

# Exploratory Hole Log Key Sheet

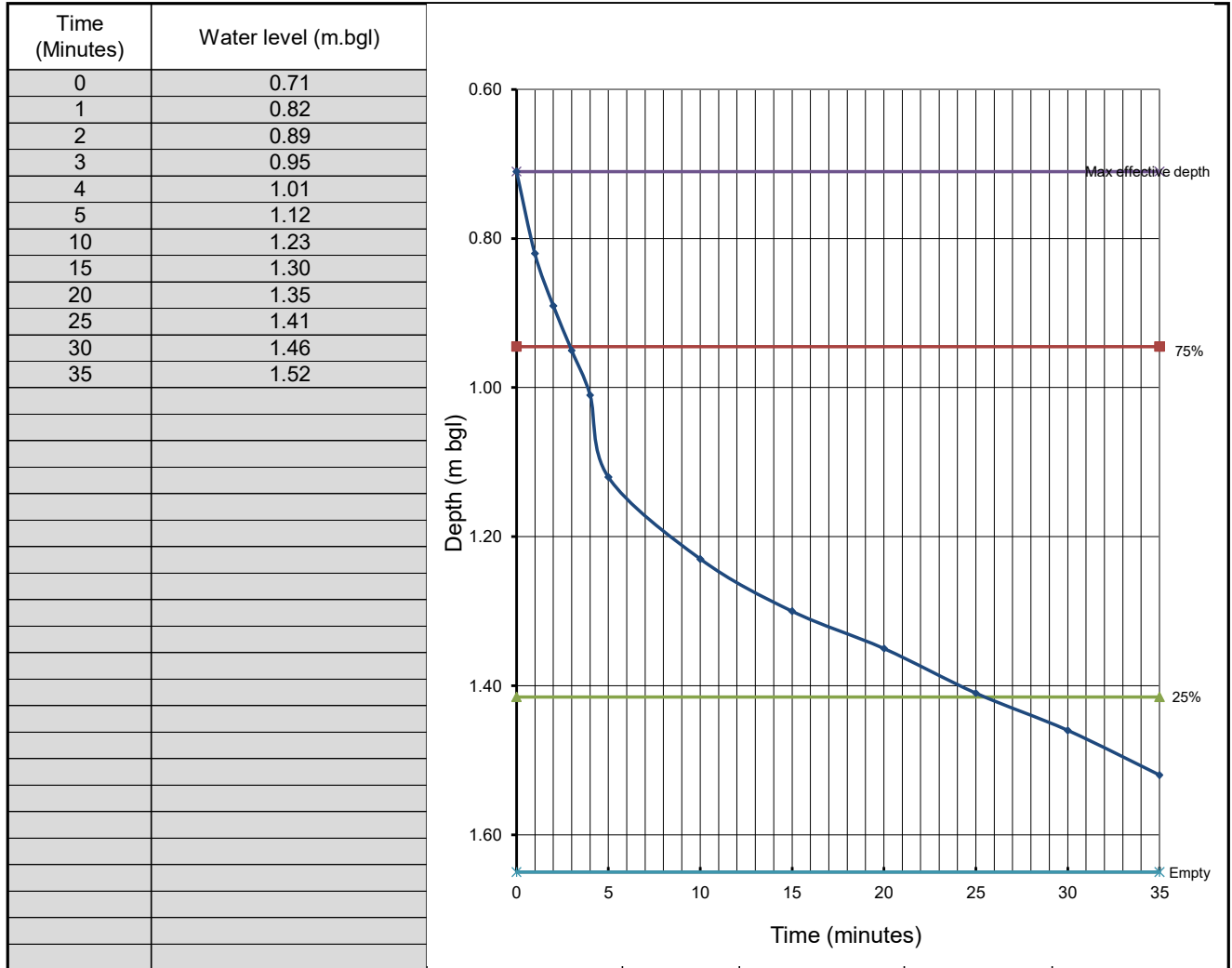
Sample Notation	Backfill Symbols	Legend Symbols
<b>D</b> Small Disturbed sample <b>B</b> Bulk Disturbed sample <b>ES</b> Environmental sample <b>U</b> Undisturbed U100 sample <b>UT</b> Undisturbed UT100 sample <b>C</b> Core sample <b>W</b> Water sample	Sand Gravel Concrete Bentonite Arisings Grout	Topsoil Made Ground Concrete Clay Silt Sand Gravel Peat Cobbles Boulders Mudstone Siltstone Sandstone Limestone Chalk Coal Breccia Conglomerate Shale Igenous Rock Metamorphic Rock  No Recovery
In Situ Test Notation	Installation Symbols	
<b>S</b> Standard Penetration Test <b>S (C)</b> Standard Penetration Test (cone) <b>HV</b> Hand Shear Vane Test <b>PID</b> Photoionization Detector Test <b>MEXE</b> Mexecone Cone Penetrometer Test <b>PP</b> Pocket Penetrometer Test <b>K</b> Permeability Test	Plain Standpipe Slotted Standpipe Piezometer Vibrating Wire Piezometer Inclinometer Extensometer (with magnet locations)	
Results Notation		
<b>Cu</b> Shear Strength                      kN/m <sup>2</sup> <b>N</b> SPT N Value                                - <b>PID</b> VOC Concentration                    ppm <b>( )</b> U/UT Blow Count                        -		
Rotary Core Notation	Groundwater (GW)	
<b>TCR</b> Total Core Recovery <b>SCR</b> Solid Core Recovery <b>RQD</b> Rock Quality Designation <b>FI</b> Fracture Index <b>If</b> Fracture Spacing <b>NI</b> Non Intact <b>NR</b> No Recovery <b>NA</b> Not Applicable	Rise Groundwater Strike - with Recorded Rise Strike Groundwater Strike - No Recorded Rise	
Ease of Dig		
<b>VE</b> Very Easy <b>E</b> Easy <b>M</b> Moderate <b>H</b> Hard <b>VH</b> Very Hard		
General Notes		
<p>1. Details of the standpipe/piezometer are given on the log. The 'Install' column shows a graphical representation of the installed including depth of instruments including slotted section or piezometer depth, and backfill details.</p> <p>2. Standard Penetration Test is defined in BS EN ISO 17892. Total N value is shown on the logs, full details of the test increments, equipment references, water and casing levels shown on the SPT Summary Sheet.</p>		
<p style="text-align: right;">Note: Most soils comprise a mixture of particle sizes. The soil type is graphically represented on the log and may be a combination of these symbols.</p>		

# **APPENDIX D**

# IN SITU SOAKAWAY TEST RESULT

<b>Trial Pit No.</b>	<b>TP38A</b>
Date	02/06/2021
Operator	MM
Test Strata	White Limestone Formation
Stability of pit	Stable
Backfill used	None

<b>Filling</b>	<b>1 of 1</b>
Trial Pit Length (m)	2.50
Trial Pit Width (m)	0.60
Trial Pit Depth (m)	1.65
Amount of Backfill placed (m)	0
Assumed Backfill Void Ratio	N/A



Initial Water Level (m)	0.71	Total internal surface area of pit (m <sup>2</sup> )	11.73
Final Water Level (m)	1.52	Internal surface area of trial pit within effective depth range (m <sup>2</sup> )	4.41
Change in Water Level (m)	0.81	Volume outflowing between 75% and 25% effective depth (m <sup>3</sup> )	0.71
Effective Depth at 25% (tp25) (m)	1.42	Time at 25% (tp25) (minutes)	25.5
Effective Depth at 75% (tp75) (m)	0.95	Time at 75% (tp75) (minutes)	3

<b>Soil Infiltration Rate (m/s)</b>	<b>1.18E-04</b>
-------------------------------------	-----------------

- Notes: 1. Undertaken in general accordance with BRE DG 365 method  
2. Based on extrapolated data NO

<b>Client:</b>	Albion Land Ltd
<b>Project:</b>	Land adjacent to Junction 10, M40, Ardley
<b>Project No.</b>	AG3268-21

**APPLIED GEOLOGY**











# **APPENDIX E**

SOIL CHEMICAL RESULTS COMPARED AGAINST SCREENING VALUES FOR HUMAN HEALTH

Site: Land adjacent to Junction 10, M46, Aubrey

Job No: ACS208-21

Location: Commercial / Industrial  
 All 1:1 %

Soil Depth Meter (%)

Chemical Name	100-150	150-200	200-250	250-300	300-350	350-400	400-450	450-500	500-550	550-600	600-650	650-700	700-750	750-800	800-850	850-900	900-950	950-1000	AVG	Screening Value	Compliance / Flag	Source of Information
Arsenic	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	Compliant	AS/NZS 1546
Barium	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	Compliant	AS/NZS 1546
Boron	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	Compliant	AS/NZS 1546
Chromium	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	Compliant	AS/NZS 1546
Copper	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	Compliant	AS/NZS 1546
Cadmium	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	Compliant	AS/NZS 1546
Lead	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	Compliant	AS/NZS 1546
Manganese	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	Compliant	AS/NZS 1546
Mercury	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	Compliant	AS/NZS 1546
Moisture Content (%)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	Compliant	AS/NZS 1546
Oil Content (%)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	Compliant	AS/NZS 1546
Phosphate	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	Compliant	AS/NZS 1546
Vanadium	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	Compliant	AS/NZS 1546
Zinc	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	Compliant	AS/NZS 1546
Chloride	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	Compliant	AS/NZS 1546
Sulfate	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	Compliant	AS/NZS 1546
Fluoride	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	Compliant	AS/NZS 1546
Nitrate	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	Compliant	AS/NZS 1546
Ammonium	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	Compliant	AS/NZS 1546

Note: All concentrations are in mg/kg unless specified.

