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Final Report

Report No.:	21-17697-1
Initial Date of Issue:	02-Jun-2021
Client	Applied Geology
Client Address:	Unit 23, Abbey Park Stareton Kenilworth Warwickshire CV8 2LY
Contact(s):	Andrew Smith Kayleigh Mcgeoch Lab Results
Project	AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Quotation No.:		**Date Received:**	26-May-2021
Order No.:	16857	**Date Instructed:**	26-May-2021
No. of Samples:	17		
Turnaround (Wkdays):	5	**Results Due:**	02-Jun-2021
Date Approved:	02-Jun-2021		

Approved By:

[redacted]

Details: Glynn Harvey, Technical Manager

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697
Quotation No.:			**Chemtest Sample ID.:**		1208517	1208518	1208519	1208520	1208521	1208522	1208523	1208524
			Sample Location:		TP7	TP11	TP20	TP31	TP42	TP54	TP56	TP60
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.15	0.1	0.2	0.2	0.1	0.4	0.3
			Bottom Depth (m):		0.3	0.25	0.2	0.3	0.3	0.2	0.45	0.4
			Date Sampled:		17-May-2021	18-May-2021	17-May-2021	18-May-2021	20-May-2021	18-May-2021	18-May-2021	21-May-2021
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Organic Matter	M	2625	%	0.40	3.8	3.6	3.6	3.5	4.1	2.9	1.5	
Arsenic	M	2450	mg/kg	1.0	30	18	23	30	23	24	18	
Cadmium	M	2450	mg/kg	0.10	0.69	0.42	0.46	0.54	0.42	0.35	0.25	
Chromium	M	2450	mg/kg	1.0	55	36	36	35	32	32	33	
Chromium (Hexavalent)	N	2490	mg/kg	0.50								< 0.50
Chromium (Trivalent)	N	2490	mg/kg	1.0								29
Copper	M	2450	mg/kg	0.50	25	15	18	18	16	15	15	
Lead	M	2450	mg/kg	0.50	39	22	24	25	24	20	14	
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
Mercury	M	2450	mg/kg	0.10	0.11	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Nickel	M	2450	mg/kg	0.50	49	30	31	31	28	29	33	
Selenium	M	2450	mg/kg	0.20	0.58	0.32	0.29	< 0.20	< 0.20	< 0.20	0.47	
Vanadium	U	2450	mg/kg	5.0	86	53	64	64	52	52	54	
Zinc	M	2450	mg/kg	0.50	110	64	62	70	65	56	50	
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	
Phenol	M	2920	mg/kg	0.020								< 0.020
Resorcinol	M	2920	mg/kg	0.020								< 0.020
Cresols	M	2920	mg/kg	0.020								< 0.020
1-Naphthol	N	2920	mg/kg	0.020								< 0.020
Trimethylphenols	M	2920	mg/kg	0.020								< 0.020
Total Phenols	M	2920	mg/kg	0.10								< 0.10

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology		**Chemtest Job No.:**			21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697
Quotation No.:		**Chemtest Sample ID.:**			1208517	1208518	1208519	1208520	1208521	1208522	1208523	1208524
		Sample Location:			TP7	TP11	TP20	TP31	TP42	TP54	TP56	TP60
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.2	0.15	0.1	0.2	0.2	0.1	0.4	0.3
		Bottom Depth (m):			0.3	0.25	0.2	0.3	0.3	0.2	0.45	0.4
		Date Sampled:			17-May-2021	18-May-2021	17-May-2021	18-May-2021	20-May-2021	18-May-2021	18-May-2021	21-May-2021
		Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-	-	-	-	-	-	-
Moisture	N	2030	%	0.020	18	18	20	18	20	18	17	27
Stones and Removed Materials	N	2030	%	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Roots	Stones and Roots
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Clay	Sand
pH	M	2010		4.0	8.2	8.3	8.3	8.5	8.4	8.4	8.6	
Boron	N	2450	mg/kg	0.40	14	12	11	9.7	11	10	9.4	

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697
Quotation No.:			**Chemtest Sample ID.:**		1208517	1208518	1208519	1208520	1208521	1208522	1208523	1208524
			Sample Location:		TP7	TP11	TP20	TP31	TP42	TP54	TP56	TP60
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.15	0.1	0.2	0.2	0.1	0.4	0.3
			Bottom Depth (m):		0.3	0.25	0.2	0.3	0.3	0.2	0.45	0.4
			Date Sampled:		17-May-2021	18-May-2021	17-May-2021	18-May-2021	20-May-2021	18-May-2021	18-May-2021	21-May-2021
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Beryllium	U	2450	mg/kg	1.0	1.9	1.3	1.5	1.3	1.1	1.1	1.4	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Demeton-O	N	2820	mg/kg	0.20						< 0.20		
Phorate	N	2820	mg/kg	0.20						< 0.20		
Demeton-S	N	2820	mg/kg	0.20						< 0.20		
Disulfoton	N	2820	mg/kg	0.20						< 0.20		
Fenthion	N	2820	mg/kg	0.20						< 0.20		
Trichloronate	N	2820	mg/kg	0.20						< 0.20		
Prothiofos	N	2820	mg/kg	0.20						< 0.20		
Fensulphothion	N	2820	mg/kg	0.20						< 0.20		
Sulprofos	N	2820	mg/kg	0.20						< 0.20		
Azinphos-Methyl	N	2820	mg/kg	0.20						< 0.20		
Coumaphos	N	2820	mg/kg	0.20						< 0.20		
Atraton	N	2830	mg/kg	0.20						< 0.20		
Prometon	N	2830	mg/kg	0.20						< 0.20		
Simazine	N	2830	mg/kg	0.20						< 0.20		
Atrazine	N	2830	mg/kg	0.20						< 0.20		
Propazine	N	2830	mg/kg	0.20						< 0.20		
Terbuthylazine	N	2830	mg/kg	0.20						< 0.20		
Secbumeton	N	2830	mg/kg	0.20						< 0.20		
Simetryn	N	2830	mg/kg	0.20						< 0.20		
Ametryn	N	2830	mg/kg	0.20						< 0.20		
Prometryn	N	2830	mg/kg	0.20						< 0.20		
Terbutryn	N	2830	mg/kg	0.20						< 0.20		
Alpha-HCH	N	2840	mg/kg	0.20						< 0.20		
Gamma-HCH (Lindane)	N	2840	mg/kg	0.20						< 0.20		
Beta-HCH	N	2840	mg/kg	0.20						< 0.20		
Delta-HCH	N	2840	mg/kg	0.20						< 0.20		
Heptachlor	N	2840	mg/kg	0.20						< 0.20		
Aldrin	N	2840	mg/kg	0.20						< 0.20		
Heptachlor Epoxide	N	2840	mg/kg	0.20						< 0.20		
Gamma-Chlordane	N	2840	mg/kg	0.20						< 0.20		
Alpha-Chlordane	N	2840	mg/kg	0.20						< 0.20		
Endosulfan I	N	2840	mg/kg	0.20						< 0.20		
4,4-DDE	N	2840	mg/kg	0.20						< 0.20		
Dieldrin	N	2840	mg/kg	0.20						< 0.20		
Endrin	N	2840	mg/kg	0.20						< 0.20		

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697
Quotation No.:			**Chemtest Sample ID.:**		1208517	1208518	1208519	1208520	1208521	1208522	1208523	1208524
			Sample Location:		TP7	TP11	TP20	TP31	TP42	TP54	TP56	TP60
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.15	0.1	0.2	0.2	0.1	0.4	0.3
			Bottom Depth (m):		0.3	0.25	0.2	0.3	0.3	0.2	0.45	0.4
			Date Sampled:		17-May-2021	18-May-2021	17-May-2021	18-May-2021	20-May-2021	18-May-2021	18-May-2021	21-May-2021
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
4,4-DDD	N	2840	mg/kg	0.20						< 0.20		
Endosulfan II	N	2840	mg/kg	0.20						< 0.20		
Endrin Aldehyde	N	2840	mg/kg	0.20						< 0.20		
4,4-DDT	N	2840	mg/kg	0.20						< 0.20		
Endosulfan Sulphate	N	2840	mg/kg	0.20						< 0.20		
Methoxychlor	N	2840	mg/kg	0.20						< 0.20		
Endrin Ketone	N	2840	mg/kg	0.20						< 0.20		

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology		**Chemtest Job No.:**			21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697
Quotation No.:		**Chemtest Sample ID.:**			1208525	1208526	1208527	1208528	1208529	1208530	1208531	1208532
		Sample Location:			TP61	TP70	TP74	TP76	TP89	TP91	TP92	TP94
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.1	0.1	0.4	0.1	0.1	0.1	0.3	0.1
		Bottom Depth (m):			0.2	0.2	0.5	0.2	0.2	0.2	0.4	0.2
		Date Sampled:			20-May-2021	17-May-2021	21-May-2021	19-May-2021	21-May-2021	17-May-2021	20-May-2021	21-May-2021
		Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Organic Matter	M	2625	%	0.40	3.1	3.8	1.9	2.8	2.4	4.0	2.9	2.1
Arsenic	M	2450	mg/kg	1.0	33	16	31	29	31	34	32	31
Cadmium	M	2450	mg/kg	0.10	0.43	0.42	0.28	0.37	0.42	0.56	0.56	0.34
Chromium	M	2450	mg/kg	1.0	27	29	34	35	31	37	41	23
Chromium (Hexavalent)	N	2490	mg/kg	0.50						< 0.50	< 0.50	< 0.50
Chromium (Trivalent)	N	2490	mg/kg	1.0						37	41	23
Copper	M	2450	mg/kg	0.50	17	15	12	15	15	19	19	13
Lead	M	2450	mg/kg	0.50	28	22	17	22	24	36	37	25
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Mercury	M	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.12	0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	27	26	30	31	27	35	38	24
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	48	44	60	56	53	62	68	42
Zinc	M	2450	mg/kg	0.50	76	61	50	59	56	82	82	49
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Phenol	M	2920	mg/kg	0.020						< 0.020	< 0.020	< 0.020
Resorcinol	M	2920	mg/kg	0.020						< 0.020	< 0.020	< 0.020
Cresols	M	2920	mg/kg	0.020						< 0.020	< 0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020						< 0.020	< 0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020						< 0.020	< 0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10						< 0.10	< 0.10	< 0.10

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology		**Chemtest Job No.:**			21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697
Quotation No.:		**Chemtest Sample ID.:**			1208525	1208526	1208527	1208528	1208529	1208530	1208531	1208532
		Sample Location:			TP61	TP70	TP74	TP76	TP89	TP91	TP92	TP94
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.1	0.1	0.4	0.1	0.1	0.1	0.3	0.1
		Bottom Depth (m):			0.2	0.2	0.5	0.2	0.2	0.2	0.4	0.2
		Date Sampled:			20-May-2021	17-May-2021	21-May-2021	19-May-2021	21-May-2021	17-May-2021	20-May-2021	21-May-2021
		Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-	-	-	-	-	-	-
Moisture	N	2030	%	0.020	16	21	15	15	13	16	14	14
Stones and Removed Materials	N	2030	%	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020			
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	8.3	8.3	8.5	8.4	8.4	8.4	8.4	8.6
Boron	N	2450	mg/kg	0.40	11	20	16	15	13	19	17	12

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology		**Chemtest Job No.:**			21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697
Quotation No.:		**Chemtest Sample ID.:**			1208525	1208526	1208527	1208528	1208529	1208530	1208531	1208532
		Sample Location:			TP61	TP70	TP74	TP76	TP89	TP91	TP92	TP94
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.1	0.1	0.4	0.1	0.1	0.1	0.3	0.1
		Bottom Depth (m):			0.2	0.2	0.5	0.2	0.2	0.2	0.4	0.2
		Date Sampled:			20-May-2021	17-May-2021	21-May-2021	19-May-2021	21-May-2021	17-May-2021	20-May-2021	21-May-2021
		Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Beryllium	U	2450	mg/kg	1.0	1.1	1.3	1.2	1.2	1.1	1.5	1.6	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Demeton-O	N	2820	mg/kg	0.20		< 0.20					< 0.20	
Phorate	N	2820	mg/kg	0.20		< 0.20					< 0.20	
Demeton-S	N	2820	mg/kg	0.20		< 0.20					< 0.20	
Disulfoton	N	2820	mg/kg	0.20		< 0.20					< 0.20	
Fenthion	N	2820	mg/kg	0.20		< 0.20					< 0.20	
Trichloronate	N	2820	mg/kg	0.20		< 0.20					< 0.20	
Prothiofos	N	2820	mg/kg	0.20		< 0.20					< 0.20	
Fensulphothion	N	2820	mg/kg	0.20		< 0.20					< 0.20	
Sulprofos	N	2820	mg/kg	0.20		< 0.20					< 0.20	
Azinphos-Methyl	N	2820	mg/kg	0.20		< 0.20					< 0.20	
Coumaphos	N	2820	mg/kg	0.20		< 0.20					< 0.20	
Atraton	N	2830	mg/kg	0.20		< 0.20					< 0.20	
Prometon	N	2830	mg/kg	0.20		< 0.20					< 0.20	
Simazine	N	2830	mg/kg	0.20		< 0.20					< 0.20	
Atrazine	N	2830	mg/kg	0.20		< 0.20					< 0.20	
Propazine	N	2830	mg/kg	0.20		< 0.20					< 0.20	
Terbuthylazine	N	2830	mg/kg	0.20		< 0.20					< 0.20	
Secbumeton	N	2830	mg/kg	0.20		< 0.20					< 0.20	
Simetryn	N	2830	mg/kg	0.20		< 0.20					< 0.20	
Ametryn	N	2830	mg/kg	0.20		< 0.20					< 0.20	
Prometryn	N	2830	mg/kg	0.20		< 0.20					< 0.20	
Terbutryn	N	2830	mg/kg	0.20		< 0.20					< 0.20	
Alpha-HCH	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Gamma-HCH (Lindane)	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Beta-HCH	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Delta-HCH	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Heptachlor	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Aldrin	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Heptachlor Epoxide	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Gamma-Chlordane	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Alpha-Chlordane	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Endosulfan I	N	2840	mg/kg	0.20		< 0.20					< 0.20	
4,4-DDE	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Dieldrin	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Endrin	N	2840	mg/kg	0.20		< 0.20					< 0.20	

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology		**Chemtest Job No.:**			21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697
Quotation No.:		**Chemtest Sample ID.:**			1208525	1208526	1208527	1208528	1208529	1208530	1208531	1208532
			Sample Location:		TP61	TP70	TP74	TP76	TP89	TP91	TP92	TP94
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.1	0.1	0.4	0.1	0.1	0.1	0.3	0.1
			Bottom Depth (m):		0.2	0.2	0.5	0.2	0.2	0.2	0.4	0.2
			Date Sampled:		20-May-2021	17-May-2021	21-May-2021	19-May-2021	21-May-2021	17-May-2021	20-May-2021	21-May-2021
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
4,4-DDD	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Endosulfan II	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Endrin Aldehyde	N	2840	mg/kg	0.20		< 0.20					< 0.20	
4,4-DDT	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Endosulfan Sulphate	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Methoxychlor	N	2840	mg/kg	0.20		< 0.20					< 0.20	
Endrin Ketone	N	2840	mg/kg	0.20		< 0.20					< 0.20	

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-17697
Quotation No.:			**Chemtest Sample ID.:**		1208533
			Sample Location:		TP131
			Sample Type:		SOIL
			Top Depth (m):		0.2
			Bottom Depth (m):		0.3
			Date Sampled:		19-May-2021
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Organic Matter	M	2625	%	0.40	2.4
Arsenic	M	2450	mg/kg	1.0	30
Cadmium	M	2450	mg/kg	0.10	0.40
Chromium	M	2450	mg/kg	1.0	20
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Chromium (Trivalent)	N	2490	mg/kg	1.0	20
Copper	M	2450	mg/kg	0.50	13
Lead	M	2450	mg/kg	0.50	19
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010
Mercury	M	2450	mg/kg	0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	20
Selenium	M	2450	mg/kg	0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	37
Zinc	M	2450	mg/kg	0.50	55
Naphthalene	M	2700	mg/kg	0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0
Phenol	M	2920	mg/kg	0.020	< 0.020
Resorcinol	M	2920	mg/kg	0.020	< 0.020
Cresols	M	2920	mg/kg	0.020	< 0.020
1-Naphthol	N	2920	mg/kg	0.020	< 0.020
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020
Total Phenols	M	2920	mg/kg	0.10	< 0.10

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-17697
Quotation No.:			**Chemtest Sample ID.:**		1208533
			Sample Location:		TP131
			Sample Type:		SOIL
			Top Depth (m):		0.2
			Bottom Depth (m):		0.3
			Date Sampled:		19-May-2021
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzene	M	2760	µg/kg	1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-
Moisture	N	2030	%	0.020	13
Stones and Removed Materials	N	2030	%	0.020	
Soil Colour	N	2040		N/A	Brown
Other Material	N	2040		N/A	Stones and Roots
Soil Texture	N	2040		N/A	Sand
pH	M	2010		4.0	9.0
Boron	N	2450	mg/kg	0.40	11

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-17697
Quotation No.:			**Chemtest Sample ID.:**		1208533
			Sample Location:		TP131
			Sample Type:		SOIL
			Top Depth (m):		0.2
			Bottom Depth (m):		0.3
			Date Sampled:		19-May-2021
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Beryllium	U	2450	mg/kg	1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0
Demeton-O	N	2820	mg/kg	0.20	< 0.20
Phorate	N	2820	mg/kg	0.20	< 0.20
Demeton-S	N	2820	mg/kg	0.20	< 0.20
Disulfoton	N	2820	mg/kg	0.20	< 0.20
Fenthion	N	2820	mg/kg	0.20	< 0.20
Trichloronate	N	2820	mg/kg	0.20	< 0.20
Prothiofos	N	2820	mg/kg	0.20	< 0.20
Fensulphothion	N	2820	mg/kg	0.20	< 0.20
Sulprofos	N	2820	mg/kg	0.20	< 0.20
Azinphos-Methyl	N	2820	mg/kg	0.20	< 0.20
Coumaphos	N	2820	mg/kg	0.20	< 0.20
Atraton	N	2830	mg/kg	0.20	< 0.20
Prometon	N	2830	mg/kg	0.20	< 0.20
Simazine	N	2830	mg/kg	0.20	< 0.20
Atrazine	N	2830	mg/kg	0.20	< 0.20
Propazine	N	2830	mg/kg	0.20	< 0.20
Terbuthylazine	N	2830	mg/kg	0.20	< 0.20
Secbumeton	N	2830	mg/kg	0.20	< 0.20
Simetryn	N	2830	mg/kg	0.20	< 0.20
Ametryn	N	2830	mg/kg	0.20	< 0.20
Prometryn	N	2830	mg/kg	0.20	< 0.20
Terbutryn	N	2830	mg/kg	0.20	< 0.20
Alpha-HCH	N	2840	mg/kg	0.20	< 0.20
Gamma-HCH (Lindane)	N	2840	mg/kg	0.20	< 0.20
Beta-HCH	N	2840	mg/kg	0.20	< 0.20
Delta-HCH	N	2840	mg/kg	0.20	< 0.20
Heptachlor	N	2840	mg/kg	0.20	< 0.20
Aldrin	N	2840	mg/kg	0.20	< 0.20
Heptachlor Epoxide	N	2840	mg/kg	0.20	< 0.20
Gamma-Chlordane	N	2840	mg/kg	0.20	< 0.20
Alpha-Chlordane	N	2840	mg/kg	0.20	< 0.20
Endosulfan I	N	2840	mg/kg	0.20	< 0.20
4,4-DDE	N	2840	mg/kg	0.20	< 0.20
Dieldrin	N	2840	mg/kg	0.20	< 0.20
Endrin	N	2840	mg/kg	0.20	< 0.20

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-17697
Quotation No.:			**Chemtest Sample ID.:**		1208533
			Sample Location:		TP131
			Sample Type:		SOIL
			Top Depth (m):		0.2
			Bottom Depth (m):		0.3
			Date Sampled:		19-May-2021
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4,4-DDD	N	2840	mg/kg	0.20	< 0.20
Endosulfan II	N	2840	mg/kg	0.20	< 0.20
Endrin Aldehyde	N	2840	mg/kg	0.20	< 0.20
4,4-DDT	N	2840	mg/kg	0.20	< 0.20
Endosulfan Sulphate	N	2840	mg/kg	0.20	< 0.20
Methoxychlor	N	2840	mg/kg	0.20	< 0.20
Endrin Ketone	N	2840	mg/kg	0.20	< 0.20

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2820	Organophosphorus (O-P) Pesticides in Soils by GC-MS	Organophosphorus pesticide representative suite including Parathion, Malathion etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2830	Organonitrogen (O-N) Pesticides in Soils by GC-MS	Organonitrogen pesticide representative suite including Triazines etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2840	Organochlorine (O-Cl) Pesticides in Soils by GC-MS	Organochlorine pesticide representative suite including DDT and its metabolites, 'drins' and HCH etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

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

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	21-18908-1
Initial Date of Issue:	11-Jun-2021
Client	Applied Geology
Client Address:	Unit 23, Abbey Park Stareton Kenilworth Warwickshire CV8 2LY
Contact(s):	Andrew Smith Kayleigh Mcgeoch Lab Results
Project	AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Quotation No.:	Q17-09497	**Date Received:**	04-Jun-2021
Order No.:	16906	**Date Instructed:**	04-Jun-2021
No. of Samples:	9		
Turnaround (Wkdays):	5	**Results Due:**	10-Jun-2021
Date Approved:	11-Jun-2021		

Approved By:

[redacted]

Details: Glynn Harvey, Technical Manager

Results - Leachate

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**			21-18908	21-18908	21-18908	21-18908	21-18908	21-18908	21-18908
Quotation No.: Q17-09497			**Chemtest Sample ID.:**			1214823	1214824	1214825	1214827	1214828	1214829	1214831
			Sample Location:			TP5	TP25	TP79	TP48	TP110	TP97	TP124
			Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):			0.2	0.2	0.1	0.1	0.1	0.3	0.1
			Bottom Depth (m):			03	0.3	0.2	0.2	0.2	0.4	0.2
			Date Sampled:			25-May-2021	26-May-2021	25-May-2021	25-May-2021	28-May-2021	28-May-2021	28-May-2021
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**							
pH	U	1010	10:1		N/A	8.5	8.2	8.2	8.2	8.5	8.5	8.5
Sulphate	U	1220	10:1	mg/l	1.0	2.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Magnesium	U	1455	10:1	mg/l	0.20	0.81	0.85	0.69	1.0	0.76	0.60	0.77
Arsenic (Dissolved)	U	1455	10:1	µg/l	0.20	0.66	0.77	1.2	0.91	0.54	0.57	0.66
Boron (Dissolved)	U	1455	10:1	µg/l	10.0	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Beryllium (Dissolved)	U	1455	10:1	µg/l	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium (Dissolved)	U	1455	10:1	µg/l	0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Copper (Dissolved)	U	1455	10:1	µg/l	0.50	1.5	1.5	5.3	3.2	2.7	1.9	3.5
Mercury (Dissolved)	U	1455	10:1	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455	10:1	µg/l	0.50	< 0.50	1.0	3.3	1.2	0.93	0.79	1.0
Lead (Dissolved)	U	1455	10:1	µg/l	0.50	< 0.50	< 0.50	0.54	< 0.50	< 0.50	< 0.50	< 0.50
Selenium (Dissolved)	U	1455	10:1	µg/l	0.50	< 0.50	< 0.50	0.72	< 0.50	< 0.50	< 0.50	< 0.50
Vanadium (Dissolved)	U	1455	10:1	µg/l	0.50	1.3	1.4	2.3	2.3	0.84	1.2	1.2
Zinc (Dissolved)	U	1455	10:1	µg/l	2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Chromium (Total)	N	1455	10:1	µg/l	0.50	< 0.50	0.50	0.65	0.57	< 0.50	< 0.50	< 0.50
Naphthalene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	N	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	N	1700	10:1	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-18908	21-18908	21-18908	21-18908	21-18908	21-18908	21-18908	21-18908
Quotation No.: Q17-09497			**Chemtest Sample ID.:**		1214823	1214824	1214825	1214826	1214827	1214828	1214829	1214830
			Sample Location:		TP5	TP25	TP79	TP58	TP48	TP110	TP97	TP112
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	0.1	0.2	0.1	0.1	0.3	0.2
			Bottom Depth (m):		03	0.3	0.2	0.3	0.2	0.2	0.4	0.3
			Date Sampled:		25-May-2021	26-May-2021	25-May-2021	24-May-2021	25-May-2021	28-May-2021	28-May-2021	27-May-2021
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Organic Matter	M	2625	%	0.40	2.9	2.9	4.1	3.1	3.5	1.6	1.2	2.6
Arsenic	M	2450	mg/kg	1.0	17	15	22	19	24	21	16	8.4
Cadmium	M	2450	mg/kg	0.10	0.37	0.37	0.53	0.34	0.49	0.27	0.26	0.33
Chromium	M	2450	mg/kg	1.0	32	32	40	26	43	15	30	27
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		< 0.50				< 0.50	
Chromium (Trivalent)	N	2490	mg/kg	1.0	32		40				30	
Copper	M	2450	mg/kg	0.50	15	14	21	13	21	7.8	12	12
Lead	M	2450	mg/kg	0.50	19	22	33	17	28	12	14	20
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Mercury	M	2450	mg/kg	0.10	< 0.10	< 0.10	0.12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	29	31	36	25	38	13	29	26
Selenium	M	2450	mg/kg	0.20	0.28	0.38	0.39	< 0.20	0.27	< 0.20	< 0.20	0.32
Vanadium	U	2450	mg/kg	5.0	48	46	61	41	69	24	41	38
Zinc	M	2450	mg/kg	0.50	56	62	76	42	77	28	45	54
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Phenol	M	2920	mg/kg	0.020	< 0.020		< 0.020				< 0.020	
Resorcinol	M	2920	mg/kg	0.020	< 0.020		< 0.020				< 0.020	
Cresols	M	2920	mg/kg	0.020	< 0.020		< 0.020				< 0.020	
1-Naphthol	N	2920	mg/kg	0.020	< 0.020		< 0.020				< 0.020	
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020		< 0.020				< 0.020	
Total Phenols	M	2920	mg/kg	0.10	< 0.10		< 0.10				< 0.10	

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology		**Chemtest Job No.:**			21-18908	21-18908	21-18908	21-18908	21-18908	21-18908	21-18908	21-18908
Quotation No.: Q17-09497		**Chemtest Sample ID.:**			1214823	1214824	1214825	1214826	1214827	1214828	1214829	1214830
		Sample Location:			TP5	TP25	TP79	TP58	TP48	TP110	TP97	TP112
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.2	0.2	0.1	0.2	0.1	0.1	0.3	0.2
		Bottom Depth (m):			03	0.3	0.2	0.3	0.2	0.2	0.4	0.3
		Date Sampled:			25-May-2021	26-May-2021	25-May-2021	24-May-2021	25-May-2021	28-May-2021	28-May-2021	27-May-2021
		Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	66	< 1.0	4.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	66	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	35	< 1.0	19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	35	< 5.0	19	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	100	< 10	23	< 10	< 10	< 10	< 10	< 10
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.051	0.048	0.042	0.044	0.038	0.048	0.041	0.038
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	21	23	22	19	20	9.0	14	25
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Roots	Stones	None	Stones and Roots	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Clay
pH	M	2010		4.0	8.6	8.2	8.5	8.2	8.2	8.6	8.6	8.1
Boron	N	2450	mg/kg	0.40	7.8	6.2	9.9	6.9	10	4.7	6.4	9.0
Beryllium	U	2450	mg/kg	1.0	1.2	1.3	1.5	1.1	1.8	< 1.0	1.3	1.6
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-18908	21-18908	21-18908	21-18908	21-18908	21-18908	21-18908	21-18908
Quotation No.: Q17-09497			**Chemtest Sample ID.:**		1214823	1214824	1214825	1214826	1214827	1214828	1214829	1214830
			Sample Location:		TP5	TP25	TP79	TP58	TP48	TP110	TP97	TP112
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	0.1	0.2	0.1	0.1	0.3	0.2
			Bottom Depth (m):		03	0.3	0.2	0.3	0.2	0.2	0.4	0.3
			Date Sampled:		25-May-2021	26-May-2021	25-May-2021	24-May-2021	25-May-2021	28-May-2021	28-May-2021	27-May-2021
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Demeton-O	N	2820	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Phorate	N	2820	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Demeton-S	N	2820	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Disulfoton	N	2820	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Fenthion	N	2820	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Trichloronate	N	2820	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Prothiofos	N	2820	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Fensulphothion	N	2820	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Sulprofos	N	2820	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Azinphos-Methyl	N	2820	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Coumaphos	N	2820	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Atraton	N	2830	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Prometon	N	2830	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Simazine	N	2830	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Atrazine	N	2830	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Propazine	N	2830	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Terbuthylazine	N	2830	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Secbumeton	N	2830	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Simetryn	N	2830	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Ametryn	N	2830	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Prometryn	N	2830	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Terbutryn	N	2830	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Alpha-HCH	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Gamma-HCH (Lindane)	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Beta-HCH	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Delta-HCH	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Heptachlor	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Aldrin	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Heptachlor Epoxide	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Gamma-Chlordane	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Alpha-Chlordane	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Endosulfan I	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
4,4-DDE	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Dieldrin	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Endrin	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
4,4-DDD	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Endosulfan II	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-18908	21-18908	21-18908	21-18908	21-18908	21-18908	21-18908	21-18908
Quotation No.: Q17-09497			**Chemtest Sample ID.:**		1214823	1214824	1214825	1214826	1214827	1214828	1214829	1214830
			Sample Location:		TP5	TP25	TP79	TP58	TP48	TP110	TP97	TP112
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	0.1	0.2	0.1	0.1	0.3	0.2
			Bottom Depth (m):		03	0.3	0.2	0.3	0.2	0.2	0.4	0.3
			Date Sampled:		25-May-2021	26-May-2021	25-May-2021	24-May-2021	25-May-2021	28-May-2021	28-May-2021	27-May-2021
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Endrin Aldehyde	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
4,4-DDT	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Endosulfan Sulphate	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Methoxychlor	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			
Endrin Ketone	N	2840	mg/kg	0.20	< 0.20	< 0.20			< 0.20			

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-18908
Quotation No.: Q17-09497			**Chemtest Sample ID.:**		1214831
			Sample Location:		TP124
			Sample Type:		SOIL
			Top Depth (m):		0.1
			Bottom Depth (m):		0.2
			Date Sampled:		28-May-2021
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Organic Matter	M	2625	%	0.40	2.6
Arsenic	M	2450	mg/kg	1.0	17
Cadmium	M	2450	mg/kg	0.10	0.32
Chromium	M	2450	mg/kg	1.0	26
Chromium (Hexavalent)	N	2490	mg/kg	0.50	
Chromium (Trivalent)	N	2490	mg/kg	1.0	
Copper	M	2450	mg/kg	0.50	12
Lead	M	2450	mg/kg	0.50	23
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010
Mercury	M	2450	mg/kg	0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	22
Selenium	M	2450	mg/kg	0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	39
Zinc	M	2450	mg/kg	0.50	44
Naphthalene	M	2700	mg/kg	0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0
Phenol	M	2920	mg/kg	0.020	
Resorcinol	M	2920	mg/kg	0.020	
Cresols	M	2920	mg/kg	0.020	
1-Naphthol	N	2920	mg/kg	0.020	
Trimethylphenols	M	2920	mg/kg	0.020	
Total Phenols	M	2920	mg/kg	0.10	

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-18908
Quotation No.: Q17-09497			**Chemtest Sample ID.:**		1214831
			Sample Location:		TP124
			Sample Type:		SOIL
			Top Depth (m):		0.1
			Bottom Depth (m):		0.2
			Date Sampled:		28-May-2021
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzene	M	2760	µg/kg	1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.041
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	18
Soil Colour	N	2040		N/A	Brown
Other Material	N	2040		N/A	Stones and Roots
Soil Texture	N	2040		N/A	Clay
pH	M	2010		4.0	8.3
Boron	N	2450	mg/kg	0.40	10
Beryllium	U	2450	mg/kg	1.0	1.3
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-18908
Quotation No.: Q17-09497			**Chemtest Sample ID.:**		1214831
			Sample Location:		TP124
			Sample Type:		SOIL
			Top Depth (m):		0.1
			Bottom Depth (m):		0.2
			Date Sampled:		28-May-2021
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Demeton-O	N	2820	mg/kg	0.20	
Phorate	N	2820	mg/kg	0.20	
Demeton-S	N	2820	mg/kg	0.20	
Disulfoton	N	2820	mg/kg	0.20	
Fenthion	N	2820	mg/kg	0.20	
Trichloronate	N	2820	mg/kg	0.20	
Prothiofos	N	2820	mg/kg	0.20	
Fensulphothion	N	2820	mg/kg	0.20	
Sulprofos	N	2820	mg/kg	0.20	
Azinphos-Methyl	N	2820	mg/kg	0.20	
Coumaphos	N	2820	mg/kg	0.20	
Atraton	N	2830	mg/kg	0.20	
Prometon	N	2830	mg/kg	0.20	
Simazine	N	2830	mg/kg	0.20	
Atrazine	N	2830	mg/kg	0.20	
Propazine	N	2830	mg/kg	0.20	
Terbuthylazine	N	2830	mg/kg	0.20	
Secbumeton	N	2830	mg/kg	0.20	
Simetryn	N	2830	mg/kg	0.20	
Ametryn	N	2830	mg/kg	0.20	
Prometryn	N	2830	mg/kg	0.20	
Terbutryn	N	2830	mg/kg	0.20	
Alpha-HCH	N	2840	mg/kg	0.20	
Gamma-HCH (Lindane)	N	2840	mg/kg	0.20	
Beta-HCH	N	2840	mg/kg	0.20	
Delta-HCH	N	2840	mg/kg	0.20	
Heptachlor	N	2840	mg/kg	0.20	
Aldrin	N	2840	mg/kg	0.20	
Heptachlor Epoxide	N	2840	mg/kg	0.20	
Gamma-Chlordane	N	2840	mg/kg	0.20	
Alpha-Chlordane	N	2840	mg/kg	0.20	
Endosulfan I	N	2840	mg/kg	0.20	
4,4-DDE	N	2840	mg/kg	0.20	
Dieldrin	N	2840	mg/kg	0.20	
Endrin	N	2840	mg/kg	0.20	
4,4-DDD	N	2840	mg/kg	0.20	
Endosulfan II	N	2840	mg/kg	0.20	

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-18908
Quotation No.: Q17-09497			**Chemtest Sample ID.:**		1214831
			Sample Location:		TP124
			Sample Type:		SOIL
			Top Depth (m):		0.1
			Bottom Depth (m):		0.2
			Date Sampled:		28-May-2021
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Endrin Aldehyde	N	2840	mg/kg	0.20	
4,4-DDT	N	2840	mg/kg	0.20	
Endosulfan Sulphate	N	2840	mg/kg	0.20	
Methoxychlor	N	2840	mg/kg	0.20	
Endrin Ketone	N	2840	mg/kg	0.20	

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2820	Organophosphorus (O-P) Pesticides in Soils by GC-MS	Organophosphorus pesticide representative suite including Parathion, Malathion etc, plus client specific determinands	Dichloromethane extraction / GC-MS

Test Methods

SOP	Title	Parameters included	Method summary
2830	Organonitrogen (O-N) Pesticides in Soils by GC-MS	Organonitrogen pesticide representative suite including Triazines etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2840	Organochlorine (O-Cl) Pesticides in Soils by GC-MS	Organochlorine pesticide representative suite including DDT and its metabolites, 'drins' and HCH etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

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

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	21-19774-1
Initial Date of Issue:	21-Jun-2021
Client	Applied Geology
Client Address:	Unit 23, Abbey Park Stareton Kenilworth Warwickshire CV8 2LY
Contact(s):	Andrew Smith Kayleigh Mcgeoch Lab Results
Project	AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Quotation No.:	Q17-09497	**Date Received:**	11-Jun-2021
Order No.:	16944	**Date Instructed:**	11-Jun-2021
No. of Samples:	6		
Turnaround (Wkdays):	7	**Results Due:**	21-Jun-2021
Date Approved:	21-Jun-2021		

Approved By:

[redacted]

Details: Glynn Harvey, Technical Manager

Results - 2 Stage WAC

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-19774								
Chemtest Sample ID:	1218792								
Sample Ref:							**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:									
Sample Location:	TP17								
Top Depth(m):	0.70								
Bottom Depth(m):	0.80								
Sampling Date:	26-May-2021								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	M	%			0.31	3	5	6
Loss On Ignition	2610	M	%			3.4	--	--	10
Total BTEX	2760	M	mg/kg			[B] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			[B] < 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH	2010	M				8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.0020	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	0.007	< 0.005	0.014	0.0034	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0018	< 0.0005	0.0036	0.0009	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	0.0007	< 0.0005	0.0014	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	< 0.003	< 0.003	4	50	200
Chloride	1220	U	1.4	< 1.0	< 10	< 10	800	15000	25000
Fluoride	1220	U	0.23	0.16	< 1.0	1.6	10	150	500
Sulphate	1220	U	9.4	2.6	19	29	1000	20000	50000
Total Dissolved Solids	1020	N	110	78	220	790	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	8.1	3.5	< 50	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	15

Leachate Test Information	
Leachant volume 1st extract/l	0.320
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.085

Waste Acceptance Criteria

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

Results - 2 Stage WAC

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-19774								
Chemtest Sample ID:	1218793								
Sample Ref:							**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:									
Sample Location:	TP58								
Top Depth(m):	1.90								
Bottom Depth(m):	2.00								
Sampling Date:	24-May-2021								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	M	%			1.9	3	5	6
Loss On Ignition	2610	M	%			1.5	--	--	10
Total BTEX	2760	M	mg/kg			[B] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			[B] < 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH	2010	M				8.9	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.032	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	< 0.0002	0.0004	< 0.0002	0.0036	0.5	2	25
Barium	1455	U	0.006	< 0.005	0.012	0.0054	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0010	< 0.0005	0.0019	0.0008	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0006	< 0.0002	0.0011	0.0005	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	< 0.003	< 0.003	4	50	200
Chloride	1220	U	2.1	4.2	< 10	40	800	15000	25000
Fluoride	1220	U	0.19	0.16	< 1.0	1.6	10	150	500
Sulphate	1220	U	9.5	5.4	19	58	1000	20000	50000
Total Dissolved Solids	1020	N	98	72	190	740	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	5.5	3.5	< 50	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	13

Leachate Test Information	
Leachant volume 1st extract/l	0.325
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.154

Waste Acceptance Criteria

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

Results - 2 Stage WAC

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-19774								
Chemtest Sample ID:	1218794								
Sample Ref:									
Sample ID:									
Sample Location:	TP43								
Top Depth(m):	1.50								
Bottom Depth(m):	1.60								
Sampling Date:	02-Jun-2021								
Determinand	**SOP**	**Accred.**	**Units**				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%			2.0	3	5	6
Loss On Ignition	2610	M	%			1.3	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH	2010	M				8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.14	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	0.009	< 0.005	0.018	0.0089	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0010	< 0.0005	0.0020	0.0010	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0004	< 0.0002	0.0008	0.0004	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	< 0.003	< 0.003	4	50	200
Chloride	1220	U	2.4	< 1.0	< 10	< 10	800	15000	25000
Fluoride	1220	U	0.27	0.23	< 1.0	2.3	10	150	500
Sulphate	1220	U	11	3.1	22	39	1000	20000	50000
Total Dissolved Solids	1020	N	100	65	210	690	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	4.7	3.4	< 50	< 50	500	800	1000

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

Leachate Test Information	
Leachant volume 1st extract/l	0.330
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.169

Waste Acceptance Criteria

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

Results - 2 Stage WAC

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-19774								
Chemtest Sample ID:	1218795								
Sample Ref:							**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:									
Sample Location:	TP90								
Top Depth(m):	0.90								
Bottom Depth(m):	1.00								
Sampling Date:	04-Jun-2021								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	M	%			2.6	3	5	6
Loss On Ignition	2610	M	%			1.1	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH	2010	M				8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.21	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	0.007	< 0.005	0.013	0.0043	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0016	< 0.0005	0.0031	0.0010	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0007	< 0.0002	0.0014	0.0005	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.009	< 0.003	0.019	0.006	4	50	200
Chloride	1220	U	5.1	< 1.0	10	< 10	800	15000	25000
Fluoride	1220	U	0.45	0.36	< 1.0	3.7	10	150	500
Sulphate	1220	U	13	2.0	26	27	1000	20000	50000
Total Dissolved Solids	1020	N	120	85	250	870	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	6.7	3.9	< 50	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	6.9

Leachate Test Information	
Leachant volume 1st extract/l	0.337
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.114

Waste Acceptance Criteria

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

Results - 2 Stage WAC

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-19774								
Chemtest Sample ID:	1218796								
Sample Ref:							**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:									
Sample Location:	TP134								
Top Depth(m):	0.90								
Bottom Depth(m):	1.00								
Sampling Date:	03-Jun-2021								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	M	%			0.66	3	5	6
Loss On Ignition	2610	M	%			6.1	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH	2010	M				8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.080	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	0.006	< 0.005	0.012	0.0031	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0012	< 0.0005	0.0023	0.0006	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	< 0.0002	0.0006	< 0.0002	0.0058	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	< 0.003	< 0.003	4	50	200
Chloride	1220	U	1.3	< 1.0	< 10	< 10	800	15000	25000
Fluoride	1220	U	0.39	0.13	< 1.0	1.4	10	150	500
Sulphate	1220	U	11	2.0	21	24	1000	20000	50000
Total Dissolved Solids	1020	N	140	72	270	740	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	6.5	3.2	< 50	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	29

Leachate Test Information	
Leachant volume 1st extract/l	0.279
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.085

Waste Acceptance Criteria

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

Results - 2 Stage WAC

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-19774								
Chemtest Sample ID:	1218797								
Sample Ref:									
Sample ID:									
Sample Location:	TP119								
Top Depth(m):	1.70								
Bottom Depth(m):	1.80								
Sampling Date:	01-Jun-2021								
Determinand	**SOP**	**Accred.**	**Units**				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%			1.2	3	5	6
Loss On Ignition	2610	M	%			1.4	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH	2010	M				8.9	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.022	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0002	0.0028	0.0005	0.027	0.5	2	25
Barium	1455	U	< 0.005	0.013	< 0.0005	0.12	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	0.0034	< 0.0005	0.031	0.5	10	70
Copper	1455	U	0.0010	0.0059	0.0021	0.0008	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0013	0.0051	0.0027	0.049	0.5	10	30
Nickel	1455	U	< 0.0005	0.0017	< 0.0005	0.016	0.4	10	40
Lead	1455	U	< 0.0005	0.0007	< 0.0005	0.0066	0.5	10	50
Antimony	1455	U	< 0.0005	0.0015	< 0.0005	0.014	0.06	0.7	5
Selenium	1455	U	< 0.0005	0.0010	< 0.0005	0.0092	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	< 0.003	< 0.003	4	50	200
Chloride	1220	U	1.8	8.2	< 10	77	800	15000	25000
Fluoride	1220	U	0.16	0.57	< 1.0	5.4	10	150	500
Sulphate	1220	U	5.7	38	11	360	1000	20000	50000
Total Dissolved Solids	1020	N	98	78	190	790	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	5.4	3.8	< 50	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	8.1

Leachate Test Information	
Leachant volume 1st extract/l	0.335
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.131

Waste Acceptance Criteria

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

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1218792			TP17	26-May-2021	B	Amber Glass 250ml
1218792			TP17	26-May-2021	B	Amber Glass 60ml
1218792			TP17	26-May-2021	B	Plastic Tub 500g
1218793			TP58	24-May-2021	B	Amber Glass 250ml
1218793			TP58	24-May-2021	B	Amber Glass 60ml
1218793			TP58	24-May-2021	B	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

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

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	21-19819-1
Initial Date of Issue:	18-Jun-2021
Client	Applied Geology
Client Address:	Unit 23, Abbey Park Stareton Kenilworth Warwickshire CV8 2LY
Contact(s):	Andrew Smith Kayleigh Mcgeoch Lab Results
Project	AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Quotation No.:	Q17-09497	**Date Received:**	11-Jun-2021
Order No.:	16944	**Date Instructed:**	11-Jun-2021
No. of Samples:	10		
Turnaround (Wkdays):	5	**Results Due:**	17-Jun-2021
Date Approved:	18-Jun-2021		

Approved By:

[redacted]

Details: Glynn Harvey, Technical Manager

Results - Leachate

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology				Chemtest Job No.:		21-19819	21-19819
Quotation No.: Q17-09497				Chemtest Sample ID.:		1218949	1218954
				Sample Location:		TP128	TP150
				Sample Type:		SOIL	SOIL
				Top Depth (m):		0.10	0.20
				Bottom Depth (m):		0.20	0.30
				Date Sampled:		03-Jun-2021	03-Jun-2021
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
pH	U	1010	10:1		N/A	8.4	8.4
Sulphate	U	1220	10:1	mg/l	1.0	< 1.0	2.7
Magnesium	U	1455	10:1	mg/l	0.20	0.75	0.61
Arsenic (Dissolved)	U	1455	10:1	µg/l	0.20	0.66	0.42
Boron (Dissolved)	U	1455	10:1	µg/l	10.0	< 10	11
Beryllium (Dissolved)	U	1455	10:1	µg/l	1.00	< 1.0	< 1.0
Cadmium (Dissolved)	U	1455	10:1	µg/l	0.11	< 0.11	< 0.11
Copper (Dissolved)	U	1455	10:1	µg/l	0.50	3.4	2.7
Mercury (Dissolved)	U	1455	10:1	µg/l	0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455	10:1	µg/l	0.50	1.2	< 0.50
Lead (Dissolved)	U	1455	10:1	µg/l	0.50	< 0.50	< 0.50
Selenium (Dissolved)	U	1455	10:1	µg/l	0.50	< 0.50	< 0.50
Vanadium (Dissolved)	U	1455	10:1	µg/l	0.50	1.2	0.73
Zinc (Dissolved)	U	1455	10:1	µg/l	2.5	< 2.5	< 2.5
Chromium (Total)	N	1455	10:1	µg/l	0.50	< 0.50	< 0.50
Naphthalene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Acenaphthylene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Acenaphthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Fluorene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Phenanthrene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Anthracene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Pyrene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Chrysene	N	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10
Total Of 16 PAH's	N	1700	10:1	µg/l	2.0	< 2.0	< 2.0

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819
Quotation No.: Q17-09497			**Chemtest Sample ID.:**		1218945	1218946	1218947	1218948	1218949	1218950	1218951	1218952
			Sample Location:		TP1	TP105	TP108	TP126	TP128	TP136	TP138	TP141
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20
			Bottom Depth (m):		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30
			Date Sampled:		04-Jun-2021	02-Jun-2021	03-Jun-2021	03-Jun-2021	03-Jun-2021	02-Jun-2021	04-Jun-2021	03-Jun-2021
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Organic Matter	M	2625	%	0.40	2.8	1.6	1.3	2.4	1.6	2.1	2.9	1.9
Arsenic	M	2450	mg/kg	1.0	24	19	28	8.0	29	25	17	31
Cadmium	M	2450	mg/kg	0.10	0.47	0.33	0.87	0.34	0.46	0.46	0.49	0.60
Chromium	M	2450	mg/kg	1.0	42	22	41	25	30	39	38	42
Chromium (Hexavalent)	N	2490	mg/kg	0.50		< 0.50						< 0.50
Chromium (Trivalent)	N	2490	mg/kg	1.0		22						42
Copper	M	2450	mg/kg	0.50	29	21	33	24	50	35	32	29
Lead	M	2450	mg/kg	0.50	31	15	28	22	26	32	29	28
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Mercury	M	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.10	0.11	0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	40	19	36	22	26	31	30	38
Selenium	M	2450	mg/kg	0.20	0.29	< 0.20	< 0.20	0.22	< 0.20	< 0.20	< 0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	61	27	62	33	41	53	48	59
Zinc	M	2450	mg/kg	0.50	64	41	76	51	67	82	86	94
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Phenol	M	2920	mg/kg	0.020		< 0.020						< 0.020
Resorcinol	M	2920	mg/kg	0.020		< 0.020						< 0.020
Cresols	M	2920	mg/kg	0.020		< 0.020						< 0.020
1-Naphthol	N	2920	mg/kg	0.020		< 0.020						< 0.020
Trimethylphenols	M	2920	mg/kg	0.020		< 0.020						< 0.020
Total Phenols	M	2920	mg/kg	0.10		< 0.10						< 0.10

