	48
0.15	42
0.063	35

Soil Fraction	Total Percentage
Cobbles	0
Gravel	30
Sand	35
Silt/Clay	35

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

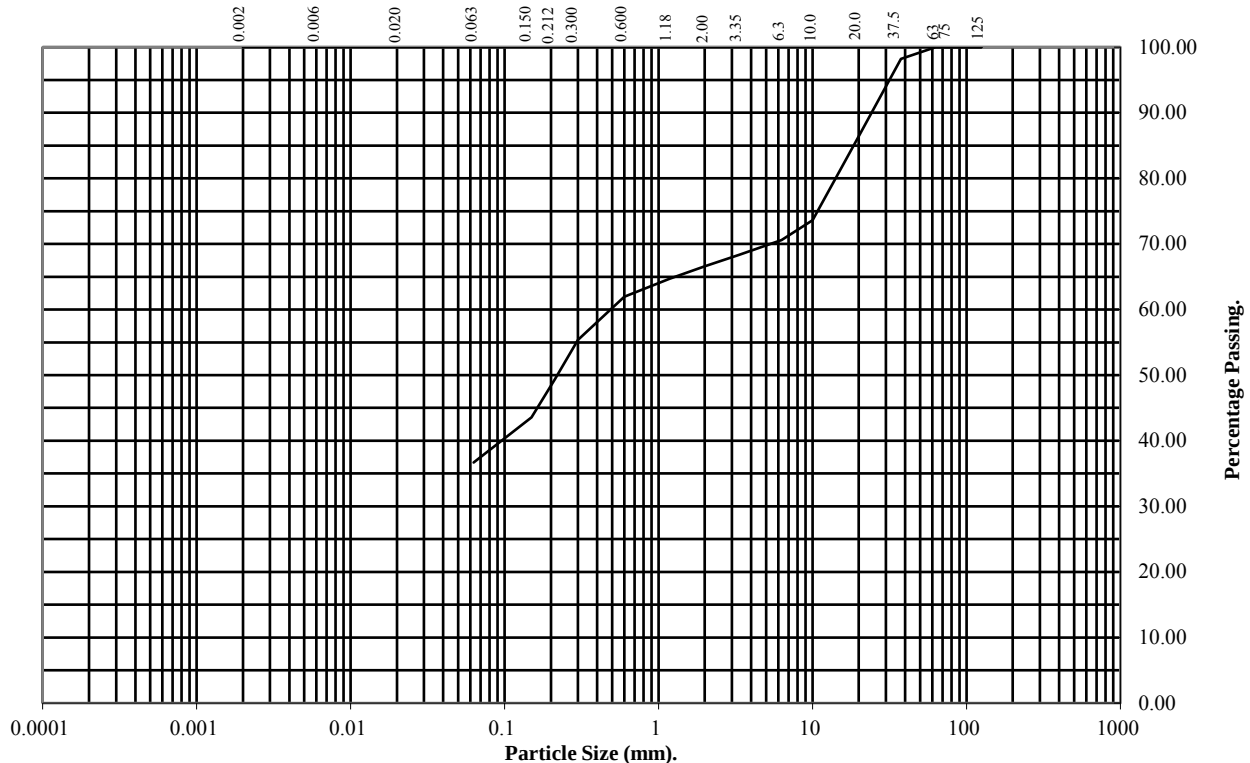
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP43 Top Depth (m): 0.50

Sample Number: C76907 Base Depth(m): 1.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	98
20	86
10	74
6.3	71
3.35	68
2	67
1.18	65
0.6	62
0.3	55
0.212	49
0.15	44
0.063	37

Soil Fraction	Total Percentage
Cobbles	0
Gravel	33
Sand	30
Silt/Clay	37

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

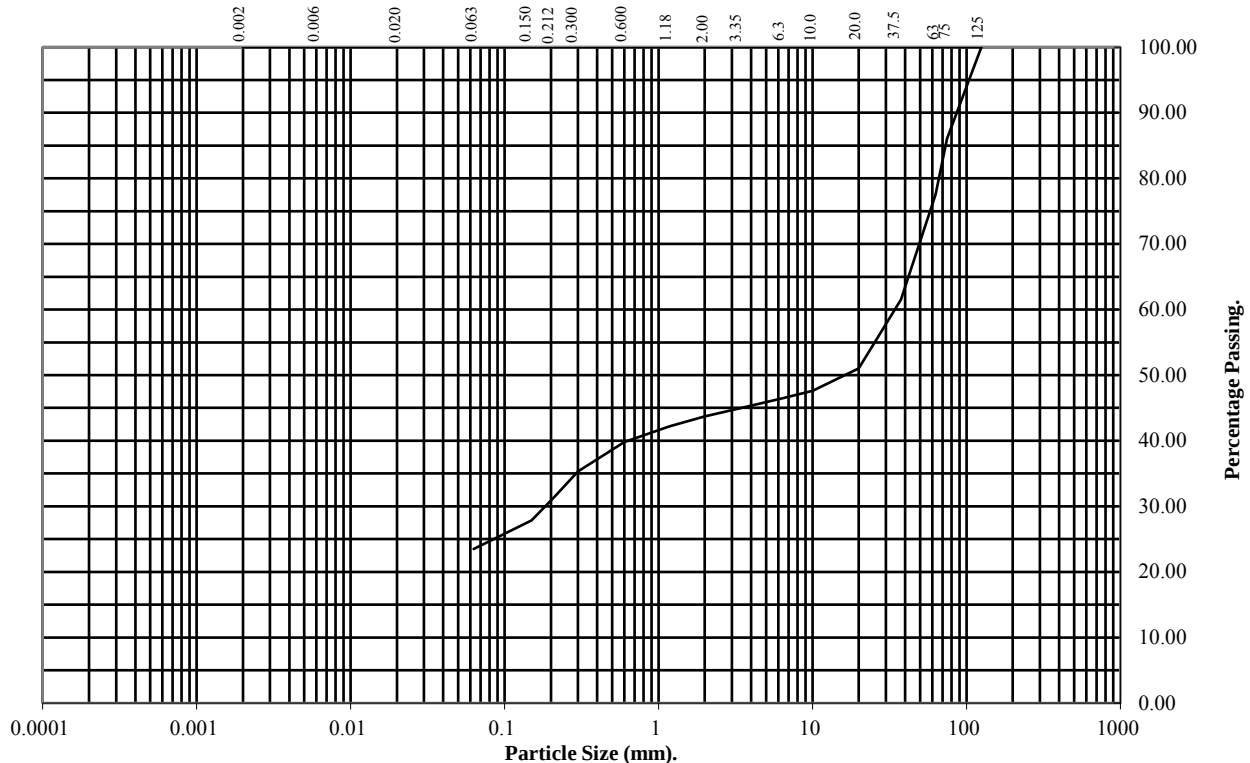
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP44 Top Depth (m): 1.00

Sample Number: C80028 Base Depth(m): 2.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	86
63	78
37.5	62
20	51
10	48
6.3	46
3.35	45
2	44
1.18	42
0.6	40
0.3	35
0.212	31
0.15	28
0.063	23

Soil Fraction	Total Percentage
Cobbles	22
Gravel	34
Sand	21
Silt/Clay	23

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

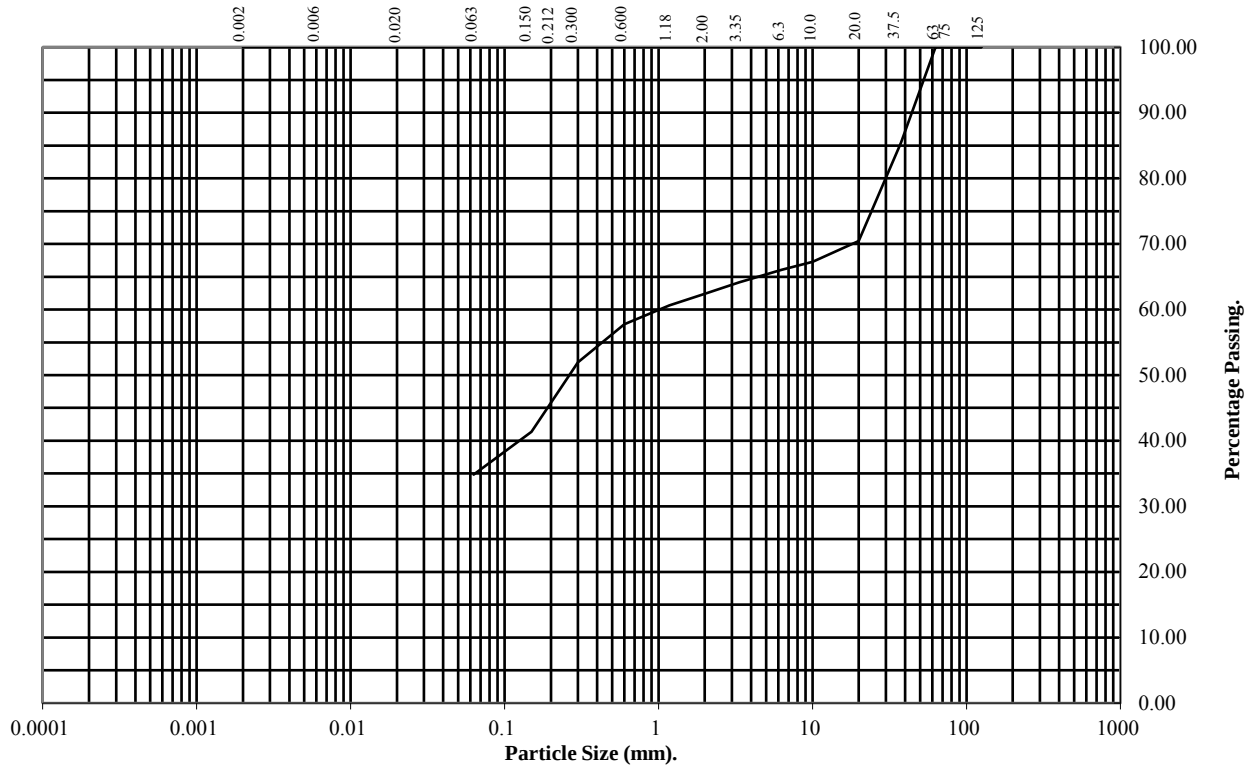
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP44 Top Depth (m): 2.50

Sample Number: C80039 Base Depth(m): 4.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	85
20	70
10	67
6.3	66
3.35	64
2	62
1.18	61
0.6	58
0.3	52
0.212	47
0.15	41
0.063	35

Soil Fraction	Total Percentage
Cobbles	0
Gravel	38
Sand	27
Silt/Clay	35

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

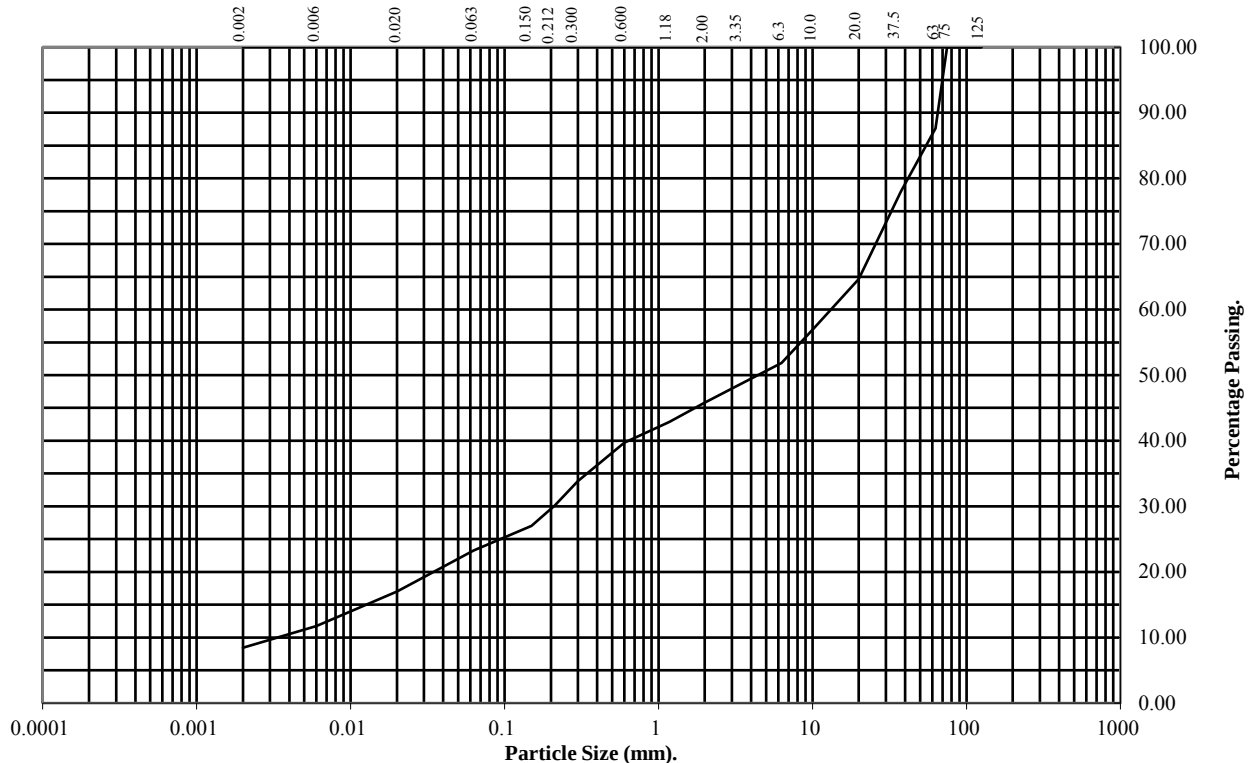
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP46 Top Depth (m): 0.00

Sample Number: C80041 Base Depth(m): 0.80

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	88
37.5	78
20	65
10	57
6.3	52
3.35	49
2	46
1.18	43
0.6	40
0.3	34
0.212	30
0.15	27
0.063	23

Particle Diameter	Percentage Passing
0.02	17
0.006	12
0.002	8

Soil Fraction	Total Percentage
Cobbles	12
Gravel	42
Sand	23
Silt	15
Clay	8

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5672
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

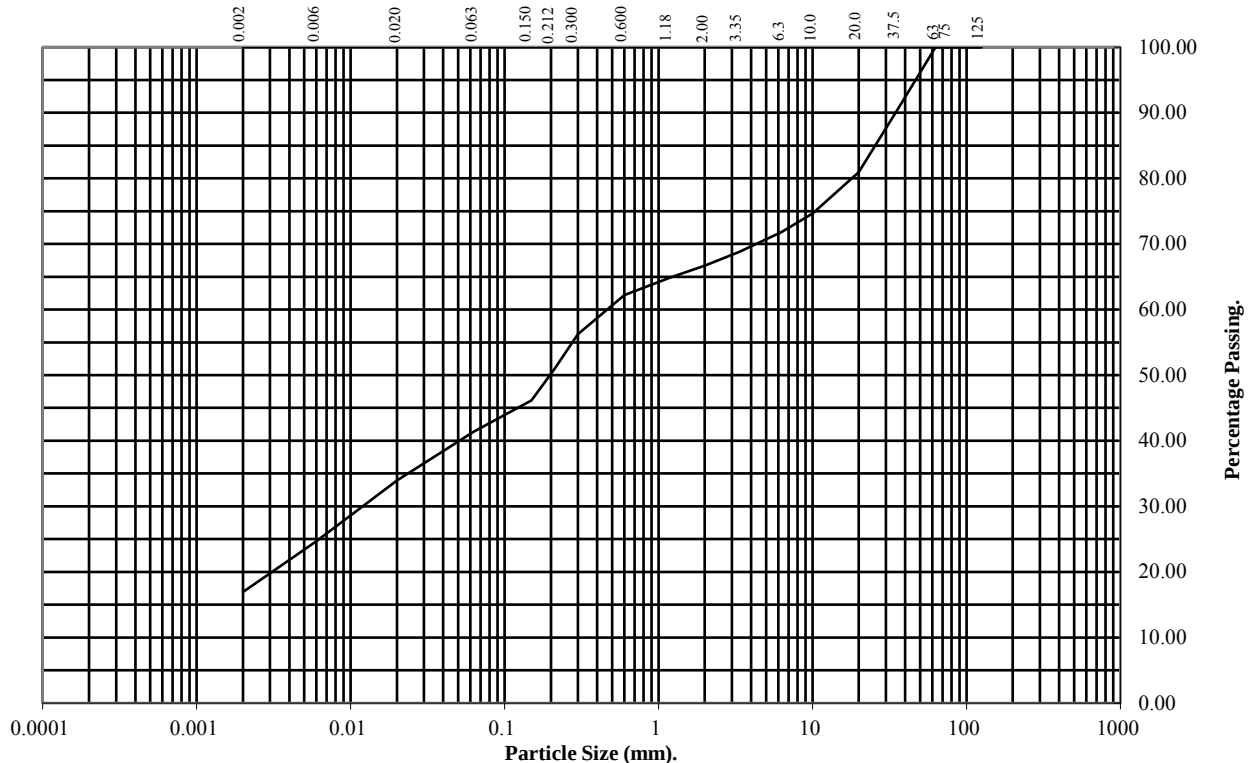
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP46 Top Depth (m): 0.80

Sample Number: C80005 Base Depth(m): 2.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	91
20	81
10	75
6.3	72
3.35	69
2	67
1.18	65
0.6	62
0.3	56
0.212	51
0.15	46
0.063	41

Particle Diameter	Percentage Passing
0.02	34
0.006	25
0.002	17

Soil Fraction	Total Percentage
Cobbles	0
Gravel	33
Sand	26
Silt	24
Clay	17

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

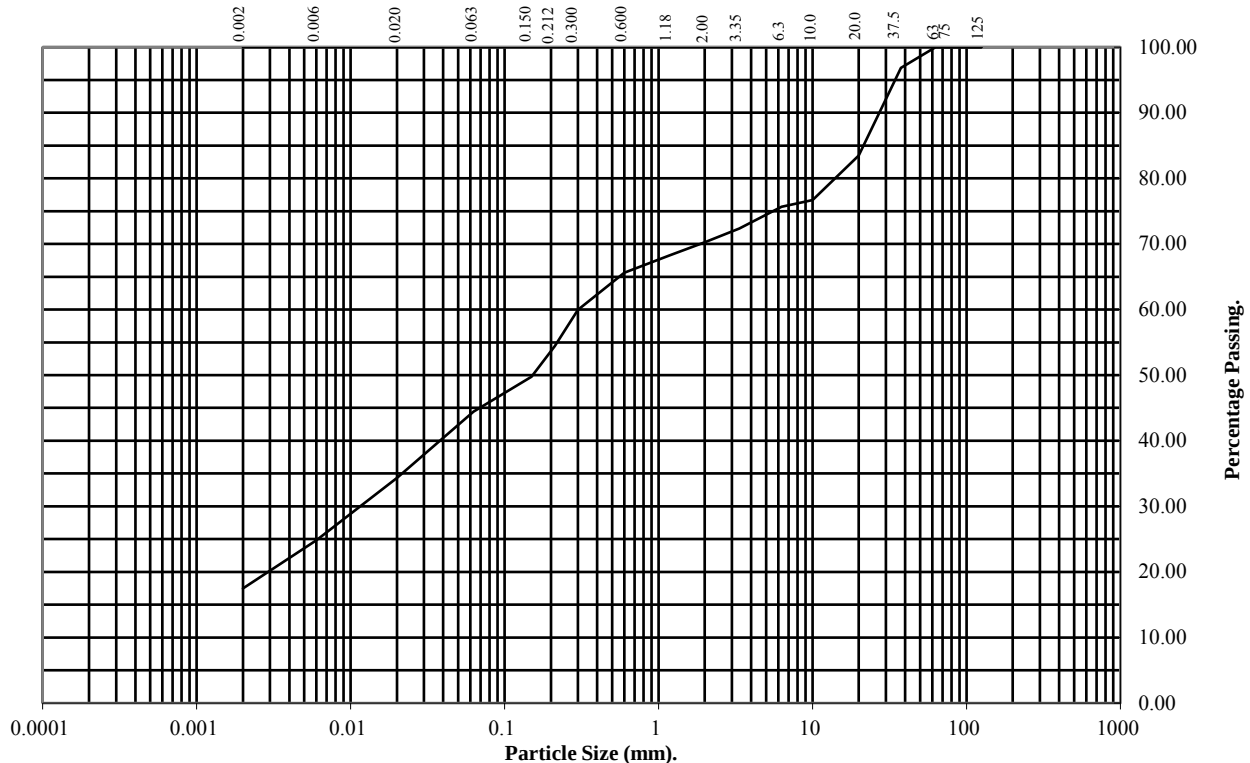
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP46 Top Depth (m): 2.00

Sample Number: C80024 Base Depth(m): 2.90

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	97
20	83
10	77
6.3	76
3.35	72
2	70
1.18	68
0.6	66
0.3	60
0.212	54
0.15	50
0.063	44

Particle Diameter	Percentage Passing
0.02	34
0.006	25
0.002	17

Soil Fraction	Total Percentage
Cobbles	0
Gravel	30
Sand	26
Silt	27
Clay	17

Remarks:

See Summary of Soil Descriptions



Coed Darcy

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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

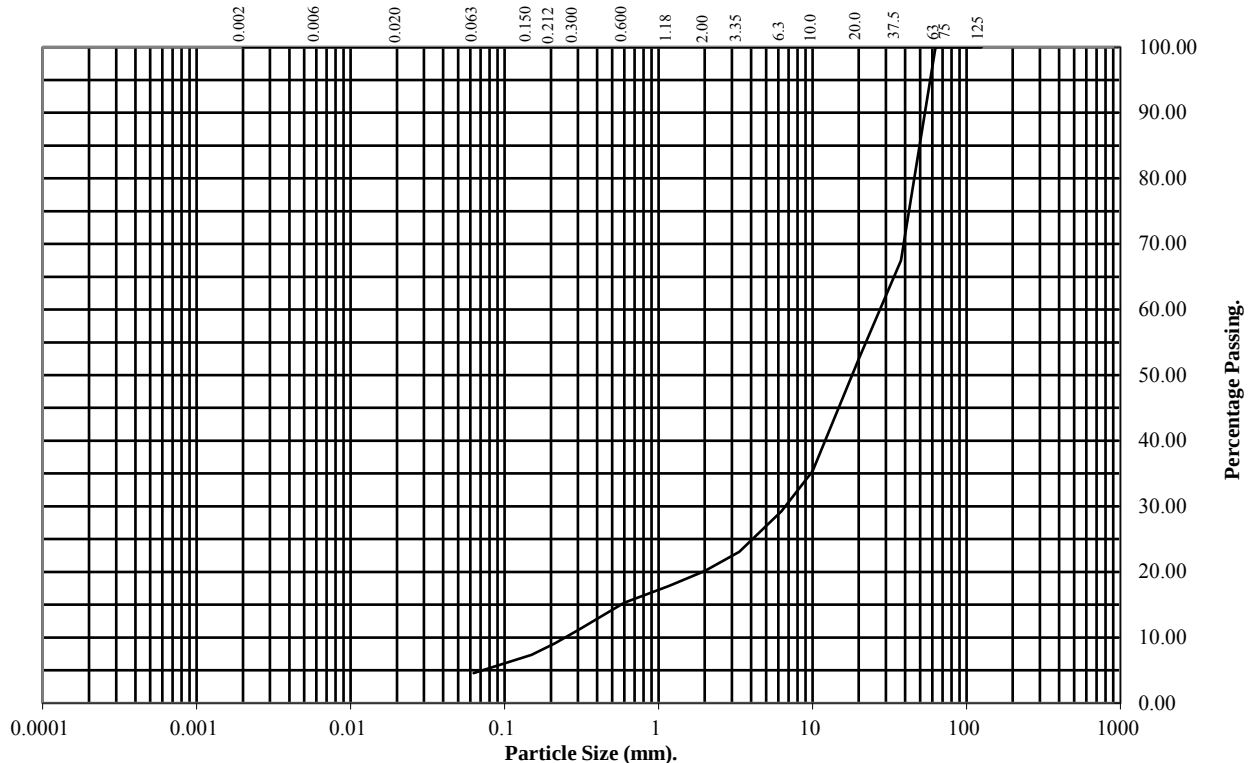
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP49 Top Depth (m): 0.00

Sample Number: C76937 Base Depth(m): 0.80

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	67
20	52
10	35
6.3	29
3.35	23
2	20
1.18	18
0.6	15
0.3	11
0.212	9
0.15	7
0.063	5

Soil Fraction	Total Percentage
Cobbles	0
Gravel	80
Sand	15
Silt/Clay	5

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
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PARTICLE SIZE DISTRIBUTION TEST

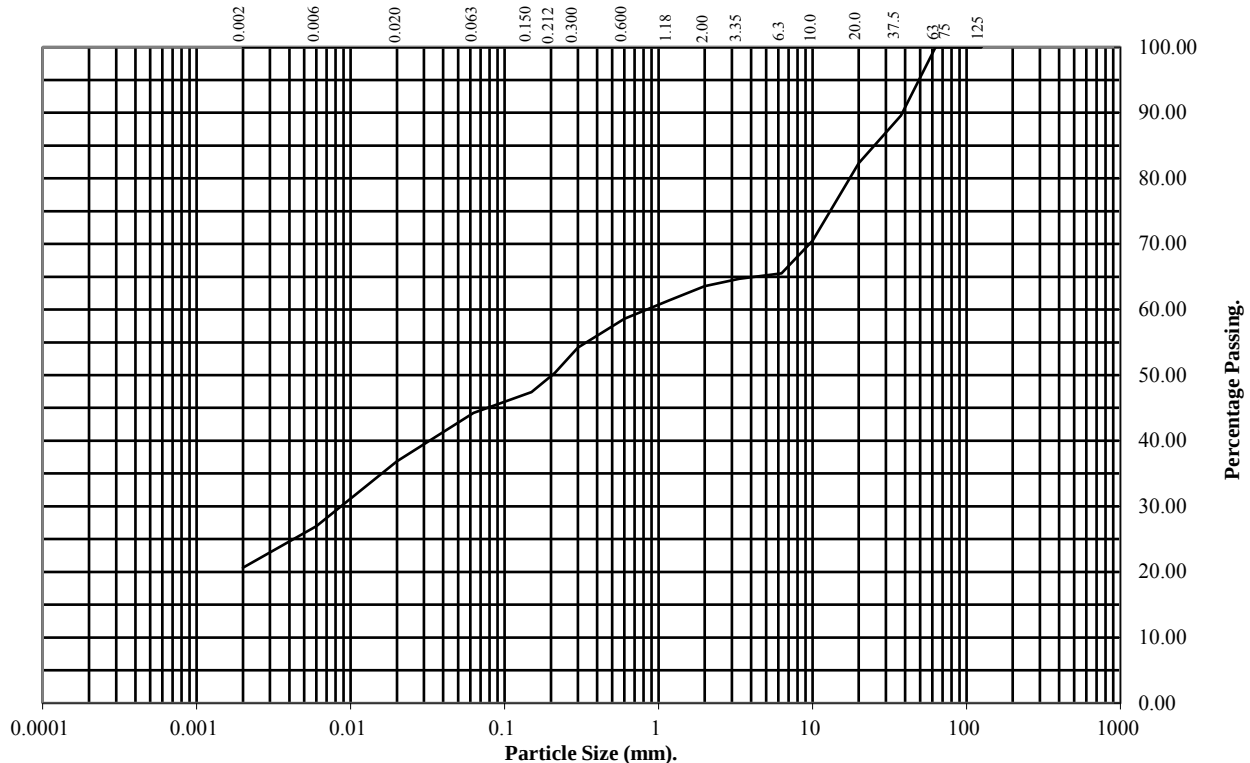
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP49 Top Depth (m): 2.20

Sample Number: C80014 Base Depth(m): 3.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	90
20	82
10	71
6.3	66
3.35	65
2	64
1.18	61
0.6	59
0.3	54
0.212	50
0.15	47
0.063	44

Particle Diameter	Percentage Passing
0.02	37
0.006	27
0.002	21

Soil Fraction	Total Percentage
Cobbles	0
Gravel	36
Sand	20
Silt	23
Clay	21

Remarks:
See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

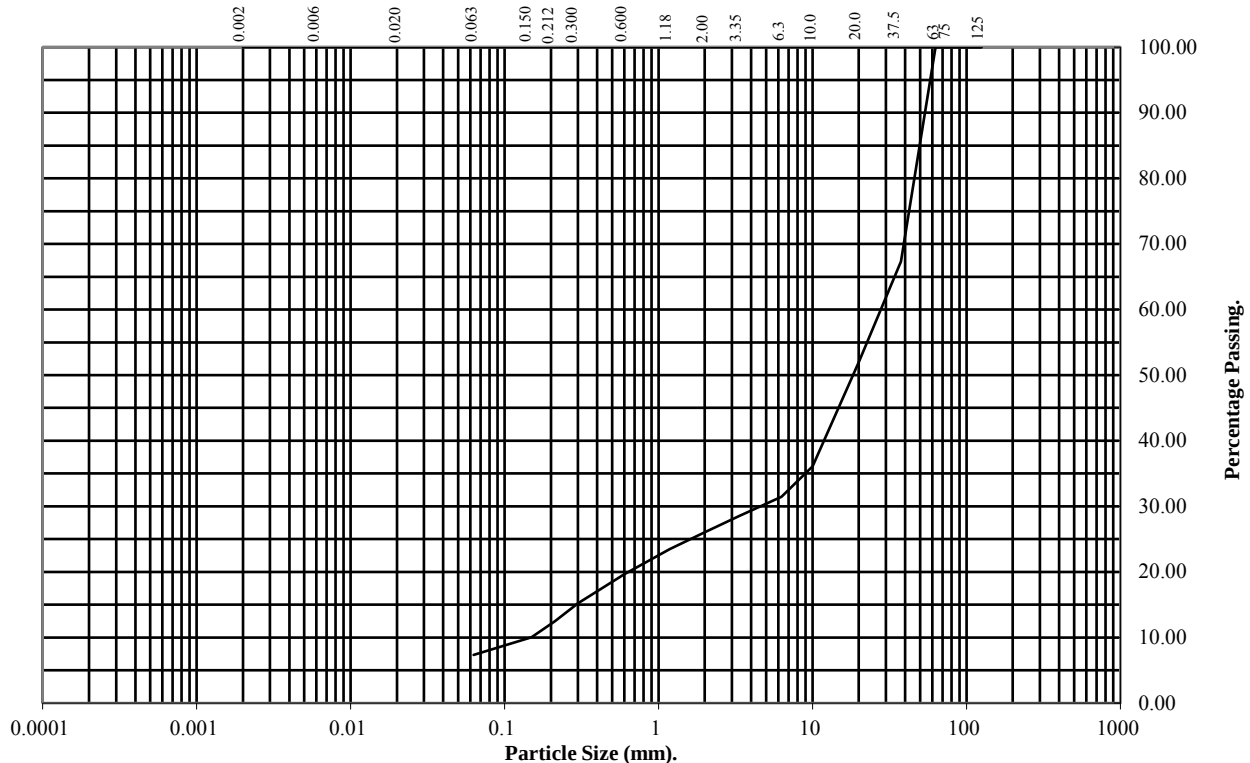
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP50 Top Depth (m): 0.00

Sample Number: C76950 Base Depth(m): 0.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	67
20	52
10	36
6.3	31
3.35	29
2	26
1.18	23
0.6	20
0.3	15
0.212	12
0.15	10
0.063	7

Soil Fraction	Total Percentage
Cobbles	0
Gravel	74
Sand	19
Silt/Clay	7

Remarks:
See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

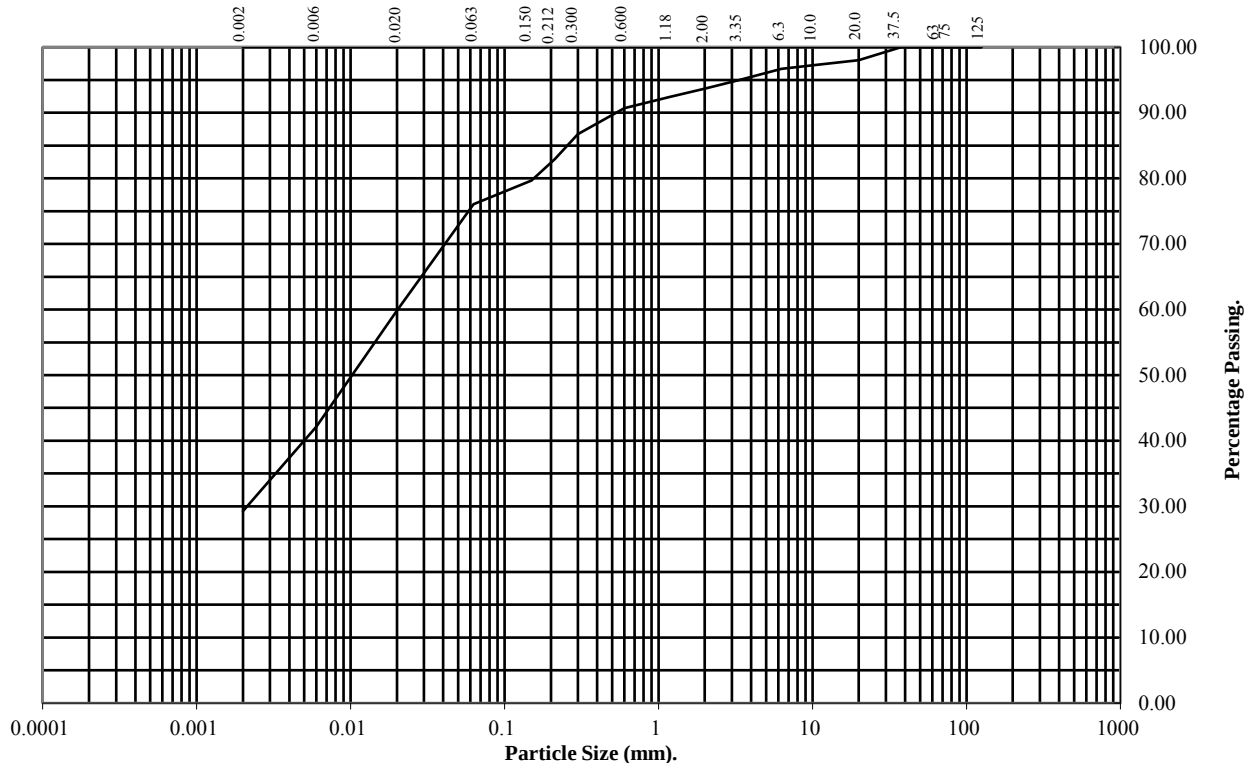
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP51 Top Depth (m): 0.00

Sample Number: C76926 Base Depth(m): 0.55

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	98
10	97
6.3	97
3.35	95
2	94
1.18	92
0.6	91
0.3	87
0.212	83
0.15	80
0.063	76

Particle Diameter	Percentage Passing
0.02	60
0.006	42
0.002	29

Soil Fraction	Total Percentage
Cobbles	0
Gravel	6
Sand	18
Silt	47
Clay	29

Remarks:
See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

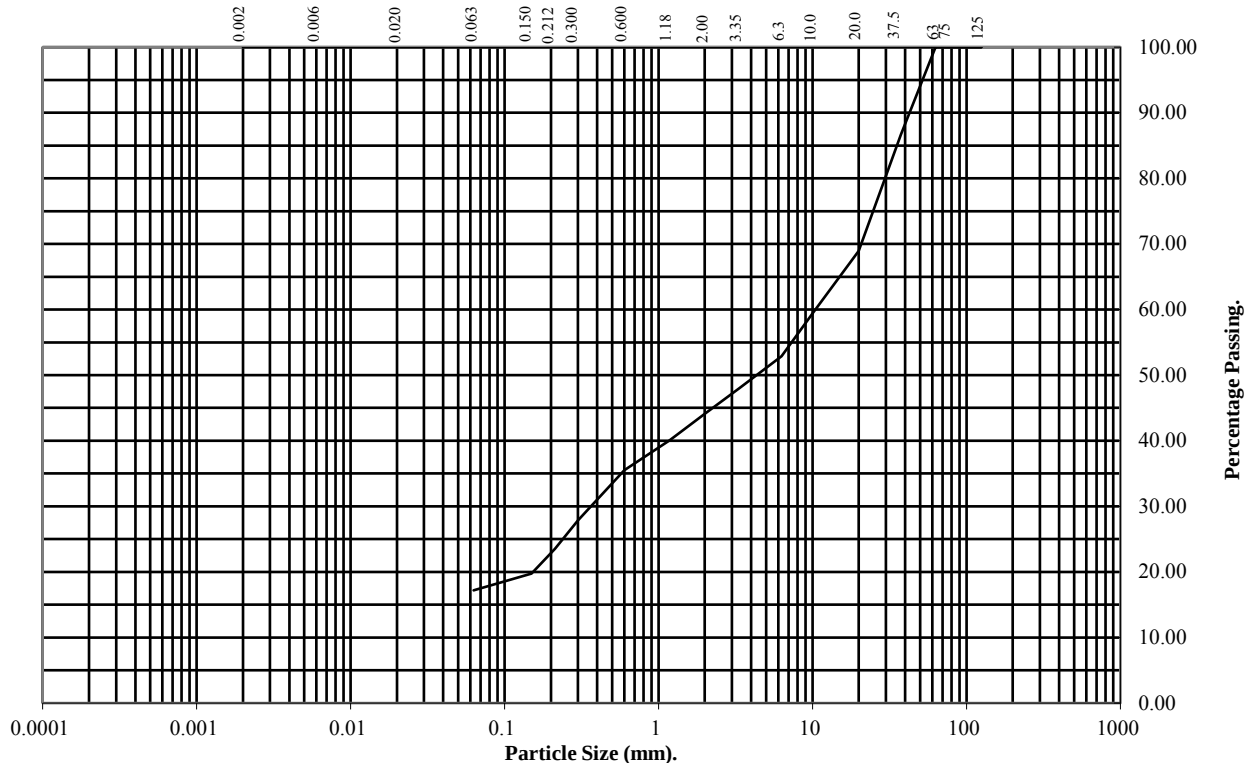
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP51 Top Depth (m): 0.55

Sample Number: C76918 Base Depth(m): 1.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	87
20	69
10	59
6.3	53
3.35	48
2	44
1.18	40
0.6	36
0.3	28
0.212	24
0.15	20
0.063	17

Soil Fraction	Total Percentage
Cobbles	0
Gravel	56
Sand	27
Silt/Clay	17

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

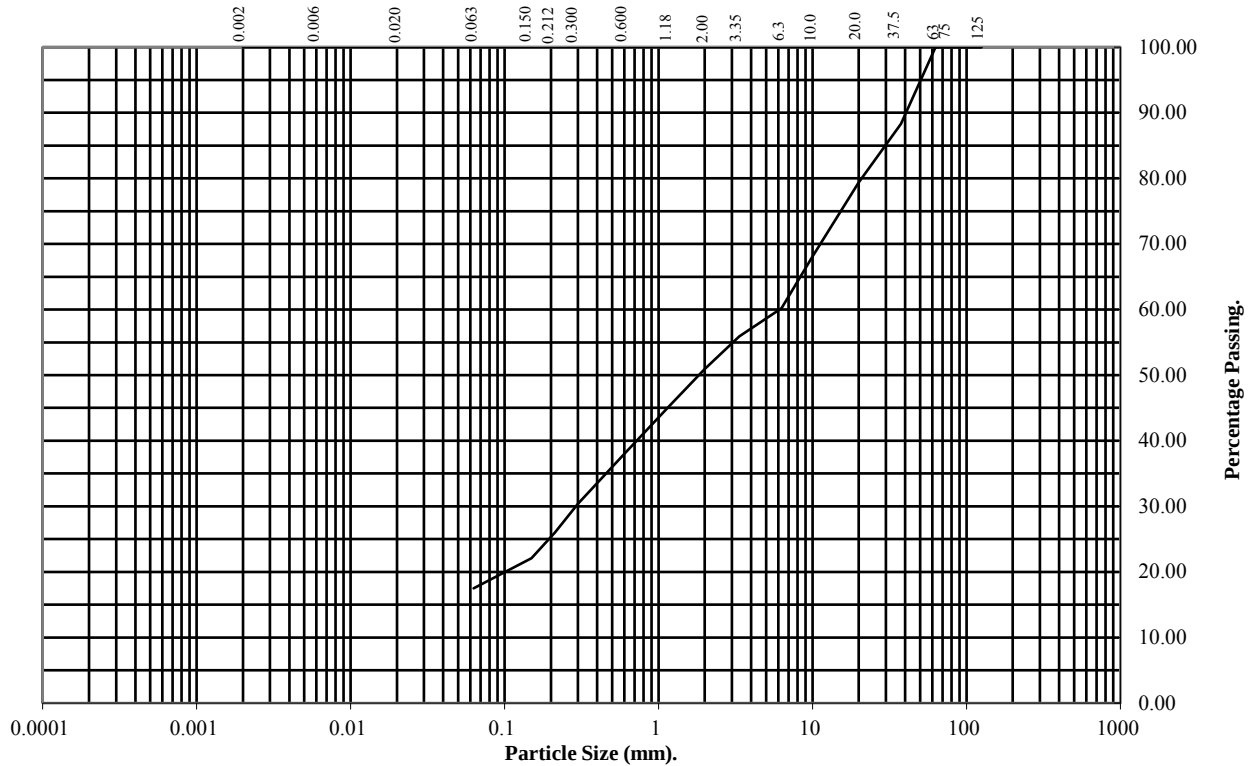
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP51 Top Depth (m): 1.50

Sample Number: C76960 Base Depth(m): 3.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	88
20	79
10	68
6.3	60
3.35	56
2	51
1.18	45
0.6	38
0.3	30
0.212	26
0.15	22
0.063	17

Soil Fraction	Total Percentage
Cobbles	0
Gravel	49
Sand	34
Silt/Clay	17

Remarks:
See Summary of Soil Descriptions



Coed Darcy

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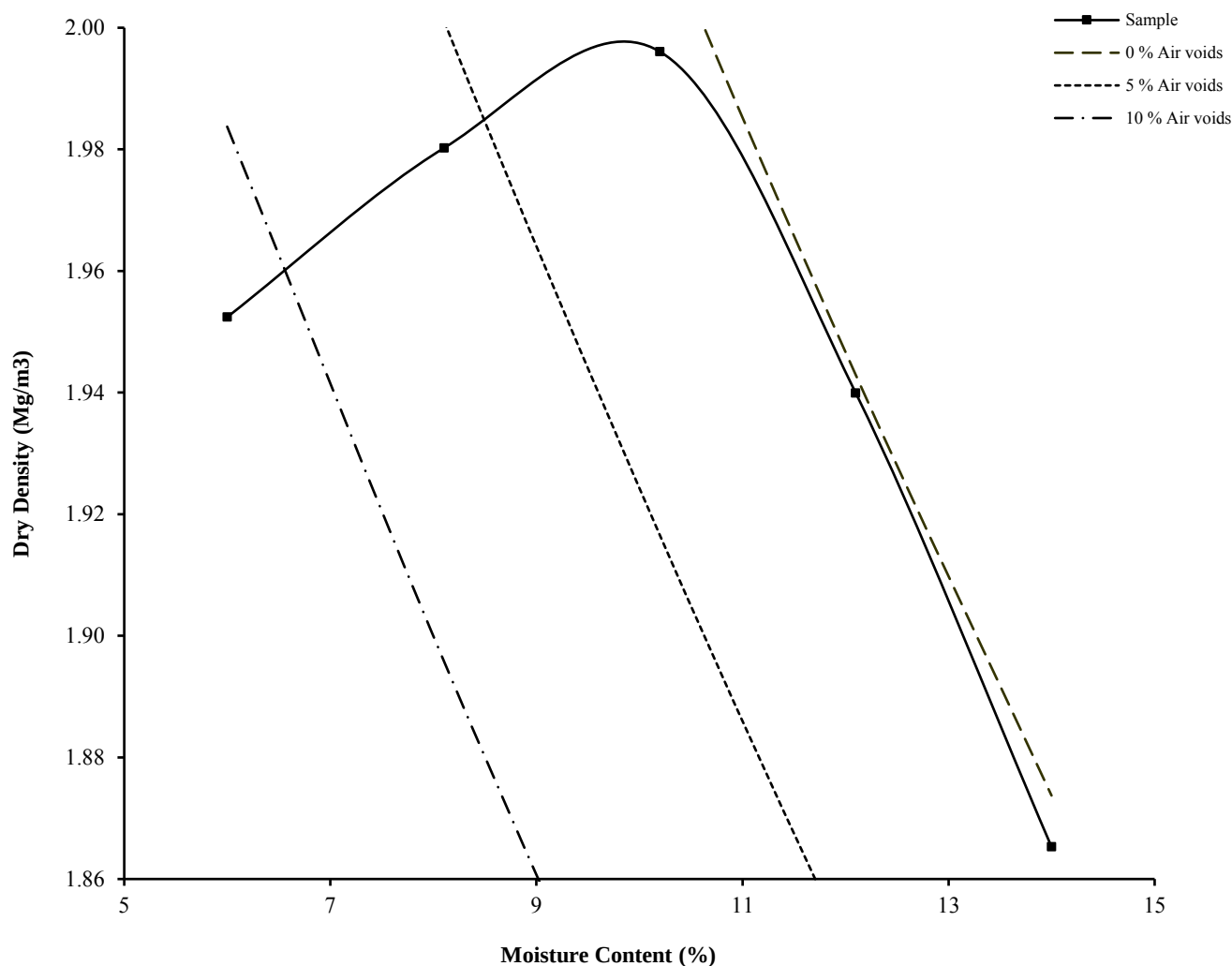
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP01 Top Depth (m) : 0.00

Sample Number: C76936 Base Depth (m) : 1.20

Sample Type: B



Initial Moisture Content:	8.1	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.54	Assumed	Material Retained on 37.5 mm Test Sieve (%):	41
Maximum Dry Density (Mg/m ³):	2.00		Material Retained on 20.0 mm Test Sieve (%):	20
Optimum Moisture Content (%):	10			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