# SUMMARY OF LEACHATE TEST RESULTS

Site Land adjacent to Junction 10, M40, Ardley  
 Job Number AG3268-21  
 Type of Water Leachate

Determinand	Limit of Detection	Hazardous or Non-Hazardous <sup>a</sup>	Sample Identity Depth Sampled Date	TP128	TP150	TP5	TP25	TP79	TP48	TP110	TP97	TP124	Waters Screening Value	Source & Justification
				0.10 03/06/2021	0.20 03/06/2021	0.2 25/05/2021	0.2 26/05/2021	0.1 25/05/2021	0.1 25/05/2021	0.1 28/05/2021	0.1 28/05/2021			
pH				8.4	8.4	8.5	8.2	8.2	8.2	8.5	8.5	8.5	-	
Arsenic	0.2	Haz	µg l <sup>-1</sup>	0.66	0.42	0.66	0.77	1.2	0.91	0.54	0.57	0.66	5	UK Drinking Water Standards (2010)
Cadmium	0.11	Non Haz	µg l <sup>-1</sup>	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	10	UK Drinking Water Standards (2010)
Chromium (Total)	0.5	Non Haz	µg l <sup>-1</sup>	0.5	0.5	0.5	0.5	0.65	0.57	0.5	0.5	0.5	50	UK Drinking Water Standards (2010)
Copper	0.5	Non Haz	µg l <sup>-1</sup>	3.4	2.7	1.5	1.5	5.3	3.2	2.7	1.9	3.5	2000	UK Drinking Water Standards (2010)
Lead	0.5	Haz	µg l <sup>-1</sup>	0.5	0.5	0.5	0.5	0.54	0.5	0.5	0.5	0.5	1	UK Drinking Water Standards (2010)
Mercury	0.05	Haz	µg l <sup>-1</sup>	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	UK Drinking Water Standards (2010)
Nickel	0.5	Non Haz	µg l <sup>-1</sup>	1.2	0.5	0.5	1	3.3	1.2	0.93	0.79	1	20	UK Drinking Water Standards (2010)
Selenium	0.5	Non Haz	µg l <sup>-1</sup>	0.5	0.5	0.5	0.5	0.72	0.5	0.5	0.5	0.5	10	UK Drinking Water Standards (2010)
Zinc	2.5	Non Haz	µg l <sup>-1</sup>	2.5	2.5	2.5	2.5	2.9	2.5	2.5	2.5	2.5	5000	UK Drinking Water Standards (2010)
Boron	10	Non Haz	µg l <sup>-1</sup>	10	10	10	10	10	10	10	10	10	1000	UK Drinking Water Standards (2010)
Beryllium	1	Non Haz	µg l <sup>-1</sup>	1	1	1	1	1	1	1	1	1	12	UK Drinking Water Standards (2010)
Vanadium	0.5	Non Haz	µg l <sup>-1</sup>	1.2	0.73	1.3	1.4	2.3	2.3	0.84	1.2	1.2	20	EQS
Sulphate	1	Non Haz	mg l <sup>-1</sup>	1	2.7	2.8	1	1	1	1	1	1	250	UK Drinking Water Standards (2010)
Naphthalene	0.1	Non Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Acenaphthylene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Acenaphthene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Fluorene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Phenanthrene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Anthracene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Fluoranthene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Pyrene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Benzo(a)anthracene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Chrysene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Benzo(b)fluoranthene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Benzo(k)fluoranthene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Benzo(a)pyrene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Dibenz(a,h)anthracene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Indeno(1,2,3-c,d)pyrene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit
Benzo(g,h,i)perylene	0.1	Haz	µg l <sup>-1</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Detection limit

<sup>a</sup> Note: Hazardous and non-hazardous substances determined by JAGDAG (Jan 2017) and published at <http://www.wfduk.org/sites/default/files/Media/170116%20Substance%20DeterminationsFinal.pdf>. These are marked in bold. For substances not assessed by JAGDAG, Applied Geology has assumed a determination based on our understanding of the behaviour of the chemical. These determinations are highlighted in yellow.

**Key:**  
 Result exceeds test Detection Limit (for Haz determinands)  
 Result exceeds Screening Value (for Non Haz determinands)  
 Values in bold at the limit of detection



# 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:**  


**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	21-17697	21-17697	21-17697
	Quotation No.:	Chemtest Sample ID.:											
	Sample Location:		1208517	1208518	1208519	1208520	1208521	1208522	1208523	1208524	1208525	1208526	1208527
	Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):		0.2	0.15	0.1	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3
	Bottom Depth (m):		0.3	0.25	0.2	0.3	0.3	0.3	0.45	0.45	0.45	0.4	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	18-May-2021	18-May-2021	21-May-2021	21-May-2021
	Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD									
Organic Matter	M	2625	%	0.40	3.8	3.6	3.5	4.1	2.9	1.5			
Arsenic	M	2450	mg/kg	0.50	30	23	30	23	24	18			
Cadmium	M	2450	mg/kg	0.10	0.69	0.46	0.54	0.42	0.35	0.25			
Chromium	M	2450	mg/kg	1.0	55	36	35	32	32	33			< 0.50
Chromium (Hexavalent)	N	2490	mg/kg	0.50									29
Chromium (Trivalent)	N	2490	mg/kg	1.0									
Copper	M	2450	mg/kg	0.50	25	15	18	16	15	15			
Lead	M	2450	mg/kg	0.50	39	22	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			
Mercury	M	2450	mg/kg	0.10	0.11	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10			
Nickel	M	2450	mg/kg	0.50	49	30	31	28	29	33			
Selenium	M	2450	mg/kg	0.20	0.58	0.29	< 0.20	< 0.20	< 0.20	0.47			
Vanadium	U	2450	mg/kg	5.0	86	53	64	52	52	54			
Zinc	M	2450	mg/kg	0.50	110	64	70	65	56	50			
Naphthalene	M	2700	mg/kg	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			
Acenaphthene	M	2700	mg/kg	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			
Phenanthrene	M	2700	mg/kg	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			
Fluoranthene	M	2700	mg/kg	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			
Benzo[a]anthracene	M	2700	mg/kg	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			
Benzo[b]fluoranthene	M	2700	mg/kg	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			
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10			
Dibenz[ah]Anthracene	M	2700	mg/kg	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			
Benzo[ghi]perylene	M	2700	mg/kg	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			
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

<b>Client:</b> Applied Geology	<b>Chemtest Job No.:</b>	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697
<b>Quotation No.:</b>	<b>Chemtest Sample ID.:</b>	1208517	1208518	1208519	1208520	1208521	1208522	1208523	1208524	
	<b>Sample Location:</b>	TP7	TP11	TP20	TP31	TP42	TP54	TP56	TP60	
	<b>Sample Type:</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
	<b>Top Depth (m):</b>	0.2	0.15	0.1	0.2	0.2	0.1	0.4	0.3	
	<b>Bottom Depth (m):</b>	0.3	0.25	0.2	0.3	0.3	0.2	0.45	0.4	
	<b>Date Sampled:</b>	17-May-2021	18-May-2021	17-May-2021	18-May-2021	20-May-2021	18-May-2021	18-May-2021	21-May-2021	
	<b>Asbestos Lab:</b>	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	
<b>Determinand</b>	<b>Accred.</b>	<b>SOP</b>	<b>Units</b>	<b>LOD</b>						
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.:		Sample Location:	Sample Type:	Top Depth (m):	Bottom Depth (m):	Date Sampled:	Asbestos Lab:	Accred.	SOP	Units	LOD	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697		
	Quotation No.:	Chemtest Sample ID.:											TP61	TP70	TP74	TP76	TP89	TP91	TP92	TP94
	1208525	1208526	SOIL	SOIL	0.1	0.2	20-May-2021	DURHAM	M	2625	%	0.40	3.1	1.9	2.8	2.4	4.0	2.9	2.1	
									M	2450	mg/kg	0.50	33	31	29	31	34	32	31	
									M	2450	mg/kg	0.10	0.43	0.28	0.37	0.42	0.56	0.56	0.56	0.34
									M	2450	mg/kg	1.0	27	34	35	31	37	41	41	23
									N	2490	mg/kg	0.50					< 0.50	< 0.50	< 0.50	
									N	2490	mg/kg	1.0					37	41	23	
									M	2450	mg/kg	0.50	17	12	15	15	19	19	13	
									M	2450	mg/kg	0.50	28	17	22	24	36	37	25	
									N	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
									M	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.12	0.10	< 0.10	
									M	2450	mg/kg	0.50	27	30	31	27	35	38	24	
									M	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	
									U	2450	mg/kg	5.0	48	60	56	53	62	68	42	
									M	2450	mg/kg	0.50	76	50	59	56	82	82	49	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
									M	2920	mg/kg	0.020					< 0.020	< 0.020	< 0.020	
									M	2920	mg/kg	0.020					< 0.020	< 0.020	< 0.020	
									M	2920	mg/kg	0.020					< 0.020	< 0.020	< 0.020	
									N	2920	mg/kg	0.020					< 0.020	< 0.020	< 0.020	
									M	2920	mg/kg	0.020					< 0.020	< 0.020	< 0.020	
									M	2920	mg/kg	0.10					< 0.10	< 0.10	< 0.10	