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology		**Chemtest Job No.:**			21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819
Quotation No.: Q17-09497		**Chemtest Sample ID.:**			1218945	1218946	1218947	1218948	1218949	1218950	1218951	1218952
		Sample Location:			TP1	TP105	TP108	TP126	TP128	TP136	TP138	TP141
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20
		Bottom Depth (m):			0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30
		Date Sampled:			04-Jun-2021	02-Jun-2021	03-Jun-2021	03-Jun-2021	03-Jun-2021	02-Jun-2021	04-Jun-2021	03-Jun-2021
		Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	20	12	14	18	10	16	12	18
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones, Roots and Wood	Stones, Roots and Wood	Stones, Roots and Wood	Stones and Roots	Stones, Roots and Wood	Stones, Roots and Wood	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	8.2	8.4	8.4	8.0	8.4	8.3	8.3	8.3
Boron	N	2450	mg/kg	0.40	6.9	5.9	8.7	11	15	20	18	19
Beryllium	U	2450	mg/kg	1.0	1.3	< 1.0	1.4	1.0	1.2	1.6	1.4	1.6
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819
Quotation No.: Q17-09497			**Chemtest Sample ID.:**		1218945	1218946	1218947	1218948	1218949	1218950	1218951	1218952
			Sample Location:		TP1	TP105	TP108	TP126	TP128	TP136	TP138	TP141
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20
			Bottom Depth (m):		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30
			Date Sampled:		04-Jun-2021	02-Jun-2021	03-Jun-2021	03-Jun-2021	03-Jun-2021	02-Jun-2021	04-Jun-2021	03-Jun-2021
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Demeton-O	N	2820	mg/kg	0.20			< 0.20	< 0.20				
Phorate	N	2820	mg/kg	0.20			< 0.20	< 0.20				
Demeton-S	N	2820	mg/kg	0.20			< 0.20	< 0.20				
Disulfoton	N	2820	mg/kg	0.20			< 0.20	< 0.20				
Fenthion	N	2820	mg/kg	0.20			< 0.20	< 0.20				
Trichloronate	N	2820	mg/kg	0.20			< 0.20	< 0.20				
Prothiofos	N	2820	mg/kg	0.20			< 0.20	< 0.20				
Fensulphothion	N	2820	mg/kg	0.20			< 0.20	< 0.20				
Sulprofos	N	2820	mg/kg	0.20			< 0.20	< 0.20				
Azinphos-Methyl	N	2820	mg/kg	0.20			< 0.20	< 0.20				
Coumaphos	N	2820	mg/kg	0.20			< 0.20	< 0.20				
Atraton	N	2830	mg/kg	0.20			< 0.20	< 0.20				
Prometon	N	2830	mg/kg	0.20			< 0.20	< 0.20				
Simazine	N	2830	mg/kg	0.20			< 0.20	< 0.20				
Atrazine	N	2830	mg/kg	0.20			< 0.20	< 0.20				
Propazine	N	2830	mg/kg	0.20			< 0.20	< 0.20				
Terbuthylazine	N	2830	mg/kg	0.20			< 0.20	< 0.20				
Secbumeton	N	2830	mg/kg	0.20			< 0.20	< 0.20				
Simetryn	N	2830	mg/kg	0.20			< 0.20	< 0.20				
Ametryn	N	2830	mg/kg	0.20			< 0.20	< 0.20				
Prometryn	N	2830	mg/kg	0.20			< 0.20	< 0.20				
Terbutryn	N	2830	mg/kg	0.20			< 0.20	< 0.20				
Alpha-HCH	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Gamma-HCH (Lindane)	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Beta-HCH	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Delta-HCH	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Heptachlor	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Aldrin	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Heptachlor Epoxide	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Gamma-Chlordane	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Alpha-Chlordane	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Endosulfan I	N	2840	mg/kg	0.20			< 0.20	< 0.20				
4,4-DDE	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Dieldrin	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Endrin	N	2840	mg/kg	0.20			< 0.20	< 0.20				
4,4-DDD	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Endosulfan II	N	2840	mg/kg	0.20			< 0.20	< 0.20				

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819
Quotation No.: Q17-09497			**Chemtest Sample ID.:**		1218945	1218946	1218947	1218948	1218949	1218950	1218951	1218952
			Sample Location:		TP1	TP105	TP108	TP126	TP128	TP136	TP138	TP141
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20
			Bottom Depth (m):		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30
			Date Sampled:		04-Jun-2021	02-Jun-2021	03-Jun-2021	03-Jun-2021	03-Jun-2021	02-Jun-2021	04-Jun-2021	03-Jun-2021
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Endrin Aldehyde	N	2840	mg/kg	0.20			< 0.20	< 0.20				
4,4-DDT	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Endosulfan Sulphate	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Methoxychlor	N	2840	mg/kg	0.20			< 0.20	< 0.20				
Endrin Ketone	N	2840	mg/kg	0.20			< 0.20	< 0.20				

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology		**Chemtest Job No.:**			21-19819	21-19819
Quotation No.: Q17-09497		**Chemtest Sample ID.:**			1218953	1218954
			Sample Location:		TP149	TP150
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	0.20
			Bottom Depth (m):		0.40	0.30
			Date Sampled:		03-Jun-2021	03-Jun-2021
			Asbestos Lab:		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Organic Matter	M	2625	%	0.40	1.0	1.4
Arsenic	M	2450	mg/kg	1.0	21	12
Cadmium	M	2450	mg/kg	0.10	0.30	0.30
Chromium	M	2450	mg/kg	1.0	33	27
Chromium (Hexavalent)	N	2490	mg/kg	0.50		
Chromium (Trivalent)	N	2490	mg/kg	1.0		
Copper	M	2450	mg/kg	0.50	27	15
Lead	M	2450	mg/kg	0.50	19	15
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010	< 0.010
Mercury	M	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	27	23
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	45	34
Zinc	M	2450	mg/kg	0.50	61	60
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0
Phenol	M	2920	mg/kg	0.020		
Resorcinol	M	2920	mg/kg	0.020		
Cresols	M	2920	mg/kg	0.020		
1-Naphthol	N	2920	mg/kg	0.020		
Trimethylphenols	M	2920	mg/kg	0.020		
Total Phenols	M	2920	mg/kg	0.10		

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology		**Chemtest Job No.:**			21-19819	21-19819
Quotation No.: Q17-09497		**Chemtest Sample ID.:**			1218953	1218954
			Sample Location:		TP149	TP150
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	0.20
			Bottom Depth (m):		0.40	0.30
			Date Sampled:		03-Jun-2021	03-Jun-2021
			Asbestos Lab:		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010	< 0.010
ACM Type	U	2192		N/A	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	12	13
Soil Colour	N	2040		N/A	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Sand	Sand
pH	M	2010		4.0	8.4	8.3
Boron	N	2450	mg/kg	0.40	12	8.8
Beryllium	U	2450	mg/kg	1.0	1.2	1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-19819	21-19819
Quotation No.: Q17-09497			**Chemtest Sample ID.:**		1218953	1218954
			Sample Location:		TP149	TP150
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	0.20
			Bottom Depth (m):		0.40	0.30
			Date Sampled:		03-Jun-2021	03-Jun-2021
			Asbestos Lab:		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Demeton-O	N	2820	mg/kg	0.20	< 0.20	
Phorate	N	2820	mg/kg	0.20	< 0.20	
Demeton-S	N	2820	mg/kg	0.20	< 0.20	
Disulfoton	N	2820	mg/kg	0.20	< 0.20	
Fenthion	N	2820	mg/kg	0.20	< 0.20	
Trichloronate	N	2820	mg/kg	0.20	< 0.20	
Prothiofos	N	2820	mg/kg	0.20	< 0.20	
Fensulphothion	N	2820	mg/kg	0.20	< 0.20	
Sulprofos	N	2820	mg/kg	0.20	< 0.20	
Azinphos-Methyl	N	2820	mg/kg	0.20	< 0.20	
Coumaphos	N	2820	mg/kg	0.20	< 0.20	
Atraton	N	2830	mg/kg	0.20	< 0.20	
Prometon	N	2830	mg/kg	0.20	< 0.20	
Simazine	N	2830	mg/kg	0.20	< 0.20	
Atrazine	N	2830	mg/kg	0.20	< 0.20	
Propazine	N	2830	mg/kg	0.20	< 0.20	
Terbuthylazine	N	2830	mg/kg	0.20	< 0.20	
Secbumeton	N	2830	mg/kg	0.20	< 0.20	
Simetryn	N	2830	mg/kg	0.20	< 0.20	
Ametryn	N	2830	mg/kg	0.20	< 0.20	
Prometryn	N	2830	mg/kg	0.20	< 0.20	
Terbutryn	N	2830	mg/kg	0.20	< 0.20	
Alpha-HCH	N	2840	mg/kg	0.20	< 0.20	
Gamma-HCH (Lindane)	N	2840	mg/kg	0.20	< 0.20	
Beta-HCH	N	2840	mg/kg	0.20	< 0.20	
Delta-HCH	N	2840	mg/kg	0.20	< 0.20	
Heptachlor	N	2840	mg/kg	0.20	< 0.20	
Aldrin	N	2840	mg/kg	0.20	< 0.20	
Heptachlor Epoxide	N	2840	mg/kg	0.20	< 0.20	
Gamma-Chlordane	N	2840	mg/kg	0.20	< 0.20	
Alpha-Chlordane	N	2840	mg/kg	0.20	< 0.20	
Endosulfan I	N	2840	mg/kg	0.20	< 0.20	
4,4-DDE	N	2840	mg/kg	0.20	< 0.20	
Dieldrin	N	2840	mg/kg	0.20	< 0.20	
Endrin	N	2840	mg/kg	0.20	< 0.20	
4,4-DDD	N	2840	mg/kg	0.20	< 0.20	
Endosulfan II	N	2840	mg/kg	0.20	< 0.20	

Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology			**Chemtest Job No.:**		21-19819	21-19819
Quotation No.: Q17-09497			**Chemtest Sample ID.:**		1218953	1218954
			Sample Location:		TP149	TP150
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	0.20
			Bottom Depth (m):		0.40	0.30
			Date Sampled:		03-Jun-2021	03-Jun-2021
			Asbestos Lab:		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Endrin Aldehyde	N	2840	mg/kg	0.20	< 0.20	
4,4-DDT	N	2840	mg/kg	0.20	< 0.20	
Endosulfan Sulphate	N	2840	mg/kg	0.20	< 0.20	
Methoxychlor	N	2840	mg/kg	0.20	< 0.20	
Endrin Ketone	N	2840	mg/kg	0.20	< 0.20	

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2820	Organophosphorus (O-P) Pesticides in Soils by GC-MS	Organophosphorus pesticide representative suite including Parathion, Malathion etc, plus client specific determinands	Dichloromethane extraction / GC-MS

Test Methods

SOP	Title	Parameters included	Method summary
2830	Organonitrogen (O-N) Pesticides in Soils by GC-MS	Organonitrogen pesticide representative suite including Triazines etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2840	Organochlorine (O-Cl) Pesticides in Soils by GC-MS	Organochlorine pesticide representative suite including DDT and its metabolites, 'drins' and HCH etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

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

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

Applied Geology Ltd
Unit 23 Abbey Park
Stareton
Kenilworth
Warwickshire
CV8 2LY
For the attention of Andrew Smith

Report No: B26845
Issue No 01

LABORATORY TEST REPORT

Project Name	**LAND ADJACENT TO JUNCTION 10, M40, ARDLEY**		
Project Number	**B26845**	Date samples received	29/06/2021
Your Ref	AG3268-21	Date written instructions received	29/06/2021
Purchase Order	17014	Date testing commenced	29/06/2021

Please find enclosed the results as summarised below

Figure / Table	Test Quantity	Description	ISO 17025 Accredited
1	34	BRE Suites - Soil	Yes

Remarks :

Issued by : Stephen Langman Date of Issue : 13/07/2021

Approved Signatories : S. Langman 13/07/2021
S Langman (Laboratory Coordinator), D Bowen (Production Manager)

Key to symbols used in this report
S/C : Testing was sub-contracted

Unless we are notified to the contrary, samples will be disposed after a period of one month from this date.
The results reported relate to samples received in the laboratory only.
All results contained in this report are provisional unless signed by an approved signatory
This report should not be reproduced except in full without the written approval of the laboratory.
Under multisite accreditation the testing contained in this report may have been performed at another Terra Tek laboratory.
The enclosed results remain the property of Terra Tek Limited and we reserve the right to withdraw
our report if we have not received cleared funds in accordance with our standard terms and conditions
Only those results indicated in this report are UKAS accredited and any opinions or interpretations expressed are outside the scope of UKAS accreditation.
Feedback on the this report may be left via our website www.terratek.co.uk/contact-us

mCERTS UKAS TESTING 0126 30 YEARS 1990-2020

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Terra Tek Ltd is registered in Scotland No. 121594
Offices in Airdrie, Birmingham, Belfast and Aston Clinton
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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client:

Engineer:

Contract No AG3268-21

Sample Identification				Lab Sample ID	pH	Sulphate (soluble in 2:1 water extract) as SO4 g/l	Sulphate (acid soluble as SO4) %	Total Sulphur %
Hole	Depth m	Sample Ref	Sample Type					
TP105	1.00-1.10		D	782466	7.9	0.02	~	~
TP107	0.80-0.90		D	782468	8.5	<0.01	0.11	0.04
TP11	0.40-0.50		D	782471	8.3	0.01	~	~
TP113	0.90-1.00		D	782475	8.3	0.02	~	~
TP120	0.60-0.70		D	782482	8.5	<0.01	0.09	0.03
TP127	0.90-1.00		D	782489	8.3	0.02	0.09	0.03
TP135	0.40-0.50		D	782496	8.2	0.02	~	~
TP147	0.90-1.00		D	782508	8.5	<0.01	~	~
TP16	1.40-1.50		D	782514	8.4	0.01	~	~
TP21	0.80-0.90		D	782518	8.4	0.01	~	~
				Limits of Detection	~	0.01	0.01	0.01
				Terra Tek Analysis Method	TP019	TP169	TP171	TP129
				Accreditation M=Mcerts U=UKAS N=No accreditation	M	M	M	M

Originator	Checked & Approved
DAB	13/07/2021

BRE SUITE

Figure 1

Sheet 1 of 4

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client:

Engineer:

Contract No AG3268-21

Sample Identification				Lab Sample ID	pH	Sulphate (soluble in 2:1 water extract) as SO4 g/l	Sulphate (acid soluble as SO4) %	Total Sulphur %
Hole	Depth m	Sample Ref	Sample Type					
TP29	0.70-0.80		D	782526	8.4	0.01	0.09	0.04
TP36	0.80-0.90		D	782533	8.5	0.01	~	~
TP41	1.50-1.60		D	782539	8.5	0.03	~	~
TP48	0.50-0.60		D	782543	8.3	0.01	~	~
TP5	0.60-0.70		D	782545	8.5	0.01	0.11	0.04
TP52	0.60-0.70		D	782547	8.5	0.01	~	~
TP55	0.90-1.00		D	782550	8.5	0.01	0.10	0.03
TP64	0.70-0.80		D	782556	8.5	0.01	~	~
TP68	0.80-0.90		B	782559	8.5	0.01	0.10	0.04
TP83	0.50-0.60		D	782573	8.3	0.01	0.10	0.04
			Limits of Detection		~	0.01	0.01	0.01
			Terra Tek Analysis Method		TP019	TP169	TP171	TP129
			Accreditation M=Mcerts U=UKAS N=No accreditation		M	M	M	M

Originator	Checked & Approved
DAB	13/07/2021

BRE SUITE

Figure 1

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client:

Engineer:

Contract No AG3268-21

Sample Identification				Lab Sample ID	pH	Sulphate (soluble in 2:1 water extract) as SO4	Sulphate (acid soluble as SO4)	Total Sulphur
Hole	Depth m	Sample Ref	Sample Type			g/l	%	%
TP84	0.80-0.90		D	782575	8.8	0.01	~	~
TP87	1.10-1.20		D	782598	8.5	0.01	~	~
TP98	0.60-0.70		D	782585	8.3	<0.01	~	~
TP9	1.60		D	782596	8.5	0.01	0.11	0.04
TP26	1.90		D	782588	8.5	0.02	0.11	0.04
TP37	2.00		B	782589	8.6	0.02	~	~
TP40	1.60		D	782590	8.6	0.01	0.08	0.03
TP72	1.50-1.60		D	782564	8.6	0.01	~	~
TP63	1.60		D	782591	8.5	0.01	~	~
TP76	1.60		D	782592	8.5	0.01	0.11	0.04
Limits of Detection					~	0.01	0.01	0.01
Terra Tek Analysis Method					TP019	TP169	TP171	TP129
Accreditation M=Mcerts U=UKAS N=No accreditation					M	M	M	M

Originator	Checked & Approved
DAB	S. Langman 13/07/2021

BRE SUITE

Figure 1

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client:

Engineer:

Contract No AG3268-21

Sample Identification				Lab Sample ID	pH	Sulphate (soluble in 2:1 water extract) as SO4 g/l	Sulphate (acid soluble as SO4) %	Total Sulphur %
Hole	Depth m	Sample Ref	Sample Type					
TP115	1.40		D	782593	8.4	0.02	~	~
TP145	1.40		D	782594	8.6	0.01	~	~
TP129	1.90		D	782595	8.6	0.01	~	~
TP126	1.00		D	782597	8.4	0.02	~	~
				Limits of Detection	~	0.01	0.01	0.01
				Terra Tek Analysis Method	TP019	TP169	TP171	TP129
				Accreditation M=Mcerts U=UKAS N=No accreditation	M	M	M	M

Originator	Checked & Approved
DAB	S. Langman 13/07/2021

BRE SUITE

Figure 1

Sheet 4 of 4

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client

Engineer

Contract No AG3268-21

Sample Identification				Lab Sample ID	Date Sampled	Temperature on receipt °C	PRIMARY MATRIX	Secondary Matrix	Additional matrix	% Loss at 30C	% Retained 2mm
Exploratory Hole	Depth m	Sample Ref	Sample Type								
TP107	0.80-0.90		D	782468	02/06/21		Clayey SAND	Fine to medium gravel		8.7	38.0
TP11	0.40-0.50		D	782471	18/05/21		Sandy CLAY	Fine to medium gravel		12.2	48.8
TP113	0.90-1.00		D	782475	27/05/21		CLAY	Fine gravel		17.5	15.0
TP120	0.60-0.70		D	782482	01/06/21		Clayey SAND	Fine to medium gravel		8.2	43.0
TP127	0.90-1.00		D	782489	03/06/21		CLAY	Fine gravel		14.6	14.0
TP135	0.40-0.50		D	782496	04/06/21		CLAY	Fine gravel		22.8	14.3
TP147	0.90-1.00		D	782508	03/06/21		Clayey SAND	Fine to medium gravel		8.6	25.8
TP16	1.40-1.50		D	782514	17/05/21		CLAY	Fine gravel		12.0	19.2
TP21	0.80-0.90		D	782518	25/05/21		Sandy CLAY	Fine to medium gravel		7.8	19.6
TP29	0.70-0.80		D	782526	26/05/21		Sandy CLAY	Fine to medium gravel		12.1	25.9
TP36	0.80-0.90		D	782533	18/05/21		Sandy CLAY	Fine gravel		10.6	59.4
TP41	1.50-1.60		D	782539	18/05/21		CLAY	Fine gravel		17.2	7.9
TP48	0.50-0.60		D	782543	25/05/21		Sandy CLAY	Fine to medium gravel		15.1	44.3
TP5	0.60-0.70		D	782545	25/05/21		Clayey SAND	Fine to medium gravel		10.8	16.6
TP52	0.60-0.70		D	782547	20/05/21		Clayey SAND	Fine to medium gravel		11.9	13.1

Notes

Terra Tek are accredited for clay, sand and loam matrix types only, where they constitute the major component of the sample. Other coarse granular materials such as gravel, are not accredited where they comprise the major component of the sample.

Results are expressed on a dry-weight basis (samples dried at <30°C) except where stated. Samples for asbestos testing are dried at 85°C.

With the exception of samples analysed for asbestos, the laboratory removes any material > 2mm prior to analysis. The quantity and nature of the material is shown as the secondary and additional matrix types in the above table.

Where a parameter cannot be determined in house it is our policy to use a UKAS/MCERTS accredited laboratory wherever possible. Terra Tek will assume responsibility for the quality of subcontracted tests and the performance of the subcontractor chosen. Where there is no known UKAS/MCERTS laboratory for a particular parameter, a laboratory listed within the Terra Tek Approved Subcontractors List, which is subject to performance assessment, will be selected.

Originator	Checked & Approved	SAMPLE DESCRIPTIONS	Appendix S1
DAB	S. Langman 13/07/2021		Sheet 1 of 3

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client

Engineer

Contract No **AG3268-21**

Sample Identification				Lab Sample ID	Date Sampled	Temperature on receipt °C	PRIMARY MATRIX	Secondary Matrix	Additional matrix	% Loss at 30C	% Retained 2mm
Exploratory Hole	Depth m	Sample Ref	Sample Type								
TP55	0.90-1.00		D	782550	24/05/21		Clayey SAND	Fine to medium gravel		10.0	36.7
TP64	0.70-0.80		D	782556	20/05/21		Sandy CLAY	Fine to medium gravel		11.9	28.2
TP68	0.80-0.90		B	782559	24/05/21		Silty CLAY	Fine gravel		15.6	18.2
TP72	1.50-1.60		D	782564	20/05/21		Clayey SAND	Fine to medium gravel		9.2	25.3
TP83	0.50-0.60		D	782573	17/05/21		Sandy CLAY	Fine to medium gravel		11.9	59.9
TP84	0.80-0.90		D	782575	20/05/21		Sandstone			3.0	~
TP98	0.60-0.70		D	782585	28/05/21		Sandy CLAY	Fine to medium gravel		12.2	35.7
TP26	1.90		D	782588	26/05/21		Sandy CLAY	Fine to medium gravel		6.6	32.8
TP37	2.00		B	782589	24/05/21		Silty SAND	Fine to medium gravel	SLURRY	16.4	14.4
TP40	1.60		D	782590	18/05/21		Silty CLAY	Fine gravel	SLURRY	15.6	22.4
TP63	1.60		D	782591	20/05/21		Silty CLAY	Fine gravel		15.5	119.9
TP76	1.60		D	782592	19/05/21		Silty CLAY	Fine to medium gravel		16.0	23.4
TP115	1.40		D	782593	27/05/21		CLAY	Fine gravel		18.0	22.8
TP145	1.40		D	782594	04/06/21		Clayey SAND	Fine to medium gravel		7.1	27.5
TP129	1.90		D	782595	01/06/21		Clayey SAND	Fine to medium gravel		10.4	20.2

Notes

Terra Tek are accredited for clay, sand and loam matrix types only, where they constitute the major component of the sample. Other coarse granular materials such as gravel, are not accredited where they comprise the major component of the sample.

Results are expressed on a dry-weight basis (samples dried at <30°C) except where stated. Samples for asbestos testing are dried at 85°C.

With the exception of samples analysed for asbestos, the laboratory removes any material > 2mm prior to analysis. The quantity and nature of the material is shown as the secondary and additional matrix types in the above table.

Where a parameter cannot be determined in house it is our policy to use a UKAS/MCERTS accredited laboratory wherever possible. Terra Tek will assume responsibility for the quality of subcontracted tests and the performance of the subcontractor chosen. Where there is no known UKAS/MCERTS laboratory for a particular parameter, a laboratory listed within the Terra Tek Approved Subcontractors List, which is subject to performance assessment, will be selected.

Originator	Checked & Approved	SAMPLE DESCRIPTIONS	Appendix S1
DAB	13/07/2021		Sheet 2 of 3

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client

Engineer

Contract No **AG3268-21**

Sample Identification				Lab Sample ID	Date Sampled	Temperature on receipt °C	PRIMARY MATRIX	Secondary Matrix	Additional matrix	% Loss at 30C	% Retained 2mm
Exploratory Hole	Depth m	Sample Ref	Sample Type								
TP9	1.60		D	782596	Deviating		Sandy CLAY	Fine to medium gravel		9.6	33.1
TP126	1.00		D	782597	03/06/21		Sandy CLAY	Fine to medium gravel		12.3	19.8
TP87	1.10-1.20		D	782598	19/05/21		Sandy CLAY	Fine gravel		9.7	23.2
TP105	1.00-1.10		D	782466	02/06/21		Clayey SAND	Fine to medium gravel		8.4	27.2

Notes

Terra Tek are accredited for clay, sand and loam matrix types only, where they constitute the major component of the sample. Other coarse granular materials such as gravel, are not accredited where they comprise the major component of the sample.

Results are expressed on a dry-weight basis (samples dried at <30°C) except where stated. Samples for asbestos testing are dried at 85°C.

With the exception of samples analysed for asbestos, the laboratory removes any material > 2mm prior to analysis. The quantity and nature of the material is shown as the secondary and additional matrix types in the above table.

Where a parameter cannot be determined in house it is our policy to use a UKAS/MCERTS accredited laboratory wherever possible. Terra Tek will assume responsibility for the quality of subcontracted tests and the performance of the subcontractor chosen. Where there is no known UKAS/MCERTS laboratory for a particular parameter, a laboratory listed within the Terra Tek Approved Subcontractors List, which is subject to performance assessment, will be selected.

Originator	Checked & Approved	**SAMPLE DESCRIPTIONS**	**Appendix S1**
DAB	S. Langman 13/07/2021		Sheet 3 of 3

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client:

Engineer:

Contract No AG3268-21

Sample Identification				Lab Sample ID	Date Sampled	Deviating conditions						Preservatives used
Exploratory Hole	Depth m	Sample Ref	Sample Type			Sampling date has not been provided	Exceeded maximium holding time for selected test(s)	Presence of headspace in sample vial	Poorly fitting cap or lid	Damaged container		
TP105	1.00-1.10		D	782466	02/06/21							
TP107	0.80-0.90		D	782468	02/06/21							
TP11	0.40-0.50		D	782471	18/05/21							
TP113	0.90-1.00		D	782475	27/05/21							
TP120	0.60-0.70		D	782482	01/06/21							
TP127	0.90-1.00		D	782489	03/06/21							
TP135	0.40-0.50		D	782496	04/06/21							
TP147	0.90-1.00		D	782508	03/06/21							
TP16	1.40-1.50		D	782514	17/05/21							
TP21	0.80-0.90		D	782518	25/05/21							
TP29	0.70-0.80		D	782526	26/05/21							
TP36	0.80-0.90		D	782533	18/05/21							
TP41	1.50-1.60		D	782539	18/05/21							
TP48	0.50-0.60		D	782543	25/05/21							
TP5	0.60-0.70		D	782545	25/05/21							

NOTES
1 Results reported for samples classified as deviating may be compromised. Deviation types are shown as "X" or "Yes" in the table above.
2 The absence of "X" or "Yes" in the table above indicates no reported deviations.
3 Deviations due to use of incorrect sample container are shown on result tables.
4 Deviating results are indicated within result tables.

Originator	Checked & Approved
DAB	13/07/2021

DEVIATING SAMPLES - SOIL

Appendix S2

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client:

Engineer:

Contract No AG3268-21

Sample Identification				Lab Sample ID	Date Sampled	Deviating conditions						Preservatives used
Exploratory Hole	Depth m	Sample Ref	Sample Type			Sampling date has not been provided	Exceeded maximium holding time for selected test(s)	Presence of headspace in sample vial	Poorly fitting cap or lid	Damaged container		
TP52	0.60-0.70		D	782547	20/05/21							
TP55	0.90-1.00		D	782550	24/05/21							
TP64	0.70-0.80		D	782556	20/05/21							
TP68	0.80-0.90		B	782559	24/05/21							
TP83	0.50-0.60		D	782573	17/05/21							
TP84	0.80-0.90		D	782575	20/05/21							
TP87	1.10-1.20		D	782598	19/05/21							
TP98	0.60-0.70		D	782585	28/05/21							
TP9	1.60		D	782596	Deviating							
TP26	1.90		D	782588	26/05/21							
TP37	2.00		B	782589	24/05/21							
TP40	1.60		D	782590	18/05/21							
TP72	1.50-1.60		D	782564	20/05/21							
TP63	1.60		D	782591	20/05/21							
TP76	1.60		D	782592	19/05/21							

NOTES
1 Results reported for samples classified as deviating may be compromised. Deviation types are shown as "X" or "Yes" in the table above.
2 The absence of "X" or "Yes" in the table above indicates no reported deviations.
3 Deviations due to use of incorrect sample container are shown on result tables.
4 Deviating results are indicated within result tables.

Originator	Checked & Approved
DAB	S. Langmead 13/07/2021

DEVIATING SAMPLES - SOIL

Appendix S2

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client:

Engineer:

Contract No AG3268-21

Sample Identification				Lab Sample ID	Date Sampled	Deviating conditions						Preservatives used
Exploratory Hole	Depth m	Sample Ref	Sample Type			Sampling date has not been provided	Exceeded maximium holding time for selected test(s)	Presence of headspace in sample vial	Poorly fitting cap or lid	Damaged container		
TP115	1.40		D	782593	27/05/21							
TP145	1.40		D	782594	04/06/21							
TP129	1.90		D	782595	01/06/21							
TP126	1.00		D	782597	03/06/21							

NOTES
1 Results reported for samples classified as deviating may be compromised. Deviation types are shown as "X" or "Yes" in the table above.
2 The absence of "X" or "Yes" in the table above indicates no reported deviations.
3 Deviations due to use of incorrect sample container are shown on result tables.
4 Deviating results are indicated within result tables.

Originator	Checked & Approved
DAB	13/07/2021

DEVIATING SAMPLES - SOIL

Appendix S2

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client:

Engineer:

Contract No **AG3268-21**

Method Code	Reference	Description of Method	ISO17025 Accredited	MCERTS Accredited	Wet/Dry Sample Tested
GP001	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Preparation of soil samples for chemical analysis	Yes	Yes	N/A
GP012	BS EN 12457-3: Characterisation of Waste - Compliance test for leaching of granular waste materials and sludges (two-stage batch test)	Preparation of soil samples for two-stage leachate test			Dry
TP019	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Determination of pH in 2.5:1 water/soil extract using pH meter.	Yes	Yes	Dry
TP032	MAFF Book 427: The Analysis of Agricultural Materials: Method 8	Determination of water soluble boron by ICP-OES	Yes		Dry
TP040	APHA/AWWA, 19th edition: Method 3500Cr-D	Determination of hexavalent chromium by colorimetry.	Yes		Dry
TP041	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Determination of organic matter by titrimetry.	Yes		Dry
TP042	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Determination of loss on ignition at 50-440°C by gravimetry	Yes	Yes	Dry
TP045	GACHAMJA A.M. Chromatography and Analysis: 1992 9-11 (modified)	Determination of polyaromatic hydrocarbons extractable in dichloromethane, by GC/MS	Yes	Yes	Dry
TP046	MEWAM method: Phenols in water and Effluents: 4-aminoantipyrine method	Determination of monohydric phenols by steam distillation/colorimetry	Yes	Yes	Dry
TP047	MEWAM method: Cyanide in Waters etc	Determination of free cyanide by steam distillation/colorimetry	Yes		Dry
TP048	MEWAM method: Cyanide in Waters etc	Determination of total cyanide by steam distillation/colorimetry.	Yes	Yes	Dry
TP049	MEWAM method: Cyanide in Waters etc	Determination of complex cyanide by calculation	Yes		Dry
TP050	MEWAM method: Determination of Thiocyanate ,1985	Determination of thiocyanate by colorimetry	Yes	Yes	Dry
TP051	USEPA Method 9030B	Determination of acid soluble sulphides by steam distillation/colorimetry.	Yes	Yes	Wet
TP067	TNRCC Method 1005: 2001 (modified)	Determination of pentane/acetone extractable petroleum hydrocarbons (C8 - C40) by GC/FID	Yes	Yes	Wet
TP072	In-house documented method	Determination of ammoniacal nitrogen by colorimetry			Dry
TP074	In-house documented method	Determination of water soluble fluoride by ion selective electrode			Dry
TP098	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Determination of acid soluble chloride by titrimetry			Dry
TP099	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Determination of water soluble chloride by titrimetry	Yes	Yes	Dry
TP100	Wisconsin DNR Modified GRO method, Method for Determining Gasoline Range Organics	Determination of Volatile Petroleum Hydrocarbons/GRO.	Yes	Yes	Wet

Notes

1. Terra Tek (Birmingham) are MCERTS accredited for clay, sand & loam matrix types only, where they constitute the major component of the sample. Other coarse granular materials, ie gravel, are not accredited where they comprise the major component of the sample.
2. Results are expressed on a dry-weight basis (samples dried at <30°C) except where stated.
3. With the exception of samples analysed for asbestos, the laboratory removes any material >2mm prior to analysis. The quantity and nature of any material removed from samples is recorded and the information is available on request.
4. The laboratory records the date of analysis of each parameter. This information is available on request.
5. The test results pertain only to the samples provided and is not guaranteed to be representative of the parent material in whole or part from which the sample was taken. Sample location, site address, taken by and client reference are included where provided by the client, Terra Tek accepts no responsibility for the validity or accuracy of this information.

Originator	Checked & Approved	SUMMARY OF IN-HOUSE ANALYTICAL TEST METHODS (SOIL)	Appendix S3
N/A	N/A		Sheet 1 of 2

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client:

Engineer:

Contract No: **AG3268-21**

Method Code	Reference	Description of Method	ISO17025 Accredited	MCERTS Accredited	Wet/Dry Sample Tested
TP110	USEPA Methods 8082A & 3665A	Determination of Total & Speciated 7 PCB Congeners by GC/MS SIM	Yes	Yes	Wet
TP114	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Determination of carbonate in soil (rapid titration method)			Dry
TP126	TNRCC Method 1006 (modified)	Extracted petroleum hydrocarbons from TP067 split into aromatic and aliphatic fractions. Analysed by GC/FID.	Yes		Wet
TP129	In-house documented method	Determination of total sulphur by ICP-OES spectroscopy	Yes	Yes	Dry
TP134	In-house documented method	Determination of water soluble chloride by titrimetry	Yes	Yes	Dry
TP135	USEPA Methods 8100 & 8270D. In-house method TP045	Determination of polyaromatic hydrocarbons extractable in dichloromethane, by GC/MS (with concentration stage)			Dry
TP137	BS7755: Section 3.9: 1995/ISO 11466:1995	Determination of acid extractable metals in soil by ICP-OES	Selected	Selected	Dry
TP145	USEPA Methods 3550C & 8270D	Determination of Semi-Volatile Organic Compounds by GC/MS	Yes	Yes	Wet
TP147	USEPA Methods 8082A & 3665A	Determination of total & speciated WHO 12 PCB Congeners by GC/MS SIM.			Wet
TP150	USEPA Methods 8081B & 8141B	Determination of pesticides and herbicides in soil by GC/MS SIM			Dry
TP152	USEPA Method 556	Determination of carbonyls by GC/MS.			Wet
TP154	USEPA Method 5021. Wisconsin DNR modified GRO method	Determination of volatiles in by GC/MS headspace	Yes	Selected	Wet
TP158	USEPA Method 1671	Determination of glycols by GC/FID DI			Wet
TP169	In-house documented method	Determination of water soluble sulphate in 2:1 water/soil extract by ICP-OES spectroscopy	Yes	Yes	Wet
TP171	In-house documented method	Determination of acid soluble sulphate by ICP-OES spectroscopy	Yes	Yes	Dry
TP174	In-house documented method	Determination of Total Organic Carbon in soils by high temperature combustion & NDIR detection	Yes		Dry
TP178	In-house documented method	Determination of water soluble nitrate by ion selective electrode			Dry
TP181	HSG 248 Asbestos: The Analysts Guide (Appendix 2)	Asbestos Identification in bulk materials	Yes	No	Dry
TP183	HSG 248 Asbestos: The Analysts Guide (Appendix 2) & Standing Committee of Analysts: The Quantification of Asbestos in Soil (2017)	Asbestos Identification & Quantification in soils	Yes	No	Dry
TP185	In-house documented method	Determination of loss on ignition at 150-440°C by gravimetry	No	No	Dry

Notes

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2. Results are expressed on a dry-weight basis (samples dried at <30°C) except where stated.
3. With the exception of samples analysed for asbestos, the laboratory removes any material >2mm prior to analysis. The quantity and nature of any material removed from samples is recorded and the information is available on request.
4. The laboratory records the date of analysis of each parameter. This information is available on request.
5. The test results pertain only to the samples provided and is not guaranteed to be representative of the parent material in whole or part from which the sample was taken. Sample location, site address, taken by and client reference are included where provided by the client, Terra Tek accepts no responsibility for the validity or accuracy of this information.

Originator	Checked & Approved	SUMMARY OF IN-HOUSE ANALYTICAL TEST METHODS (SOIL)	Appendix S3
N/A	N/A		Sheet 2 of 2

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

Applied Geology Ltd
Unit 23 Abbey Park
Stareton
Kenilworth
Warwickshire
CV8 2LY
For the attention of Andrew Smith

Report No: B26845
Issue No 02

LABORATORY TEST REPORT

Project Name	**LAND ADJACENT TO JUNCTION 10, M40, ARDLEY**		
Project Number	**B26845**	Date samples received	29/06/2021
Your Ref	AG3268-21	Date written instructions received	29/06/2021
Purchase Order	17014	Date testing commenced	29/06/2021

Please find enclosed the results as summarised below

Figure / Table	Test Quantity	Description	ISO 17025 Accredited
	137	Summary of Geotechnical Tests	See report
	20	Atterberg Limit	Yes
	20	Particle Size Distribution	Yes
	10	Moisture Condition Value	Yes
	22	California Bearing Ratio	Yes

Remarks :

Issued by : Stephen Langman Date of Issue : 12/08/2021

Approved Signatories : S. Langman 12/08/2021
S Langman (Laboratory Coordinator), D Bowen (Production Manager)

Key to symbols used in this report
S/C : Testing was sub-contracted

Unless we are notified to the contrary, samples will be disposed after a period of one month from this date.
The results reported relate to samples received in the laboratory only.
All results contained in this report are provisional unless signed by an approved signatory
This report should not be reproduced except in full without the written approval of the laboratory.
Under multisite accreditation the testing contained in this report may have been performed at another Terra Tek laboratory.
The enclosed results remain the property of Terra Tek Limited and we reserve the right to withdraw
our report if we have not received cleared funds in accordance with our standard terms and conditions
Only those results indicated in this report are UKAS accredited and any opinions or interpretations expressed are outside the scope of UKAS accreditation.
Feedback on the this report may be left via our website www.terratek.co.uk/contact-us

mCERTS UKAS TESTING 0126 30 YEARS 1990-2020

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Offices in Airdrie, Birmingham, Belfast and Aston Clinton
Head Office : 62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No B26845

~ Indicates test not carried out

Sample Identification						Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description		Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP1	0.90-1.00		D	782460	Brown gravelly very silty SAND with pockets of clay. Gravel is fine to coarse	11		~	~	~		~	~	~	~	~	~	
TP10	0.90-1.00		D	782461	Brown gravelly sandy very silty CLAY. Gravel is fine to coarse	26.9		~	~	~		~	~	~	~	~	~	
TP100	0.50-0.60		D	782462	Brown gravelly very sandy CLAY. Gravel is fine to coarse	17		~	~	~		~	~	~	~	~	~	
TP101	1.50-1.60		D	782463	Brown sandy very gravelly CLAY. Gravel is fine to coarse	12.8		~	~	~		~	~	~	~	~	~	
TP102	0.80-0.90		B	782464	Brown sandy clayey fine to coarse GRAVEL with cobbles and organic matter	41	72	32	40	58	CV	~	~	~	~	~	~	

Notes: Opinions and interpretations are outside the scope of UKAS accreditation

Test details are given on the 'Notes on Laboratory Procedures' sheet

See individual report sheets

UKAS Accredited Test Y/N	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No B26845

~ Indicates test not carried out

Sample Identification							Atterberg limits						Density		Total Stress				
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification	Particle Density Mg/m³	Bulk Mg/m³	Dry Mg/m³	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	Other Tests
TP103	0.50-0.60		D	782465	Brown gravelly very sandy CLAY. Gravel is fine to coarse	12		~	~	~		~	~	~	~	~	~	
TP105	1.00-1.10		D	782466	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	9.9		~	~	~		~	~	~	~	~	~	
TP106	0.80-0.90		D	782467	Brown gravelly very sandy CLAY. Gravel is fine to coarse	12.8		~	~	~		~	~	~	~	~	~	
TP107	0.80-0.90		D	782468	Brown sandy clayey fine to coarse GRAVEL	8.9		~	~	~		~	~	~	~	~	~	
TP108	0.90-0.90		B	782469	Brown sandy clayey fine to coarse GRAVEL with cobbles	9.9		~	~	~		~	~	~	~	~	~	CBR
Notes	Opinions and interpretations are outside the scope of UKAS accreditation				UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet													See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y		

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No B26845

~ Indicates test not carried out

Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP109	1.00-1.10		D	782470	Brown gravelly very sandy CLAY. Gravel is fine to coarse	13		~	~	~		~	~	~	~	~	~	
TP11	0.40-0.50		D	782471	Brown gravelly very sandy CLAY. Gravel is fine to coarse	11.4		~	~	~		~	~	~	~	~	~	
TP110	0.60-0.70		D	782472	Brown gravelly very sandy CLAY. Gravel is fine to coarse	12.9		~	~	~		~	~	~	~	~	~	
TP111	0.80-0.90		D	782473	Brown gravelly very sandy CLAY. Gravel is fine to coarse	13		~	~	~		~	~	~	~	~	~	
TP112	0.50-0.60		D	782474	Brown gravelly sandy very silty CLAY with rootlets. Gravel is fine to coarse	29.7		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No **B26845**

~ Indicates test not carried out

Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP113	0.90-1.00		D	782475	Brown gravelly very sandy CLAY. Gravel is fine to coarse	14		~	~	~		~	~	~	~	~	~	
TP114	0.55-0.65		B	782476	Brown gravelly sandy very silty CLAY. Gravel is fine to coarse	22		~	~	~		~	~	~	~	~	~	
TP115	0.70-0.80		D	782477	Brown gravelly sandy very silty CLAY. Gravel is fine to coarse	25.8		~	~	~		~	~	~	~	~	~	
TP117	0.50-0.60		D	782478	Brown gravelly very sandy CLAY. Gravel is fine to coarse	12.1		~	~	~		~	~	~	~	~	~	
TP118	0.80-0.90		D	782479	Brown gravelly very sandy CLAY. Gravel is fine to coarse	11.3		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No B26845

~ Indicates test not carried out

Sample Identification							Atterberg limits						Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification	Particle Density Mg/m³	Bulk Mg/m³	Dry Mg/m³	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	
TP119	0.50-0.60		D	782480	Brown gravelly very sandy CLAY. Gravel is fine to coarse	13		~	~	~		~	~	~	~	~	~	
TP12	0.90-1.00		D	782481	Brown gravelly very sandy CLAY. Gravel is fine to coarse	14.7		~	~	~		~	~	~	~	~	~	
TP120	0.60-0.70		D	782482	Brown sandy clayey fine to medium GRAVEL	9		~	~	~		~	~	~	~	~	~	
TP121	1.00-1.10		D	782483	Brown sandy clayey fine to medium GRAVEL	7.4		~	~	~		~	~	~	~	~	~	
TP122	0.80-0.90		D	782484	Brown gravelly very sandy CLAY. Gravel is fine to coarse	11		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet: Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	See individual report sheets

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No B26845

~ Indicates test not carried out

Sample Identification							Atterberg limits						Density		Total Stress				
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification	Particle Density Mg/m³	Bulk Mg/m³	Dry Mg/m³	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	Other Tests
TP123	0.85-0.90		D	782485	Brown gravelly very sandy CLAY. Gravel is fine to coarse	15	41	14	27	39	CI	~	~	~	~	~	~	
TP124	1.80-1.90		D	782486	Brown gravelly sandy very silty CLAY. Gravel is fine to coarse	30.6		~	~	~		~	~	~	~	~	~	
TP125	0.90-1.00		B	782487	Brown slightly gravelly sandy CLAY with rootlets. Gravel is fine	49	68	27	41	49	CH	2.62	~	~	~	~	~	PSD Compaction CBR
TP126	0.50-0.60		D	782488	Brown gravelly sandy very silty CLAY. Gravel is fine to coarse	32.3		~	~	~		~	~	~	~	~	~	
TP127	0.90-1.00		D	782489	Brown gravelly very sandy CLAY. Gravel is fine to coarse	16.1	41	15	26	28	CI	~	~	~	~	~	~	

Notes: Opinions and interpretations are outside the scope of UKAS accreditation

Test details are given on the 'Notes on Laboratory Procedures' sheet

See individual report sheets

UKAS Accredited Test Y/N	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No **B26845**

~ Indicates test not carried out

Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP128	0.50-0.60		D	782490	Brown gravelly very sandy CLAY. Gravel is fine to coarse	10		~	~	~		~	~	~	~	~	~	
TP129	0.60-0.70		D	782491	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	9.4		~	~	~		~	~	~	~	~	~	
TP13	0.70-0.70		BX2	782492	Brown sandy clayey fine to coarse GRAVEL with cobbles	14.8		~	~	~		~	~	~	~	~	~	PSD CBR
TP130	1.00-1.10		B	782493	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	10.9		~	~	~		~	~	~	~	~	~	
TP133	0.60-0.70		D	782494	Brown gravelly sandy very silty CLAY with rootlets. Gravel is fine to coarse	28.7	47	19	28	27	CI	~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No **B26845**

~ Indicates test not carried out

Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP134	0.70-0.80		D	782495	Brown gravelly sandy very silty CLAY with rootlets. Gravel is fine to coarse	25		~	~	~		~	~	~	~	~	~	
TP135	0.40-0.50		D	782496	Brown gravelly sandy very silty CLAY with rootlets. Gravel is fine to coarse	30.9		~	~	~		~	~	~	~	~	~	
TP136	1.30-1.40		D	782497	Brown gravelly sandy silty CLAY. Gravel is fine to coarse	19.9		~	~	~		~	~	~	~	~	~	
TP138	0.60-0.60		B	782498	Brown sandy clayey fine to coarse GRAVEL with cobbles	12.7	40	17	23	76	CI	2.66	~	~	~	~	~	PSD Compaction CBR
TP139	0.60-0.70		D	782499	Brown sandy clayey fine to coarse GRAVEL	8.6		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No **B26845**

~ Indicates test not carried out

Sample Identification							Atterberg limits						Density		Total Stress				
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification	Particle Density Mg/m³	Bulk Mg/m³	Dry Mg/m³	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	Other Tests
TP14	1.10-1.20		D	782500	Brown sandy clayey fine to coarse GRAVEL	9.7		~	~	~		~	~	~	~	~	~	
TP140	0.50-0.60		D	782501	Brown gravelly sandy silty CLAY. Gravel is fine to coarse	10		~	~	~		~	~	~	~	~	~	
TP141	0.80-0.90		D	782502	Brown gravelly sandy silty CLAY. Gravel is fine to coarse	9.8		~	~	~		~	~	~	~	~	~	
TP142	0.60-0.60		B	782503	Brown silty very sandy very clayey fine to coarse GRAVEL with cobbles and rootlets	27.2		~	~	~		~	~	~	~	~	~	PSD CBR
TP143	0.50-0.60		D	782504	Brown sandy very gravelly CLAY. Gravel is fine to coarse	9.1		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No B26845

~ Indicates test not carried out

Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP144	0.40-0.50		D	782505	Brown gravelly very sandy CLAY. Gravel is fine to coarse	15		~	~	~		~	~	~	~	~	~	
TP145	0.70-0.70		B	782506	Brown sandy clayey fine to coarse GRAVEL with cobbles	11.1		~	~	~		~	~	~	~	~	~	PSD CBR
TP146	1.00-1.10		D	782507	Brown sandy clayey fine to coarse GRAVEL	8.9		~	~	~		~	~	~	~	~	~	
TP147	0.90-1.00		D	782508	Brown sandy clayey fine to coarse GRAVEL	9.4		~	~	~		~	~	~	~	~	~	
TP148	1.10-1.20		D	782509	Brown gravelly sandy CLAY. Gravel is fine to medium	17.9		~	~	~		~	~	~	~	~	~	
Notes	Opinions and interpretations are outside the scope of UKAS accreditation					Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
					UKAS Accredited Test Y/N	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

Originator	Checked & Approved
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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

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Client: Applied Geology Limited

Engineer:

Contract No B26845

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Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP149	0.70-0.80		D	189008	Brown gravelly sandy silty CLAY. Gravel is fine to coarse	23		~	~	~		~	~	~	~	~	~	
TP15	0.70-0.70		B	782510	Brown very clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse	15.9	34	20	14	62	CL	2.65	~	~	~	~	~	PSD Compaction CBR
TP150	0.80-0.90		D	782511	Brown sandy clayey fine to coarse GRAVEL	6.9		~	~	~		~	~	~	~	~	~	
TP151	1.10-1.20		D	782512	Brown sandy clayey fine to coarse GRAVEL	11.2		~	~	~		~	~	~	~	~	~	
TP152	0.80-0.90		D	782513	Brown gravelly very sandy CLAY. Gravel is fine to coarse	12.3		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

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Engineer:

Contract No **B26845**

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Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP16	1.40-1.50		D	782514	Brown gravelly very sandy CLAY. Gravel is fine to coarse	12		~	~	~		~	~	~	~	~	~	
TP17	0.60-0.70		D	782515	Brown gravelly silty very sandy CLAY. Gravel is fine to coarse	15.3		~	~	~		~	~	~	~	~	~	
TP18	0.60-0.70		D	782516	Brown gravelly sandy very silty CLAY. Gravel is fine to coarse	27.8		~	~	~		~	~	~	~	~	~	
TP2	0.90-0.90		B	782517	Brown very clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse	13		~	~	~		~	~	~	~	~	~	PSD CBR
TP21	0.80-0.90		D	782518	Brown gravelly sandy very silty CLAY. Gravel is fine to coarse	12.8		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

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Client: Applied Geology Limited

Engineer:

Contract No **B26845**

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Sample Identification							Atterberg limits						Density		Total Stress				
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification	Particle Density Mg/m³	Bulk Mg/m³	Dry Mg/m³	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	Other Tests
TP22	0.40-0.50		D	782519	Brown sandy very gravelly CLAY. Gravel is fine to coarse	9.9		~	~	~		~	~	~	~	~	~	
TP24	1.80-1.90		D	782520	Brown gravelly sandy very silty CLAY with rootlets. Gravel is fine to coarse	32.1	47	24	23	83	CI	~	~	~	~	~	~	
TP24	2.40-2.80		D	782521	Brown gravelly sandy very silty CLAY with rootlets. Gravel is fine to coarse	38.3	69	26	43	64	CH	~	~	~	~	~	~	
TP25	0.40-0.50		D	782522	Reddish brown very sandy very silty CLAY	26.2		~	~	~		~	~	~	~	~	~	
TP26	1.20-1.30		D	782523	Brown slightly gravelly sandy CLAY. Gravel is fine	16.9		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

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Client: Applied Geology Limited

Engineer:

Contract No B26845

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Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP27	1.40-1.50		D	782524	Brown gravelly very sandy CLAY. Gravel is fine to medium	13		~	~	~		~	~	~	~	~	~	
TP28	0.50-0.60		B	782525	Brown sandy very clayey fine to coarse GRAVEL with cobbles	21.8	37	15	22	61	CI	2.67	~	~	~	~	~	PSD Compaction CBR
TP29	0.70-0.80		D	782526	Brown gravelly very sandy CLAY. Gravel is fine to coarse	16.9		~	~	~		~	~	~	~	~	~	
TP3	0.90-1.00		D	782527	Brown gravelly very sandy CLAY. Gravel is fine to coarse	12.4		~	~	~		~	~	~	~	~	~	
TP30	1.30-1.40		B	782528	Brown slightly sandy gravelly CLAY. Gravel is fine to coarse	9.1		~	~	~		~	~	~	~	~	~	

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UKAS Accredited Test Y/N	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y

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Client: Applied Geology Limited

Engineer:

Contract No B26845

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Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP31	0.70-0.80		B	782529	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	15	27	14	13	65	CL	~	~	~	~	~	~	CBR
TP32	0.50-0.60		D	782530	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	13		~	~	~		~	~	~	~	~	~	
TP34	0.50-0.60		D	782531	Brown sandy clayey fine to coarse GRAVEL	5.4		~	~	~		~	~	~	~	~	~	
TP35	1.90-2.00		D	782532	Brown sandy clayey fine to coarse GRAVEL	6.7		~	~	~		~	~	~	~	~	~	
TP36	0.80-0.90		D	782533	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	16		~	~	~		~	~	~	~	~	~	

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UKAS Accredited Test Y/N	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y

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Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP37	0.40-0.50		B	189009	Brown gravelly very sandy CLAY. Gravel is fine to coarse	14		~	~	~		~	~	~	~	~	~	CBR
TP38	1.00-1.10		D	782534	Brown gravelly sandy CLAY. Gravel is fine to coarse	11.9		~	~	~		~	~	~	~	~	~	
TP38	1.60-1.70		B	782535	Brown sandy clayey fine to coarse GRAVEL with cobbles	15.3		~	~	~		~	~	~	~	~	~	PSD
TP39	0.70-0.80		D	782536	Brown gravelly sandy CLAY. Gravel is fine to coarse	16.2		~	~	~		~	~	~	~	~	~	
TP4	1.20-1.30		D	782537	Brown gravelly sandy CLAY. Gravel is fine to coarse	21.9		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

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SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

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Client: Applied Geology Limited

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Contract No **B26845**

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Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP40	0.50-0.60		D	782538	Brown gravelly sandy CLAY. Gravel is fine to coarse	13		~	~	~		~	~	~	~	~	~	
TP41	1.50-1.60		D	782539	Brown gravelly sandy CLAY. Gravel is fine to coarse	12		~	~	~		~	~	~	~	~	~	
TP42	0.40-0.50		D	782540	Brown very sandy very clayey fine to coarse GRAVEL	8.5		~	~	~		~	~	~	~	~	~	
TP44	0.40-0.50		D	782600	Brown very sandy very clayey fine to coarse GRAVEL with cobbles	11.8		~	~	~		~	~	~	~	~	~	PSD CBR
TP45	1.60-1.70		D	782541	Brown very sandy very clayey fine to coarse GRAVEL	8.5		~	~	~		~	~	~	~	~	~	
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						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

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Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP46	0.50-0.60		D	782542	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	12		~	~	~		~	~	~	~	~	~	
TP48	0.50-0.60		D	782543	Brown clayey very sandy fine to coarse GRAVEL	15.3		~	~	~		~	~	~	~	~	~	PSD CBR
TP49	1.20-1.50		D	782544	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	14.8		~	~	~		~	~	~	~	~	~	
TP5	0.60-0.70		D	782545	Brown clayey very sandy fine to coarse GRAVEL	8.8		~	~	~		~	~	~	~	~	~	
TP5	1.90-2.00		D	782605	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	12.3		~	~	~		~	~	~	~	~	~	

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UKAS Accredited Test Y/N	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y

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Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP50	0.40-0.50		D	189010	Brown gravelly sandy CLAY. Gravel is fine to coarse	18		~	~	~		~	~	~	~	~	~	
TP51	1.00-1.10		D	782546	Brown gravelly sandy CLAY. Gravel is fine to coarse	16.2		~	~	~		~	~	~	~	~	~	
TP52	0.60-0.70		D	782547	Brown gravelly sandy CLAY. Gravel is fine to coarse	16.4		~	~	~		~	~	~	~	~	~	
TP53	1.40-1.50		D	782548	Brown gravelly sandy CLAY. Gravel is fine to coarse	13.1		~	~	~		~	~	~	~	~	~	
TP54	0.70-0.80		D	782549	Brown gravelly sandy CLAY. Gravel is fine to coarse	15.8		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

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Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP55	0.90-1.00		D	782550	Brown gravelly sandy CLAY. Gravel is fine to coarse	12		~	~	~		~	~	~	~	~	~	
TP56	0.50-0.50		B	782551	Brown gravelly very sandy CLAY. Gravel is fine to coarse	20.2	35	14	21	46	CL	~	~	~	~	~	~	CBR
TP57	1.10-1.20		D	189011	Brown clayey very sandy fine to coarse GRAVEL	7.7		~	~	~		~	~	~	~	~	~	
TP59	0.50-0.60		D	782552	Brown gravelly sandy CLAY. Gravel is fine to coarse	14.2		~	~	~		~	~	~	~	~	~	
TP60	0.70-0.80		B	782553	Brown gravelly very sandy very silty CLAY. Gravel is fine to medium	37.2	61	20	41	62	CH	2.62	~	~	~	~	~	PSD Compaction CBR
Notes: Opinions and interpretations are outside the scope of UKAS accreditation						Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
					UKAS Accredited Test Y/N	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

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Sample Identification						Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description		Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP61	1.20-1.30		D	782554	Brown gravelly sandy CLAY. Gravel is fine to coarse	15		~	~	~		~	~	~	~	~	~	
TP62	0.50-0.50		B	782555	Brown sandy silty fine to coarse GRAVEL with cobbles	20.1		~	~	~		~	~	~	~	~	~	PSD CBR
TP63	1.60-1.70		D	189012	Brown very sandy very silty CLAY	18.1		~	~	~		~	~	~	~	~	~	
TP64	0.70-0.80		D	782556	Brown gravelly sandy CLAY. Gravel is fine to coarse	13		~	~	~		~	~	~	~	~	~	
TP66	1.50-1.60		D	782557	Brown gravelly sandy CLAY. Gravel is fine to coarse	14.2		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

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Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP67	0.90-1.00		D	782558	Brown gravelly sandy CLAY. Gravel is fine to coarse	13		~	~	~		~	~	~	~	~	~	
TP68	0.80-0.90		B	782609	Brown gravelly sandy CLAY. Gravel is fine to coarse	17.7		~	~	~		~	~	~	~	~	~	
TP69	0.90-1.00		D	782560	Brown gravelly sandy CLAY. Gravel is fine to coarse	12	29	15	14	28	CL	~	~	~	~	~	~	
TP7	0.80-0.90		D	782561	Brown gravelly very sandy silty CLAY. Gravel is fine to medium	19.9		~	~	~		~	~	~	~	~	~	
TP70	0.80-0.80		B	782562	Brown gravelly sandy CLAY. Gravel is fine to coarse	13		~	~	~		~	~	~	~	~	~	CBR

Notes: Opinions and interpretations are outside the scope of UKAS accreditation

Test details are given on the 'Notes on Laboratory Procedures' sheet

See individual report sheets

UKAS Accredited Test Y/N	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No B26845

~ Indicates test not carried out

Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP71	0.60-0.70		D	782563	Brown gravelly sandy CLAY. Gravel is fine to coarse	14		~	~	~		~	~	~	~	~	~	
TP72	1.50-1.60		D	782564	Brown gravelly sandy CLAY. Gravel is fine to coarse	9.2		~	~	~		~	~	~	~	~	~	
TP73	1.20-1.30		D	782565	Brown gravelly sandy CLAY. Gravel is fine to coarse	14		~	~	~		~	~	~	~	~	~	
TP74	0.40-0.40		D	782566	Brown gravelly sandy very silty CLAY. Gravel is fine to medium	28.6	42	21	21	17	CI	~	~	~	~	~	~	
TP75	0.80-0.80		B	782567	Brown sandy clayey fine to coarse GRAVEL with cobbles	15.2	31	17	14	59	CL	2.66	~	~	~	~	~	PSD Compaction CBR
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	See individual report sheets

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No B26845

~ Indicates test not carried out

Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP76	0.80-0.90		D	782568	Brown sandy clayey fine to coarse GRAVEL	12		~	~	~		~	~	~	~	~	~	
TP78	0.50-0.60		D	782569	Brown gravelly sandy very silty CLAY. Gravel is fine to medium	25.7		~	~	~		~	~	~	~	~	~	
TP79	0.90-0.90		B	782570	Brown slightly gravelly sandy CLAY with rootlets. Gravel is fine	20.2	43	21	22	40	CI	2.60	~	~	~	~	~	PSD Compaction CBR
TP8	0.80-0.90		D	782571	Brown sandy clayey fine to coarse GRAVEL	19.9		~	~	~		~	~	~	~	~	~	
TP80	0.80-0.90		D	782572	Brown gravelly very sandy silty CLAY. Gravel is fine to coarse	9.6		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No B26845

~ Indicates test not carried out

Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP82	0.50-0.60		D	782574	Brown gravelly sandy CLAY. Gravel is fine to coarse	28	38	21	17	51	CI	~	~	~	~	~	~	
TP83	0.50-0.60		D	782573	Brown gravelly sandy CLAY. Gravel is fine to coarse	13.8		~	~	~		~	~	~	~	~	~	
TP84	0.80-0.90		D	782575	Brown gravelly sandy CLAY. Gravel is fine to coarse	9.8		~	~	~		~	~	~	~	~	~	
TP86	0.90-1.00		D	782576	Brown gravelly sandy CLAY. Gravel is fine to coarse	11		~	~	~		~	~	~	~	~	~	
TP87	1.10-1.20		D	782598	Brown gravelly sandy CLAY. Gravel is fine to coarse	9.3		~	~	~		~	~	~	~	~	~	
Notes	Opinions and interpretations are outside the scope of UKAS accreditation				UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No B26845

~ Indicates test not carried out

Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP88	0.70-0.80		D	189013	Brown gravelly sandy very silty CLAY. Gravel is fine to medium	36		~	~	~		~	~	~	~	~	~	
TP89	0.80-0.80		B	782577	Brown clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse	17		~	~	~		~	~	~	~	~	~	PSD CBR
TP9	1.00-1.10		D	782578	Brown gravelly sandy CLAY. Gravel is fine to coarse	11.9		~	~	~		~	~	~	~	~	~	
TP90	0.60-0.70		D	782579	Brown gravelly sandy CLAY. Gravel is fine to coarse	10.8		~	~	~		~	~	~	~	~	~	
TP91	1.30-1.40		D	782580	Brown gravelly sandy CLAY. Gravel is fine to coarse	10.9		~	~	~		~	~	~	~	~	~	

Notes: Opinions and interpretations are outside the scope of UKAS accreditation

Test details are given on the 'Notes on Laboratory Procedures' sheet

See individual report sheets

UKAS Accredited Test Y/N	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No B26845

~ Indicates test not carried out

Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits					Particle Density	Density		Total Stress			Other Tests
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification		Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
						%	%	%		%		Mg/m³	Mg/m³	Mg/m³	kPa	kPa		
TP92	0.80-0.90		D	782581	Brown gravelly sandy CLAY. Gravel is fine to coarse	11		~	~	~		~	~	~	~	~	~	
TP93	0.60-0.70		D	782582	Brown gravelly sandy CLAY. Gravel is fine to coarse	18.9		~	~	~		~	~	~	~	~	~	
TP94	0.70		Bx2	188976	COBBLES with brown sandy clayey fine to coarse gravel	14.8		~	~	~		~	~	~	~	~	~	PSD CBR
TP96	0.60-0.70		D	782583	Brown gravelly sandy CLAY. Gravel is fine to coarse	17		~	~	~		~	~	~	~	~	~	
TP97	1.00-1.10		B	782584	Brown gravelly very sandy very silty CLAY with cobbles. Gravel is fine to coarse	22.4	47	25	22	31	CI	~	~	~	~	~	~	PSD CBR
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

Originator	Checked & Approved
CD	CD 05/08/2021

SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site: AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY

Client: Applied Geology Limited

Engineer:

Contract No **B26845**

~ Indicates test not carried out

Sample Identification							Atterberg limits						Density		Total Stress				
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification	Particle Density Mg/m³	Bulk Mg/m³	Dry Mg/m³	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	Other Tests
TP98	0.60-0.70		D	782585	Brown gravelly sandy CLAY. Gravel is fine to coarse	18		~	~	~		~	~	~	~	~	~	
TP99	0.90-1.00		D	782586	Brown gravelly very sandy CLAY. Gravel is fine to coarse	8.7		~	~	~		~	~	~	~	~	~	
Notes: Opinions and interpretations are outside the scope of UKAS accreditation					UKAS Accredited Test Y/N	Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
						Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	

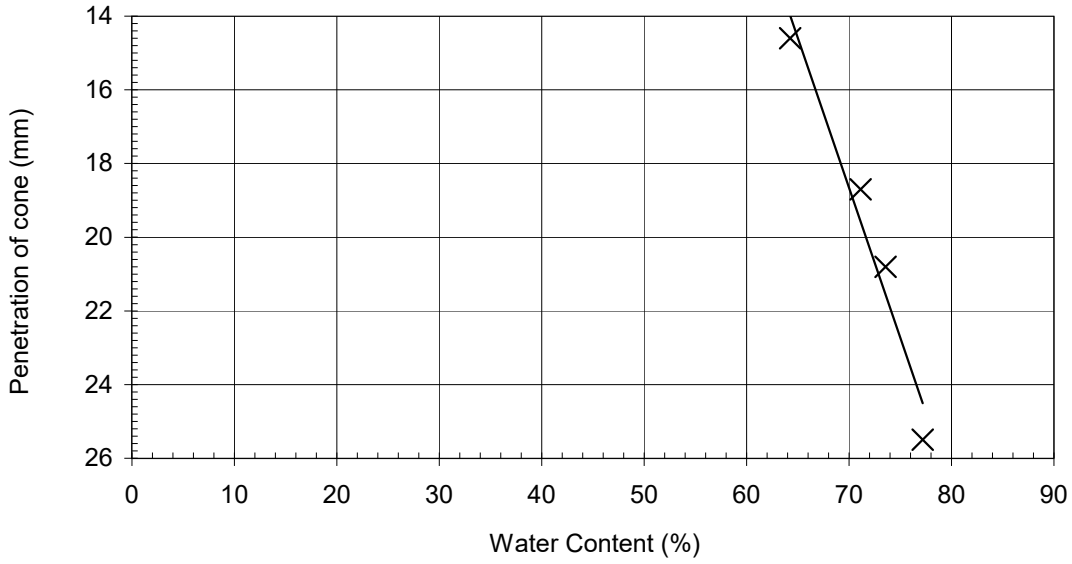
Originator	Checked & Approved
CD	CD 05/08/2021

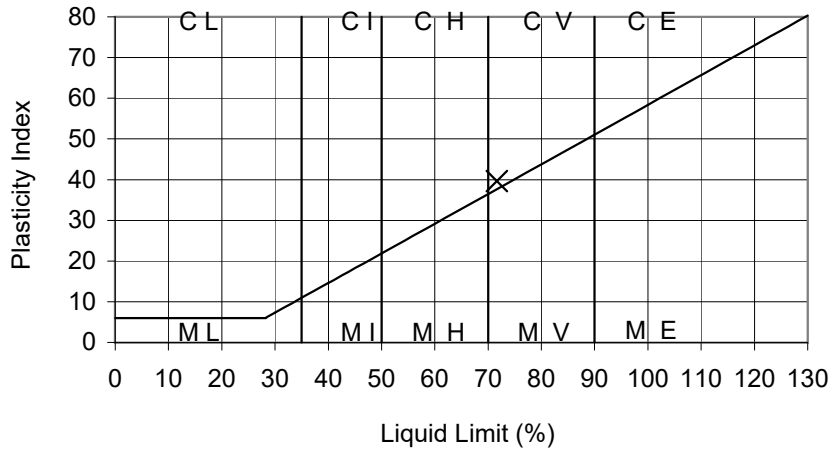
SUMMARY OF GEOTECHNICAL TESTS

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.**	**B26845**
	Client	Applied Geology Limited	Hole ID	TP102
	Engineer		Sample Ref	
			Depth (m)	0.80-0.90
			Sample Type	B

Non Engineering Description : Brown sandy clayey fine to coarse GRAVEL with cobbles and organic matter

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

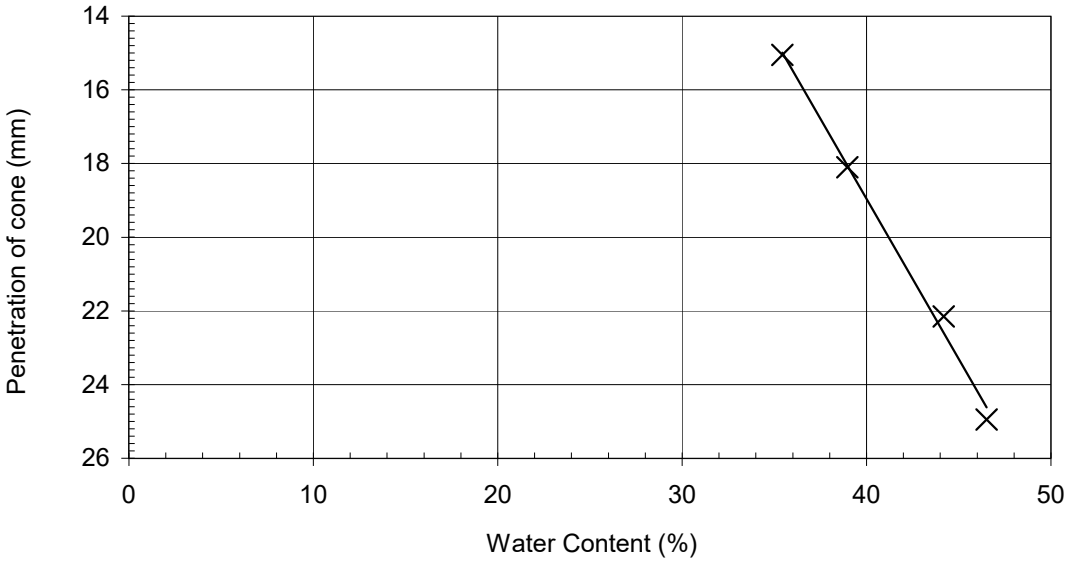
As Received Water Content : (BS EN ISO 17892-1:2014)	41.0	%
Percentage retained on 425µm sieve :	58	%
Liquid Limit :	72	%
Plastic Limit :	32	%
Plasticity Index :	40	
Equivalent water content of material passing 425µm sieve :	97.6	%
Liquidity Index :	1.64	

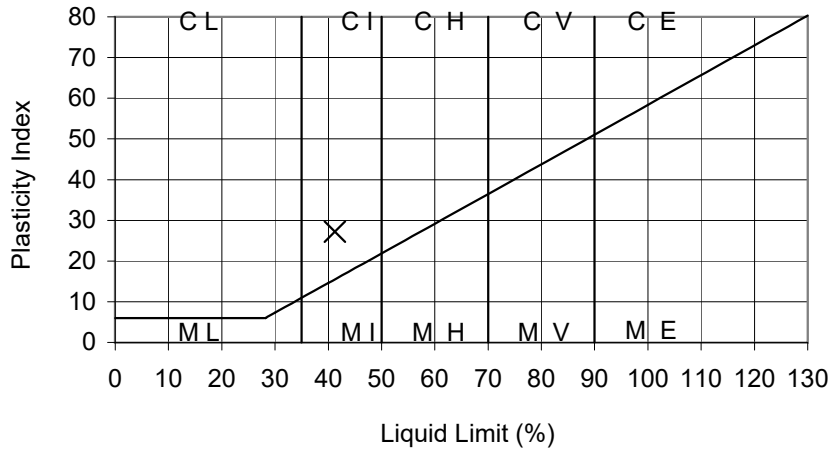
Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method) Plastic Limit, Plasticity Index & Liquidity Index**	
AK	CD 05/08/2021	BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk Sheet 1 of 1

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.**	**B26845**
	Client	Applied Geology Limited	Hole ID	TP123
	Engineer		Sample Ref	
			Depth (m)	0.85-0.90
			Sample Type	D

Non Engineering Description : Brown gravelly very sandy CLAY. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

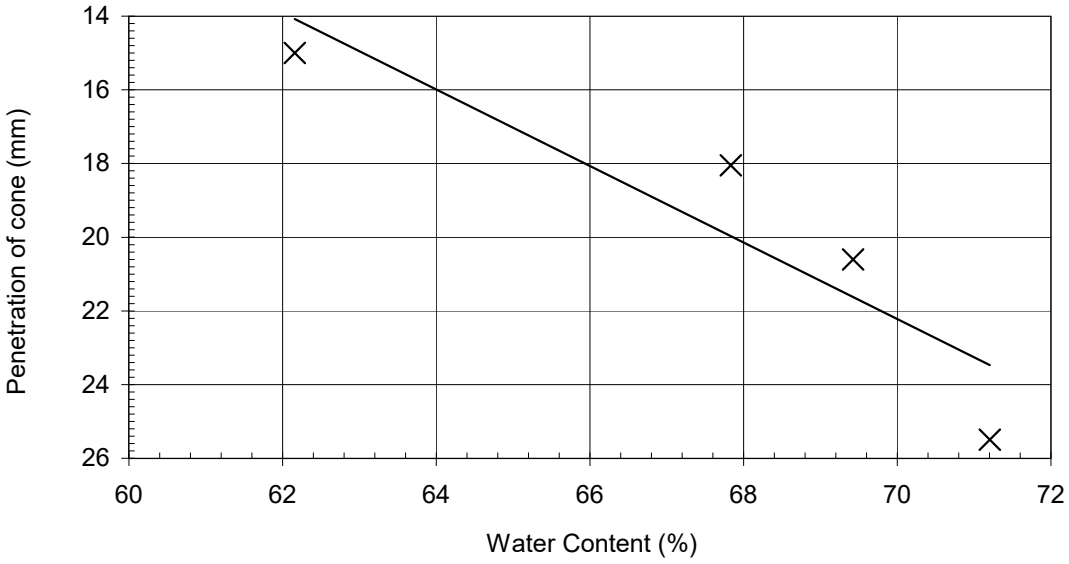
As Received Water Content : (BS EN ISO 17892-1:2014)	14.9 %
Percentage retained on 425µm sieve :	39 %
Liquid Limit :	41 %
Plastic Limit :	14 %
Plasticity Index :	27
Equivalent water content of material passing 425µm sieve :	24.4 %
Liquidity Index :	0.39

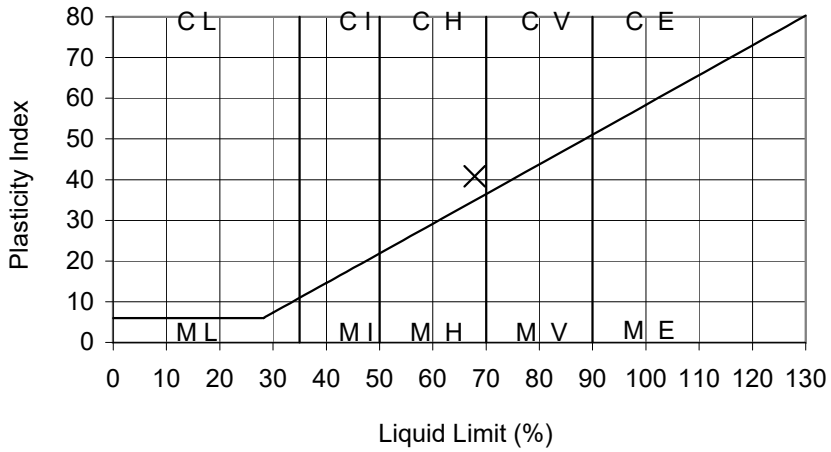
Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method) Plastic Limit, Plasticity Index & Liquidity Index**	
SR	CD 05/08/2021	BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk Sheet 1 of 1

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.**	**B26845**
	Client	Applied Geology Limited	Hole ID	TP125
	Engineer		Sample Ref	
			Depth (m)	0.90-1.00
			Sample Type	B

Non Engineering Description : Brown slightly gravelly sandy CLAY with rootlets. Gravel is fine

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

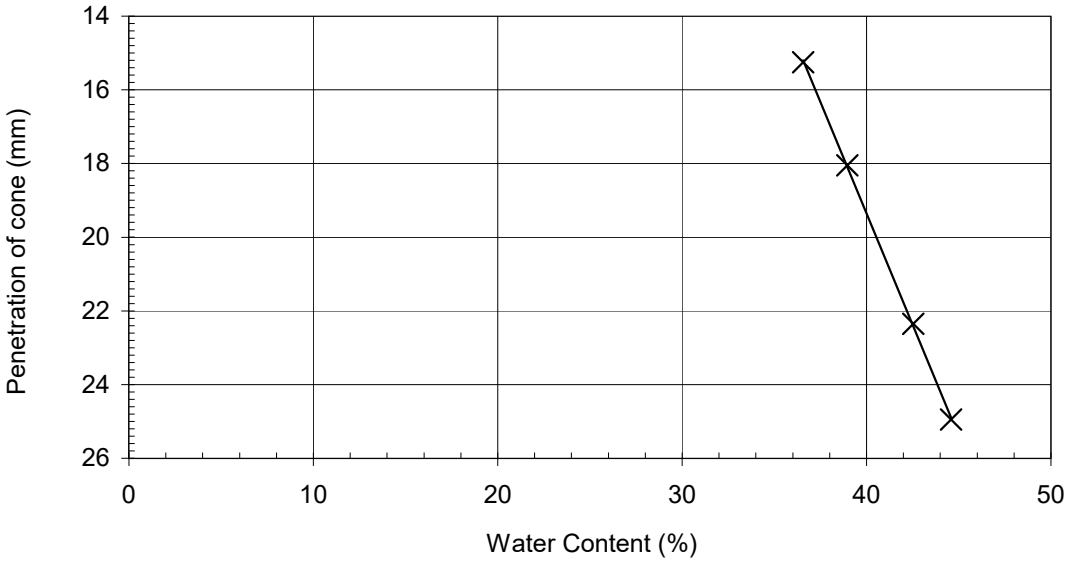
As Received Water Content : (BS EN ISO 17892-1:2014)	49.0	%
Percentage retained on 425µm sieve :	49	%
Liquid Limit :	68	%
Plastic Limit :	27	%
Plasticity Index :	41	
Equivalent water content of material passing 425µm sieve :	96.1	%
Liquidity Index :	1.69	

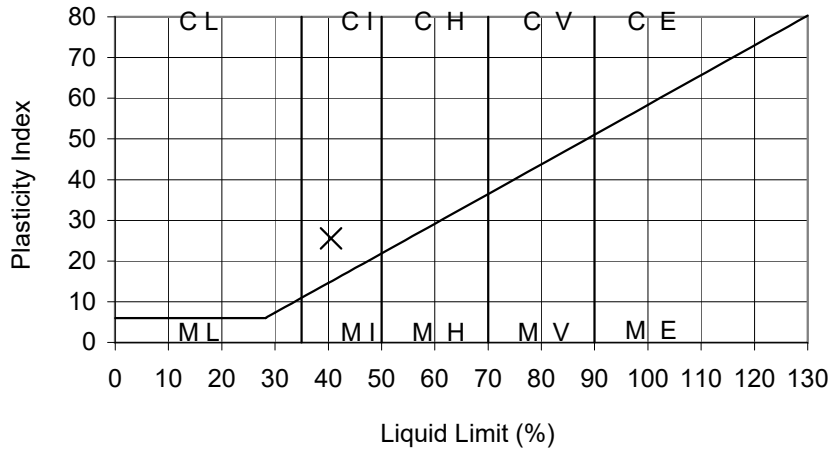
Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk	Sheet 1 of 1
DW	CD 05/08/2021			

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP127
	Engineer		Sample Ref
			Depth (m) 0.90-1.00
			Sample Type D

Non Engineering Description : Brown gravelly very sandy CLAY. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

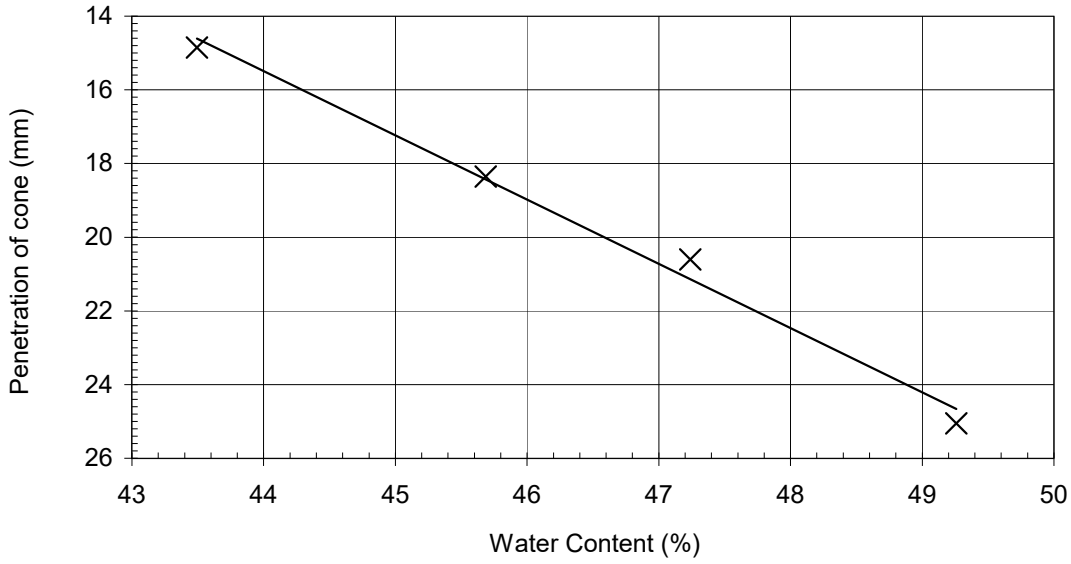
As Received Water Content : (BS EN ISO 17892-1:2014)	16.1 %
Percentage retained on 425µm sieve :	28 %
Liquid Limit :	41 %
Plastic Limit :	15 %
Plasticity Index :	26
Equivalent water content of material passing 425µm sieve :	22.4 %
Liquidity Index :	0.28

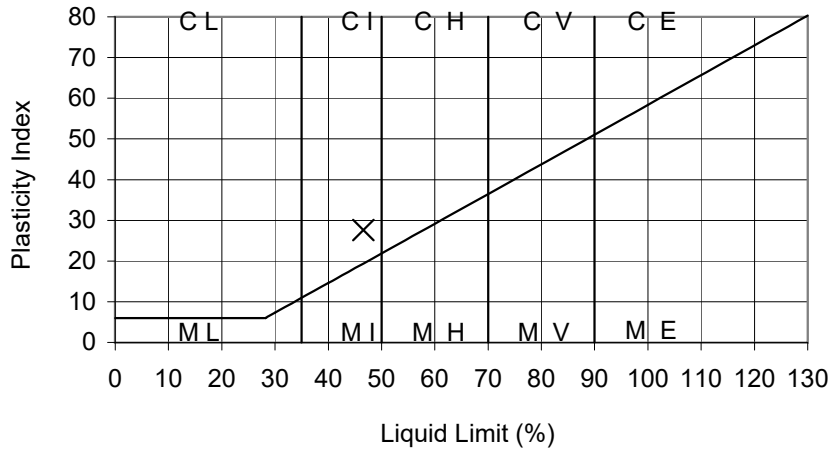
Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
SR	CD 05/08/2021		Sheet 1 of 1

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.**	**B26845**
	Client	Applied Geology Limited	Hole ID	TP133
	Engineer		Sample Ref	
			Depth (m)	0.60-0.70
			Sample Type	D

Non Engineering Description : Brown gravelly sandy very silty CLAY with rootlets. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

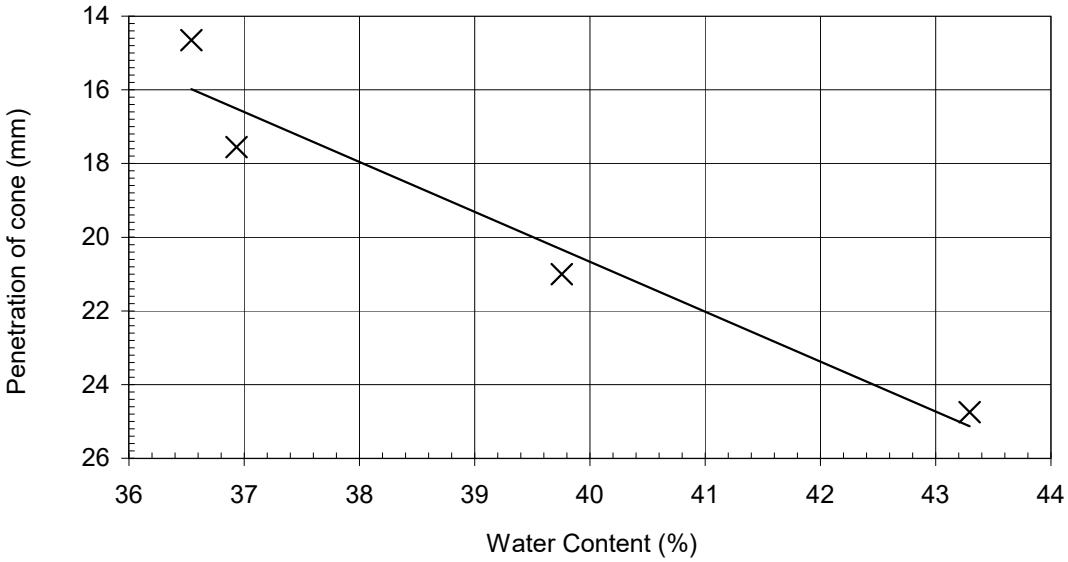
As Received Water Content : (BS EN ISO 17892-1:2014)	28.7	%
Percentage retained on 425µm sieve :	27	%
Liquid Limit :	47	%
Plastic Limit :	19	%
Plasticity Index :	28	
Equivalent water content of material passing 425µm sieve :	39.3	%
Liquidity Index :	0.73	

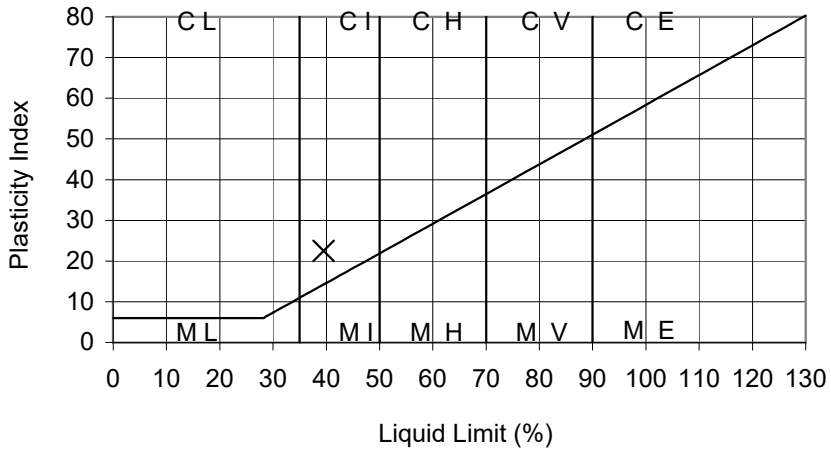
Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
DW	CD 05/08/2021		Sheet 1 of 1

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP138
	Engineer		Sample Ref
			Depth (m) 0.60-0.60
			Sample Type B

Non Engineering Description : Brown sandy clayey fine to coarse GRAVEL with cobbles

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

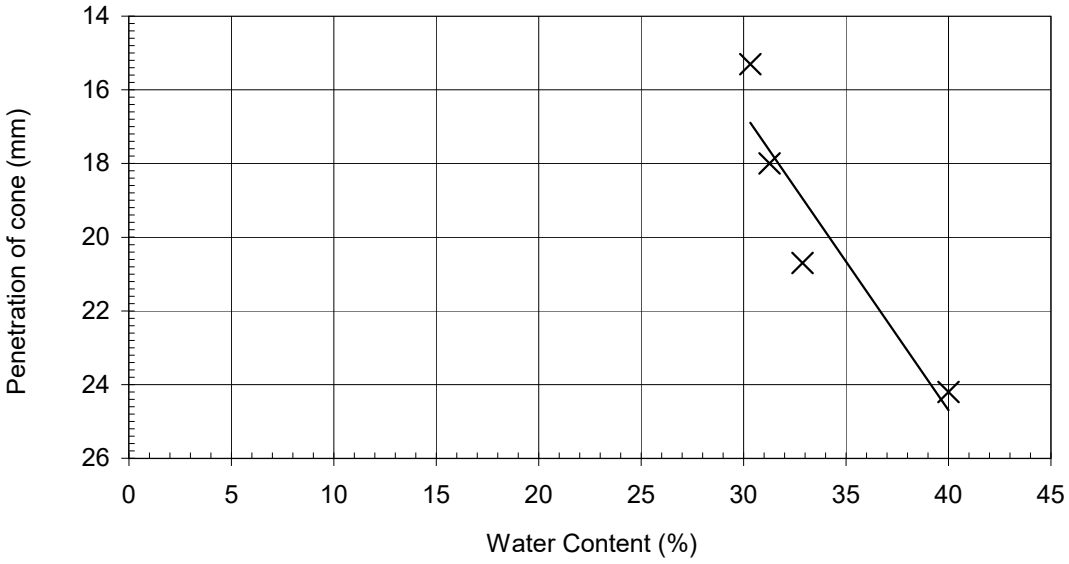
As Received Water Content : (BS EN ISO 17892-1:2014)	12.7 %
Percentage retained on 425µm sieve :	76 %
Liquid Limit :	40 %
Plastic Limit :	17 %
Plasticity Index :	23
Equivalent water content of material passing 425µm sieve :	52.9 %
Liquidity Index :	1.56

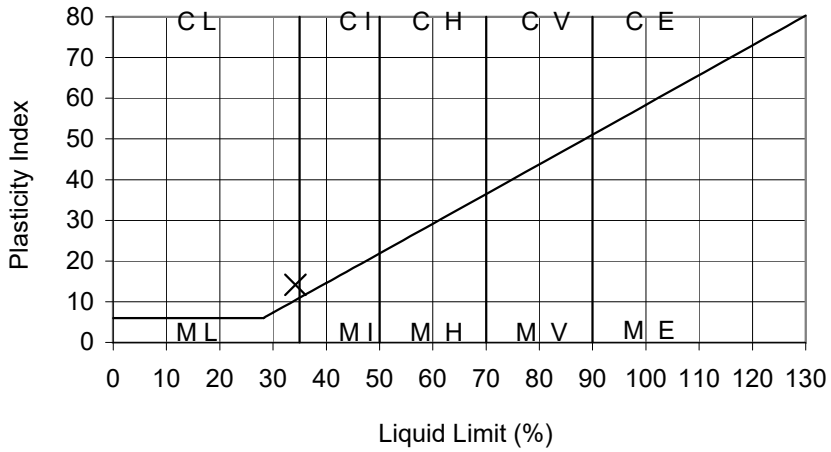
Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
DW	CD 05/08/2021		Sheet 1 of 1

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP15
	Engineer		Sample Ref
			Depth (m) 0.70-0.70
			Sample Type B

Non Engineering Description : Brown very clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	15.9	%
Percentage retained on 425µm sieve :	62	%
Liquid Limit :	34	%
Plastic Limit :	20	%
Plasticity Index :	14	
Equivalent water content of material passing 425µm sieve :	41.8	%
Liquidity Index :	1.56	

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
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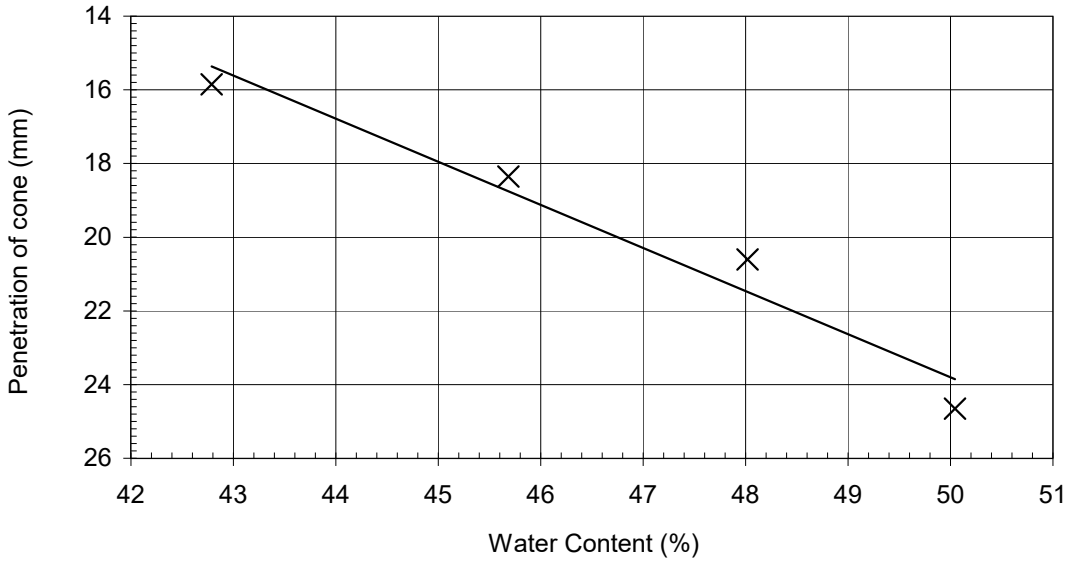
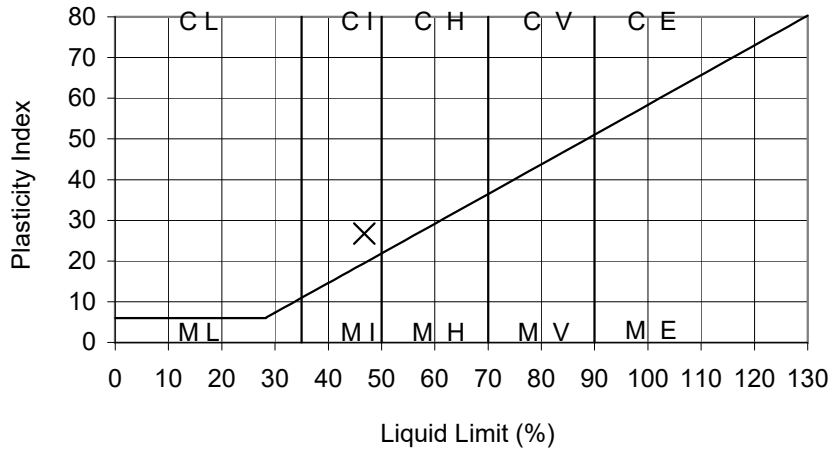
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP18
	Engineer		Sample Ref Depth (m) 0.60-0.70 Sample Type D

Non Engineering Description : Brown gravelly sandy very silty CLAY. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	27.8 %
Percentage retained on 425µm sieve :	30 %
Liquid Limit :	47 %
Plastic Limit :	20 %
Plasticity Index :	27
Equivalent water content of material passing 425µm sieve :	39.7 %
Liquidity Index :	0.73

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
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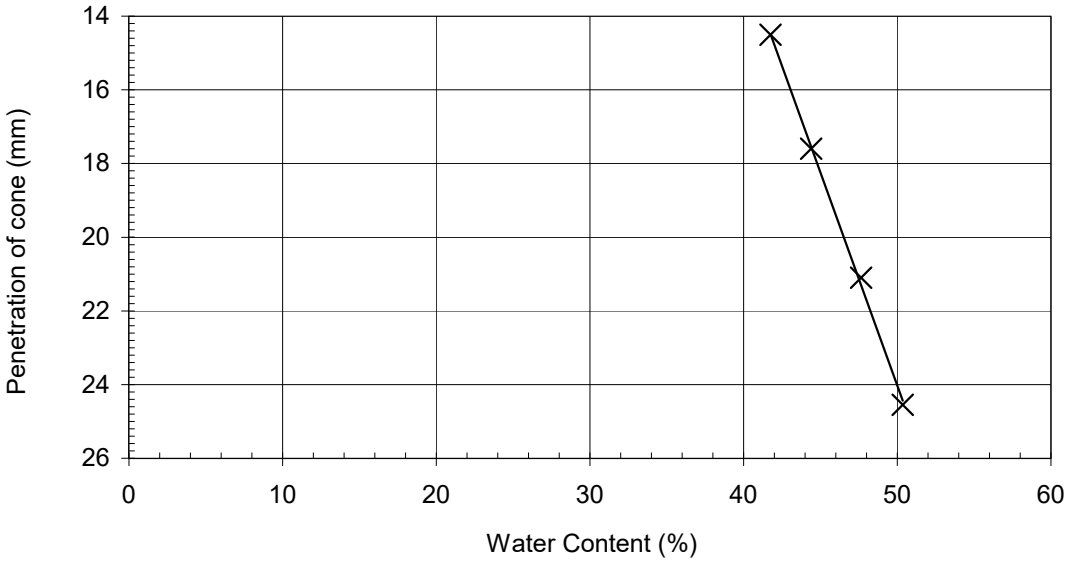
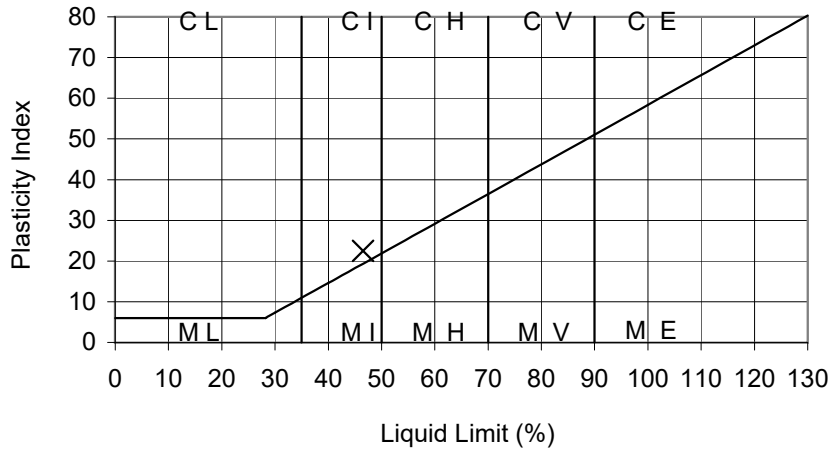
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP24
	Engineer		Sample Ref Depth (m) 1.80-1.90 Sample Type D

Non Engineering Description : Brown gravelly sandy very silty CLAY with rootlets. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	32.1 %
Percentage retained on 425µm sieve :	83 %
Liquid Limit :	47 %
Plastic Limit :	24 %
Plasticity Index :	23
Equivalent water content of material passing 425µm sieve :	189 %
Liquidity Index :	7.17

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
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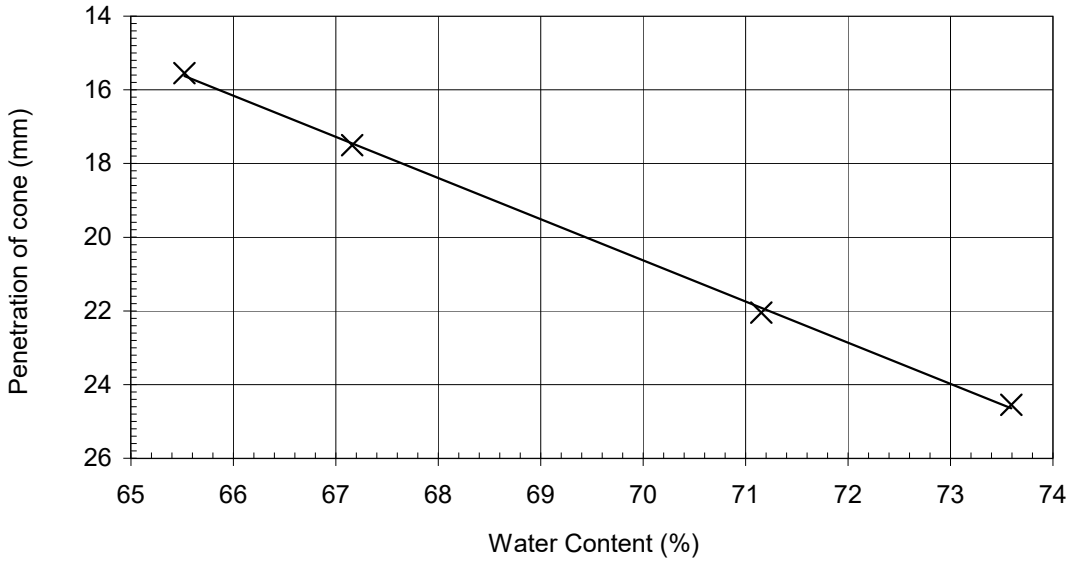
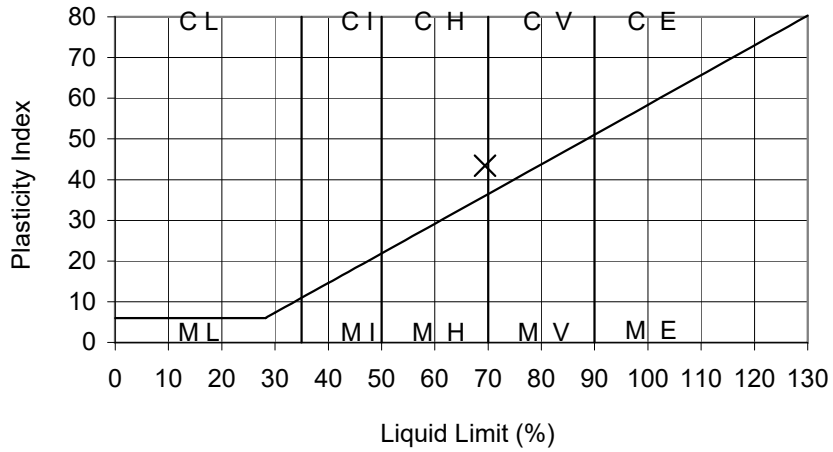
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP24 Sample Ref Depth (m) 2.40-2.80 Sample Type D
	Engineer		

Non Engineering Description : Brown gravelly sandy very silty CLAY with rootlets. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	38.3	%
Percentage retained on 425µm sieve :	64	%
Liquid Limit :	69	%
Plastic Limit :	26	%
Plasticity Index :	43	
Equivalent water content of material passing 425µm sieve :	106	%
Liquidity Index :	1.86	