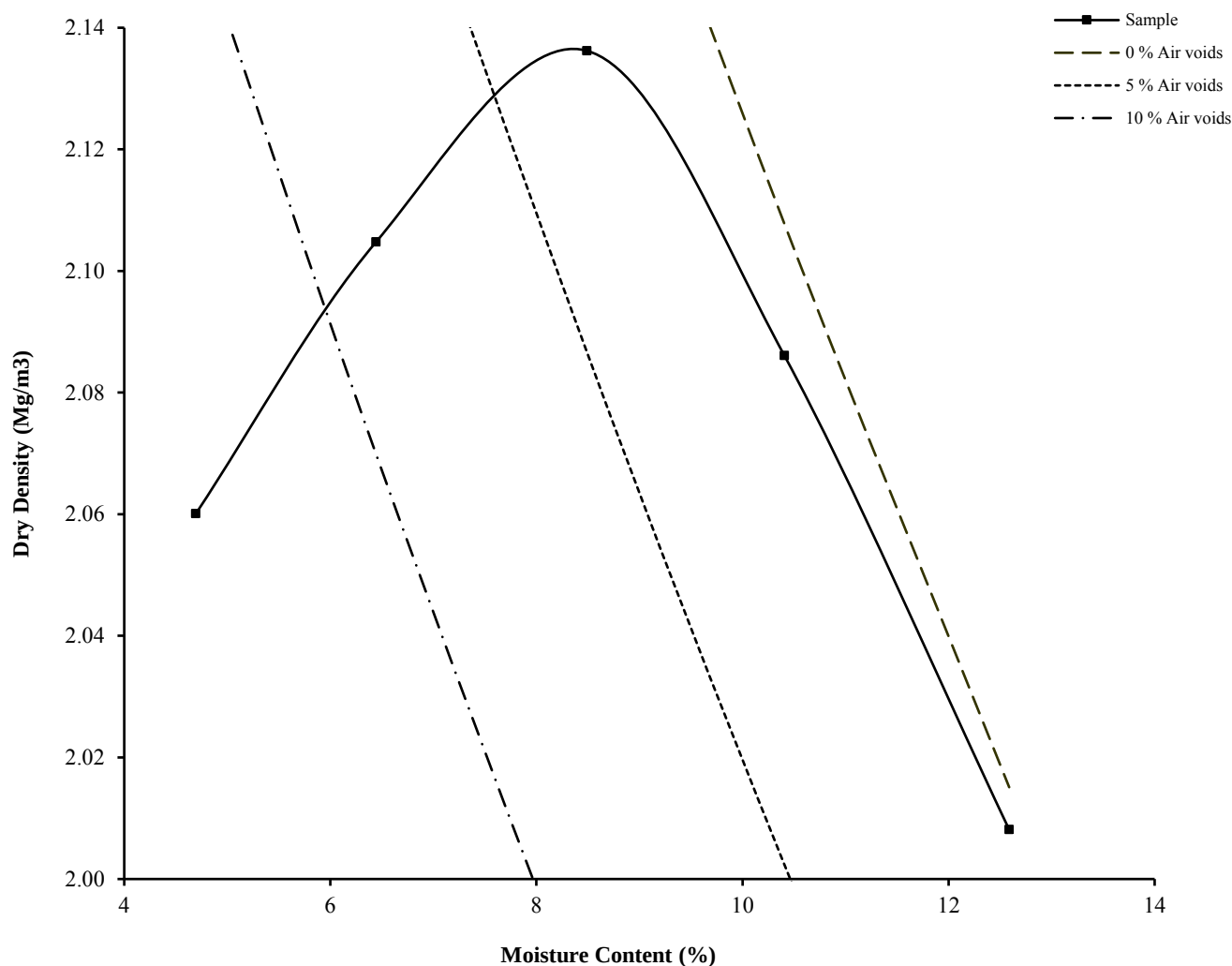
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP03 Top Depth (m) : 0.00

Sample Number: C76917 Base Depth (m) : 1.20

Sample Type: B



Initial Moisture Content:	6.4	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.7	Assumed	Material Retained on 37.5 mm Test Sieve (%):	33
Maximum Dry Density (Mg/m3):	2.14		Material Retained on 20.0 mm Test Sieve (%):	17
Optimum Moisture Content (%):	8			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

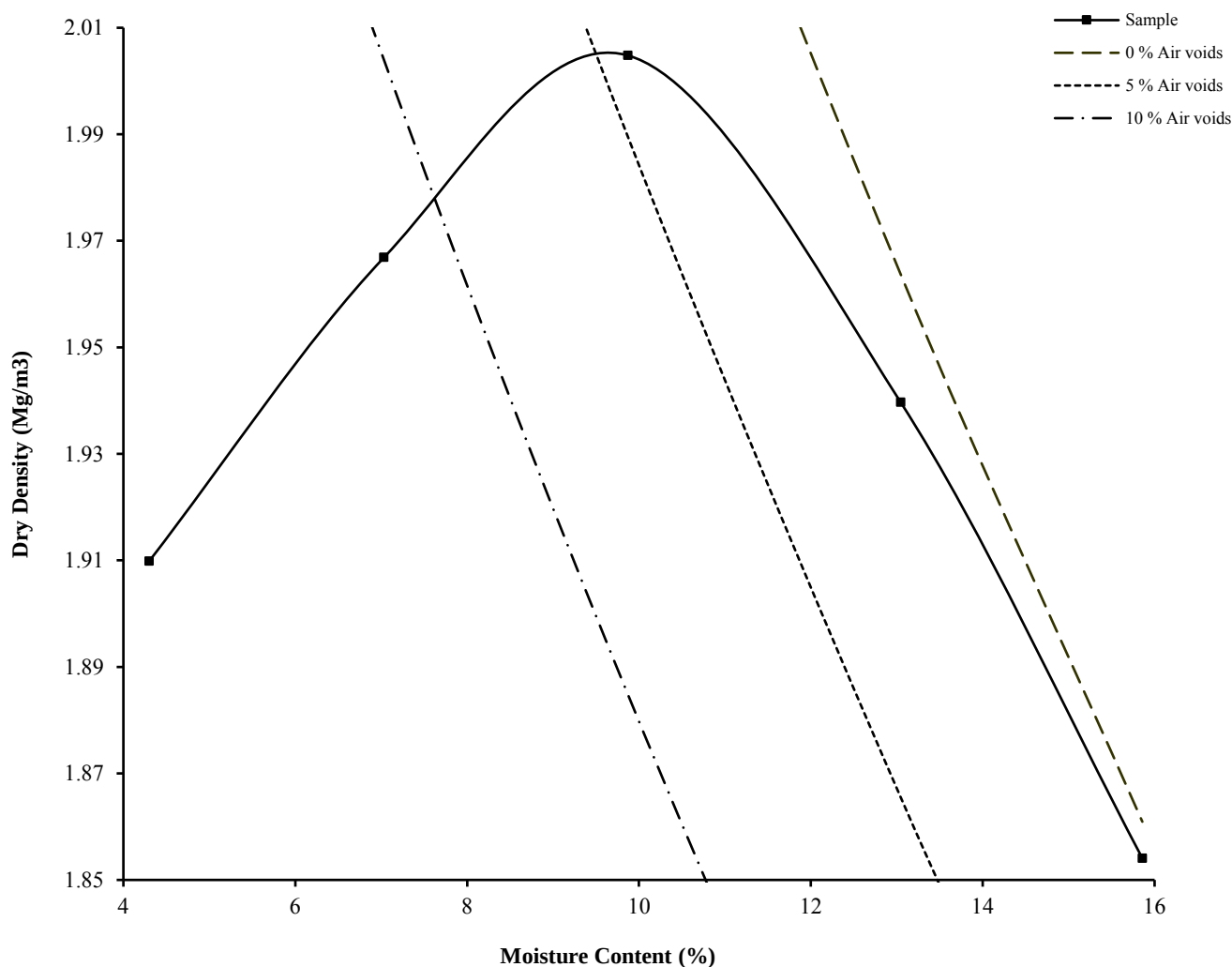
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP06 Top Depth (m) : 0.30

Sample Number: C80017 Base Depth (m) : 1.20

Sample Type: B



Initial Moisture Content:	13	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.64	Assumed	Material Retained on 37.5 mm Test Sieve (%):	9
Maximum Dry Density (Mg/m ³):	2.00		Material Retained on 20.0 mm Test Sieve (%):	10
Optimum Moisture Content (%):	10			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

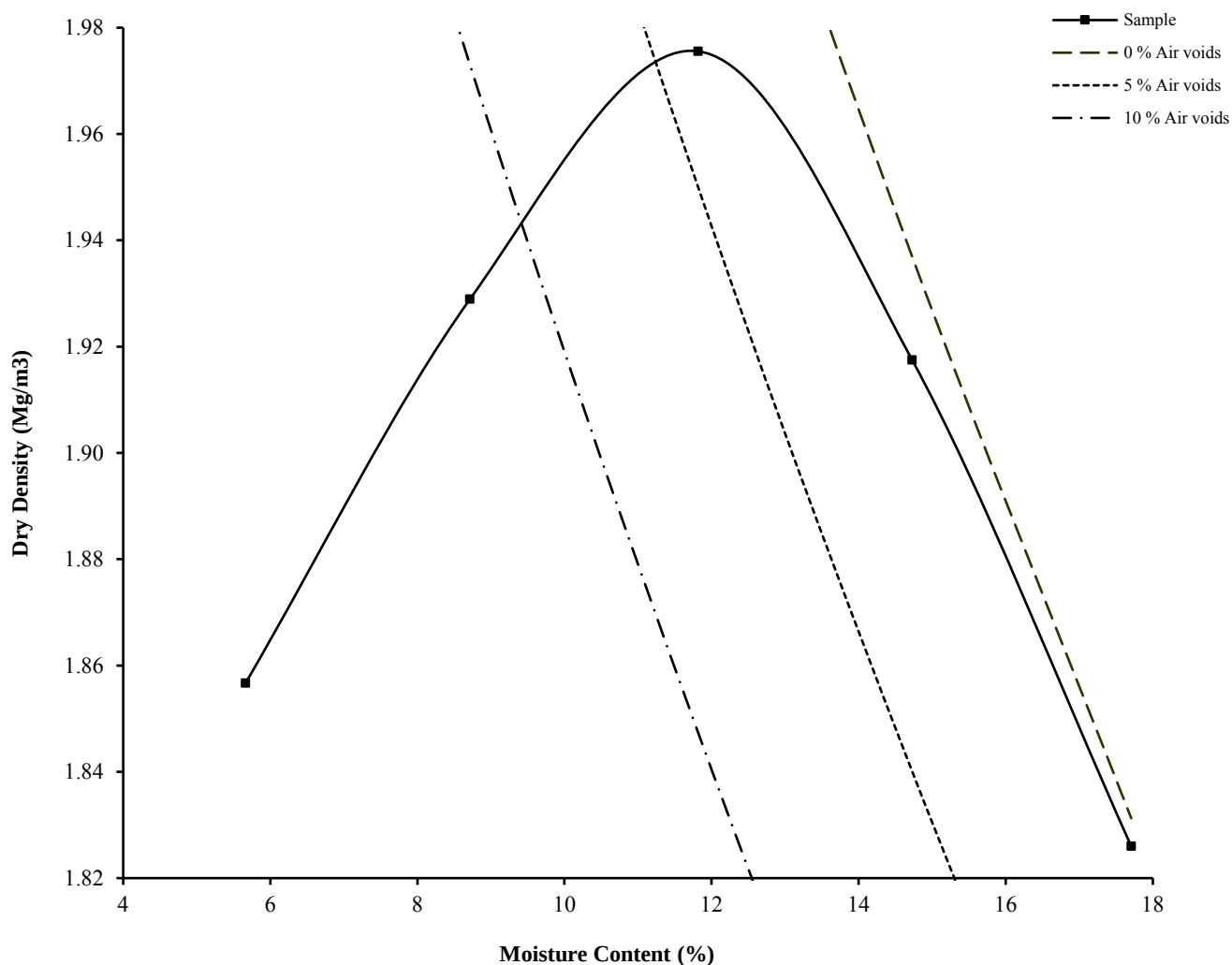
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP14 Top Depth (m) : 0.00

Sample Number: C76912 Base Depth (m) : 1.00

Sample Type: B



Initial Moisture Content:	15	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.71	Assumed	Material Retained on 37.5 mm Test Sieve (%):	19
Maximum Dry Density (Mg/m3):	1.98		Material Retained on 20.0 mm Test Sieve (%):	9
Optimum Moisture Content (%):	12			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

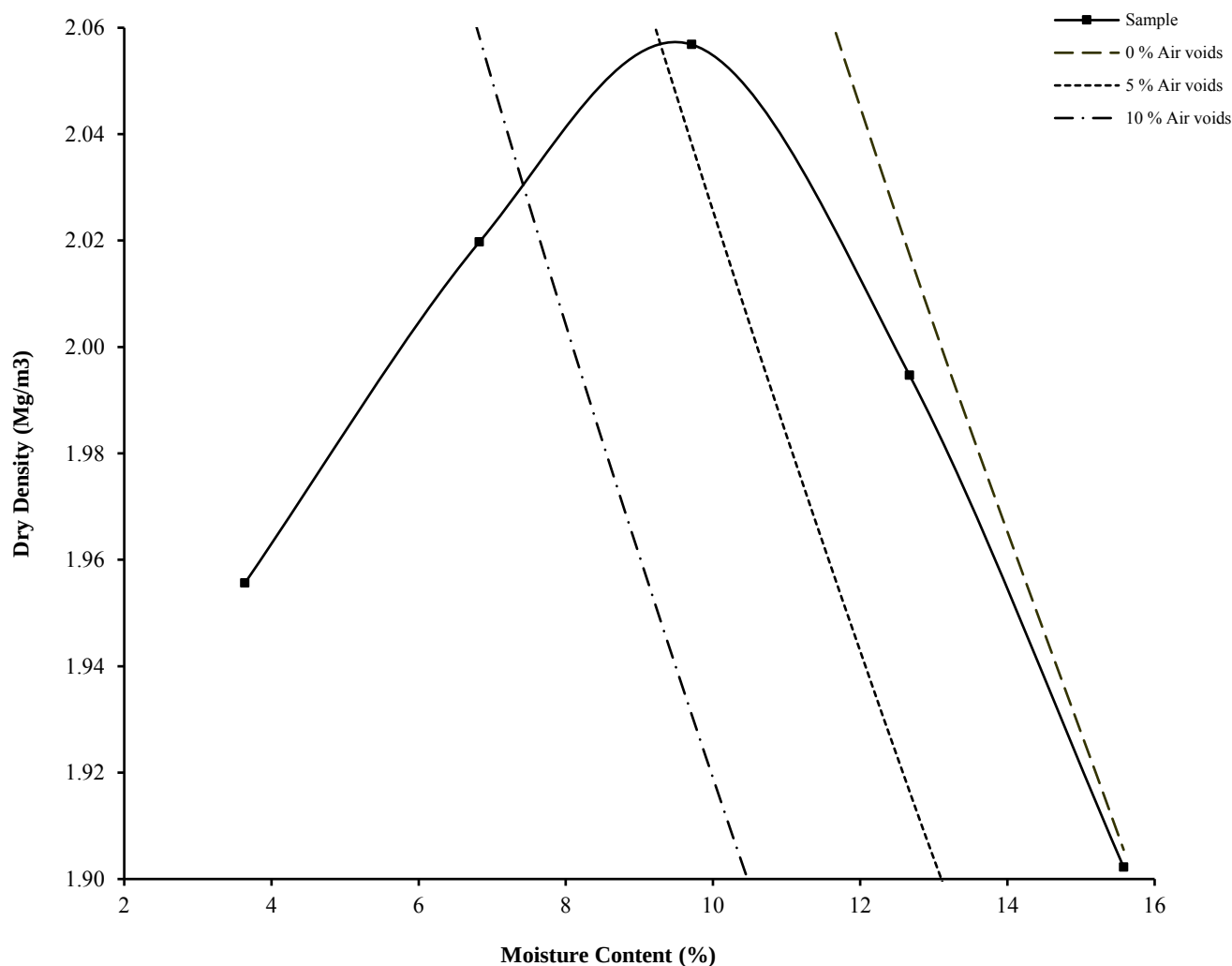
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP17 Top Depth (m) : 0.00

Sample Number: C76904 Base Depth (m) : 1.50

Sample Type: B



Initial Moisture Content:	13	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.71	Assumed	Material Retained on 37.5 mm Test Sieve (%):	19
Maximum Dry Density (Mg/m3):	2.06		Material Retained on 20.0 mm Test Sieve (%):	10
Optimum Moisture Content (%):	10			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

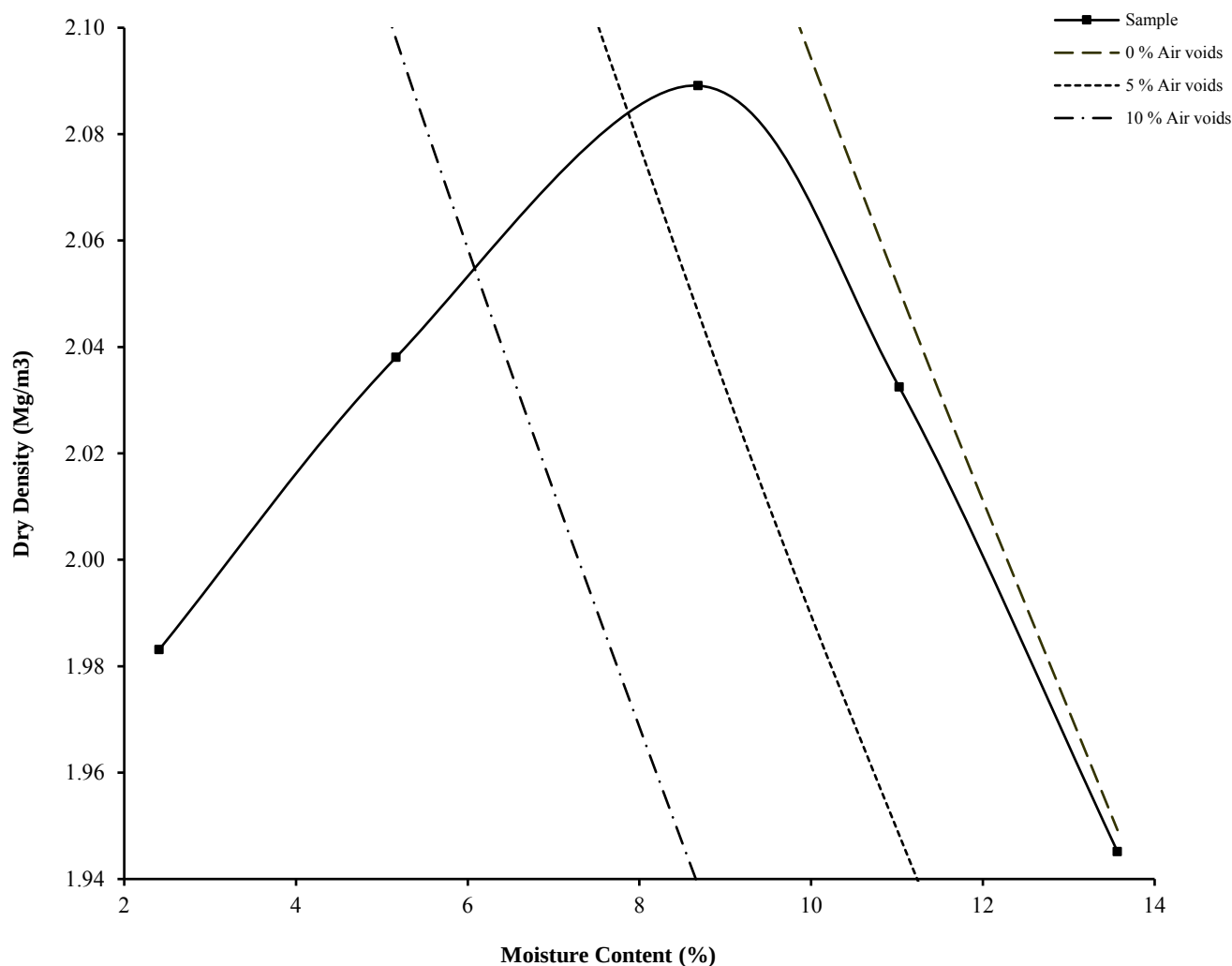
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP18 Top Depth (m) : 0.00

Sample Number: C80019 Base Depth (m) : 0.20

Sample Type: B



Initial Moisture Content:	14	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	2
Maximum Dry Density (Mg/m ³):	2.09		Material Retained on 20.0 mm Test Sieve (%):	8
Optimum Moisture Content (%):	9			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

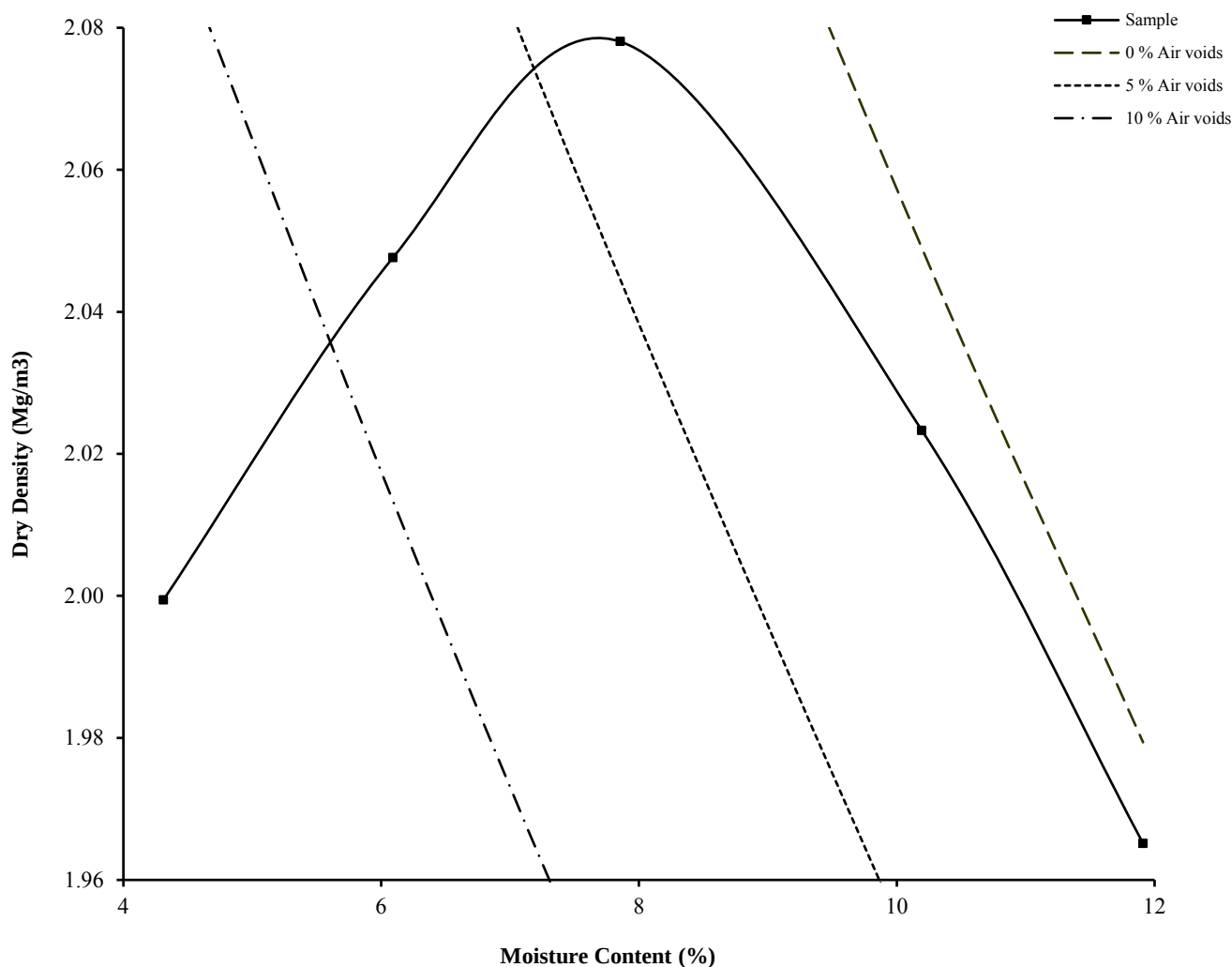
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP21 Top Depth (m) : 0.00

Sample Number: C80007 Base Depth (m) : 0.70

Sample Type: B



Initial Moisture Content:	10	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.59	Assumed	Material Retained on 37.5 mm Test Sieve (%):	44
Maximum Dry Density (Mg/m ³):	2.08		Material Retained on 20.0 mm Test Sieve (%):	14
Optimum Moisture Content (%):	8			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

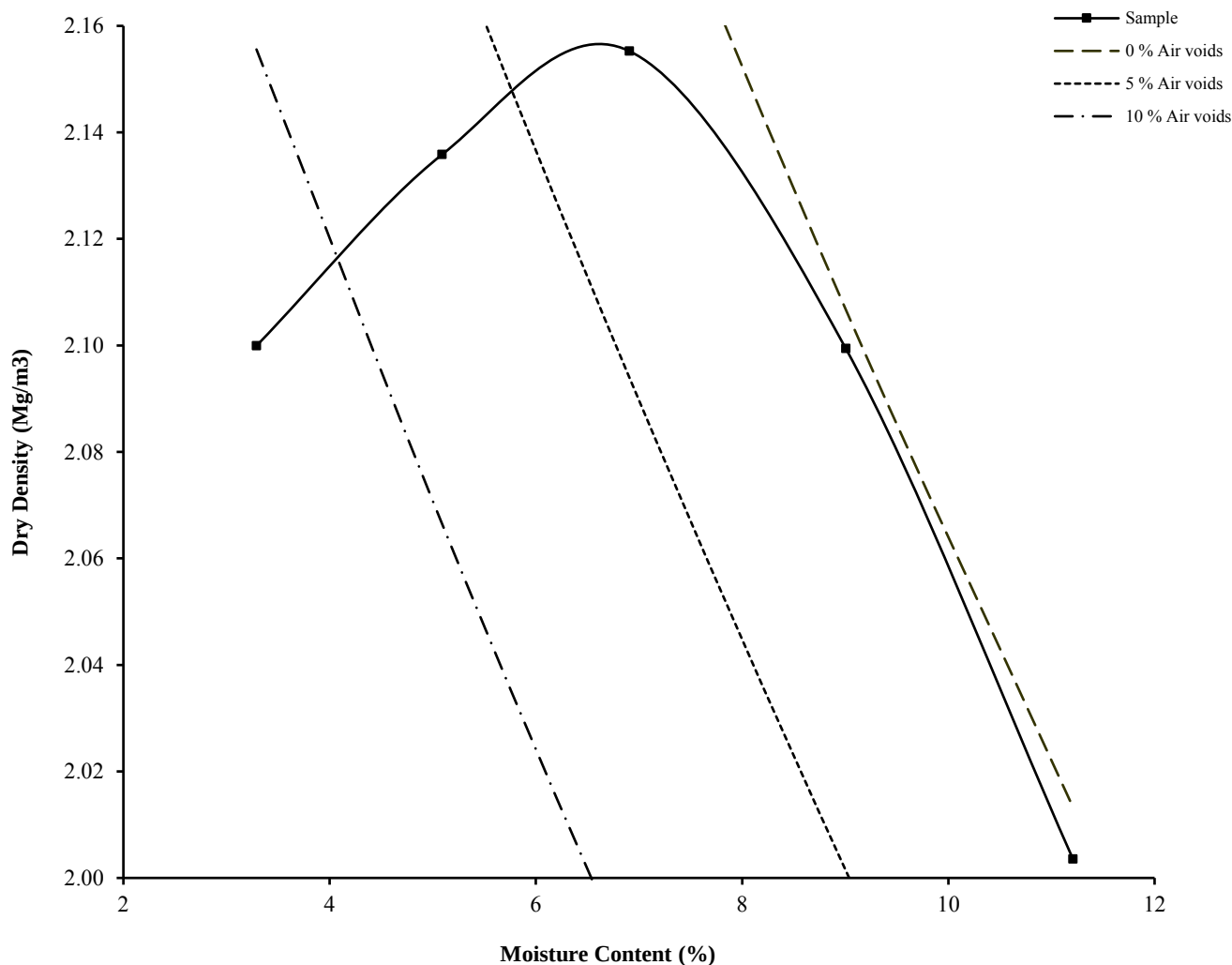
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP22 Top Depth (m) : 0.00

Sample Number: C80025 Base Depth (m) : 1.30

Sample Type: B



Initial Moisture Content:	6.9	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.60	Assumed	Material Retained on 37.5 mm Test Sieve (%):	56
Maximum Dry Density (Mg/m ³):	2.16		Material Retained on 20.0 mm Test Sieve (%):	18
Optimum Moisture Content (%):	7			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

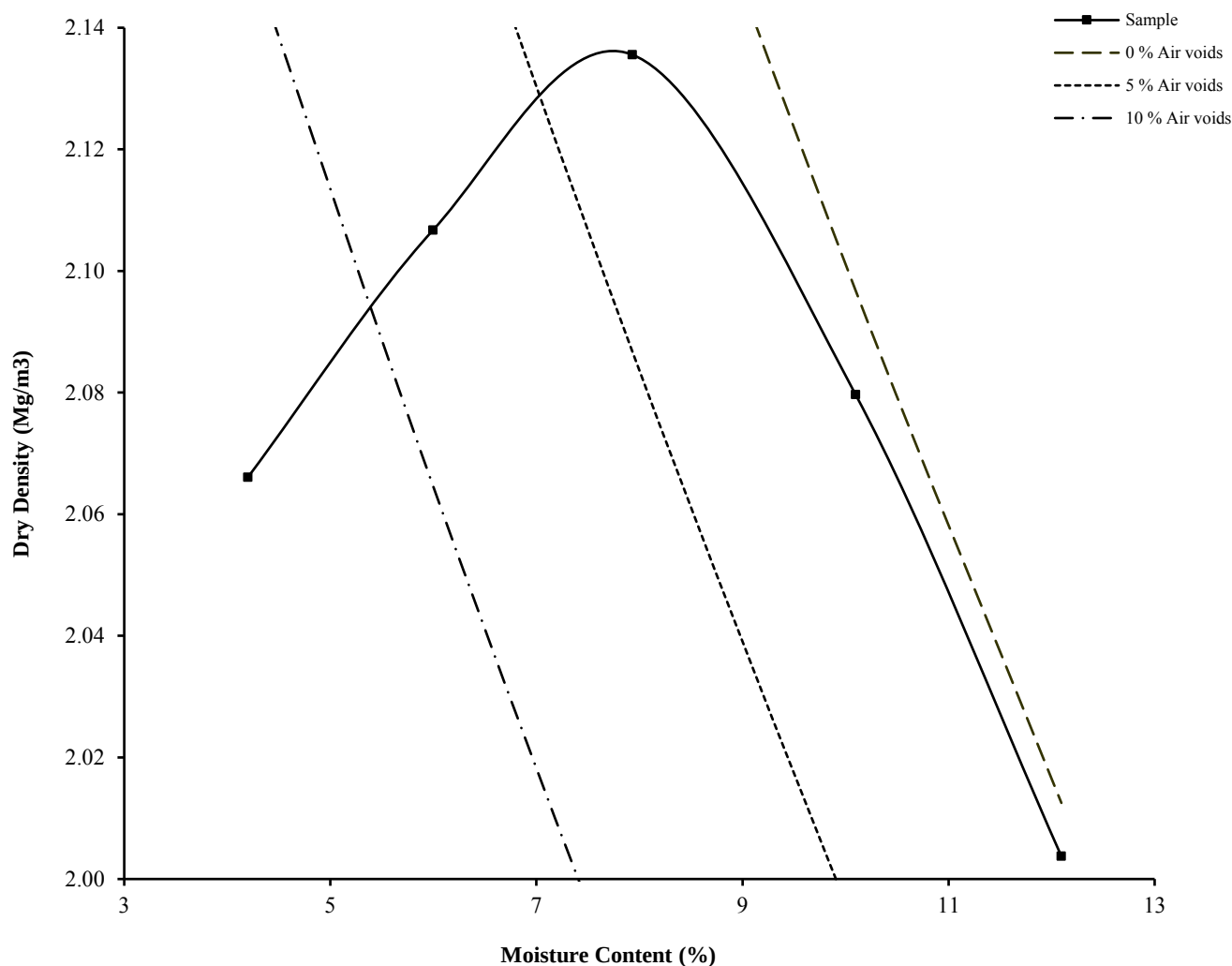
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP25 Top Depth (m) : 0.00

Sample Number: C80040 Base Depth (m) : 1.50

Sample Type: B



Initial Moisture Content:	7.9	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.66	Assumed	Material Retained on 37.5 mm Test Sieve (%):	23
Maximum Dry Density (Mg/m ³):	2.14		Material Retained on 20.0 mm Test Sieve (%):	7
Optimum Moisture Content (%):	8			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

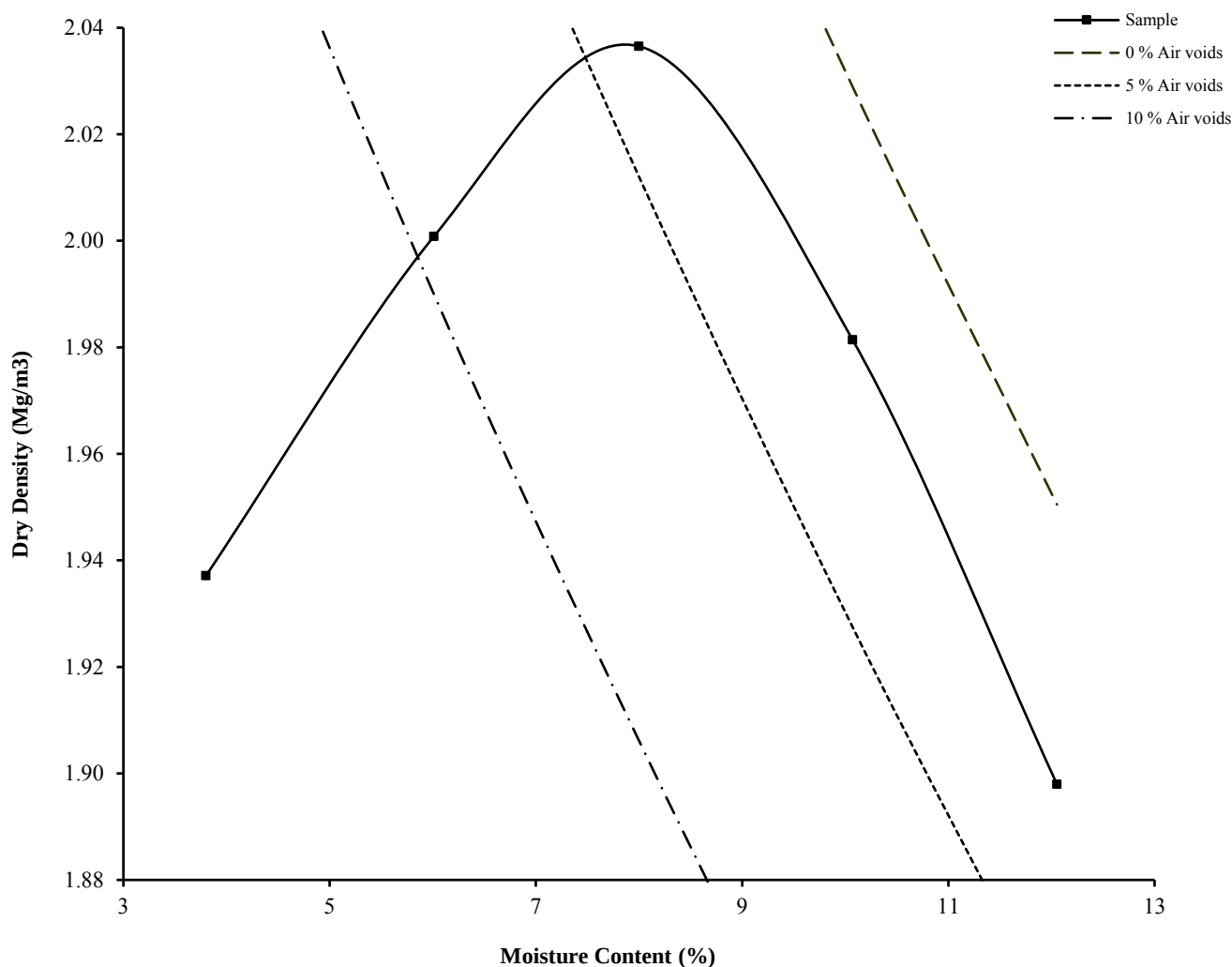
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP26 Top Depth (m) : 0.00

Sample Number: C76970 Base Depth (m) : 1.20

Sample Type: B



Initial Moisture Content:	16	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.55	Assumed	Material Retained on 37.5 mm Test Sieve (%):	14
Maximum Dry Density (Mg/m ³):	2.04		Material Retained on 20.0 mm Test Sieve (%):	6
Optimum Moisture Content (%):	8			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

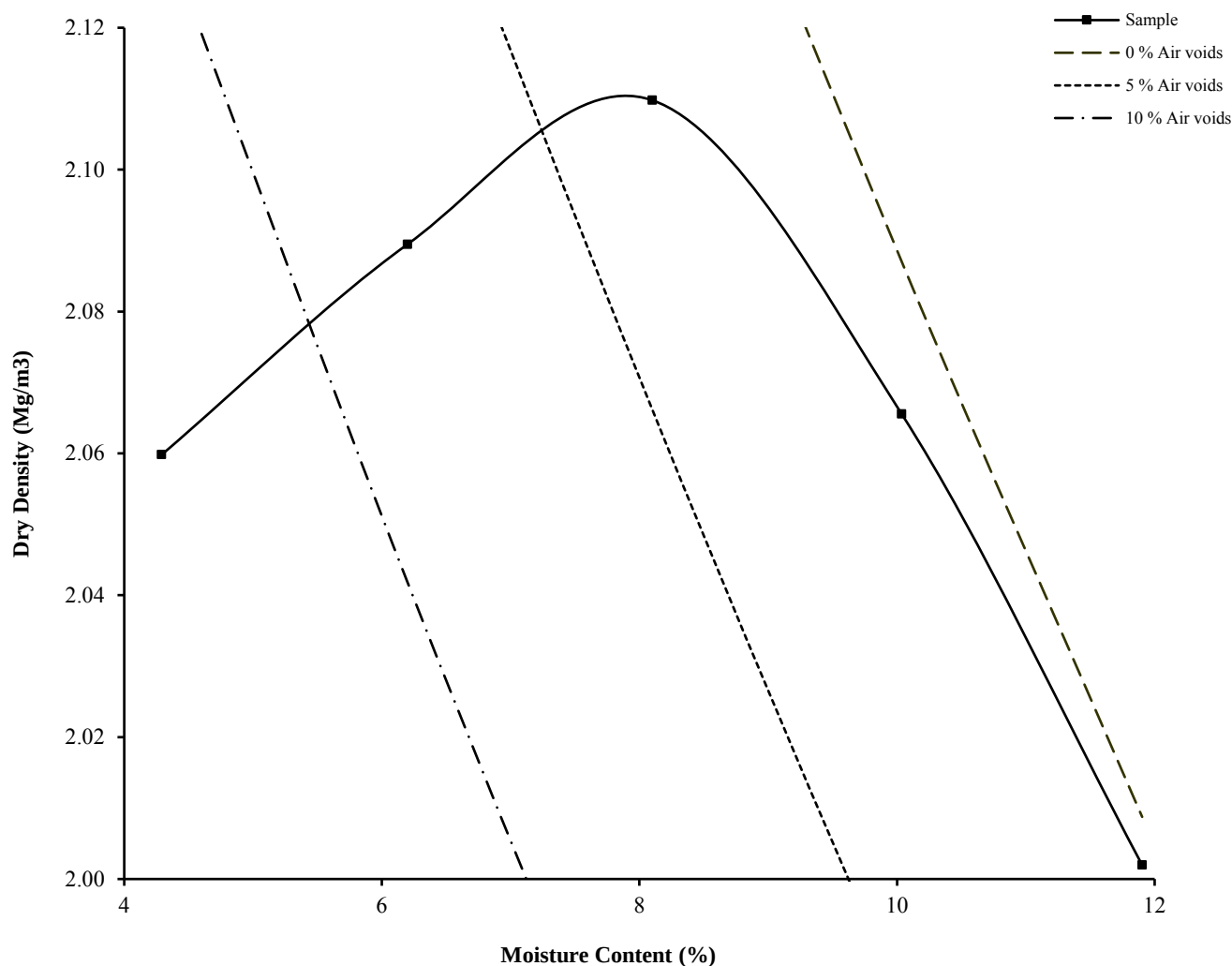
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP28 Top Depth (m) : 0.00

Sample Number: C76989 Base Depth (m) : 0.80

Sample Type: B



Initial Moisture Content:	10	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.64	Assumed	Material Retained on 37.5 mm Test Sieve (%):	19
Maximum Dry Density (Mg/m ³):	2.11		Material Retained on 20.0 mm Test Sieve (%):	10
Optimum Moisture Content (%):	8			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

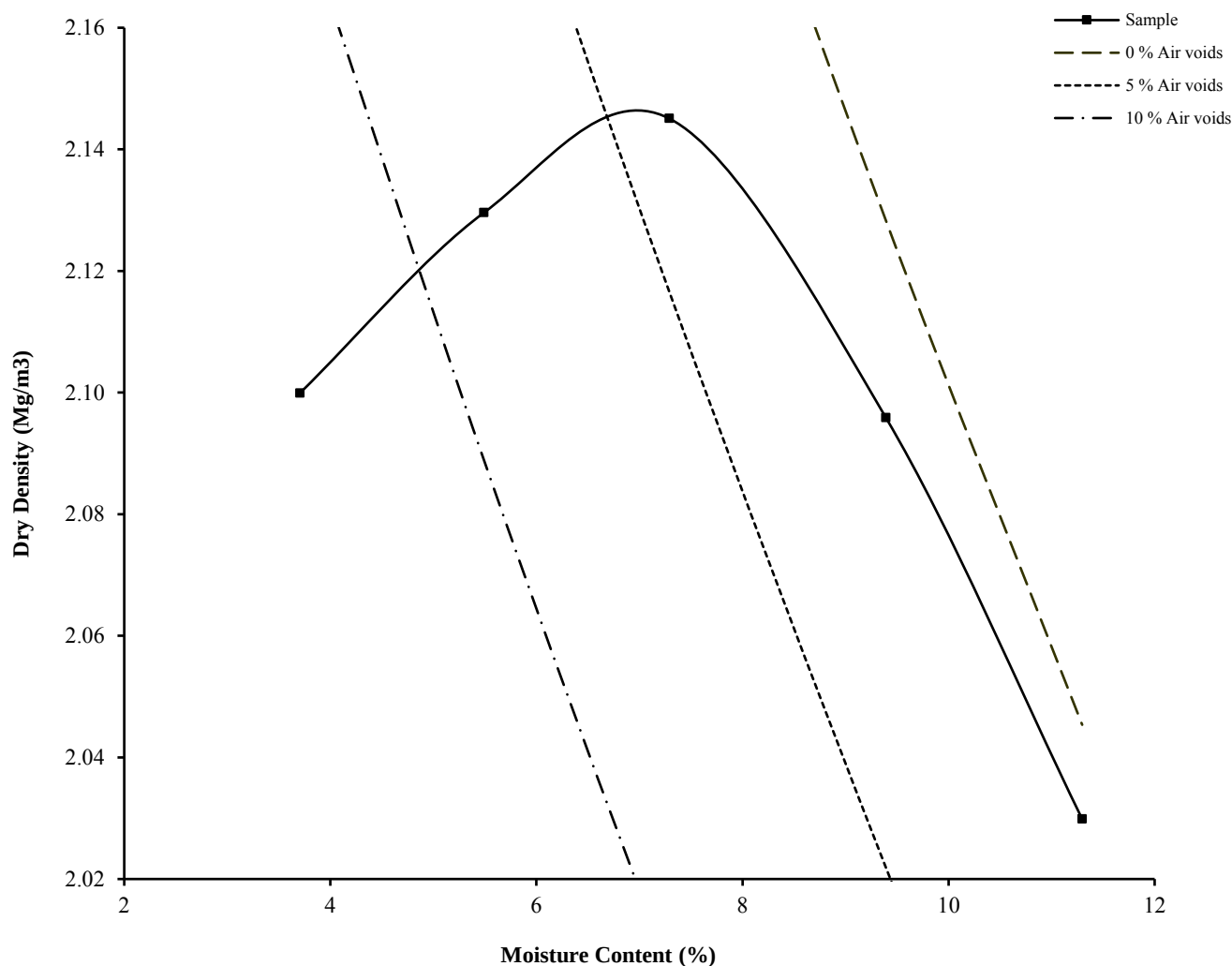
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP28 Top Depth (m) : 0.80

Sample Number: C76998 Base Depth (m) : 2.00

Sample Type: B



Initial Moisture Content:	7.3	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.66	Assumed	Material Retained on 37.5 mm Test Sieve (%):	24
Maximum Dry Density (Mg/m3):	2.15		Material Retained on 20.0 mm Test Sieve (%):	21
Optimum Moisture Content (%):	7			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