## Results - Soil

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

		Chemtest Job No.:		21-17697		21-17697		21-17697		21-17697		21-17697		21-17697		
Client: Applied Geology		Chemtest Sample ID.:		1208525		1208526		1208527		1208528		1208529		1208531		
Quotation No.:		Sample Location:		TP61		TP70		TP74		TP76		TP89		TP92		
		Sample Type:		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		
		Top Depth (m):		0.1		0.1		0.4		0.1		0.1		0.3		
		Bottom Depth (m):		0.2		0.2		0.5		0.2		0.2		0.4		
		Date Sampled:		20-May-2021		17-May-2021		21-May-2021		19-May-2021		21-May-2021		20-May-2021		
		Asbestos Lab:		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	1.2	1.2	1.2	1.1	1.1	1.6	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	< 1.0	< 1.0	< 1.0	< 1.0
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	
Terbutylazine	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	

## Results - Soil

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

<b>Client:</b> Applied Geology	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697
<b>Quotation No.:</b>	1208525	1208526	1208527	1208528	1208529	1208530	1208531	1208532	1208533	1208534
<b>Chemtest Job No.:</b>	TP61	TP70	TP74	TP76	TP89	TP91	TP92	TP94	TP95	TP96
<b>Chemtest Sample ID.:</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sample Location:</b>										
<b>Sample Type:</b>										
<b>Top Depth (m):</b>	0.1	0.1	0.4	0.1	0.1	0.1	0.3	0.1	0.1	0.1
<b>Bottom Depth (m):</b>	0.2	0.2	0.5	0.2	0.2	0.2	0.4	0.2	0.2	0.2
<b>Date Sampled:</b>	20-May-2021	17-May-2021	21-May-2021	19-May-2021	21-May-2021	17-May-2021	20-May-2021	21-May-2021	20-May-2021	21-May-2021
<b>Asbestos Lab:</b>	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
<b>Determinand</b>	<b>Accred.</b>	<b>SOP</b>	<b>Units</b>	<b>LOD</b>						
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
Arsenic	M	2450	mg/kg	1.0
Cadmium	M	2450	mg/kg	0.10
Chromium	M	2450	mg/kg	1.0
Chromium (Hexavalent)	N	2490	mg/kg	0.50
Chromium (Trivalent)	N	2490	mg/kg	1.0
Copper	M	2450	mg/kg	0.50
Lead	M	2450	mg/kg	0.50
Magnesium (Water Soluble)	N	2120	g/l	0.010
Mercury	M	2450	mg/kg	0.10
Nickel	M	2450	mg/kg	0.50
Selenium	M	2450	mg/kg	0.20
Vanadium	U	2450	mg/kg	5.0
Zinc	M	2450	mg/kg	0.50
Naphthalene	M	2700	mg/kg	0.10
Acenaphthylene	M	2700	mg/kg	0.10
Acenaphthene	M	2700	mg/kg	0.10
Fluorene	M	2700	mg/kg	0.10
Phenanthrene	M	2700	mg/kg	0.10
Anthracene	M	2700	mg/kg	0.10
Fluoranthene	M	2700	mg/kg	0.10
Pyrene	M	2700	mg/kg	0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10
Chrysene	M	2700	mg/kg	0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10
Dibenz[a,h]Anthracene	M	2700	mg/kg	0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10
Total Of 16 PAH's	M	2700	mg/kg	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.:	21-17697		
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
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0
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
Terbutylazine	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

## Results - Soil

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

<b>Client: Applied Geology</b>	<b>Chemtest Job No.:</b>	21-17697		
Quotation No.:	<b>Chemtest Sample ID.:</b>	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		
<b>Determinand</b>	<b>Accred.</b>	<b>SOP</b>	<b>Units</b>	<b>LOD</b>
4,4-DDD	N	2840	mg/kg	0.20
Endosulfan II	N	2840	mg/kg	0.20
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
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](mailto:customerservices@chemtest.com)



# Results - Leachate

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

Client: Applied Geology	Chemtest Job No.:		Sample Location:	Sample Type:	Top Depth (m):	Bottom Depth (m):	Date Sampled:	21-18908		21-18908		21-18908		21-18908	
	Quotation No.: Q17-09497	Chemtest Sample ID.:						1214824	1214825	1214827	1214828	1214829	1214831		
Sample Location:		TP5	SOIL	TP25	SOIL	TP79	SOIL	TP48	SOIL	TP110	SOIL	TP97	SOIL	TP124	SOIL
Date Sampled:		25-May-2021	26-May-2021	25-May-2021	25-May-2021	25-May-2021	25-May-2021	25-May-2021	25-May-2021	28-May-2021	28-May-2021	28-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	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	< 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	0.60	0.77	0.77	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	0.66	0.66	0.66
Boron (Dissolved)	U	1455	10:1	µg/l	10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Beryllium (Dissolved)	U	1455	10:1	µg/l	1.00	< 1.0	< 1.0	< 1.0	< 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	< 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	3.5	3.5	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	< 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	1.0	1.0	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	< 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	< 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	1.2	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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 2.0	< 2.0	< 2.0

# Results - Soil

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

Client: Applied Geology	Chemtest Job No.:		Chemtest Sample ID.:		21-18908		21-18908		21-18908		21-18908		21-18908	
	Quotation No.: Q17-09497	TP5	TP25	TP58	TP79	TP88	TP97	TP110	TP112	TP110	TP110	TP110	TP110	TP112
Sample Location:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
Sample Type:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
Top Depth (m):	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Bottom Depth (m):	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Date Sampled:	25-May-2021	26-May-2021	26-May-2021	24-May-2021	25-May-2021	25-May-2021	25-May-2021	24-May-2021	24-May-2021	25-May-2021	25-May-2021	25-May-2021	28-May-2021	27-May-2021
Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD										
Organic Matter	M	2625	%	0.40	2.9	4.1	3.1	3.5	1.6	1.2	1.2	1.2	2.6	
Arsenic	M	2450	mg/kg	0.50	17	22	19	24	21	16	16	16	8.4	
Cadmium	M	2450	mg/kg	0.10	0.37	0.53	0.34	0.49	0.27	0.26	0.26	0.26	0.33	
Chromium	M	2450	mg/kg	1.0	32	40	26	43	15	30	30	30	27	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50				< 0.50	< 0.50	< 0.50		
Chromium (Trivalent)	N	2490	mg/kg	1.0	32	40								
Copper	M	2450	mg/kg	0.50	15	21	13	21	7.8	12	12	12	12	
Lead	M	2450	mg/kg	0.50	19	33	17	28	12	14	14	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	< 0.010	
Mercury	M	2450	mg/kg	0.10	< 0.10	0.12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Nickel	M	2450	mg/kg	0.50	29	36	25	38	13	29	29	29	26	
Selenium	M	2450	mg/kg	0.20	0.28	0.39	< 0.20	0.27	< 0.20	< 0.20	< 0.20	< 0.20	0.32	
Vanadium	U	2450	mg/kg	5.0	48	61	41	69	24	41	41	41	38	
Zinc	M	2450	mg/kg	0.50	56	76	42	77	28	45	45	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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 2.0	
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	



# Results - Soil

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

Determiand	Accred.	SOP	Units	LOD	Chemtest Job No.:		Chemtest Sample ID.:		21-18908		21-18908		21-18908		21-18908		21-18908			
					21-18908	1214824	21-18908	1214825	21-18908	1214826	21-18908	1214827	21-18908	1214828	21-18908	1214829	21-18908	1214830		
<b>Client: Applied Geology</b>																				
Quotation No.: Q17-09497																				
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	
Determiand	Accred.	SOP	Units	LOD	No Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected	Asbestos Detected
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1.0	4.1	< 1.0	< 1.0	< 1.0	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 1.0	19	< 1.0	< 1.0	< 1.0	< 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	< 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	< 5.0	19	< 5.0	< 5.0	< 5.0	< 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	100	< 10	< 10	23	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.051	0.048	0.042	0.042	0.044	0.044	0.038	0.038	0.038	0.048	0.041	0.041	0.041	0.038	0.038	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	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	22	19	19	20	20	20	9.0	14	14	14	25	25	25
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Roots	Stones	Stones	None	None	Stones and Roots	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	8.6	8.2	8.5	8.2	8.2	8.2	8.2	8.2	8.2	8.6	8.6	8.6	8.6	8.1	8.1	8.1
Boron	N	2450	mg/kg	0.40	7.8	6.2	9.9	10	6.9	6.9	10	10	10	4.7	6.4	6.4	6.4	9.0	9.0	9.0
Beryllium	U	2450	mg/kg	1.0	1.2	1.3	1.5	1.8	1.1	1.1	1.8	1.8	1.8	< 1.0	1.3	1.3	1.3	1.6	1.6	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	< 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**