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
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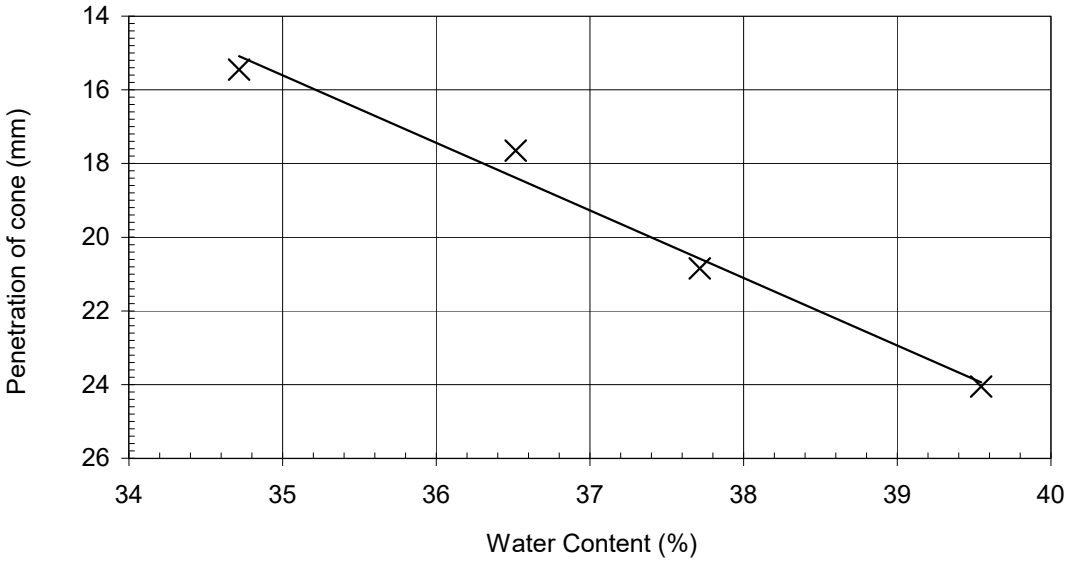
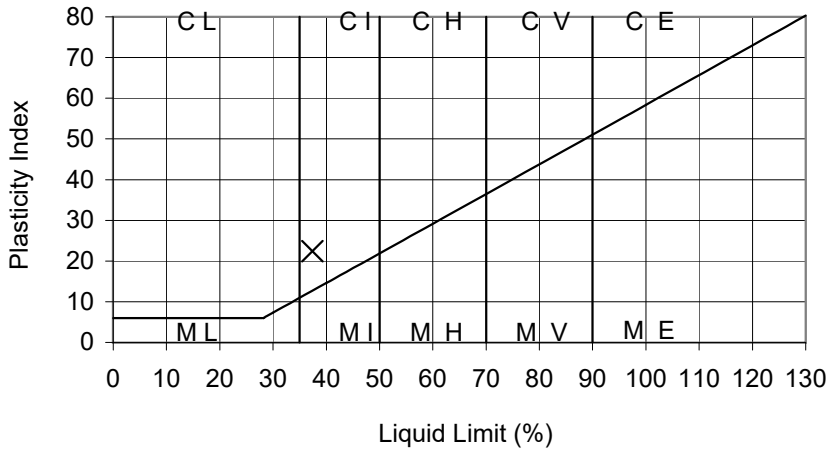
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP28
	Engineer		Sample Ref Depth (m) 0.50-0.60 Sample Type B

Non Engineering Description : Brown sandy very clayey fine to coarse GRAVEL with cobbles

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	21.8 %
Percentage retained on 425µm sieve :	61 %
Liquid Limit :	37 %
Plastic Limit :	15 %
Plasticity Index :	22
Equivalent water content of material passing 425µm sieve :	55.9 %
Liquidity Index :	1.86

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
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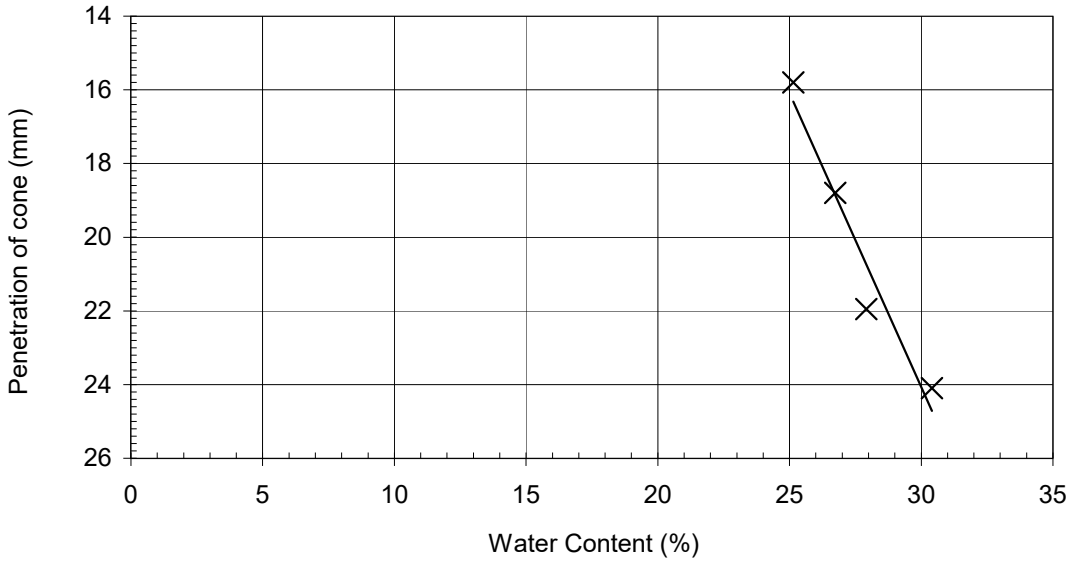
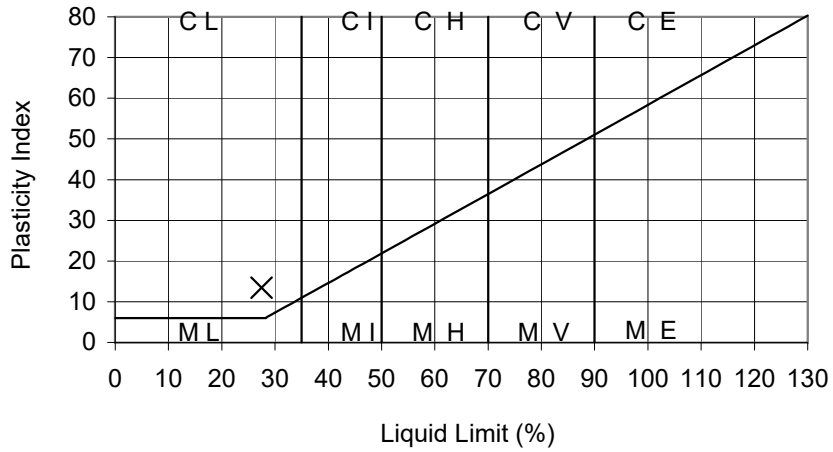
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP31
	Engineer		Sample Ref Depth (m) 0.70-0.80 Sample Type B

Non Engineering Description : Brown very gravelly very sandy CLAY. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	14.7 %
Percentage retained on 425µm sieve :	65 %
Liquid Limit :	27 %
Plastic Limit :	14 %
Plasticity Index :	13
Equivalent water content of material passing 425µm sieve :	42.0 %
Liquidity Index :	2.15

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	TTk
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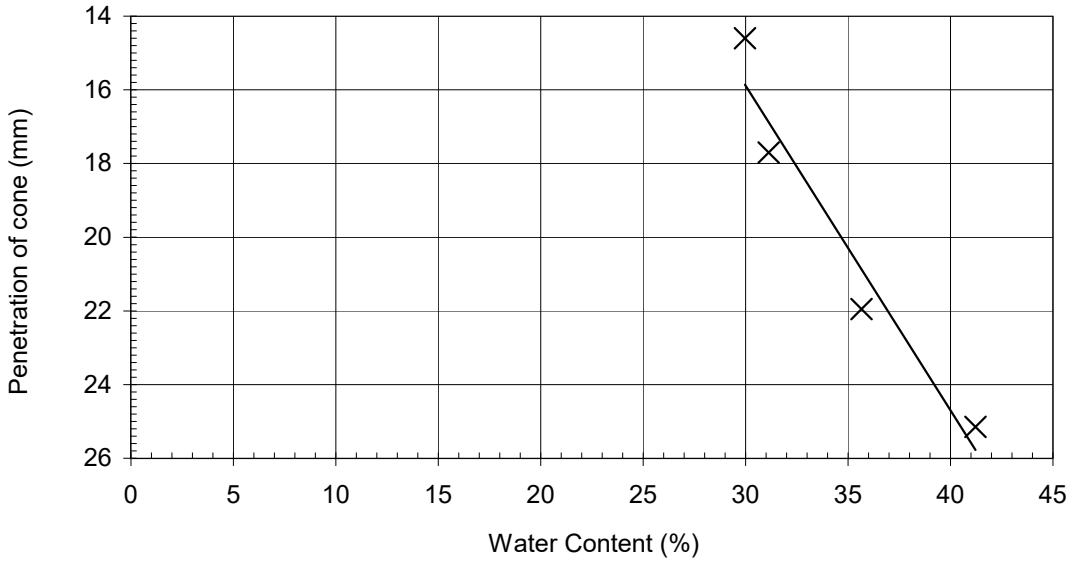
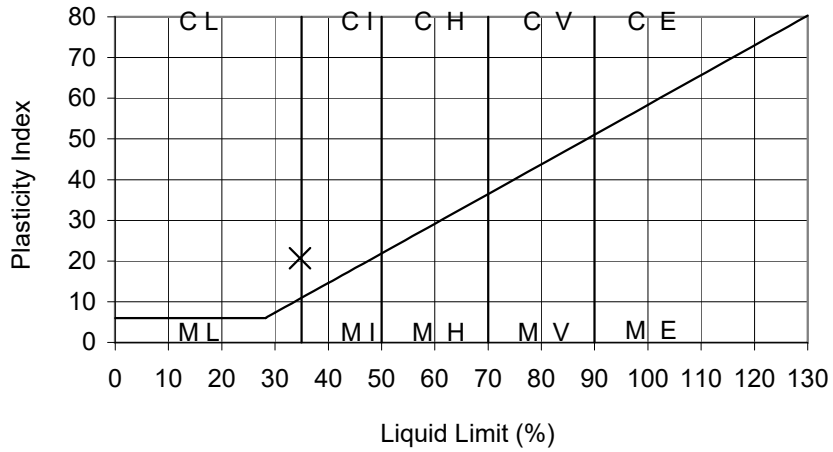
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP56
	Engineer		Sample Ref Depth (m) 0.50-0.50 Sample Type B

Non Engineering Description : Brown gravelly very sandy CLAY. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	20.2 %
Percentage retained on 425µm sieve :	46 %
Liquid Limit :	35 %
Plastic Limit :	14 %
Plasticity Index :	21
Equivalent water content of material passing 425µm sieve :	37.4 %
Liquidity Index :	1.11

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
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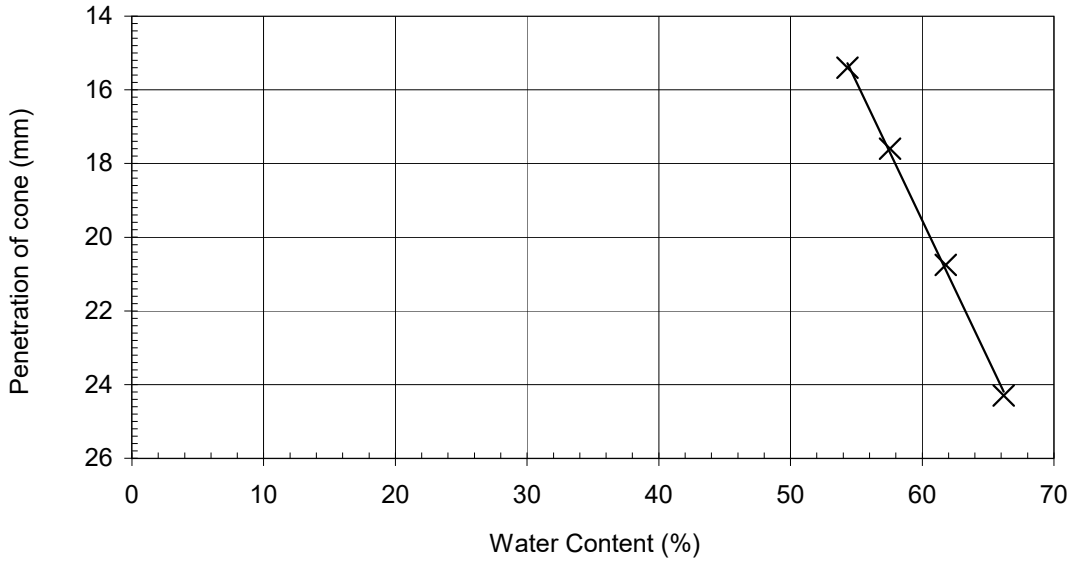
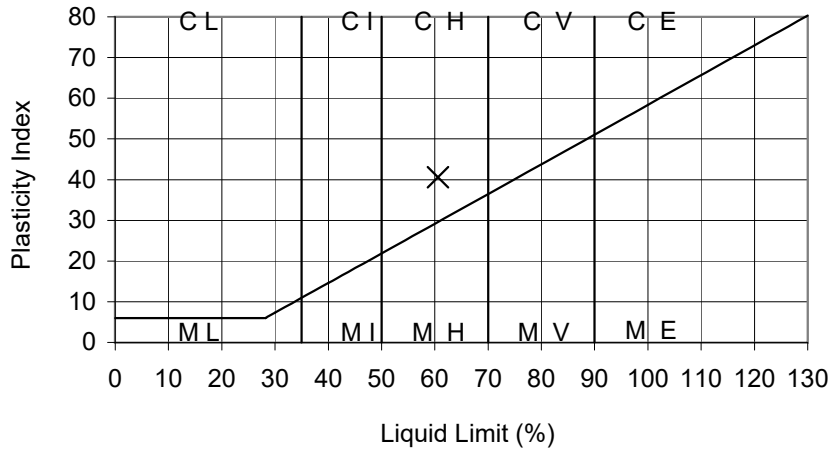
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.**	**B26845**
	Client	Applied Geology Limited	Hole ID	TP60
	Engineer		Sample Ref	
			Depth (m)	0.70-0.80
			Sample Type	B

Non Engineering Description : Brown gravelly very sandy very silty CLAY. Gravel is fine to medium

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	37.2	%
Percentage retained on 425µm sieve :	62	%
Liquid Limit :	61	%
Plastic Limit :	20	%
Plasticity Index :	41	
Equivalent water content of material passing 425µm sieve :	97.9	%
Liquidity Index :	1.90	

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk	Sheet 1 of 1
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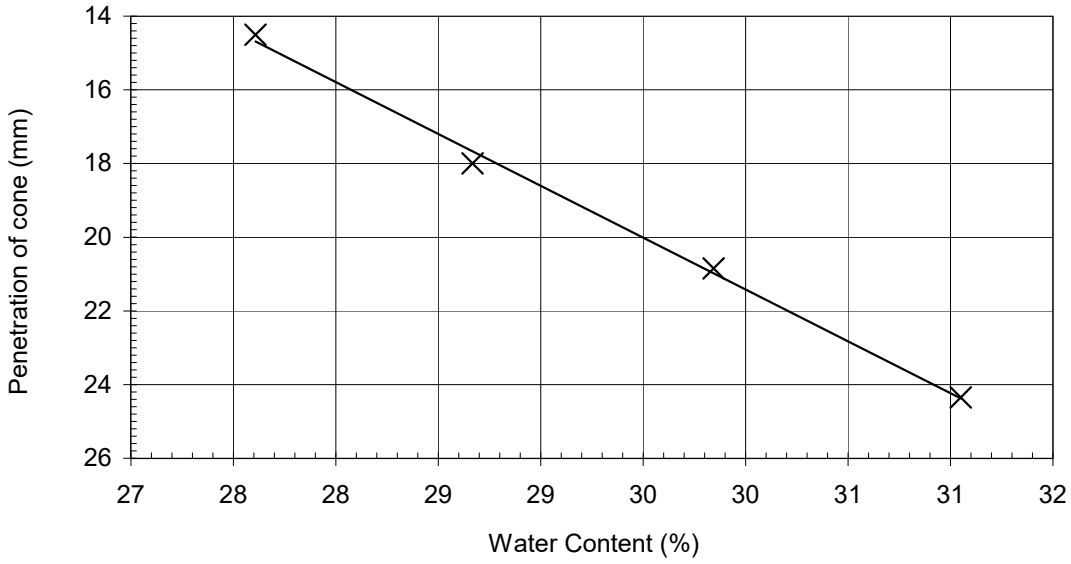
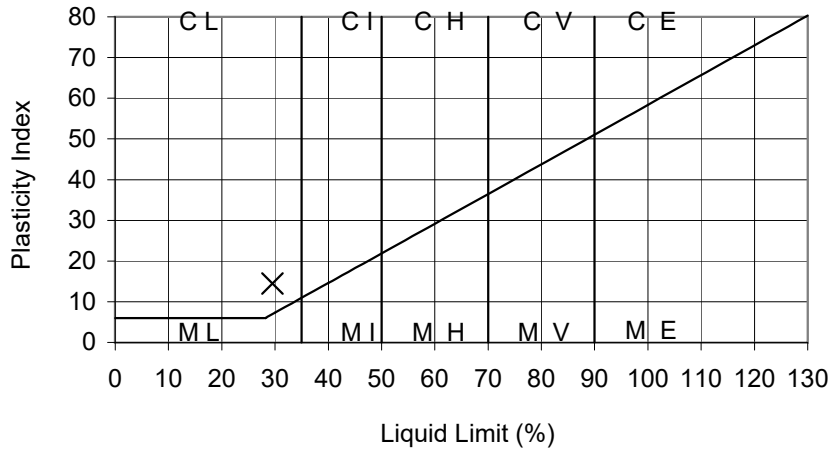
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP69
	Engineer		Sample Ref Depth (m) 0.90-1.00 Sample Type D

Non Engineering Description : Brown gravelly sandy CLAY. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	12.0 %
Percentage retained on 425µm sieve :	28 %
Liquid Limit :	29 %
Plastic Limit :	15 %
Plasticity Index :	14
Equivalent water content of material passing 425µm sieve :	16.7 %
Liquidity Index :	0.12

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
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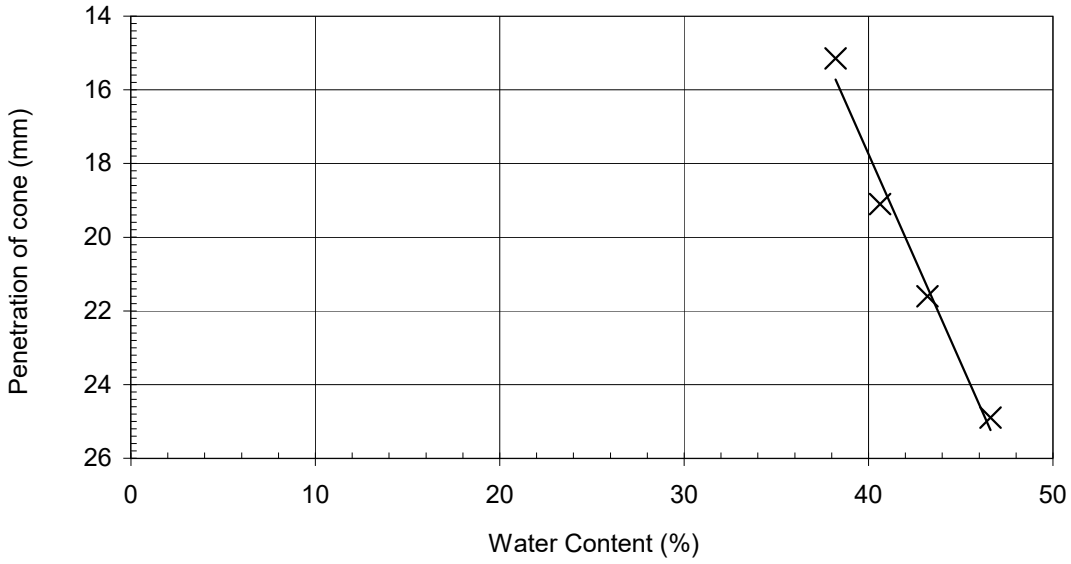
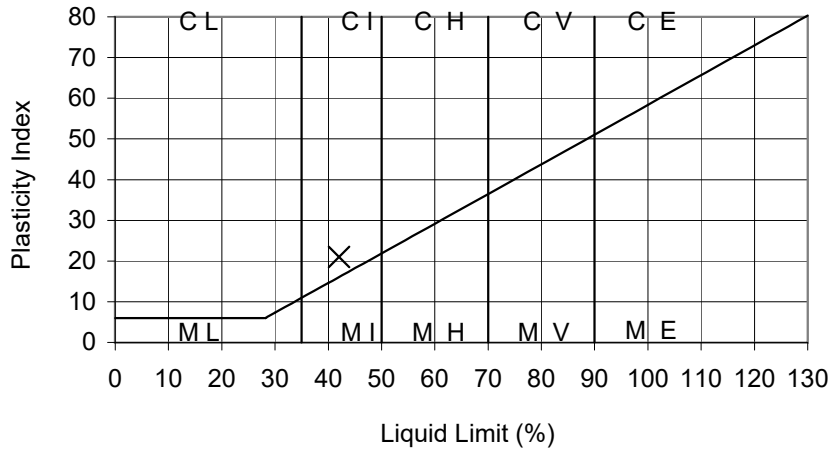
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP74
	Engineer		Sample Ref
			Depth (m) 0.40-0.40
			Sample Type D

Non Engineering Description : Brown gravelly sandy very silty CLAY. Gravel is fine to medium

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	28.6	%
Percentage retained on 425µm sieve :	17	%
Liquid Limit :	42	%
Plastic Limit :	21	%
Plasticity Index :	21	
Equivalent water content of material passing 425µm sieve :	34.5	%
Liquidity Index :	0.64	

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
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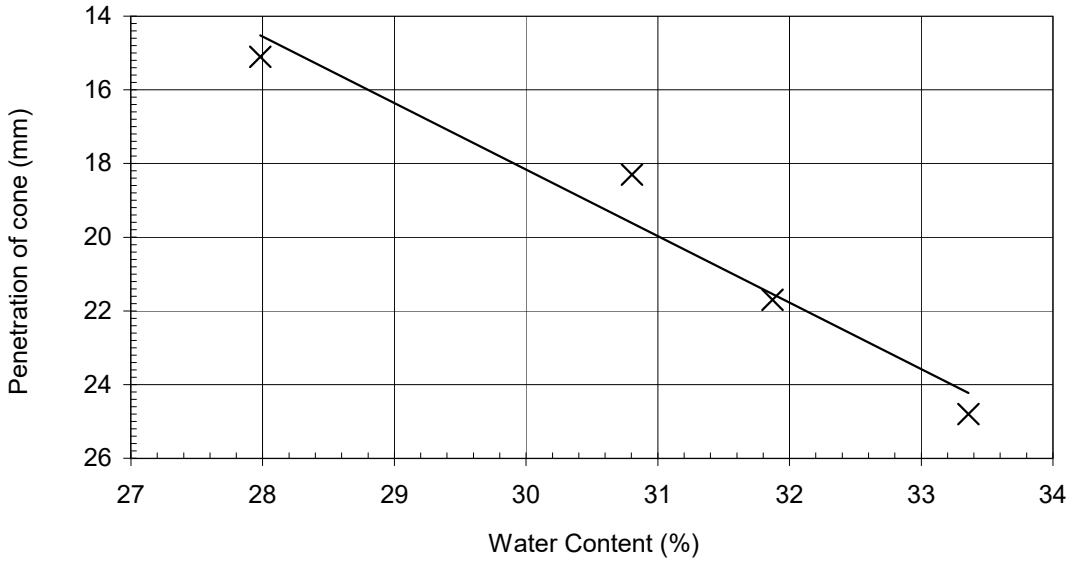
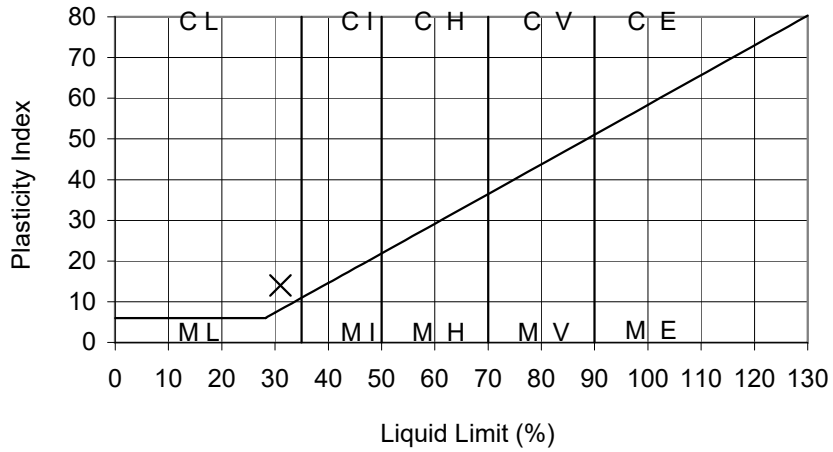
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.**	**B26845**
	Client	Applied Geology Limited	Hole ID	TP75
	Engineer		Sample Ref	
			Depth (m)	0.80-0.80
			Sample Type	B

Non Engineering Description : Brown sandy clayey fine to coarse GRAVEL with cobbles

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

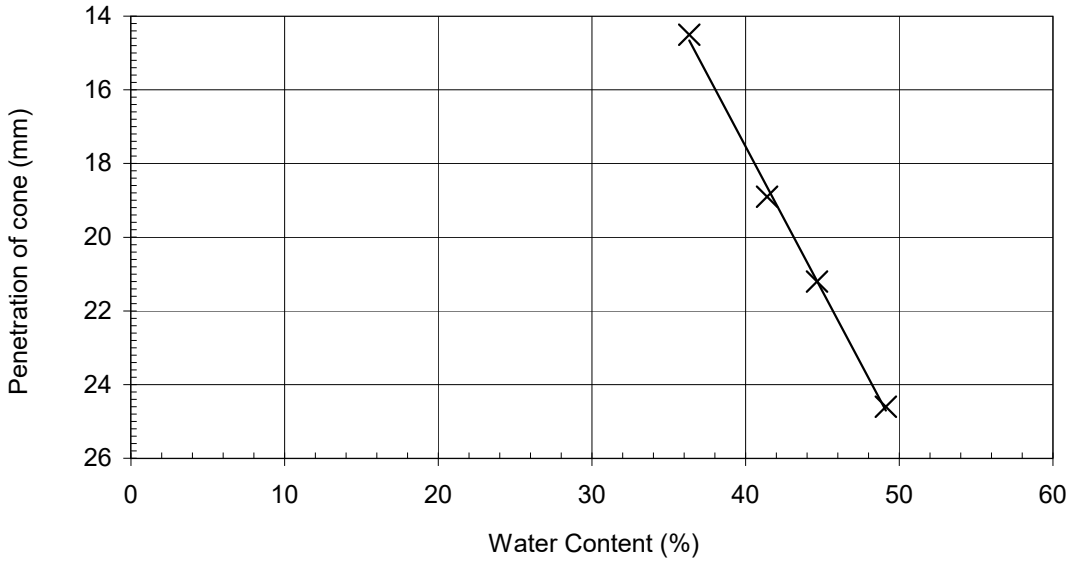
As Received Water Content : (BS EN ISO 17892-1:2014)	15.2 %
Percentage retained on 425µm sieve :	59 %
Liquid Limit :	31 %
Plastic Limit :	17 %
Plasticity Index :	14
Equivalent water content of material passing 425µm sieve :	37.1 %
Liquidity Index :	1.44

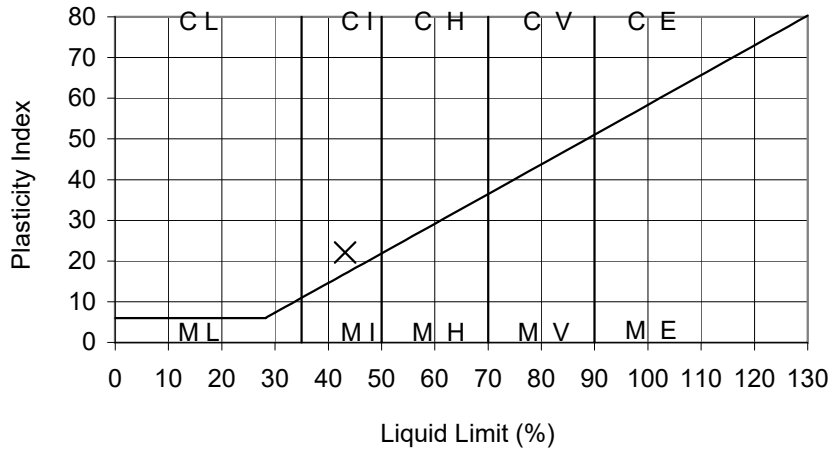
Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method) Plastic Limit, Plasticity Index & Liquidity Index**	
AK	CD 05/08/2021	BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Sheet 1 of 1

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP79
	Engineer		Sample Ref Depth (m) 0.90-0.90 Sample Type B

Non Engineering Description : Brown slightly gravelly sandy CLAY with rootlets. Gravel is fine

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	20.2 %
Percentage retained on 425µm sieve :	40 %
Liquid Limit :	43 %
Plastic Limit :	21 %
Plasticity Index :	22
Equivalent water content of material passing 425µm sieve :	33.7 %
Liquidity Index :	0.58

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
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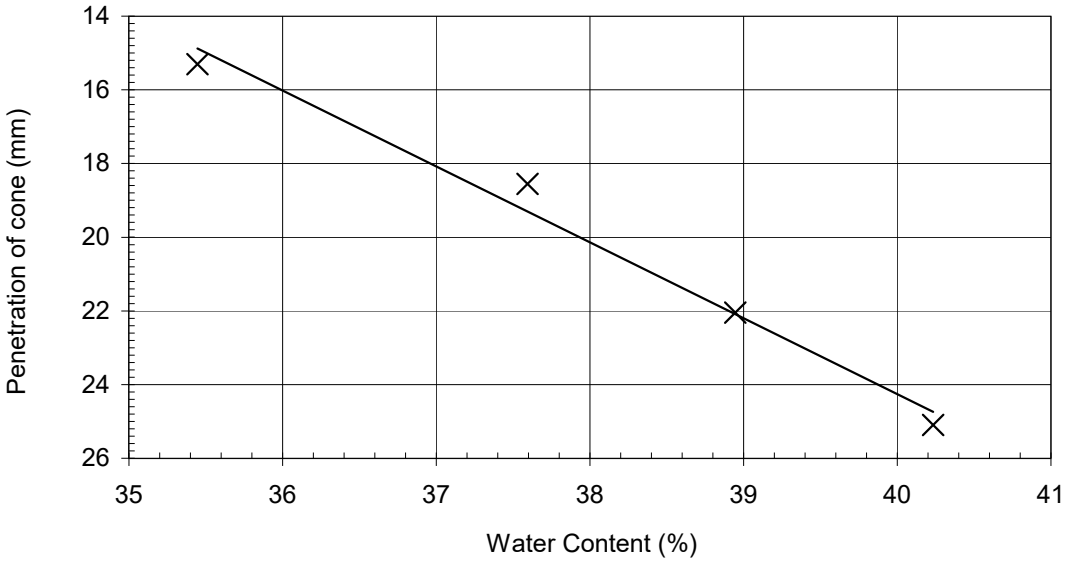
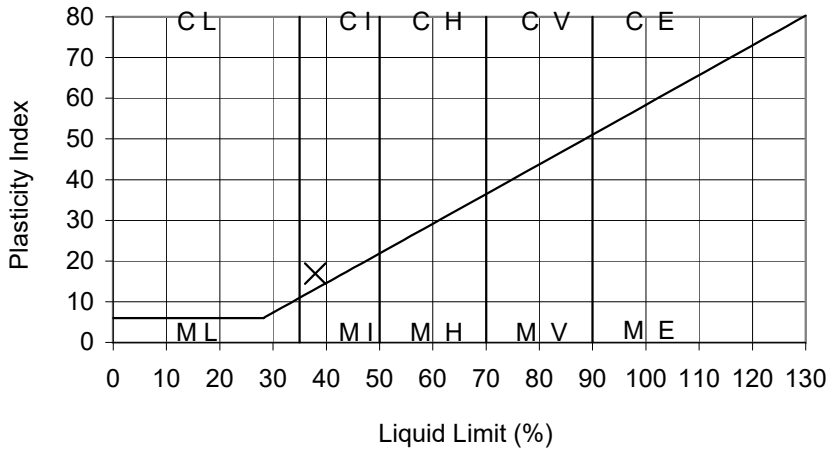
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP82
	Engineer		Sample Ref Depth (m) 0.50-0.60 Sample Type D

Non Engineering Description : Brown gravelly sandy CLAY. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	27.8 %
Percentage retained on 425µm sieve :	51 %
Liquid Limit :	38 %
Plastic Limit :	21 %
Plasticity Index :	17
Equivalent water content of material passing 425µm sieve :	56.7 %
Liquidity Index :	2.10

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
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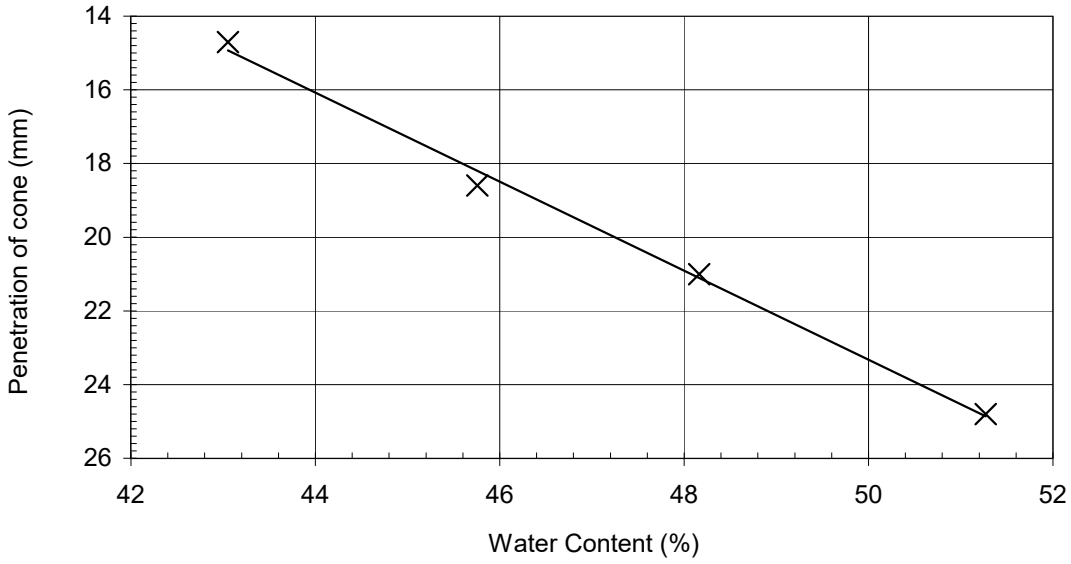
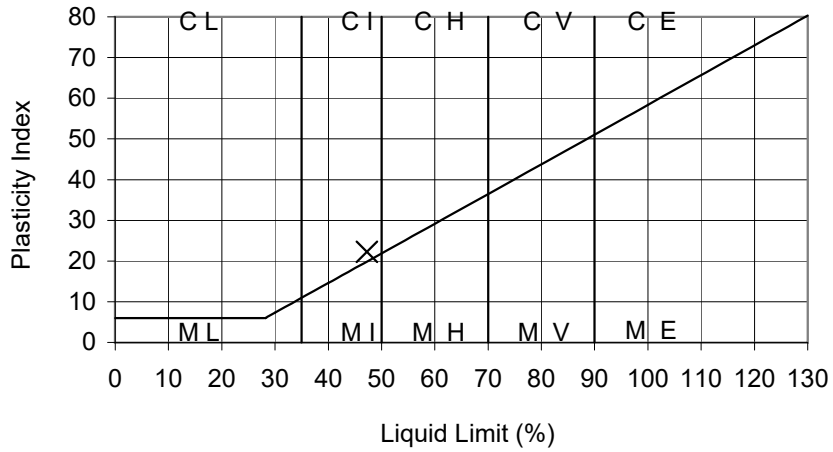
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No.** **B26845**
	Client	Applied Geology Limited	Hole ID TP97
	Engineer		Sample Ref
			Depth (m) 1.00-1.10
			Sample Type D

Non Engineering Description : Brown gravelly very sandy very silty CLAY with cobbles. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving





Liquid Limit was determined by mixing using increasing water content and 30° cone

Results :

As Received Water Content : (BS EN ISO 17892-1:2014)	22.4 %
Percentage retained on 425µm sieve :	31 %
Liquid Limit :	47 %
Plastic Limit :	25 %
Plasticity Index :	22
Equivalent water content of material passing 425µm sieve :	32.5 %
Liquidity Index :	0.34

Originator	Checked & Approved	**Liquid Limit (Four Point Cone Penetrometer Method)** **Plastic Limit, Plasticity Index & Liquidity Index** BS EN ISO 17892-12:2018 Clause 5.3 BS EN ISO 17892-12:2018 Clause 5.5	Tk
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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP102
Engineer		Sample Ref	
		Depth (m)	0.80-0.90
		Sample Type	B

Particle Size	% Passing
125.0 mm	100
90.0 mm	80
75.0 mm	68
63.0 mm	61
50.0 mm	45
37.5 mm	39
28.0 mm	34
20.0 mm	31
14.0 mm	30
10.0 mm	29
6.30 mm	27
5.00 mm	27
3.35 mm	24
2.00 mm	23
1.18 mm	21
630 µm	17
425 µm	15
300 µm	14
200 µm	13
150 µm	13
63 µm	12

Non Engineering Description

Brown sandy clayey fine to coarse GRAVEL with cobbles and organic matter

Sample Proportions - %

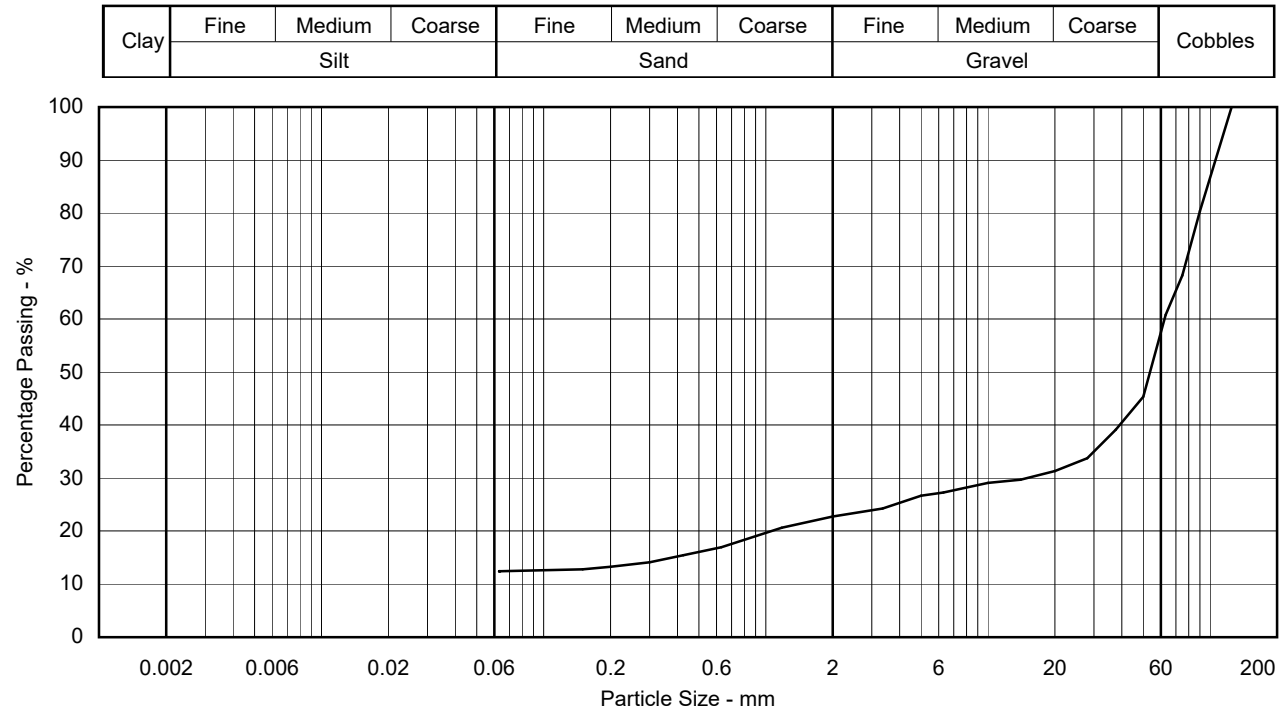
Cobbles	42.8
Gravel	34.5
Sand	10.3
Silt & Clay	12.4

Particle Diameter - mm

D100	125
D60	62
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes

Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP108
Engineer		Sample Ref	
		Depth (m)	0.90-0.90
		Sample Type	B

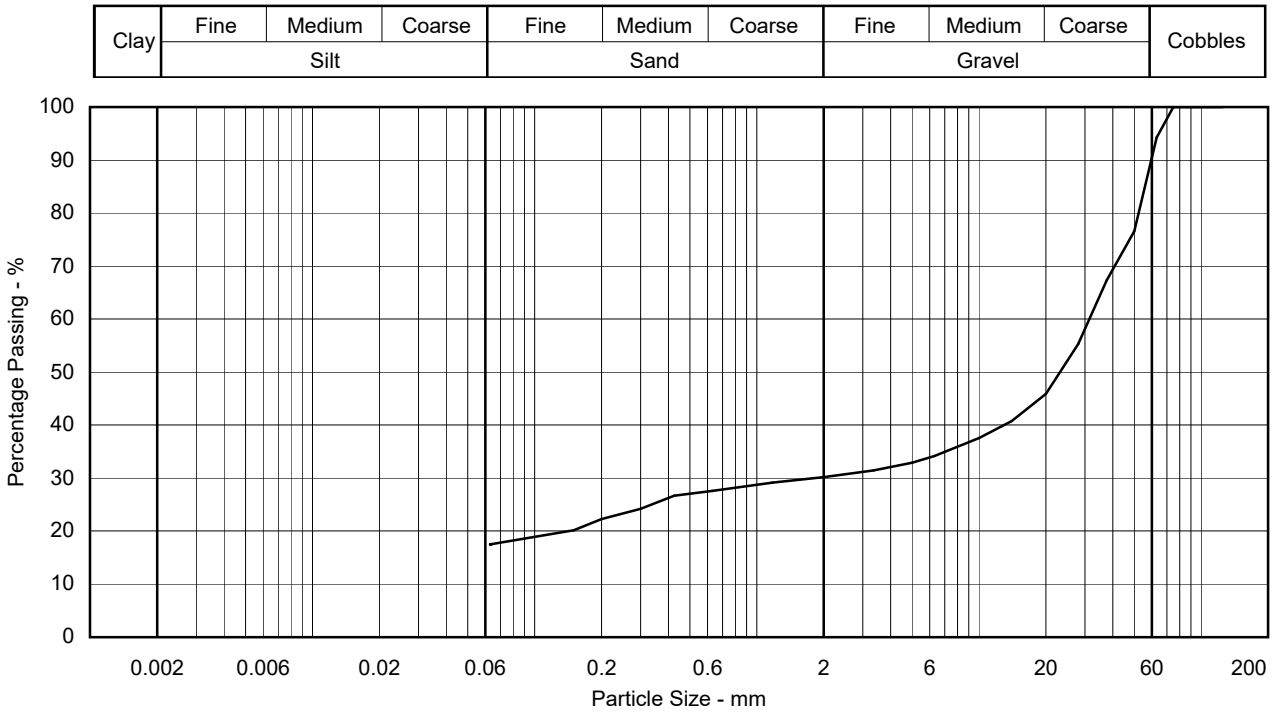
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	94
50.0 mm	77
37.5 mm	67
28.0 mm	55
20.0 mm	46
14.0 mm	41
10.0 mm	37
6.30 mm	34
5.00 mm	33
3.35 mm	31
2.00 mm	30
1.18 mm	29
630 µm	28
425 µm	27
300 µm	24
200 µm	22
150 µm	20
63 µm	17

Non Engineering Description
Brown sandy clayey fine to coarse GRAVEL with cobbles

Sample Proportions - %	
Cobbles	9.8
Gravel	60.0
Sand	12.7
Silt & Clay	17.5

Particle Diameter - mm	
D100	75
D60	31
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



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TERRA TEK
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP125
Engineer		Sample Ref	
		Depth (m)	0.90-1.00
		Sample Type	B

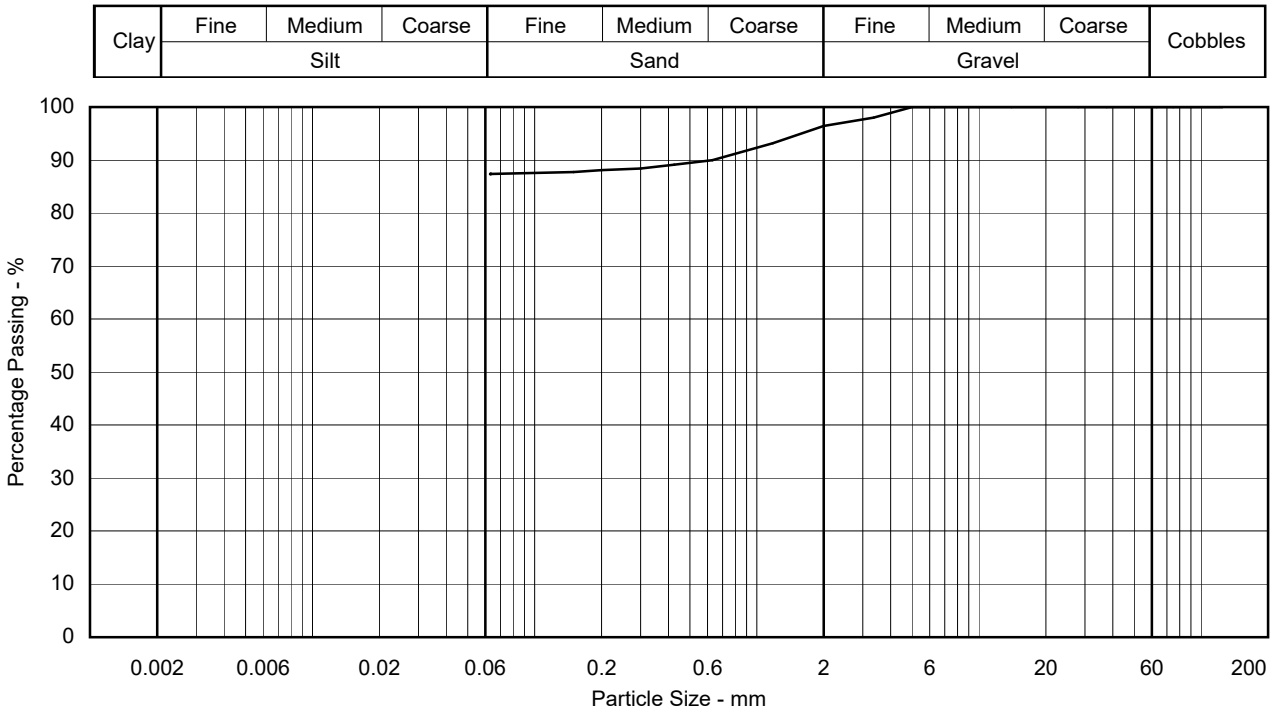
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	98
2.00 mm	96
1.18 mm	93
630 µm	90
425 µm	89
300 µm	88
200 µm	88
150 µm	88
63 µm	87

Non Engineering Description
Brown slightly gravelly sandy CLAY with rootlets. Gravel is fine

Sample Proportions - %	
Cobbles	0.0
Gravel	3.6
Sand	9.1
Silt & Clay	87.4

Particle Diameter - mm	
D100	5.0
D60	
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP13
Engineer		Sample Ref	
		Depth (m)	0.70-0.70
		Sample Type	BX2

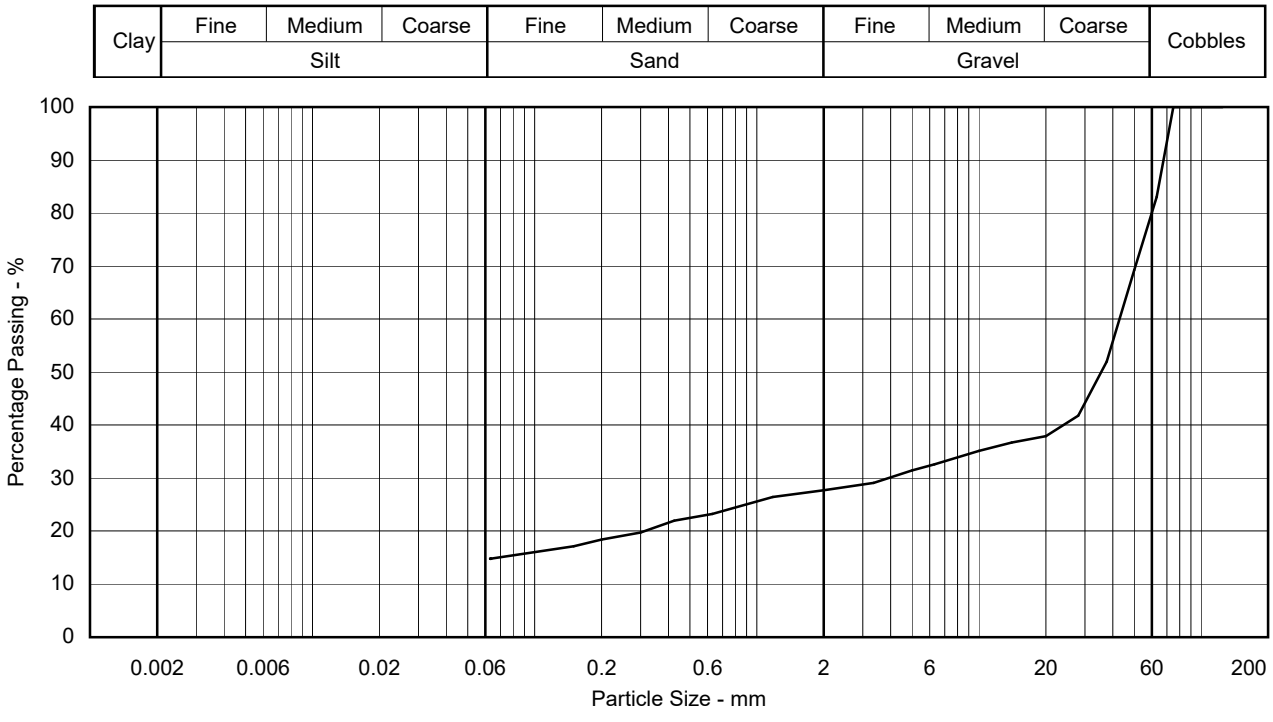
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	83
50.0 mm	69
37.5 mm	52
28.0 mm	42
20.0 mm	38
14.0 mm	37
10.0 mm	35
6.30 mm	33
5.00 mm	31
3.35 mm	29
2.00 mm	28
1.18 mm	26
630 µm	23
425 µm	22
300 µm	20
200 µm	18
150 µm	17
63 µm	15