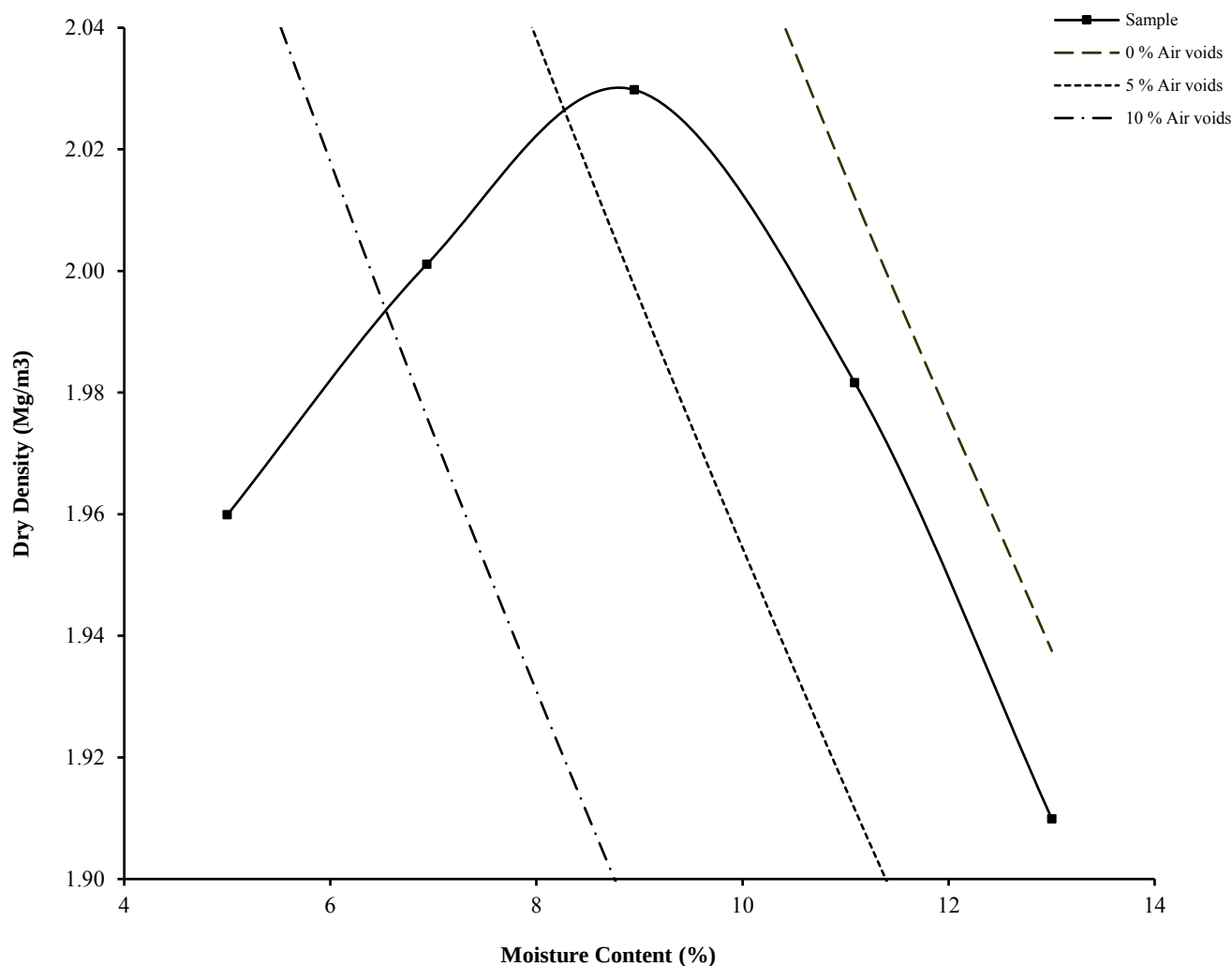
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP29 Top Depth (m) : 0.00

Sample Number: C80012 Base Depth (m) : 1.00

Sample Type: B



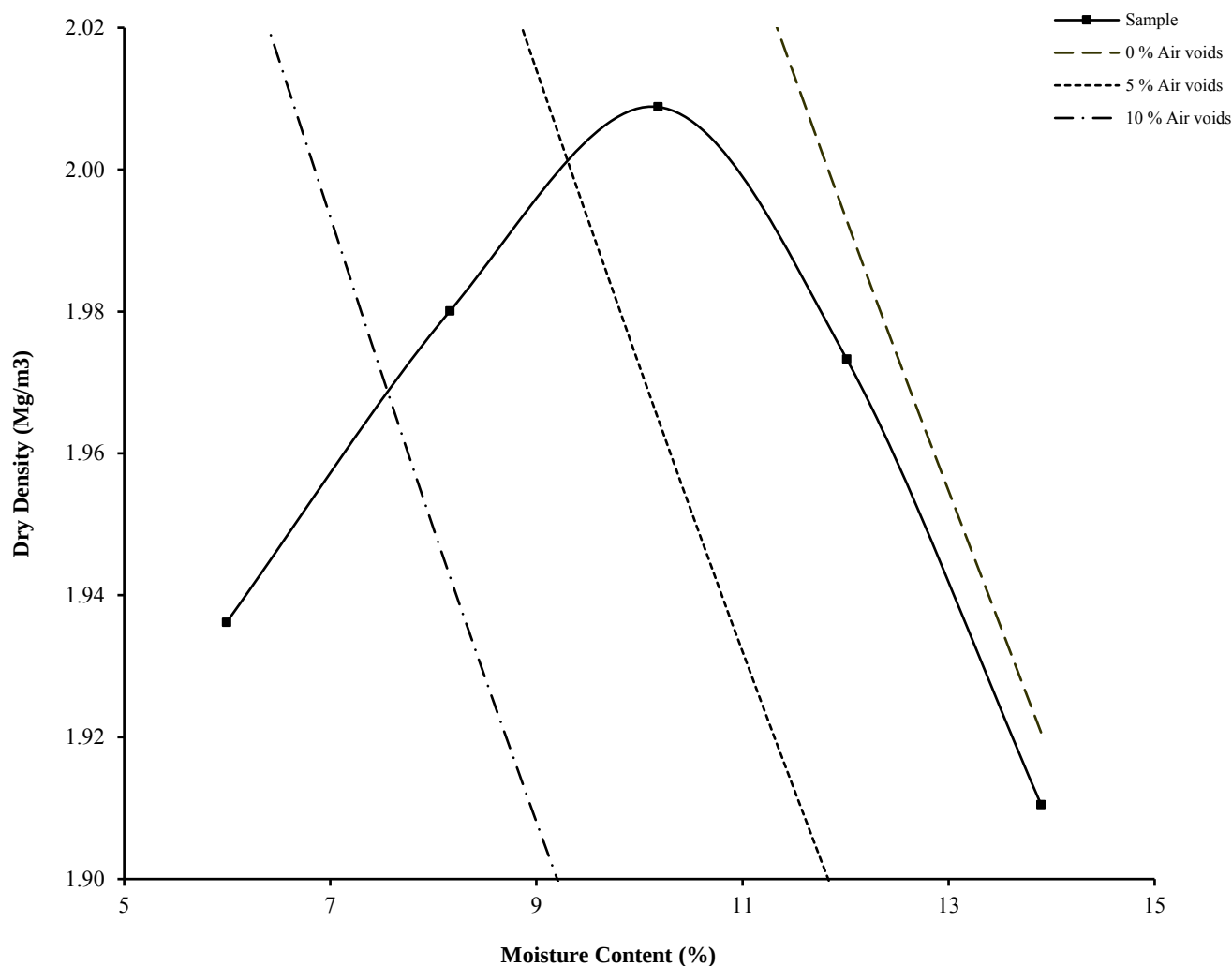
Initial Moisture Content:	12	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.59	Assumed	Material Retained on 37.5 mm Test Sieve (%):	13
Maximum Dry Density (Mg/m ³):	2.03		Material Retained on 20.0 mm Test Sieve (%):	12
Optimum Moisture Content (%):	9			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP29 Top Depth (m) : 1.00
 Sample Number: C76976 Base Depth (m) : 2.80
 Sample Type: B



Initial Moisture Content:	14	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.62	Assumed	Material Retained on 37.5 mm Test Sieve (%):	28
Maximum Dry Density (Mg/m ³):	2.01		Material Retained on 20.0 mm Test Sieve (%):	16
Optimum Moisture Content (%):	10			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

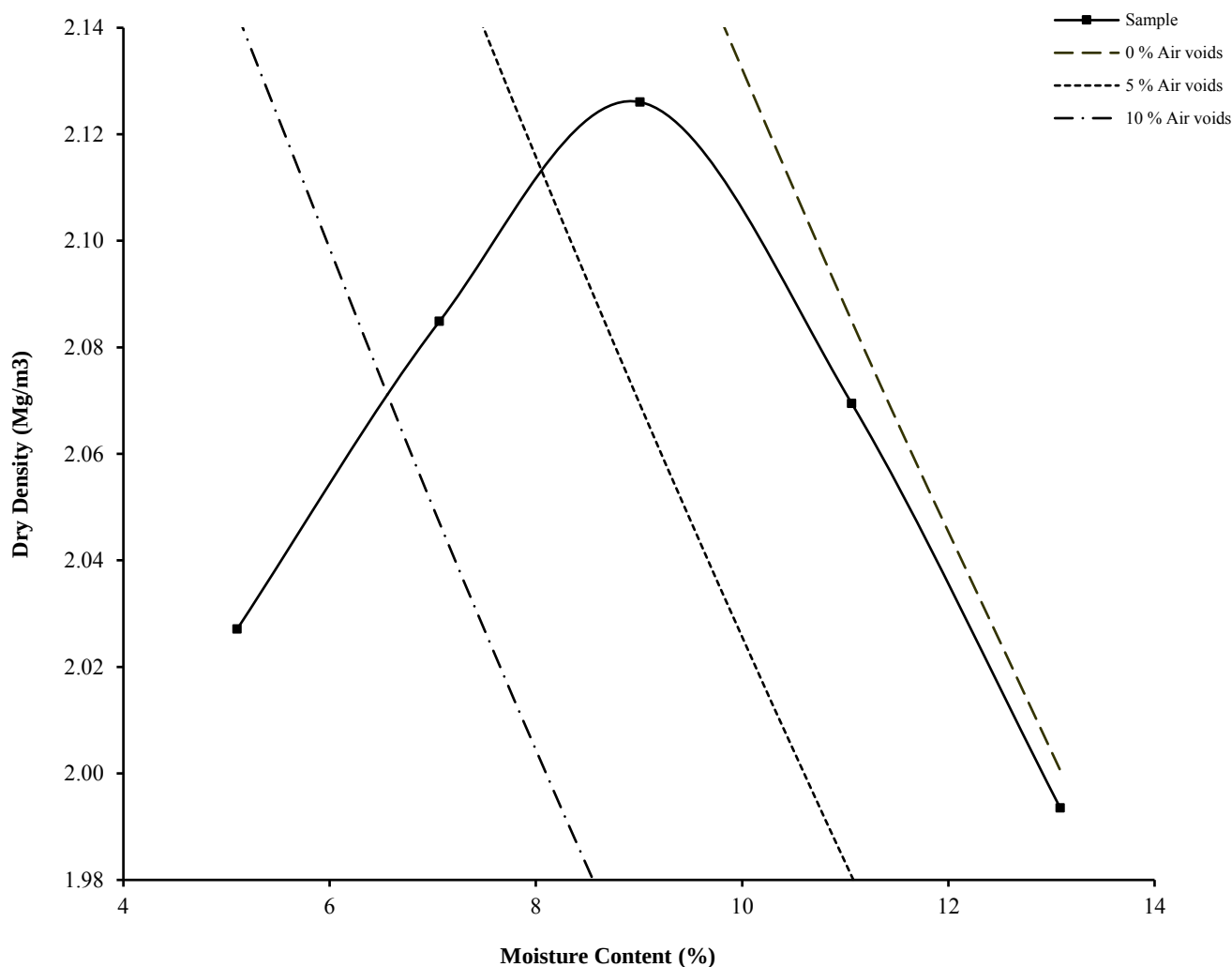
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP31 Top Depth (m) : 1.00

Sample Number: 595584 Base Depth (m) : 3.50

Sample Type: B



Initial Moisture Content:	9.0	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.71	Assumed	Material Retained on 37.5 mm Test Sieve (%):	42
Maximum Dry Density (Mg/m ³):	2.13		Material Retained on 20.0 mm Test Sieve (%):	17
Optimum Moisture Content (%):	9			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

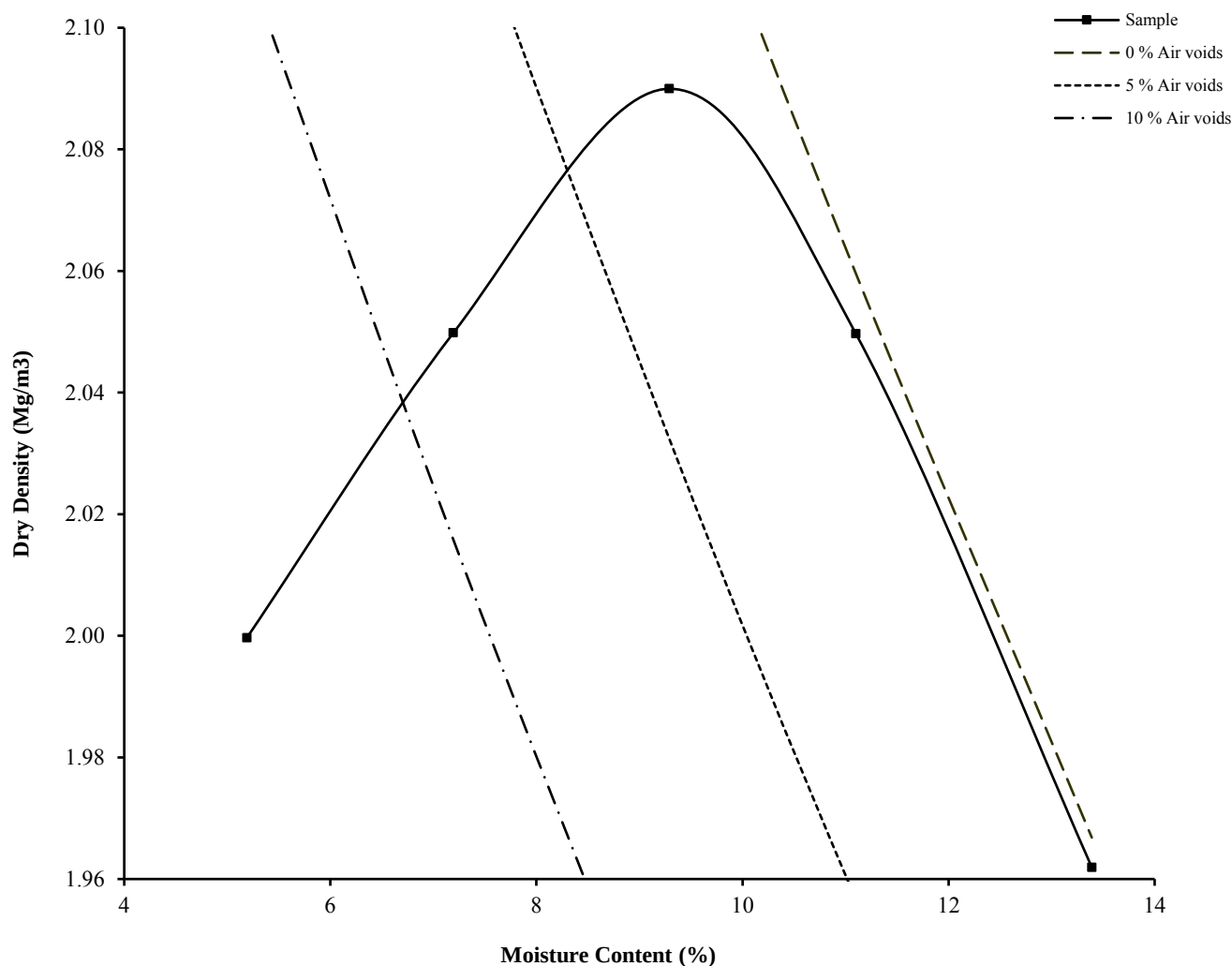
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP32 Top Depth (m) : 0.00

Sample Number: C80020 Base Depth (m) : 0.40

Sample Type: B



Initial Moisture Content:	9.3	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.67	Assumed	Material Retained on 37.5 mm Test Sieve (%):	49
Maximum Dry Density (Mg/m ³):	2.09		Material Retained on 20.0 mm Test Sieve (%):	8
Optimum Moisture Content (%):	9			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

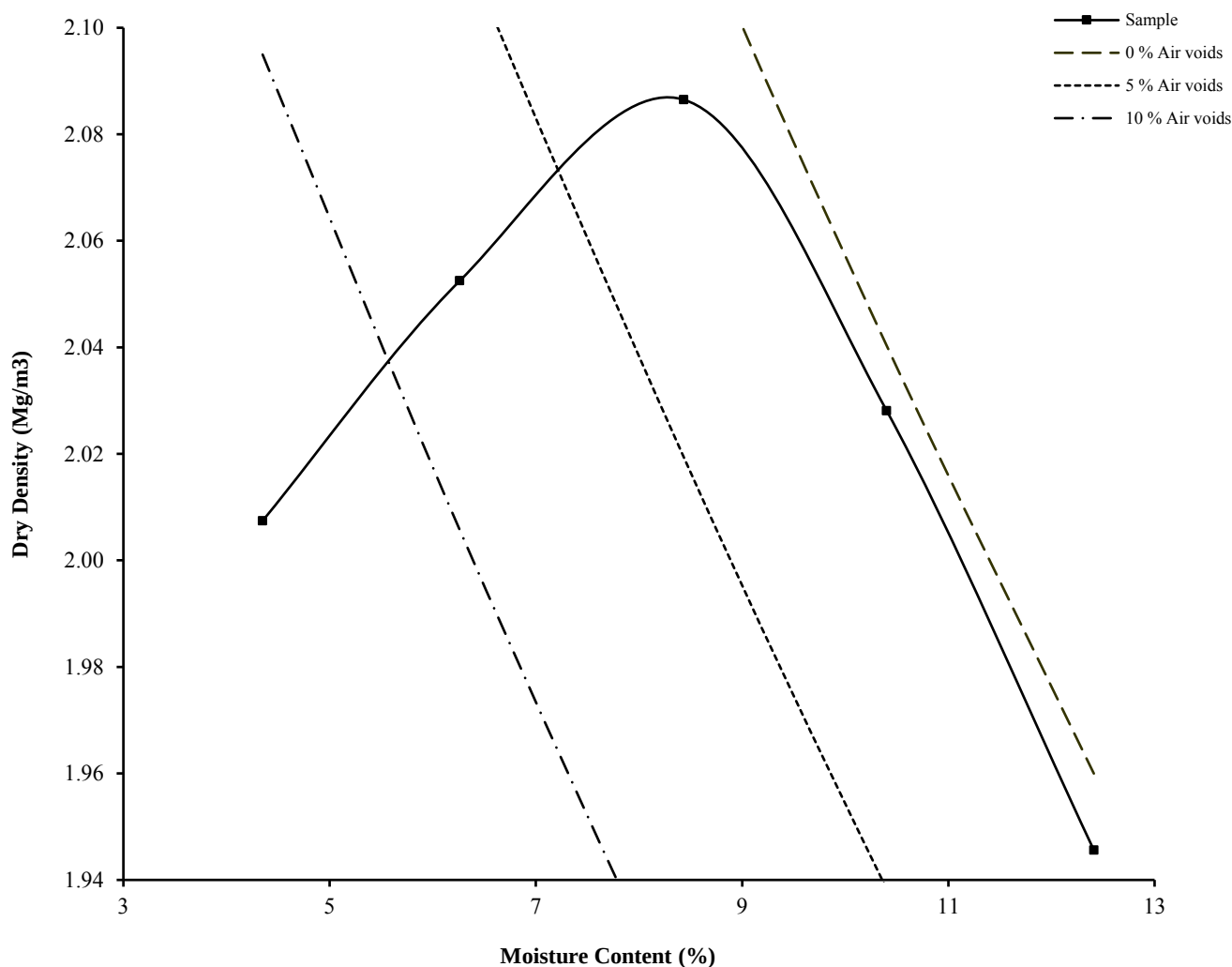
Hole Number: TP33

Top Depth (m) : 0.00

Sample Number:

Base Depth (m) : 1.30

Sample Type: B



Initial Moisture Content:	8.4	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.59	Assumed	Material Retained on 37.5 mm Test Sieve (%):	33
Maximum Dry Density (Mg/m ³):	2.09		Material Retained on 20.0 mm Test Sieve (%):	12
Optimum Moisture Content (%):	8			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

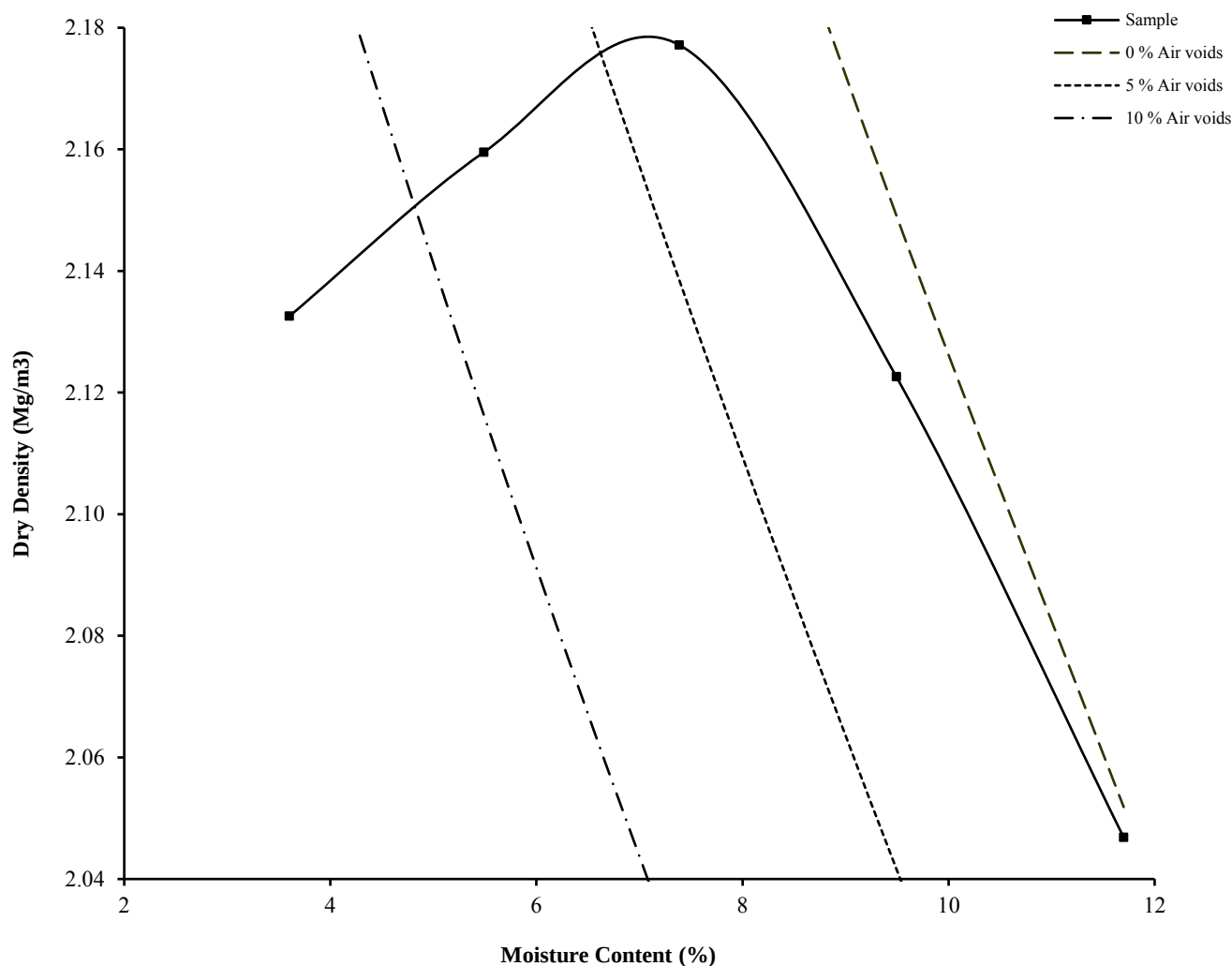
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP35 Top Depth (m) : 0.00

Sample Number: C80036 Base Depth (m) : 1.20

Sample Type: B



Initial Moisture Content:	7.4	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.70	Assumed	Material Retained on 37.5 mm Test Sieve (%):	43
Maximum Dry Density (Mg/m ³):	2.18		Material Retained on 20.0 mm Test Sieve (%):	12
Optimum Moisture Content (%):	7			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

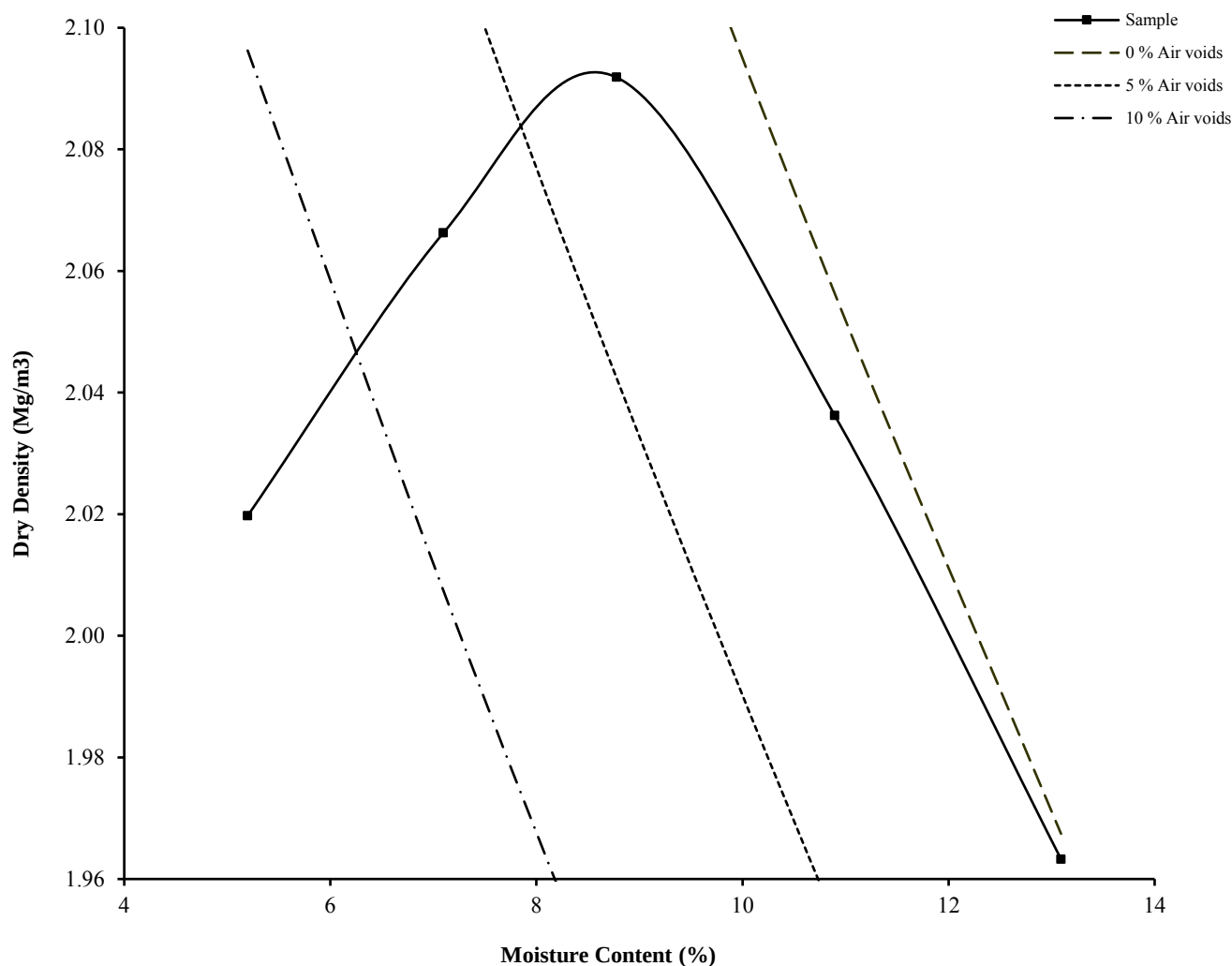
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP35 Top Depth (m) : 1.60

Sample Number: C76961 Base Depth (m) : 2.60

Sample Type: B



Initial Moisture Content:	11	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m³):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	5
Maximum Dry Density (Mg/m³):	2.09		Material Retained on 20.0 mm Test Sieve (%):	15
Optimum Moisture Content (%):	9			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

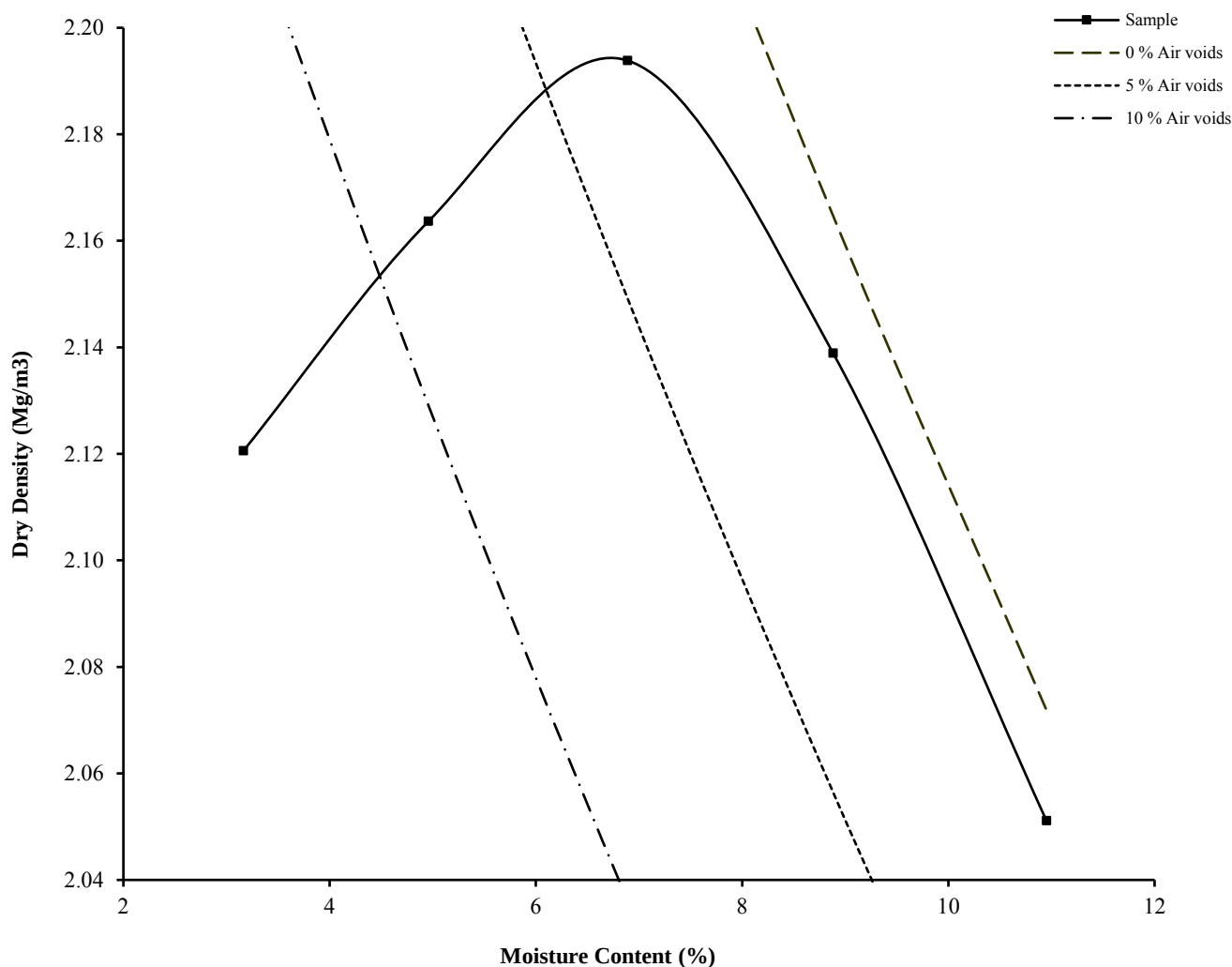
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP36 Top Depth (m) : 0.00

Sample Number: C76962 Base Depth (m) : 1.10

Sample Type: B



Initial Moisture Content:	6.9	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.68	Assumed	Material Retained on 37.5 mm Test Sieve (%):	36
Maximum Dry Density (Mg/m ³):	2.19		Material Retained on 20.0 mm Test Sieve (%):	14
Optimum Moisture Content (%):	7			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

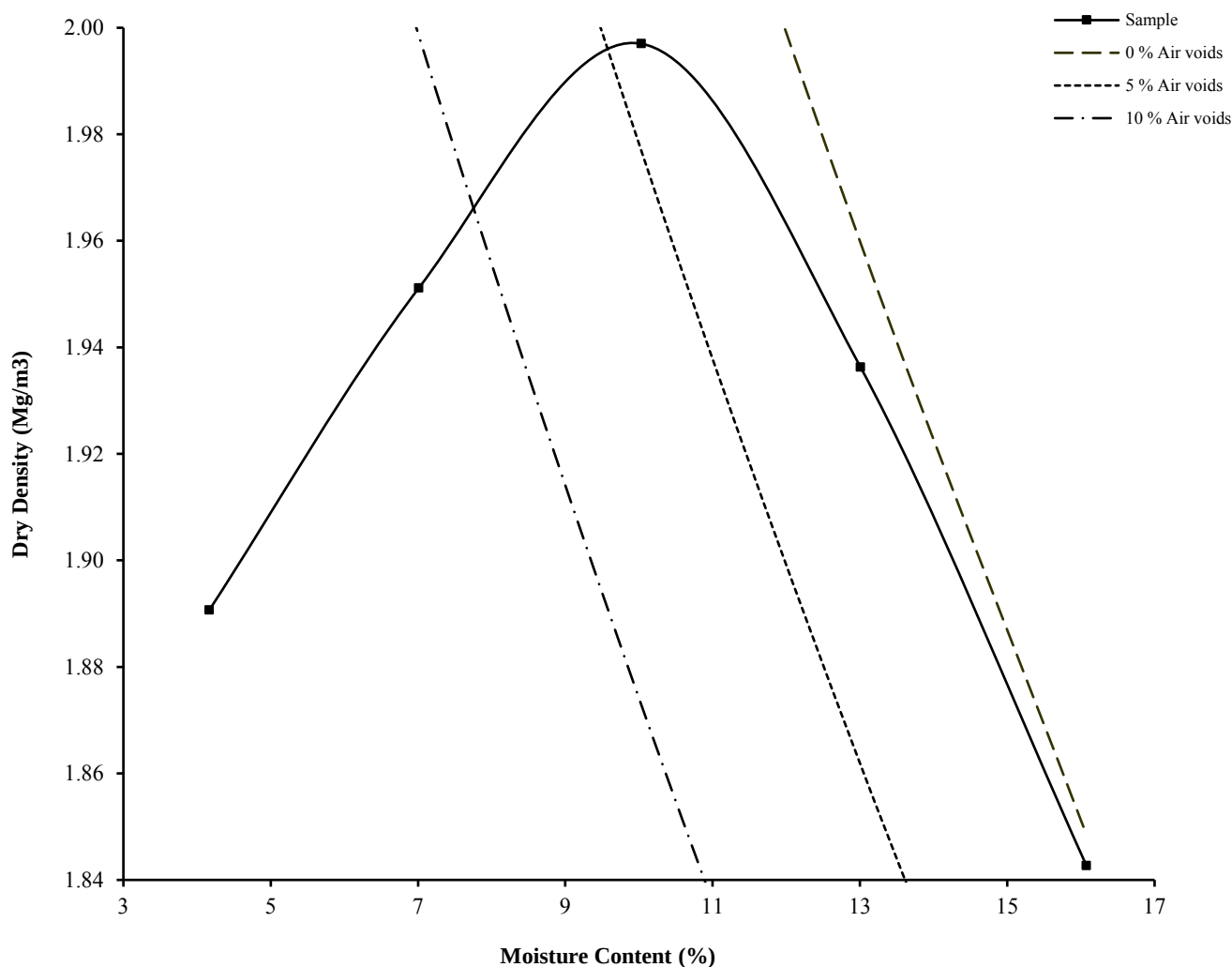
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP43 Top Depth (m) : 0.50

Sample Number: C76907 Base Depth (m) : 1.50

Sample Type: B



Initial Moisture Content:	10	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.63	Assumed	Material Retained on 37.5 mm Test Sieve (%):	2
Maximum Dry Density (Mg/m ³):	2.00		Material Retained on 20.0 mm Test Sieve (%):	12
Optimum Moisture Content (%):	10			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

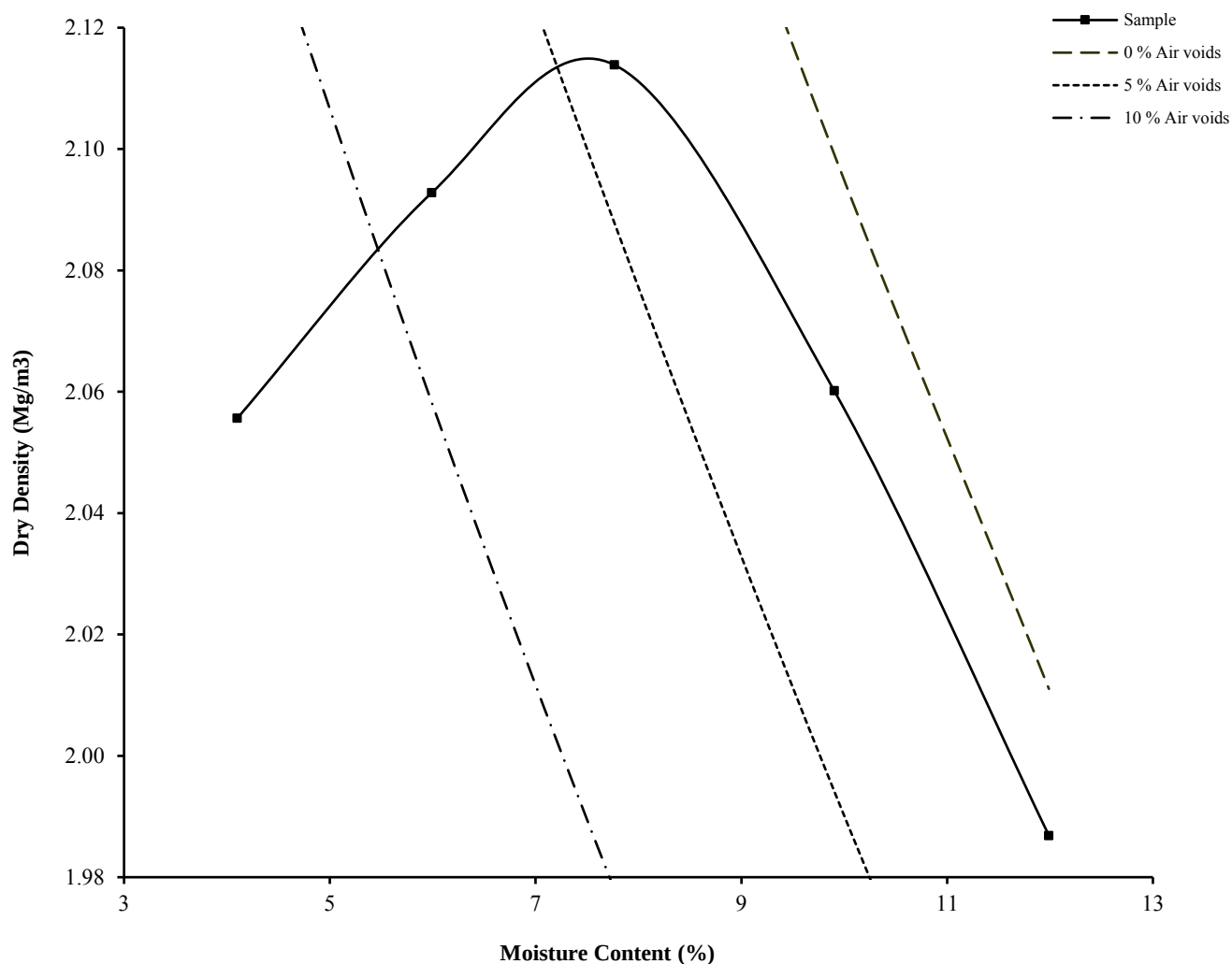
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP46 Top Depth (m) : 0.80

Sample Number: C80005 Base Depth (m) : 2.00

Sample Type: B



Initial Moisture Content:	7.8	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	9
Maximum Dry Density (Mg/m3):	2.11		Material Retained on 20.0 mm Test Sieve (%):	10
Optimum Moisture Content (%):	8			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

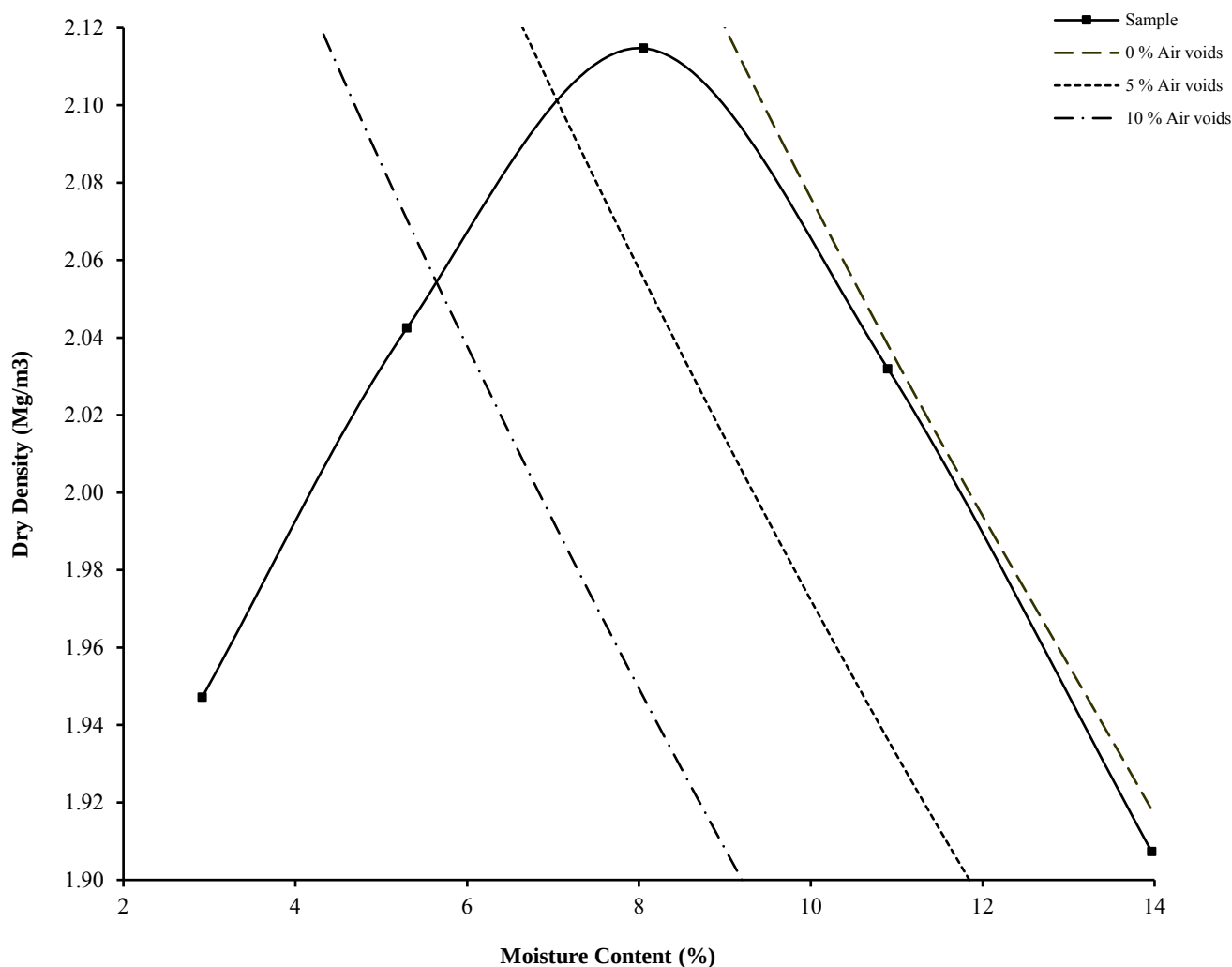
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP46 Top Depth (m) : 2.00

Sample Number: C80024 Base Depth (m) : 2.90

Sample Type: B



Initial Moisture Content:	8.1	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.62	Assumed	Material Retained on 37.5 mm Test Sieve (%):	3
Maximum Dry Density (Mg/m ³):	2.11		Material Retained on 20.0 mm Test Sieve (%):	14
Optimum Moisture Content (%):	8			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

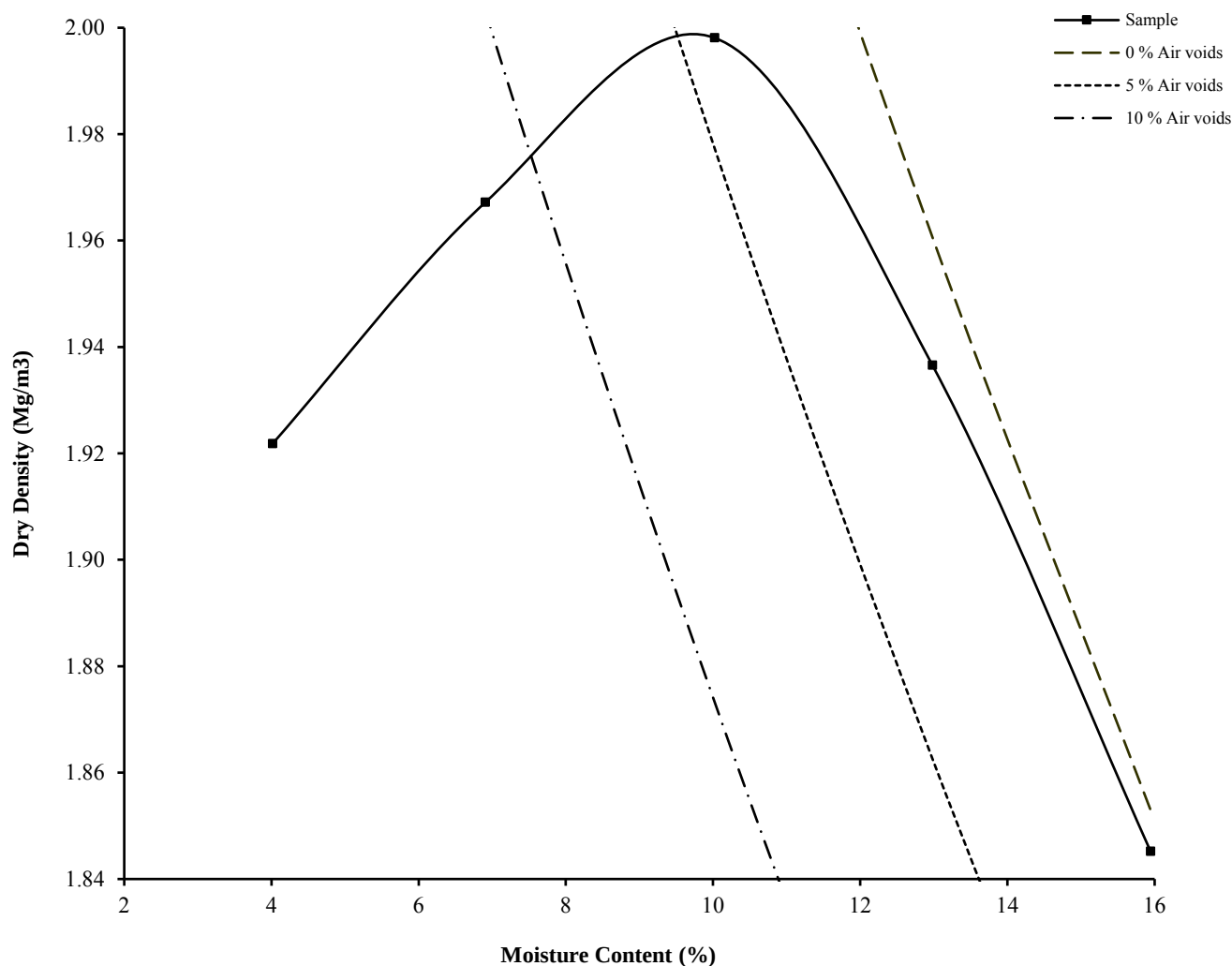
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP47 Top Depth (m) : 0.00