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

## Results - Soil

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

<b>Client:</b> Applied Geology	<b>Chemtest Job No.:</b> 21-18908	<b>21-18908</b>	<b>21-18908</b>	<b>21-18908</b>	<b>21-18908</b>	<b>21-18908</b>	<b>21-18908</b>	<b>21-18908</b>	<b>21-18908</b>
<b>Quotation No.:</b> Q17-09497	<b>Chemtest Sample ID.:</b> 1214824	1214824	1214825	1214826	1214827	1214828	1214829	1214830	
	<b>Sample Location:</b>	TP25	TP79	TP58	TP48	TP110	TP97	TP112	
	<b>Sample Type:</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
	<b>Top Depth (m):</b>	0.2	0.1	0.2	0.1	0.1	0.3	0.2	
	<b>Bottom Depth (m):</b>	0.3	0.2	0.3	0.2	0.2	0.4	0.3	
	<b>Date Sampled:</b>	26-May-2021	25-May-2021	24-May-2021	25-May-2021	28-May-2021	28-May-2021	27-May-2021	
	<b>Asbestos Lab:</b>	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	
<b>Determinand</b>	<b>Accred.</b>	<b>SOP</b>	<b>Units</b>	<b>LOD</b>					
Endrin Aldehyde	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	
4,4-DDT	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	
Endosulfan Sulphate	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	
Methoxychlor	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	
Endrin Ketone	N	2840	mg/kg	0.20	< 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
Arsenic	M	2450	mg/kg	1.0
Cadmium	M	2450	mg/kg	0.10
Chromium	M	2450	mg/kg	1.0
Chromium (Hexavalent)	N	2490	mg/kg	0.50
Chromium (Trivalent)	N	2490	mg/kg	1.0
Copper	M	2450	mg/kg	0.50
Lead	M	2450	mg/kg	0.50
Magnesium (Water Soluble)	N	2120	g/l	0.010
Mercury	M	2450	mg/kg	0.10
Nickel	M	2450	mg/kg	0.50
Selenium	M	2450	mg/kg	0.20
Vanadium	U	2450	mg/kg	5.0
Zinc	M	2450	mg/kg	0.50
Naphthalene	M	2700	mg/kg	0.10
Acenaphthylene	M	2700	mg/kg	0.10
Acenaphthene	M	2700	mg/kg	0.10
Fluorene	M	2700	mg/kg	0.10
Phenanthrene	M	2700	mg/kg	0.10
Anthracene	M	2700	mg/kg	0.10
Fluoranthene	M	2700	mg/kg	0.10
Pyrene	M	2700	mg/kg	0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10
Chrysene	M	2700	mg/kg	0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10
Dibenz[a,h]Anthracene	M	2700	mg/kg	0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10
Total Of 16 PAH's	M	2700	mg/kg	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
Terbutylazine	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

<b>Client: Applied Geology</b>	<b>Chemtest Job No.:</b>	21-18908
Quotation No.: Q17-09497	<b>Chemtest Sample ID.:</b>	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
<b>Determinand</b>	<b>Accred.</b>	<b>SOP</b>
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 Trimethylphenols Note: 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	Compliance Test 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](mailto:customerservices@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:**  


**Details:** Glynn Harvey, Technical Manager

---

## Results - 2 Stage WAC

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

**Chemtest Job No:** 21-19774

**Chemtest Sample ID:** 1218792

**Sample Ref:**

**Sample ID:** TP17

**Sample Location:**

**Top Depth(m):** 0.70

**Bottom Depth(m):** 0.80

**Sampling Date:** 26-May-2021

Determinand	SOP	Accred.	Units	Landfill Waste Acceptance Criteria Limits		
				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	M	%	0.31	5	6
Loss On Ignition	2610	M	%	3.4	---	10
Total BTEX	2760	M	mg/kg	[B] < 0.010	---	---
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	---	---
TPH Total WAC	2670	M	mg/kg	[B] < 10	---	---
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	---	---
pH	2010	M		8.7	> 6	---
Acid Neutralisation Capacity	2015	N	mol/kg	0.0020	To evaluate	To evaluate
<b>Eluate Analysis</b>			<b>2:1</b>	<b>Cumulative mg/kg 10:1</b>	<b>Limit values for compliance leaching test using BS EN 12457 at L/S 10 /kg</b>	
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	25
Barium	1455	U	0.007	0.014	20	100
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10
Copper	1455	U	0.0018	0.0036	2	50
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2
Molybdenum	1455	U	< 0.0002	< 0.0002	0.5	10
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10
Lead	1455	U	< 0.0005	< 0.0005	0.5	10
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7
Selenium	1455	U	0.0007	0.0014	0.1	0.5
Zinc	1455	U	< 0.003	< 0.003	4	50
Chloride	1220	U	1.4	< 1.0	800	15000
Fluoride	1220	U	0.23	< 1.0	10	150
Sulphate	1220	U	9.4	19	1000	20000
Total Dissolved Solids	1020	N	110	220	4000	60000
Phenol Index	1920	U	< 0.030	< 0.30	1	---
Dissolved Organic Carbon	1610	U	8.1	< 50	500	800

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

**Chemtest Job No:** 21-19774

**Chemtest Sample ID:** 1218793

**Sample Ref:**

**Sample ID:** TP58

**Sample Location:**

**Top Depth(m):** 1.90

**Bottom Depth(m):** 2.00

**Sampling Date:** 24-May-2021

Determinand	SOP	Accred.	Units	Landfill Waste Acceptance Criteria Limits		
				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	M	%	1.9	5	6
Loss On Ignition	2610	M	%	1.5	---	10
Total BTEX	2760	M	mg/kg	[B] < 0.010	---	---
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	---	---
TPH Total WAC	2670	M	mg/kg	[B] < 10	---	---
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	---	---
pH	2010	M		8.9	> 6	---
Acid Neutralisation Capacity	2015	N	mol/kg	0.032	To evaluate	To evaluate
<b>Eluate Analysis</b>			<b>2:1</b>	<b>Cumulative mg/kg 10:1</b>	<b>Limit values for compliance leaching test using BS EN 12457 at L/S 10 /kg</b>	
Arsenic	1455	U	< 0.0002	0.0036	0.5	25
Barium	1455	U	< 0.006	0.0054	20	100
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10
Copper	1455	U	0.0010	0.0008	2	50
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2
Molybdenum	1455	U	0.0006	0.0005	0.5	10
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10
Lead	1455	U	< 0.0005	< 0.0005	0.5	10
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5
Zinc	1455	U	< 0.003	< 0.003	4	50
Chloride	1220	U	2.1	40	800	15000
Fluoride	1220	U	0.19	1.6	10	150
Sulphate	1220	U	9.5	58	1000	20000
Total Dissolved Solids	1020	N	98	740	4000	60000
Phenol Index	1920	U	< 0.030	< 0.50	1	---
Dissolved Organic Carbon	1610	U	5.5	< 50	500	800

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

**Chemtest Job No:** 21-19774

**Chemtest Sample ID:** 1218794

**Sample Ref:**

**Sample ID:** TP43

**Sample Location:**

**Top Depth(m):** 1.50

**Bottom Depth(m):** 1.60

**Sampling Date:** 02-Jun-2021

Determinand	SOP	Accred.	Units	Landfill Waste Acceptance Criteria Limits		
				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	M	%	2.0	5	6
Loss On Ignition	2610	M	%	1.3	---	10
Total BTEX	2760	M	mg/kg	< 0.010	---	---
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	---	---
TPH Total WAC	2670	M	mg/kg	< 10	---	---
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	---	---
pH	2010	M		8.8	> 6	---
Acid Neutralisation Capacity	2015	N	mol/kg	0.14	To evaluate	To evaluate
<b>Eluate Analysis</b>			<b>2:1</b>	<b>Cumulative mg/kg 10:1</b>	<b>Limit values for compliance leaching test using BS EN 12457 at L/S 10 /kg</b>	
Arsenic	1455	U	< 0.0002 mg/l	< 0.0002 mg/kg	0.5	25
Barium	1455	U	< 0.009 mg/l	< 0.018 mg/kg	20	100
Cadmium	1455	U	< 0.00011 mg/l	< 0.00011 mg/kg	0.04	1
Chromium	1455	U	< 0.0005 mg/l	< 0.0005 mg/kg	0.5	10
Copper	1455	U	0.0010 mg/l	0.0020 mg/kg	2	50
Mercury	1455	U	< 0.00005 mg/l	< 0.00005 mg/kg	0.01	0.2
Molybdenum	1455	U	0.0004 mg/l	0.0008 mg/kg	0.5	10
Nickel	1455	U	< 0.0005 mg/l	< 0.0005 mg/kg	0.4	10
Lead	1455	U	< 0.0005 mg/l	< 0.0005 mg/kg	0.5	10
Antimony	1455	U	< 0.0005 mg/l	< 0.0005 mg/kg	0.06	0.7
Selenium	1455	U	< 0.0005 mg/l	< 0.0005 mg/kg	0.1	0.5
Zinc	1455	U	< 0.003 mg/l	< 0.003 mg/kg	4	50
Chloride	1220	U	2.4 mg/l	< 1.0 mg/kg	800	15000
Fluoride	1220	U	0.27 mg/l	< 1.0 mg/kg	10	150
Sulphate	1220	U	11 mg/l	22 mg/kg	1000	20000
Total Dissolved Solids	1020	N	100 mg/l	210 mg/kg	4000	60000
Phenol Index	1920	U	< 0.030 mg/l	< 0.30 mg/kg	1	---
Dissolved Organic Carbon	1610	U	4.7 mg/l	< 50 mg/kg	500	800

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

**Chemtest Job No:** 21-19774

**Chemtest Sample ID:** 1218795

**Sample Ref:**

**Sample ID:** TP90

**Sample Location:** 0.90

**Top Depth(m):** 1.00

**Bottom Depth(m):** 04-Jun-2021

**Sampling Date:**

**Determinand**

**SOP**

**Accred.**

**Units**

Total Organic Carbon

Loss On Ignition

Total BTEX

Total PCBs (7 Congeners)