Non Engineering Description
Brown sandy clayey fine to coarse GRAVEL with cobbles

Sample Proportions - %	
Cobbles	20.2
Gravel	52.1
Sand	13.0
Silt & Clay	14.7

Particle Diameter - mm	
D100	75
D60	43
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP138
Engineer		Sample Ref	
		Depth (m)	0.60-0.60
		Sample Type	B

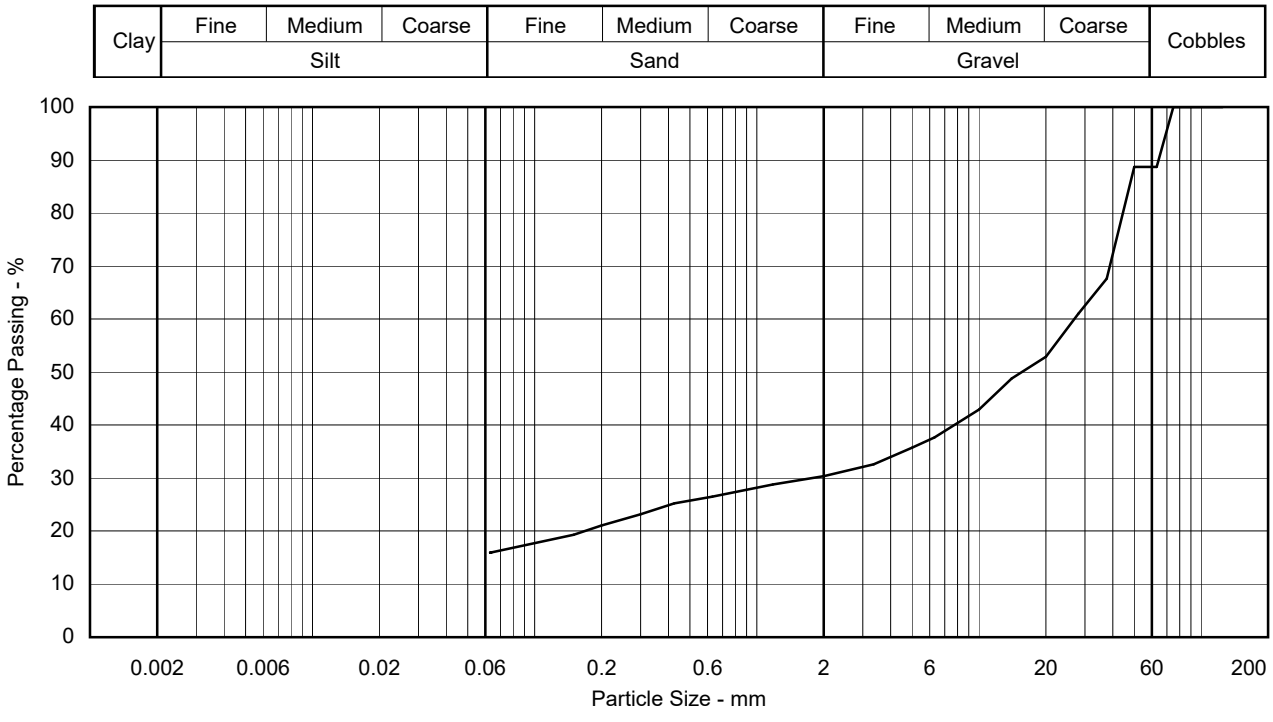
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	89
50.0 mm	89
37.5 mm	68
28.0 mm	61
20.0 mm	53
14.0 mm	49
10.0 mm	43
6.30 mm	38
5.00 mm	36
3.35 mm	33
2.00 mm	30
1.18 mm	29
630 µm	26
425 µm	25
300 µm	23
200 µm	21
150 µm	19
63 µm	16

Non Engineering Description
Brown sandy clayey fine to coarse GRAVEL with cobbles

Sample Proportions - %	
Cobbles	11.3
Gravel	58.4
Sand	14.4
Silt & Clay	15.9

Particle Diameter - mm	
D100	75
D60	27
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP142
Engineer		Sample Ref	
		Depth (m)	0.60-0.60
		Sample Type	B

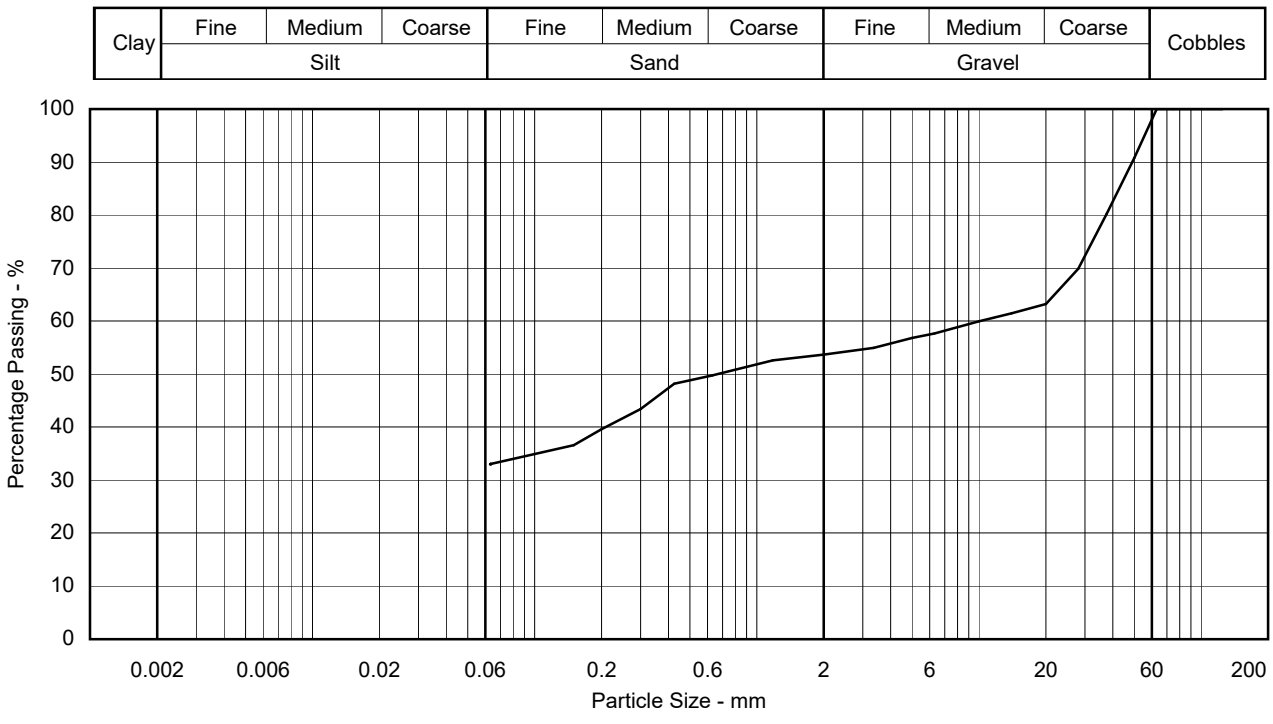
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	91
37.5 mm	80
28.0 mm	70
20.0 mm	63
14.0 mm	61
10.0 mm	60
6.30 mm	58
5.00 mm	57
3.35 mm	55
2.00 mm	54
1.18 mm	53
630 µm	50
425 µm	48
300 µm	43
200 µm	40
150 µm	37
63 µm	33

Non Engineering Description
Brown silty very sandy very clayey fine to coarse GRAVEL with cobbles and rootlets

Sample Proportions - %	
Cobbles	2.1
Gravel	44.2
Sand	20.7
Silt & Clay	33.0

Particle Diameter - mm	
D100	63
D60	10
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP145
Engineer		Sample Ref	
		Depth (m)	0.70-0.70
		Sample Type	B

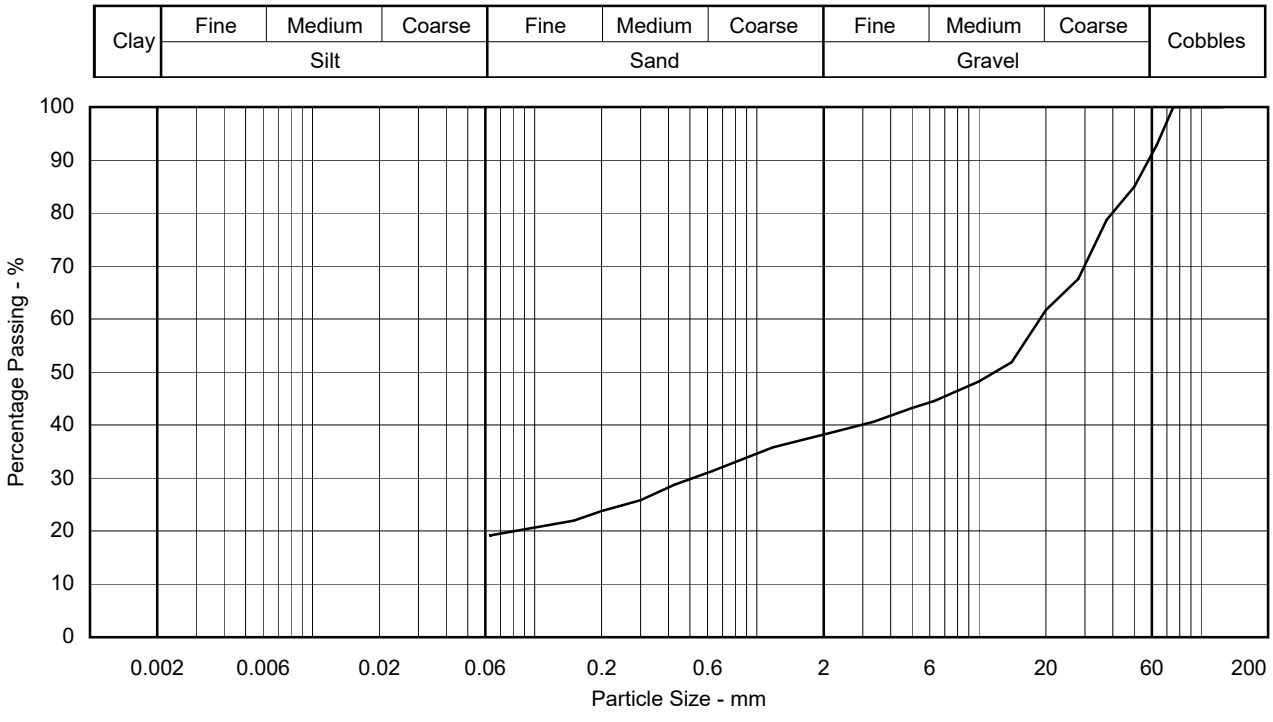
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	93
50.0 mm	85
37.5 mm	79
28.0 mm	68
20.0 mm	62
14.0 mm	52
10.0 mm	48
6.30 mm	45
5.00 mm	43
3.35 mm	41
2.00 mm	38
1.18 mm	36
630 µm	31
425 µm	29
300 µm	26
200 µm	24
150 µm	22
63 µm	19

Non Engineering Description
Brown sandy clayey fine to coarse GRAVEL with cobbles

Sample Proportions - %	
Cobbles	9.0
Gravel	52.8
Sand	19.0
Silt & Clay	19.1

Particle Diameter - mm	
D100	75
D60	19
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP15
Engineer		Sample Ref	
		Depth (m)	0.70-0.70
		Sample Type	B

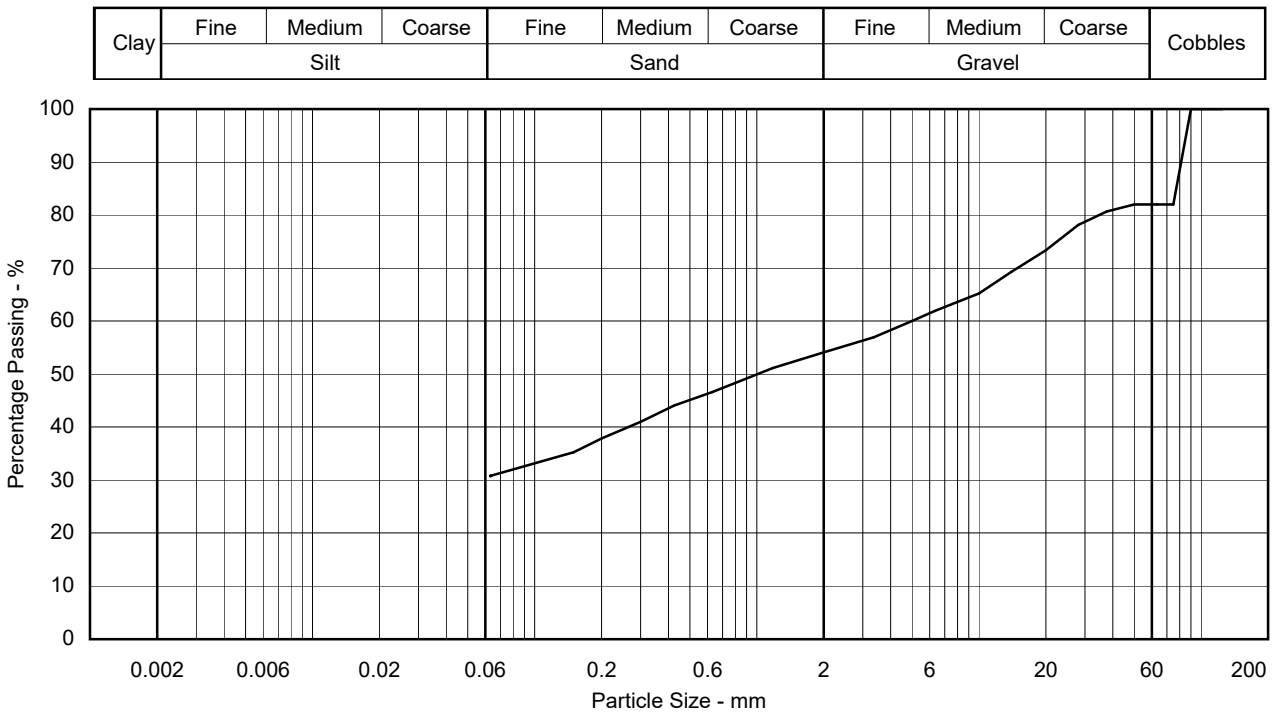
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	82
63.0 mm	82
50.0 mm	82
37.5 mm	81
28.0 mm	78
20.0 mm	73
14.0 mm	69
10.0 mm	65
6.30 mm	62
5.00 mm	60
3.35 mm	57
2.00 mm	54
1.18 mm	51
630 µm	47
425 µm	44
300 µm	41
200 µm	38
150 µm	35
63 µm	31

Non Engineering Description
Brown very clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse

Sample Proportions - %	
Cobbles	18.0
Gravel	27.9
Sand	23.3
Silt & Clay	30.8

Particle Diameter - mm	
D100	90
D60	5.0
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP2
Engineer		Sample Ref	
		Depth (m)	0.90-0.90
		Sample Type	B

Particle Size	% Passing
125.0 mm	100
90.0 mm	86
75.0 mm	86
63.0 mm	69
50.0 mm	63
37.5 mm	58
28.0 mm	52
20.0 mm	52
14.0 mm	48
10.0 mm	47
6.30 mm	44
5.00 mm	43
3.35 mm	41
2.00 mm	40
1.18 mm	39
630 µm	36
425 µm	34
300 µm	32
200 µm	31
150 µm	29
63 µm	26

Non Engineering Description

Brown very clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse

Sample Proportions - %

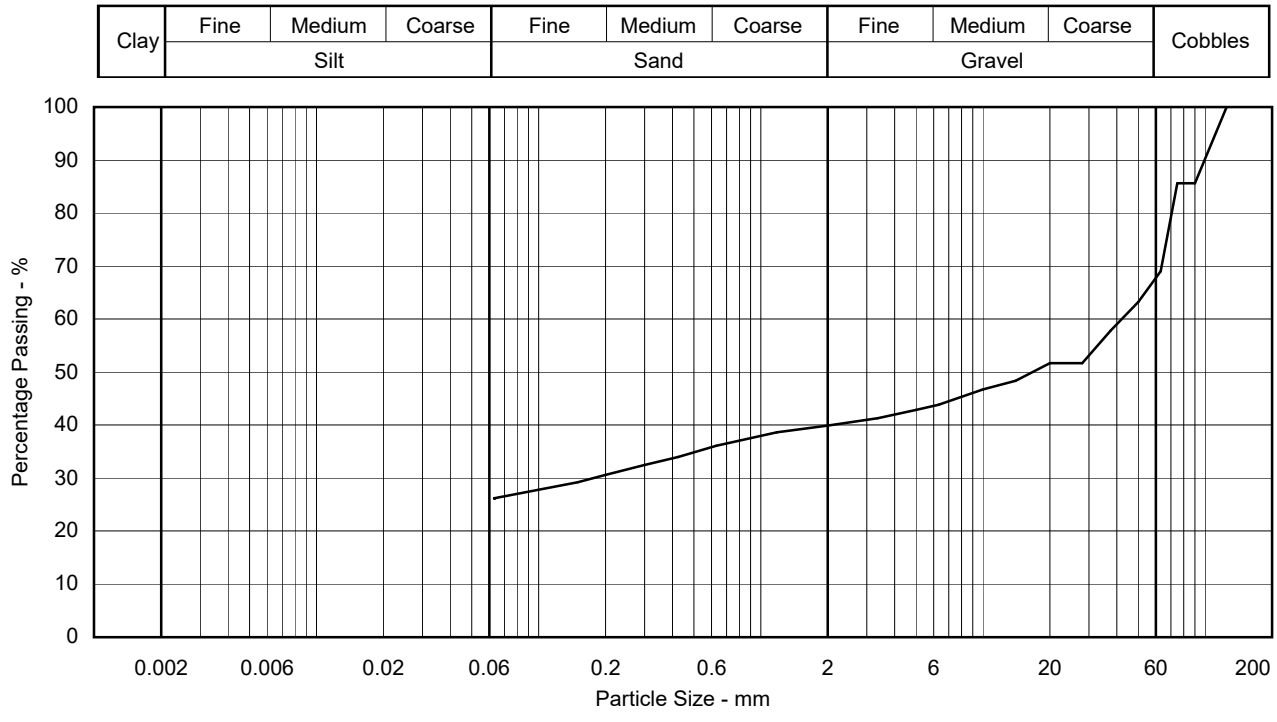
Cobbles	32.4
Gravel	27.8
Sand	13.7
Silt & Clay	26.2

Particle Diameter - mm

D100	125
D60	42
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes

Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP28
Engineer		Sample Ref	
		Depth (m)	0.50-0.60
		Sample Type	B

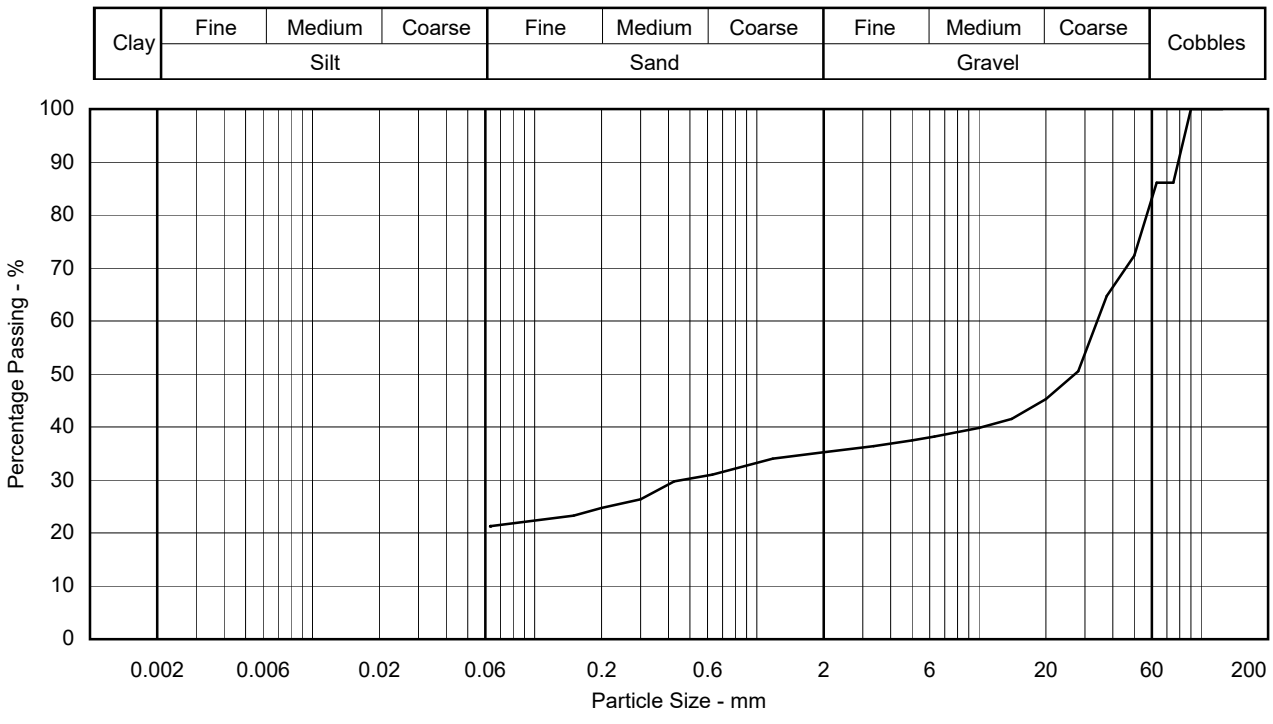
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	86
63.0 mm	86
50.0 mm	72
37.5 mm	65
28.0 mm	51
20.0 mm	45
14.0 mm	41
10.0 mm	40
6.30 mm	38
5.00 mm	37
3.35 mm	36
2.00 mm	35
1.18 mm	34
630 µm	31
425 µm	30
300 µm	26
200 µm	25
150 µm	23
63 µm	21

Non Engineering Description
Brown sandy very clayey fine to coarse GRAVEL with cobbles

Sample Proportions - %	
Cobbles	17.1
Gravel	47.7
Sand	13.9
Silt & Clay	21.3

Particle Diameter - mm	
D100	90
D60	34
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP38
Engineer		Sample Ref	
		Depth (m)	1.60-1.70
		Sample Type	B

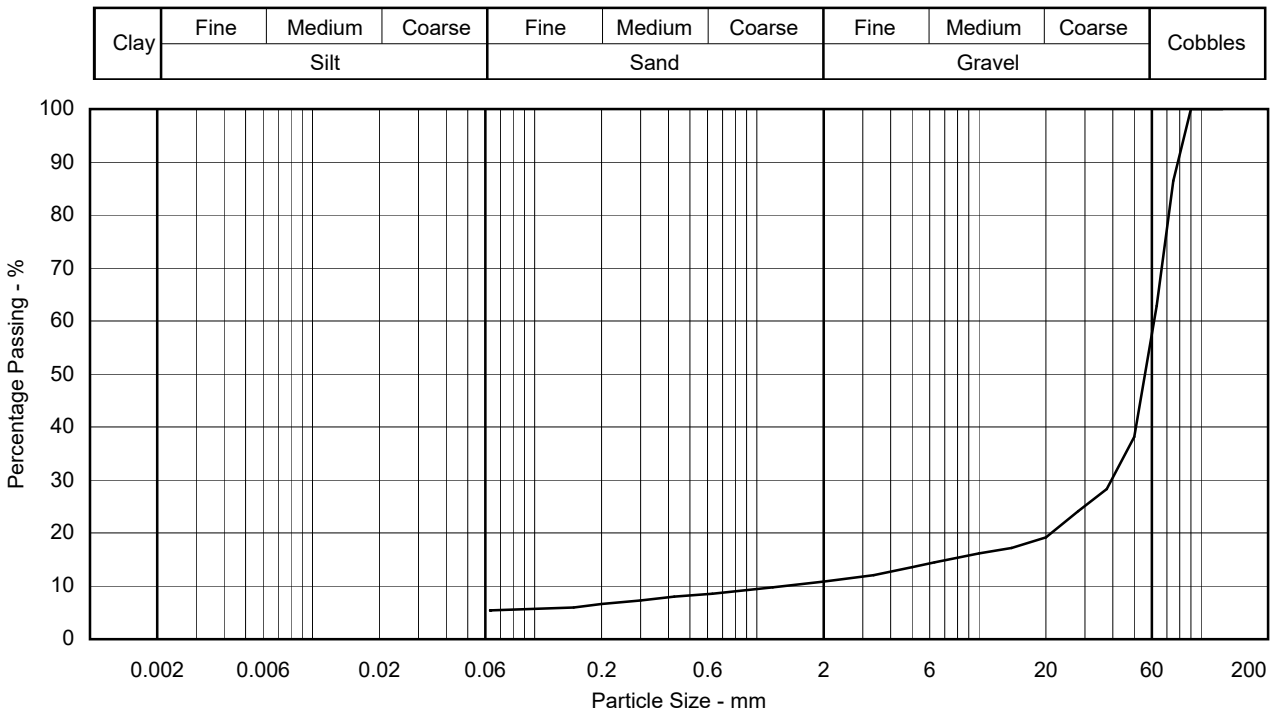
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	86
63.0 mm	63
50.0 mm	38
37.5 mm	28
28.0 mm	24
20.0 mm	19
14.0 mm	17
10.0 mm	16
6.30 mm	14
5.00 mm	14
3.35 mm	12
2.00 mm	11
1.18 mm	10
630 µm	9
425 µm	8
300 µm	7
200 µm	7
150 µm	6
63 µm	5

Non Engineering Description
Brown sandy clayey fine to coarse GRAVEL with cobbles

Sample Proportions - %	
Cobbles	42.9
Gravel	46.3
Sand	5.4
Silt & Clay	5.4

Particle Diameter - mm	
D100	90
D60	61
D10	1.3
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	46.9

Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP44
Engineer		Sample Ref	
		Depth (m)	0.40-0.50
		Sample Type	B

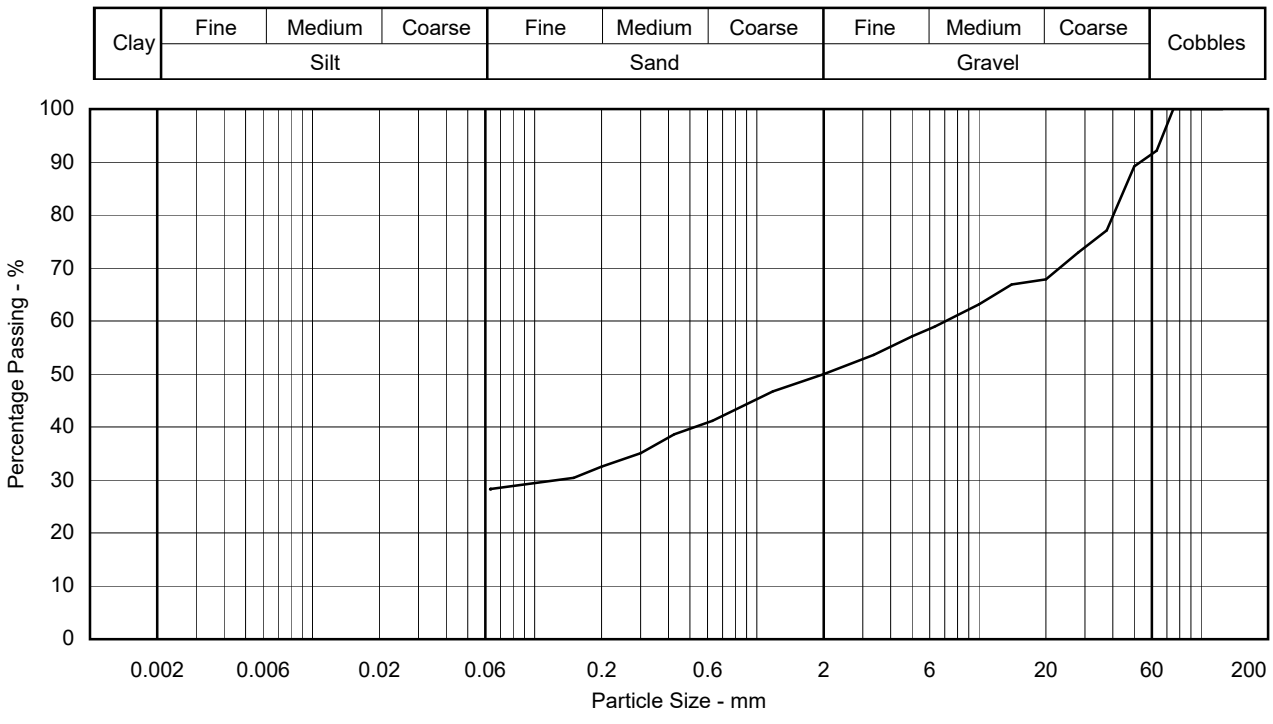
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	92
50.0 mm	89
37.5 mm	77
28.0 mm	73
20.0 mm	68
14.0 mm	67
10.0 mm	63
6.30 mm	59
5.00 mm	57
3.35 mm	54
2.00 mm	50
1.18 mm	47
630 µm	41
425 µm	39
300 µm	35
200 µm	32
150 µm	30
63 µm	28

Non Engineering Description
Brown very sandy very clayey fine to coarse GRAVEL with cobbles

Sample Proportions - %	
Cobbles	8.5
Gravel	41.5
Sand	21.6
Silt & Clay	28.3

Particle Diameter - mm	
D100	75
D60	7.1
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP48
Engineer		Sample Ref	
		Depth (m)	0.50-0.60
		Sample Type	D

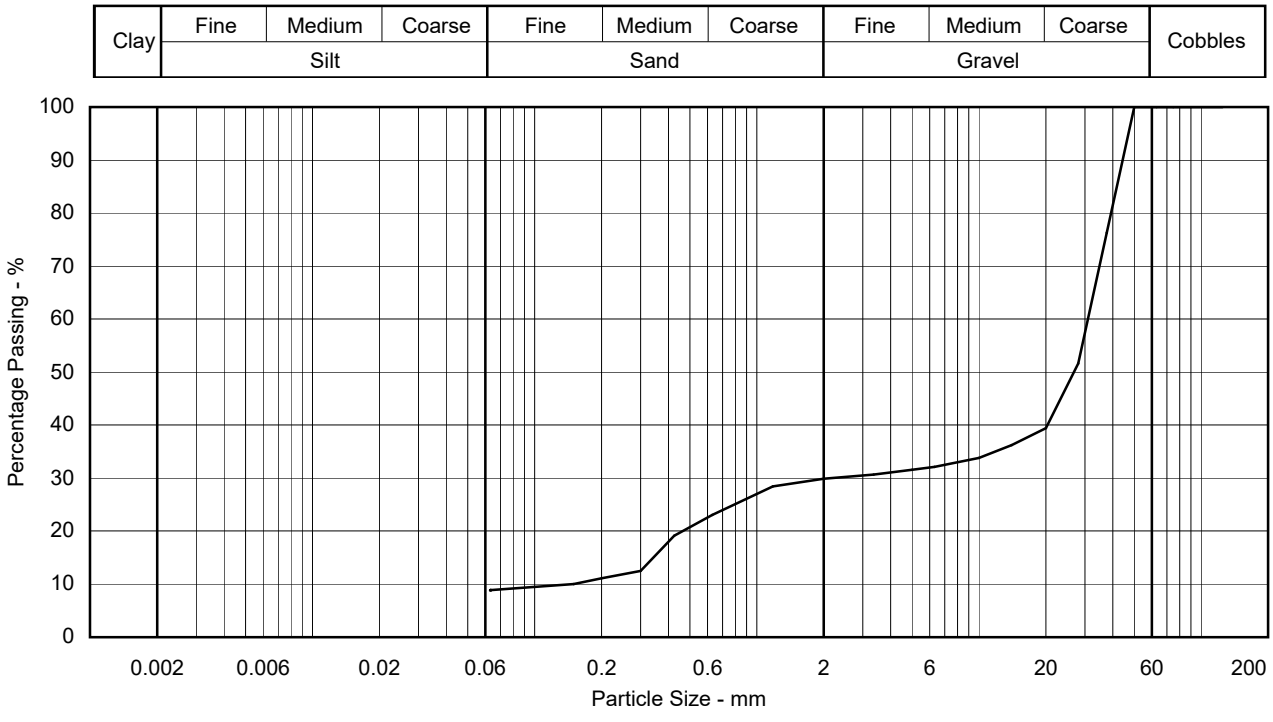
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	76
28.0 mm	52
20.0 mm	39
14.0 mm	36
10.0 mm	34
6.30 mm	32
5.00 mm	32
3.35 mm	31
2.00 mm	30
1.18 mm	28
630 µm	23
425 µm	19
300 µm	12
200 µm	11
150 µm	10
63 µm	9

Non Engineering Description
Brown clayey very sandy fine to coarse GRAVEL

Sample Proportions - %	
Cobbles	0.0
Gravel	70.2
Sand	21.0
Silt & Clay	8.8

Particle Diameter - mm	
D100	50
D60	31
D10	0.15
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	206.7

Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP60
Engineer		Sample Ref	
		Depth (m)	0.70-0.80
		Sample Type	B

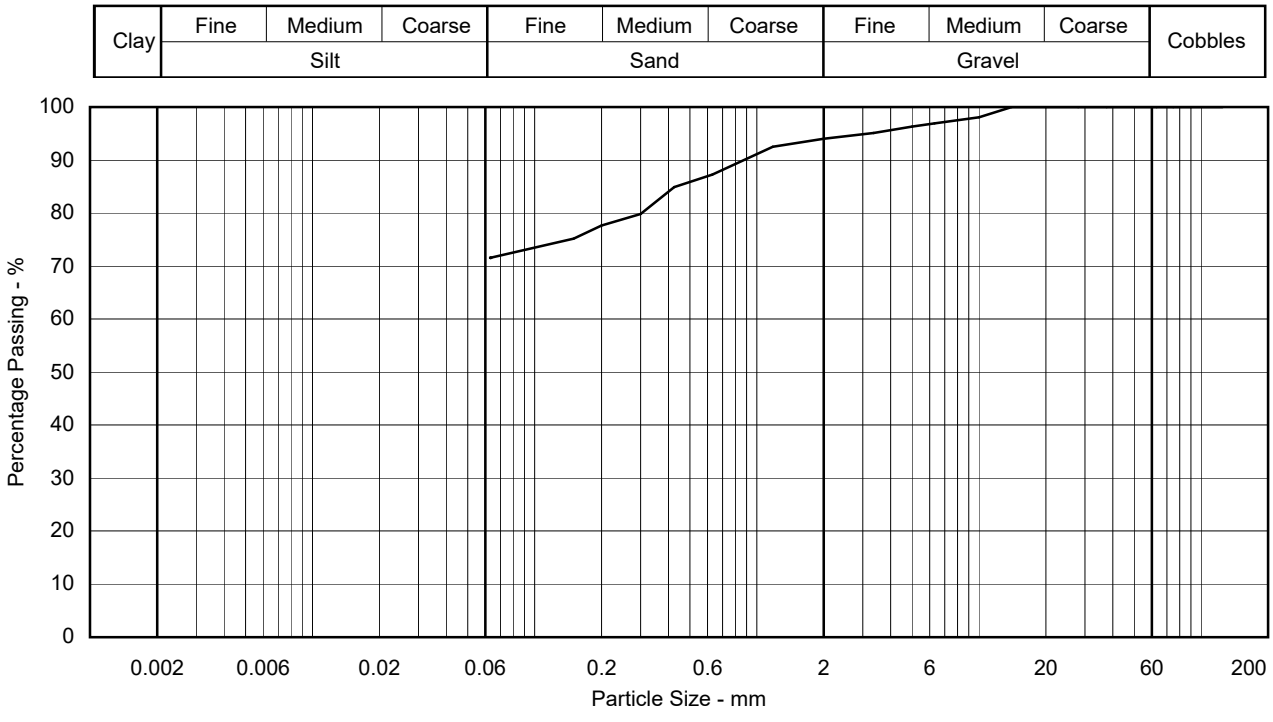
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	98
6.30 mm	97
5.00 mm	96
3.35 mm	95
2.00 mm	94
1.18 mm	93
630 µm	87
425 µm	85
300 µm	80
200 µm	78
150 µm	75
63 µm	72

Non Engineering Description
Brown gravelly very sandy very silty CLAY. Gravel is fine to medium

Sample Proportions - %	
Cobbles	0.0
Gravel	6.0
Sand	22.4
Silt & Clay	71.5

Particle Diameter - mm	
D100	14
D60	
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes



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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP62
Engineer		Sample Ref	
		Depth (m)	0.50-0.50
		Sample Type	B

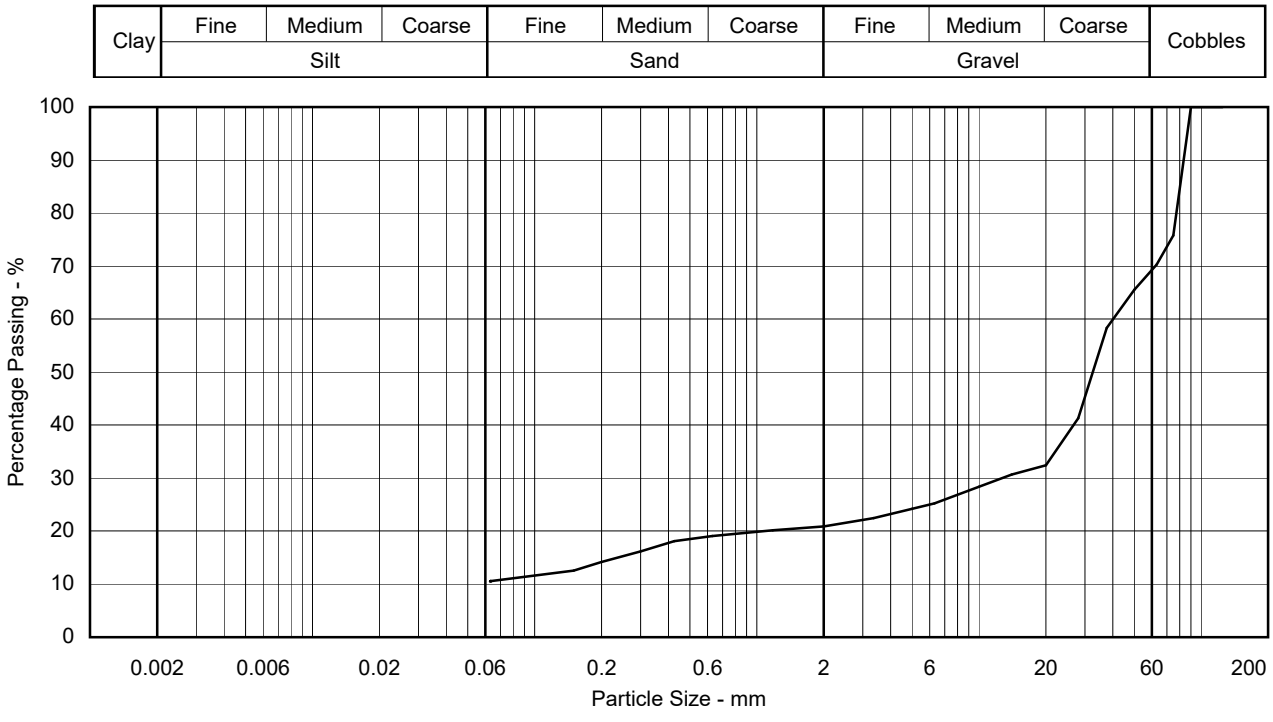
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	76
63.0 mm	70
50.0 mm	65
37.5 mm	58
28.0 mm	41
20.0 mm	32
14.0 mm	31
10.0 mm	28
6.30 mm	25
5.00 mm	24
3.35 mm	22
2.00 mm	21
1.18 mm	20
630 µm	19
425 µm	18
300 µm	16
200 µm	14
150 µm	13
63 µm	11

Non Engineering Description
Brown sandy silty fine to coarse GRAVEL with cobbles

Sample Proportions - %	
Cobbles	30.8
Gravel	48.3
Sand	10.4
Silt & Clay	10.5

Particle Diameter - mm	
D100	90
D60	40
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



Originator	Checked & Approved
TP	CD 05/08/2021

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method

Tk

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP75
Engineer		Sample Ref	
		Depth (m)	0.80-0.80
		Sample Type	B

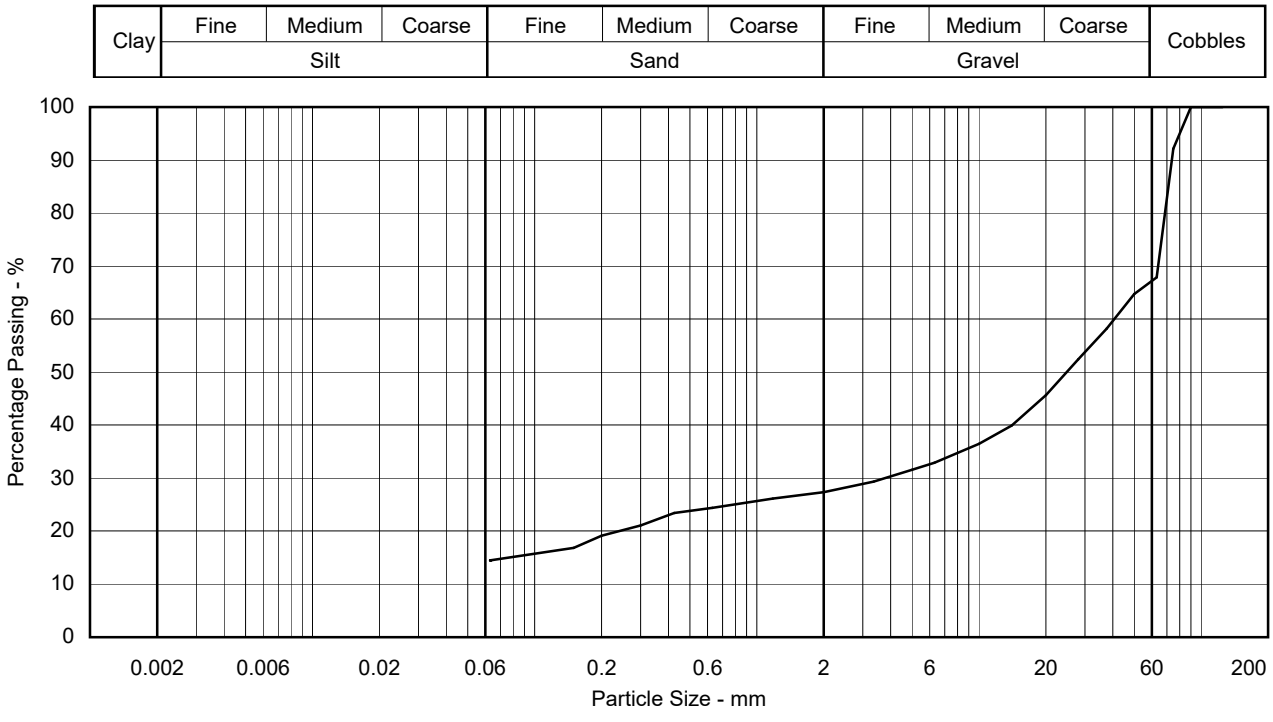
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	92
63.0 mm	68
50.0 mm	65
37.5 mm	58
28.0 mm	52
20.0 mm	46
14.0 mm	40
10.0 mm	36
6.30 mm	33
5.00 mm	32
3.35 mm	29
2.00 mm	27
1.18 mm	26
630 µm	24
425 µm	23
300 µm	21
200 µm	19
150 µm	17
63 µm	14

Non Engineering Description
Brown sandy clayey fine to coarse GRAVEL with cobbles

Sample Proportions - %	
Cobbles	32.9
Gravel	39.8
Sand	12.9
Silt & Clay	14.4

Particle Diameter - mm	
D100	90
D60	41
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



Originator	Checked & Approved
TP	CD 05/08/2021

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method

Tk

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP79
Engineer		Sample Ref	
		Depth (m)	0.90-0.90
		Sample Type	B

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
630 µm	94
425 µm	92
300 µm	89
200 µm	87
150 µm	83
63 µm	76

Non Engineering Description

Brown slightly gravelly sandy CLAY with rootlets. Gravel is fine

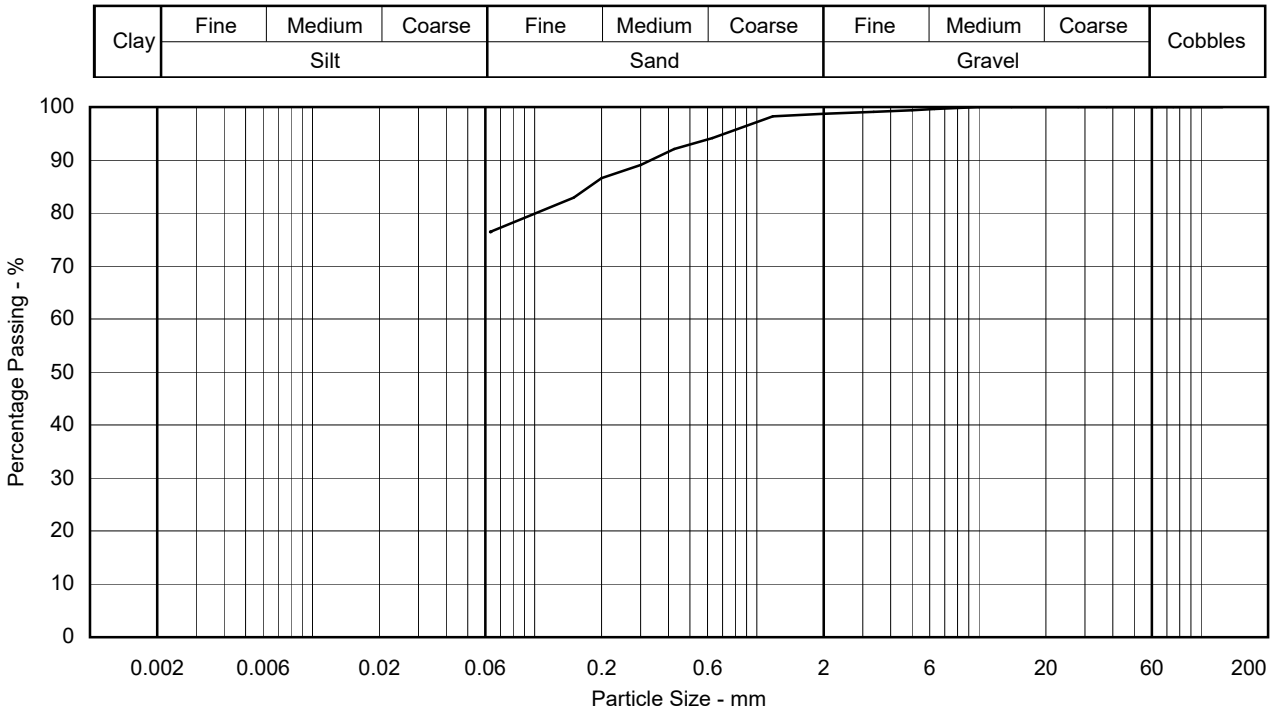
Sample Proportions - %

Cobbles	0.0
Gravel	1.2
Sand	22.3
Silt & Clay	76.5

Particle Diameter - mm

D100	10
D60	
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes



Originator	Checked & Approved
TP	CD 05/08/2021

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP89
Engineer		Sample Ref	
		Depth (m)	0.80-0.80
		Sample Type	B

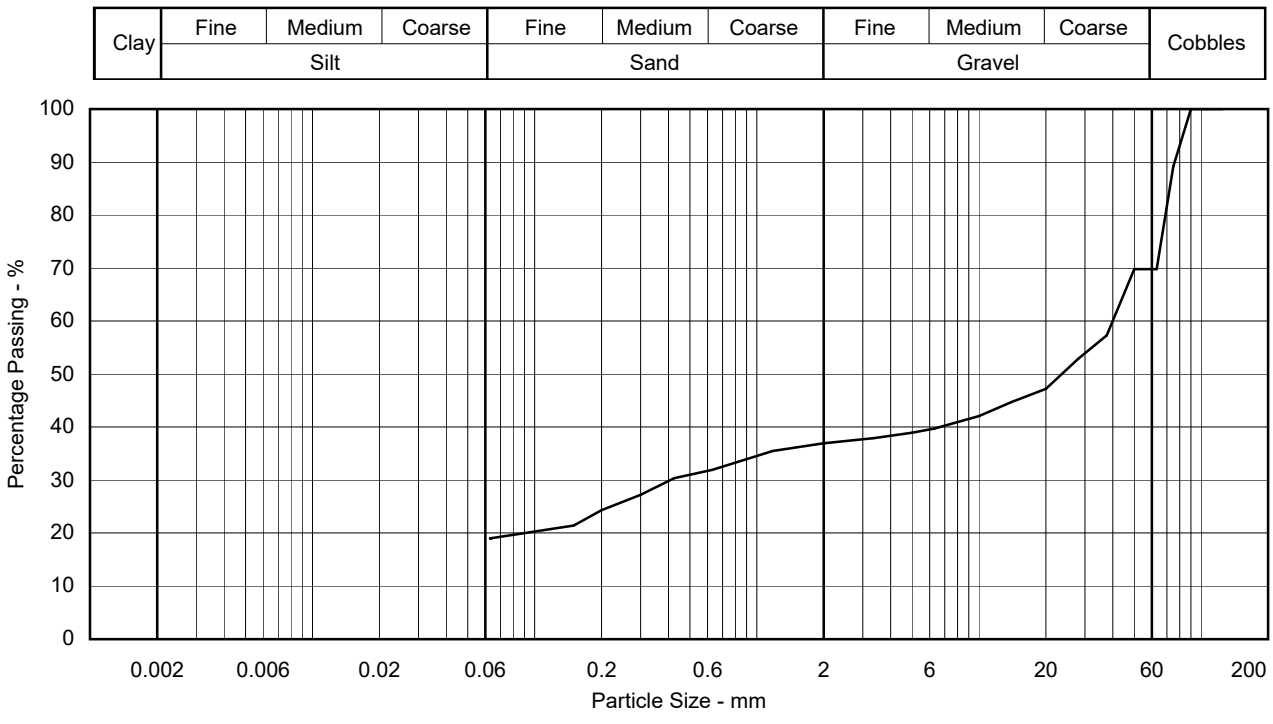
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	89
63.0 mm	70
50.0 mm	70
37.5 mm	57
28.0 mm	53
20.0 mm	47
14.0 mm	45
10.0 mm	42
6.30 mm	40
5.00 mm	39
3.35 mm	38
2.00 mm	37
1.18 mm	35
630 µm	32
425 µm	30
300 µm	27
200 µm	24
150 µm	21
63 µm	19