Sample Number: C76929 Base Depth (m) : 1.10

Sample Type: B



Initial Moisture Content:	10	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.63	Assumed	Material Retained on 37.5 mm Test Sieve (%):	9
Maximum Dry Density (Mg/m ³):	2.00		Material Retained on 20.0 mm Test Sieve (%):	7
Optimum Moisture Content (%):	10			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

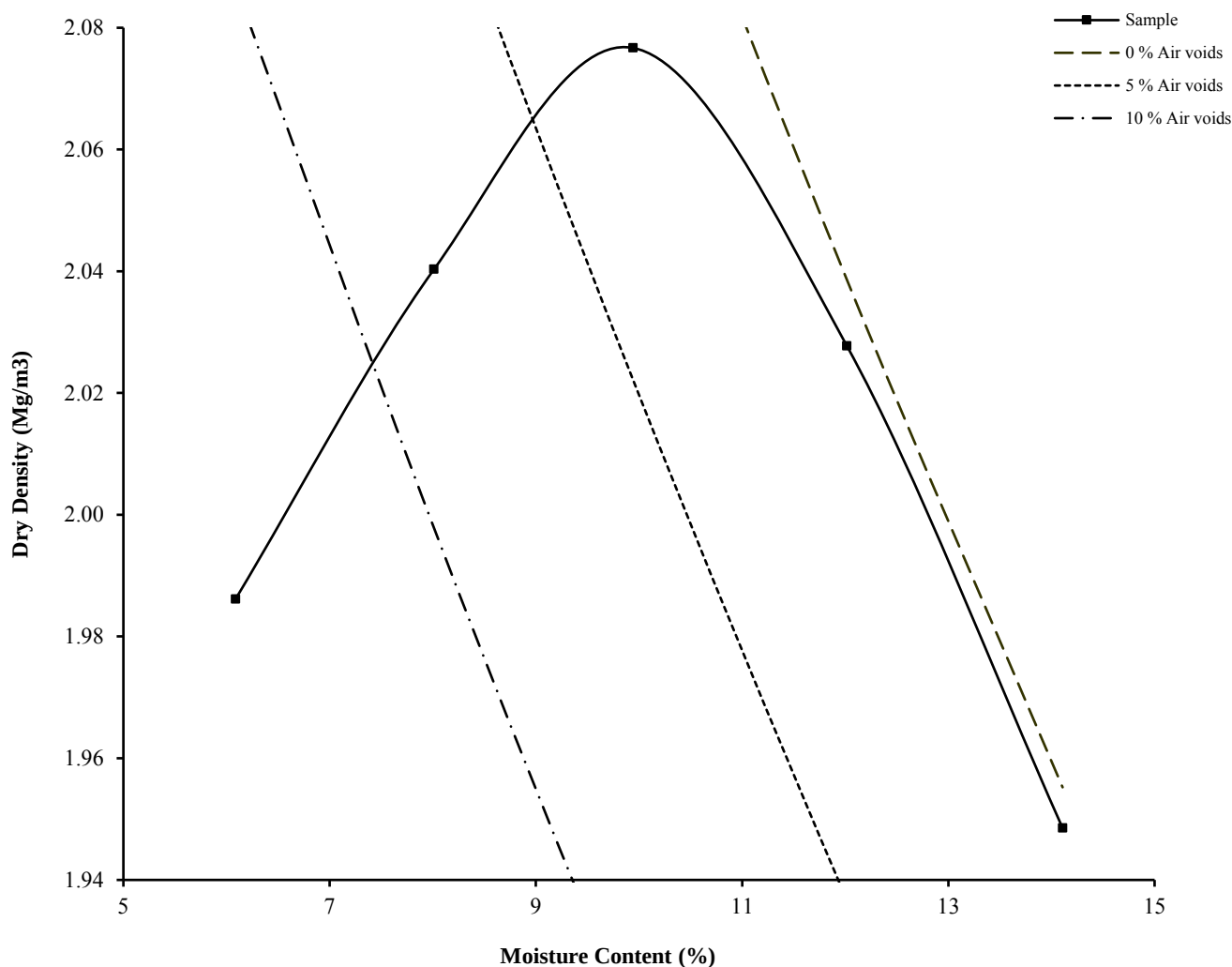
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : 1990

Hole Number: TP49 Top Depth (m) : 0.00

Sample Number: C76937 Base Depth (m) : 0.80

Sample Type: B



Initial Moisture Content:	10	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m ³):	2.7	Assumed	Material Retained on 37.5 mm Test Sieve (%):	33
Maximum Dry Density (Mg/m ³):	2.08		Material Retained on 20.0 mm Test Sieve (%):	15
Optimum Moisture Content (%):	10			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880

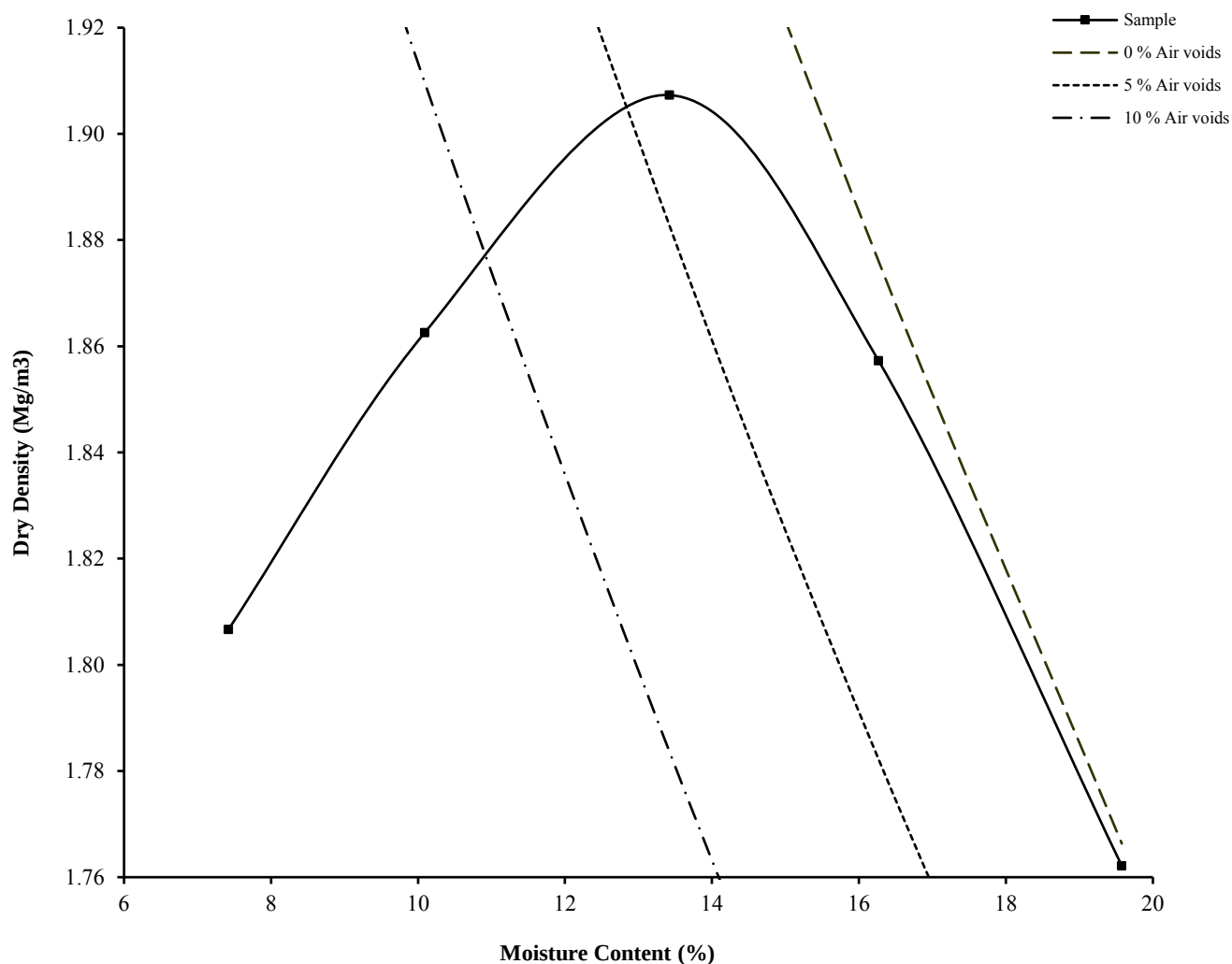
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP51 Top Depth (m) : 0.00

Sample Number: C76926 Base Depth (m) : 0.55

Sample Type: B



Initial Moisture Content:	23	Method of Compaction:	4.5kg	Separate Samples
Particle Density (Mg/m3):	2.7	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m3):	1.91		Material Retained on 20.0 mm Test Sieve (%):	2
Optimum Moisture Content (%):	13			
Remarks				
See summary of soil descriptions.				

		Coed Darcy	Contract
			PSL17/5672
			Client Ref
			PC176880



LABORATORY REPORT



4043

Contract Number: PSL17/5842

Report Date: 12 December 2017
Client's Reference: PC176880
Client Name: Geotechnics Limited
Unit 1, Borders Industrial Park
River Lane
Saltney
Chester
CH4 8RJ

For the attention of: Jon Hutchinson

Contract Title: Coed Darcy
Date Received: 30/11/2017
Date Commenced: 30/11/2017
Date Completed: 12/12/2017

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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

Checked and Approved Signatories:

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(Director)

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(Senior Technician)

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(Director)

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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP02		B	0.00	0.70	Brown very sandy clayey GRAVEL.
TP04		B	0.00	0.90	Brown very sandy clayey GRAVEL with cobbles.
TP06		B	0.00	0.30	Brown gravelly sandy CLAY.
TP08		B	0.80	1.50	Brown very gravelly very sandy CLAY.
TP08		B	2.20	3.00	Brown very gravelly slightly sandy CLAY.
TP09		B	0.00	0.80	Brown sandy clayey GRAVEL.
TP09		B	2.00	4.00	Brown sandy clayey GRAVEL with cobbles.
TP14		B	1.00	2.50	Brown very gravelly very sandy CLAY.
TP14		B	2.50	5.00	Brown very gravelly very sandy CLAY.
TP16		B	0.00	1.20	Brown clayey very sandy GRAVEL of cobbles.
TP16		B	1.20	2.00	Greyish brown sandy very clayey GRAVEL.
TP18		B	3.50	5.00	Greyish brown sandy clayey GRAVEL of cobbles.
TP19		B	0.00	0.50	Brown gravelly very sandy CLAY.
TP20		B	0.00	0.60	Brown very gravelly very sandy CLAY.
TP20		B	2.50	3.50	Greyish brown very gravelly very sandy CLAY.
TP21		B	0.70	1.30	Brown very gravelly sandy CLAY.
TP24		B	0.00	1.20	Brown gravelly very sandy CLAY.
TP27		B	0.00	0.90	Brown sandy clayey GRAVEL.
TP31		B	0.00	1.60	Brown very sandy clayey GRAVEL.



Coed Darcy

Contract No:

PSL17/5842

Client Ref:

PC176880

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP34		B	0.00	1.00	Brown very sandy clayey GRAVEL.
TP38		B	0.00	0.30	Brown sandy clayey GRAVEL.
TP42		B	0.00	0.20	Brown sandy silty GRAVEL.
TP44		B	0.00	1.00	Brown clayey very sandy GRAVEL.
TP45		B	0.00	0.40	Brown very gravelly very sandy CLAY.
TP45		B	0.40	1.50	Greyish brown sandy clayey GRAVEL with cobbles.
TP45		B	1.50	3.10	Greyish brown very sandy very clayey GRAVEL with cobbles.
TP48		B	1.20	3.00	Grey mottled brown very gravelly very sandy CLAY.
TP48		B	3.00	4.70	Grey very gravelly very sandy CLAY.
TP49		B	0.80	2.20	Brown sandy clayey GRAVEL.
TP50		B	0.50	2.00	Brown sandy clayey GRAVEL with cobbles.
TP50		B	2.00	2.60	Brown very gravelly very sandy CLAY with cobbles.



Coed Darcy

Contract No:
PSL17/5842
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

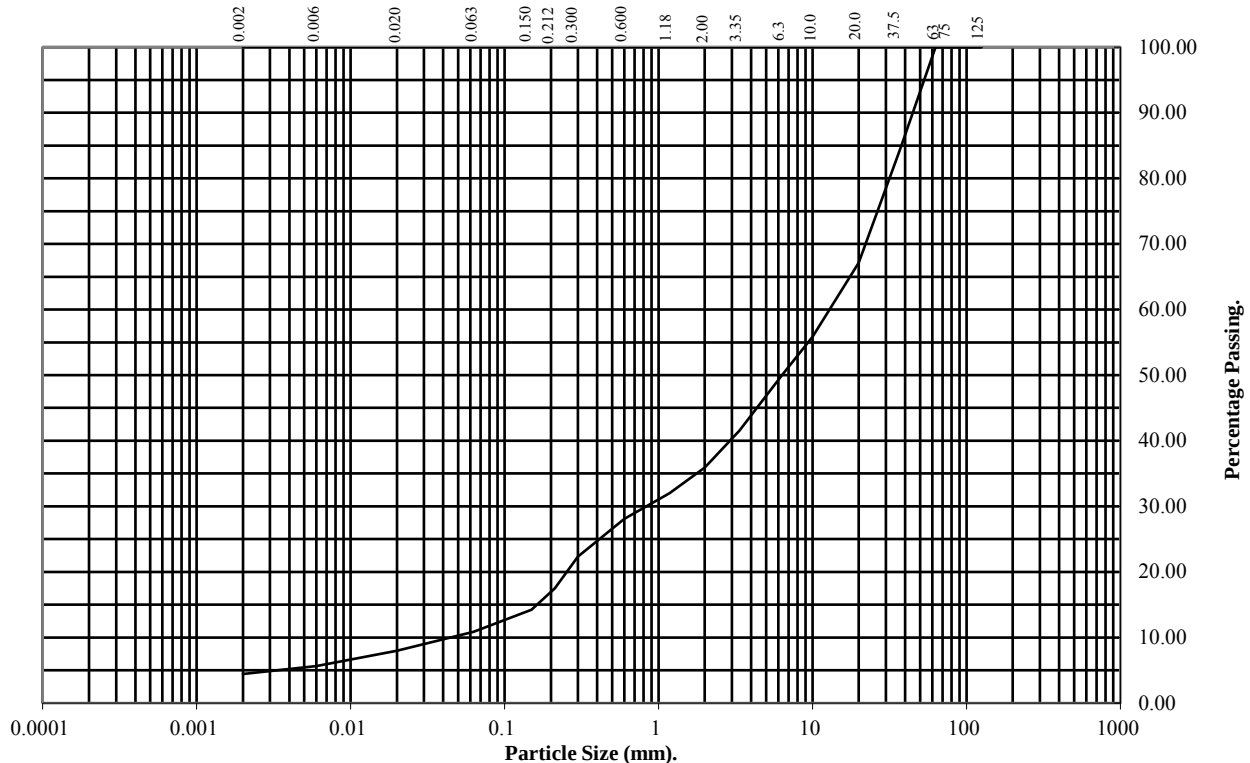
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP02 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.70

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	85
20	67
10	56
6.3	50
3.35	41
2	36
1.18	32
0.6	28
0.3	22
0.212	17
0.15	14
0.063	11

Particle Diameter	Percentage Passing
0.02	8
0.006	6
0.002	4

Soil Fraction	Total Percentage
Cobbles	0
Gravel	64
Sand	25
Silt	7
Clay	4

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

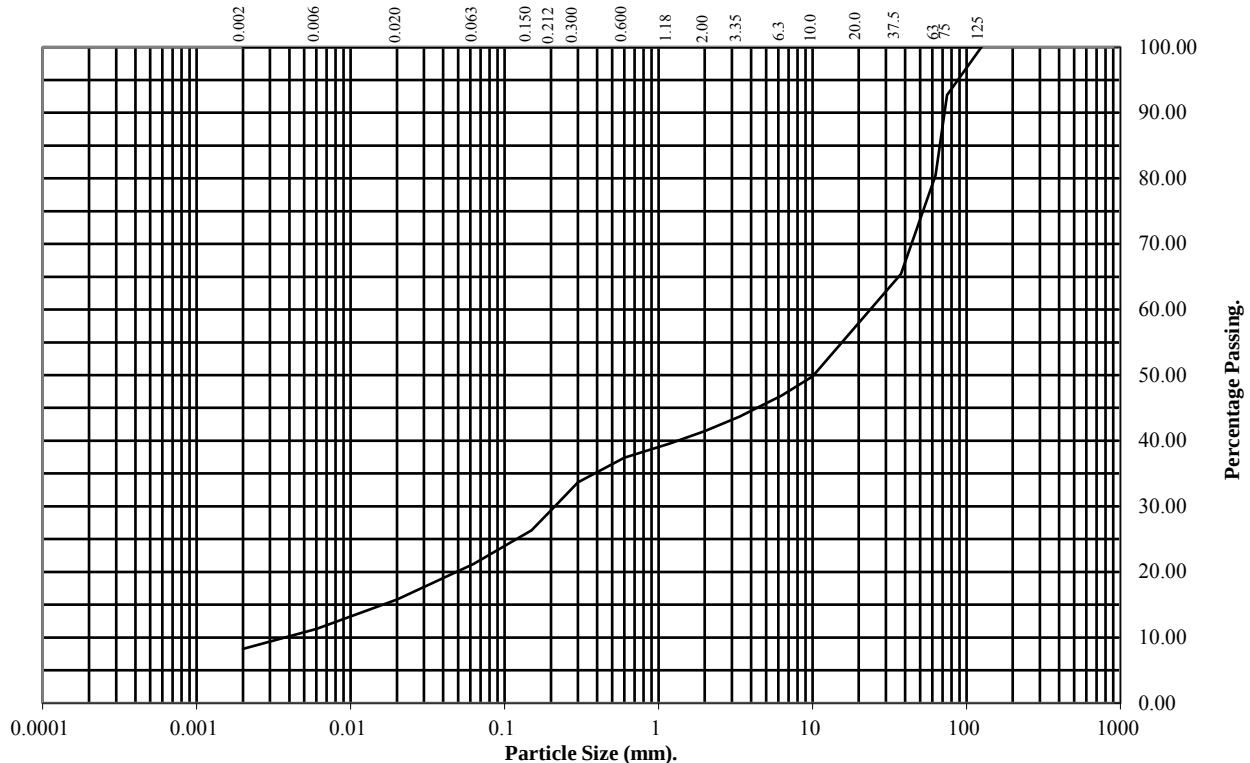
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP04 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.90

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	93
63	80
37.5	65
20	58
10	50
6.3	47
3.35	44
2	41
1.18	40
0.6	37
0.3	34
0.212	30
0.15	26
0.063	21

Particle Diameter	Percentage Passing
0.02	16
0.006	11
0.002	8

Soil Fraction	Total Percentage
Cobbles	20
Gravel	39
Sand	20
Silt	13
Clay	8

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

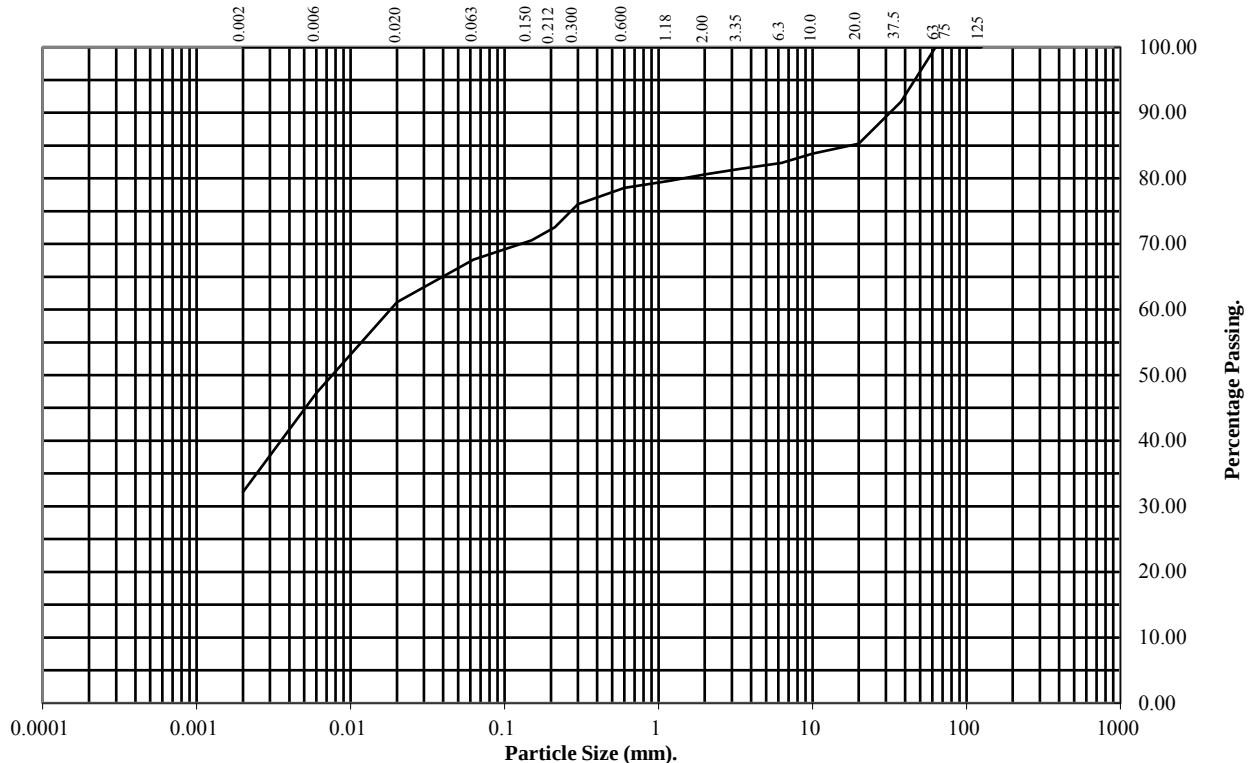
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP06 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.30

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	92
20	85
10	84
6.3	82
3.35	81
2	81
1.18	80
0.6	79
0.3	76
0.212	73
0.15	71
0.063	68

Particle Diameter	Percentage Passing
0.02	61
0.006	47
0.002	32

Soil Fraction	Total Percentage
Cobbles	0
Gravel	19
Sand	13
Silt	36
Clay	32

Remarks:
See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

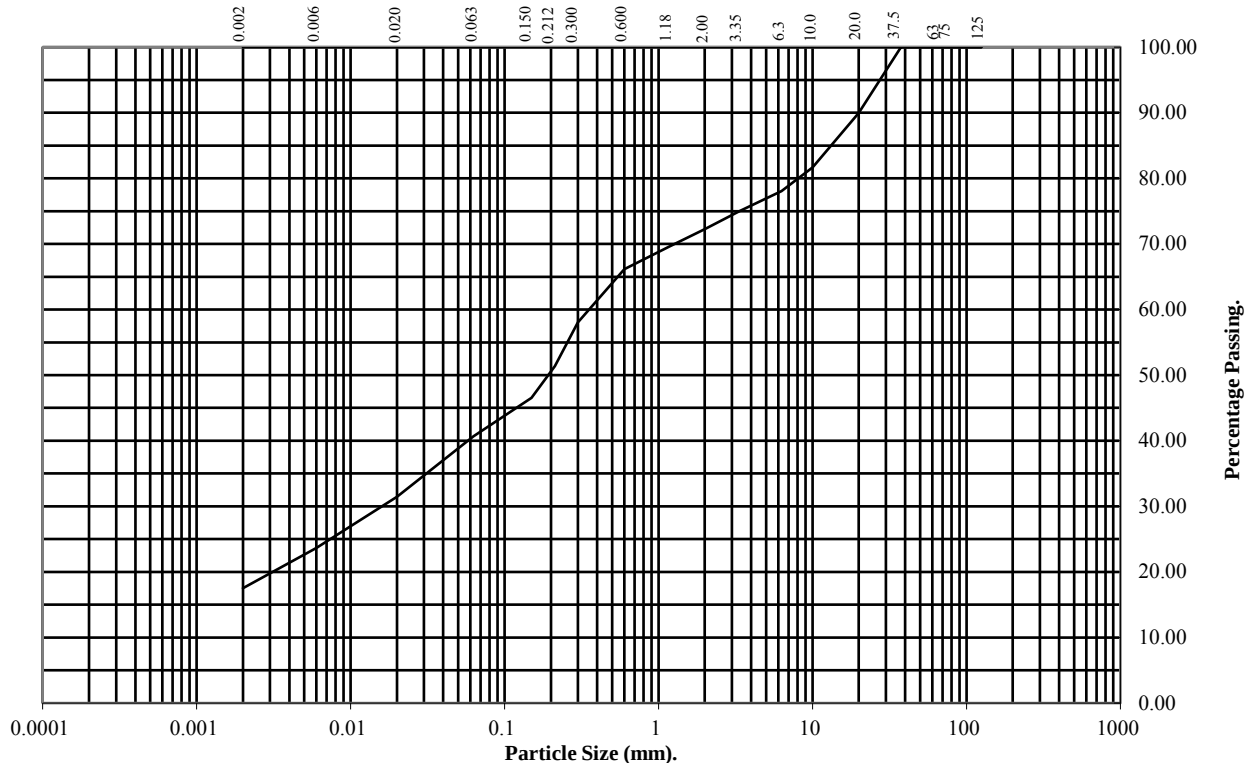
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP08 Top Depth (m): 0.80

Sample Number: Base Depth(m): 1.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	90
10	82
6.3	78
3.35	75
2	72
1.18	70
0.6	66
0.3	58
0.212	51
0.15	47
0.063	41

Particle Diameter	Percentage Passing
0.02	31
0.006	24
0.002	18

Soil Fraction	Total Percentage
Cobbles	0
Gravel	28
Sand	31
Silt	23
Clay	18

Remarks:

See Summary of Soil Descriptions



Coed Darcy

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PARTICLE SIZE DISTRIBUTION TEST

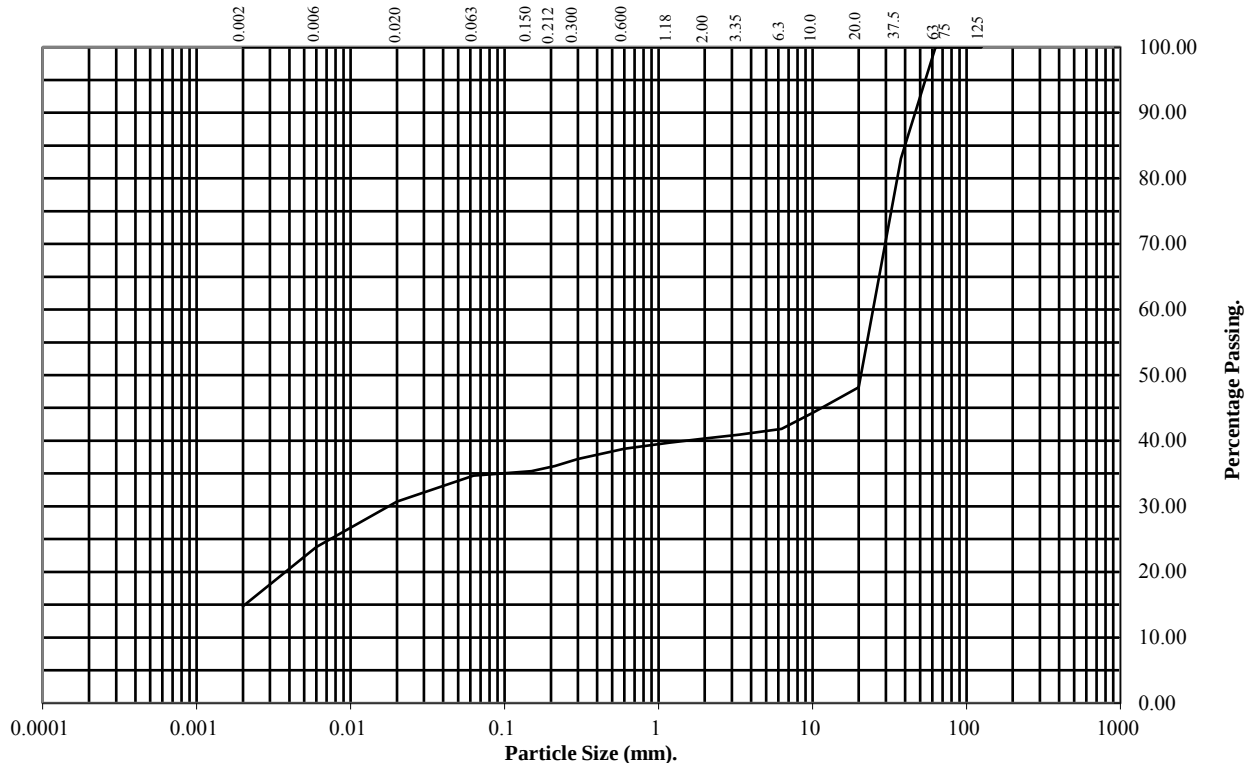
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP08 Top Depth (m): 2.20

Sample Number: Base Depth(m): 3.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	83
20	48
10	44
6.3	42
3.35	41
2	40
1.18	40
0.6	39
0.3	37
0.212	36
0.15	35
0.063	35

Particle Diameter	Percentage Passing
0.02	31
0.006	24
0.002	15

Soil Fraction	Total Percentage
Cobbles	0
Gravel	60
Sand	5
Silt	20
Clay	15

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

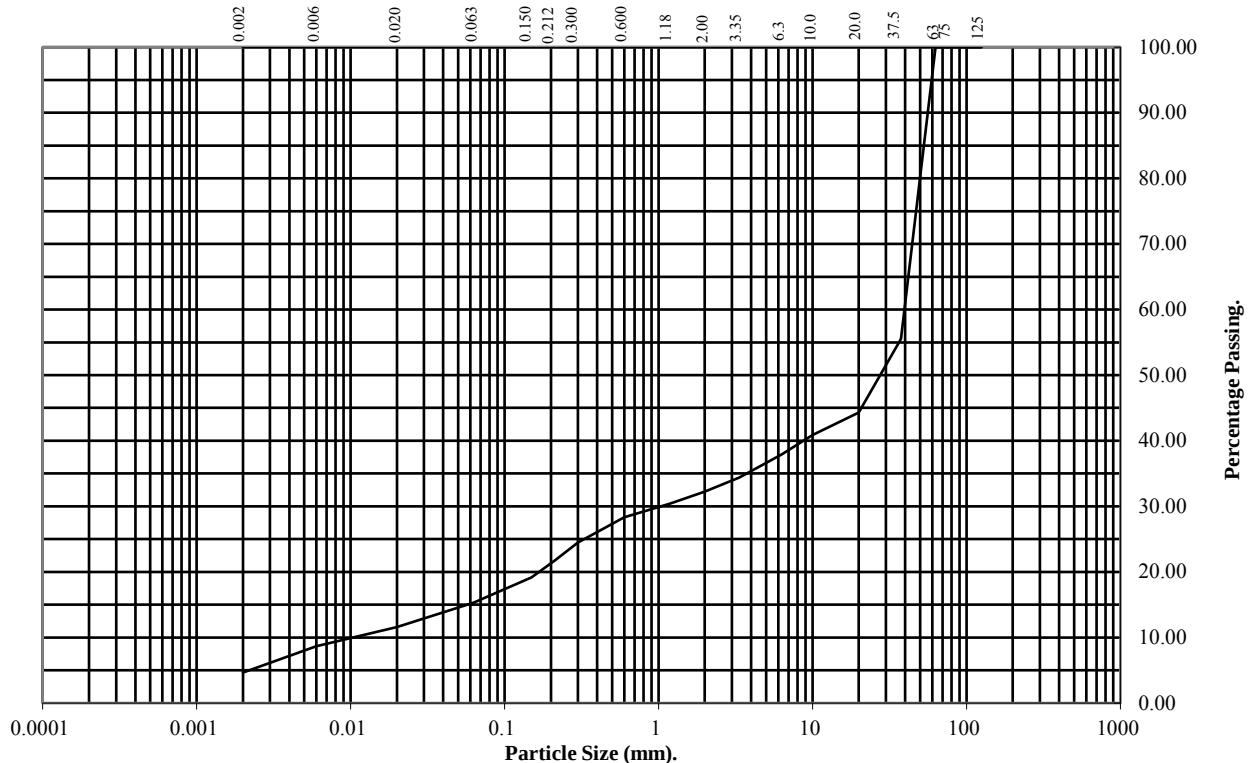
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP09 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.80

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	56
20	44
10	41
6.3	38
3.35	34
2	32
1.18	30
0.6	28
0.3	24
0.212	22
0.15	19
0.063	15

Particle Diameter	Percentage Passing
0.02	12
0.006	9
0.002	5

Soil Fraction	Total Percentage
Cobbles	0
Gravel	68
Sand	17
Silt	10
Clay	5

Remarks:
See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

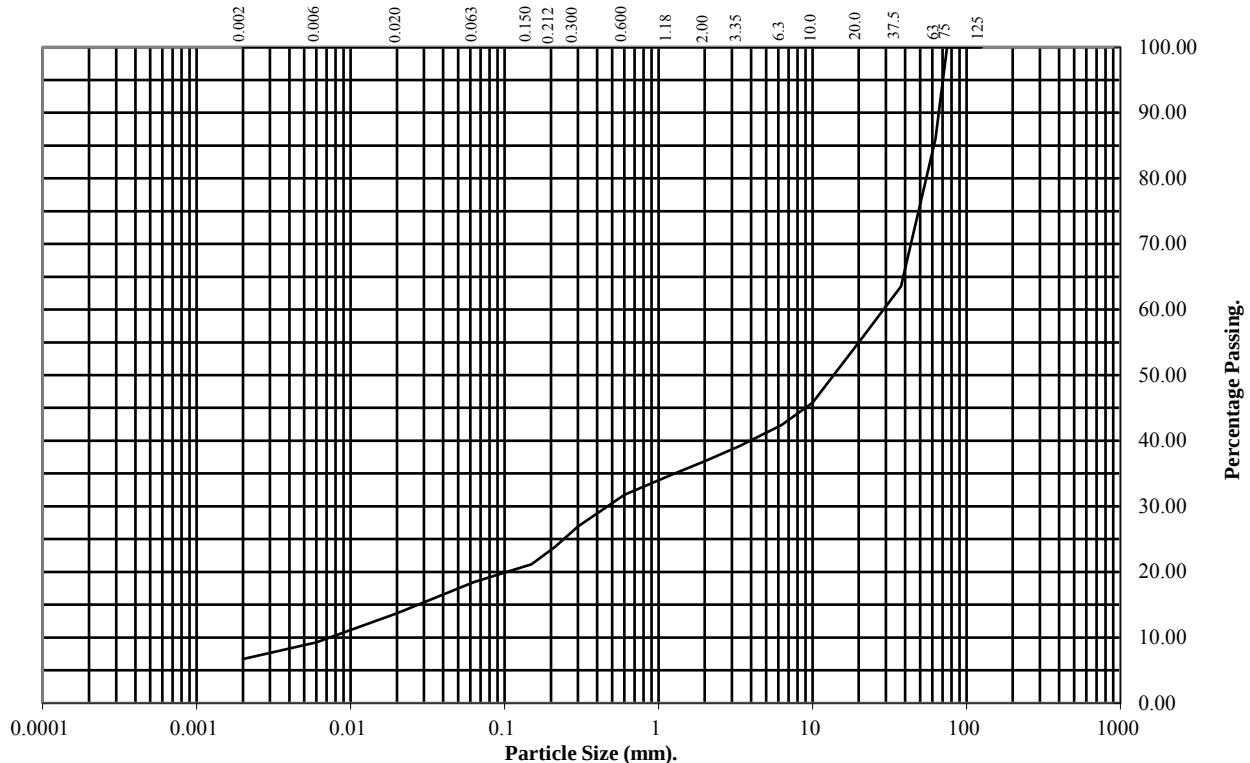
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP09 Top Depth (m): 2.00

Sample Number: Base Depth(m): 4.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	86
37.5	64
20	55
10	46
6.3	42
3.35	39
2	37
1.18	35
0.6	32
0.3	27
0.212	24
0.15	21
0.063	18

Particle Diameter	Percentage Passing
0.02	14
0.006	9
0.002	7

Soil Fraction	Total Percentage
Cobbles	14
Gravel	49
Sand	19
Silt	11
Clay	7

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

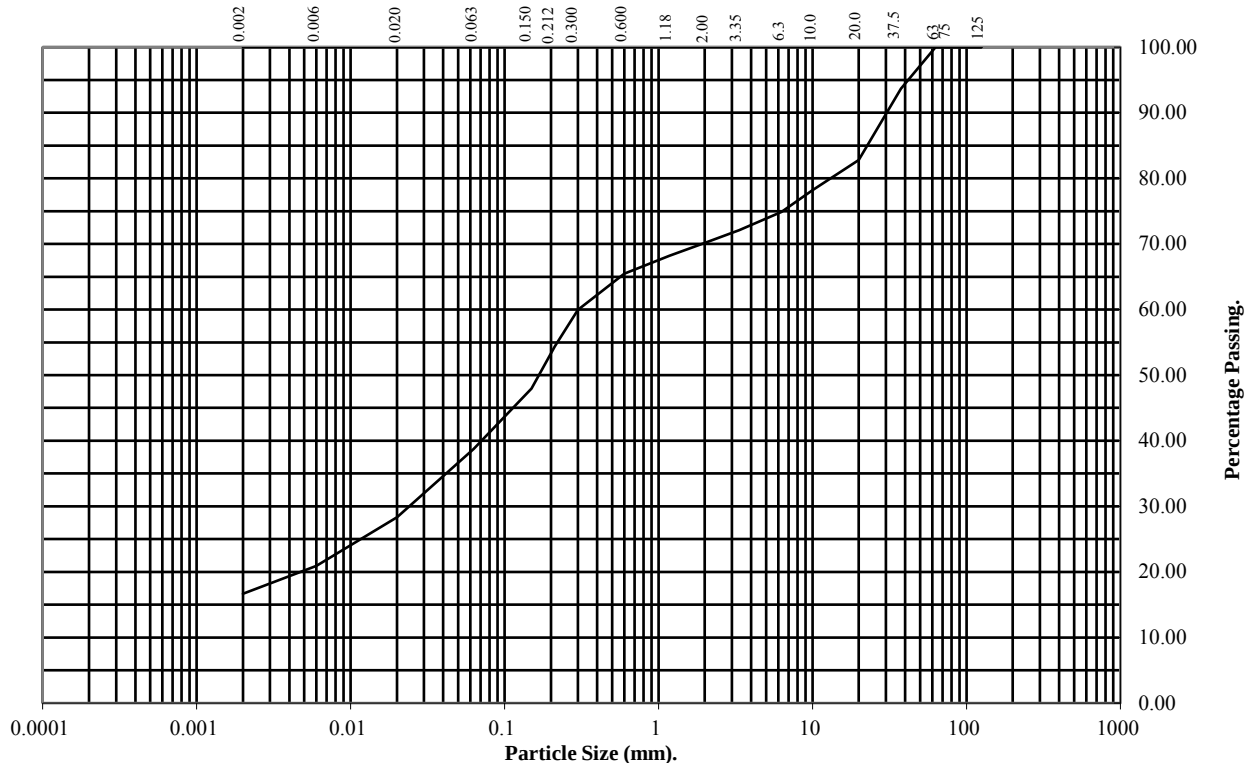
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP14 Top Depth (m): 1.00

Sample Number: Base Depth(m): 2.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	94
20	83
10	78
6.3	75
3.35	72
2	70
1.18	68
0.6	65
0.3	60
0.212	54
0.15	48
0.063	39

Particle Diameter	Percentage Passing
0.02	28
0.006	21
0.002	17

Soil Fraction	Total Percentage
Cobbles	0
Gravel	30
Sand	31
Silt	22
Clay	17

Remarks:
See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

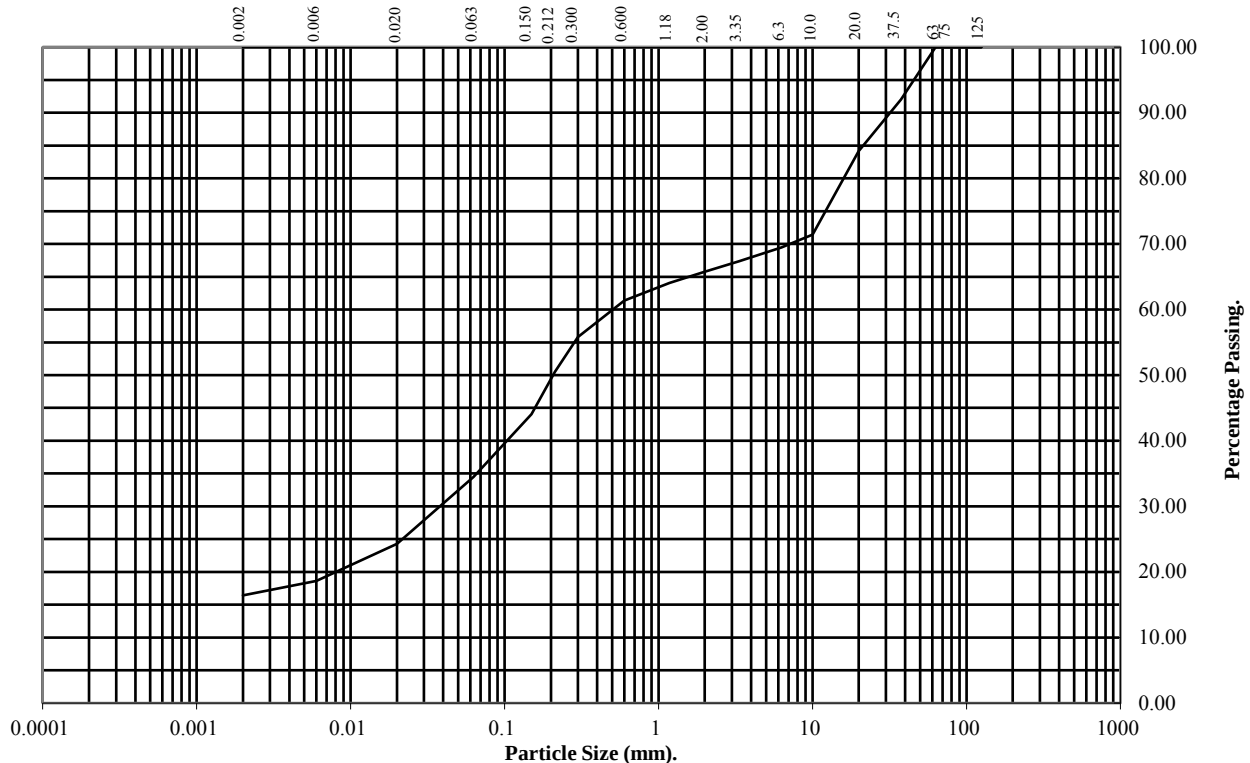
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP14 Top Depth (m): 2.50

Sample Number: Base Depth(m): 5.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	92
20	84
10	71
6.3	69
3.35	67
2	66
1.18	64
0.6	61
0.3	56
0.212	51
0.15	44
0.063	35