TPH Total WAC

Total (Of 17) PAH's

pH

Acid Neutralisation Capacity

**Eluate Analysis**

Arsenic

Barium

Cadmium

Chromium

Copper

Mercury

Molybdenum

Nickel

Lead

Antimony

Selenium

Zinc

Chloride

Fluoride

Sulphate

Total Dissolved Solids

Phenol Index

Dissolved Organic Carbon

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley				Landfill Waste Acceptance Criteria Limits			
Chemtest Job No: 21-19774				Cumulative mg/kg 10:1	Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Chemtest Sample ID: 1218795							
Sample Ref:				8:1 mg/l	2:1 mg/kg	To evaluate	To evaluate
Sample ID: TP90							
Sample Location: 0.90				Limit values for compliance leaching test using BS EN 12457 at L/S 10 /kg	To evaluate	To evaluate	To evaluate
Top Depth(m): 1.00							
Bottom Depth(m): 04-Jun-2021				Limit values for compliance leaching test using BS EN 12457 at L/S 10 /kg	To evaluate	To evaluate	To evaluate
Sampling Date:							
Determinand	SOP	Accred.	Units	8:1 mg/l	2:1 mg/kg	To evaluate	To evaluate
Total Organic Carbon	2625	M	%	< 0.0002	< 0.0002	0.5	2
Loss On Ignition	2610	M	%	< 0.005	0.013	20	100
Total BTEX	2760	M	mg/kg	< 0.00011	< 0.00011	0.04	1
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.0005	< 0.0005	0.5	10
TPH Total WAC	2670	M	mg/kg	< 0.0005	0.0031	2	50
Total (Of 17) PAH's	2700	N	mg/kg	< 0.0005	< 0.00005	0.01	0.2
pH	2010	M		< 0.0002	0.0014	0.5	10
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0005	< 0.0005	0.4	10
<b>Eluate Analysis</b>			<b>2:1 mg/l</b>	< 0.0005	< 0.0005	0.5	10
Arsenic	1455	U	< 0.0002	< 0.0002	< 0.0005	0.06	0.7
Barium	1455	U	0.007	< 0.0005	< 0.0005	0.1	0.5
Cadmium	1455	U	< 0.00011	< 0.0005	< 0.0005	0.1	0.5
Chromium	1455	U	< 0.0005	< 0.0005	< 0.0005	0.1	0.5
Copper	1455	U	0.0016	< 0.0005	< 0.0005	0.1	0.5
Mercury	1455	U	< 0.00005	< 0.00005	< 0.0005	0.1	0.5
Molybdenum	1455	U	0.0007	< 0.0002	< 0.0005	0.1	0.5
Nickel	1455	U	< 0.0005	< 0.0005	< 0.0005	0.1	0.5
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	0.1	0.5
Antimony	1455	U	< 0.0005	< 0.0005	< 0.0005	0.1	0.5
Selenium	1455	U	< 0.0005	< 0.0005	< 0.0005	0.1	0.5
Zinc	1455	U	0.009	< 0.003	0.019	4	50
Chloride	1220	U	5.1	< 1.0	10	800	15000
Fluoride	1220	U	0.45	0.36	< 1.0	10	150
Sulphate	1220	U	13	2.0	26	1000	20000
Total Dissolved Solids	1020	N	120	85	250	4000	60000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	1	-
Dissolved Organic Carbon	1610	U	6.7	3.9	< 50	500	800

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

**Chemtest Job No:** 21-19774

**Chemtest Sample ID:** 1218796

**Sample Ref:**

**Sample ID:** TP134

**Sample Location:** 0.90

**Top Depth(m):** 1.00

**Bottom Depth(m):** 03-Jun-2021

**Sampling Date:**

**Determinand**

**SOP**

**Accred.**

**Units**

Total Organic Carbon

Loss On Ignition

Total BTEX

Total PCBs (7 Congeners)

TPH Total WAC

Total (Of 17) PAH's

pH

Acid Neutralisation Capacity

**Eluate Analysis**

Arsenic

Barium

Cadmium

Chromium

Copper

Mercury

Molybdenum

Nickel

Lead

Antimony

Selenium

Zinc

Chloride

Fluoride

Sulphate

Total Dissolved Solids

Phenol Index

Dissolved Organic Carbon

Determinand	SOP	Accred.	Units	8:1			2:1			Cumulative mg/kg 10:1	Landfill Waste Acceptance Criteria Limits		
				mg/l	mg/kg	mg/l	mg/kg	mg/kg	Inert Waste Landfill		Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Total Organic Carbon	2625	M	%	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.66	3	5	6
Loss On Ignition	2610	M	%	0.006	<0.0005	<0.0005	0.012	<0.0002	<0.0031	6.1	---	---	10
Total BTEX	2760	M	mg/kg	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.010	6	---	---
Total PCBs (7 Congeners)	2815	M	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.10	1	---	---
TPH Total WAC	2670	M	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<10	500	---	---
Total (Of 17) PAH's	2700	N	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<2.0	100	---	---
pH	2010	M							8.6	>6	---	---	---
Acid Neutralisation Capacity	2015	N	mol/kg						0.080	To evaluate	To evaluate	To evaluate	To evaluate
<b>Eluate Analysis</b>			<b>2:1</b>										
Arsenic	1455	U	mg/l	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.5	2	25
Barium	1455	U	mg/l	0.006	<0.0005	<0.0005	0.012	<0.0002	0.0031	0.0031	20	100	300
Cadmium	1455	U	mg/l	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	<0.00011	0.04	1	5
Chromium	1455	U	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.5	10	70
Copper	1455	U	mg/l	0.0012	<0.0005	<0.0005	0.0023	<0.0005	0.0006	0.0006	2	50	100
Mercury	1455	U	mg/l	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.01	0.2	2
Molybdenum	1455	U	mg/l	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	0.0058	0.0058	0.5	10	30
Nickel	1455	U	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.4	10	40
Lead	1455	U	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.5	10	50
Antimony	1455	U	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.06	0.7	5
Selenium	1455	U	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.1	0.5	7
Zinc	1455	U	mg/l	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	4	50	200
Chloride	1220	U	mg/l	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<10	800	15000	25000
Fluoride	1220	U	mg/l	0.39	0.13	<1.0	<1.0	<1.0	1.4	1.4	10	150	500
Sulphate	1220	U	mg/l	11	2.0	21	21	21	24	24	1000	20000	50000
Total Dissolved Solids	1020	N	mg/l	140	72	270	270	270	740	740	4000	60000	100000
Phenol Index	1920	U		<0.030	<0.030	<0.30	<0.30	<0.30	<0.50	<0.50	1	---	---
Dissolved Organic Carbon	1610	U	mg/l	6.5	3.2	<50	<50	<50	<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

**Chemtest Job No:** 21-19774

**Chemtest Sample ID:** 1218797

**Sample Ref:**

**Sample ID:** TP119

**Sample Location:**

1.70

**Top Depth(m):**

1.80

**Bottom Depth(m):**

01-Jun-2021

**Sampling Date:**

Determinand	SOP	Accred.	Units
Total Organic Carbon	2625	M	%
Loss On Ignition	2610	M	%
Total BTEX	2760	M	mg/kg
Total PCBs (7 Congeners)	2815	M	mg/kg
TPH Total WAC	2670	M	mg/kg
Total (Of 17) PAH's	2700	N	mg/kg
pH	2010	M	
Acid Neutralisation Capacity	2015	N	mol/kg

Eluate Analysis	8:1 mg/l		2:1 mg/kg		Cumulative mg/kg 10:1	Landfill Waste Acceptance Criteria Limits		
	mg/l	mg/kg	mg/kg	mg/kg		Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Arsenic	0.0028	0.0005	0.0005	0.027	0.5	2	25	
Barium	0.013	<0.0005	<0.0005	0.12	20	100	300	
Cadmium	<0.00011	<0.00011	<0.00011	<0.00011	0.04	1	5	
Chromium	0.0034	<0.0005	<0.0005	0.031	0.5	10	70	
Copper	0.0059	0.0021	0.0021	0.008	2	50	100	
Mercury	<0.00005	<0.00005	<0.00005	<0.00005	0.01	0.2	2	
Molybdenum	0.0051	0.0027	0.0027	0.049	0.5	10	30	
Nickel	0.0017	<0.0005	<0.0005	0.016	0.4	10	40	
Lead	<0.0005	<0.0005	<0.0005	0.066	0.5	10	50	
Antimony	0.0015	<0.0005	<0.0005	0.014	0.06	0.7	5	
Selenium	0.0010	<0.0005	<0.0005	0.0092	0.1	0.5	7	
Zinc	<0.003	<0.003	<0.003	<0.003	4	50	200	
Chloride	8.2	<10	<10	77	800	15000	25000	
Fluoride	0.57	<1.0	<1.0	5.4	10	150	500	
Sulphate	38	11	11	360	1000	20000	50000	
Total Dissolved Solids	78	190	190	790	4000	60000	100000	
Phenol Index	<0.030	<0.30	<0.30	<0.50	1	-	-	
Dissolved Organic Carbon	3.8	<50	<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.

<b>Sample:</b>	<b>Sample Ref:</b>	<b>Sample ID:</b>	<b>Sample Location:</b>	<b>Sampled Date:</b>	<b>Deviation Code(s):</b>	<b>Containers Received:</b>
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](mailto:customerservices@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:**



**Details:** Glynn Harvey, Technical Manager

---

# Results - Leachate

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

Determinand	Accred.	SOP	Type	Units		LOD	21-19819	21-19819
				Chemtest Job No.:	Chemtest Sample ID.:			
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