Non Engineering Description
Brown clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse

Sample Proportions - %	
Cobbles	30.2
Gravel	32.9
Sand	17.9
Silt & Clay	19.0

Particle Diameter - mm	
D100	90
D60	40
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



Originator	Checked & Approved
TP	CD 05/08/2021

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method

Tk

TERRA TEK
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP94
Engineer		Sample Ref	
		Depth (m)	0.70
		Sample Type	Bx2

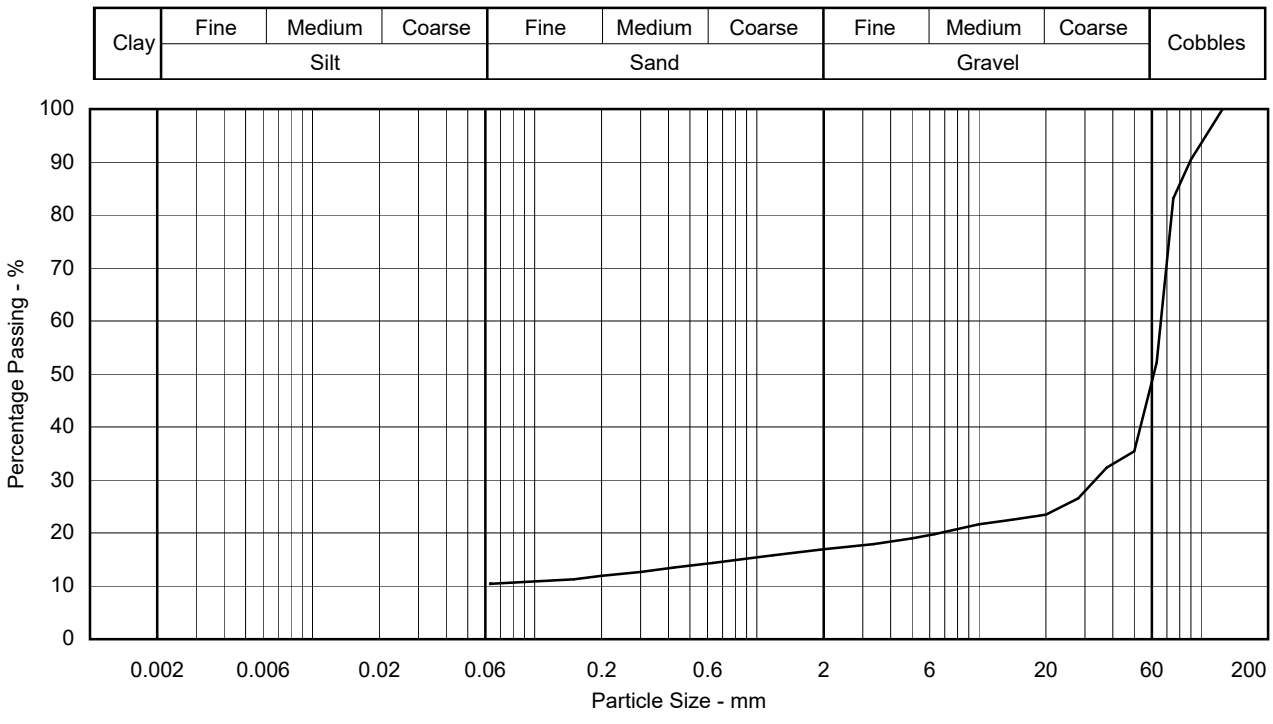
Particle Size	% Passing
125.0 mm	100
90.0 mm	90
75.0 mm	83
63.0 mm	52
50.0 mm	35
37.5 mm	32
28.0 mm	27
20.0 mm	23
14.0 mm	23
10.0 mm	22
6.30 mm	20
5.00 mm	19
3.35 mm	18
2.00 mm	17
1.18 mm	16
630 µm	14
425 µm	13
300 µm	13
200 µm	12
150 µm	11
63 µm	10

Non Engineering Description
COBBLES with brown sandy clayey fine to coarse gravel

Sample Proportions - %	
Cobbles	51.7
Gravel	31.4
Sand	6.5
Silt & Clay	10.4

Particle Diameter - mm	
D100	125
D60	66
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements



Originator	Checked & Approved
TP	CD 05/08/2021

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method

Tk

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP97
Engineer		Sample Ref	
		Depth (m)	1.00-1.10
		Sample Type	B

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	78
63.0 mm	78
50.0 mm	78
37.5 mm	78
28.0 mm	78
20.0 mm	77
14.0 mm	76
10.0 mm	74
6.30 mm	71
5.00 mm	69
3.35 mm	68
2.00 mm	66
1.18 mm	64
630 µm	61
425 µm	59
300 µm	56
200 µm	53
150 µm	49
63 µm	44

Non Engineering Description

Brown gravelly very sandy very silty CLAY with cobbles. Gravel is fine to coarse

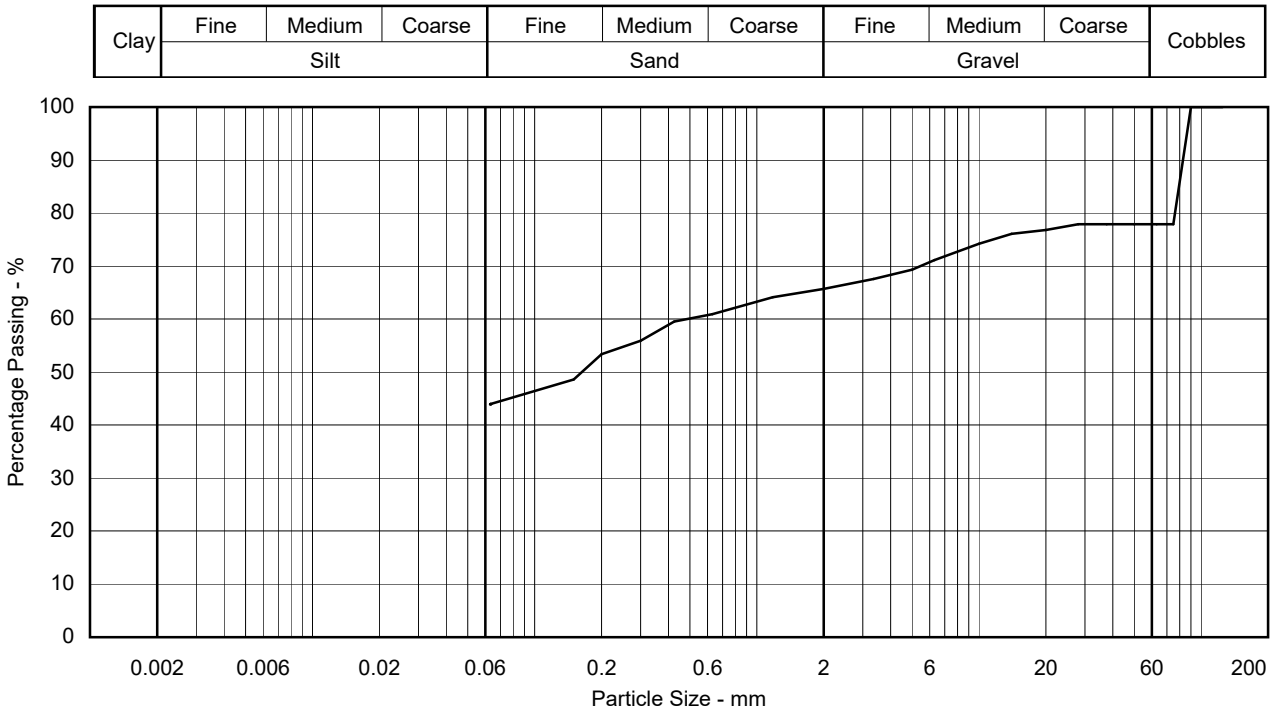
Sample Proportions - %

Cobbles	22.1
Gravel	12.2
Sand	21.7
Silt & Clay	43.9

Particle Diameter - mm

D100	90
D60	0.49
D10	
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	N/A

Notes



Originator	Checked & Approved
TP	CD 05/08/2021

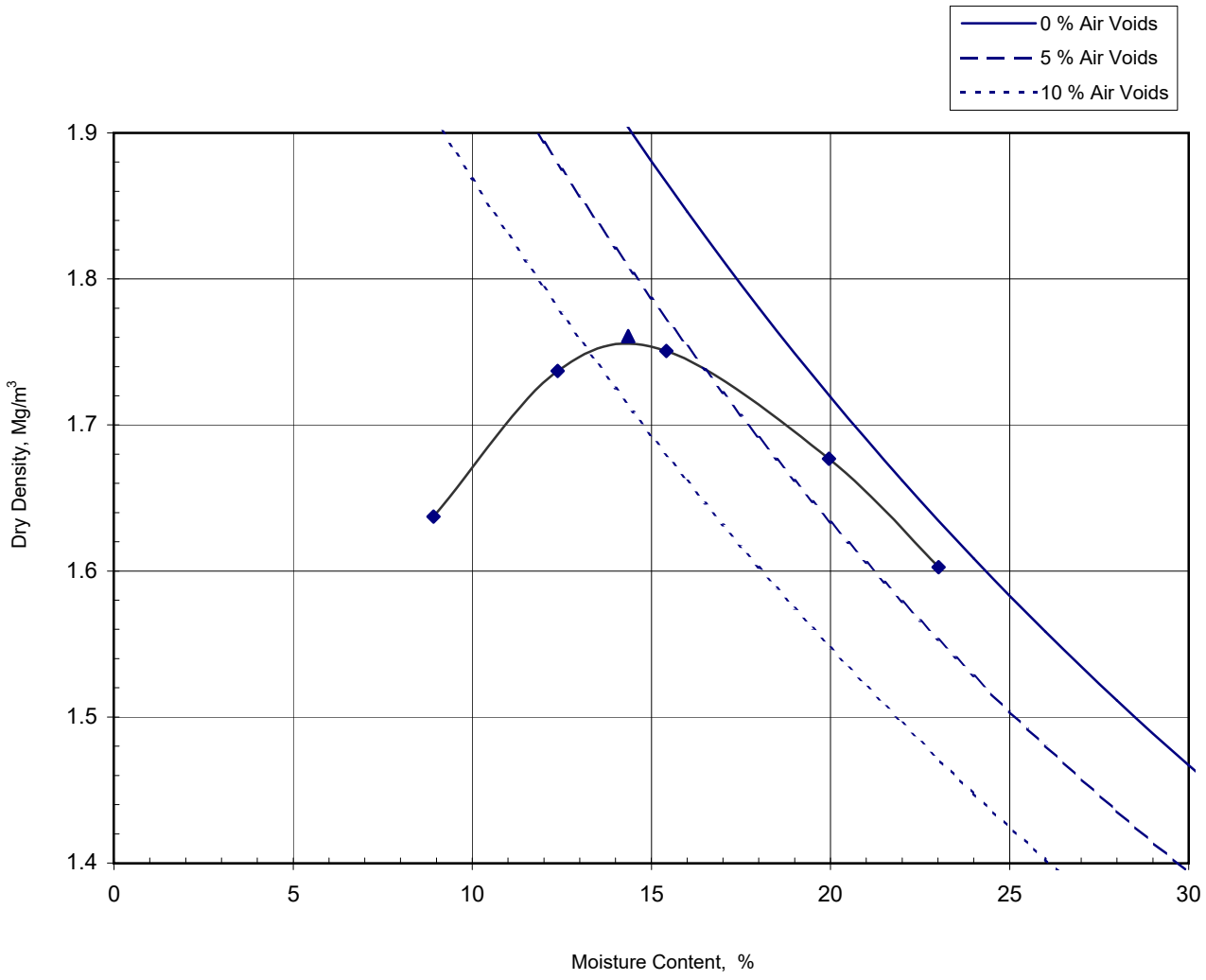
PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP125
Engineer		Sample Ref	
		Depth (m)	0.90-1.00
		Sample Type	B



Non Engineering Description		Brown slightly gravelly sandy CLAY with rootlets. Gravel is fine
Preparation		Oven dried
Test Method		4.5kg Rammer for soils with particles up to medium-gravel size
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	0
Mass Retained on 20.0 mm Sieve	%	0
Particle Density - Measured	Mg/m³	2.62
Natural Moisture Content	%	49
Maximum Dry Density	Mg/m³	1.76
Optimum Moisture Content	%	14.4

Originator	Checked & Approved
SK	CD 05/08/2021

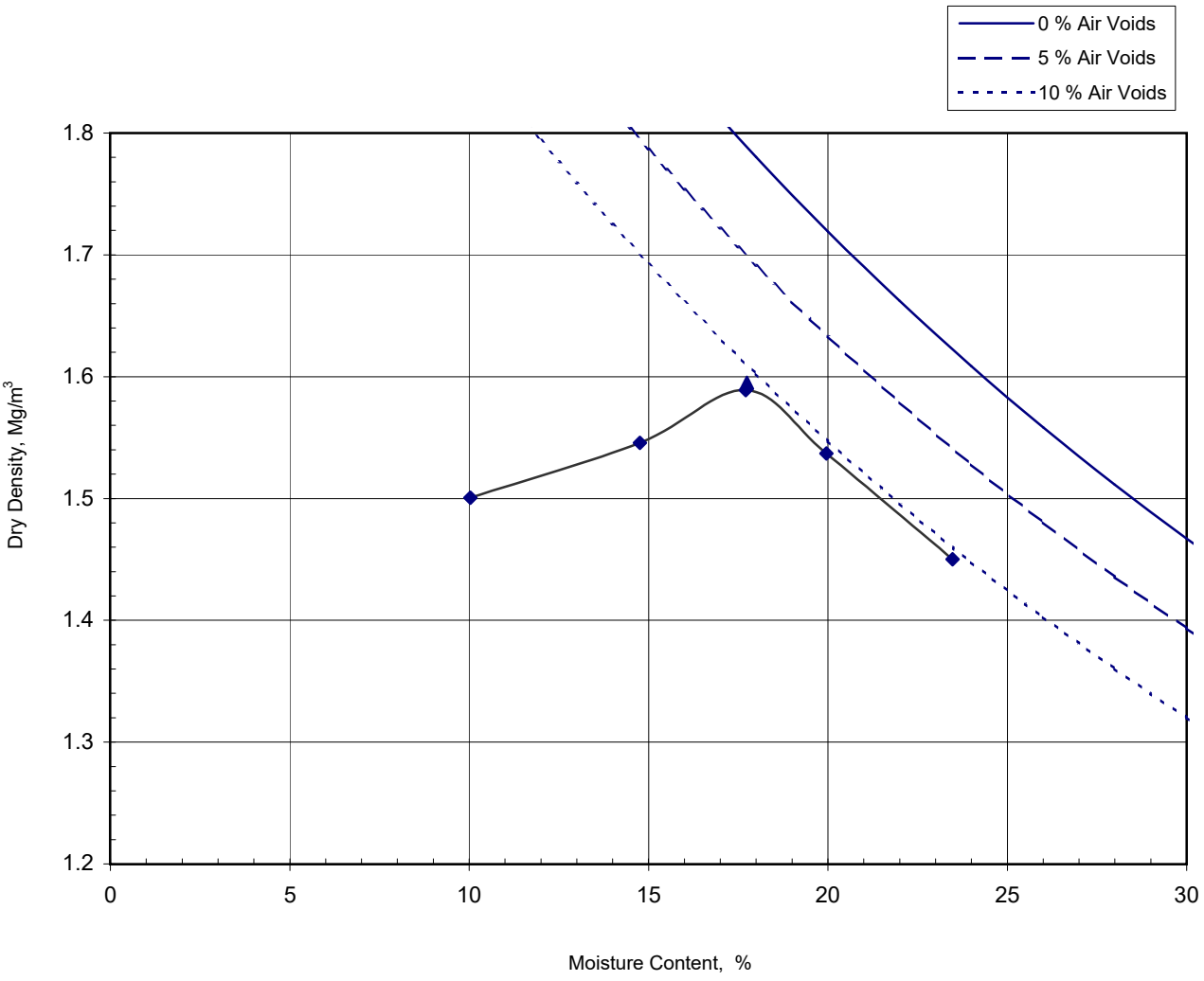
Moisture Content / Dry Density Relationship

BS1377:Part 4:1990 Clause 3.5

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP125
Engineer		Sample Ref	
		Depth (m)	0.90-1.00
		Sample Type	B



Non Engineering Description		Brown slightly gravelly sandy CLAY with rootlets. Gravel is fine
Preparation		Oven dried
Test Method		2.5kg Rammer for soils with particles up to medium-gravel size
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	0
Mass Retained on 20.0 mm Sieve	%	0
Particle Density - Measured	Mg/m³	2.62
Natural Moisture Content	%	49
Maximum Dry Density	Mg/m³	1.59
Optimum Moisture Content	%	17.7

Originator	Checked & Approved
SK	CD 05/08/2021

Moisture Content / Dry Density Relationship

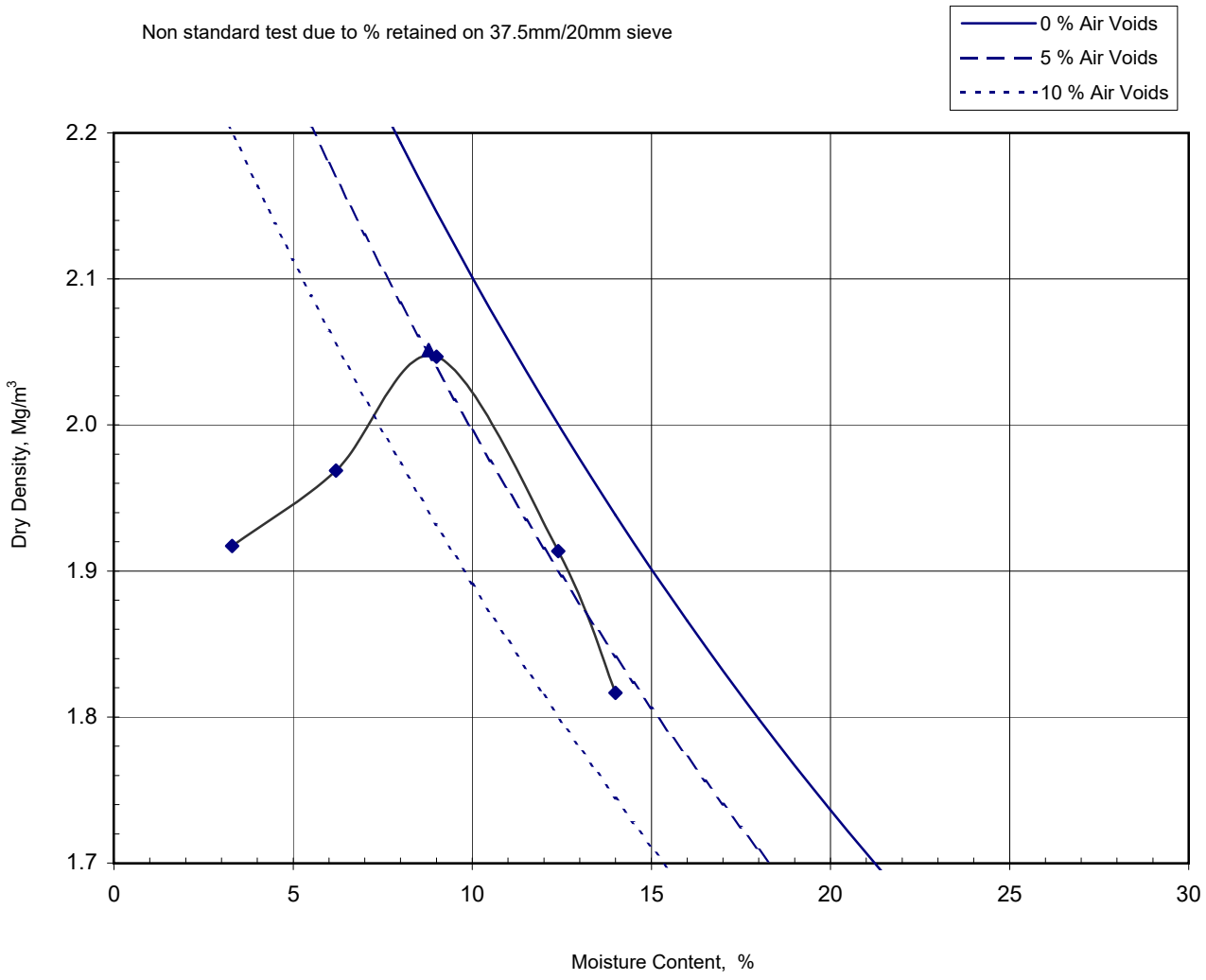
BS1377:Part 4:1990 Clause 3.3

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP138
Engineer		Sample Ref	
		Depth (m)	0.60-0.60
		Sample Type	B

Non standard test due to % retained on 37.5mm/20mm sieve



Non Engineering Description		Brown sandy clayey fine to coarse GRAVEL with cobbles
Preparation		Oven dried
Test Method		Vibrating Hammer
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	36
Mass Retained on 20.0 mm Sieve	%	57
Particle Density - Measured	Mg/m³	2.66
Natural Moisture Content	%	13
Maximum Dry Density	Mg/m³	2.05
Optimum Moisture Content	%	8.8

Originator	Checked & Approved
SK	CD 05/08/2021

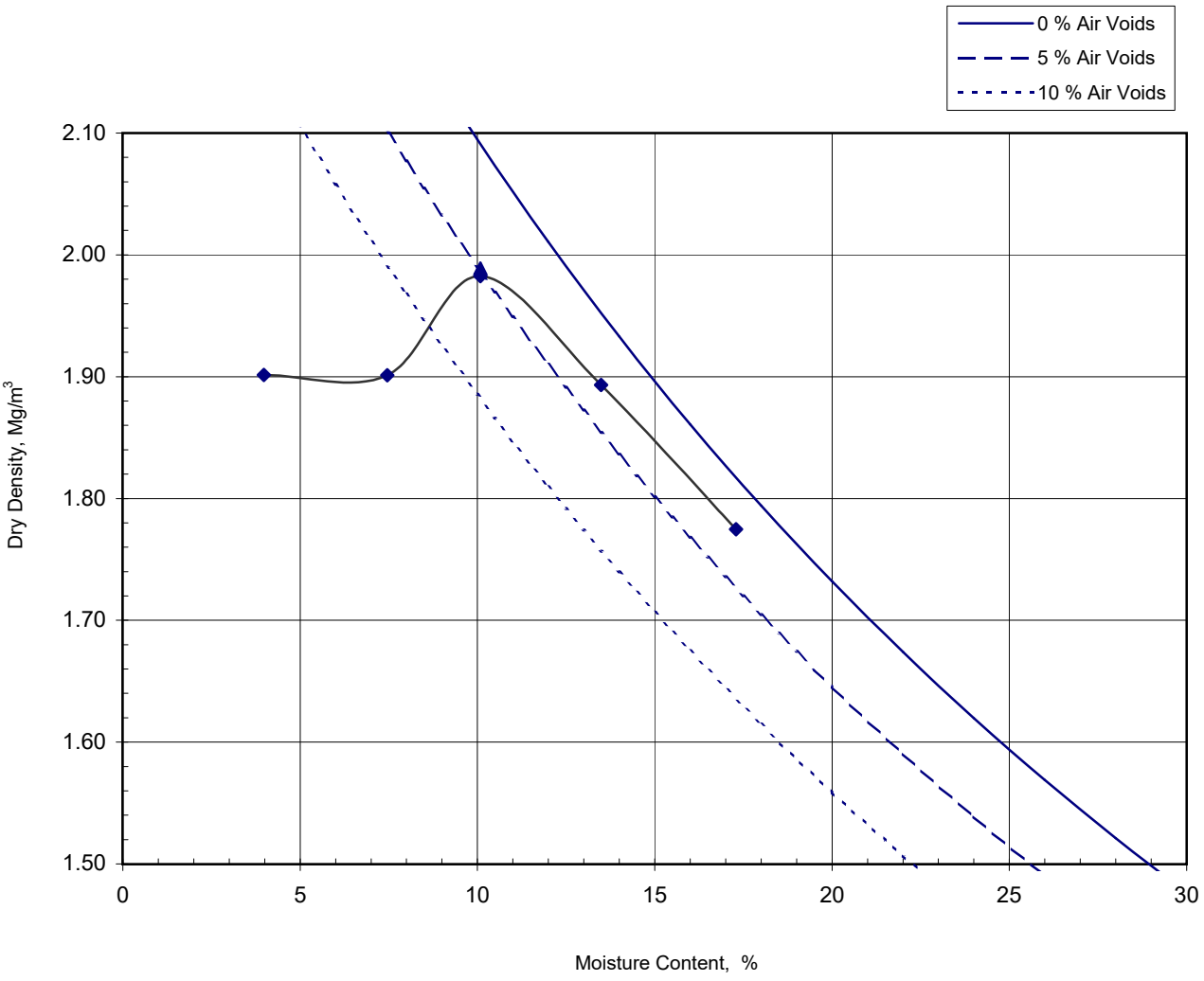
Moisture Content / Dry Density Relationship

BS1377:Part 4:1990 Clause 3.7

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP15
Engineer		Sample Ref	
		Depth (m)	0.70-0.70
		Sample Type	B



Non Engineering Description		Brown very clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse
Preparation		Oven dried
Test Method		Vibrating Hammer
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	5
Mass Retained on 20.0 mm Sieve	%	12
Particle Density - Measured	Mg/m³	2.65
Natural Moisture Content	%	16
Maximum Dry Density	Mg/m³	1.99
Optimum Moisture Content	%	10.1

Originator	Checked & Approved
BJ	CD 05/08/2021

Moisture Content / Dry Density Relationship

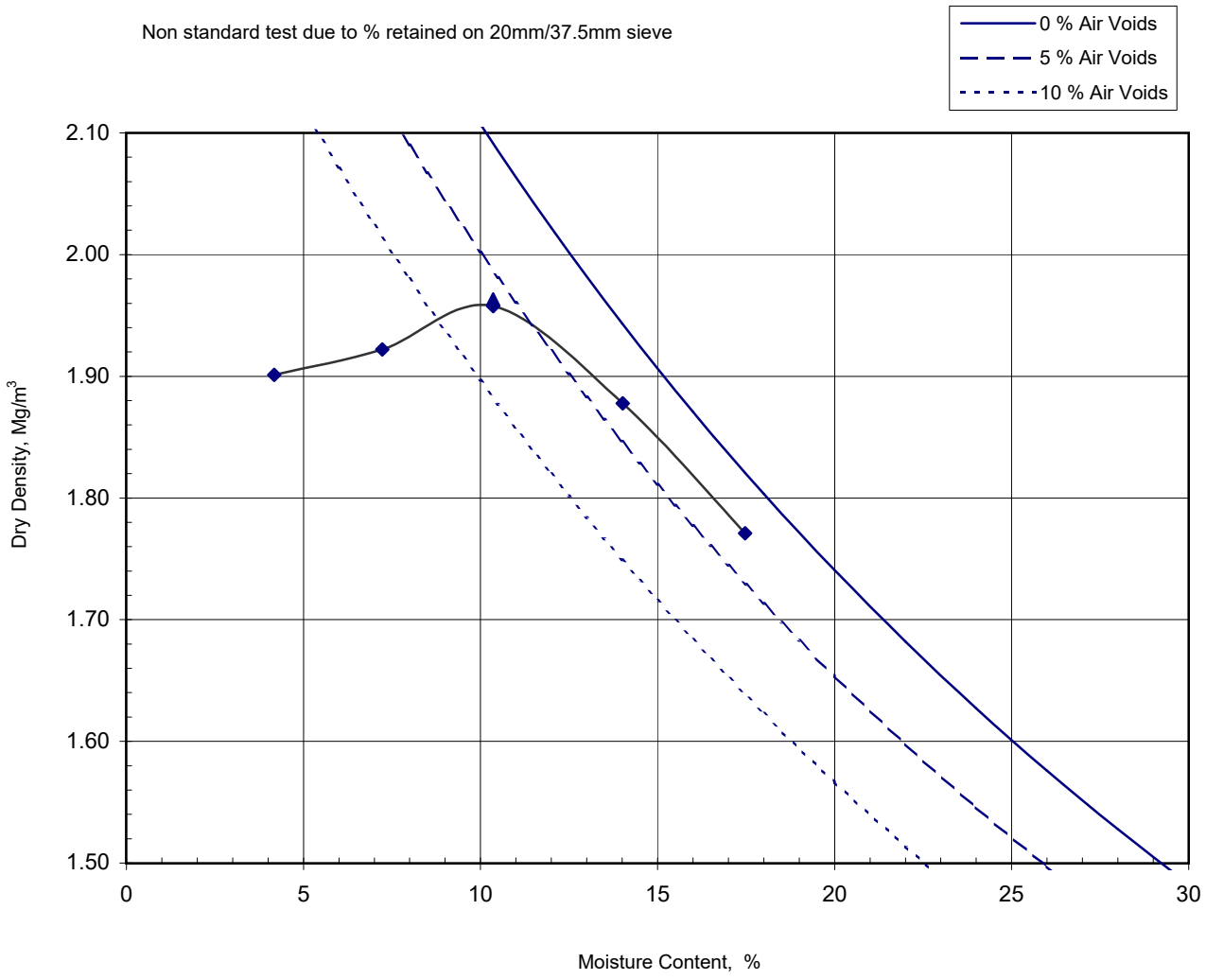
BS1377:Part 4:1990 Clause 3.7

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP28
Engineer		Sample Ref	
		Depth (m)	0.50-0.60
		Sample Type	B

Non standard test due to % retained on 20mm/37.5mm sieve



Non Engineering Description		Brown sandy very clayey fine to coarse GRAVEL with cobbles
Preparation		Oven dried
Test Method		Vibrating Hammer
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	52
Mass Retained on 20.0 mm Sieve	%	67
Particle Density - Assumed	Mg/m³	2.67
Natural Moisture Content	%	22
Maximum Dry Density	Mg/m³	1.96
Optimum Moisture Content	%	10.4

Originator	Checked & Approved
BJ	CD 05/08/2021

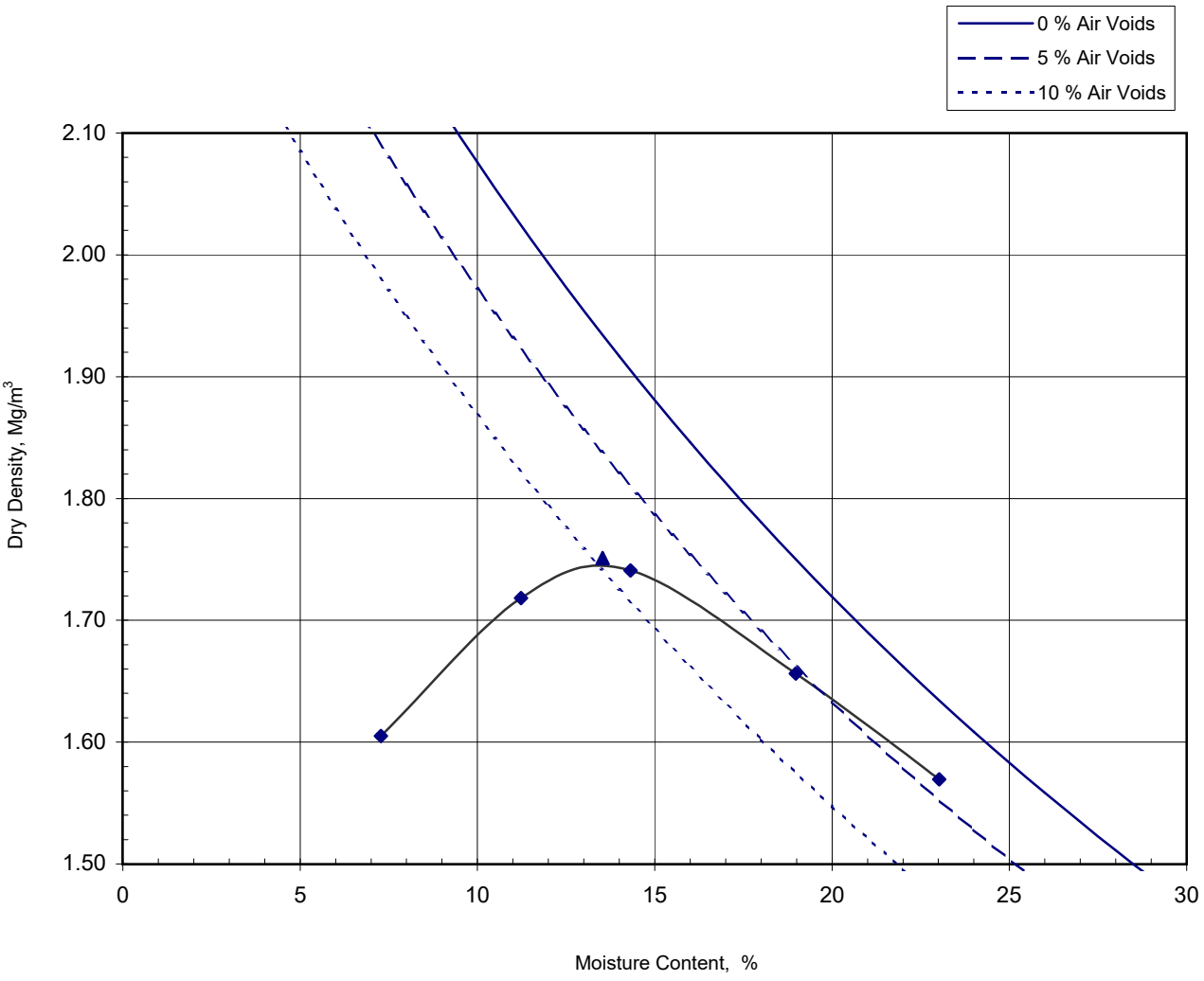
Moisture Content / Dry Density Relationship

BS1377:Part 4:1990 Clause 3.7

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP60
Engineer		Sample Ref	
		Depth (m)	0.70-0.80
		Sample Type	B



Non Engineering Description		Brown gravelly very sandy very silty CLAY. Gravel is fine to medium
Preparation		Oven dried
Test Method		4.5kg Rammer for soils with particles up to medium-gravel size
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	0
Mass Retained on 20.0 mm Sieve	%	0
Particle Density - Measured	Mg/m³	2.62
Natural Moisture Content	%	37
Maximum Dry Density	Mg/m³	1.75
Optimum Moisture Content	%	13.5

Originator	Checked & Approved
SK	CD 05/08/2021

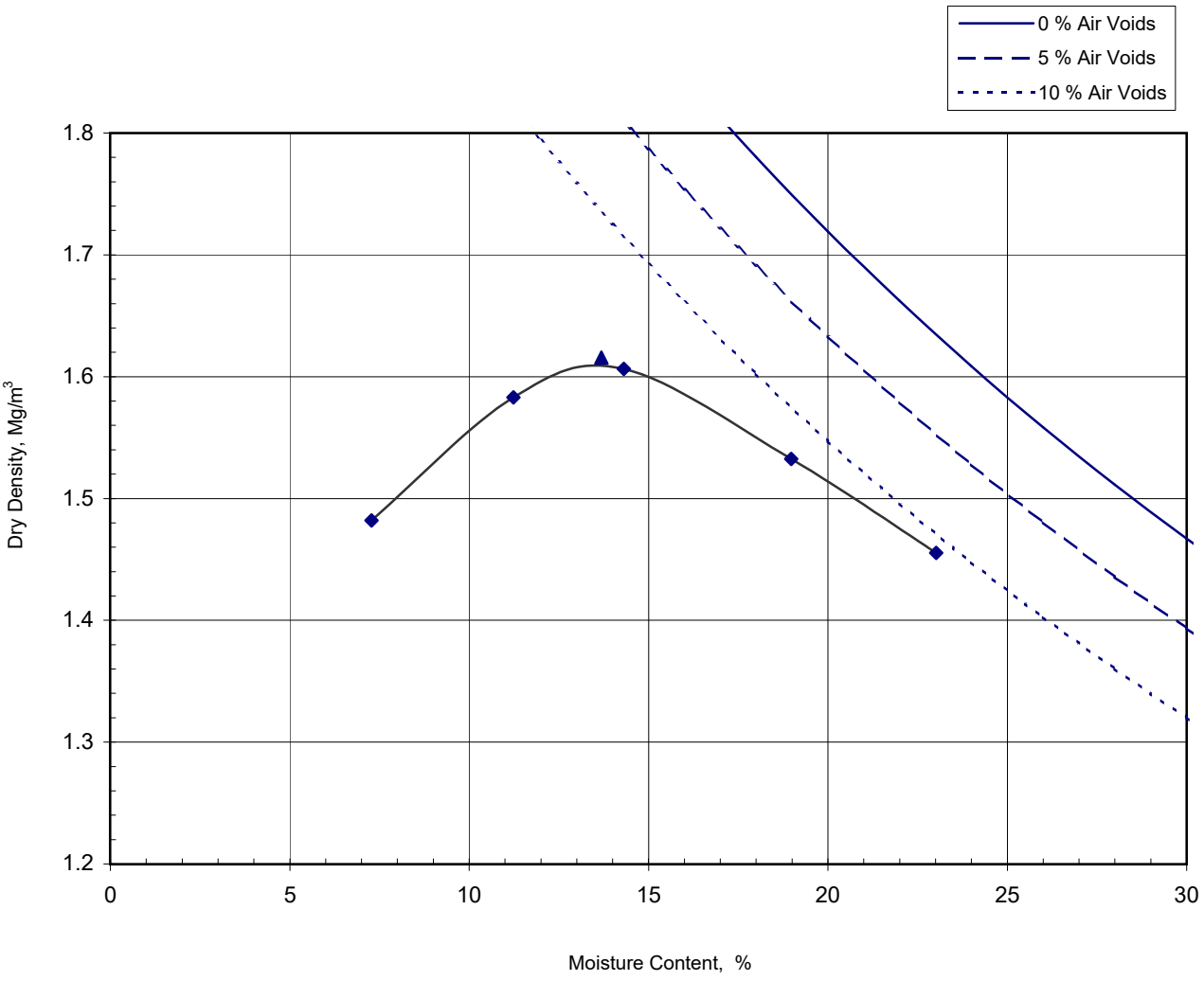
Moisture Content / Dry Density Relationship

BS1377:Part 4:1990 Clause 3.5

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP60
Engineer		Sample Ref	
		Depth (m)	0.70-0.80
		Sample Type	B



Non Engineering Description		Brown gravelly very sandy very silty CLAY. Gravel is fine to medium
Preparation		Oven dried
Test Method		2.5kg Rammer for soils with particles up to medium-gravel size
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	0
Mass Retained on 20.0 mm Sieve	%	0
Particle Density - Measured	Mg/m³	2.62
Natural Moisture Content	%	37
Maximum Dry Density	Mg/m³	1.62
Optimum Moisture Content	%	13.7

Originator	Checked & Approved
SK	CD 05/08/2021

Moisture Content / Dry Density Relationship

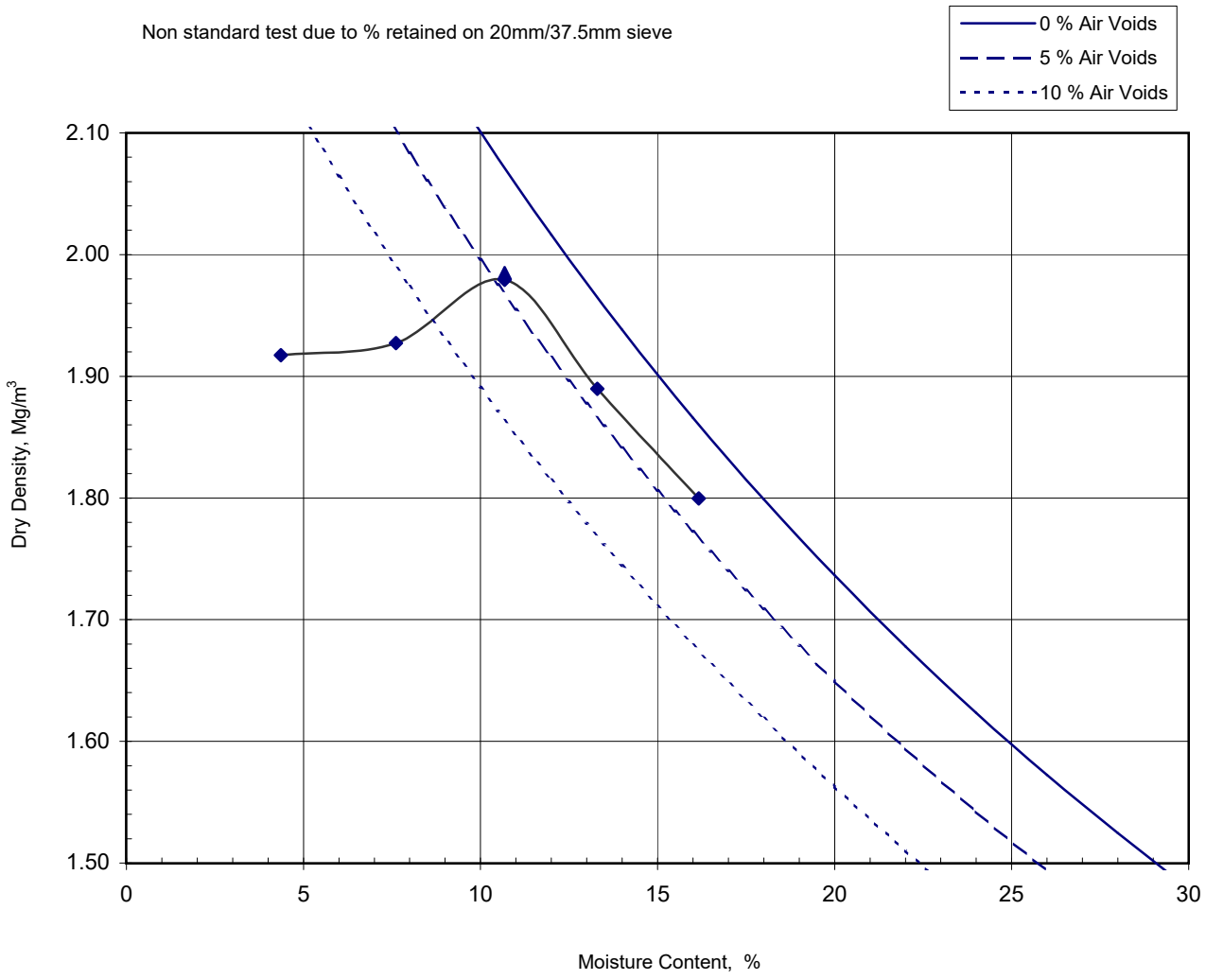
BS1377:Part 4:1990 Clause 3.3

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP75
Engineer		Sample Ref	
		Depth (m)	0.80-0.80
		Sample Type	B

Non standard test due to % retained on 20mm/37.5mm sieve



Non Engineering Description		Brown sandy clayey fine to coarse GRAVEL with cobbles
Preparation		Oven dried
Test Method		Vibrating Hammer
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	50
Mass Retained on 20.0 mm Sieve	%	65
Particle Density - Measured	Mg/m³	2.66
Natural Moisture Content	%	15
Maximum Dry Density	Mg/m³	1.98
Optimum Moisture Content	%	10.7

Originator	Checked & Approved
BJ	CD 05/08/2021

Moisture Content / Dry Density Relationship

BS1377:Part 4:1990 Clause 3.7

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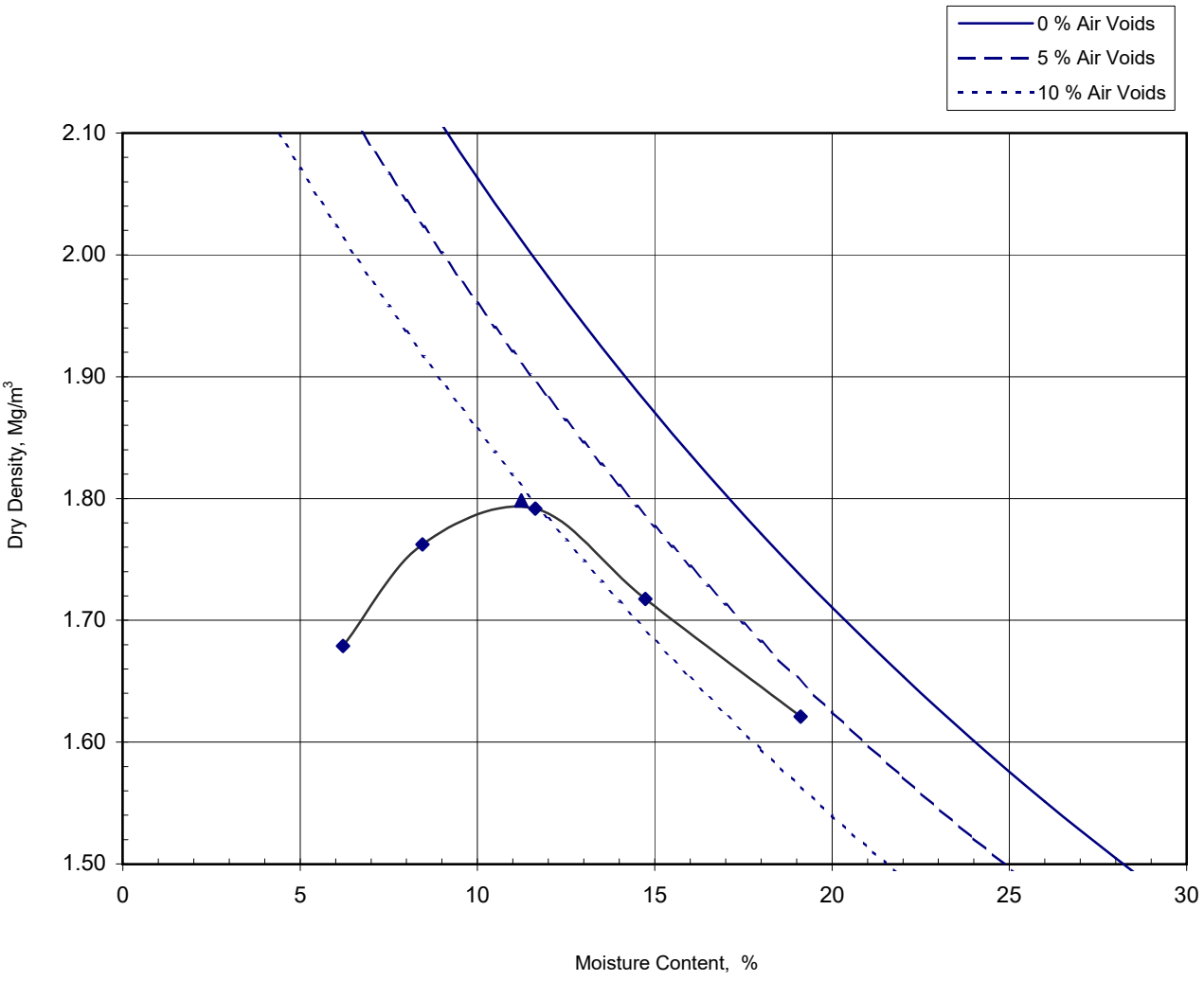
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP79
Engineer		Sample Ref	
		Depth (m)	0.90-0.90
		Sample Type	B



Non Engineering Description		Brown slightly gravelly sandy CLAY with rootlets. Gravel is fine
Preparation		Oven dried
Test Method		4.5kg Rammer for soils with particles up to medium-gravel size
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	0
Mass Retained on 20.0 mm Sieve	%	0
Particle Density - Measured	Mg/m³	2.60
Natural Moisture Content	%	20
Maximum Dry Density	Mg/m³	1.80
Optimum Moisture Content	%	11.2

Originator	Checked & Approved
SK	CD 05/08/2021

Moisture Content / Dry Density Relationship

BS1377:Part 4:1990 Clause 3.5

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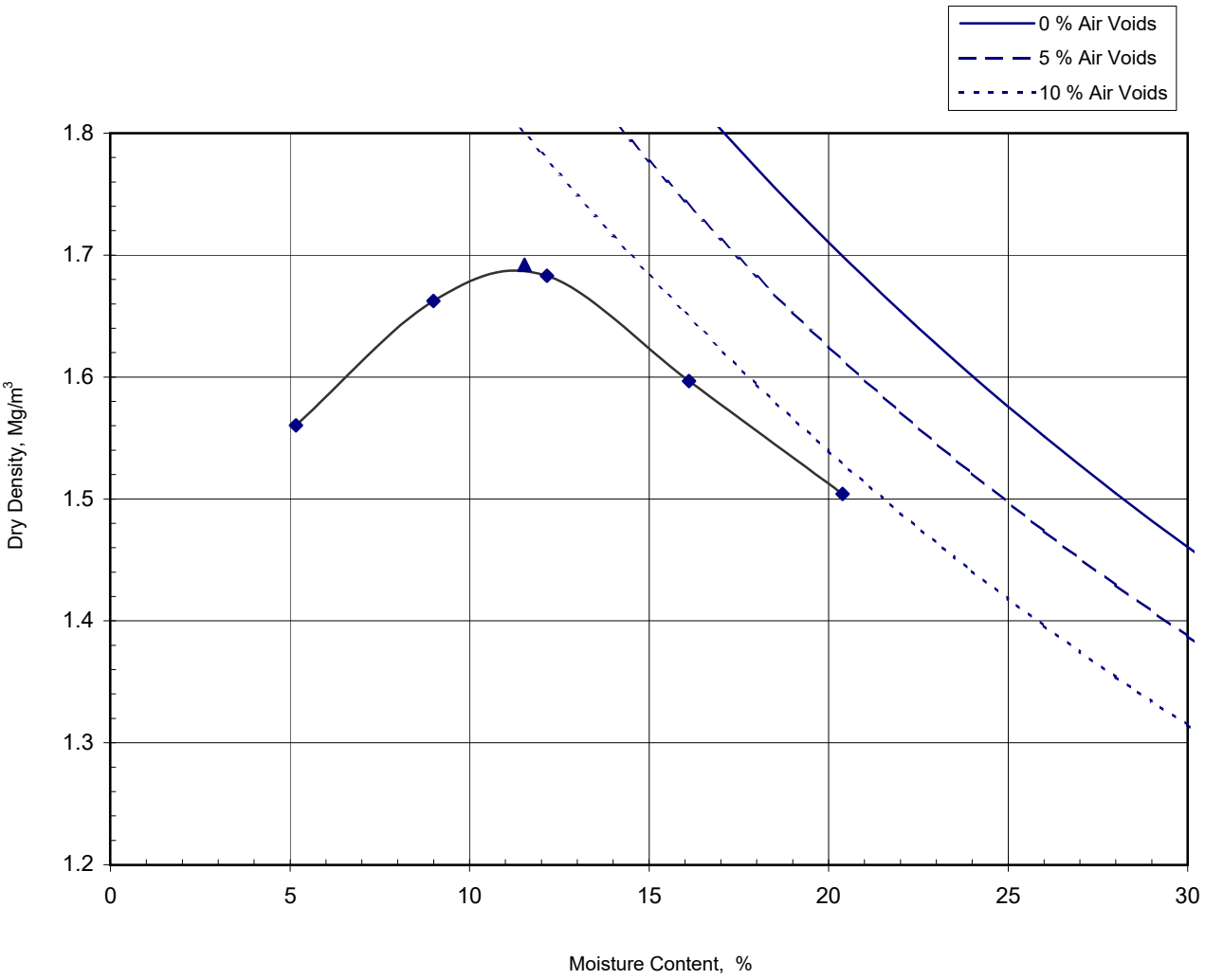
TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole	TP79
Engineer		Sample Ref	
		Depth (m)	0.90-0.90
		Sample Type	B