Particle Diameter	Percentage Passing
0.02	24
0.006	19
0.002	16

Soil Fraction	Total Percentage
Cobbles	0
Gravel	34
Sand	31
Silt	19
Clay	16

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

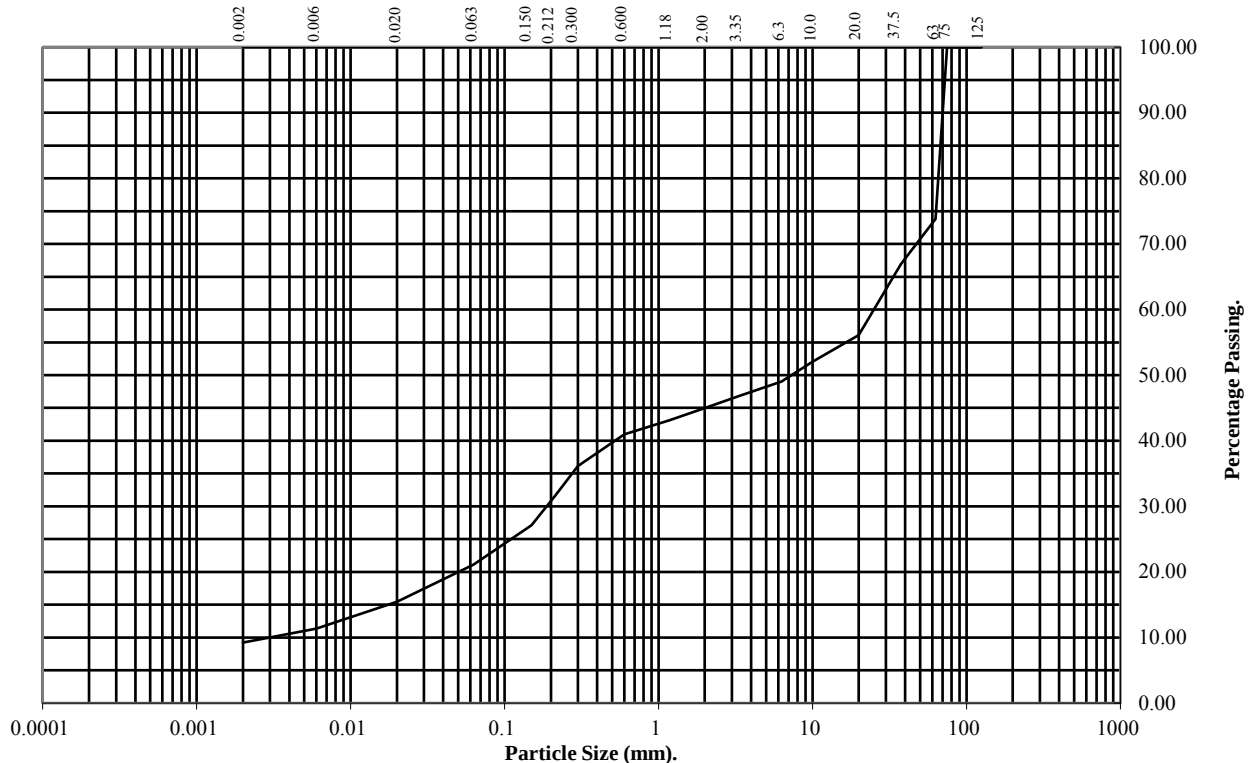
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP16 Top Depth (m): 0.00

Sample Number: Base Depth(m): 1.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	74
37.5	67
20	56
10	52
6.3	49
3.35	47
2	45
1.18	43
0.6	41
0.3	36
0.212	32
0.15	27
0.063	21

Particle Diameter	Percentage Passing
0.02	15
0.006	11
0.002	9

Soil Fraction	Total Percentage
Cobbles	26
Gravel	29
Sand	24
Silt	12
Clay	9

Remarks:
See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

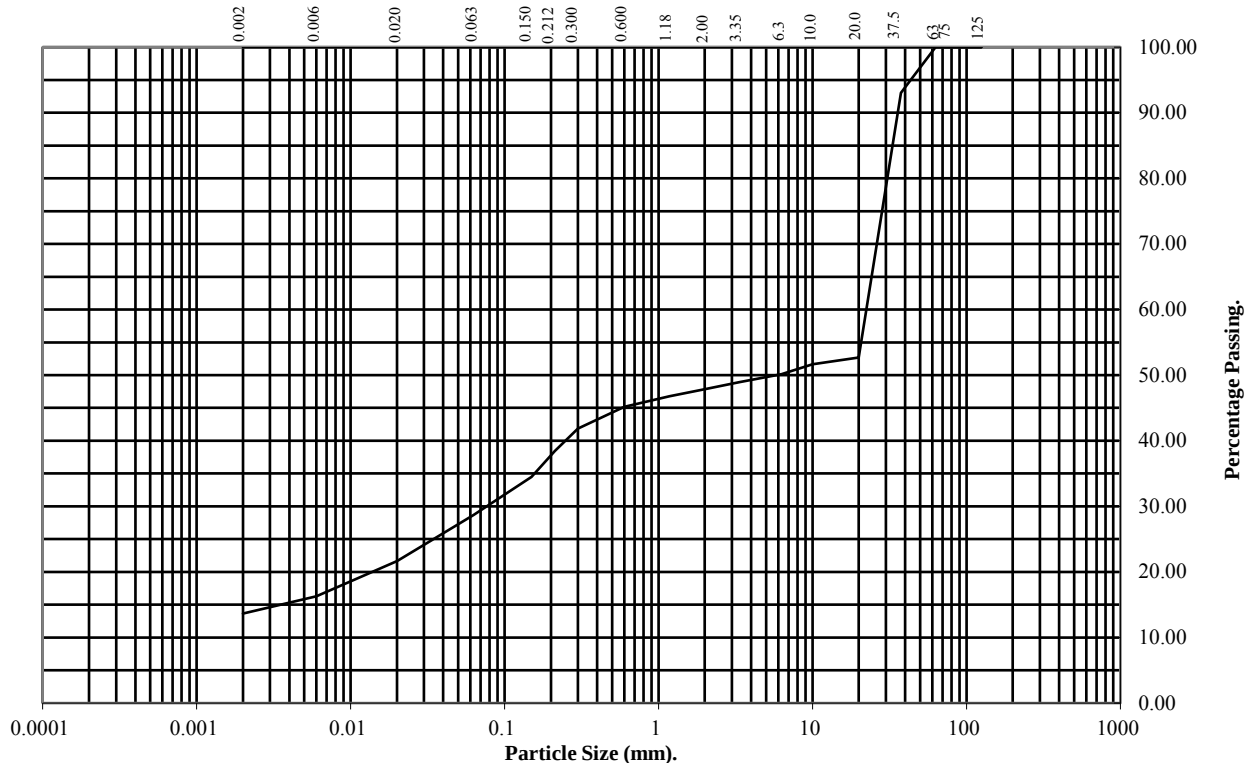
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP16 Top Depth (m): 1.20

Sample Number: Base Depth(m): 2.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	93
20	53
10	52
6.3	50
3.35	49
2	48
1.18	47
0.6	45
0.3	42
0.212	38
0.15	35
0.063	29

Particle Diameter	Percentage Passing
0.02	22
0.006	16
0.002	14

Soil Fraction	Total Percentage
Cobbles	0
Gravel	52
Sand	19
Silt	15
Clay	14

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

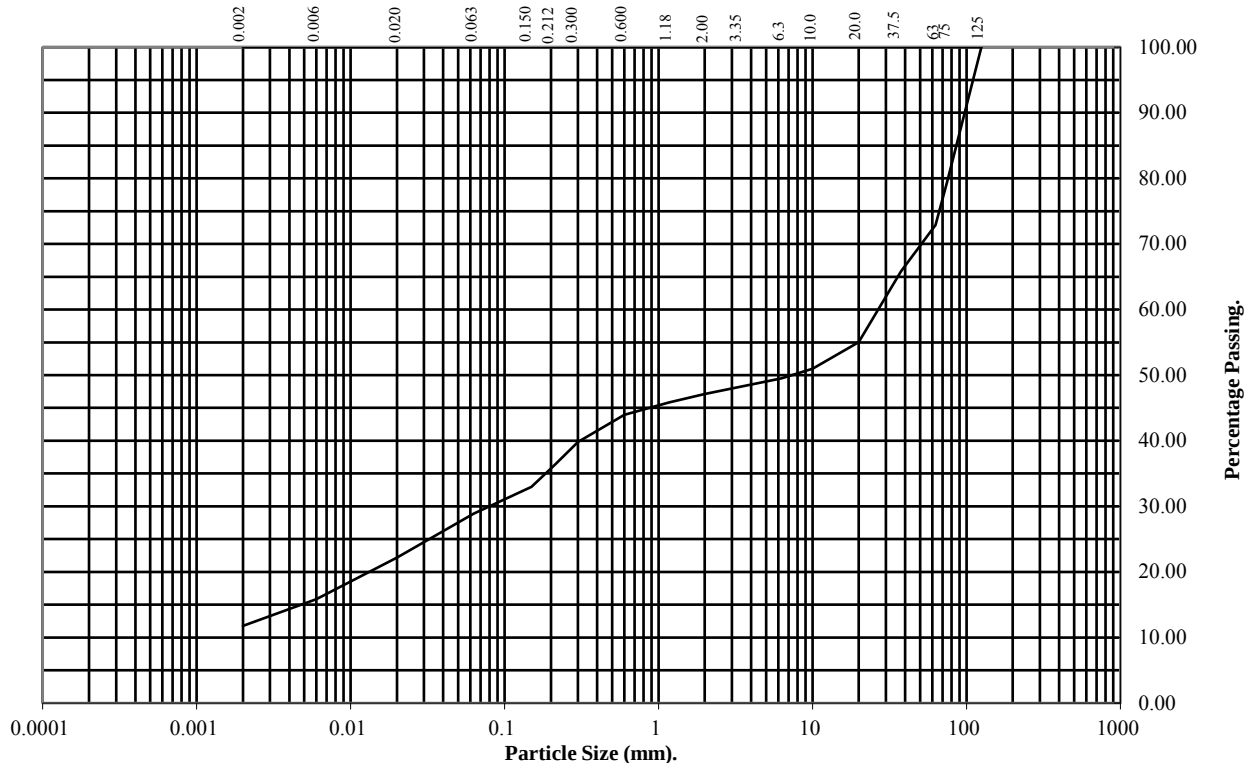
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP18 Top Depth (m): 3.50

Sample Number: Base Depth(m): 5.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	79
63	73
37.5	66
20	55
10	51
6.3	50
3.35	48
2	47
1.18	46
0.6	44
0.3	40
0.212	36
0.15	33
0.063	29

Particle Diameter	Percentage Passing
0.02	22
0.006	16
0.002	12

Soil Fraction	Total Percentage
Cobbles	27
Gravel	26
Sand	18
Silt	17
Clay	12

Remarks:
See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

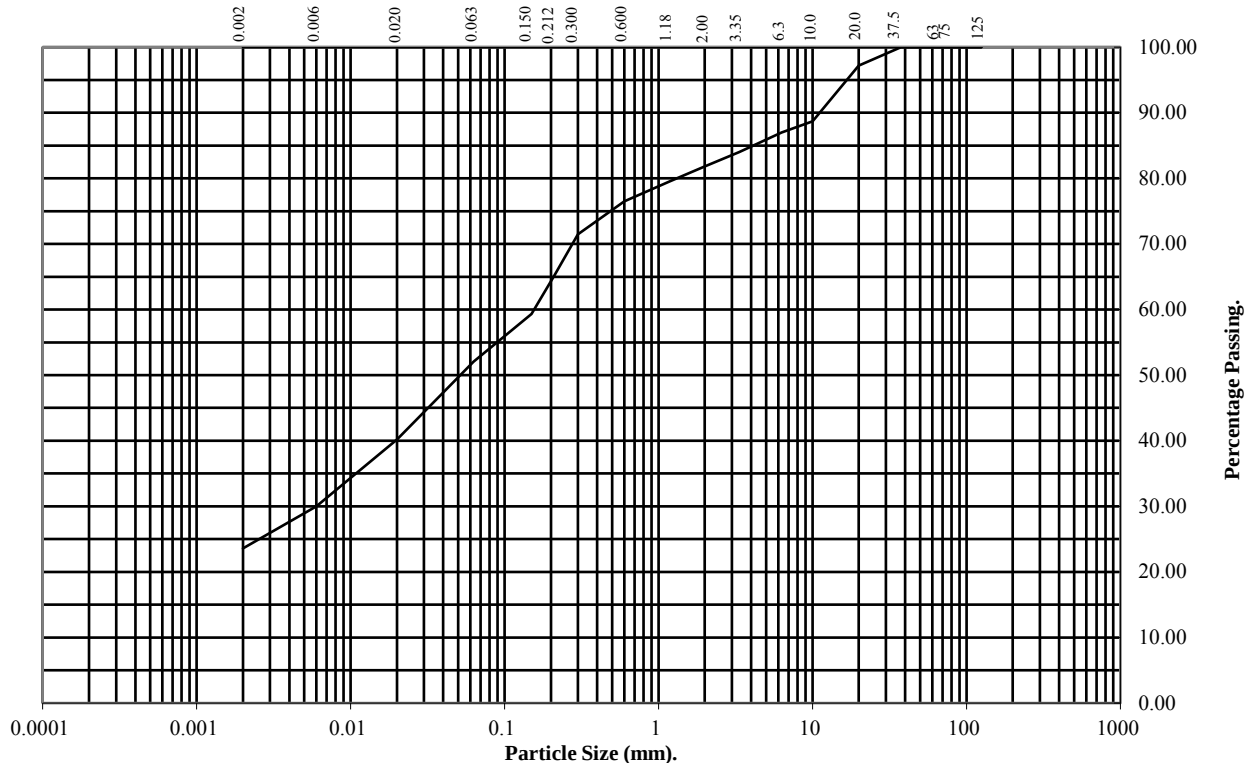
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP19 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	97
10	89
6.3	87
3.35	84
2	82
1.18	80
0.6	76
0.3	71
0.212	65
0.15	59
0.063	52

Particle Diameter	Percentage Passing
0.02	40
0.006	30
0.002	24

Soil Fraction	Total Percentage
Cobbles	0
Gravel	18
Sand	30
Silt	28
Clay	24

Remarks:
See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

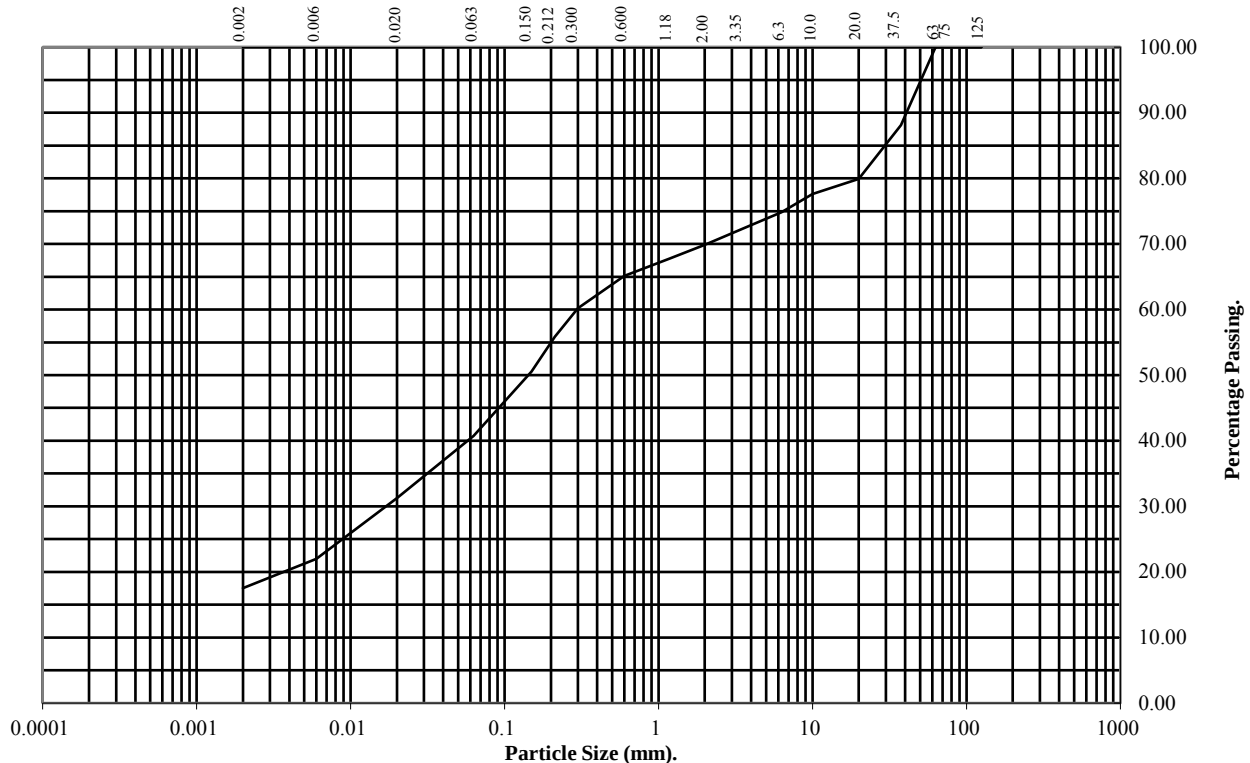
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP20 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.60

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	88
20	80
10	78
6.3	75
3.35	72
2	70
1.18	68
0.6	65
0.3	60
0.212	56
0.15	51
0.063	41

Particle Diameter	Percentage Passing
0.02	31
0.006	22
0.002	18

Soil Fraction	Total Percentage
Cobbles	0
Gravel	30
Sand	29
Silt	23
Clay	18

Remarks:
See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

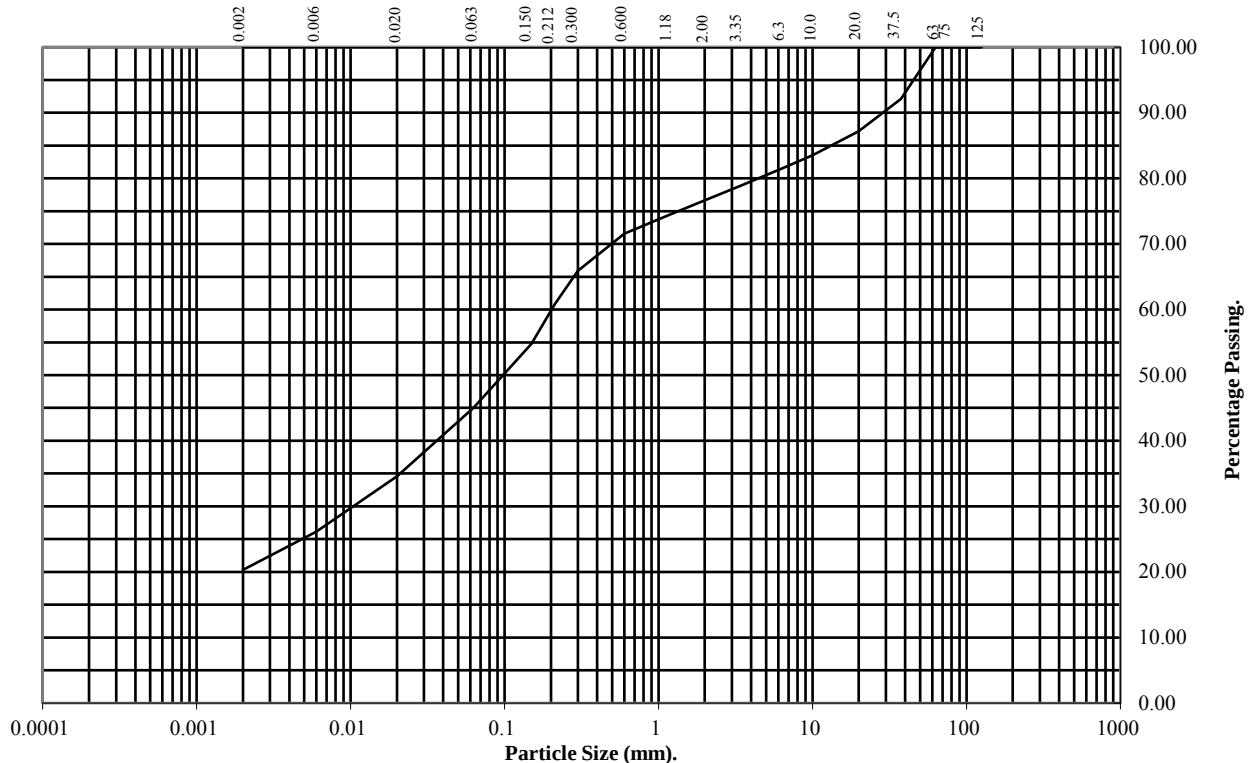
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP20 Top Depth (m): 2.50

Sample Number: Base Depth(m): 3.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	92
20	87
10	84
6.3	81
3.35	79
2	77
1.18	74
0.6	72
0.3	66
0.212	61
0.15	55
0.063	45

Particle Diameter	Percentage Passing
0.02	35
0.006	26
0.002	20

Soil Fraction	Total Percentage
Cobbles	0
Gravel	23
Sand	32
Silt	25
Clay	20

Remarks:
See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

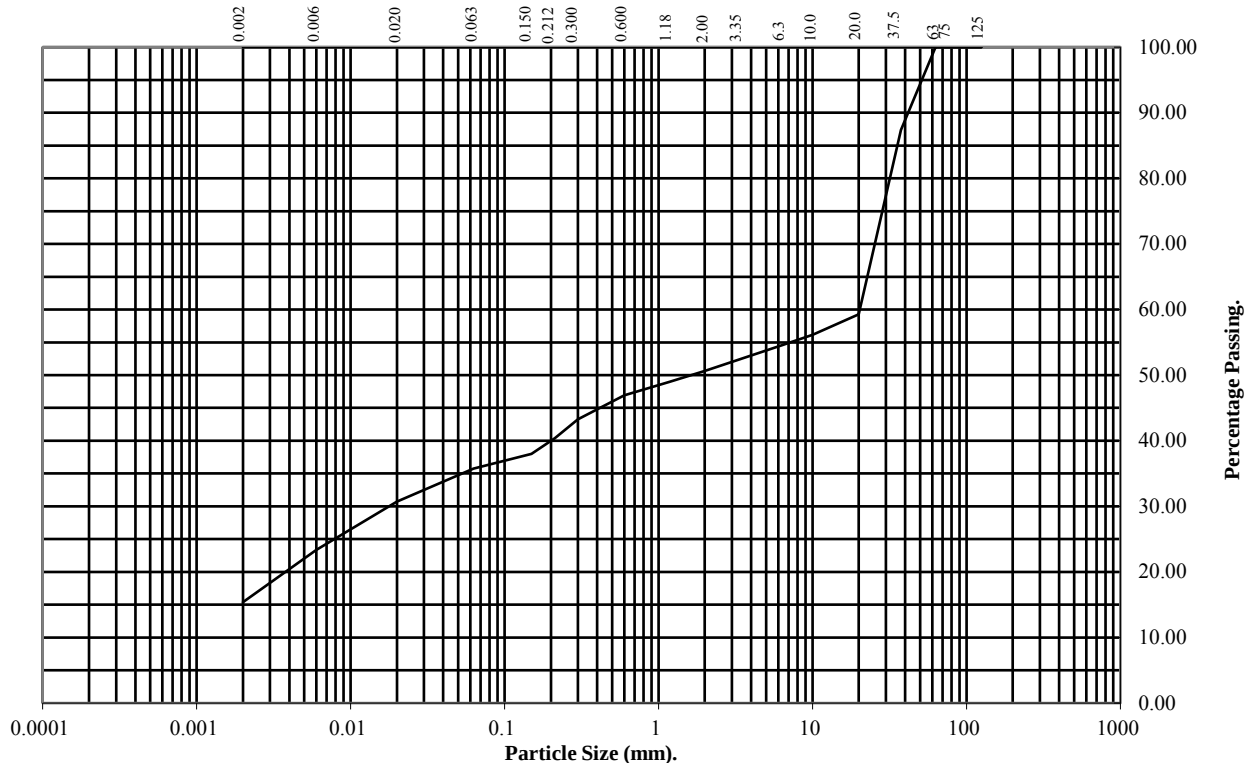
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP21 Top Depth (m): 0.70

Sample Number: Base Depth(m): 1.30

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	87
20	59
10	56
6.3	55
3.35	52
2	51
1.18	49
0.6	47
0.3	43
0.212	40
0.15	38
0.063	36

Particle Diameter	Percentage Passing
0.02	31
0.006	23
0.002	15

Soil Fraction	Total Percentage
Cobbles	0
Gravel	49
Sand	15
Silt	21
Clay	15

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

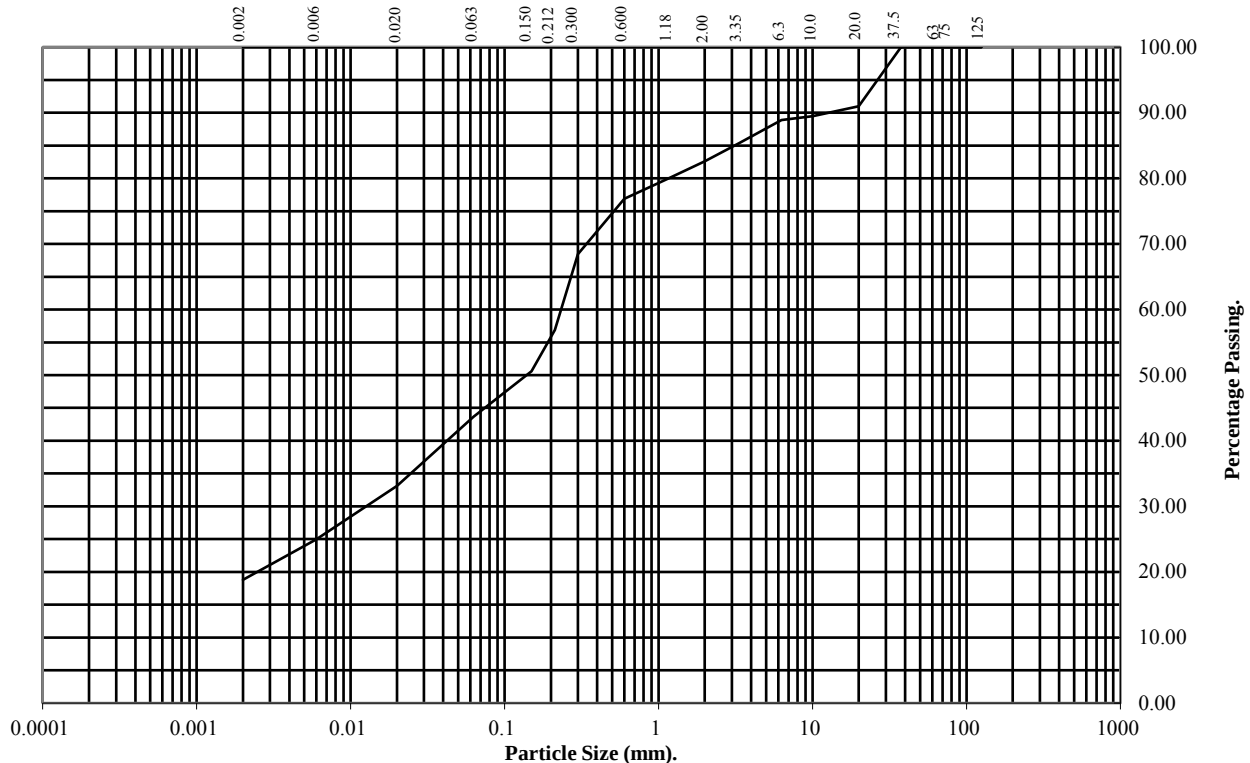
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP24 Top Depth (m): 0.00

Sample Number: Base Depth(m): 1.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	91
10	89
6.3	89
3.35	85
2	83
1.18	80
0.6	77
0.3	68
0.212	57
0.15	51
0.063	44

Particle Diameter	Percentage Passing
0.02	33
0.006	25
0.002	19

Soil Fraction	Total Percentage
Cobbles	0
Gravel	17
Sand	39
Silt	25
Clay	19

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

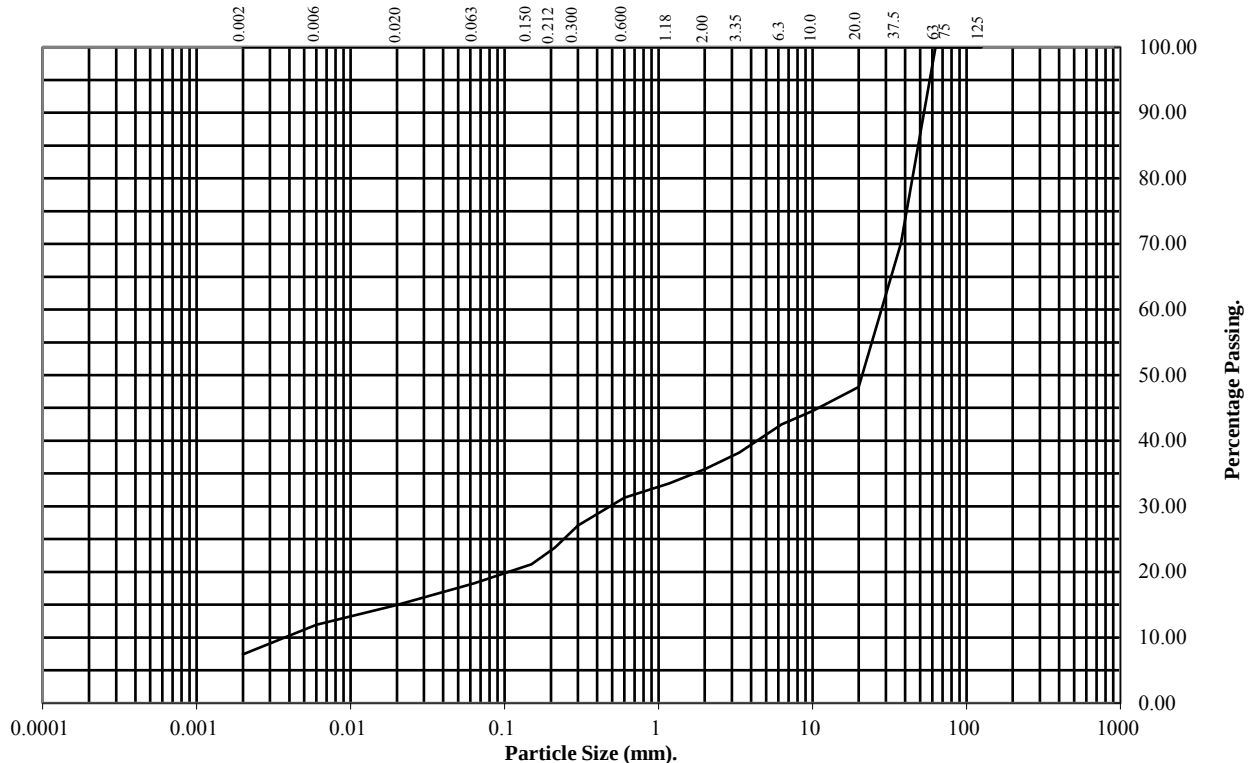
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP27 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.90

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	70
20	48
10	45
6.3	43
3.35	38
2	36
1.18	34
0.6	31
0.3	27
0.212	24
0.15	21
0.063	18

Particle Diameter	Percentage Passing
0.02	15
0.006	12
0.002	7

Soil Fraction	Total Percentage
Cobbles	0
Gravel	64
Sand	18
Silt	11
Clay	7

Remarks:
See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

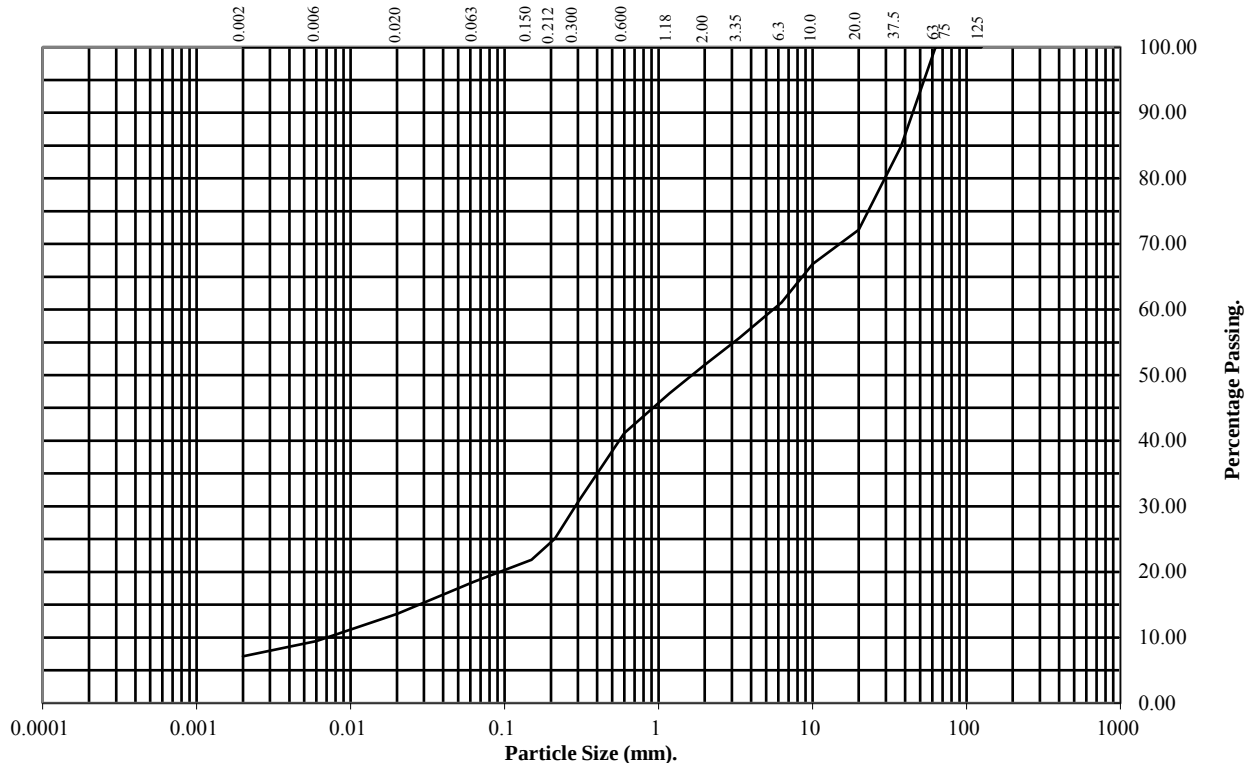
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP31 Top Depth (m): 0.00

Sample Number: Base Depth(m): 1.60

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	85
20	72
10	67
6.3	61
3.35	56
2	52
1.18	47
0.6	41
0.3	31
0.212	25
0.15	22
0.063	18

Particle Diameter	Percentage Passing
0.02	14
0.006	9
0.002	7

Soil Fraction	Total Percentage
Cobbles	0
Gravel	48
Sand	34
Silt	11
Clay	7

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

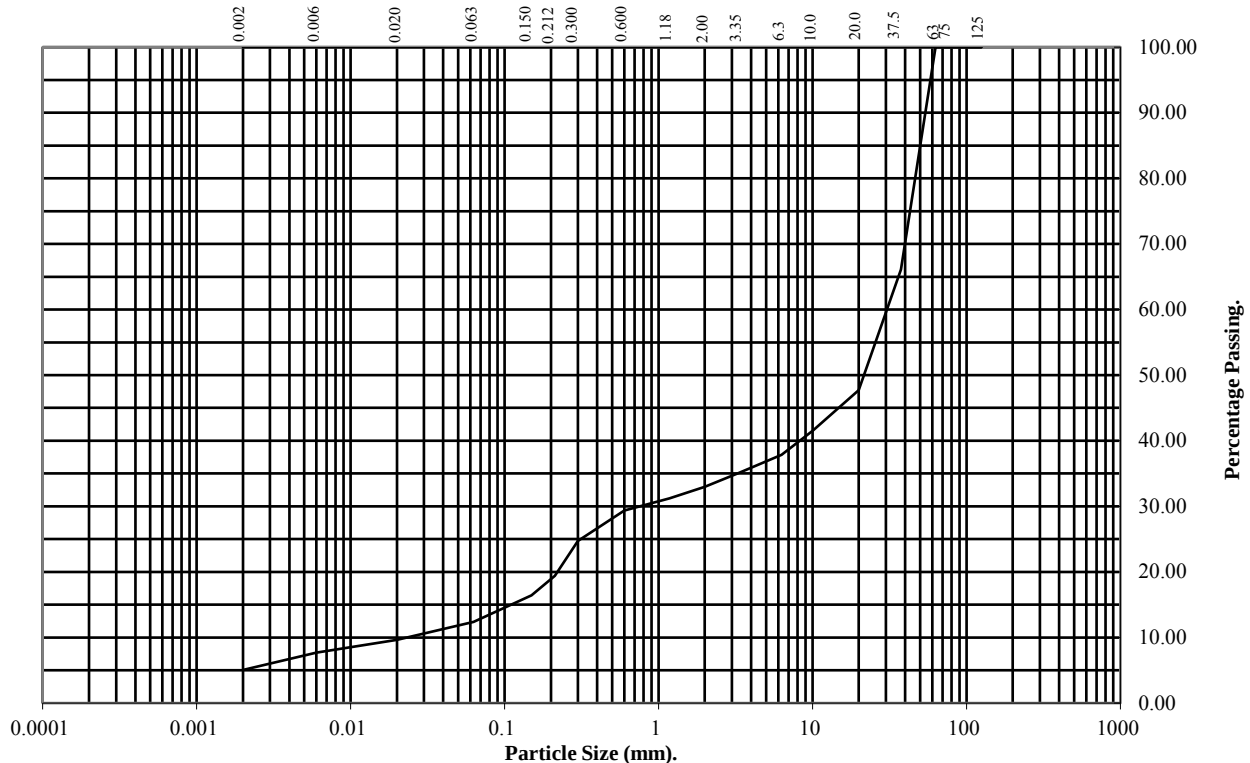
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP34 Top Depth (m): 0.00

Sample Number: Base Depth(m): 1.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	66
20	48
10	42
6.3	38
3.35	35
2	33
1.18	31
0.6	29
0.3	25
0.212	19
0.15	16
0.063	12

Particle Diameter	Percentage Passing
0.02	10
0.006	8
0.002	5

Soil Fraction	Total Percentage
Cobbles	0
Gravel	67
Sand	21
Silt	7
Clay	5

Remarks:

See Summary of Soil Descriptions



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PARTICLE SIZE DISTRIBUTION TEST

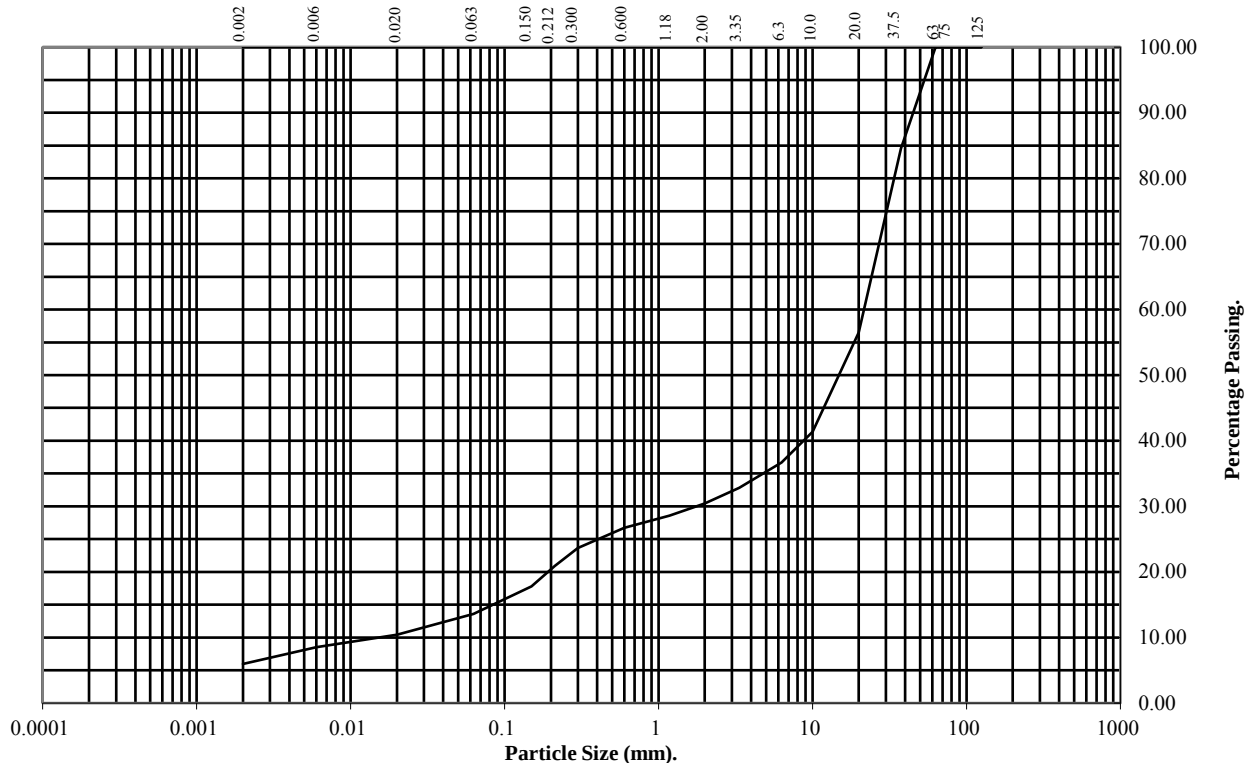
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP38 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.30

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	85
20	56
10	41
6.3	37
3.35	33
2	30
1.18	29
0.6	27
0.3	24
0.212	21
0.15	18
0.063	14

Particle Diameter	Percentage Passing
0.02	10
0.006	9
0.002	6

Soil Fraction	Total Percentage
Cobbles	0
Gravel	70
Sand	16
Silt	8
Clay	6

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
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PC176880

PARTICLE SIZE DISTRIBUTION TEST

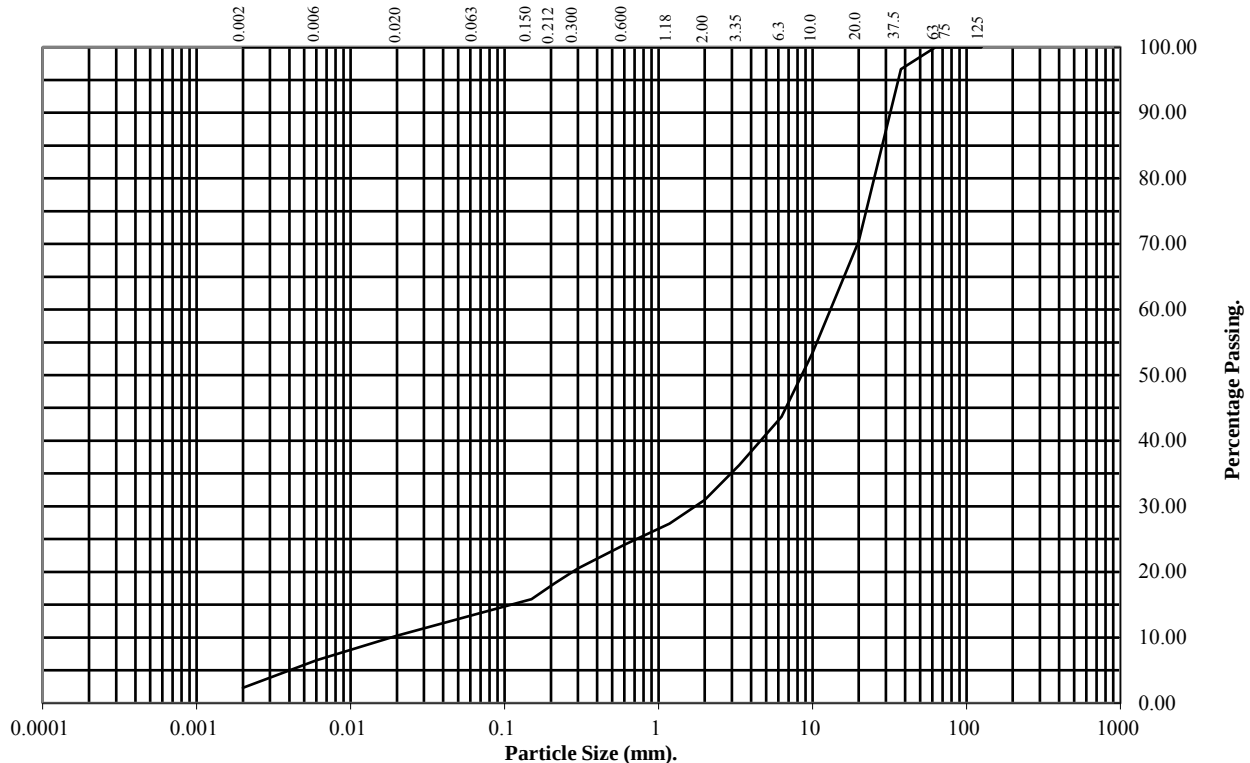
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP42 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	97
20	70
10	53
6.3	44
3.35	36
2	31
1.18	27
0.6	24
0.3	21
0.212	18
0.15	16
0.063	13

Particle Diameter	Percentage Passing
0.02	10
0.006	7
0.002	2

Soil Fraction	Total Percentage
Cobbles	0
Gravel	69
Sand	18
Silt	11
Clay	2

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5842
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

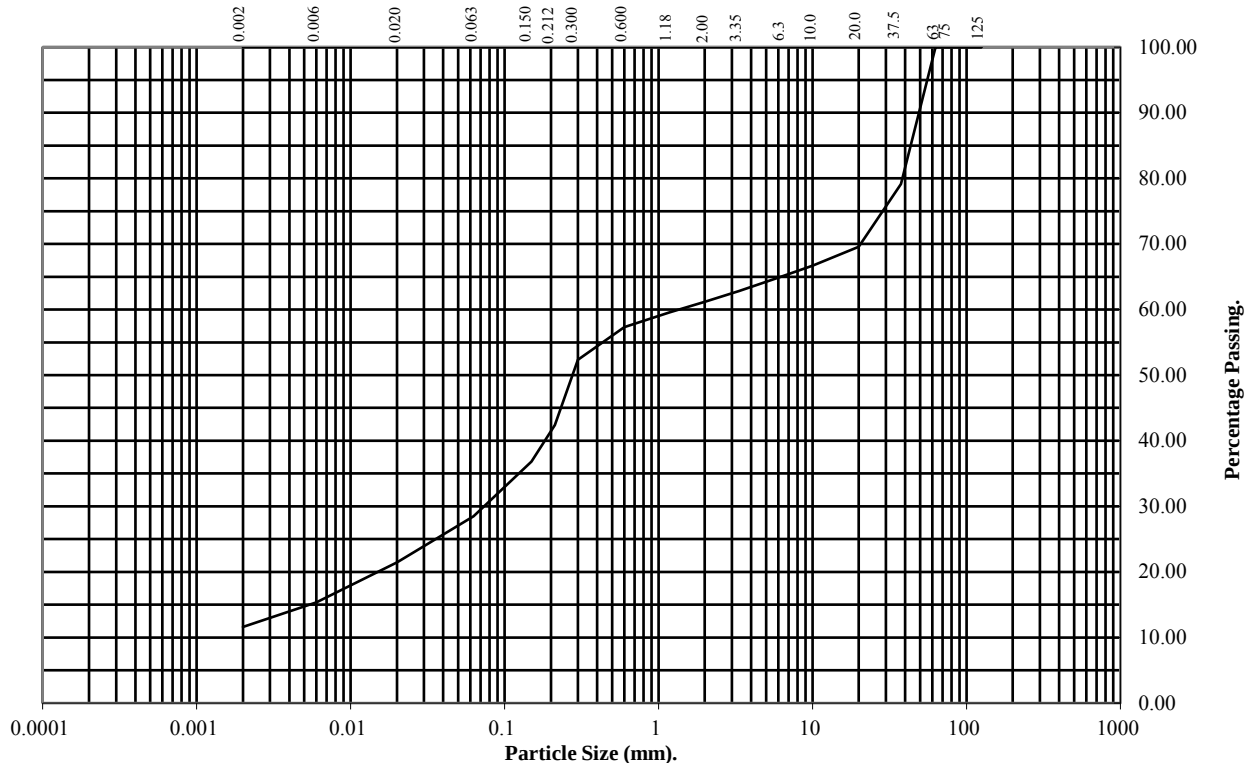
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP44 Top Depth (m): 0.00