	Chemtest Job No.:		21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819
	Chemtest Sample ID.:	Chemtest Sample ID.:											
Client: Applied Geology			1218945	1218946	1218947	1218948	1218949	1218950	1218951	1218952	TP141	TP138	TP141
Quotation No.: Q17-09497			TP1	TP105	TP108	TP126	TP128	TP136	SOIL	SOIL	SOIL	SOIL	SOIL
			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20
			Top Depth (m):	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30
			Bottom Depth (m):	0.42	0.42	0.41	0.41	0.46	0.46	0.49	0.49	0.49	0.60
			Date Sampled:	04-Jun-2021	02-Jun-2021	03-Jun-2021	03-Jun-2021	03-Jun-2021	04-Jun-2021	04-Jun-2021	04-Jun-2021	04-Jun-2021	03-Jun-2021
			DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
			Asbestos Lab:										
<b>Determinand</b>	<b>Accred.</b>	<b>SOP</b>	<b>Units</b>	<b>LOD</b>									
Organic Matter	M	2625	%	0.40	2.8	1.6	1.3	2.4	1.6	1.6	2.1	2.9	1.9
Arsenic	M	2450	mg/kg	0.50	24	19	28	8.0	29	25	25	17	31
Cadmium	M	2450	mg/kg	0.10	0.47	0.33	0.87	0.34	0.46	0.46	0.46	0.49	0.60
Chromium	M	2450	mg/kg	1.0	42	22	41	25	30	39	39	38	42
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50							< 0.50
Chromium (Trivalent)	N	2490	mg/kg	1.0	22	22							42
Copper	M	2450	mg/kg	0.50	29	21	33	24	50	35	35	32	29
Lead	M	2450	mg/kg	0.50	31	15	28	22	26	32	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	< 0.010
Mercury	M	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.10	0.11	0.11	0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	40	19	36	22	26	31	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	< 0.20
Vanadium	U	2450	mg/kg	5.0	61	27	62	33	41	53	53	48	59
Zinc	M	2450	mg/kg	0.50	64	41	76	51	67	82	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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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.:		Sample Location:	Sample Type:	Top Depth (m):	Bottom Depth (m):	Date Sampled:	Asbestos Lab:	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819
	Chemtest Sample ID.:	TP1							TP105	TP108	TP126	TP128	TP136	TP138	TP141
Quotation No.: Q17-09497	1218945	1218946	1218947	1218948	1218949	1218950	1218951	1218952	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	0.10	0.10	0.10	0.10	0.10	0.10	0.20
	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30							
	04-Jun-2021	02-Jun-2021	03-Jun-2021	03-Jun-2021	03-Jun-2021	02-Jun-2021	04-Jun-2021	03-Jun-2021	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
	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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 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	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 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	< 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	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	20	12	14	18	10	16	12	18	18	18	18
Soil Colour	N	2040		N/A	Brown	Brown	Brown	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, Roots and Wood	Stones, Roots and Wood	Stones, Roots and Wood	Stones, Roots and Wood	Stones, Roots and Wood	Stones, Roots and Wood	Stones, Roots and Wood	Stones and Roots
Soil Texture	N	2040		N/A	Sand	Sand	Sand	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	8.3	8.3	8.3
Boron	N	2450	mg/kg	0.40	6.9	5.9	8.7	11	15	20	18	19	19	19	19
Beryllium	U	2450	mg/kg	1.0	1.3	1.0	1.4	1.0	1.2	1.6	1.4	1.6	1.6	1.6	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	< 1.0	< 1.0	< 1.0



## Results - Soil

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

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

## Results - Soil

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

		21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819
		1218945	1218946	1218947	1218948	1218949	1218950	1218951	1218952	1218951	1218952
		TP1	TP105	TP108	TP126	TP128	TP136	TP138	TP141	TP138	TP141
		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.20
		0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30
		04-Jun-2021	02-Jun-2021	03-Jun-2021	03-Jun-2021	03-Jun-2021	02-Jun-2021	04-Jun-2021	03-Jun-2021	04-Jun-2021	03-Jun-2021
		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
		Asbestos Lab:	Asbestos Lab:	Asbestos Lab:	Asbestos Lab:	Asbestos Lab:	Asbestos Lab:	Asbestos Lab:	Asbestos Lab:	Asbestos Lab:	Asbestos Lab:
		Accred.	SOP	Units	LOD	Accred.	SOP	Units	LOD	Accred.	SOP
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						

# Results - Soil

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

		Chemtest Job No.: 21-19819		21-19819	
Client: Applied Geology		Chemtest Sample ID.: 1218953		1218954	
Quotation No.: Q17-09497		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	1.4
Arsenic	M	2450	mg/kg	1.0	12
Cadmium	M	2450	mg/kg	0.10	0.30
Chromium	M	2450	mg/kg	1.0	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
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	27
Selenium	M	2450	mg/kg	0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	45
Zinc	M	2450	mg/kg	0.50	61
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

		Chemtest Job No.:		21-19819	
Client: Applied Geology		Chemtest Sample ID.:		1218953	
Quotation No.: Q17-09497		Sample Location:		TP149	
		Sample Type:		SOIL	
		Top Depth (m):		0.30	
		Bottom Depth (m):		0.40	
		Date Sampled:		03-Jun-2021	
		Asbestos Lab:		DURHAM	
Determinand	Accred.	SOP	Units	LOD	21-19819
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
Moisture	N	2030	%	0.020	12
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	8.4
Boron	N	2450	mg/kg	0.40	12
Beryllium	U	2450	mg/kg	1.0	1.2
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.: 21-19819		21-19819	
Quotation No.: Q17-09497		Chemtest Sample ID.: 1218953		1218954	
	Sample Location:	TP149	SOIL	TP150	SOIL
	Sample Type:				
	Top Depth (m):	0.30	0.20	0.20	0.20
	Bottom Depth (m):	0.40	0.30	0.30	0.30
	Date Sampled:	03-Jun-2021	03-Jun-2021	03-Jun-2021	03-Jun-2021
	Asbestos Lab:	DURHAM	DURHAM	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
Terbutylazine	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

<b>Client: Applied Geology</b>	<b>Chemtest Job No.:</b>	21-19819	21-19819
Quotation No.: Q17-09497	<b>Chemtest Sample ID.:</b>	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
<b>Determinand</b>	<b>Accred.</b>	<b>SOP</b>	<b>Units</b>
Endrin Aldehyde	N	2840	mg/kg
4,4-DDT	N	2840	mg/kg
Endosulfan Sulphate	N	2840	mg/kg
Methoxychlor	N	2840	mg/kg
Endrin Ketone	N	2840	mg/kg
			LOD
			< 0.20
			< 0.20
			< 0.20
			< 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 Trimethylphenols Note: 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	Compliance Test 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](mailto:customerservices@chemtest.com)

**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

Key to symbols used in this report

S/C : Testing was sub-contracted

Approved Signatories :

*S. Langman*  
13/07/2021

S Langman (Laboratory Coordinator), D Bowen (Production Manager)

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](http://www.terratek.co.uk/contact-us)





Moor Lane, Witton, Birmingham, B6 7HG

Tel: +44 (0)121 344 4838

[birmingham@terratek.co.uk](mailto:birmingham@terratek.co.uk)

[www.terratek.co.uk](http://www.terratek.co.uk)



Terra Tek Ltd is registered in Scotland No. 121594  
Offices in Airdrie, Birmingham, Belfast and Aston Clinton




 SITE INVESTIGATION AND LABORATORY SERVICES		LAND ADJACENT TO JUNCTION 10, M40, ARDLEY										Contract No <b>AG32688-21</b>									
		Client										Engineer									
Sample Identification		Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	PH	Sulphate (soluble in 2:1 water extract) as SO4 g/l	Sulphate (acid soluble as SO4) %	Total Sulphur %											
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	~	~	~												
							~	0.01	0.01	0.01											
							TP019	TP169	TP171	TP129											
							M	M	M	M											
							Limits of Detection														
							Terra Tek Analysis Method														
							Accreditation M=Meets U=UKAS N=No accreditation														
Originator	Checked & Approved																				
DAB	 13/07/2021																				




**BRE SUITE**




Figure 1

 SITE INVESTIGATION AND LABORATORY SERVICES		LAND ADJACENT TO JUNCTION 10, M40, ARDLEY										Contract No <b>AG32688-21</b>								
		Client										Engineer								
Sample Identification		Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	PH	Sulphate (soluble in 2:1 water extract) as SO4 g/l	Sulphate (acid soluble as SO4) %	Total Sulphur %										
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												
Accreditation M=Moerts U=UKAS N=No accreditation Limits of Detection Terra Tek Analysis Method TP019 M TP169 M TP171 M TP129 M																				
Originator	Checked & Approved										 <b>Figure 1</b> Sheet 2 of 4									
DAB	<i>S. Langman</i> 13/07/2021																			

 SITE INVESTIGATION AND LABORATORY SERVICES		Site LAND ADJACENT TO JUNCTION 10, M40, ARDLEY Client Engineer					Contract No <b>AG32688-21</b>					
		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									
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	TP171	TP129				
				Accreditation M=Meets U=UKAS N=No accreditation		M	M	M				
Originator	Checked & Approved		<b>BRE SUITE</b>  <b>Figure 1</b> Sheet 3 of 4									
DAB	 13/07/2021											

				Site <b>LAND ADJACENT TO JUNCTION 10, M40, ARDLEY</b> Client Engineer				Contract No <b>AG32688-21</b>			
Sample Identification				Lab Sample ID		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	?	?	?		
				pH		TP019 M		TP169 M		TP171 M	
				Limits of Detection		~		TP129 M		TP129 M	
				Accreditation M=Moerts U=UKAS N=No accreditation							
Originator	Checked & Approved										
DAB	 13/07/2021										
<b>BRE SUITE</b>								<b>Figure 1</b> Sheet 4 of 4			

 <b>TERRA TEK</b> <small>SITE INVESTIGATION AND LABORATORY SERVICES</small>	Site	LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	Contract No	<b>AG3268-21</b>
	Client			
	Engineer			

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	<b>SAMPLE DESCRIPTIONS</b>	<b>Appendix S1</b>
DAB	<i>S. Langren</i> 13/07/2021		

 <b>TERRA TEK</b> <small>SITE INVESTIGATION AND LABORATORY SERVICES</small>	Site	LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	Contract No	<b>AG3268-21</b>
	Client			
	Engineer			

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	<b>SAMPLE DESCRIPTIONS</b>	<b>Appendix S1</b>
DAB	<i>S. Langren</i> 13/07/2021		



 <b>TERRA TEK</b> <small>SITE INVESTIGATION AND LABORATORY SERVICES</small>	Site	LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	Contract No	<b>AG3268-21</b>
	Client			
	Engineer			

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.