Non Engineering Description		Brown slightly gravelly sandy CLAY with rootlets. Gravel is fine
Preparation		Oven dried
Test Method		2.5kg Rammer for soils with particles up to medium-gravel size
Samples Used		Single
Mass Retained on 37.5 mm Sieve	%	0
Mass Retained on 20.0 mm Sieve	%	0
Particle Density - Measured	Mg/m³	2.60
Natural Moisture Content	%	20
Maximum Dry Density	Mg/m³	1.69
Optimum Moisture Content	%	11.5

Originator	Checked & Approved
SK	CD 05/08/2021

Moisture Content / Dry Density Relationship

BS1377:Part 4:1990 Clause 3.3

62 Rochsolloch Road, Airdrie, ML6 9BG

Non Engineering Description: Brown sandy clayey fine to coarse GRAVEL with cobbles

Preparation Details:

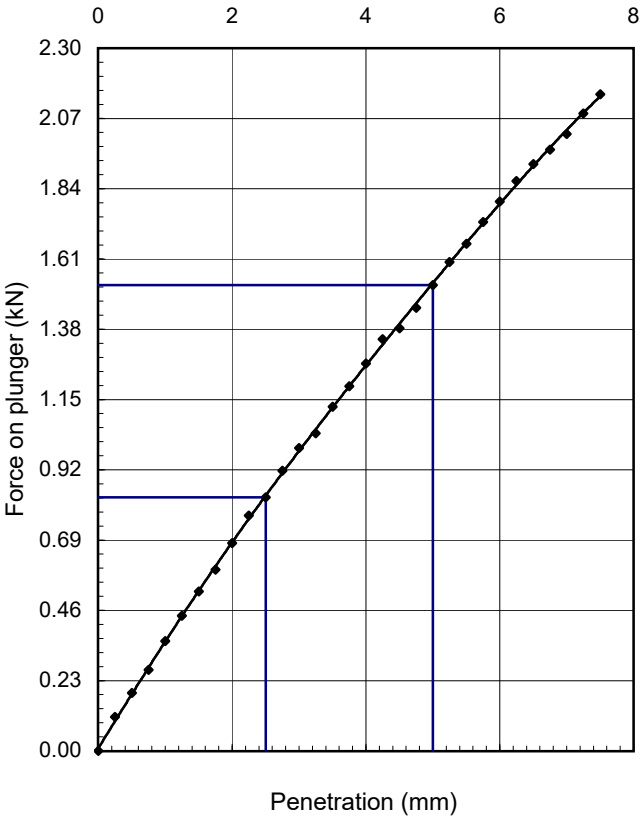
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.12	Mg/m³
Specimen Dry Density	1.90	Mg/m³
Mass of sample > 20 mm	55.4	%

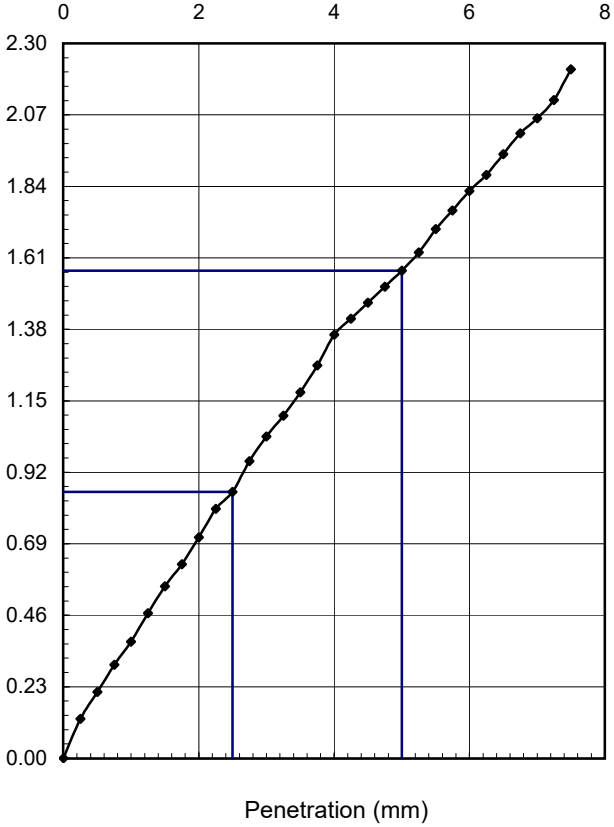
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	13	%	11	%
CBR Value:	7.6	%	7.8	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Non standard test due to % retained on 20mm sieve

Originator	Checked & Approved
SK	CD 10/08/2021

CALIFORNIA BEARING RATIO

BS1377 : Part 4 : Clause 7 : 1990

Non Engineering Description: Brown slightly gravelly sandy CLAY with rootlets. Gravel is fine

Preparation Details:

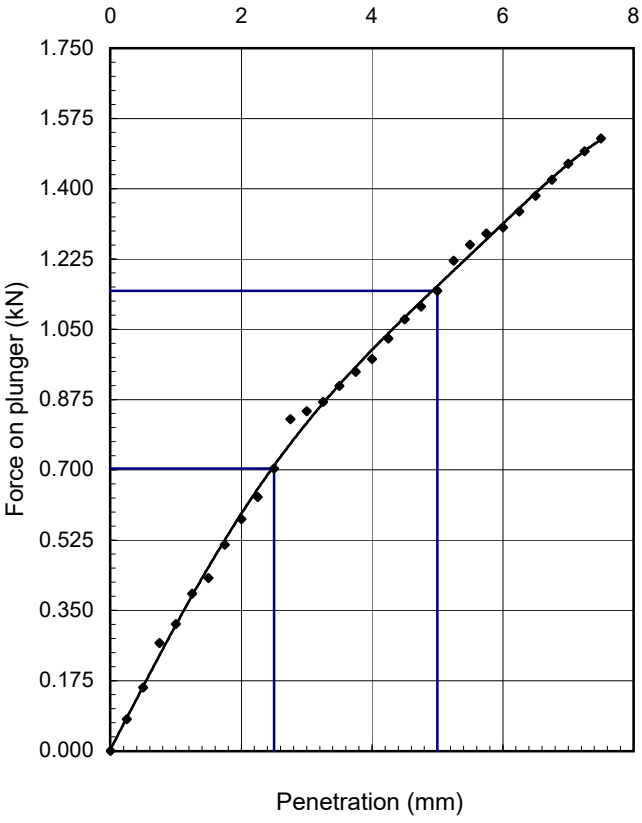
Specimen was initially oven-dried
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.06	Mg/m³
Specimen Dry Density	1.77	Mg/m³
Mass of sample > 20 mm	0.0	%

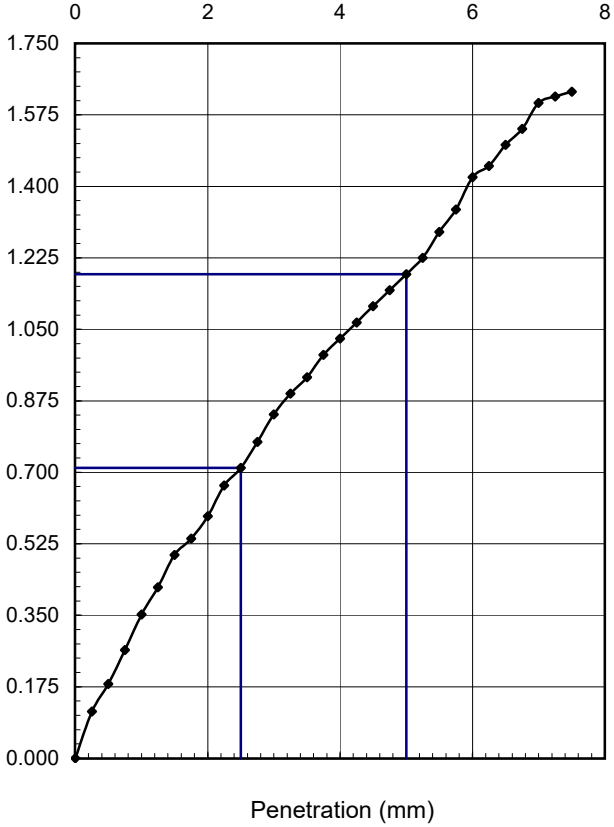
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	16	%	17	%
CBR Value:	5.7	%	5.9	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Originator	Checked & Approved
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CALIFORNIA BEARING RATIO
BS1377 : Part 4 : Clause 7 : 1990

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
			Hole ID	TP13
	Client	Applied Geology Limited	Sample No	
			Depth (m)	0.70-0.70
	Engineer		Sample Type	BX2

Non Engineering Description: Brown sandy clayey fine to coarse GRAVEL with cobbles

Preparation Details:

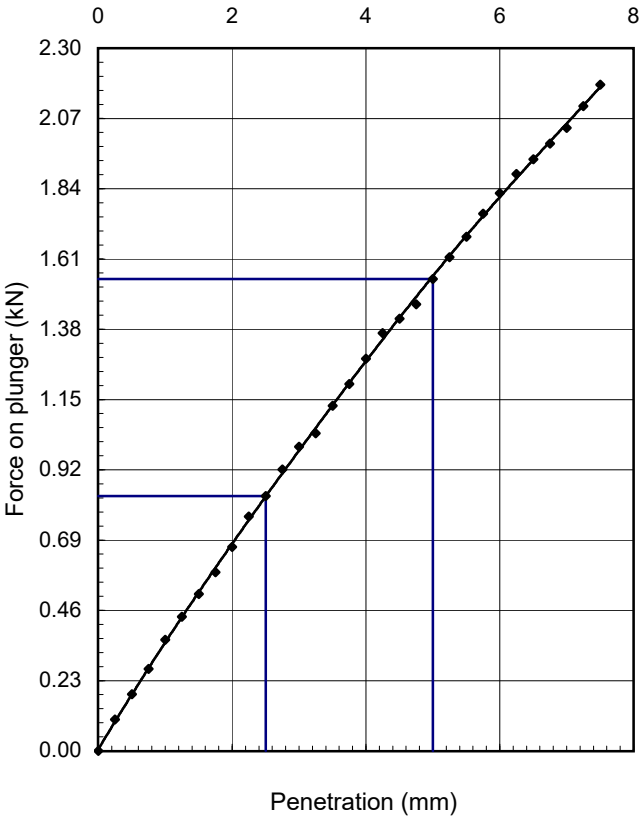
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.11	Mg/m³
Specimen Dry Density	1.87	Mg/m³
Mass of sample > 20 mm	58.0	%

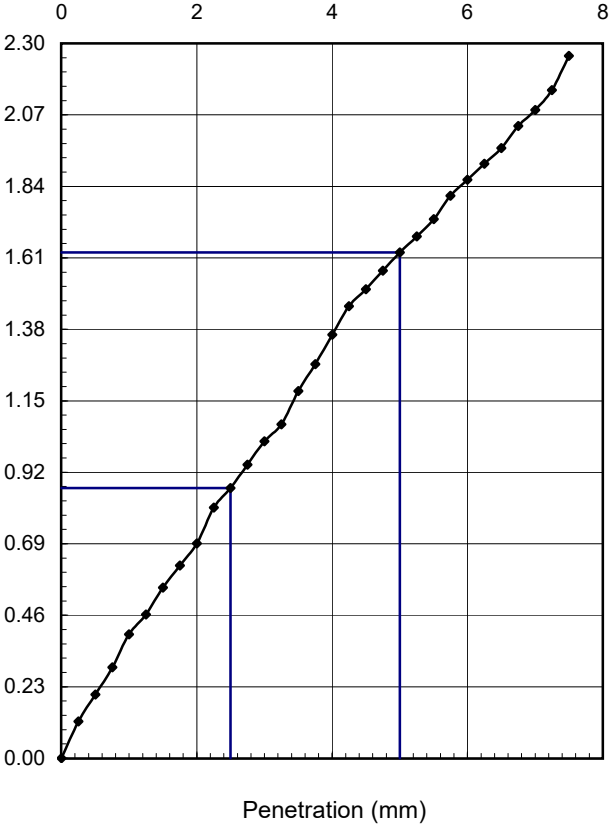
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	15	%	12	%
CBR Value:	7.7	%	8.1	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Non standard test due to % retained on 20mm sieve

Originator	Checked & Approved
SK	CD 10/08/2021

CALIFORNIA BEARING RATIO
BS1377 : Part 4 : Clause 7 : 1990

62 Rochsolloch Road, Airdrie, ML6 9BG

Non Engineering Description: Brown sandy clayey fine to coarse GRAVEL with cobbles

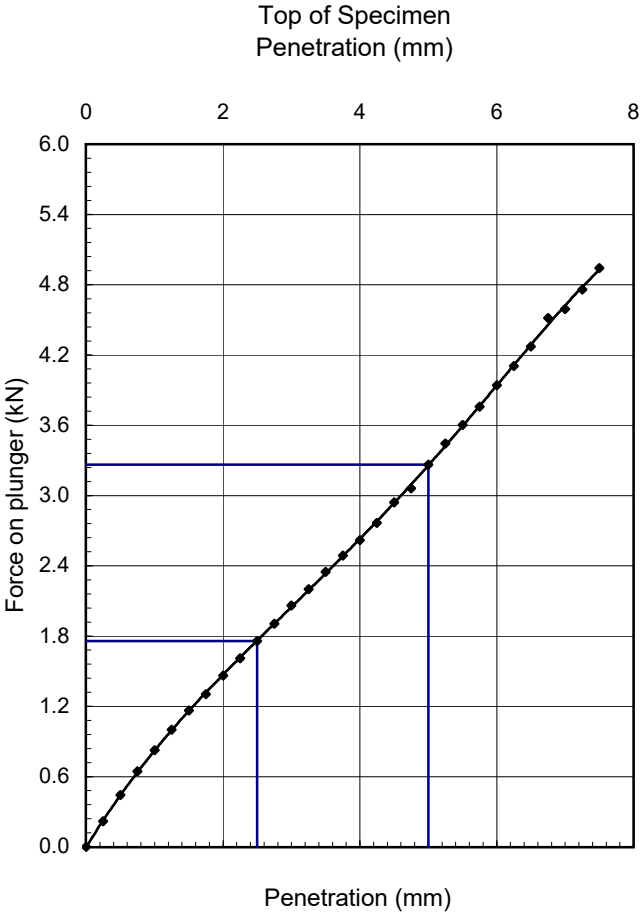
Preparation Details:

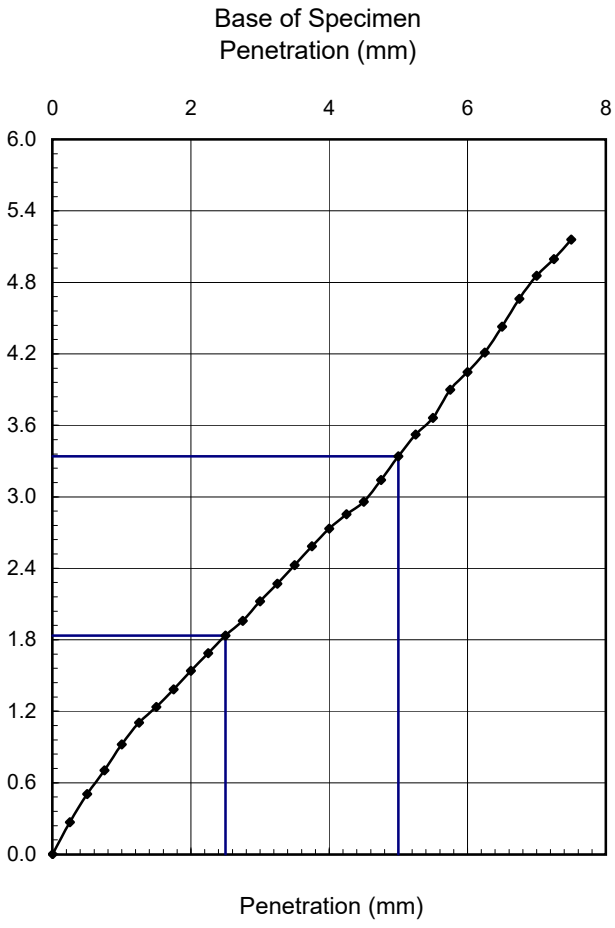
Specimen was initially oven-dried
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.20	Mg/m³
Specimen Dry Density	2.02	Mg/m³
Mass of sample > 20 mm	40.0	%

Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	8.5	%	9.1	%
CBR Value:	16.3	%	16.7	%





Non standard test due to % retained on 20mm sieve

Originator	Checked & Approved
SK	CD 10/08/2021

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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
			Hole ID	TP142
	Client	Applied Geology Limited	Sample No	
	Engineer		Depth (m)	0.60-0.60
			Sample Type	B

Non Engineering Description: Brown silty very sandy very clayey fine to coarse GRAVEL with cobbles and rootlets

Preparation Details:

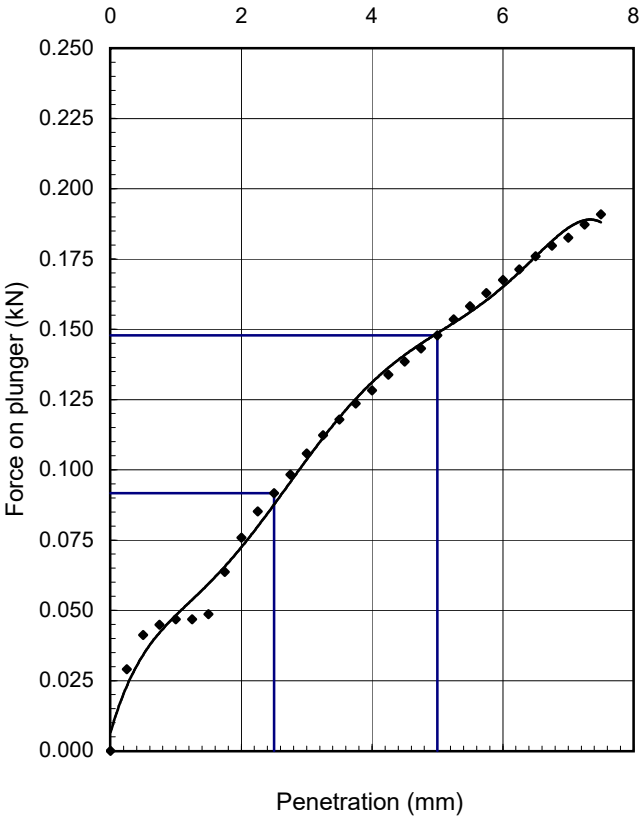
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	1.91	Mg/m³
Specimen Dry Density	1.49	Mg/m³
Mass of sample > 20 mm	37.1	%

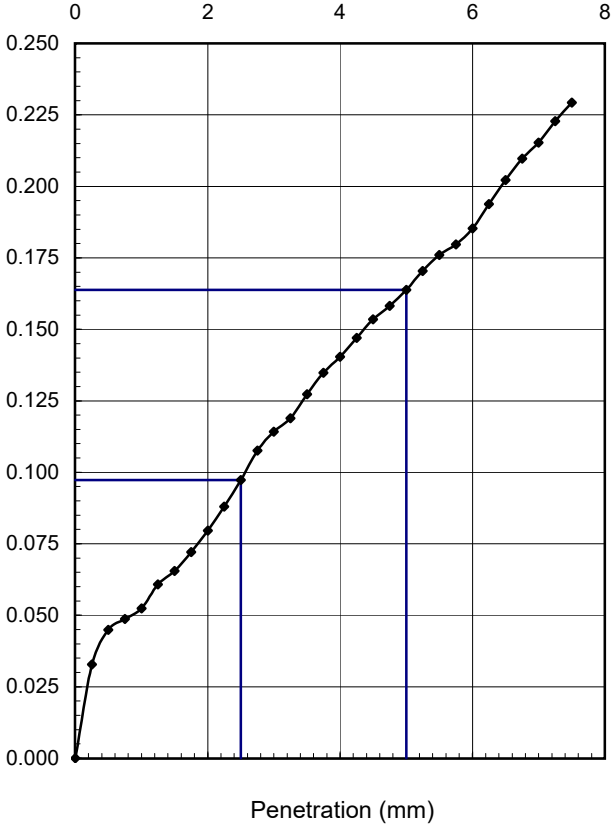
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	10	N	10	N
Moisture Content:	28	%	29	%
CBR Value:	0.7	%	0.8	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Non standard test due to % retained on 20mm sieve

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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
			Hole ID	TP145
	Client	Applied Geology Limited	Sample No	
	Engineer		Depth (m)	0.70-0.70
			Sample Type	B

Non Engineering Description: Brown sandy clayey fine to coarse GRAVEL with cobbles

Preparation Details:

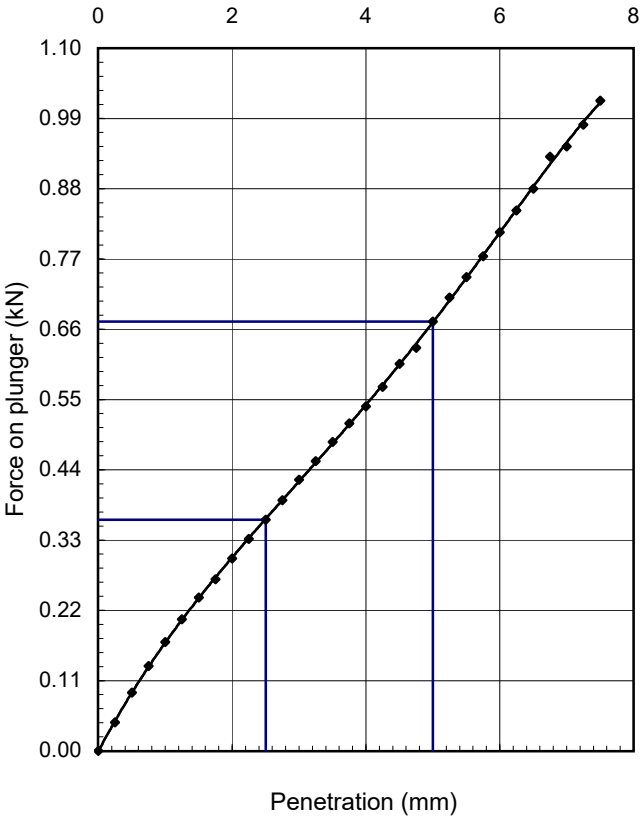
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.16	Mg/m³
Specimen Dry Density	1.91	Mg/m³
Mass of sample > 20 mm	20.1	%

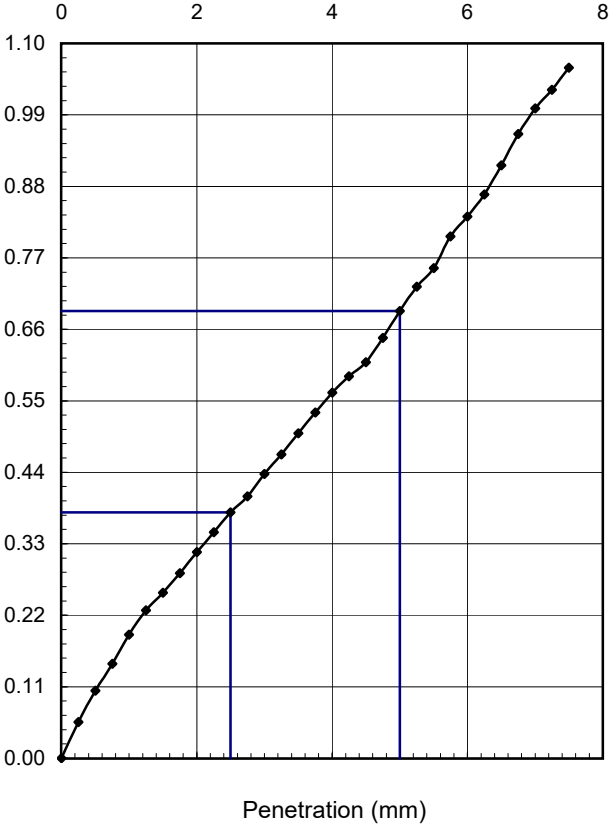
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	13	%	13	%
CBR Value:	3.4	%	3.4	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Originator	Checked & Approved
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CALIFORNIA BEARING RATIO
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Non Engineering Description: Brown very clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse

Preparation Details:

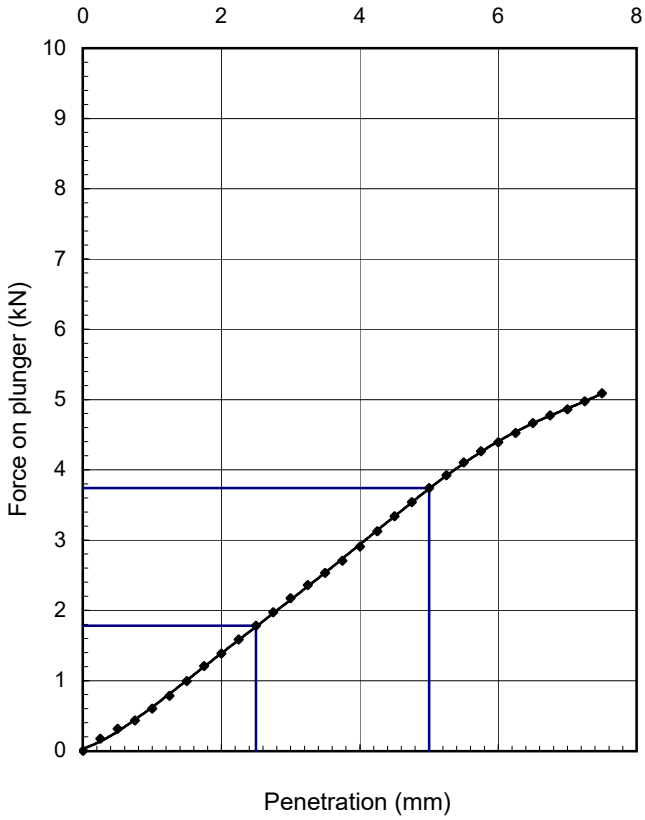
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.03	Mg/m³
Specimen Dry Density	1.84	Mg/m³
Mass of sample > 20 mm	26.0	%

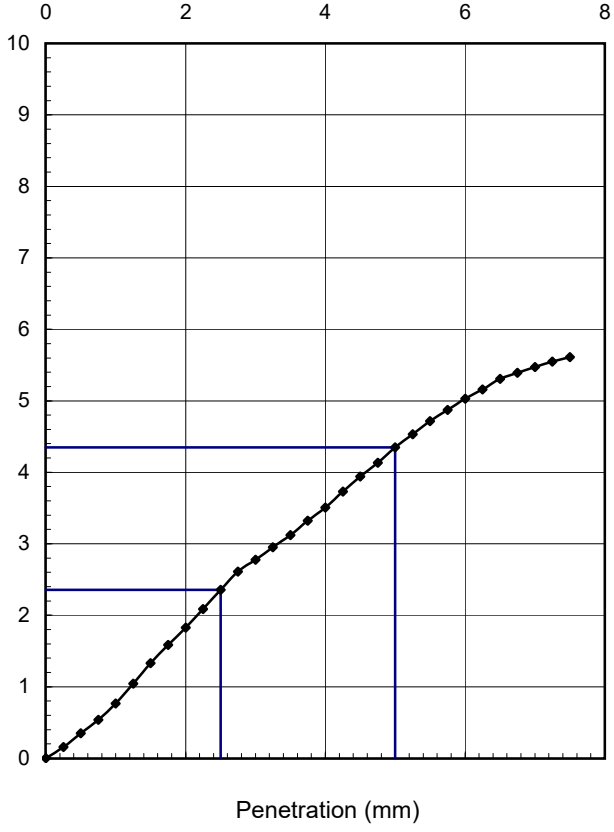
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	10.0	%	10	%
CBR Value:	18.7	%	21.8	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Non standard test due to % retained on 20mm sieve

Originator	Checked & Approved
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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole ID	TP2
Engineer		Sample No	
		Depth (m)	0.90-0.90
		Sample Type	B

Non Engineering Description: Brown very clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse

Preparation Details:

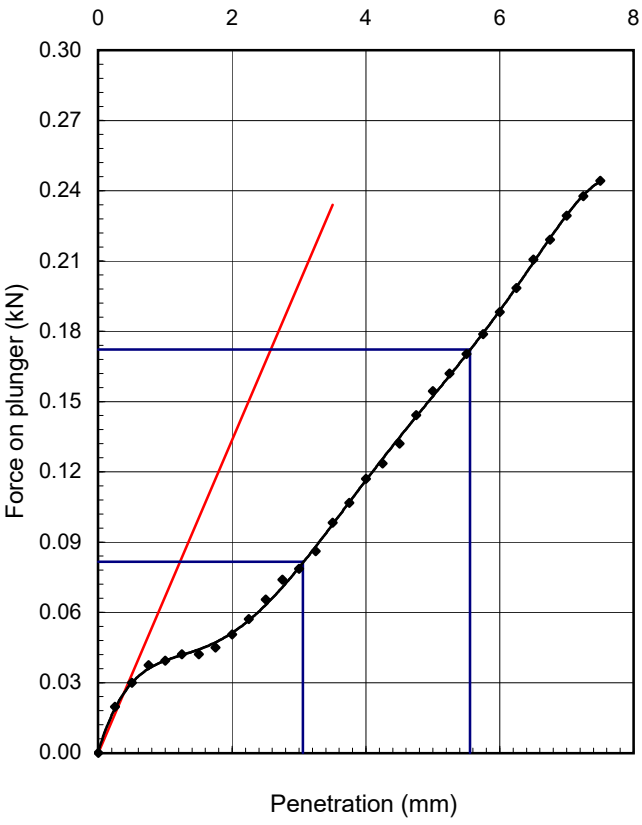
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	1.91	Mg/m³
Specimen Dry Density	1.50	Mg/m³
Mass of sample > 20 mm	21.3	%

Specimen Unsoaked

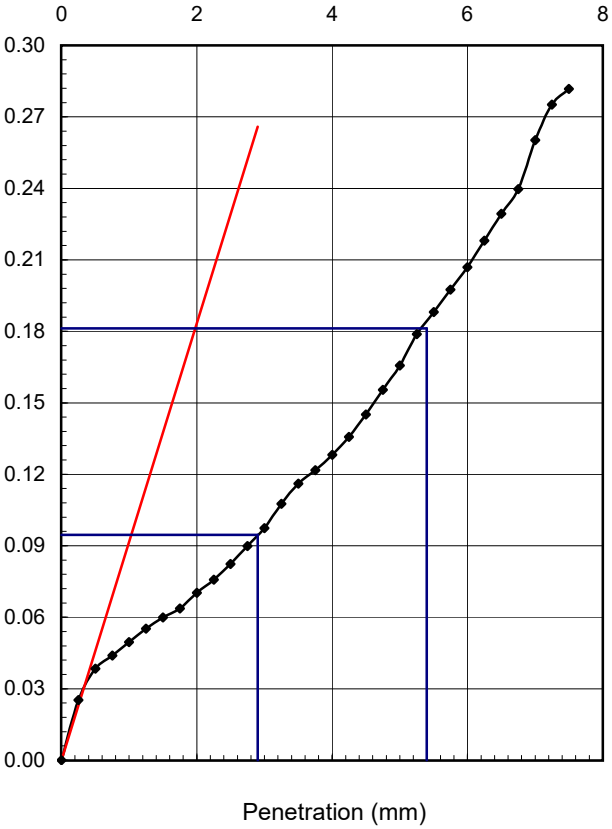
Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	10	N	10	N
Moisture Content:	26	%	28	%
CBR Value:	0.9	%	0.9	%

Top of Specimen Penetration (mm)



Curve Corrections Applied

Base of Specimen Penetration (mm)



Curve Corrections Applied

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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
			Hole ID	TP28
	Client	Applied Geology Limited	Sample No	
	Engineer		Depth (m)	0.50-0.60
			Sample Type	B

Non Engineering Description: Brown sandy very clayey fine to coarse GRAVEL with cobbles

Preparation Details:

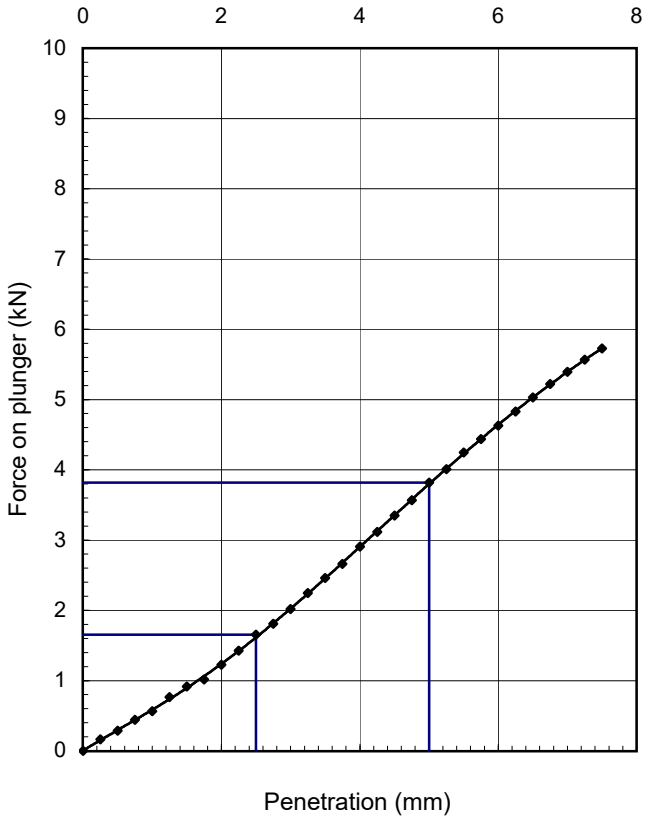
Specimen was initially air-dried
Compaction using 2.5kg compactive effort

Specimen Bulk Density	1.92	Mg/m³
Specimen Dry Density	1.74	Mg/m³
Mass of sample > 20 mm	32.4	%

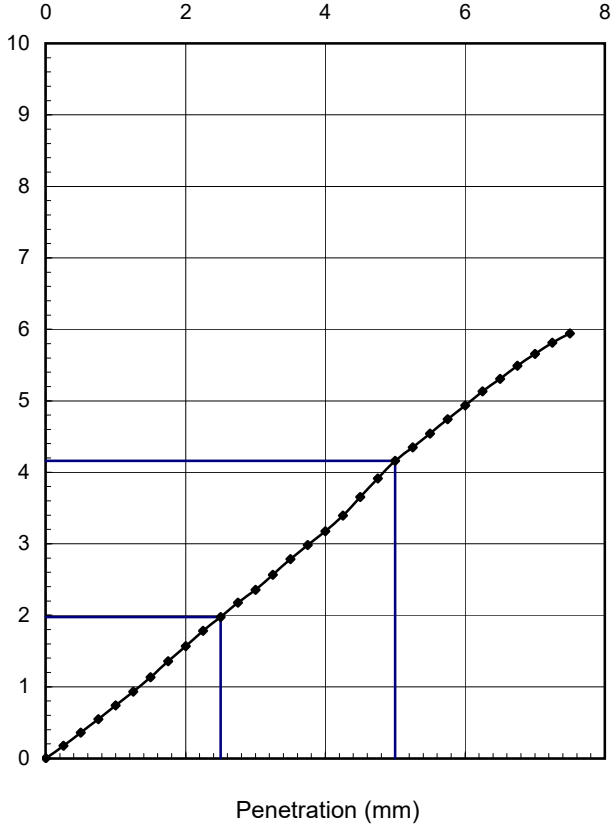
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	11	%	10	%
CBR Value:	19.1	%	20.8	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



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Originator	Checked & Approved
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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole ID	TP31
Engineer		Sample No	
		Depth (m)	0.70-0.80
		Sample Type	B

Non Engineering Description: Brown very gravelly very sandy CLAY. Gravel is fine to coarse

Preparation Details:

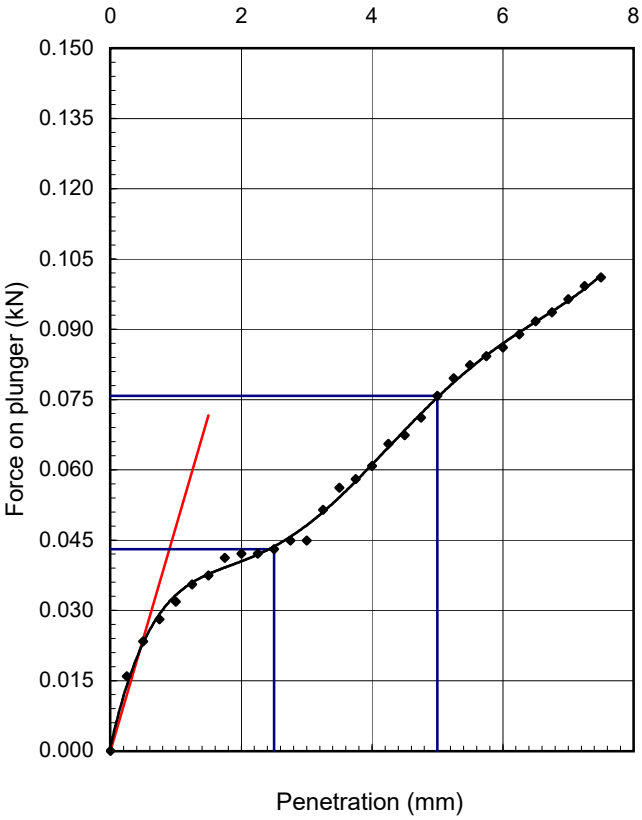
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.08	Mg/m³
Specimen Dry Density	1.76	Mg/m³
Mass of sample > 20 mm	26.2	%

Specimen Unsoaked

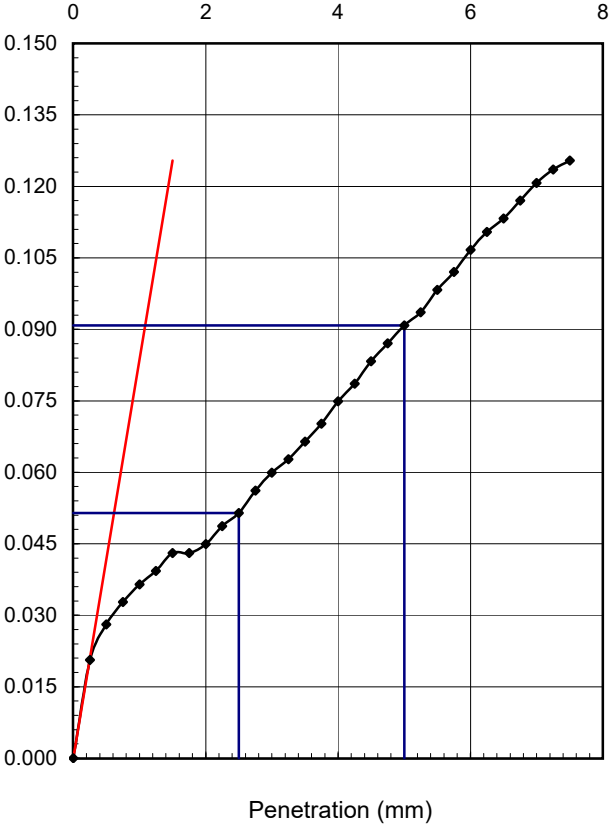
Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	10	N	10	N
Moisture Content:	18	%	18	%
CBR Value:	0.4	%	0.5	%

Top of Specimen Penetration (mm)



Curve Corrections Applied

Base of Specimen Penetration (mm)



Curve Corrections Applied

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CALIFORNIA BEARING RATIO

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Non Engineering Description: Brown gravelly very sandy CLAY. Gravel is fine to coarse

Preparation Details:

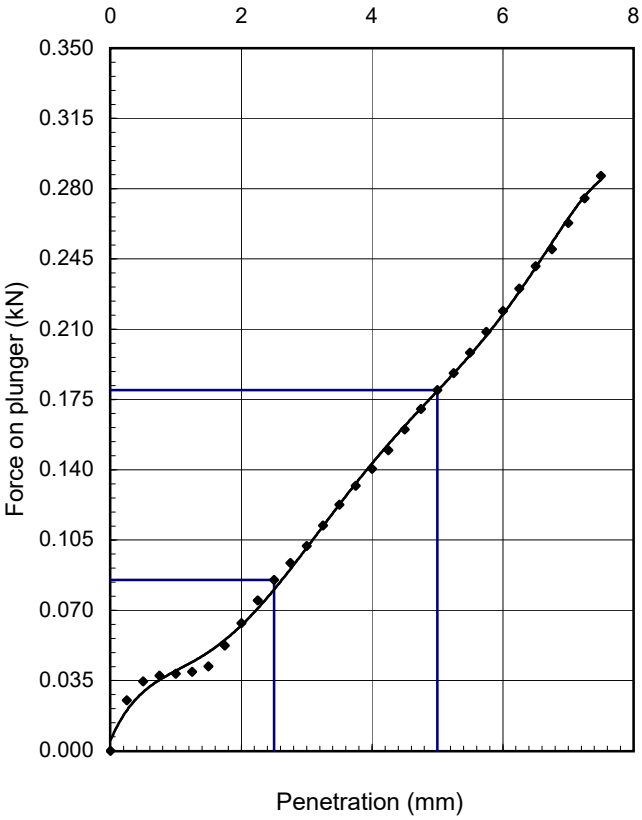
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	0.44	Mg/m³
Specimen Dry Density	0.38	Mg/m³
Mass of sample > 20 mm	14.3	%

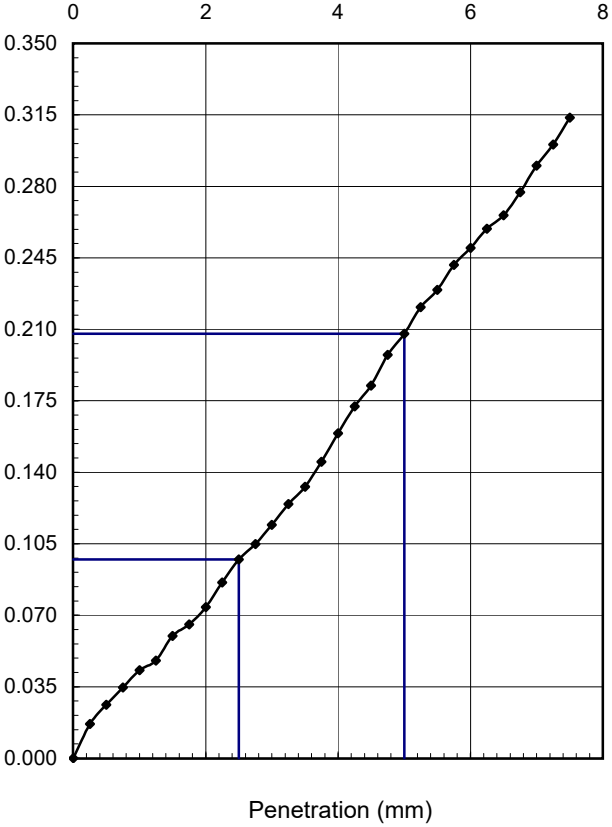
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	10	N	10	N
Moisture Content:	16	%	17	%
CBR Value:	0.9	%	1.0	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Originator	Checked & Approved
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CALIFORNIA BEARING RATIO
BS1377 : Part 4 : Clause 7 : 1990

Non Engineering Description: Brown very sandy very clayey fine to coarse GRAVEL with cobbles

Preparation Details:

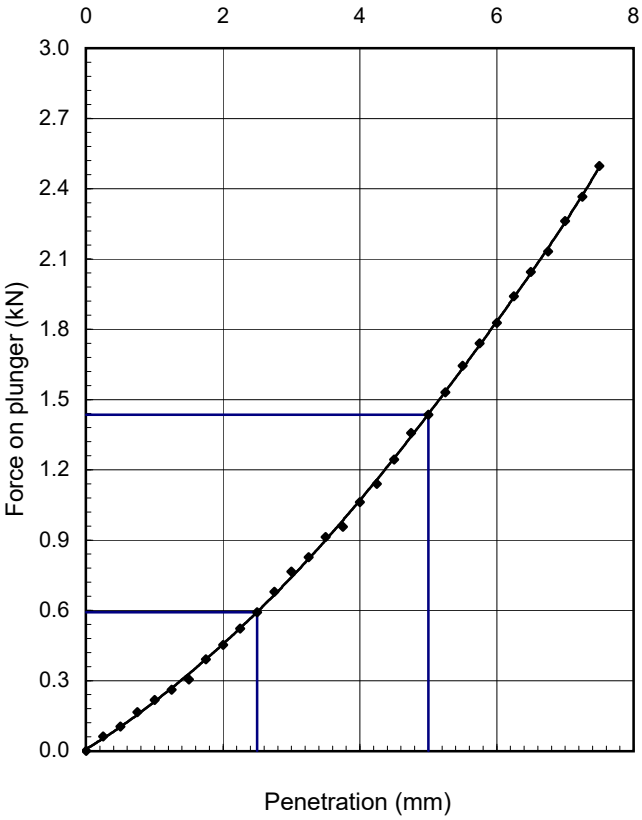
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.16	Mg/m³
Specimen Dry Density	1.92	Mg/m³
Mass of sample > 20 mm	29.3	%

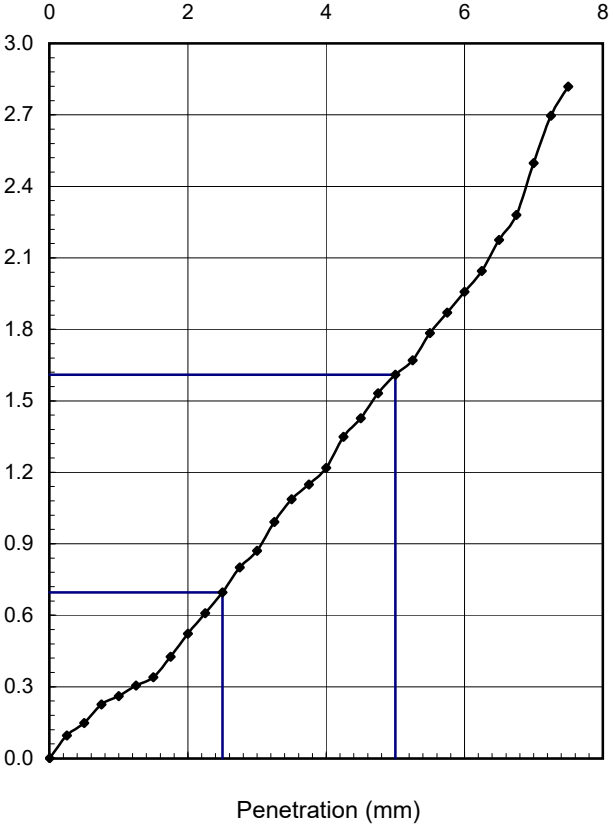
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	13	%	12	%
CBR Value:	7.2	%	8.0	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Non standard test due to % retained on 20mm sieve

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TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole ID	TP48
Engineer		Sample No	
		Depth (m)	0.50-0.60
		Sample Type	D

Non Engineering Description: Brown clayey very sandy fine to coarse GRAVEL

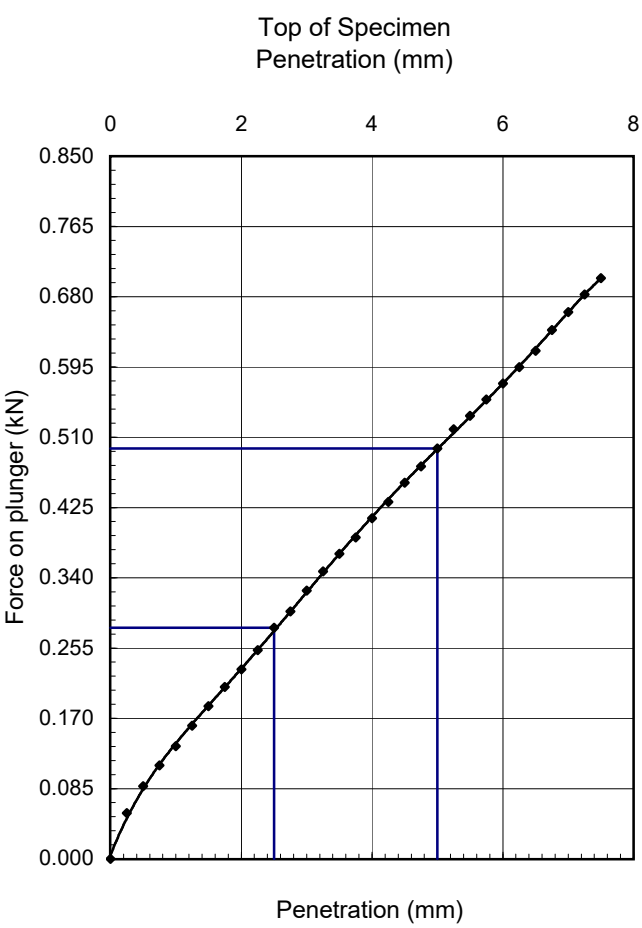
Preparation Details:

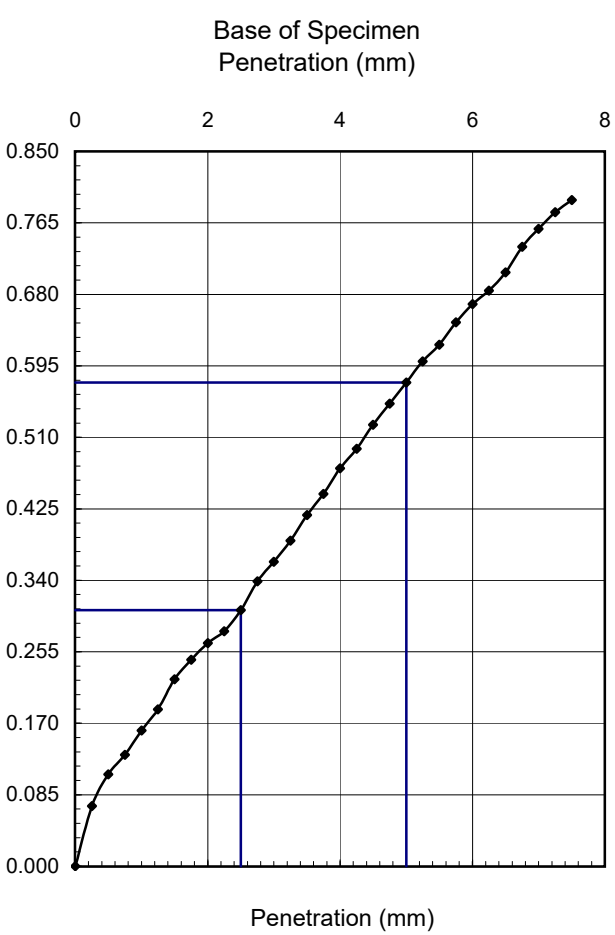
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.02	Mg/m³
Specimen Dry Density	1.70	Mg/m³
Mass of sample > 20 mm	42.0	%

Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	18	%	20	%
CBR Value:	2.5	%	2.9	%





Non standard test due to % retained on 20mm sieve

Originator	Checked & Approved
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TERRA TEK
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole ID	TP56
Engineer		Sample No	
		Depth (m)	0.50-0.50
		Sample Type	B

Non Engineering Description: Brown gravelly very sandy CLAY. Gravel is fine to coarse

Preparation Details:

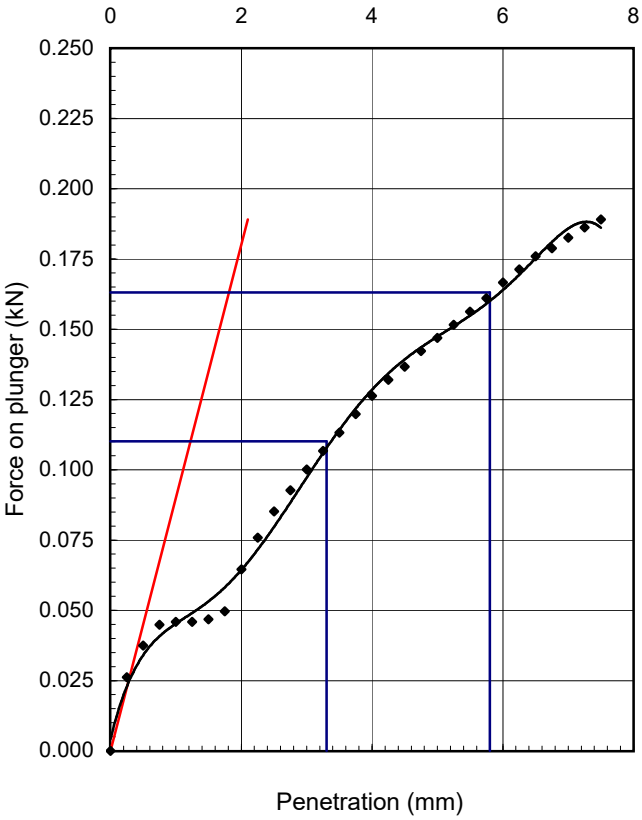
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	1.95	Mg/m³
Specimen Dry Density	1.62	Mg/m³
Mass of sample > 20 mm	2.3	%

Specimen Unsoaked

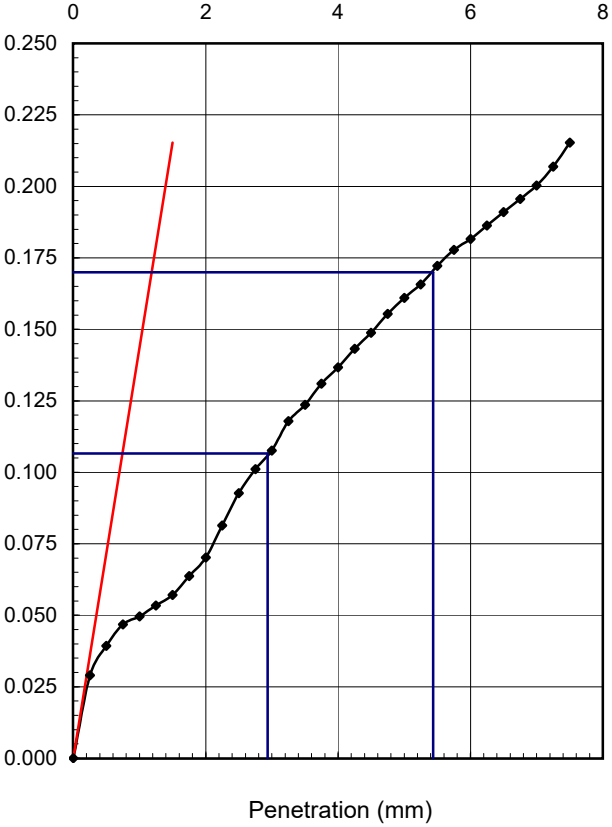
Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	10	N	10	N
Moisture Content:	20	%	20	%
CBR Value:	0.8	%	0.8	%

Top of Specimen Penetration (mm)



Curve Corrections Applied

Base of Specimen Penetration (mm)



Curve Corrections Applied

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SK	CD 10/08/2021

CALIFORNIA BEARING RATIO

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62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole ID	TP60
Engineer		Sample No	
		Depth (m)	0.70-0.80
		Sample Type	B

Non Engineering Description: Brown gravelly very sandy very silty CLAY. Gravel is fine to medium

Preparation Details:

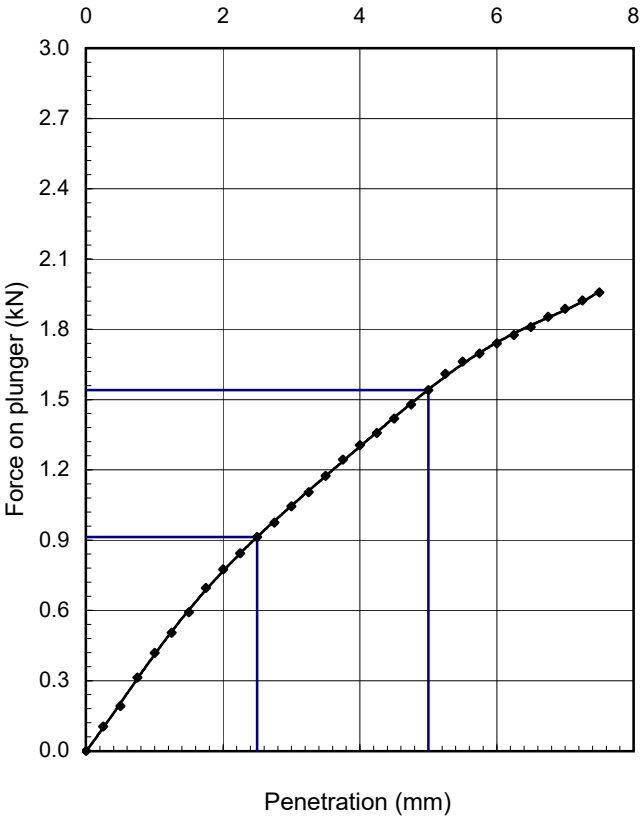
Specimen was initially oven-dried
Compaction using 2.5kg compactive effort

Specimen Bulk Density	1.98	Mg/m³
Specimen Dry Density	1.74	Mg/m³
Mass of sample > 20 mm	0.0	%

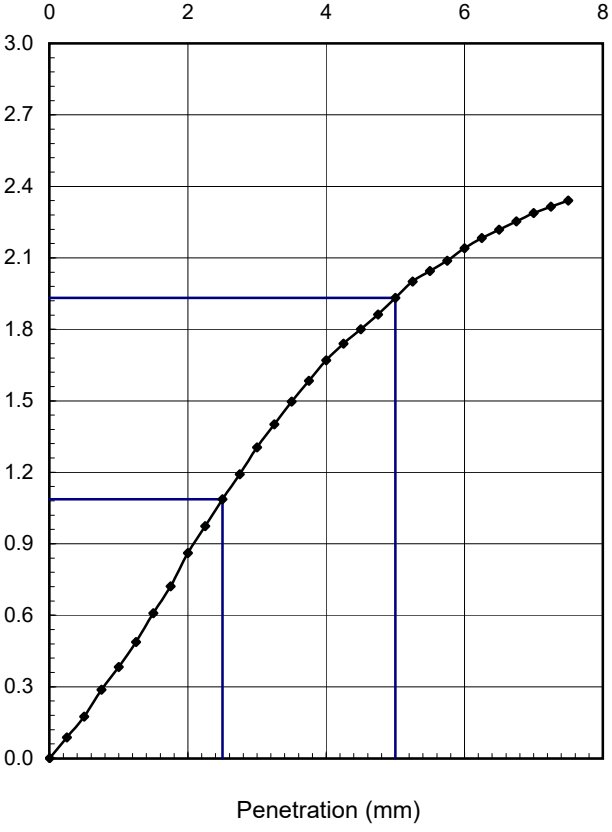
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	14	%	14	%
CBR Value:	7.7	%	9.7	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Originator	Checked & Approved
SM	CD 10/08/2021

CALIFORNIA BEARING RATIO
BS1377 : Part 4 : Clause 7 : 1990

62 Rochsolloch Road, Airdrie, ML6 9BG

Non Engineering Description: Brown sandy silty fine to coarse GRAVEL with cobbles

Preparation Details:

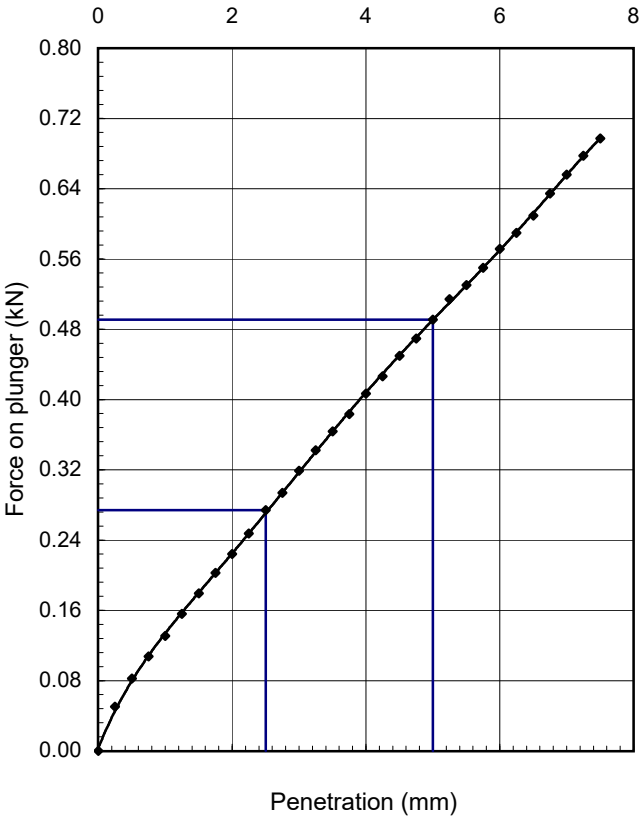
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.03	Mg/m³
Specimen Dry Density	1.68	Mg/m³
Mass of sample > 20 mm	58.2	%

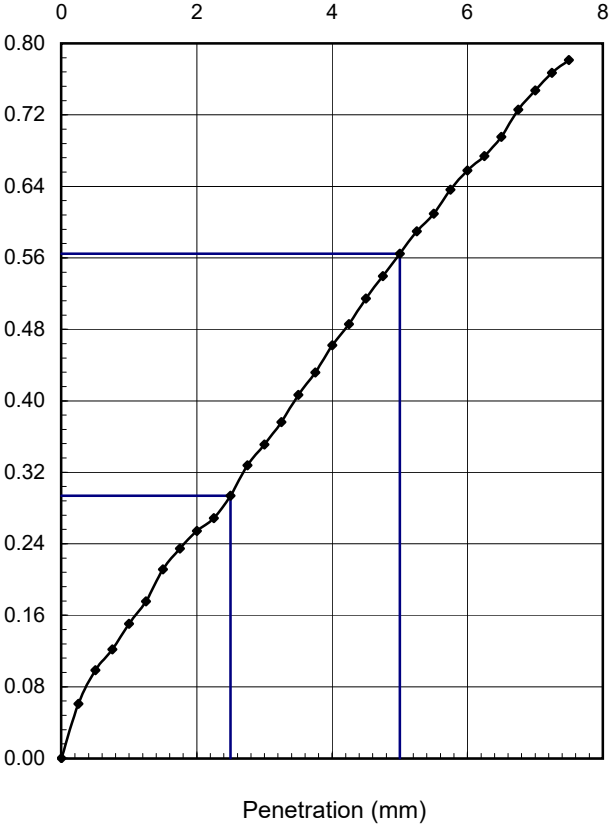
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	21	%	20	%
CBR Value:	2.5	%	2.8	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Non standard test due to % retained on 20mm sieve

Originator	Checked & Approved
SK	CD 10/08/2021

CALIFORNIA BEARING RATIO
BS1377 : Part 4 : Clause 7 : 1990

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
			Hole ID	TP70
	Client	Applied Geology Limited	Sample No	
	Engineer		Depth (m)	0.80-0.80
			Sample Type	B

Non Engineering Description: Brown gravelly sandy CLAY. Gravel is fine to coarse

Preparation Details:

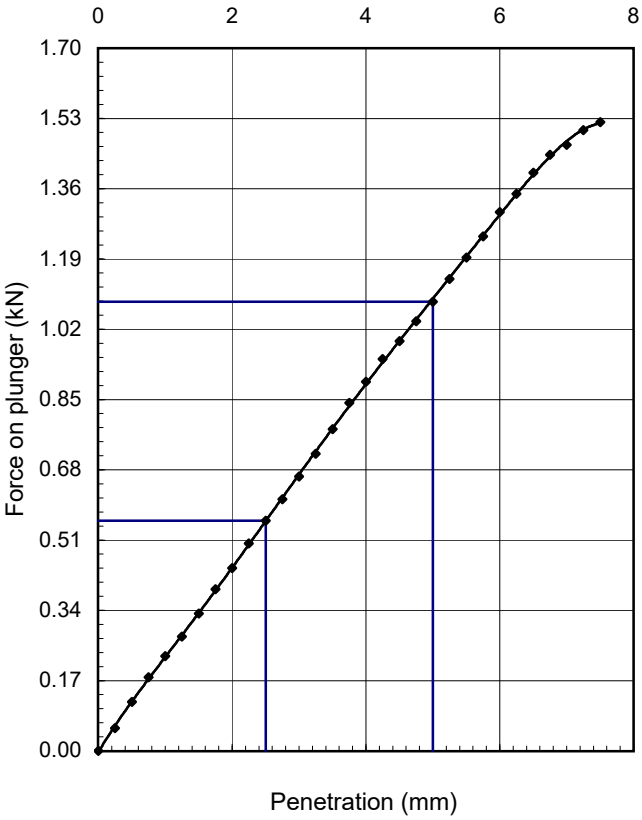
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.13	Mg/m³
Specimen Dry Density	1.83	Mg/m³
Mass of sample > 20 mm	33.6	%

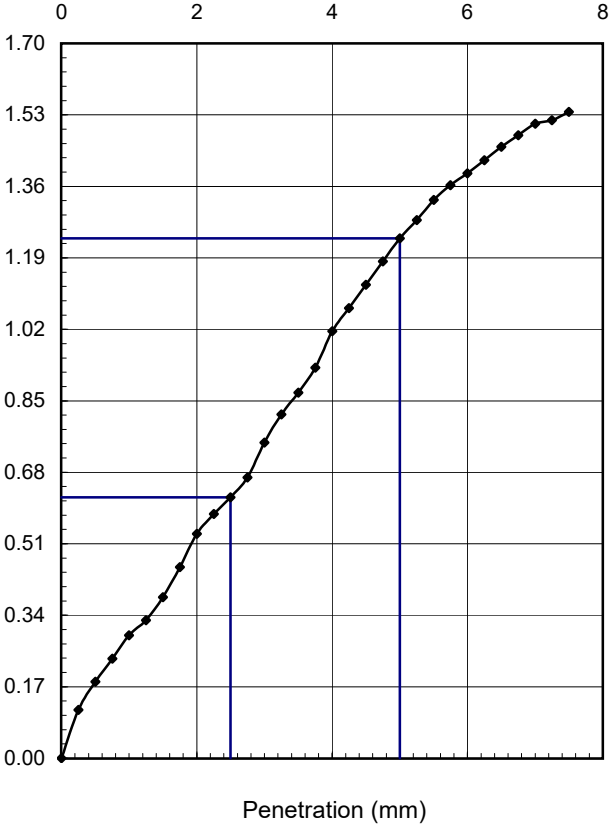
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	18	%	15	%
CBR Value:	5.4	%	6.2	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Non standard test due to % retained on 20mm sieve

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SK	CD 10/08/2021

CALIFORNIA BEARING RATIO

BS1377 : Part 4 : Clause 7 : 1990

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole ID	TP75
Engineer		Sample No	
		Depth (m)	0.80-0.80
		Sample Type	B

Non Engineering Description: Brown sandy clayey fine to coarse GRAVEL with cobbles

Preparation Details:

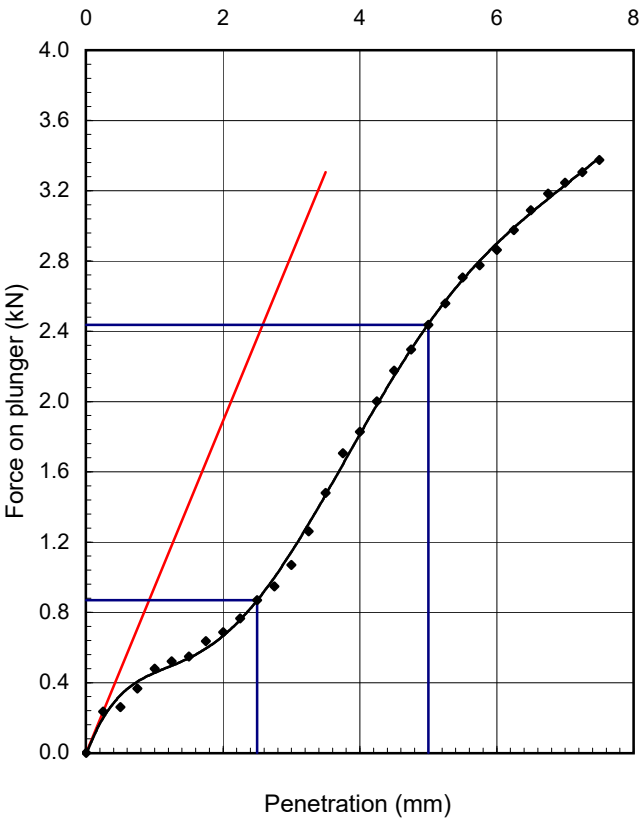
Specimen was initially oven-dried
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.13	Mg/m³
Specimen Dry Density	1.92	Mg/m³
Mass of sample > 20 mm	39.6	%

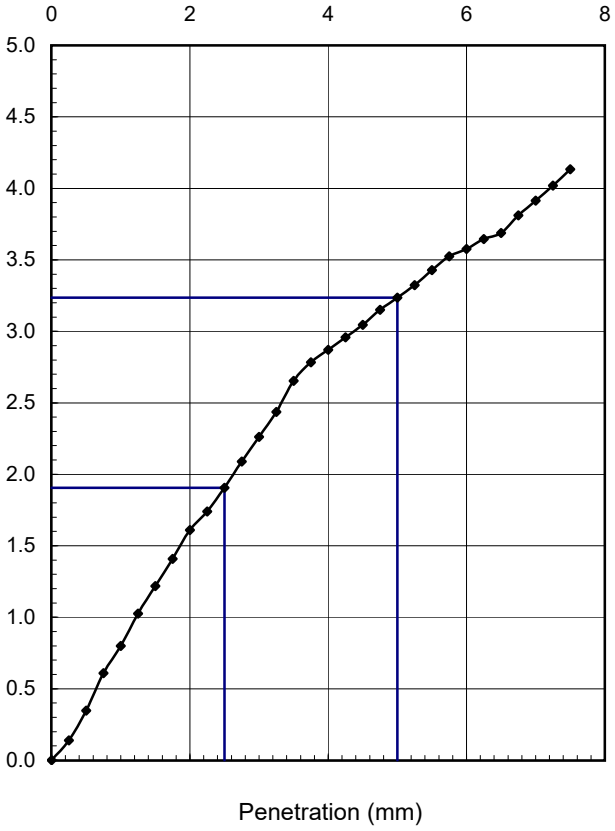
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	10	%	11	%
CBR Value:	12.2	%	16.2	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Curve Corrections Applied

Non standard test due to % retained on 20mm sieve

Originator	Checked & Approved
SK	CD 10/08/2021

CALIFORNIA BEARING RATIO
BS1377 : Part 4 : Clause 7 : 1990

62 Rochsolloch Road, Airdrie, ML6 9BG

Non Engineering Description: Dark brown very gravelly very clayey SAND. Gravel is fine to coarse

Preparation Details:

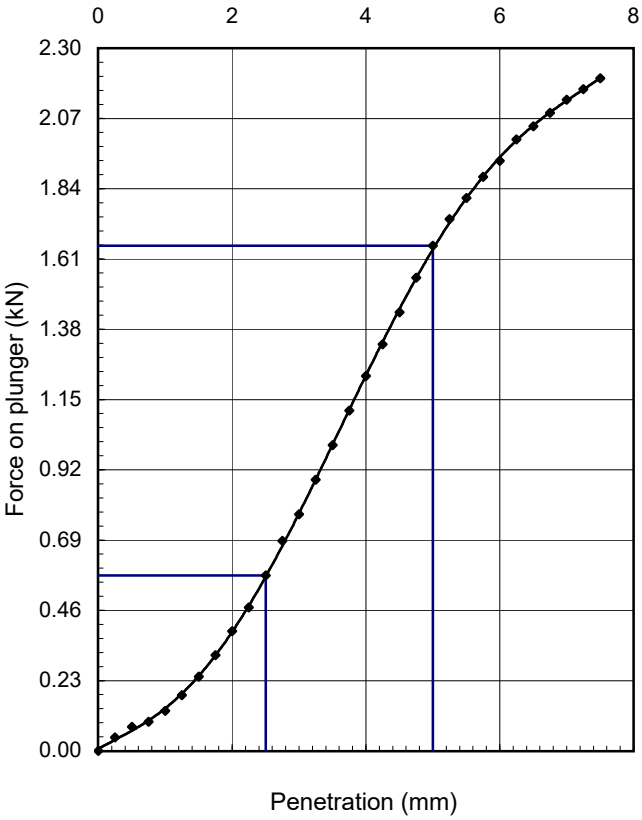
Specimen was initially oven-dried
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.07	Mg/m³
Specimen Dry Density	1.86	Mg/m³
Mass of sample > 20 mm	0.0	%

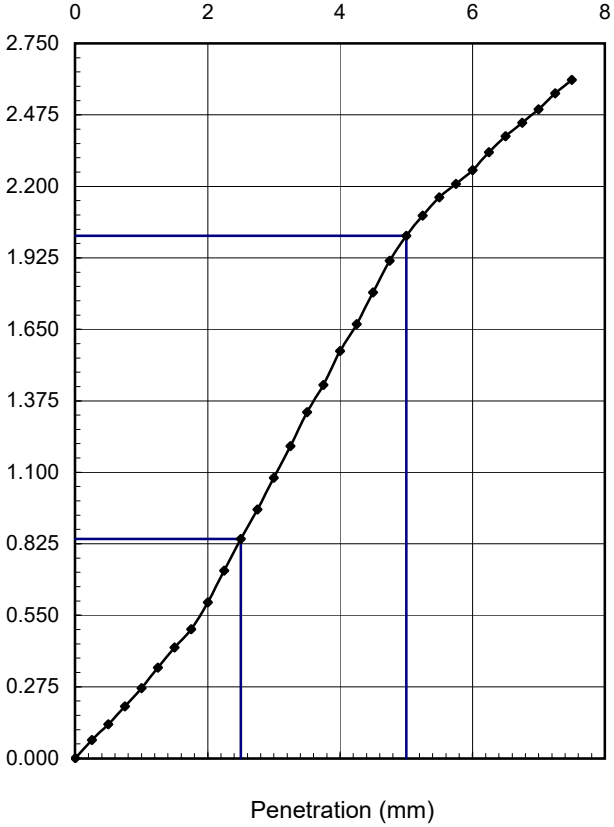
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	10	N	10	N
Moisture Content:	11	%	11	%
CBR Value:	8.3	%	10.0	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Originator	Checked & Approved
SM	CD 10/08/2021

CALIFORNIA BEARING RATIO
BS1377 : Part 4 : Clause 7 : 1990

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
			Hole ID	TP89
	Client	Applied Geology Limited	Sample No	
	Engineer		Depth (m)	0.80-0.80
			Sample Type	B

Non Engineering Description: Brown clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse

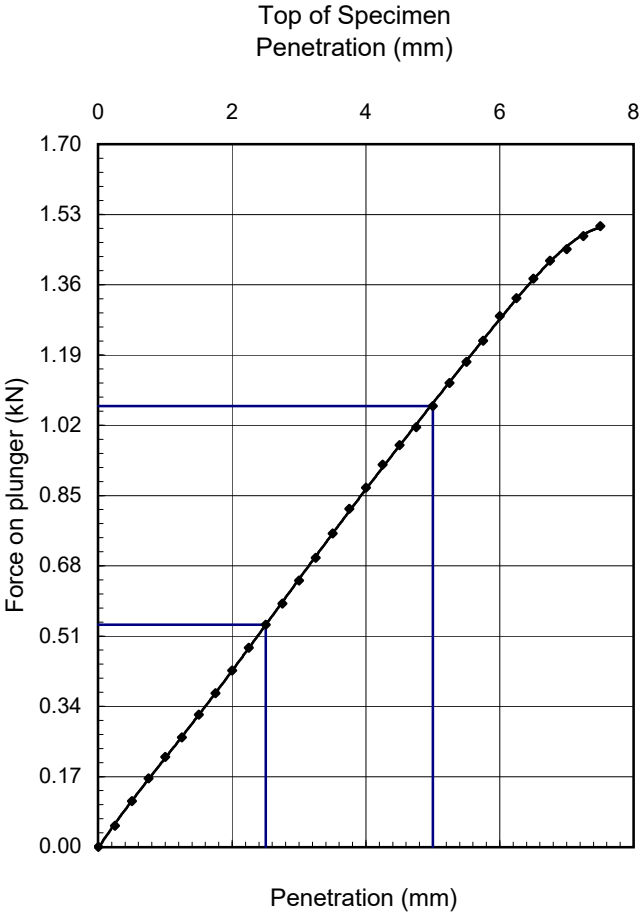
Preparation Details:

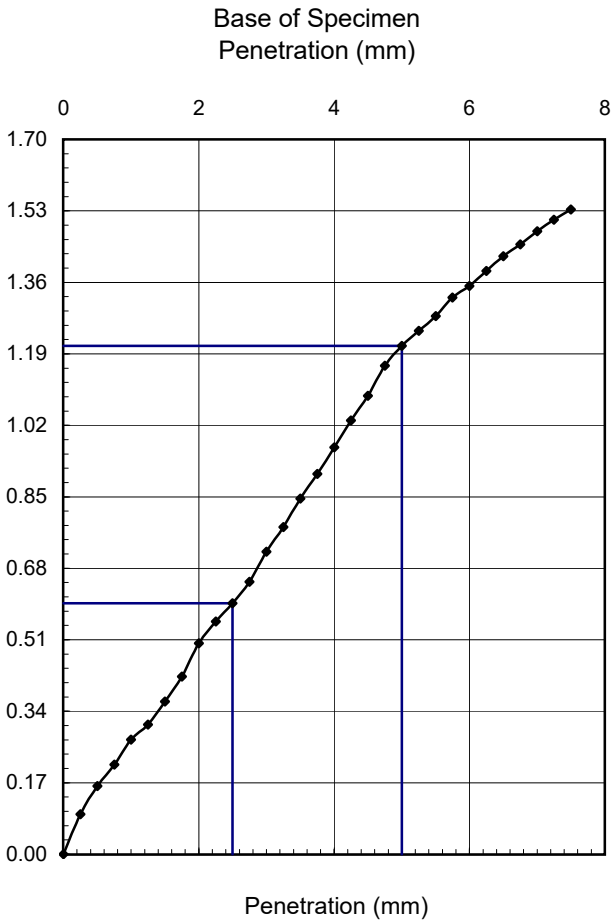
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.13	Mg/m³
Specimen Dry Density	1.86	Mg/m³
Mass of sample > 20 mm	57.8	%

Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	15	%	14	%
CBR Value:	5.3	%	6.0	%





Non standard test due to % retained on 20mm sieve

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SK	CD 10/08/2021

CALIFORNIA BEARING RATIO
BS1377 : Part 4 : Clause 7 : 1990

62 Rochsolloch Road, Airdrie, ML6 9BG

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	**Contract No**	**B26845**
Client	Applied Geology Limited	Hole ID	TP94
Engineer		Sample No	
		Depth (m)	0.70
		Sample Type	Bx2

Non Engineering Description: COBBLES with brown sandy clayey fine to coarse gravel

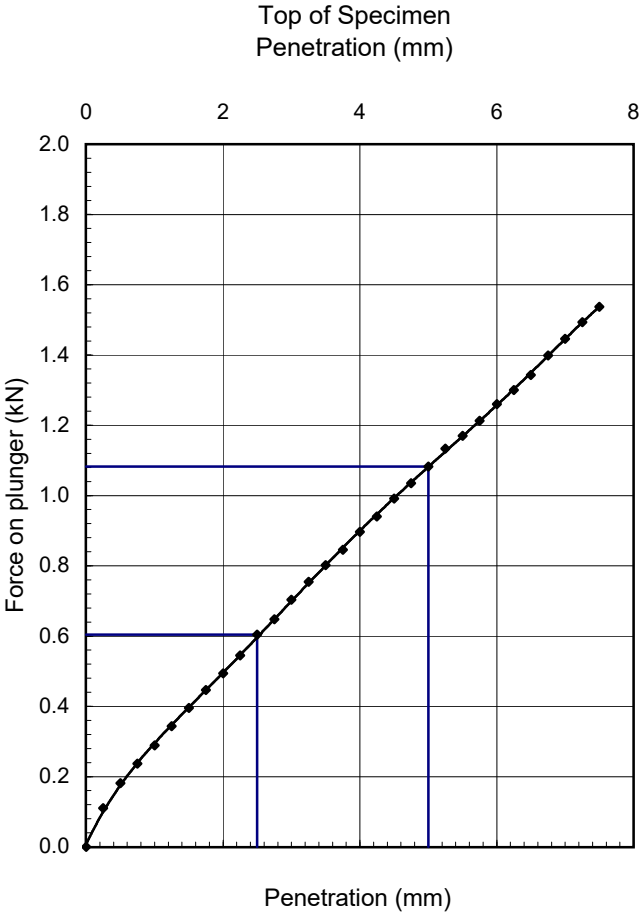
Preparation Details:

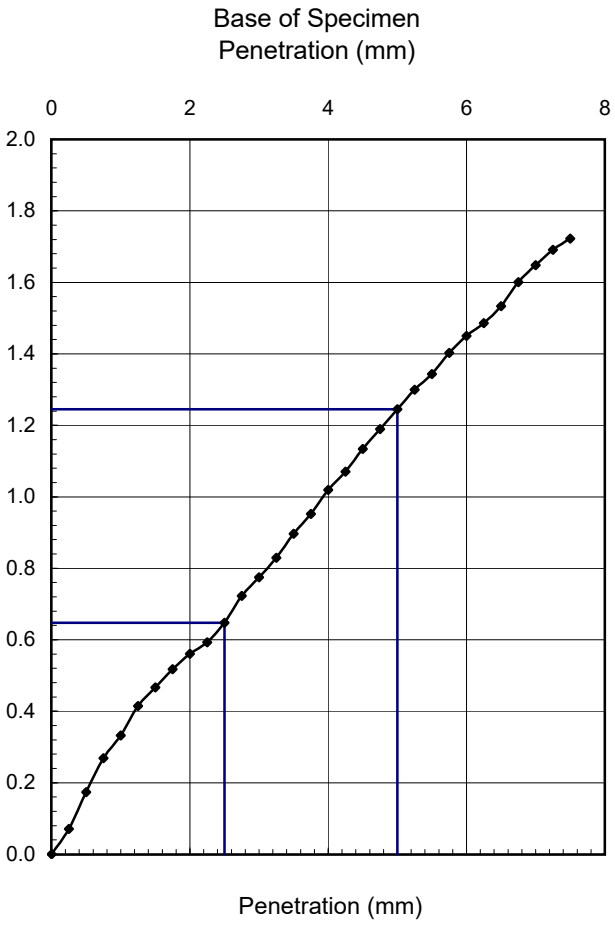
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.07	Mg/m³
Specimen Dry Density	1.78	Mg/m³
Mass of sample > 20 mm	63.4	%

Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	17	%	17	%
CBR Value:	5.4	%	6.2	%





Non standard test due to % retained on 20mm sieve

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CALIFORNIA BEARING RATIO
BS1377 : Part 4 : Clause 7 : 1990

62 Rochsolloch Road, Airdrie, ML6 9BG

Non Engineering Description: Brown gravelly very sandy very silty CLAY with cobbles. Gravel is fine to coarse

Preparation Details:

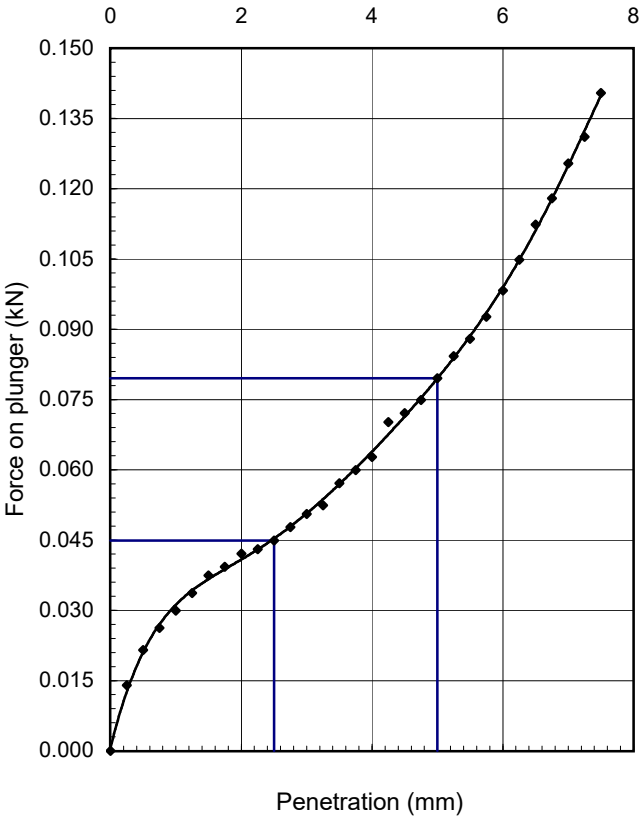
Specimen was prepared at Natural Moisture Content
Compaction using 2.5kg compactive effort

Specimen Bulk Density	2.02	Mg/m³
Specimen Dry Density	1.63	Mg/m³
Mass of sample > 20 mm	27.6	%

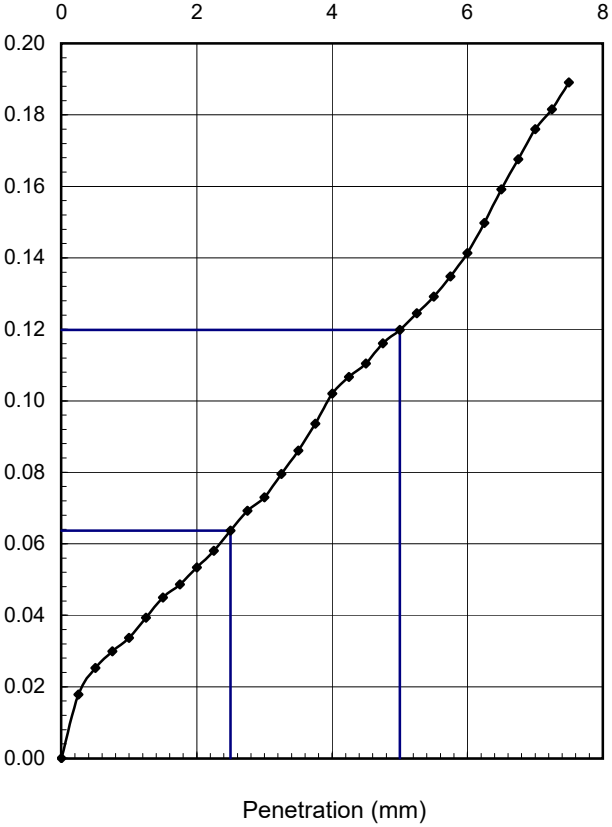
Specimen Unsoaked

Test Details:	**Top**		**Base**	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	10	N	10	N
Moisture Content:	24	%	24	%
CBR Value:	0.4	%	0.6	%

Top of Specimen Penetration (mm)



Base of Specimen Penetration (mm)



Non standard test due to % retained on 20mm sieve

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CALIFORNIA BEARING RATIO
BS1377 : Part 4 : Clause 7 : 1990

APPENDIX F

APPENDIX F

STANDARD FIELDWORK AND ASSESSMENT PROCEDURES

Scope of Work

The scope of work undertaken is defined in Section 1 of the Report. It should be noted that Applied Geology Limited does not provide arboricultural surveys, specialist surveys for the detection of invasive plant species (such as Japanese Knotweed) or protected species of wildlife. Information from environmental and ecological datasets is included from a review of the MAGIC (Multi-Agency Geographic Information for the Countryside) website, however, if a full assessment of Environmental or Ecological aspects is required, it is recommended that other specialists are consulted. Similarly, information on flood risk is included; obtained from the Environment Agency Web site and the GroundSure report; but this is not intended to be a full hydrological study and, if a flood risk assessment is needed, additional analysis by others is recommended to confirm this aspect of the development. Also, whilst our field staff have undergone asbestos awareness training, Applied Geology does not undertake asbestos surveys or provide specific advice relating to asbestos-containing materials. Any suspected asbestos-containing materials observed by our field staff will be mentioned in the report but further assessment by others may be required.

Fieldwork

Fieldwork is generally carried out in accordance with BS5930 (2015) “Code of Practice for Site Investigations” and BS10175 (2011) Investigation of Potentially Contaminated Sites, unless otherwise stated.

Prior to commencement on site, statutory services plans are generally obtained and verbal enquiries are also made regarding the positions of private or statutory services on site. Prior to excavation or drilling, locations are scanned with a cable avoidance tool (CAT) and service pits are generally excavated at borehole positions, where possible.

Descriptions and depths of the various strata recovered are presented on the exploratory hole records, reproduced in the report appendices, together with sample depths, the results of in-situ testing, comments on groundwater inflows, and any other pertinent information. The strata descriptions are in general accordance with BS5930:2015. Disturbed plastic pot and glass amber jar samples are recovered from the various strata and stored and transported in cool boxes, where relevant, for possible future laboratory testing.

Light cable percussion boreholes are generally drilled using a Pilcon Wayfarer or Dando rig and are advanced using equipment to bore 200/150mm diameter boreholes. Disturbed plastic pot samples are recovered from all deposits encountered to allow examination and laboratory testing. Certain strata are cased off due to their tendency to collapse, particularly in the presence of groundwater inflows and/or to reduce the risk of cross contamination. In situ Standard Penetration Tests, using Split Spoon (SPT) and Cone (CPT) are undertaken in the boreholes to provide a measure of the relative density of the granular (coarse grained) deposits or shear strength of the clay/chalk/ weathered rock deposits using industry recognised correlation guidelines of shear strength against SPT “N” value results. Within the fine grained (cohesive) deposits, “undisturbed” 100mm driven open tube samples were recovered from the various deposits to provide samples for examination and laboratory testing. On encountering groundwater, boring is usually suspended for 20 minutes while any rise in water level is recorded. Full details of the groundwater observations and monitoring results during boring operations are included on the borehole records. All boreholes without monitoring wells installed are usually backfilled with arisings upon completion, unless otherwise stated on the individual logs.

Unless otherwise stated on the relevant logs, trial pits are excavated using a wheeled backhoe excavator, usually with a 0.6m wide bucket. The excavations are logged from the ground surface by an Engineering Geologist / Geo-environmental Engineer and relevant field testing, appropriate to the soils encountered, is carried out on samples brought to the surface. Representative disturbed soil

samples are collected from selected horizons for subsequent laboratory testing. The trial pits are usually unshored and where reasonable, left open for a period of time to allow observations of pit stability and depth and inflow rate of any groundwater ingress. The excavations are backfilled with arisings prior to moving on to the next position. Any trial pits carried out as part of this or previous investigations may represent soft spots and conduits/sumps for groundwater or surface water. In excavations, such materials may also be loose and unstable.

Driven Continuous Sampling (DCS) boreholes are drilled using a track mounted Global mini-rig or similar using sampling tubes of varying diameter (decreasing with depth). Samples of the deposits encountered are recovered in 1m long clear plastic liners, which are logged and sub-sampled on site by an Engineering Geologist. Generally for geotechnical investigations, during the drilling process in-situ Standard Penetration Tests (SPTs) are undertaken at selected depths to provide a measure of the relative density of the granular (coarse grained) deposits or shear strength of the clay/chalk/ weathered rock deposits using industry recognised correlation guidelines of shear strength against SPT “N” value results. Groundwater seepages are noted during drilling if encountered. All boreholes without monitoring wells installed are usually backfilled with arisings upon completion.

Unless specifically stated in the report, exploratory hole locations should be regarded as approximate. Consideration should be given to accurate location of the exploratory holes where it is considered they may impact on proposed development.

It should be noted that groundwater levels at any particular site may fluctuate due to rainfall, seasonal variations etc and, therefore, levels may be different to those measured during the course of the fieldwork and monitoring period.

Laboratory Testing

The geotechnical testing was carried out in accordance with BS 1377:1990 Method of Tests for Soils for Civil Engineering Purposes and was undertaken by a UKAS accredited specialist laboratory. Chemical testing was undertaken by a UKAS accredited specialist chemical testing laboratory and MCERTS accredited methods, in accordance with Environment Agency recommendations, were specified where available.

Contamination Assessment – Human Health

Applied Geology Limited has followed the guidance given in the CLR 11 publication and other available guidance to assess the contaminant concentrations. Details of the methodology followed are briefly outlined below.

The available chemical data is sorted into appropriate datasets depending on sampling regime and ground conditions. An initial generic quantitative risk assessment is undertaken on this data using statistical tests, where appropriate, and relevant screening values. Risk to human health has been initially assessed by comparing soil results against various published screening criteria. These have been sourced from the following, in order of preference:

- DEFRA. Category 4 Screening Levels (C4SL), March 2014;
- LQM/CIEH S4UL for Human Health Risk Assessment (S4UL), 2015*;
- Environment Agency/DEFRA, Soil Guideline Values (SGV) published in 2009;
- EIC/AGS/CL:AIRE Soil Generic Assessment Criteria (GAC), 2010.

Except for lead and benzo(a)pyrene, the assessments will be carried out by comparing results against the LQM/CIEH S4UL in the first instance, where these values are exceeded, then reference will be made to the C4SLs where such exist. Lead will only be compared to the C4SL because no S4UL exists for lead. For Benzo(a)pyrene, Applied Geology has chosen to adopt the approach presented by the C4SL committee rather than the approach proposed by LQM/CIEH. Further discussion on this is presented below.

It is our view, and the view of others in the industry, that the C4SL were derived for use in both the Part IIA system and through the planning system, as they allow identification of those sites that fall within Category 4 (not contaminated) and are therefore able to be developed with no further remedial action. The C4SLs are considered to represent a contamination level that is 'low' from a toxicological view point, which we therefore consider to be 'acceptable' under planning.

Historically, the level of contamination has been assessed with reference to SGV values which were derived to represent a 'minimal' level of contamination. The SGVs are still valid and can be used alongside C4SL, however both screening values are only intended to provide guidance as to the level of contamination and, where concentrations fall below these screening values, the site is not contaminated (and is within Category 4). Exceedance of a SGV/S4UL/C4SL does not automatically indicate that an 'unacceptable' risk exists at a site; simply that further consideration of that particular contaminant is required.

At this time, there are two toxicological methodologies that can be used in the derivation of screening criteria for PAHs; Relative Potency Factor (RPFs) or the Surrogate Marker approach. Applied Geology has chosen (based on the latest guidance from the Health Protection Agency (HPA) to use the surrogate marker approach proposed in the C4SL methodology, whereby benzo(a)pyrene can be used as a surrogate marker for all 'genotoxic' (gene damaging) PAHs. The surrogate marker approach estimates the toxicity of a mixture of PAHs in an environmental matrix by using data from toxicity studies in which a PAH mixture of known composition was tested. Exposure to the surrogate marker benzo(a)pyrene is assumed to represent exposure to all the PAHs in the environmental matrix. Thus, the level of toxicity ascribed to the surrogate represents the toxicity of the PAH mixture. This allows an assessment of the combined carcinogenic risk associated with genotoxic PAHs using only benzo(a)pyrene. In order to confirm that the mixture of genotoxic PAH in the soil is similar to the coal tar mixture used in the toxicological study, various PAH ratios are plotted and checked to see that they fall within the limits set in HPA, 2010.

Contamination Assessment – Water Quality

Risks to water quality has been assessed by following the Environment Agency guidance on groundwater protection (previously known as GP3), updated on their website in March 2017, see https://www.gov.uk/government/policies/water-quality and 'The Environment Agency's approach to groundwater protection' (March 2017 Version 1.0).

For hazardous substances, which should be prevented from entering groundwater, the screening criteria are initially set as the limit of detection, however, if groundwater has already been impacted, an appropriate environmental standard will then be used. For hazardous substances, background quality may also be taken into account.

For non-hazardous compounds, their release should not result in any pollution or significant risk of pollution in the future, as such comparison with UK DWS or EQS standards will allow determination of whether pollution could occur. Typically screening criteria will be sourced from the following:

- Environmental Standards (ES), which are defined in European legislation such as the Water Framework Directive (WFD) (2000/60/EC) and the Priority Substances Directive (PSD) (2008/105/EC) a daughter directive of the WFD.
- The River Basin Districts Typology, Standards and Groundwater Threshold Values (Water Framework Directive) (England and Wales) Direction, 2010.
- UK Water Supply (Water Quality) Regulations, 2010.
- UK quality standards for water to be used for direct abstraction to potable supply e.g. Surface Water (Abstraction for Drinking Water) (Classification) Regulations, 1996.
- World Health Organisation (WHO) Guidelines for Drinking Water Quality.

Re-use of Soils and Waste Soil Disposal

It is noted that if any excavated material is to be reused on site, a Waste Management Plan (WMP) and / or a Materials Management Plan (MMP) will probably be required. Any such materials must be suitable for re-use without further treatment, and only the quantity necessary for the specified works should be used. Any materials not within these definitions may need to be considered as waste whereby a Waste Management Licence Exemption may also be required.

A specific categorisation and assessment of potential waste soils arising from the proposed development has not been undertaken as part of the investigation, unless otherwise detailed in the report text. However, generic comments and advice are made below for the reader.

All waste soils should be sorted to prevent mixtures of waste types. Where possible, any waste soil should be recycled and the volume of soil to be disposed of should be minimised. Any excavated soil material and excess spoil disposed of off-site should be treated as Waste and classified as Inert, Non-hazardous or Hazardous, prior to removal from site, as required by the “Duty of Care” (Environmental Protection Act, 1990) legislation together with Annex II of Directive 1999/31/EC (“Landfill Directive”). Initially, Basic Characterisation of the waste is required whereby the material should be described and its source of origin recorded (a site plan, exploratory hole records and the certificates of chemical analysis in this report should be included). This should also include data on its composition and leaching behaviour, its European Waste Catalogue (EWC) code, and where relevant any hazardous properties according to Annex III of Directive 91/689/EEC. This information should be provided to the licensed waste contractor.

Soils excavated on many sites would generally fall under the EWC description “Soil and Stones”, EWC code 17 05 04. Waste Acceptance Criteria (WAC) testing is required for many Inert wastes and generally for all Hazardous Waste but not for non-hazardous waste. There are certain restrictions for inert wastes regarding topsoil and peat. Any asbestos must be disposed of by suitably licensed contractors to a suitably licensed facility.

Health & Safety Aspects

As outlined within the HSE publication ‘Successful Health and Safety Management - HSG65’, this report should inform your development of safe systems of work and information as an input into the safety management system.

When developing risk control systems we suggest making reference to the CIRIA report 132 "A guide for safe working on contaminated sites" and the HSE document "Protection of workers and the general public during the development of contaminated land – HSG66". All risk control measures should be in accordance with the guidelines laid down within the Management of Health and Safety at Work Regulations 1999.

The contents of this report may be used to supplement the contents of the Health and Safety File as required under the Construction Design and Management (CDM) Regulations.

Where excavations are undertaken on site, trench support or the angle of batter should be designed by an appropriately qualified engineer or competent person to suit the required depth and the ground and groundwater conditions. Care should be taken when digging excavations to prevent undermining or causing loss of support to the foundations of the nearby adjoining structures. Surcharging such as from spoil or vehicle movements close to excavation sides should be avoided. Practical guidance on trench excavation is given in CIRIA Report 97 Trenching Practice. Guidance on groundwater control is given in CIRIA Report 113 Control of groundwater for temporary works. Temporary works should be designed by a suitably qualified engineer or a competent person particularly where personnel access is necessary, in accordance with the requirements of the Construction (Design and Management) (CDM) Regulations.