Sample Number: Base Depth(m): 1.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	79
20	70
10	67
6.3	65
3.35	63
2	61
1.18	60
0.6	57
0.3	52
0.212	42
0.15	37
0.063	28

Particle Diameter	Percentage Passing
0.02	21
0.006	15
0.002	12

Soil Fraction	Total Percentage
Cobbles	0
Gravel	39
Sand	33
Silt	16
Clay	12

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5842
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

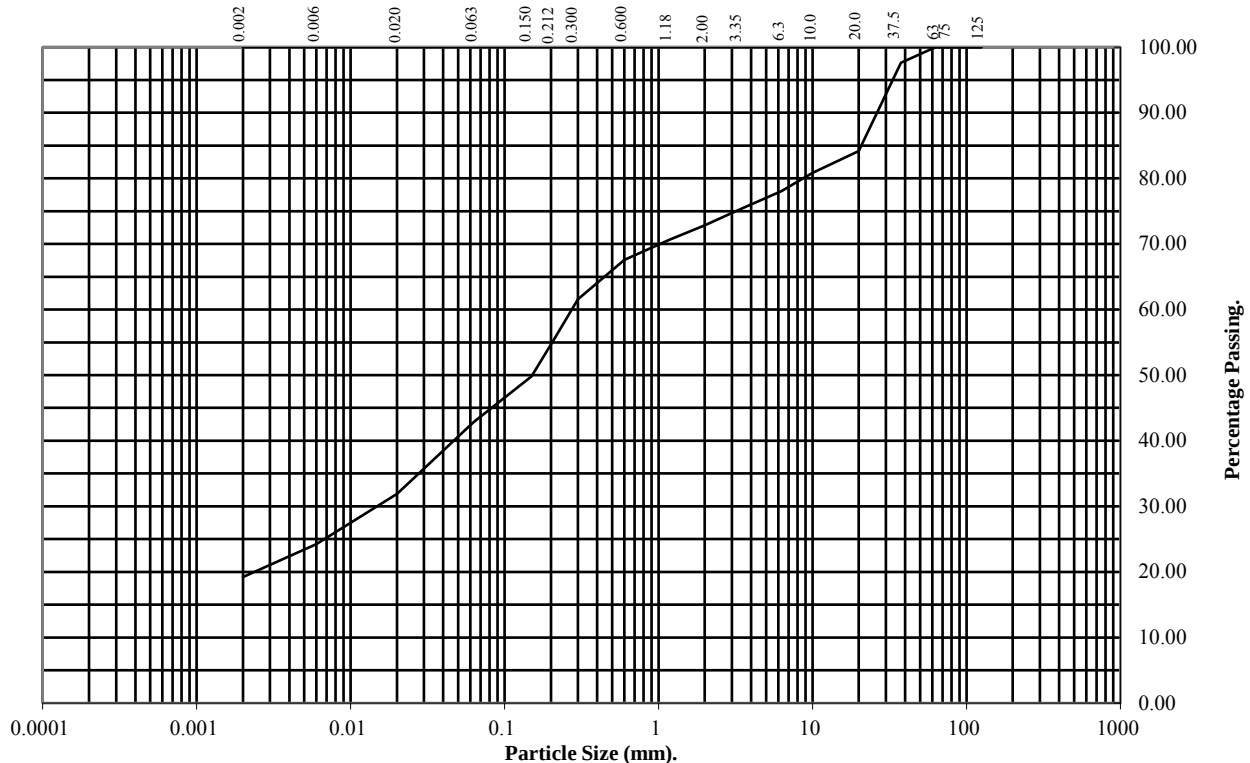
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP45 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.45

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	98
20	84
10	81
6.3	78
3.35	75
2	73
1.18	71
0.6	68
0.3	62
0.212	56
0.15	50
0.063	43

Particle Diameter	Percentage Passing
0.02	32
0.006	24
0.002	19

Soil Fraction	Total Percentage
Cobbles	0
Gravel	27
Sand	30
Silt	24
Clay	19

Remarks:
See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5842
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

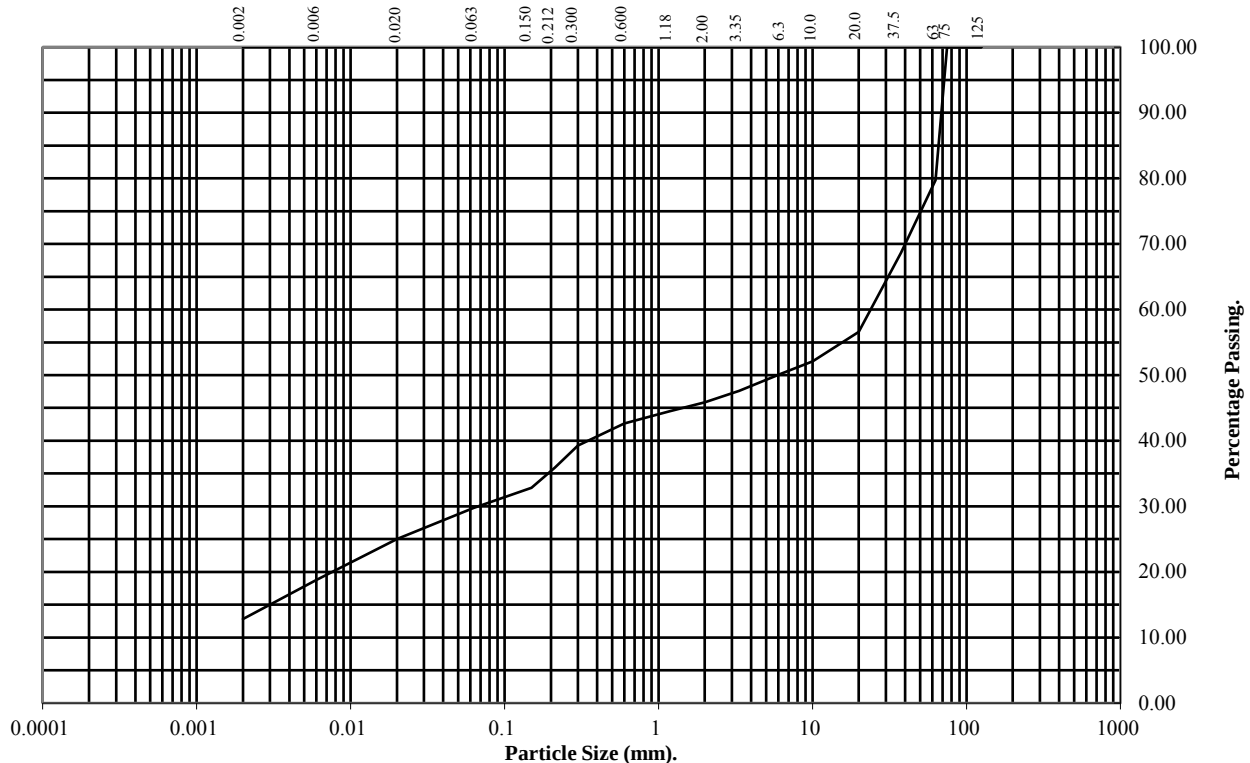
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP45 Top Depth (m): 0.40

Sample Number: Base Depth(m): 1.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	80
37.5	69
20	57
10	52
6.3	50
3.35	48
2	46
1.18	44
0.6	43
0.3	39
0.212	36
0.15	33
0.063	30

Particle Diameter	Percentage Passing
0.02	25
0.006	19
0.002	13

Soil Fraction	Total Percentage
Cobbles	20
Gravel	34
Sand	16
Silt	17
Clay	13

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5842
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

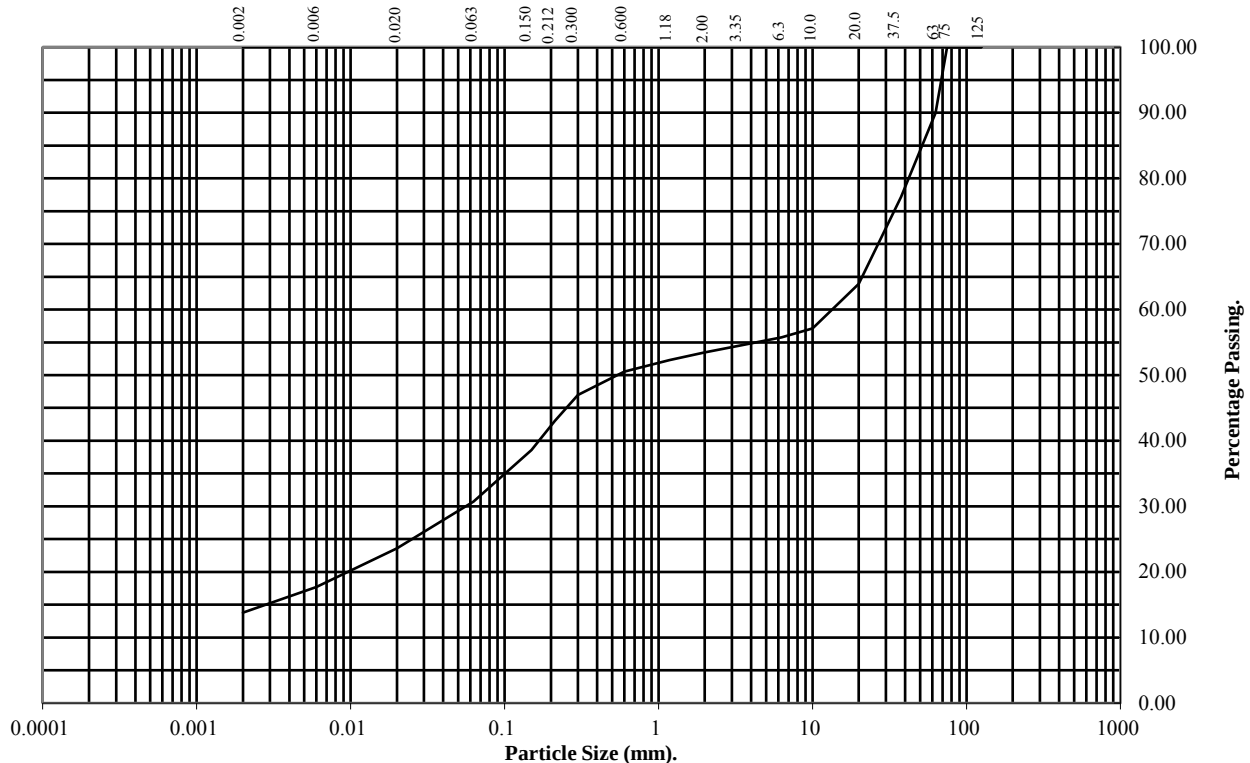
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP45 Top Depth (m): 1.50

Sample Number: Base Depth(m): 3.10

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	90
37.5	77
20	64
10	57
6.3	56
3.35	55
2	53
1.18	52
0.6	51
0.3	47
0.212	43
0.15	39
0.063	31

Particle Diameter	Percentage Passing
0.02	24
0.006	18
0.002	14

Soil Fraction	Total Percentage
Cobbles	10
Gravel	37
Sand	22
Silt	17
Clay	14

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5842
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

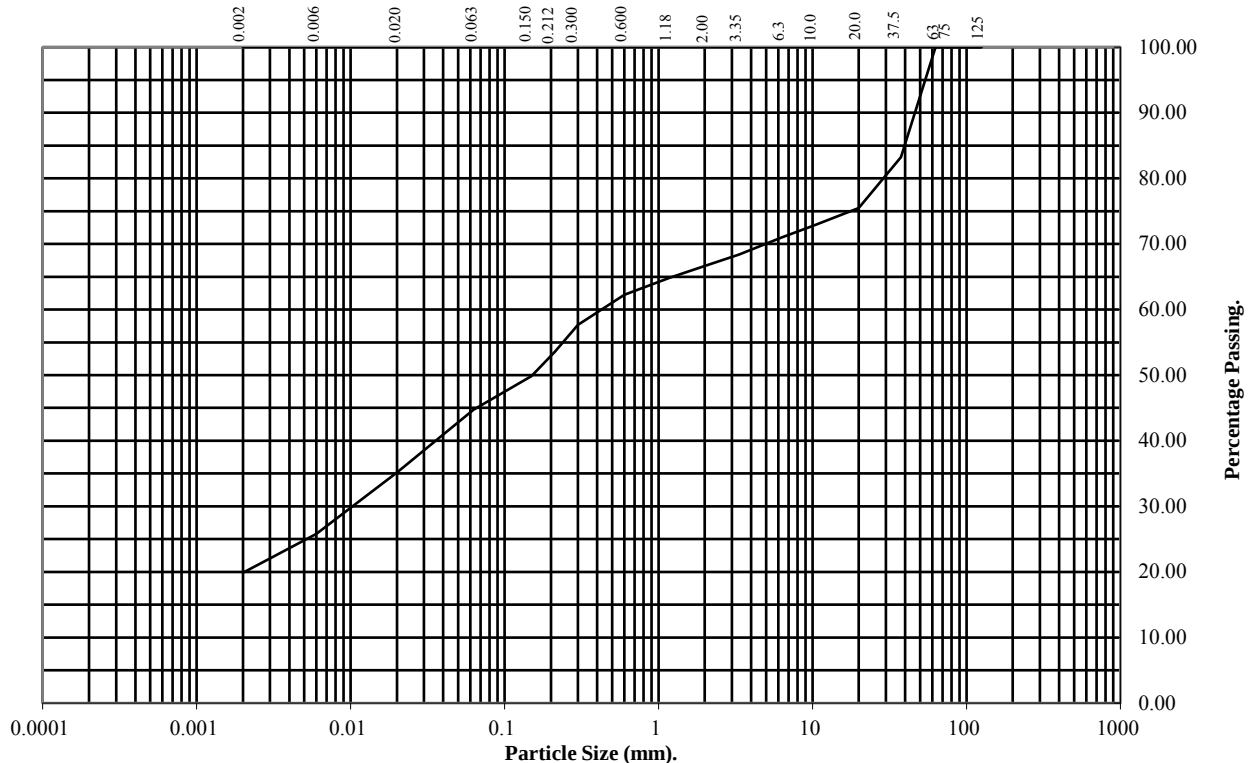
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP48 Top Depth (m): 1.20

Sample Number: Base Depth(m): 3.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	83
20	75
10	73
6.3	71
3.35	68
2	67
1.18	65
0.6	62
0.3	58
0.212	54
0.15	50
0.063	45

Particle Diameter	Percentage Passing
0.02	35
0.006	26
0.002	20

Soil Fraction	Total Percentage
Cobbles	0
Gravel	33
Sand	22
Silt	25
Clay	20

Remarks:
See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5842
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

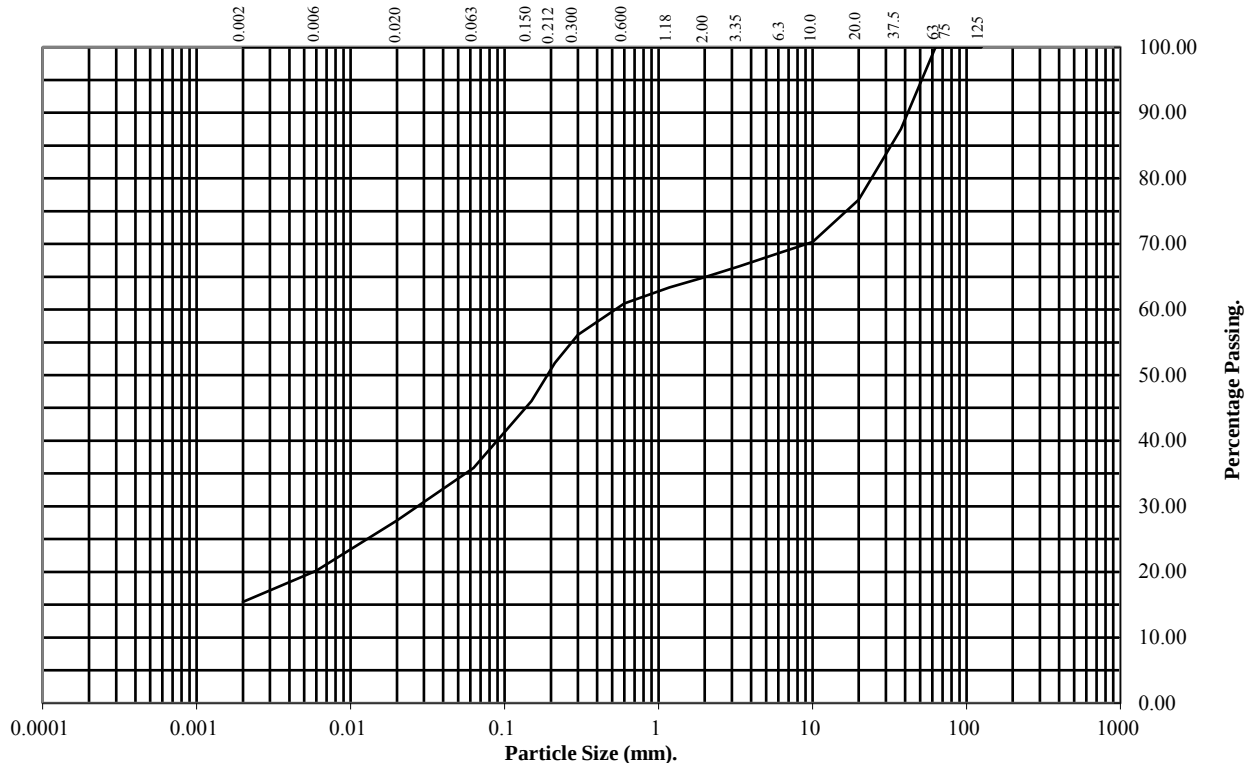
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP48 Top Depth (m): 3.00

Sample Number: Base Depth(m): 4.70

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	88
20	77
10	70
6.3	69
3.35	67
2	65
1.18	63
0.6	61
0.3	56
0.212	52
0.15	46
0.063	36

Particle Diameter	Percentage Passing
0.02	28
0.006	20
0.002	15

Soil Fraction	Total Percentage
Cobbles	0
Gravel	35
Sand	29
Silt	21
Clay	15

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5842
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

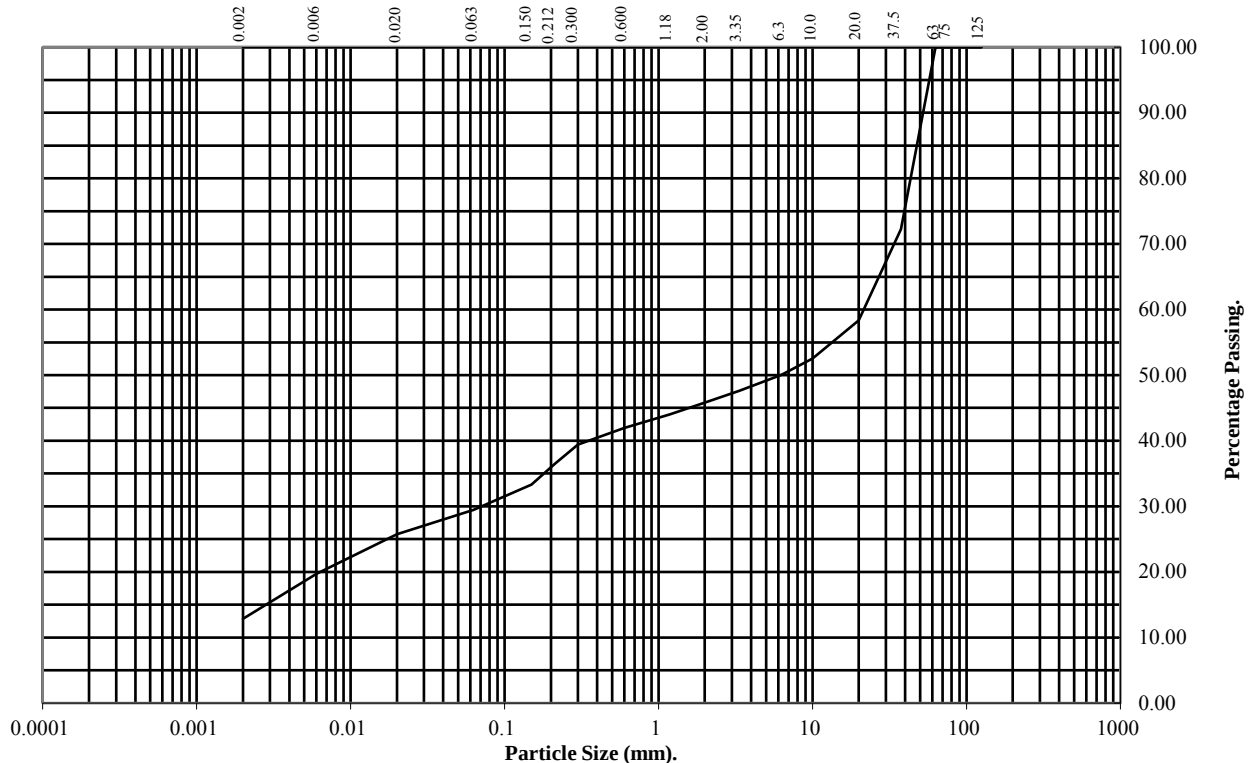
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP49 Top Depth (m): 0.80

Sample Number: Base Depth(m): 2.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	72
20	58
10	53
6.3	50
3.35	48
2	46
1.18	44
0.6	42
0.3	39
0.212	36
0.15	33
0.063	29

Particle Diameter	Percentage Passing
0.02	26
0.006	20
0.002	13

Soil Fraction	Total Percentage
Cobbles	0
Gravel	54
Sand	17
Silt	16
Clay	13

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5842
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

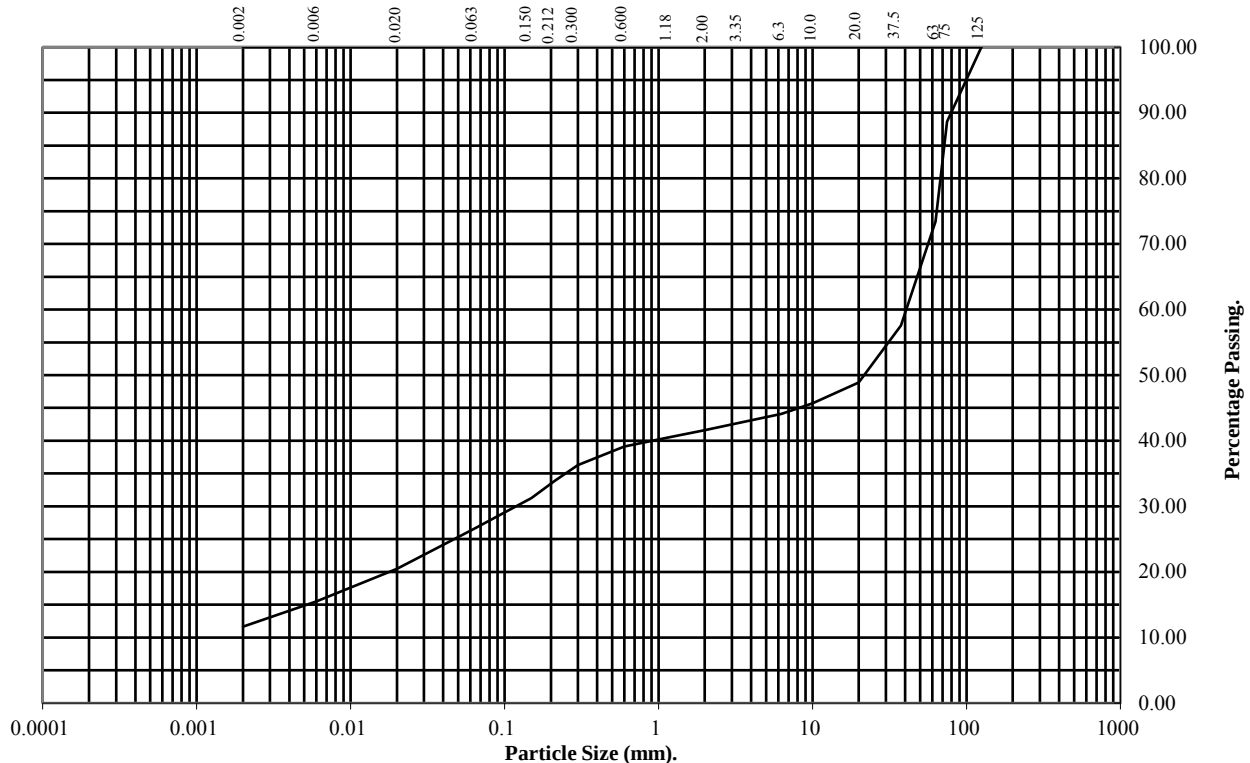
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP50 Top Depth (m): 0.50

Sample Number: Base Depth(m): 2.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	89
63	73
37.5	58
20	49
10	46
6.3	44
3.35	43
2	42
1.18	41
0.6	39
0.3	36
0.212	34
0.15	31
0.063	27

Particle Diameter	Percentage Passing
0.02	20
0.006	16
0.002	12

Soil Fraction	Total Percentage
Cobbles	27
Gravel	31
Sand	15
Silt	15
Clay	12

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5842
Client Ref:
PC176880

PARTICLE SIZE DISTRIBUTION TEST

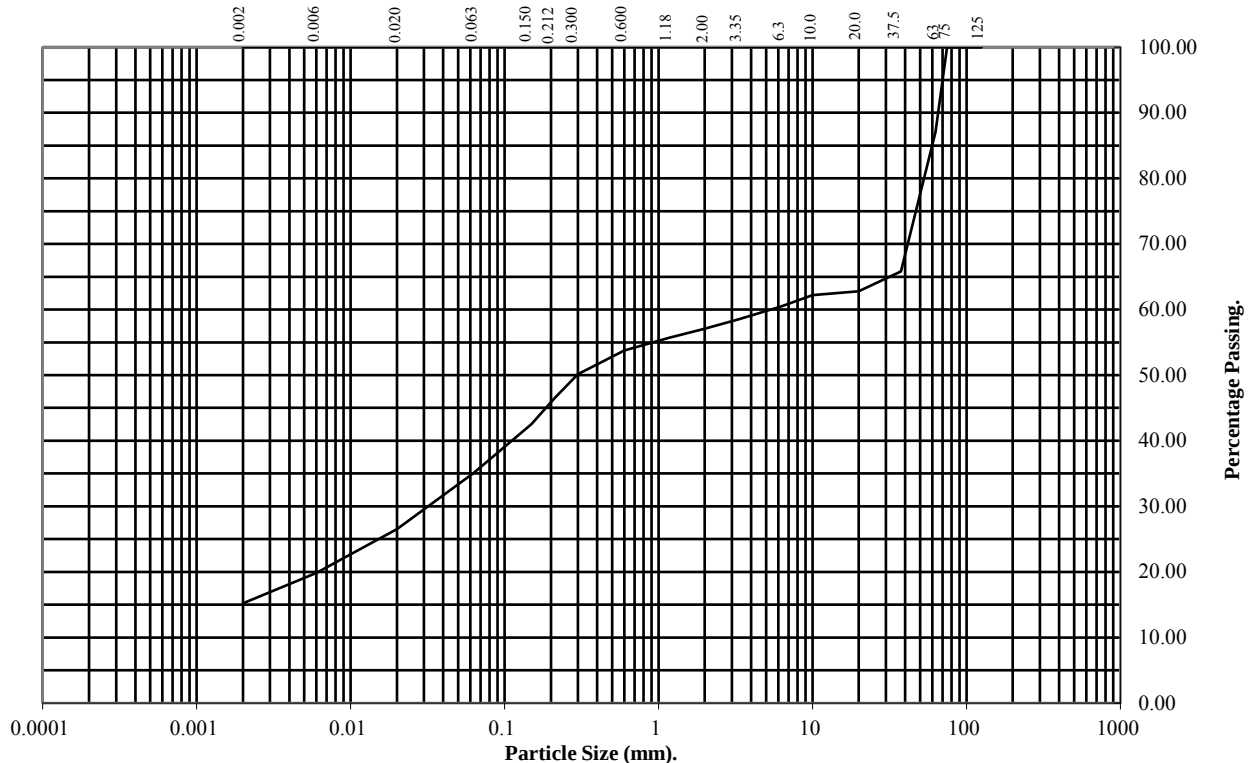
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: TP50 Top Depth (m): 2.00

Sample Number: Base Depth(m): 2.60

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	87
37.5	66
20	63
10	62
6.3	60
3.35	59
2	57
1.18	56
0.6	54
0.3	50
0.212	47
0.15	43
0.063	35

Particle Diameter	Percentage Passing
0.02	27
0.006	20
0.002	15

Soil Fraction	Total Percentage
Cobbles	13
Gravel	30
Sand	22
Silt	20
Clay	15

Remarks:

See Summary of Soil Descriptions



Coed Darcy

Contract No:
PSL17/5842
Client Ref:
PC176880

LABORATORY TEST CERTIFICATE

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032
Fax: 0141 774 3552

email: info@mattest.org
Website: www.mattest.org

Certificate No : 17/1446 - 01 Interim 01
To : Stephan Schiano
Client : **Geotechnics Limited**
The Geotechnical Centre
203 Torrington Avenue
Tile Hill
Coventry
CV4 9UT

Dear Sirs,

LABORATORY TESTING OF ROCK

Introduction

We refer to samples taken from COED Darcy and delivered to our laboratory on 30th November 2017.

Material & Source

Sample Reference	:	See Report Plates
Sampled By	:	Client
Sampling Certificate	:	Not Supplied
Location	:	See Report Plates
Description	:	Rock cores
Date Sampled	:	Not Supplied
Date Tested	:	30th November 2017 Onwards
Source	:	PC176880 - COED Darcy

Test Results;

As Detailed On Page 2 to Page 24 inclusive

Comments;

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

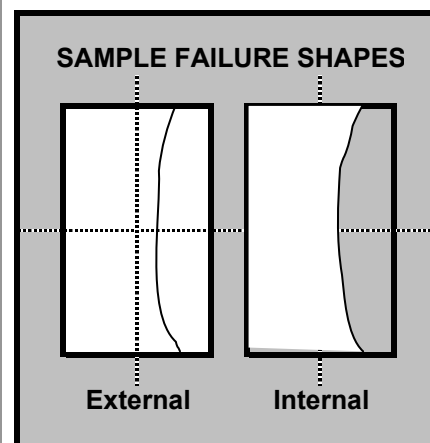
Remarks;

Approved for Issue

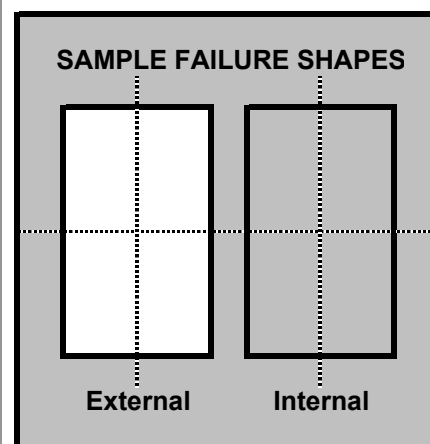
T McLelland (Director)

Date 20/12/2017

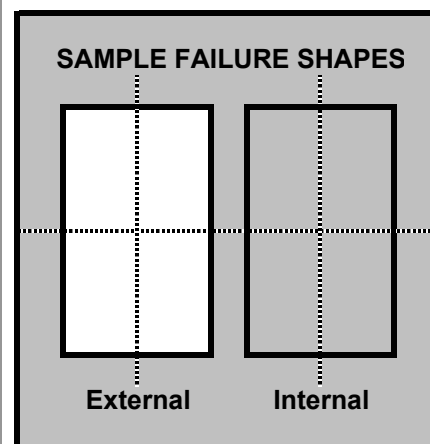
BOREHOLE		BH01
SAMPLE		C
DEPTH	m	7.30
SAMPLE DIAMETER	mm	85.92
SAMPLE HEIGHT	mm	194.79
TEST CONDITION		As Received
RATE OF LOADING	kN/s	0.7
TEST DURATION	min.sec	7.55
DATE OF TESTING		08/12/2017
LOAD FRAME USED		2000kN
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		Unknown
FAILURE LOAD	kN	313.6
UNCONFINED COMPRESSIVE STRENGTH	MPa	54.1
WATER CONTENT (ISRM Suggested Methods)	%	0.4
BULK DENSITY (ISRM Suggested Methods)	Mg/m ³	2.67
DRY DENSITY (ISRM Suggested Methods)	Mg/m ³	2.66



BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNCONFINED COMPRESSIVE STRENGTH	MPa	
WATER CONTENT (ISRM Suggested Methods)	%	
BULK DENSITY (ISRM Suggested Methods)	Mg/m ³	
DRY DENSITY (ISRM Suggested Methods)	Mg/m ³	



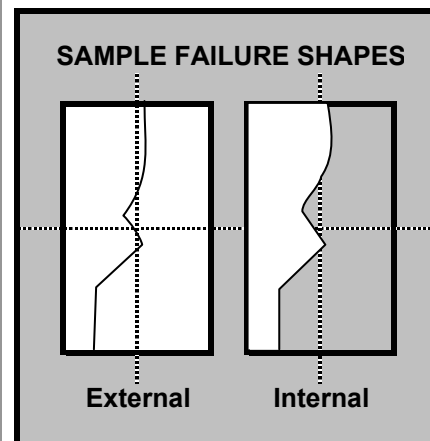
BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNCONFINED COMPRESSIVE STRENGTH	MPa	
WATER CONTENT (ISRM Suggested Methods)	%	
BULK DENSITY (ISRM Suggested Methods)	Mg/m ³	
DRY DENSITY (ISRM Suggested Methods)	Mg/m ³	



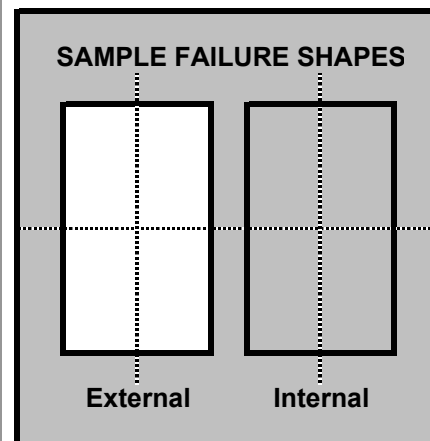
Tested in accordance with ASTM D7012 - 14

SUMMARY OF UNCONFINED COMPRESSIVE STRENGTH

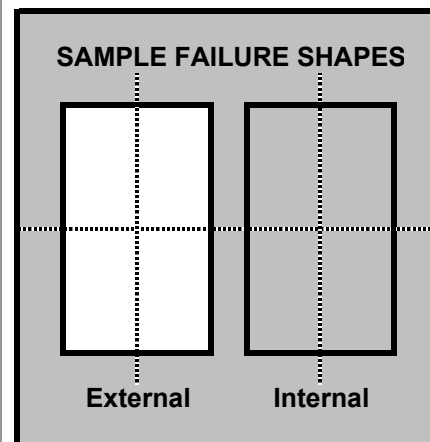
BOREHOLE		BH05
SAMPLE		C
DEPTH	m	2.00
SAMPLE DIAMETER	mm	86.87
SAMPLE HEIGHT	mm	194.53
TEST CONDITION		As Received
RATE OF LOADING	kN/s	0.6
TEST DURATION	min.sec	14.50
DATE OF TESTING		08/12/2017
LOAD FRAME USED		2000kN
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		Unknown
FAILURE LOAD	kN	556.9
UNCONFINED COMPRESSIVE STRENGTH	MPa	94.0
WATER CONTENT (ISRM Suggested Methods)	%	0.5
BULK DENSITY (ISRM Suggested Methods)	Mg/m ³	2.67
DRY DENSITY (ISRM Suggested Methods)	Mg/m ³	2.66



BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNCONFINED COMPRESSIVE STRENGTH	MPa	
WATER CONTENT (ISRM Suggested Methods)	%	
BULK DENSITY (ISRM Suggested Methods)	Mg/m ³	
DRY DENSITY (ISRM Suggested Methods)	Mg/m ³	



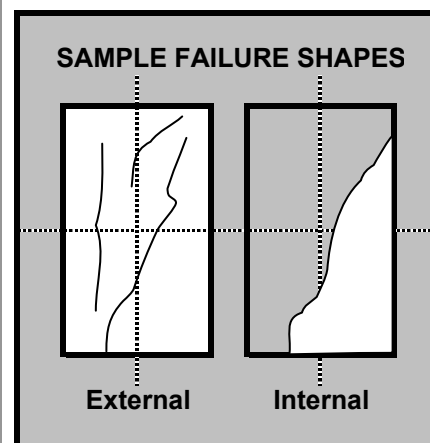
BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNCONFINED COMPRESSIVE STRENGTH	MPa	
WATER CONTENT (ISRM Suggested Methods)	%	
BULK DENSITY (ISRM Suggested Methods)	Mg/m ³	
DRY DENSITY (ISRM Suggested Methods)	Mg/m ³	



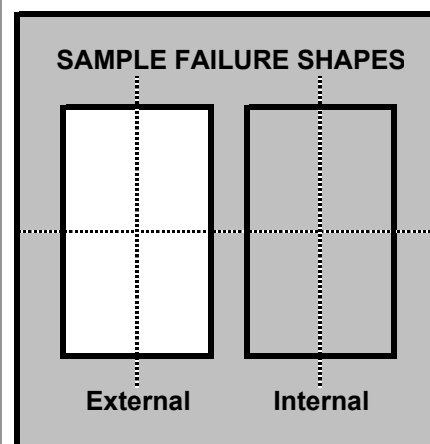
Tested in accordance with ASTM D7012 - 14

SUMMARY OF UNCONFINED COMPRESSIVE STRENGTH

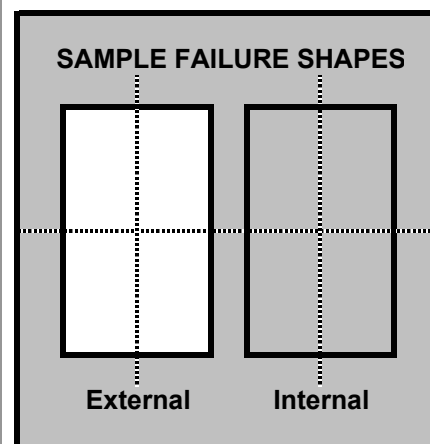
BOREHOLE		BH12
SAMPLE		C
DEPTH	m	8.57
SAMPLE DIAMETER	mm	86.81
SAMPLE HEIGHT	mm	191.62
TEST CONDITION		As Received
RATE OF LOADING	kN/s	0.4
TEST DURATION	min.sec	14.49
DATE OF TESTING		08/12/2017
LOAD FRAME USED		2000kN
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		Unknown
FAILURE LOAD	kN	390.3
UNCONFINED COMPRESSIVE STRENGTH	MPa	66.0
WATER CONTENT (ISRM Suggested Methods)	%	0.3
BULK DENSITY (ISRM Suggested Methods)	Mg/m ³	2.65
DRY DENSITY (ISRM Suggested Methods)	Mg/m ³	2.64



BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNCONFINED COMPRESSIVE STRENGTH	MPa	
WATER CONTENT (ISRM Suggested Methods)	%	
BULK DENSITY (ISRM Suggested Methods)	Mg/m ³	
DRY DENSITY (ISRM Suggested Methods)	Mg/m ³	



BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNCONFINED COMPRESSIVE STRENGTH	MPa	
WATER CONTENT (ISRM Suggested Methods)	%	
BULK DENSITY (ISRM Suggested Methods)	Mg/m ³	
DRY DENSITY (ISRM Suggested Methods)	Mg/m ³	



Tested in accordance with ASTM D7012 - 14

SUMMARY OF UNCONFINED COMPRESSIVE STRENGTH

NOTE: N/M - Not measured
NOTE: A dash (-) signifies that scale did not register a reading

Mean Is(50) - Axial tests	7.59
Mean Is(50) - Diametrical tests	4.33
Ia(50)	1.75

SUMMARY OF POINT LOAD TEST RESULTS

BOREHOLE	SAMPLE	DEPTH (m)	MOISTURE CONTENT (%)	TYPE OF TEST * (see below)	CORE DIAMETER (mm)	EQUIVALENT DIAMETER (mm)	PLATEN SEPARATION (mm)	FAILURE LOAD (kN)	Is (MPa)	Is(50) (MPa)
BH02	C	3.21	As Received	D	87.71	87.71	87.71	20.92	2.72	3.50
				A	87.71	68.93	42.55	12.20	2.57	2.97
				A	87.71	64.99	37.82	12.47	2.95	3.32
	C	6.30	As Received	D	87.81	87.81	87.81	2.03	0.26	0.34
				A	87.81	83.06	61.71	0.18	0.03	0.03
				A	87.81	80.85	58.47	2.14	0.33	0.41

NOTE: N/M - Not measured

NOTE: A dash (-) signifies that scale
did not register a reading

* I = IRREGULAR TEST
D = DIAMETRAL TEST
A = AXIAL TEST

Mean Is(50) - Axial tests	1.68
Mean Is(50) - Diametrical tests	1.92
la(50)	0.88

Tested in accordance with ISRM Standard, "Suggested Method for determining Point Load Strength"

SUMMARY OF POINT LOAD TEST RESULTS

BOREHOLE	SAMPLE	DEPTH (m)	MOISTURE CONTENT (%)	TYPE OF TEST * (see below)	CORE DIAMETER (mm)	EQUIVALENT DIAMETER (mm)	PLATEN SEPARATION (mm)	FAILURE LOAD (kN)	Is (MPa)	Is(50) (MPa)
BH03	C	7.00	As Received	D	86.91	86.91	86.91	9.87	1.31	1.68
				A	86.91	69.81	44.04	6.42	1.32	1.53
				A	86.91	77.42	54.16	6.54	1.09	1.33
	C	8.50	As Received	D	86.17	86.17	86.17	1.00	0.13	0.17
				A	86.17	74.36	50.40	8.00	1.45	1.73
				A	86.17	73.96	49.85	7.98	1.46	1.74

NOTE: N/M - Not measured

NOTE: A dash (-) signifies that scale
did not register a reading

* I = IRREGULAR TEST
D = DIAMETRAL TEST
A = AXIAL TEST

Mean Is(50) - Axial tests	1.58
Mean Is(50) - Diametrical tests	0.92
la(50)	1.71

Tested in accordance with ISRM Standard, "Suggested Method for determining Point Load Strength"

SUMMARY OF POINT LOAD TEST RESULTS

BOREHOLE	SAMPLE	DEPTH (m)	MOISTURE CONTENT (%)	TYPE OF TEST * (see below)	CORE DIAMETER (mm)	EQUIVALENT DIAMETER (mm)	PLATEN SEPARATION (mm)	FAILURE LOAD (kN)	Is (MPa)	Is(50) (MPa)
BH04	C	4.68	As Received	D	86.81	86.81	86.81	2.04	0.27	0.35
				A	86.81	66.92	40.52	9.00	2.01	2.29
				A	86.81	77.04	53.70	10.94	1.84	2.24
	C	5.72	As Received	A	89.78	44.98	17.70	0.55	0.27	0.26
				A	89.78	48.64	20.70	0.72	0.30	0.30
				I	51.52	31.93	15.54	0.38	0.37	0.30
	C	6.36	As Received	D	86.84	86.84	86.84	0.08	0.01	0.01
				A	86.84	66.21	39.65	13.26	3.02	3.43
				A	86.84	59.02	31.50	12.10	3.47	3.74

NOTE: N/M - Not measured

NOTE: A dash (-) signifies that scale
did not register a reading

* I = IRREGULAR TEST
D = DIAMETRAL TEST
A = AXIAL TEST

Mean Is(50) - Axial tests	2.04
Mean Is(50) - Diametrical tests	0.18
la(50)	11.34

Tested in accordance with ISRM Standard, "Suggested Method for determining Point Load Strength"

SUMMARY OF POINT LOAD TEST RESULTS

NOTE: N/M - Not measured
NOTE: A dash (-) signifies that scale did not register a reading

Mean Is(50) - Axial tests	0.21
Mean Is(50) - Diametrical tests	0.26
Ia(50)	0.83

SUMMARY OF POINT LOAD TEST RESULTS

BOREHOLE	SAMPLE	DEPTH (m)	MOISTURE CONTENT (%)	TYPE OF TEST * (see below)	CORE DIAMETER (mm)	EQUIVALENT DIAMETER (mm)	PLATEN SEPARATION (mm)	FAILURE LOAD (kN)	Is (MPa)	Is(50) (MPa)
BH07	C	2.30	As Received	D	86.58	86.58	86.58	0.49	0.07	0.08
				A	86.58	61.62	34.44	0.49	0.13	0.14
				A	86.58	64.11	37.28	1.34	0.33	0.36
	C	4.00	As Received	D	86.76	86.76	86.76	1.92	0.26	0.33
				A	86.76	73.86	49.38	3.81	0.70	0.83
				A	86.76	80.83	59.14	2.19	0.34	0.42

NOTE: N/M - Not measured

NOTE: A dash (-) signifies that scale
did not register a reading

* I = IRREGULAR TEST
D = DIAMETRICAL TEST
A = AXIAL TEST

Mean Is(50) - Axial tests	0.44
Mean Is(50) - Diametrical tests	0.21
la(50)	2.14

Tested in accordance with ISRM Standard, "Suggested Method for determining Point Load Strength"