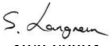
Originator	Checked & Approved	<b>SAMPLE DESCRIPTIONS</b>	<b>Appendix S1</b>
DAB	<i>S. Langren</i> 13/07/2021		




 <b>TERRA TEK</b> <small>SITE INVESTIGATION AND LABORATORY SERVICES</small>				Site LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		Contract No <b>AG3268-21</b>					
				Client							
				Engineer							
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 maximum 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	<b>DEVIATING SAMPLES - SOIL</b>	 <b>Appendix S2</b>
DAB	 13/07/2021		

 <b>TERRA TEK</b> <small>SITE INVESTIGATION AND LABORATORY SERVICES</small>				Site LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		Contract No <b>AG3268-21</b>						
				Client								
				Engineer								
Sample Identification						Deviating conditions						
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Date Sampled	Sampling date has not been provided	Exceeded maximum holding time for selected test(s)	Presence of headspace in sample vial	Poorly fitting cap or lid	Damaged container	Preservatives used	
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							
<b>NOTES</b> 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		<b>DEVIATING SAMPLES - SOIL</b>					 <b>Appendix S2</b>		Sheet 2 of 3	
DAB		 13/07/2021										

 <b>TERRA TEK</b> <small>SITE INVESTIGATION AND LABORATORY SERVICES</small>				Site LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		Contract No <b>AG3268-21</b>						
				Client								
				Engineer								
Sample Identification						Deviating conditions				Preservatives used		
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Date Sampled	Sampling date has not been provided	Exceeded maximum 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							
<p><b>NOTES</b></p> <ol style="list-style-type: none"> <li>1 Results reported for samples classified as deviating may be compromised. Deviation types are shown as "X" or "Yes" in the table above.</li> <li>2 The absence of "X" or "Yes" in the table above indicates no reported deviations.</li> <li>3 Deviations due to use of incorrect sample container are shown on result tables.</li> <li>4 Deviating results are indicated within result tables.</li> </ol>												
Originator		Checked & Approved		<b>DEVIATING SAMPLES - SOIL</b>				 <b>Appendix S2</b>				
DAB		 13/07/2021								Sheet 3 of 3		

 <b>TERRA TEK</b> <small>SITE INVESTIGATION AND LABORATORY SERVICES</small>		Site LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	Contract No <b>AG3268-21</b>		
		Client			
		Engineer			
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
<b>Notes</b> 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	<b>SUMMARY OF IN-HOUSE ANALYTICAL TEST METHODS (SOIL)</b>			 <b>Appendix S3</b>  Sheet 1 of 2
N/A	N/A				

 <b>TERRA TEK</b> <small>SITE INVESTIGATION AND LABORATORY SERVICES</small>		Site LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	Contract No <b>AG3268-21</b>		
		Client			
		Engineer			
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
<b>Notes</b> 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	<b>SUMMARY OF IN-HOUSE ANALYTICAL TEST METHODS (SOIL)</b>		 <b>Appendix S3</b>	Sheet 2 of 2
N/A	N/A				

**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	<b>LAND ADJACENT TO JUNCTION 10, M40, ARDLEY</b>		
Project Number	<b>B26845</b>	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

Key to symbols used in this report

S/C : Testing was sub-contracted

Approved Signatories :

*S. Langman*  
12/08/2021

S Langman (Laboratory Coordinator), D Bowen (Production Manager)

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](http://www.terratek.co.uk/contact-us)




Moor Lane, Witton, Birmingham, B6 7HG

Tel: +44 (0)121 344 4838

[birmingham@terratek.co.uk](mailto:birmingham@terratek.co.uk)



[www.terratek.co.uk](http://www.terratek.co.uk)

Terra Tek Ltd is registered in Scotland No. 121594  
Offices in Airdrie, Birmingham, Belfast and Aston Clinton

<b>TERRA TEK</b> SITE INVESTIGATION AND LABORATORY SERVICES				Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY				Contract No <b>B26845</b>									
Client Applied Geology Limited				Engineer Applied Geology Limited				~ 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	
Notes	Opinions and interpretations are outside the scope of UKAS accreditation			UKAS Accredited Test Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	See individual report sheets
Originator	Checked & Approved			SUMMARY OF GEOTECHNICAL TESTS													
CD	 05/08/2021																
TP1	0.90-1.00		D	782460	Brown gravely very silty SAND with pockets of clay. Gravel is fine to coarse	11	?	?	?	?	?	?	?	?	?	?	
TP10	0.90-1.00		D	782461	Brown gravely sandy very silty CLAY. Gravel is fine to coarse	26.9	?	?	?	?	?	?	?	?	?	?	
TP100	0.50-0.60		D	782462	Brown gravely very sandy CLAY. Gravel is fine to coarse	17	?	?	?	?	?	?	?	?	?	?	
TP101	1.50-1.60		D	782463	Brown sandy very gravely 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	?	?	?	?	?	?	?	?	?	?	










				Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY				Contract No <b>B26845</b>									
Client Applied Geology Limited				~ Indicates test not carried out													
Engineer																	
Sample Identification																	
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Atterberg limits Liquid Limit % Plastic Limit % Plasticity Index Percentage retained 425µm % Atterberg Classification				Density Bulk Mg/m³ Dry Mg/m³		Total Stress Shear Strength kPa Apparent Cohesion 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					
Originator	Checked & Approved																
CD	 05/08/2021																








**SUMMARY OF GEOTECHNICAL TESTS**


				Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY				Contract No <b>B26845</b>									
Client Applied Geology Limited				Engineer				~ Indicates test not carried out									
Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Atterberg limits				Particle Density Mg/m <sup>3</sup>	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 Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C 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					
Originator	Checked & Approved																
CD	 05/08/2021			<b>SUMMARY OF GEOTECHNICAL TESTS</b>													



		Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		Contract No <b>B26845</b>									
Client Applied Geology Limited		Engineer		~ Indicates test not carried out									
Sample Identification		Lab Sample ID		Other Tests									
Exploratory Hole	Depth m	Sample Ref	Sample Type	Moisture Content %	Atterberg limits	Density	Total Stress						
					Liquid Limit %	Bulk Mg/m <sup>3</sup>	Shear Strength kPa						
					Plastic Limit %	Dry Mg/m <sup>3</sup>	Apparent Cohesion C kPa						
					Plasticity Index	Particle Density Mg/m <sup>3</sup>	Angle of Shearing Resistance Phi						
					Percentage retained 425µm %								
					Atterberg Classification								
TP113	0.90-1.00		D	14		?	?	?	?	?	?	?	?
TP114	0.55-0.65		B	22		?	?	?	?	?	?	?	?
TP115	0.70-0.80		D	25.8		?	?	?	?	?	?	?	?
TP117	0.50-0.60		D	12.1		?	?	?	?	?	?	?	?
TP118	0.80-0.90		D	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							
Originator	Checked & Approved	<b>SUMMARY OF GEOTECHNICAL TESTS</b>											
CD	 05/08/2021												

		Site		Contract No		B26845 ~ Indicates test not carried out												
		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY																
Client		Engineer		Atterberg limits		Density	Total Stress		Other Tests									
		Applied Geology Limited		Liquid Limit	Plastic Limit		Plasticity Index	Percentage retained 425µm		Atterberg Classification	Particle Density	Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi		
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/m <sup>3</sup>	Bulk Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	Other Tests
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		Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	See individual report sheets
Originator	Checked & Approved	<b>SUMMARY OF GEOTECHNICAL TESTS</b> 																
CD	CD 05/08/2021																	



				<b>Contract No B26845</b> ~ Indicates test not carried out														
<b>Site</b> AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		<b>Client</b> Applied Geology Limited		<b>Engineer</b>														
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description	Atterberg limits				Particle Density Mg/m <sup>3</sup>	Density		Total Stress			Other Tests		
						Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %		CI	Bulk Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa		Angle of Shearing Resistance Phi	
TP123	0.85-0.90		D	782485	Brown gravelly very sandy CLAY. Gravel is fine to coarse	41	14	27	39	CI	?	?	?	?	?			
TP124	1.80-1.90		D	782486	Brown gravelly sandy very silty CLAY. Gravel is fine to coarse	?	?	?	?	?	?	?	?	?	?			
TP125	0.90-1.00		B	782487	Brown slightly gravelly sandy CLAY with rootlets. Gravel is fine	68	27	41	49	CH	?	?	?	?	?	PSD	Compaction CBR	
TP126	0.50-0.60		D	782488	Brown gravelly sandy very silty CLAY. Gravel is fine to coarse	?	?	?	?	?	?	?	?	?	?			
TP127	0.90-1.00		D	782489	Brown gravelly very sandy CLAY. Gravel is fine to coarse	41	15	26	28	CI	?	?	?	?	?			
Notes		Opinions and interpretations are outside the scope of UKAS accreditation			UKAS Accredited Test Y/N		Y	Y	Y	Y	Y	Y	Y	Y	Y	Test details are given on the 'Notes on Laboratory Procedures' sheet		See individual report sheets
Originator	Checked & Approved																	
CD	 05/08/2021		<b>SUMMARY OF GEOTECHNICAL TESTS</b>  															