SUMMARY OF POINT LOAD TEST RESULTS

NOTE: N/M - Not measured
NOTE: A dash (-) signifies that scale did not register a reading

Mean Is(50) - Axial tests	3.71
Mean Is(50) - Diametrical tests	2.32
Ia(50)	1.60

SUMMARY OF POINT LOAD TEST RESULTS

BOREHOLE	SAMPLE	DEPTH (m)	MOISTURE CONTENT (%)	TYPE OF TEST * (see below)	CORE DIAMETER (mm)	EQUIVALENT DIAMETER (mm)	PLATEN SEPARATION (mm)	FAILURE LOAD (kN)	Is (MPa)	Is(50) (MPa)
BH09	C	3.10	As Received	D	87.30	87.30	87.30	5.34	0.70	0.90
				A	87.30	52.14	24.46	5.81	2.14	2.18
				A	87.30	63.35	36.11	8.51	2.12	2.36
	C	4.20	As Received	D	86.89	86.89	86.89	2.39	0.32	0.41
				A	86.89	73.05	48.23	21.88	4.10	4.86
				A	86.89	75.93	52.11	23.01	3.99	4.82
	C	5.29	As Received	D	86.89	86.89	86.89	10.21	1.35	1.73
				A	86.89	83.90	63.62	5.64	0.80	1.01
				A	86.89	81.21	59.61	14.54	2.20	2.74
	C	7.34	As Received	D	86.73	86.73	86.73	10.23	1.36	1.74
				A	86.73	71.11	45.79	13.00	2.57	3.01
				A	86.73	92.74	77.89	12.94	1.50	1.99

NOTE: N/M - Not measured

NOTE: A dash (-) signifies that scale
did not register a reading

* I = IRREGULAR TEST
D = DIAMETRICAL TEST
A = AXIAL TEST

Mean Is(50) - Axial tests	2.87
Mean Is(50) - Diametrical tests	1.20
la(50)	2.40

Tested in accordance with ISRM Standard, "Suggested Method for determining Point Load Strength"

SUMMARY OF POINT LOAD TEST RESULTS

NOTE: N/M - Not measured
NOTE: A dash (-) signifies that scale did not register a reading

Mean Is(50) - Axial tests	1.01
Mean Is(50) - Diametrical tests	1.46
Ia(50)	0.69

SUMMARY OF POINT LOAD TEST RESULTS

NOTE: N/M - Not measured
NOTE: A dash (-) signifies that scale did not register a reading

Mean Is(50) - Axial tests	0.87
Mean Is(50) - Diametrical tests	0.96
Ia(50)	0.91

SUMMARY OF POINT LOAD TEST RESULTS

BOREHOLE	SAMPLE	DEPTH (m)	MOISTURE CONTENT (%)	TYPE OF TEST * (see below)	CORE DIAMETER (mm)	EQUIVALENT DIAMETER (mm)	PLATEN SEPARATION (mm)	FAILURE LOAD (kN)	Is (MPa)	Is(50) (MPa)
BH12	C	7.43	As Received	D	86.95	86.95	86.95	7.01	0.93	1.19
				A	86.95	77.68	54.51	14.59	2.42	2.95
				A	86.95	58.67	31.09	8.07	2.34	2.52
	C	9.38	As Received	D	87.16	87.16	87.16	8.82	1.16	1.49
				A	87.16	68.72	42.55	15.13	3.20	3.70
				A	87.16	73.46	48.62	13.52	2.51	2.98

NOTE: N/M - Not measured

NOTE: A dash (-) signifies that scale
did not register a reading

* I = IRREGULAR TEST
D = DIAMETRAL TEST
A = AXIAL TEST

Mean Is(50) - Axial tests	3.04
Mean Is(50) - Diametrical tests	1.34
la(50)	2.27

Tested in accordance with ISRM Standard, "Suggested Method for determining Point Load Strength"

SUMMARY OF POINT LOAD TEST RESULTS

NOTE: N/M - Not measured
NOTE: A dash (-) signifies that scale did not register a reading

Mean Is(50) - Axial tests	4.36
Mean Is(50) - Diametrical tests	3.51
Ia(50)	1.24

SUMMARY OF POINT LOAD TEST RESULTS

NOTE: N/M - Not measured
NOTE: A dash (-) signifies that scale did not register a reading

Mean Is(50) - Axial tests	0.29
Mean Is(50) - Diametrical tests	0.16
Ia(50)	1.87

SUMMARY OF POINT LOAD TEST RESULTS

NOTE: N/M - Not measured
NOTE: A dash (-) signifies that scale did not register a reading

Mean Is(50) - Axial tests	4.45
Mean Is(50) - Diametrical tests	1.63
Ia(50)	2.72

SUMMARY OF POINT LOAD TEST RESULTS

BOREHOLE	SAMPLE	DEPTH (m)	MOISTURE CONTENT (%)	TYPE OF TEST * (see below)	CORE DIAMETER (mm)	EQUIVALENT DIAMETER (mm)	PLATEN SEPARATION (mm)	FAILURE LOAD (kN)	Is (MPa)	Is(50) (MPa)
BH18	C	0.70	As Received	D	87.01	87.01	87.01	3.03	0.40	0.51
				A	87.01	78.19	55.18	16.39	2.68	3.28
				A	87.01	68.80	42.73	12.11	2.56	2.95
	C	2.80	As Received	D	86.86	86.86	86.86	2.42	0.32	0.41
				A	86.86	77.29	54.01	9.05	1.52	1.84
				A	86.86	60.24	32.81	9.87	2.72	2.96
	C	3.70	As Received	D	87.06	87.06	87.06	18.69	2.47	3.16
				A	87.06	78.59	55.72	12.37	2.00	2.45
				A	87.06	57.77	30.11	10.12	3.03	3.24

NOTE: N/M - Not measured
NOTE: A dash (-) signifies that scale did not register a reading

* I = IRREGULAR TEST
D = DIAMETRICAL TEST
A = AXIAL TEST

Mean Is(50) - Axial tests	2.79
Mean Is(50) - Diametrical tests	1.36
la(50)	2.04

Tested in accordance with ISRM Standard, "Suggested Method for determining Point Load Strength"

SUMMARY OF POINT LOAD TEST RESULTS

NOTE: N/M - Not measured
NOTE: A dash (-) signifies that scale did not register a reading

Mean Is(50) - Axial tests	0.14
Mean Is(50) - Diametrical tests	0.11
la(50)	1.24

SUMMARY OF POINT LOAD TEST RESULTS

BOREHOLE	SAMPLE	DEPTH (m)	MOISTURE CONTENT (%)	TYPE OF TEST * (see below)	CORE DIAMETER (mm)	EQUIVALENT DIAMETER (mm)	PLATEN SEPARATION (mm)	FAILURE LOAD (kN)	Is (MPa)	Is(50) (MPa)
BH20	C	1.16	As Received	D	87.35	87.35	87.35	0.72	0.09	0.12
				A	87.35	45.76	18.83	0.98	0.47	0.45
				A	87.35	46.69	19.60	1.30	0.60	0.58
	C	1.38	As Received	D	91.63	91.63	91.63	4.95	0.59	0.77
				A	91.63	65.10	36.32	15.35	3.62	4.08
				A	91.63	43.84	16.47	2.90	1.51	1.42
	C	2.24	As Received	D	87.75	87.75	87.75	2.68	0.35	0.45
				A	87.75	56.88	28.96	10.05	3.11	3.29
				A	87.75	64.47	37.20	14.53	3.50	3.92

NOTE: N/M - Not measured

NOTE: A dash (-) signifies that scale
did not register a reading

* I = IRREGULAR TEST
D = DIAMETRAL TEST
A = AXIAL TEST

Mean Is(50) - Axial tests	2.29
Mean Is(50) - Diametrical tests	0.45
la(50)	5.11

Tested in accordance with ISRM Standard, "Suggested Method for determining Point Load Strength"

SUMMARY OF POINT LOAD TEST RESULTS

NOTE: N/M - Not measured
NOTE: A dash (-) signifies that scale did not register a reading

Mean Is(50) - Axial tests	0.74
Mean Is(50) - Diametrical tests	0.56
Ia(50)	1.33

SUMMARY OF POINT LOAD TEST RESULTS

NOTE: N/M - Not measured
NOTE: A dash (-) signifies that scale did not register a reading

Mean Is(50) - Axial tests	4.35
Mean Is(50) - Diametrical tests	1.32
Ia(50)	3.29

SUMMARY OF POINT LOAD TEST RESULTS

BOREHOLE	SAMPLE	DEPTH (m)	MOISTURE CONTENT (%)	TYPE OF TEST * (see below)	CORE DIAMETER (mm)	EQUIVALENT DIAMETER (mm)	PLATEN SEPARATION (mm)	FAILURE LOAD (kN)	Is (MPa)	Is(50) (MPa)
BH24	C	4.30	As Received	D	86.86	86.86	86.86	20.06	2.66	3.41
				A	86.86	63.54	36.51	13.16	3.26	3.63
				A	86.86	64.98	38.18	16.92	4.01	4.51
	C	5.00	As Received	D	87.25	87.25	87.25	11.98	1.57	2.02
				A	87.25	67.22	40.67	6.37	1.41	1.61
				A	87.25	63.10	35.84	9.77	2.45	2.72

NOTE: N/M - Not measured

NOTE: A dash (-) signifies that scale
did not register a reading

* I = IRREGULAR TEST
D = DIAMETRICAL TEST
A = AXIAL TEST

Mean Is(50) - Axial tests	3.12
Mean Is(50) - Diametrical tests	2.72
la(50)	1.15

Tested in accordance with ISRM Standard, "Suggested Method for determining Point Load Strength"

SUMMARY OF POINT LOAD TEST RESULTS

LABORATORY TEST CERTIFICATE

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032
Fax: 0141 774 3552

email: info@mattest.org
Website: www.mattest.org

Certificate No : 18/012 - 01
To : Stephan Schiano
Client : **Geotechnics Limited**
The Geotechnical Centre
203 Torrington Avenue
Tile Hill
Coventry
CV4 9UT

Dear Sirs,

LABORATORY TESTING OF ROCK

Introduction

We refer to a sample taken from Coed Darcy and delivered to our laboratory on 09th January 2018.

Material & Source

Sample Reference : See Report Plates
Sampled By : Client
Sampling Certificate : Not Supplied
Location : See Report Plates
Description : Rock cores
Date Sampled : Not Supplied
Date Tested : 09th January 2018 Onwards
Source : PC176880 - Coed Darcy

Test Results;

As Detailed On Page 2

Comments;

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

Remarks;

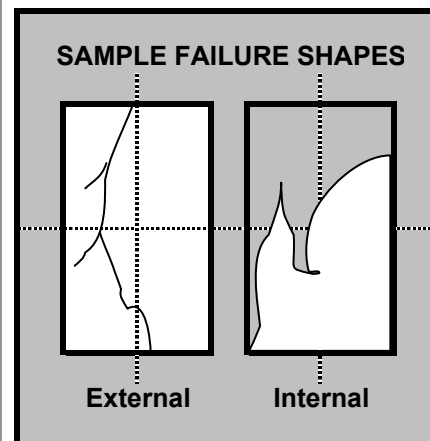
Approved for Issue

T McLelland (Director)

Date 11/01/2018

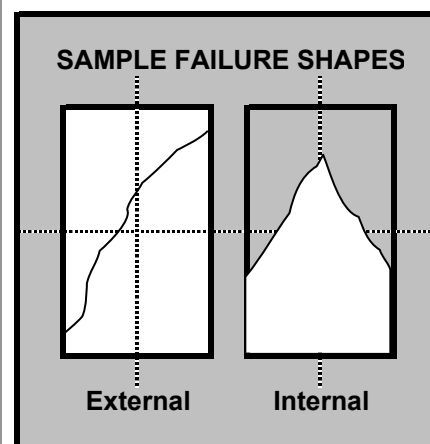


BOREHOLE		BH01
SAMPLE		C
DEPTH	m	9.00-9.36
SAMPLE DIAMETER	mm	86.12
SAMPLE HEIGHT	mm	141.19
TEST CONDITION		As Received
RATE OF LOADING	kN/s	0.7
TEST DURATION	min.sec	9.15
DATE OF TESTING		10/01/2018
LOAD FRAME USED		2000kN
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		Parallel
FAILURE LOAD	kN	362.4
UNIAXIAL COMPRESSIVE STRENGTH	MPa	62.2
WATER CONTENT	%	0.7
BULK DENSITY	Mg/m ³	2.59
DRY DENSITY	Mg/m ³	2.58



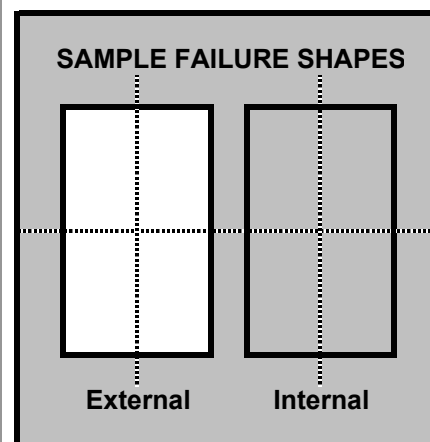
Test specimen does not meet specified length / diameter ratio requirements

BOREHOLE		BH01
SAMPLE		C
DEPTH	m	12.47-12.80
SAMPLE DIAMETER	mm	85.53
SAMPLE HEIGHT	mm	193.46
TEST CONDITION		As Received
RATE OF LOADING	kN/s	0.7
TEST DURATION	min.sec	12.07
DATE OF TESTING		10/01/2018
LOAD FRAME USED		2000kN
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		Parallel
FAILURE LOAD	kN	496.6
UNIAXIAL COMPRESSIVE STRENGTH	MPa	86.4
WATER CONTENT	%	0.9
BULK DENSITY	Mg/m ³	2.66
DRY DENSITY	Mg/m ³	2.64



Test specimen does not meet specified length / diameter ratio requirements

BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNIAXIAL COMPRESSIVE STRENGTH	MPa	
WATER CONTENT	%	
BULK DENSITY	Mg/m ³	
DRY DENSITY	Mg/m ³	



Tested in accordance with ISRM Suggested Methods

SUMMARY OF UNIAXIAL COMPRESSIVE STRENGTH

APPENDIX 9

ESG Geophysical Report October 2017



EUROPEAN GEOPHYSICAL SERVICES

REPORT OF THE
GEOPHYSICAL LOGGING
OF
TWO BOREHOLES
AT
COE ARC

prepared For



The Geotechnical Centre
Unit 1B Borders Industrial Park, River Lane,
Saltney, Chester CH4 8RJ

OCT ICS rpt SS

	Name	Date
Logged by:	Rhys Powell	19.10.17
Report by:	Rhys Powell	26.10.17
Checked by:	James Whitford	01.11.17

European Geophysical Services Ltd

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CO N T E N T S

I N T R O D U C T I O N

T E C H N I C A L L O C A T I O N

S I T E D E T A I L S

P R O C E S S I N G A N D R E S U L T S O F I N T E R P R E T A T I O N

B O R E H O L E L O C A T I O N C O N S T R A I N T S

L I S T O F F I G U R E S

Figure 3.1	Location map showing site location highlighted by red circle
Figure 3.2	Aerial image showing site location and approximate borehole positions
Appendix 1	Defect Classification
Appendix 2	Geophysical Logs

INTRODUCTION

At the request of Geotechnics Ltd., borehole imaging and geophysical logging was carried out in two boreholes located at Coed Darcy, Neath, South Wales.

The work was carried out by European Geophysical Services on the 19th of October 2017.

The following logs were run:-

B	Logs	From m	To m
B	Optical Imager	13.9	24.9
	Acoustic Imager	13.9	24.9
	Natural Gamma	1.4	25.0
	Caliper	0.9	24.3

B	Logs	From m	To m
B	Optical Imager	5.6	11.0
	Acoustic Imager	5.6	10.9
	Natural Gamma	2.0	11.0
	Caliper	1.3	10.4

T E E O S I C A L L O I E T O S

The Equipment and Field Procedure

A fully digital logging system with a 600m capacity motorised winch mounted in a 4x4 van was used.

All logging data was recorded digitally for reprocessing and archiving purposes.

The optical imager survey was carried out first to avoid the disturbance of the fluid by the geophysical logs which may affect water clarity.

Optical Borehole Imager Optical

A precision-machined prism and CCD camera assembly permits a high definition video image of the borehole wall to be captured in a variety of horizontal and vertical resolutions. The resulting image is digitised in the sonde for transmission to the surface acquisition system.

The image is then orientated to Magnetic North and displayed as an unwrapped image log. This enables a detailed structural interpretation to be made if required.

For the best results the optical imager should be run above the water level or in clean, clear fluid. The logging tool is centralised during data acquisition by two sets of bow springs. The bow springs are adjusted to a variety of borehole diameters prior to acquisition. The image is recorded on the way down the borehole to limit disturbance to the clarity of the water in the borehole by the logging tool.

Images and associated data are viewed in real time during the data acquisition.

The orientation system employs a flux gate magnetometer and therefore the recorded data within approximately one metre of magnetic steel casing is un-orientated. This is corrected manually during the post-processing stage

T E E O S I C A L L O I E T O S

Acoustic Borehole Imager Amplitude and Travel Time

This tool scans the borehole wall through 360 degrees and records the acoustic reflection of the resulting signal in terms of amplitude and transit time (the travel time from the tool to the borehole wall). This technique requires a fluid filled borehole with a minimum of suspended solids, polymers or muds within the fluid column.

This sensitive technique responds to small diameter changes, rugosity and the acoustic nature of the borehole wall. It is primarily used for detecting fractures and other discontinuities. The resultant images are orientated (to magnetic North) 0° through 90°, 180° and 270° back to 0°.

The logging tool is centralised during data acquisition by two sets of bow springs. The bow springs are adjusted to a variety of borehole diameters prior to acquisition. The image is viewed on the way down the borehole to allow fine tuning of the acquisition parameters. The settings are then adjusted and the image recorded on the way up the borehole which ensures a constant line speed during acquisition.

Images and associated data are viewed in real time during the data acquisition.

The orientation system employs a flux gate magnetometer and therefore the recorded data within approximately one metre of magnetic steel casing is un-orientated. This is corrected manually during the post-processing stage

T E E O S I C A L L O I E T O S

Caliper Cal

This tool measures the mean diameter of the borehole. It is used to check the integrity of the borehole lining, and where the borehole is unlined to identify zones of washout, breakout or fissures.

atural amma am

The tool measures the naturally occurring gamma radiation found in rocks and sediments. It is mainly used to detect the clays that contain potassium K^{40} , though the U^{238} series of elements and the Th^{232} series of elements also emit gamma radiation.

The higher the concentration of these clay minerals the greater the responses on the natural gamma log.

SITE DETAILS

Site
Coed Darcy

OS Grid Ref SS 715 959

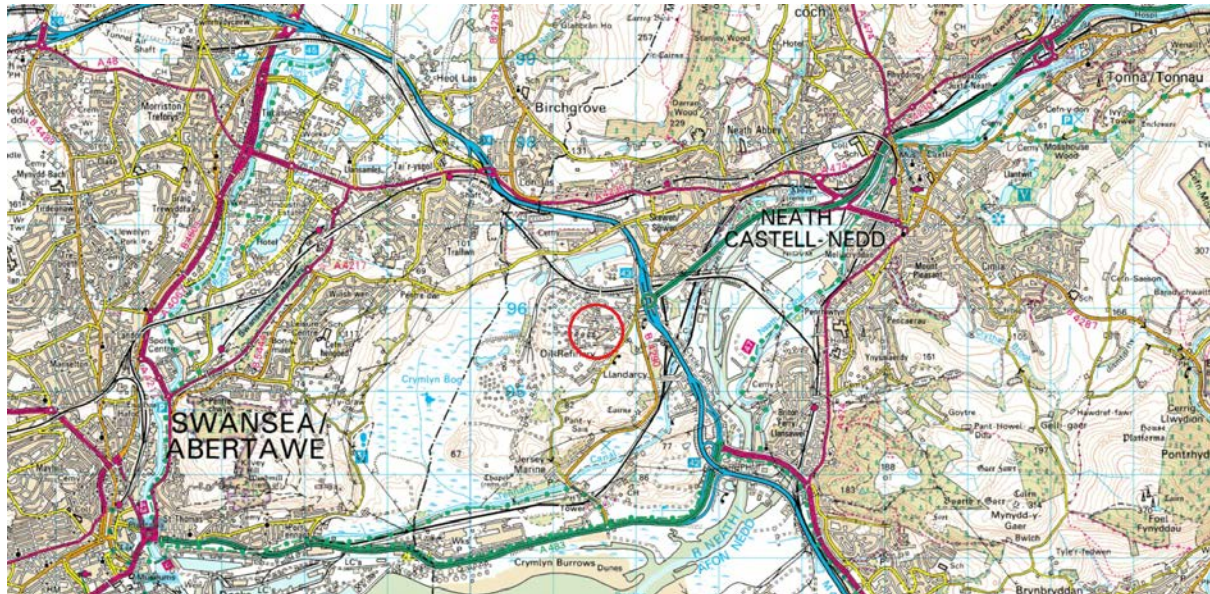


Figure Location map showing site location highlighted by red circle.
© Crown copyright 2005 OS100057099



Figure Aerial image showing approximate area of investigation. © Google 2017.

PROCESSING AND RESULTS

Detailed logs of the imager data have been produced at a vertical scale of 1:10. Composite logs comprising the geophysical data have been presented at 1:50,

Constructional details and information on each borehole are given in the headers of each log.

All images have been referenced to Magnetic North.

The borehole's azimuth and tilt are plotted alongside the images.

The image of the borehole wall is presented in an unwrapped form with a horizontal scale marked 0° - North, through 90° - East, 180° - South, 270° - West, back to North.

Structural features and discontinuities have been picked from the images in the form of colour coded sinusoidal projections - see Appendix 1 for details. This 'Discontinuities' log is also presented with a horizontal scale marked 0° - North, through 90° - East, 180° - South, 270° - West, back to North.

Structure picking is not a definitive analysis of all the features within a borehole. Only the discontinuities that have a linear dip and direction are 'picked' and used in the analysis of the discontinuities. Features that do not have a regular sinusoidal shape do not have a linear dip and direction, 'best fit' picking of these features is done if approximately 80% coverage of the sinusoid can be achieved. Below this percentage the inaccuracy of the picking is too great and if included in any structural analysis may adversely skew the results. Vugs, solution holes, and angular break outs are examples of features not picked.

The apparent azimuth and apparent dip (i.e. relative to the borehole's azimuth and tilt) of the discontinuities are calculated using the diameter of the borehole and the geometric parameters of the sinusoids overlaid on the discontinuities. The final processing stage is to correct these apparent values to true azimuth (in relation to Magnetic North) and true dip (from horizontal) by correcting for the borehole's azimuth and tilt.

The final results are presented as a 'tadpole' plot (Discontinuities - True°). The horizontal position of the tadpole's head gives the defect's true dip angle and its tail points in the direction of the defect's azimuth. These logs are presented with a horizontal scale in degrees. By convention the top of the page is North (Magnetic) and the right hand edge of the paper is East.

The true structural data has been presented in digital format as an excel file (xls).

BORE HOLE LOG I CO STRAITS

- **Vehicle access restrictions**
None
 - **Tool access restrictions**
None
 - **Borehole conditions ris to equipment**
Good stable boreholes, casing to rock head. Boreholes contaminated – hydrocarbons.
 - **Lack of fluid filled column cloudy fluid**
Optical and Acoustic Image run in both boreholes.
 - **Time constraint**
None
 - **Borehole construction casing**
Steel casing to rockhead.
-

Appendi

iscontinuity Classification

iscontinuity	Colour	Classification arameters
Major Fracture or Fissure	Blue	An open break in the formation, that is <u>continuous</u> across the entire image.
Minor Fracture or Fissure	Turquoise	A thin or closed break in the formation, that is <u>continuous or discontinuous</u> across the image.
Vein	Green	That may be <u>continuous or discontinuous</u> across the entire image.
Fabric	Red	Defines a feature generally metamorphic, igneous or sedimentary in origin that may be <u>continuous or discontinuous</u> across the image, such as bedding and cross-bedding, schistosity or gneissosity.
Intrusions	Purple	Intrusive features such as dykes and sills, generally <u>continuous</u> across the image
Unknown	Black	Faint features which can not be classified.

Appendi eophysical Logs



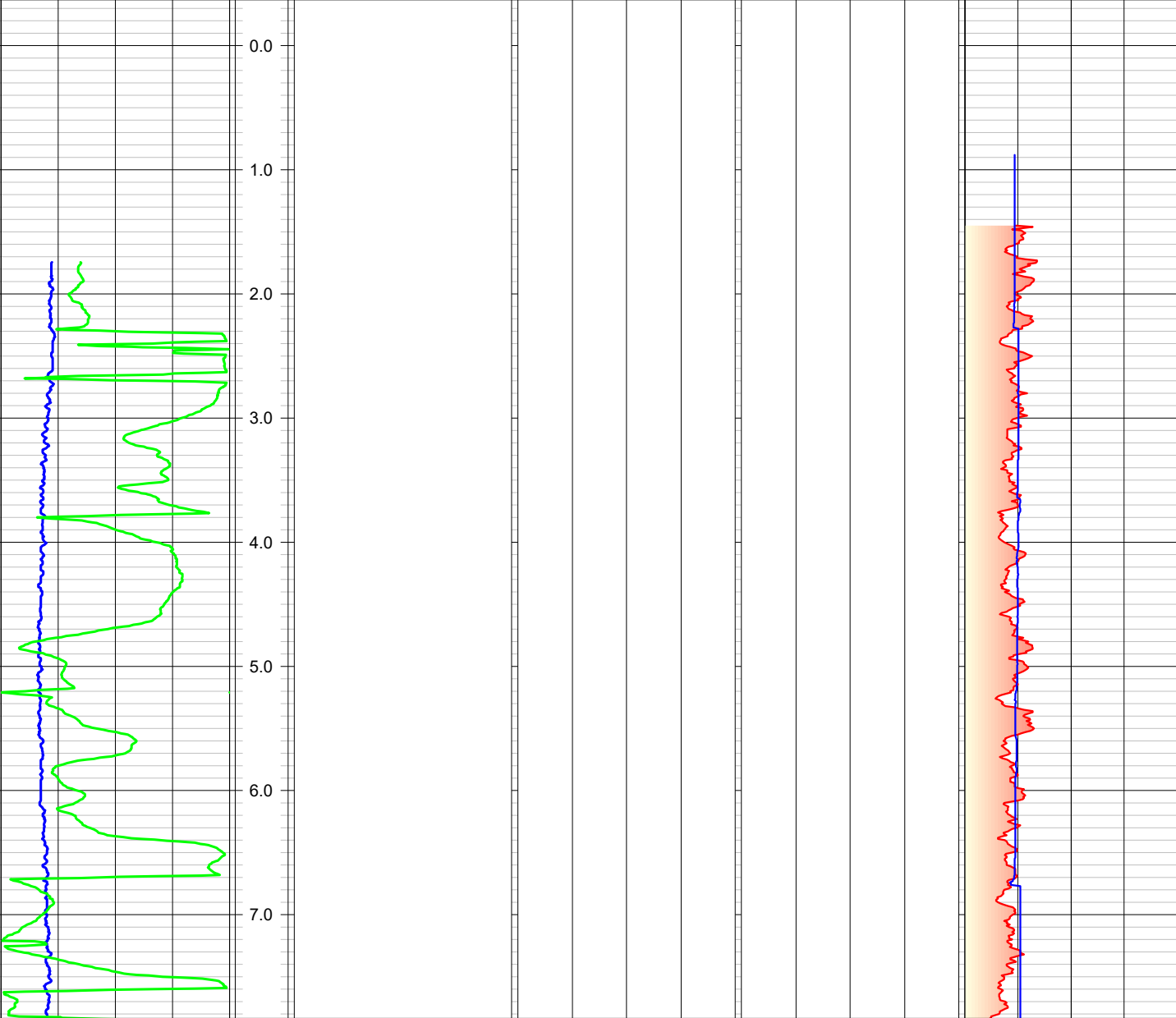
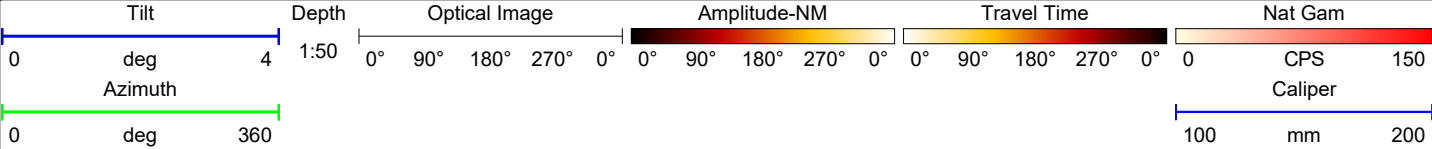
EUROPEAN GEOPHYSICAL SERVICES LTD

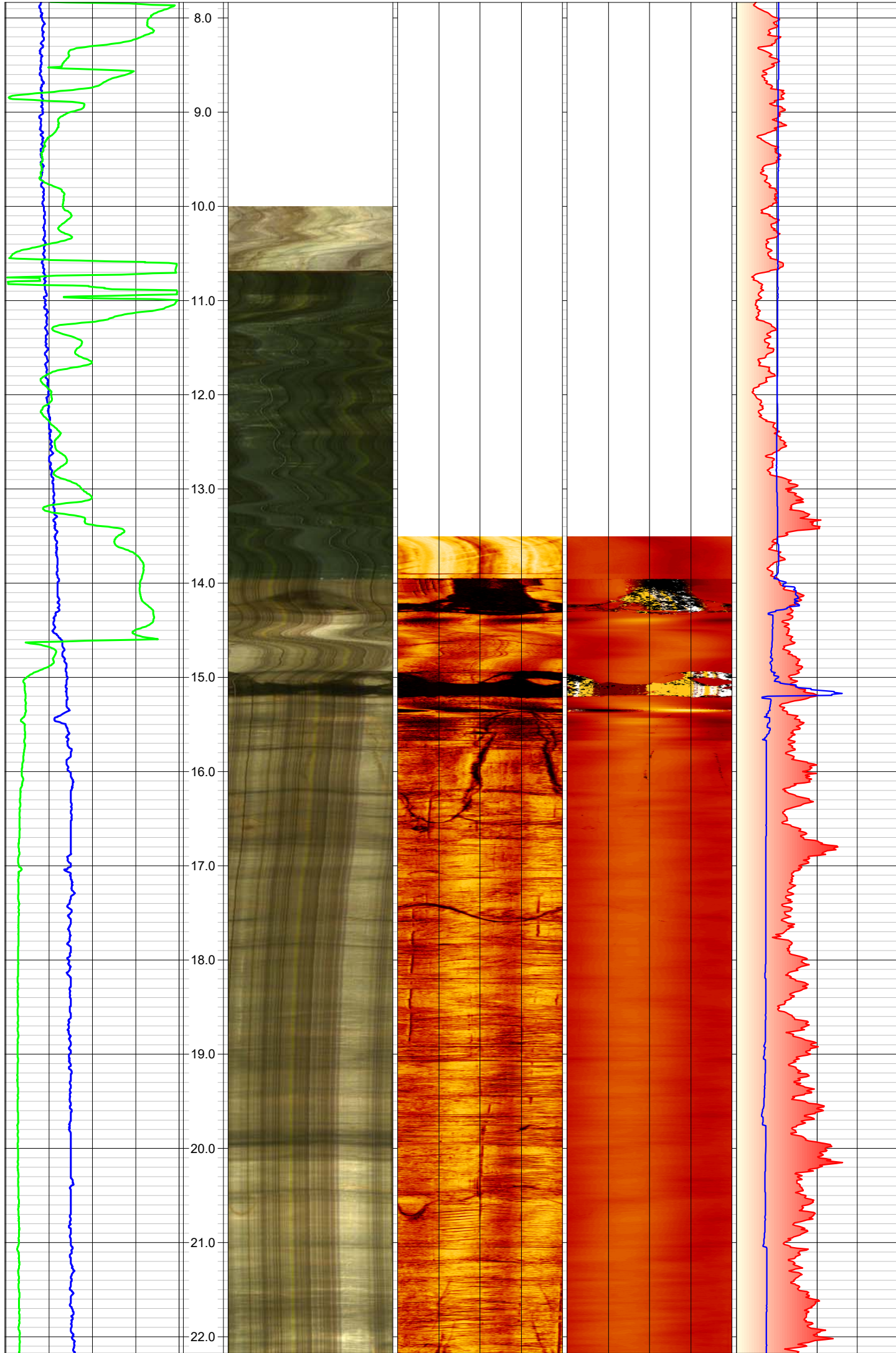
Client:	Geotechnics	Log Type: Composite
Borehole:	BH08	

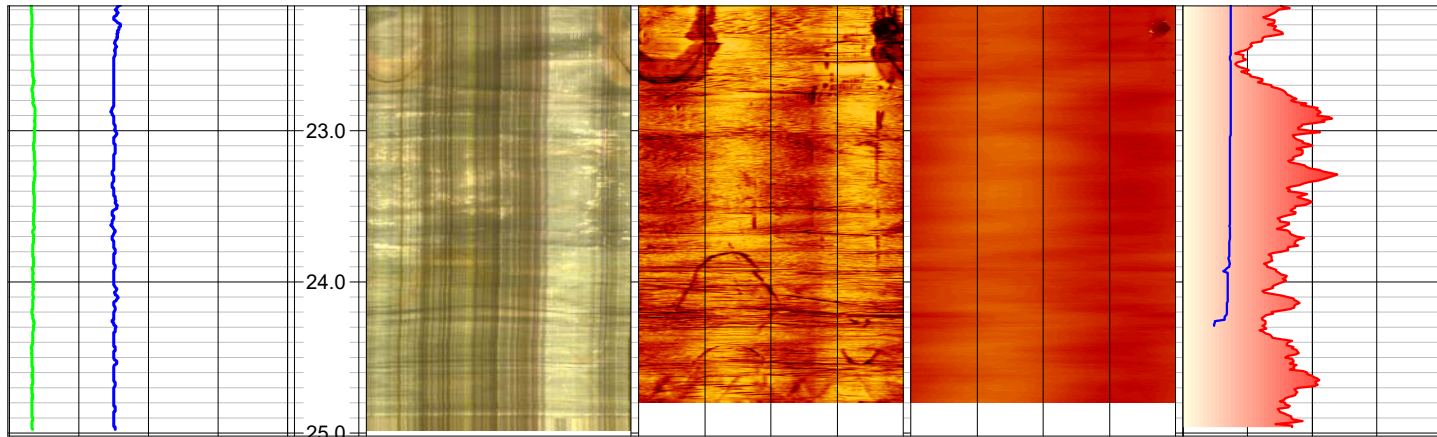
Location: **Coed Darcy** Area: **South Wales** Grid Ref: Elevation:

Drilled Depth: (m)	25.2	Date:	19.10.17
Logged Depth: (m)	25.0	Recorded By:	R. Powell
Logging Datum:	Ground Level	Remarks: Ref:	
Logged Interval: (m)	0.5 - 25.0		
Fluid Level: (m)	10.7		

BOREHOLE RECORD			CASING RECORD			
Bit: (mm)	From: (m)	To: (m)	Type	Size: (mm)	From: (m)	To: (m)
116	14.0	25.2	Steel	125	0.0	14.0









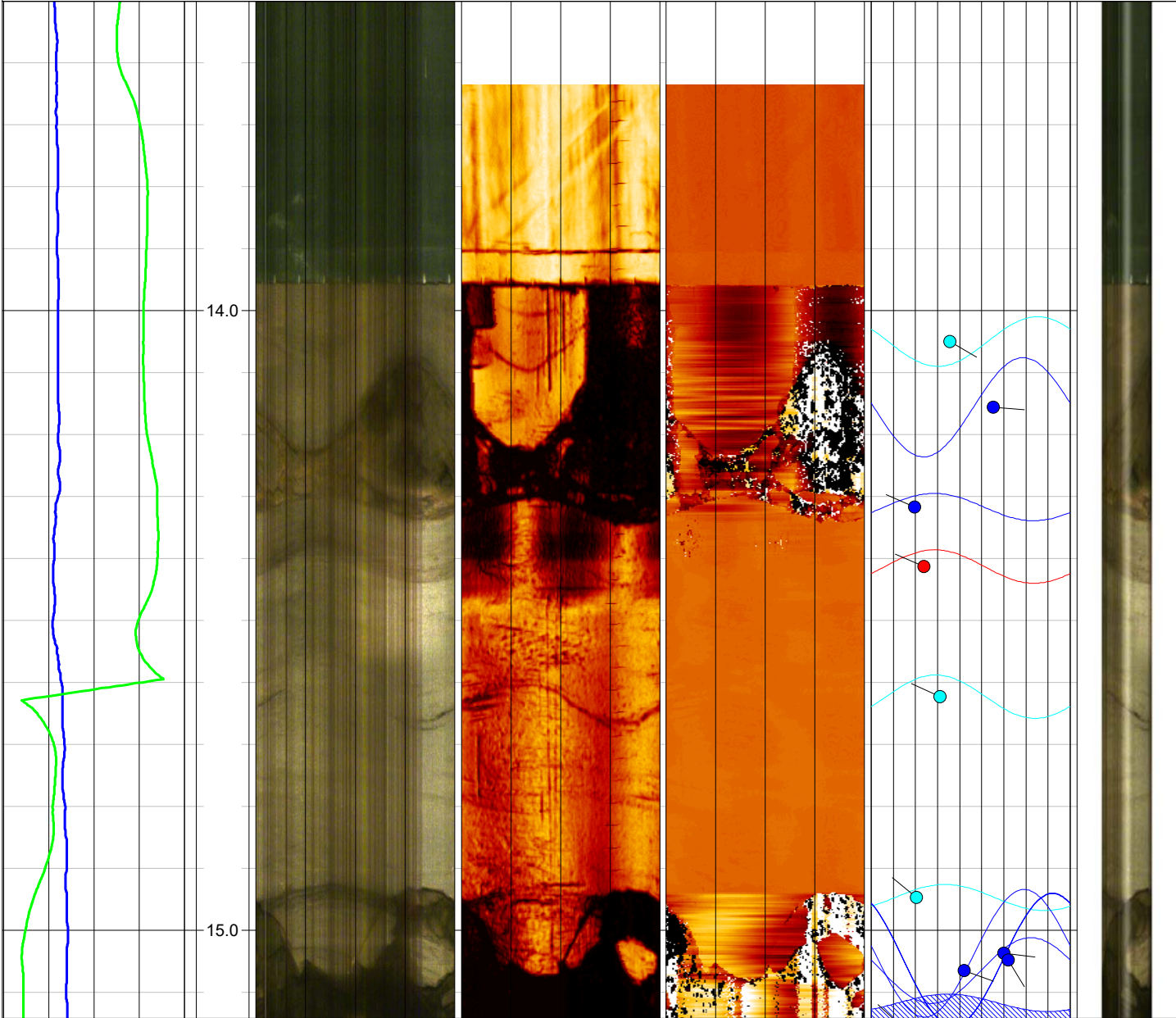
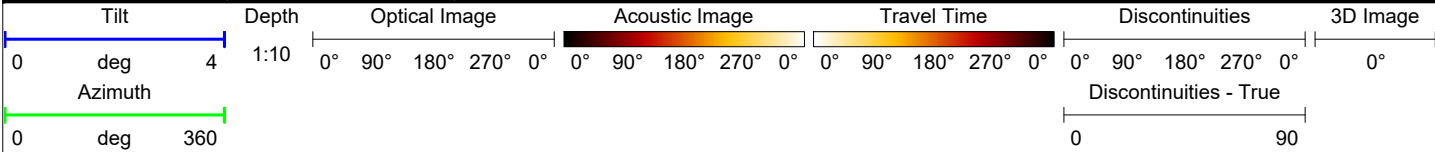
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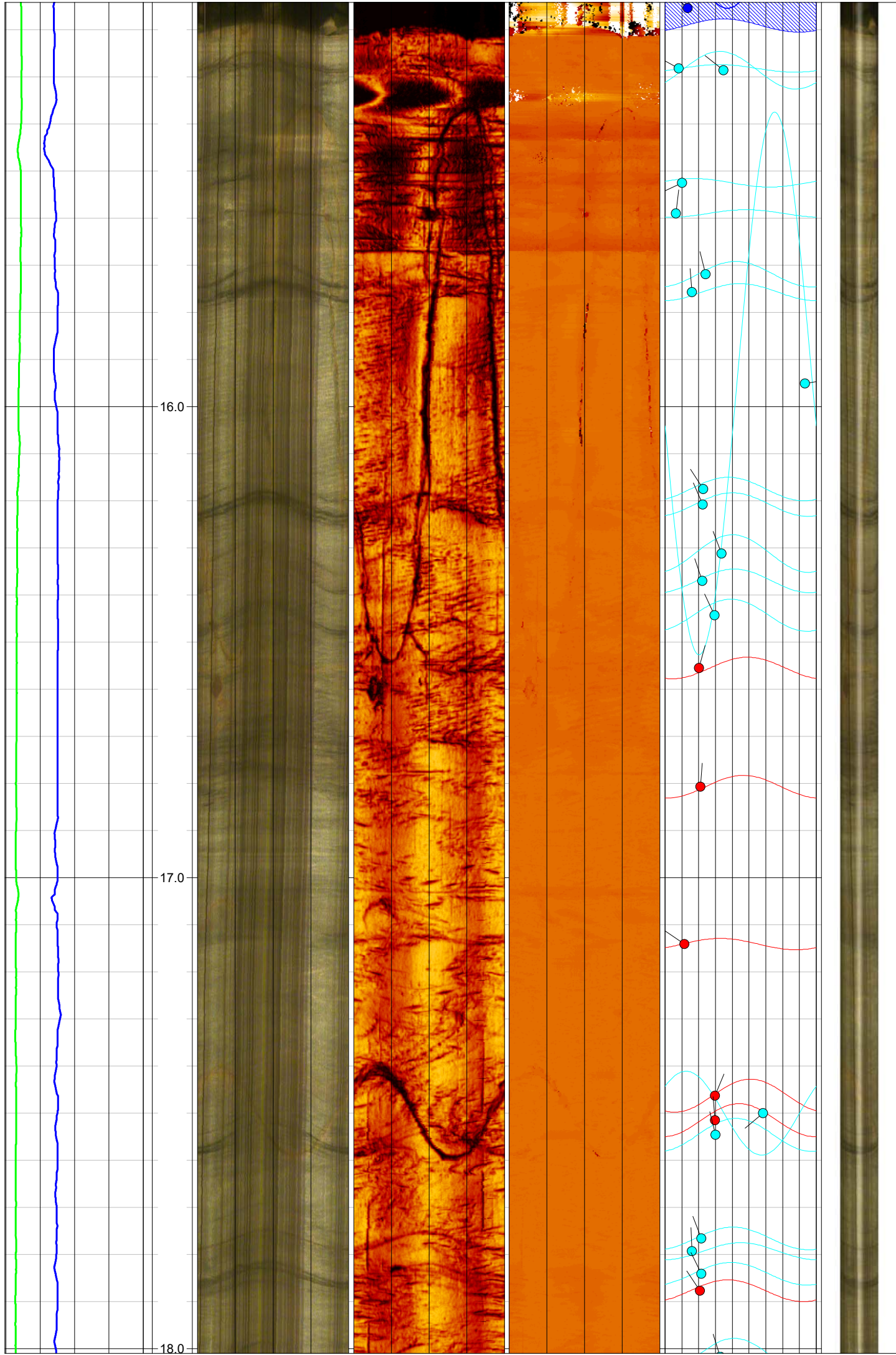
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Borehole:	BH08	

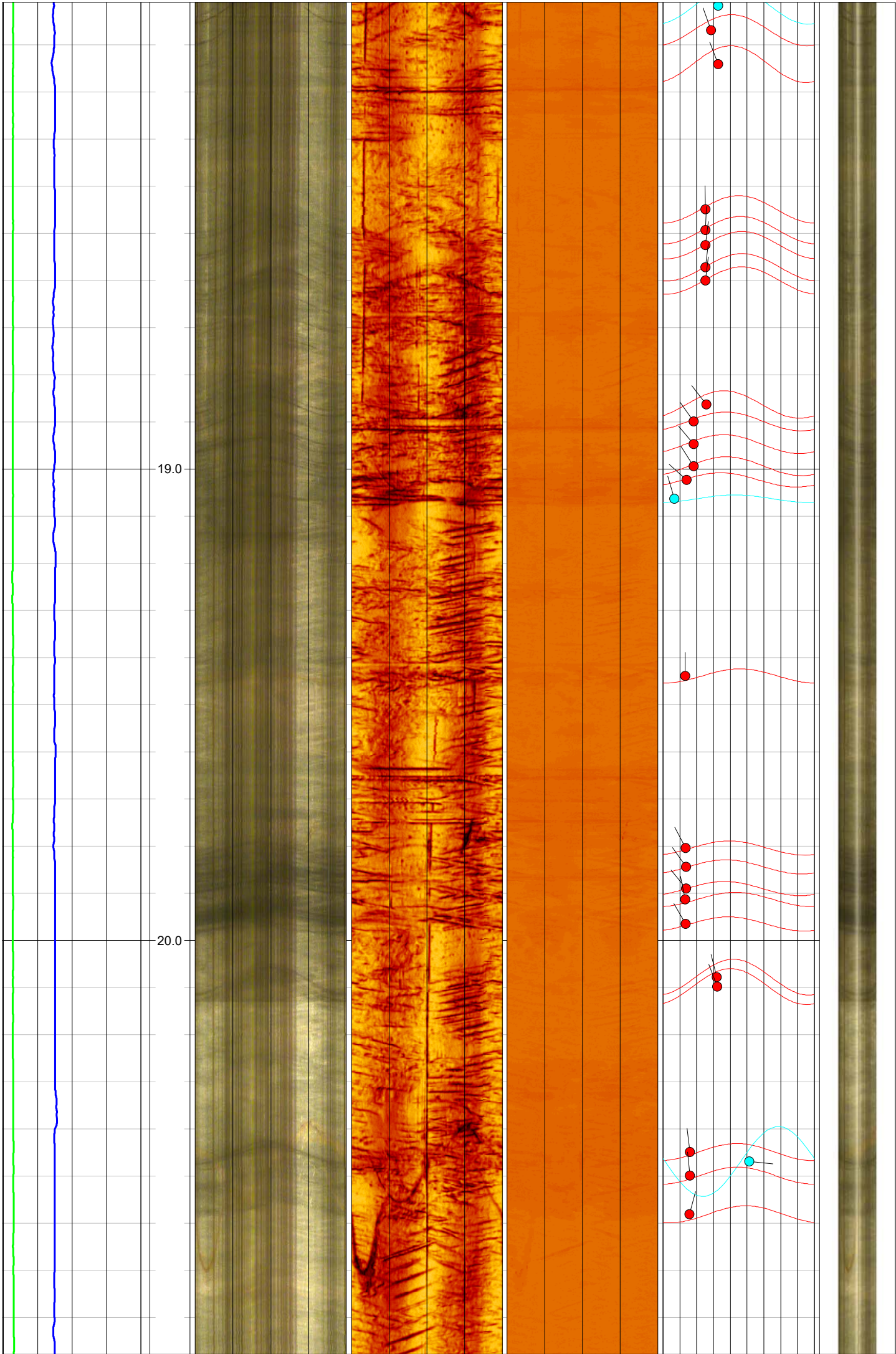
Location: Coed Darcy	Area: South Wales	Grid Ref:	Elevation:
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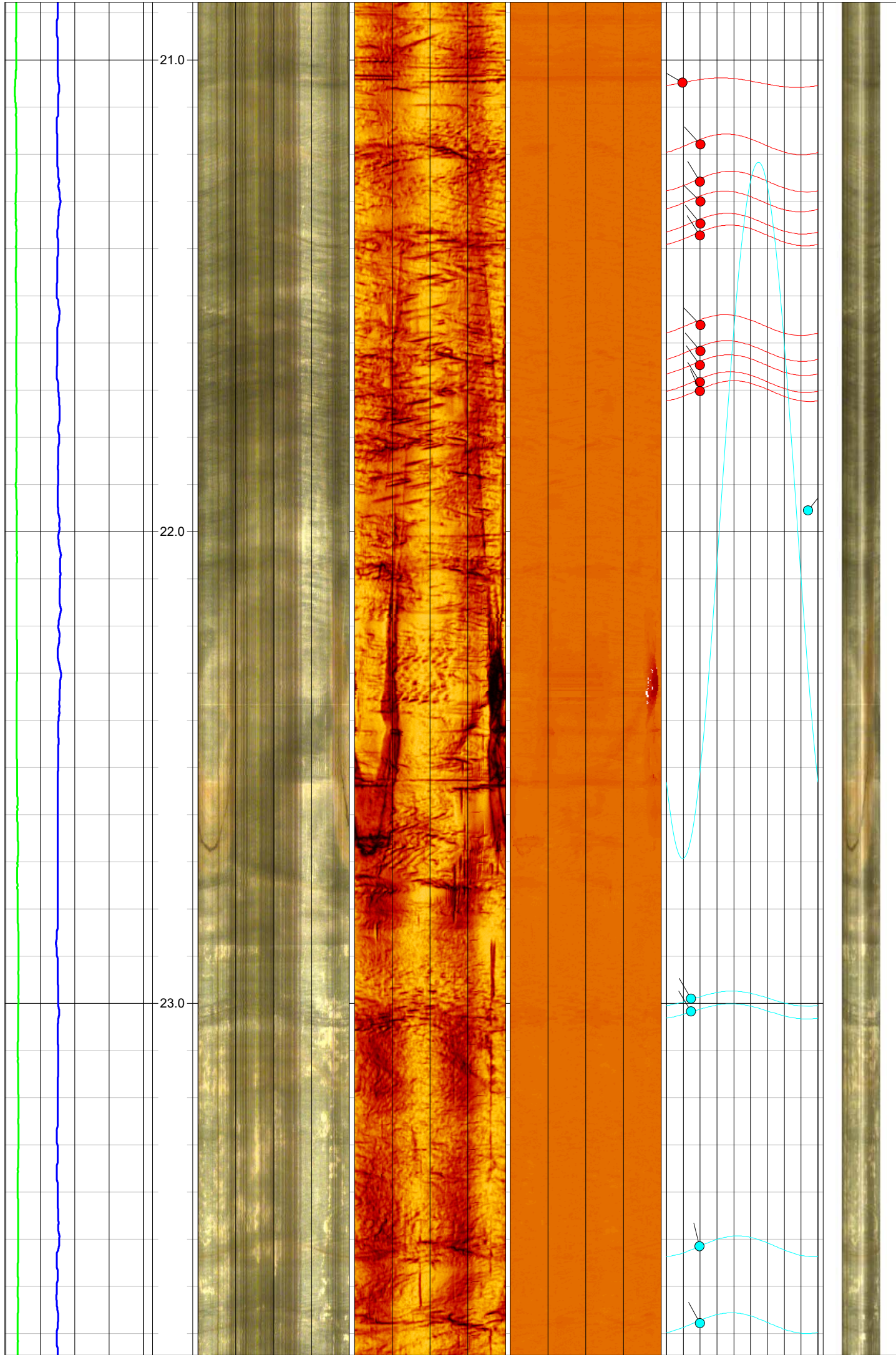
Drilled Depth: (m)	25.2	Date:	19.10.17
Logged Depth: (m)	25.0	Recorded By:	R. Powell
Logging Datum:	Ground Level	Remarks:	
Logged Interval: (m)	0.5 - 25.0		
Fluid Level: (m)	10.7		
		Ref:	

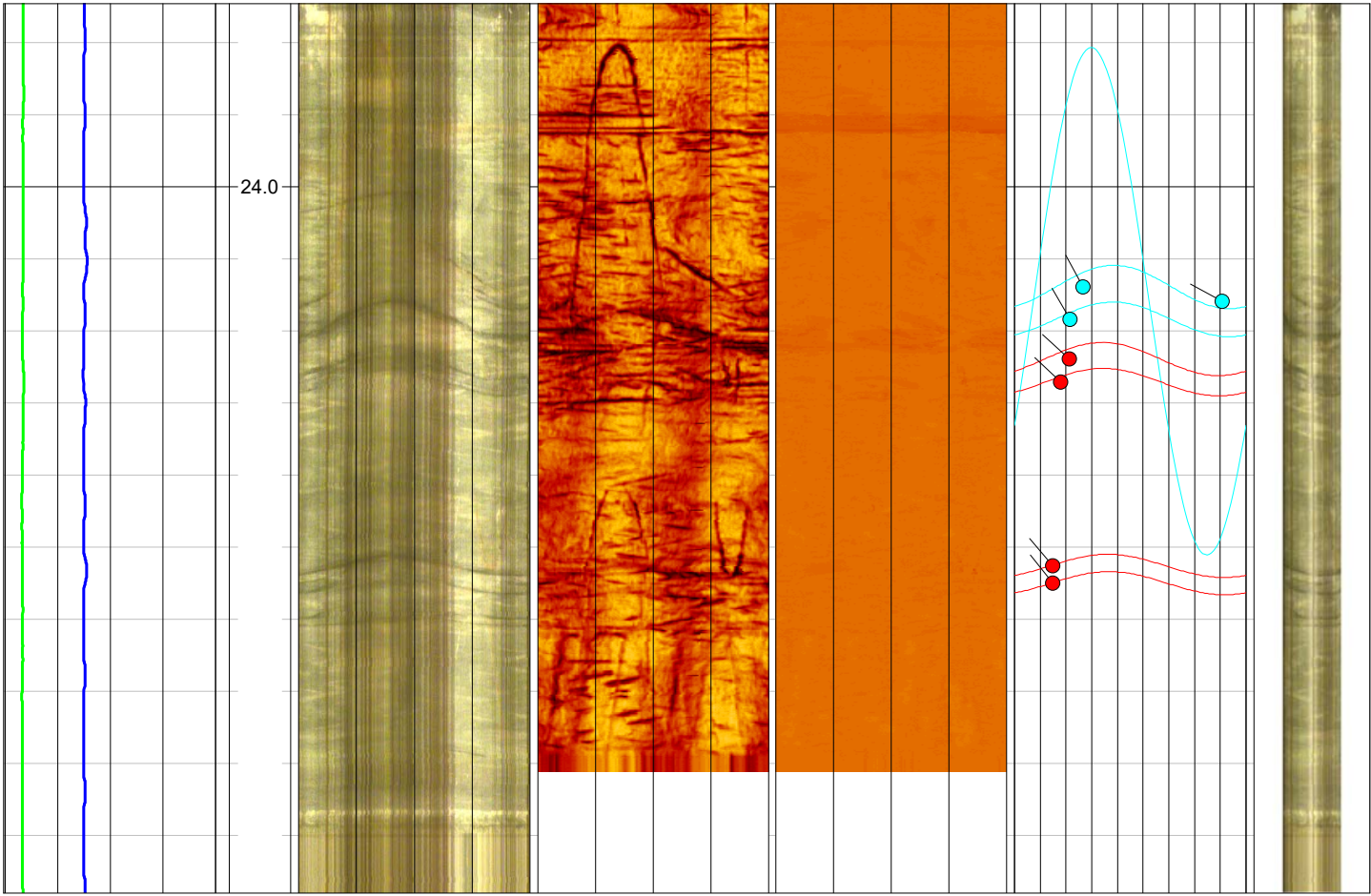
BOREHOLE RECORD			CASING RECORD			
Bit: (mm)	From: (m)	To: (m)	Type	Size: (mm)	From: (m)	To: (m)
116	14.0	25.2	Steel	125	0.0	14.0













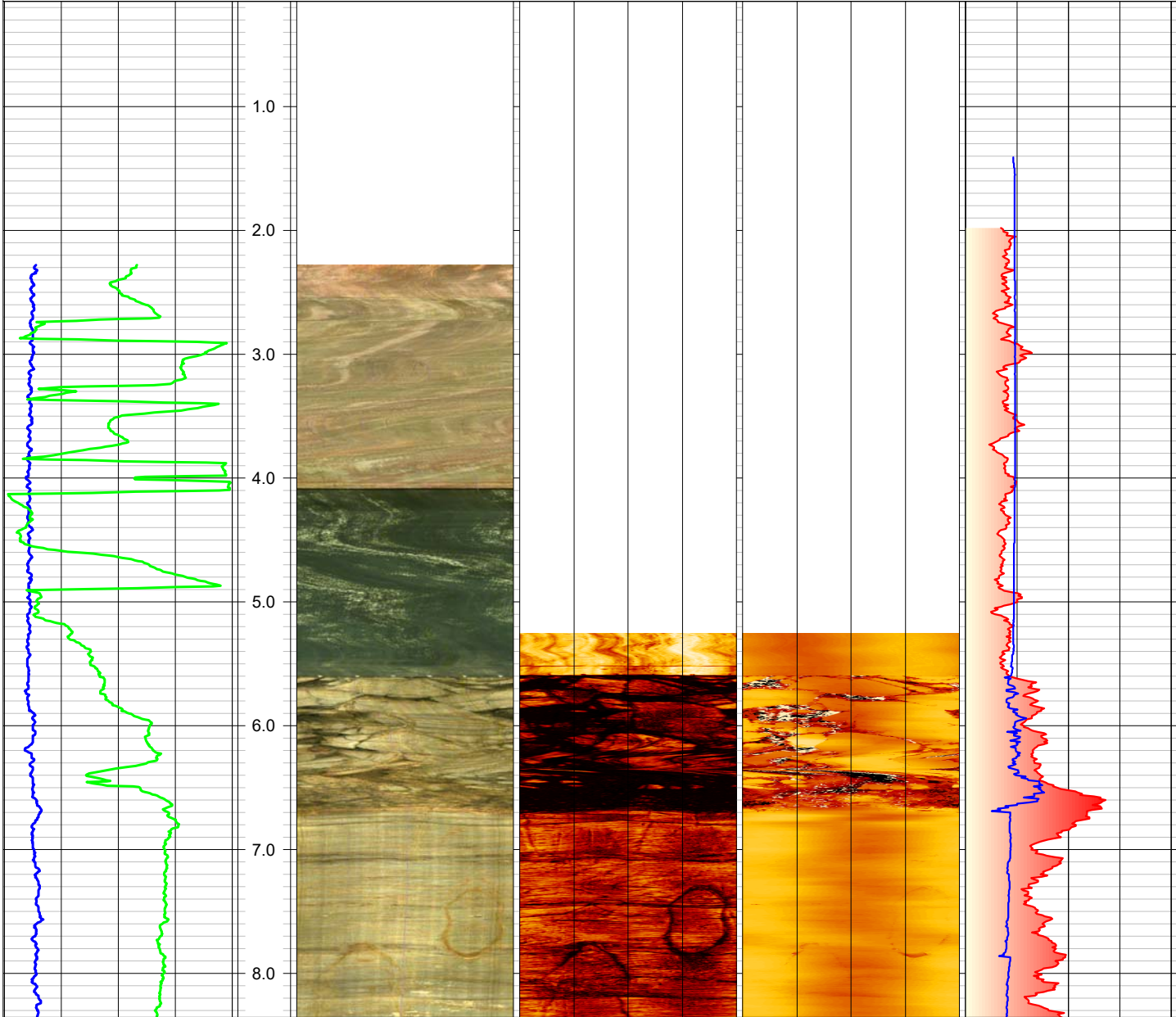
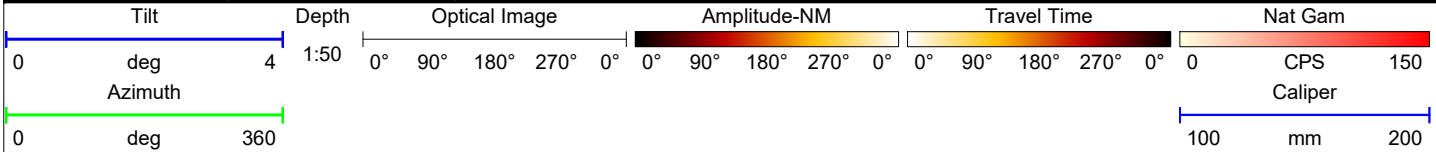
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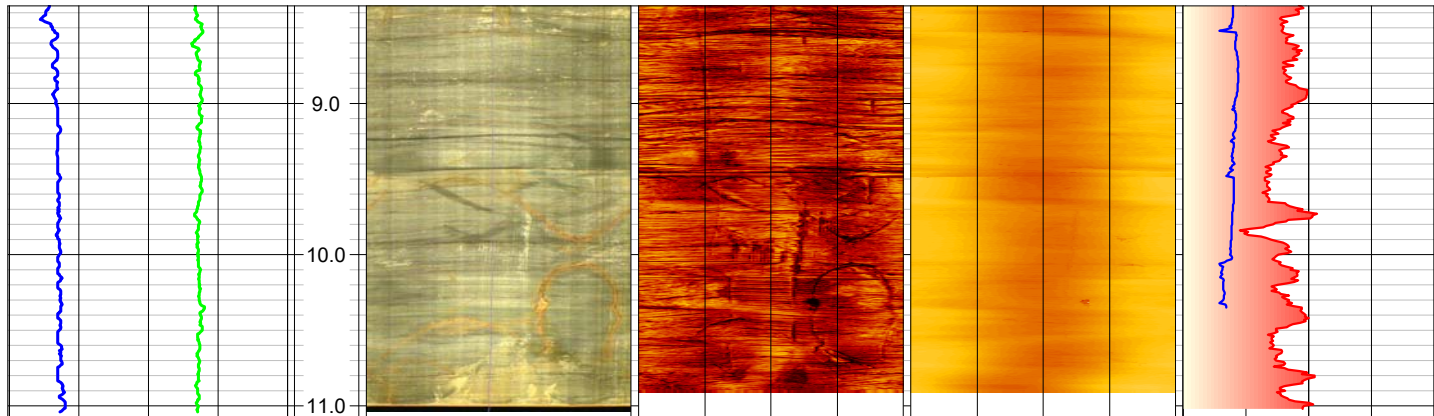
Client:	Geotechnics	Log Type: Composite
Borehole:	BH15	

Location: Coed Darcy	Area: South Wales	Grid Ref:	Elevation:
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Drilled Depth: (m)	11.0	Date:	19.10.17
Logged Depth: (m)	11.0	Recorded By:	R. Powell
Logging Datum:	Ground Level	Remarks:	
Logged Interval: (m)	1.0 - 11.0		
Fluid Level: (m)	4.1		
		Ref:	

BOREHOLE RECORD			CASING RECORD			
Bit: (mm)	From: (m)	To: (m)	Type	Size: (mm)	From: (m)	To: (m)
116	5.6	11.0	Steel	125	0.0	5.6







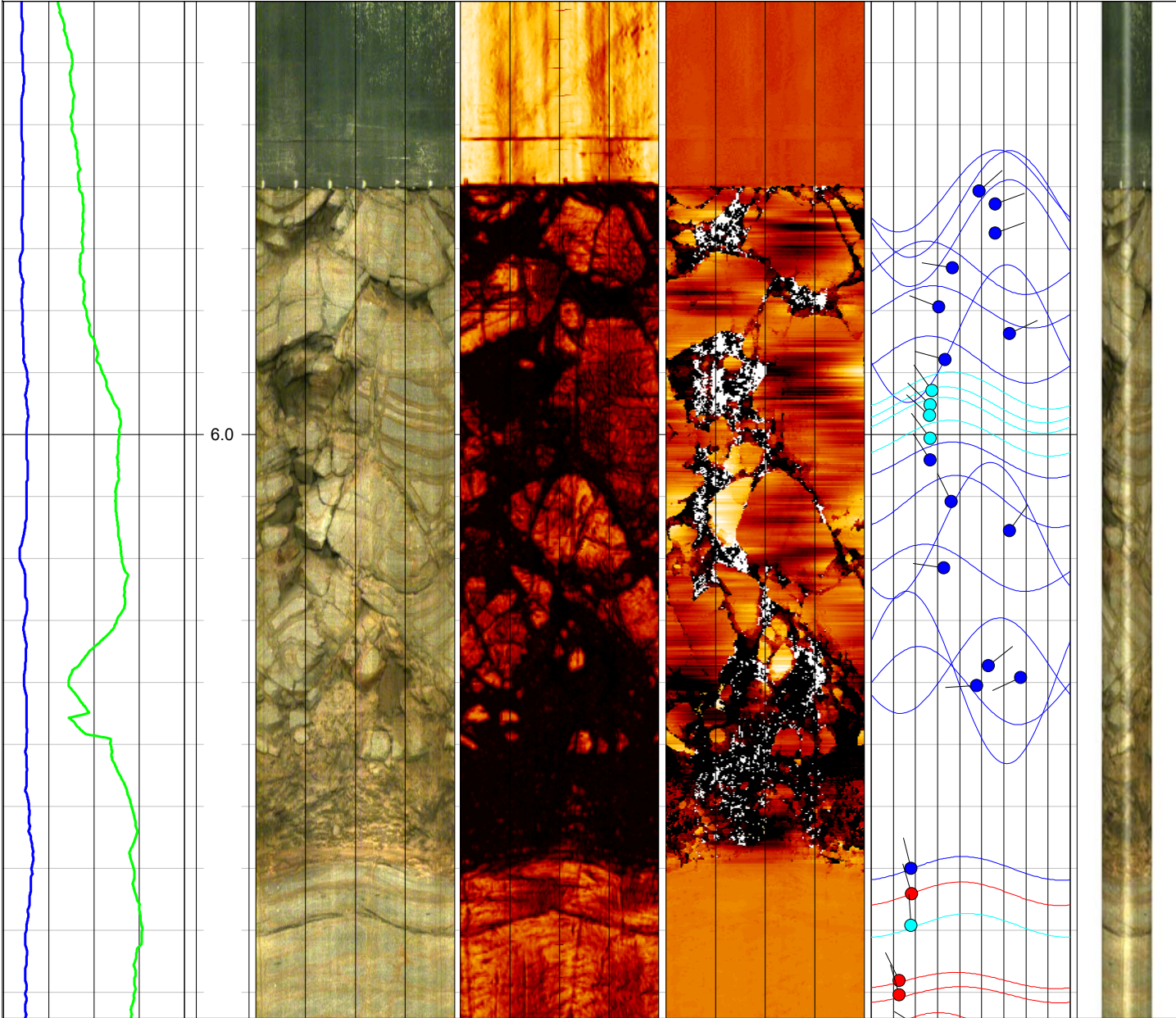
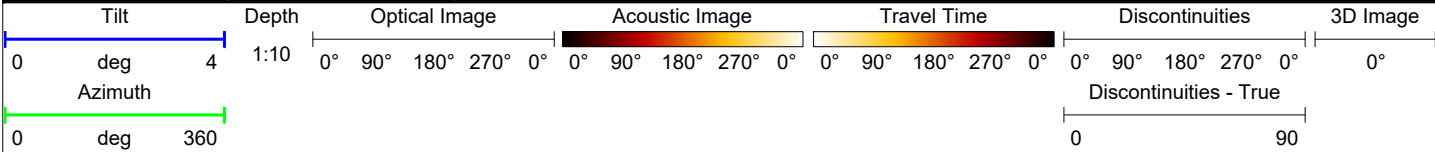
EUROPEAN GEOPHYSICAL SERVICES LTD

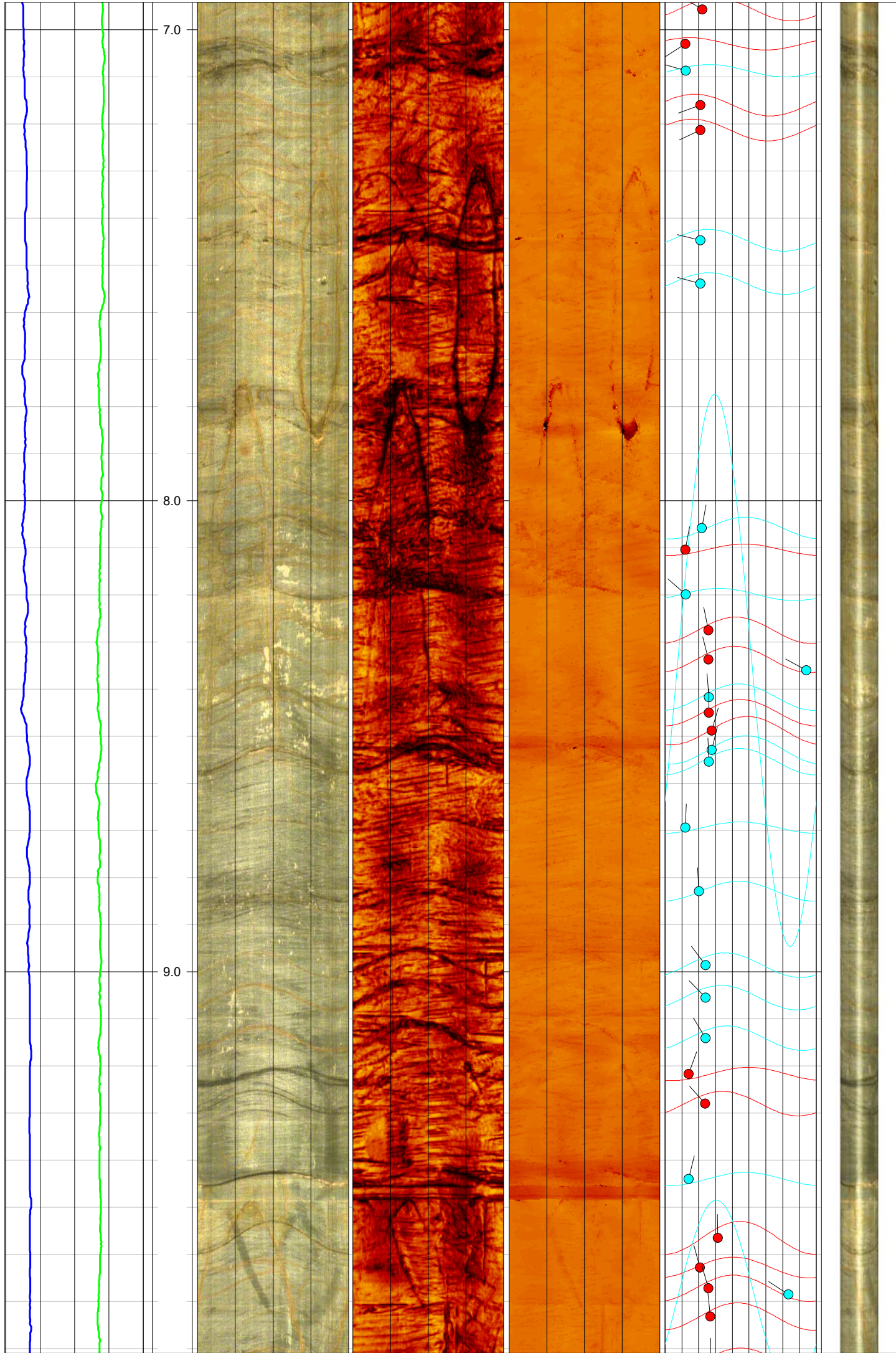
Client:	Geotechnics	Log Type: Image
Borehole:	BH15	

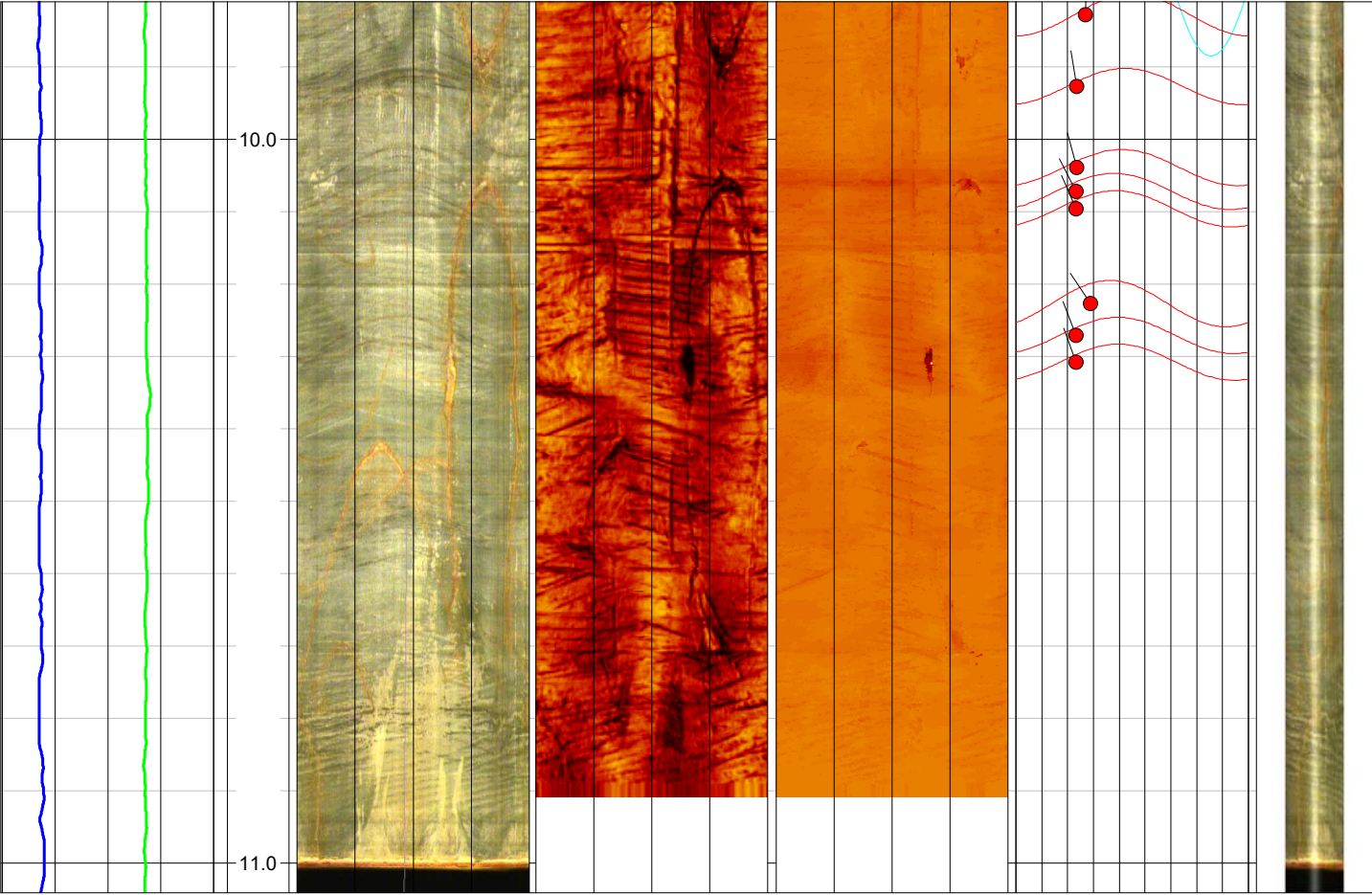
Location: Coed Darcy	Area: South Wales	Grid Ref:	Elevation:
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Drilled Depth: (m)	11.0	Date:	19.10.17
Logged Depth: (m)	11.0	Recorded By:	R. Powell
Logging Datum:	Ground Level	Remarks:	
Logged Interval: (m)	1.0 - 11.0		
Fluid Level: (m)	4.1		
		Ref:	

BOREHOLE RECORD			CASING RECORD			
Bit: (mm)	From: (m)	To: (m)	Type	Size: (mm)	From: (m)	To: (m)
116	5.6	11.0	Steel	125	0.0	5.6







APPENDIX 10

Investigation Techniques and General Notes

INTRODUCTION

The following brief review of Ground Investigation techniques, generally used as part of most Site Investigations in the UK, summarises their methodology, advantages and limitations. Detailed descriptions of the techniques are available and can be provided on request. This review should be read in conjunction with the accompanying General Notes.

TRIAL PITS

The trial pit is amongst the simplest yet most effective means of identifying shallow ground conditions on a site. Its advantages include simplicity, speed, potential accuracy and cost-effectiveness. The trial pit is most commonly formed using a back-acting excavator which can typically determine ground conditions to some 4 metres below ground level. Hand excavation is often used to locate, expose and detail existing foundations, features or services. In general, it is difficult to extend pits significantly below the water table in predominantly granular soils, where flows can cause instability. Unless otherwise stated, the trial pits will not have been provided with temporary side support during their construction. Under such circumstances, entrance into the pit is not permitted and hence observations will have been made from the ground surface and samples taken from the excavator bucket.

Where access for personnel is required to allow close observation of the exposed strata, the taking of samples and the carrying out of in situ tests, the sides of the trial pits (Observation Pits in BS 5930:2015) will be made safe using temporary supports or the sides battered back to a stable angle. Some limited access to such Trial Pits (Observation Pits) at depths less than 1m may be allowed in stable conditions or where the sides are benched or battered back to a safe angle.

Trends in strata type, level and thickness can be determined, shear surfaces identified and the behaviour of plant, excavation sides and excavated materials can be related to the construction process. They are particularly valuable in land slip investigations. Some types of in situ test can be undertaken in such pits and large disturbed or block samples obtained.

CABLE PERCUSSION BORING

The light Cable Percussion technique of soft ground boring, typically at a diameter of 150mm, is a well-established simple and flexible method of boring vertical holes and generally allows data to be obtained in respect of strata conditions other than rock. A tubular cutter (for cohesive soils) or shell with a flap valve (for granular soils) is repeatedly lifted and dropped using a winch and rope operating from an "A" frame. Soil which enters these tools is regularly removed and either sampled for subsequent examination or test, or laid to one side for later removal off site and licensed disposal or, if permitted by the Client, use as backfill. Steel casing will have been used to prevent collapse of the borehole sides where necessary. A degree of disturbance of soil and mixing of layers is inevitable and the presence of very thin layers of different soils within a particular stratum may not be identified. Changes in strata type can only be detected on recognition of a change in soil samples at the surface, after the interface has been passed. For the foregoing reasons, depth measurements should not be considered to be more accurate than 0.10 metre. The technique can determine ground conditions to depths in excess of 30 metres under suitable circumstances and usually causes less surface disturbance than trial pitting.

In cohesive soils cylindrical samples are retrieved by driving or pushing in 100mm nominal diameter tubes. In soft soils, piston sampling or vane testing may be undertaken. In granular soils and often in cohesive materials, in situ Standard Penetration Tests (SPT's) are performed. The SPT records the number of standard blows required to drive a 50mm diameter open or cone ended probe for 300mm after an initial 150mm penetration. A modified method of recording is used in denser strata. Small disturbed samples are obtained throughout.

ROTARY DRILLING

Rotary Drilling to produce cores by rotating an annular diamond-impregnated tube or barrel into the ground is the technique most appropriate to the forming of site investigation boreholes through rock or other hard strata. It has the advantage of being able to be used vertically or at an angle. Core diameters of less than 100mm are most common for site investigation purposes. Core is normally retrieved in plastic lining tubes. A flushing fluid such as air, water or foam is used to cool the bit and carry cuttings to the surface. Depths in excess of 60 metres can be achieved under suitable circumstances using rotary techniques, with minimal surface disturbance.

Examination of cores allows detailed rock description and generally enables angled discontinuity surfaces to be observed. However, vertical holes do not necessarily reveal the presence of vertical or near-vertical fissures or joint discontinuities. The core type and/or techniques used will depend on the ground conditions. Where open hole rotary drilling is employed, descriptions of strata result from examination at the surface of small particles ejected from the borehole in the flushing medium. In consequence, no indication of fissuring, bedding, consistency or degree of weathering can be obtained.

DYNAMIC SAMPLING

This technique involves the driving of an open-ended tube into the ground and retrieval of the soil which enters the tube. It was previously called window or windowless sampling. The term "window sample" arose from the original device which had a "window" or slot cut into the side of the tube through which samples were taken. This was superseded by the use of a thin-walled plastic liner to retrieve the soil sample from within a sampler (windowless sampling) which has a solid wall. Line diameters range from 36 to 86mm. Such samples can be used for qualitative logging, selection of samples for classification and chemical analysis and for obtaining a rudimentary assessment of strength.

Driving devices can be hand-held or machine mounted and the drive tubes are typically in 1m lengths. Depending on the type of rig used, the hole formed can be cased to prevent collapse of the borehole sides. Where the type of rig does not allow the insertion of casing, the success of this technique can be limited when soils and groundwater conditions are such that the sides of the hole collapse on withdrawal of the sampler. Obstructions within the ground, the density of the material or its strength can also limit the depth and rate of penetration of this light-weight investigation technique. Nevertheless, it is a valuable tool where access is constrained such as within buildings or on embankments. Depths of up to 10m can be achieved in suitable circumstances depending on the rig type but depths of 5m to 6m are more common.

EXPLORATORY HOLE RECORDS

The data obtained by these techniques are generally presented on Trial Pit, Borehole, Drillhole or Dynamic Sample Records. The descriptions of strata result from information gathered from a number of sources which may include published geological data, preliminary field observations and descriptions, in situ test results, laboratory test results and specimen descriptions. A key to the symbols and abbreviations used accompanies the records. The descriptions on the exploratory hole records accommodate but may not necessarily be identical to those on any preliminary records or the laboratory summaries.

The records show ground conditions at the exploratory hole locations. The degree to which they can be used to represent conditions between or beyond such holes, however, is a matter for geological interpretation rather than factual reporting and the associated uncertainties must be recognised.

DYNAMIC PROBING

This technique typically measures the number of blows of a standard weight falling over a standard height to advance a cone-ended rod over sequential standard distances (typically 100mm). Some devices measure the penetration of the probe per standard blow. It is essentially a profiling tool and is best used in conjunction with other investigation techniques where site-specific correlation can be used to delineate the distribution of soft or loose soils or the upper horizon of a dense or strong layer such as rock.

Both machine-driven and hand-driven equipment is available, the selection depending upon access restrictions and the depth of penetration required. It is particularly useful where access for larger equipment is not available, disturbance is to be minimised or where there are cost constraints. No samples are recovered and some techniques leave a sacrificial cone head in the ground. As with other lightweight techniques, progress is limited in strong or dense soils. The results are presented both numerically and graphically. Depths of up to 10m are commonly achieved in suitable circumstances.

The hand-driven DCP probing device has been calibrated by the Highways Agency to provide a profile of CBR values over a range of depths.

INSTRUMENTATION

The most common form of instrument used in site investigation is either the standpipe or else the standpipe piezometer which can be installed in investigation holes. They are used to facilitate monitoring of groundwater levels and water sampling over a period of time following site work. Normally a standpipe would be formed using rigid plastic tubing which has been perforated or slotted over much of its length whilst a standpipe piezometer would have a filter tip which would be placed at a selected level and the hole sealed above and sometimes below to isolate the zone of interest. Groundwater levels are determined using an electronic "dip meter" to measure the depth to the water surface from ground level. Piezometers can also be used to measure permeability. They are simple and inexpensive instruments for long term monitoring but response times can limit their use in tidal areas and access to the ground surface at each instrument is necessary. Remote reading requires more sophisticated hydraulic, electronic or pneumatic equipment.

Settlement can be monitored using surface or buried target plates whilst lateral movement over a range of depths is monitored using slip indicator or inclinometer equipment.

1. The report is prepared for the exclusive use of the Client named in the document and copyright subsists with Geotechnics Limited. Prior written permission must be obtained to reproduce all or part of the report. It is prepared on the understanding that its contents are only disclosed to parties directly involved in the current investigation, preparation and development of the site.
2. Further copies may be obtained with the Client's written permission, from Geotechnics Limited with whom the master copy of the document will be retained.
3. The report and/or opinion is prepared for the specific purpose stated in the document and in relation to the nature and extent of proposals made available to Geotechnics Limited at that time. Re-consideration will be necessary should those details change. The recommendations should not be used for other schemes on or adjacent to the site without further reference to Geotechnics Limited.
4. The assessment of the significance of the factual data, where called for, is provided to assist the Client and their Engineer and/or Advisers in the preparation of their designs.
5. The report is based on the ground conditions encountered in the exploratory holes together with the results of field and laboratory testing in the context of the proposed development. The data from any commissioned desk study and site reconnaissance are also drawn upon. There may be special conditions appertaining to the site, however, which are not revealed by the investigation and which may not be taken into account in the report.
6. Methods of construction and/or design other than those proposed by the designers or referred to in the report may require consideration during the evolution of the proposals and further assessment of the geotechnical and any geoenvironmental data would be required to provide discussion and evaluations appropriate to these methods.
7. The accuracy of results reported depends upon the technique of measurement, investigation and test used and these values should not be regarded necessarily as characteristics of the strata as a whole (see accompanying notes on Investigation Techniques). Where such measurements are critical, the technique of investigation will need to be reviewed and supplementary investigation undertaken in accordance with the advice of the Company where necessary.
8. The samples selected for laboratory test are prepared and tested in accordance with the relevant Clauses and Parts of BS EN ISO 17892 and BS 1377 Parts 1 to 8, where appropriate, in Geotechnics Limited's UKAS accredited Laboratory, where possible. A list of tests is given.
9. Tests requiring the use of another laboratory having UKAS accreditation where possible are identified.
10. Any unavoidable variations from specified procedures are identified in the report.
11. Specimens are cut vertically, where this is relevant and can be identified, unless otherwise stated
12. All the data required by the test procedures are recorded on individual test sheets but the results in the report are presented in summary form to aid understanding and assimilation for design purposes. Where all details are required, these can be made available.
13. Whilst the report may express an opinion on possible configurations of strata between or beyond exploratory holes, or on the possible presence of features based on either visual, verbal, written, cartographical, photographic or published evidence, this is for guidance only and no liability can be accepted for its accuracy.
14. The Code of Practice for Ground Investigations – BS 5930:2015 calls for man-made soils to be described as Anthropogenic Ground with soils placed in an un-controlled manner classified as Made Ground and soils placed in a controlled manner as Fill. In view of the difficulty in always accurately determining the origin of man-made soils in exploratory holes, Geotechnics Limited classify such materials as Made Ground. Where soils can be clearly identified as being placed in a controlled manner then further classification of the soils as Fill has been added to the Exploratory Hole Records.
15. Classification of man-made soils is based on the inspection of retrieved samples or exposed excavations. Where it is obvious that foreign matter such as paper, plastic or metal is present, classification is clear. Frequently, however, for man-made soils that arise from the adjacent ground or from the backfilling of excavations, their visual characteristics can closely resemble those of undisturbed ground. Other evidence such as site history, exploratory hole location or other tests may need to be drawn upon to provide clarification. For these reasons, classification of soils on the exploratory hole records as either Made Ground or naturally occurring strata, the boundary between them and any interpretation that this gives rise to should be regarded as provisional and subject to re-evaluation in the light of further data.
16. The classification of materials as Topsoil is generally based on visual description and should not be interpreted to mean that the material so described complies with the criteria for Topsoil used in BS 3882:2015. Specific testing would be necessary where such a definition is a requirement.
17. Ground conditions should be monitored during the construction of the works and the report should be re-evaluated in the light of these data by the supervising geotechnical engineers.
18. Any comments on groundwater conditions are based on observations made at the time of the investigation, unless specifically stated otherwise. It should be noted, however, that the observations are subject to the method and speed of boring, drilling or excavation and that groundwater levels will vary due to seasonal or other effects.
19. Any bearing capacities for conventional spread foundations which are given in the report and interpreted from the investigation are for bases at a minimum depth of 1m below finished ground level in naturally occurring strata and at broadly similar levels throughout individual structures, unless otherwise stated. Typically they are based on serviceability criteria taking account of an assessment of the shear strength and/or density data obtained by the investigation. The foundations should be designed in accordance with the good practice embodied in BS 8004:2015 - Foundations, supplemented for housing by NHBC Standards. Foundation design is an iterative process and bearing pressures may need adjustment or other measures may need to be taken in the context of final layouts and levels prior to finalisation of proposals.
20. Unless specifically stated, the investigation does not take account of the possible effects of mineral extraction or of gases from fill or natural sources within, below or outside the site.
21. The costs or economic viability of the proposals referred to in the report, or of the solutions put forward to any problems encountered, will depend on very many factors in addition to geotechnical or geoenvironmental considerations and hence their evaluation is outside the scope of the report.

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: MSMW36d		PAGE 1 of 3	
	NUMBER	TYPE					START DATE: 24/06/98	DRILLING METHOD: Odex/Rotary		
							FINISH DATE: 25/06/98		BOREHOLE DIAMETER: 165/115mm	
							DRILLER: R2		SCREEN TYPE & DIAMETER: UPVC 50mm	
							LOGGED BY: SG APPR'D BY:		SCREEN SLOT SIZE: 0.5mm	
						DESCRIPTION	COMMENTS			
						0	Loose red-brown and dark brown slightly silty and gravelly SAND with some clay (MADE GROUND)		0	
						1.0	Soft yellow and brown gravelly and silty CLAY with some sand (MADE GROUND)		1.0	
						2.0	Loose black slightly silty SAND with ash and clinker (MADE GROUND)		2.0	
						3.0			3.0	
						4.0			4.0	
						5.0	Firm brown-grey gravelly, slightly silty CLAY		5.0	
						6.0	becoming very gravelly at 5.5m		6.0	
						7.0			7.0	
						8.0	Medium dense blue-grey medium to coarse sub-rounded GRAVEL with cobbles - frequent sandstone cobbles at 7.8m		8.0	
						9.0			9.0	
						10			10	

LOCATION / NOTES: 1. All measurements in m below ground level (mbgl)		LEGEND Disturbed Sample Undisturbed Sample Headspace Analysis Down Borehole Analysis Groundwater Table Perched Water Table		BOREHOLE LOG Job Title SOIL & GROUNDWATER INVESTIGATION Location LLANDARCY REFINERY Client BP LLANDARCY App'd DRAFT Ref. MC/CR/BR5 Date JUL 98 Job No. 39991-001-401	
				DAMES & MOORE GROUP	

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: MSMW36d		PAGE 2 of 3	
	NUMBER	TYPE					START DATE: 24/06/98	DRILLING METHOD: Rotary	FINISH DATE: 25/06/98	BOREHOLE DIAMETER: 165/115mm
							DESCRIPTION	COMMENTS		
						10	Medium dense blue-grey medium to coarse sub-rounded GRAVEL with cobbles			10
						11	ROCKHEAD: Soft blue-grey SILTSTONE (BEDROCK)			11
						12				12
						13				13
						14				14
						15				15
						16				16
						17				17
						18	COAL (soft)			18
						19				19
						20	Soft blue grey SILTSTONE			20

LOCATION / NOTES: 1. All measurements in m below ground level (mbgl) 2. Odex to 13 mbgl Rotary 13 to 25 mbgl		LEGEND Disturbed Sample Undisturbed Sample Headspace Analysis Down Borehole Analysis Groundwater Table Perched Water Table	BOREHOLE LOG Job Title SOIL & GROUNDWATER INVESTIGATION Location LLANDARCY REFINERY Client BP LLANDARCY App'd DRAFT Ref. MC/CR/BRS Date JUL 98 Job No. 39991-001-401
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DAMES & MOORE
GROUP

BOREHOLE CONSTRUCTION	SAMPLE		SOIL VAPOUR (ppm)	GROUNDWATER	DEPTH (m)	GEOLOGY	BOREHOLE NUMBER: MSMW36d		PAGE 3 of 3		
	NUMBER	TYPE					START DATE: 24/06/98	DRILLING METHOD: Rotary	FINISH DATE: 25/06/98	BOREHOLE DIAMETER: 115mm	DRILLER: R2
							DESCRIPTION	COMMENTS			
						20	Soft blue-grey SILTSTONE		20		
						21			21		
						22			22		
						23			23		
						24			24		
						25	Borehole terminated at 25.0 mbgl		25		
						26			26		
						27			27		
						28			28		
						29			29		
						30			30		

LOCATION / NOTES:	LEGEND	BOREHOLE LOG	
1. All measurements in m below ground level (mbgl)	Disturbed Sample	Job Title	SOIL & GROUNDWATER INVESTIGATION
2. Water strike at 22.4 mbgl	Undisturbed Sample	Location	LLANDARCY REFINERY
3. Rotary from 13-25 mbgl	Headspace Analysis	Client	BP LLANDARCY
	Down Borehole Analysis	App'd	DRAFT
	Groundwater Table	Ref.	MC/CR/BRs
	Perched Water Table	Date	JUL 98
		Job No.	39991-001-401
		DAMES & MOORE	