		Site		Contract No		B26845 ~ Indicates test not carried out													
		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY																	
Client		Engineer		Applied Geology Limited		Other Tests													
Sample Identification		Sample Type		Lab Sample ID		Moisture Content		Atterberg limits				Density		Total Stress					
Exploratory Hole	Depth m	Sample Ref						Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification	Particle Density	Bulk	Dry	Shear Strength	Apparent Cohesion	Angle of Shearing Resistance Phi	
				Non Engineering Sample Description				%	%	%	%	Mg/m <sup>3</sup>	Mg/m <sup>3</sup>	Mg/m <sup>3</sup>	Mg/m <sup>3</sup>	kPa	kPa	?	
TP128	0.50-0.60		D	Brown gravelly very sandy CLAY. Gravel is fine to coarse	782490		10												
TP129	0.60-0.70		D	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	782491		9.4												
TP13	0.70-0.70		BX2	Brown sandy clayey fine to coarse GRAVEL with cobbles	782492		14.8												PSD CBR
TP130	1.00-1.10		B	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	782493		10.9												
TP133	0.60-0.70		D	Brown gravelly sandy very silty CLAY with rootlets. Gravel is fine to coarse	782494		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									
Originator	Checked & Approved																		
CD	CD 05/08/2021																		



**SUMMARY OF GEOTECHNICAL TESTS**

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY				Contract No B26845												
Site		Applied Geology Limited																
Client		Applied Geology Limited																
Engineer		Applied Geology Limited																
Sample Identification		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/m <sup>3</sup>	Bulk Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	
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						
Originator	Checked & Approved		SUMMARY OF GEOTECHNICAL TESTS									TK						
CD	CD 05/08/2021											Sheet 8 of 28						

				Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY				Contract No <b>B26845</b>											
Client Applied Geology Limited				Engineer Applied Geology Limited				~ Indicates test not carried out											
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Atterberg limits				Particle Density Mg/m <sup>3</sup>	Density	Total Stress			Other Tests			
							Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %			Atterberg Classification	Shear Strength kPa	Apparent Cohesion C kPa		Angle of Shearing Resistance Phi		
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			
Originator	Checked & Approved			<b>SUMMARY OF GEOTECHNICAL TESTS</b>															
CD	 05/08/2021																		





TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES		Site		Contract No		~ Indicates test not carried out								
		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		B26845										
Client		Applied Geology Limited		Density		Total Stress		Other Tests						
		Engineer		Bulk	Dry	Shear Strength	Apparent Cohesion			Angle of Shearing Resistance Phi				
Sample Identification		Sample Ref		Atterberg limits		Particle Density		Moisture Content						
		Depth m	Sample Type	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification							
Exploratory Hole	Depth m	Sample Type	Lab Sample ID	Non Engineering Sample Description		Liquid Limit	Plastic Limit	Percentage retained 425µm	Atterberg Classification	Bulk	Dry	Shear Strength	Apparent Cohesion	Angle of Shearing Resistance Phi
TP144	0.40-0.50	D	782505	Brown gravelly very sandy CLAY. Gravel is fine to coarse		%		%		Mg/m <sup>3</sup>	Mg/m <sup>3</sup>	kPa	kPa	?
TP145	0.70-0.70	B	782506	Brown sandy clayey fine to coarse GRAVEL with cobbles		15		?		?	?	?	?	?
TP146	1.00-1.10	D	782507	Brown sandy clayey fine to coarse GRAVEL		11.1		?		?	?	?	?	?
TP147	0.90-1.00	D	782508	Brown sandy clayey fine to coarse GRAVEL		8.9		?		?	?	?	?	?
TP148	1.10-1.20	D	782509	Brown gravelly sandy CLAY. Gravel is fine to medium		9.4		?		?	?	?	?	?
Notes		Opinions and interpretations are outside the scope of UKAS accreditation		UKAS Accredited Test Y/N		Y	Y	Y	Y	Y	Y	Y	Y	Y
Originator	Checked & Approved	CD		CD		Y	Y	Y	Y	Y	Y	Y	Y	Y
CD		CD		CD		Y	Y	Y	Y	Y	Y	Y	Y	Y
CD		CD		CD		Y	Y	Y	Y	Y	Y	Y	Y	Y






**SUMMARY OF GEOTECHNICAL TESTS**

				Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		Contract No <b>B26845</b>													
Client Applied Geology Limited				~ Indicates test not carried out															
Engineer																			
Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Atterberg limits				Particle Density Mg/m <sup>3</sup>	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 Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa		Angle of Shearing Resistance Phi	
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							
Originator	Checked & Approved																		
CD	 05/08/2021																		



**SUMMARY OF GEOTECHNICAL TESTS**




		Site		Contract No					
		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		B26845					
Client		Engineer		~ Indicates test not carried out					
		Applied Geology Limited							
Sample Identification		Lab Sample ID		Total Stress		Other Tests			
Exploratory Hole	Depth m	Sample Type	Sample Description	Moisture Content %	Atterberg limits	Density	Particle Density		
TP16	1.40-1.50	D	Brown gravelly very sandy CLAY. Gravel is fine to coarse	12	Liquid Limit % Plastic Limit % Plasticity Index Percentage retained 425µm % Atterberg Classification	Bulk Mg/m³ Dry Mg/m³	Mg/m³	Shear Strength kPa Apparent Cohesion kPa Angle of Shearing Resistance Phi	PSD CBR
TP17	0.60-0.70	D	Brown gravelly silty very sandy CLAY. Gravel is fine to coarse	15.3					
TP18	0.60-0.70	D	Brown gravelly sandy very silty CLAY. Gravel is fine to coarse	27.8					
TP2	0.90-0.90	B	Brown very clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse	13					
TP21	0.80-0.90	D	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	
Originator	Checked & Approved	<p style="text-align: center;"><b>SUMMARY OF GEOTECHNICAL TESTS</b></p> 							
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		~ Indicates test not carried out																
Engineer																		
Sample Identification		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/m <sup>3</sup>	Bulk Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	
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	~	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	~	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		Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y
Originator	Checked & Approved	SUMMARY OF GEOTECHNICAL TESTS																
CD	CD 05/08/2021	TK																
See individual report sheets																		

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES		Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		Contract No B26845	
Client Applied Geology Limited		~ Indicates test not carried out			
Engineer					
Sample Identification		Sample Type		Lab Sample ID	
Exploratory Hole	Depth m	Sample Ref			
TP27	1.40-1.50		D	782524	Brown gravelly very sandy CLAY. Gravel is fine to medium
TP28	0.50-0.60		B	782525	Brown sandy very clayey fine to coarse GRAVEL with cobbles
TP29	0.70-0.80		D	782526	Brown gravelly very sandy CLAY. Gravel is fine to coarse
TP3	0.90-1.00		D	782527	Brown gravelly very sandy CLAY. Gravel is fine to coarse
TP30	1.30-1.40		B	782528	Brown slightly sandy gravelly CLAY. Gravel is fine to coarse
		Moisture Content	%		
		Liquid Limit	%	37	
		Plastic Limit	%	15	
		Plasticity Index		22	
		Percentage retained 425µm	%	61	
		Atterberg Classification		CI	
		Particle Density	Mg/m <sup>3</sup>	2.67	
		Density	Bulk	Mg/m <sup>3</sup>	
			Dry	Mg/m <sup>3</sup>	
		Total Stress	Shear Strength	kPa	
			Apparent Cohesion	kPa	
			Angle of Shearing Resistance Phi		
		Other Tests			PSD Compaction CBR
Notes		Opinions and interpretations are outside the scope of UKAS accreditation		UKAS Accredited Test Y/N	
Originator		Checked & Approved		Test details are given on the 'Notes on Laboratory Procedures' sheet	
CD		CD 05/08/2021		See individual report sheets	






**SUMMARY OF GEOTECHNICAL TESTS**

		Site		Contract No		B26845 ~ Indicates test not carried out				
		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY								
Client Applied Geology Limited		Engineer		Density Bulk Mg/m <sup>3</sup> Dry Mg/m <sup>3</sup>		Total Stress Shear Strength kPa Apparent Cohesion C Angle of Shearing Resistance Phi		Other Tests CBR		
Sample Identification		Lab Sample ID		Atterberg limits		Particle Density		Moisture Content		
Exploratory Hole	Depth m	Sample Ref	Sample Type	Non Engineering Sample Description	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification
TP31	0.70-0.80		B	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	15	27	14	13	65	CL
TP32	0.50-0.60		D	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	13	?	?	?	?	?
TP34	0.50-0.60		D	Brown sandy clayey fine to coarse GRAVEL	5.4	?	?	?	?	?
TP35	1.90-2.00		D	Brown sandy clayey fine to coarse GRAVEL	6.7	?	?	?	?	?
TP36	0.80-0.90		D	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	16	?	?	?	?	?
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		
Originator	Checked & Approved	<b>SUMMARY OF GEOTECHNICAL TESTS</b> 								
CD	 05/08/2021									

		Site		Contract No		~ Indicates test not carried out											
		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		B26845													
Client Applied Geology Limited		Engineer		Density		Total Stress		Other Tests									
Sample Identification		Lab Sample ID		Atterberg limits		Particle Density		Density									
Exploratory Hole	Depth m	Sample Ref	Sample Type	Non Engineering Sample Description	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification	Mg/m <sup>3</sup>	Bulk Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	
TP37	0.40-0.50		B	Brown gravelly very sandy CLAY. Gravel is fine to coarse	14	?	?	?	?		?	?	?	?	?	?	CBR
TP38	1.00-1.10		D	Brown gravelly sandy CLAY. Gravel is fine to coarse	11.9	?	?	?	?		?	?	?	?	?	?	PSD
TP38	1.60-1.70		B	Brown sandy clayey fine to coarse GRAVEL with cobbles	15.3	?	?	?	?		?	?	?	?	?	?	
TP39	0.70-0.80		D	Brown gravelly sandy CLAY. Gravel is fine to coarse	16.2	?	?	?	?		?	?	?	?	?	?	
TP4	1.20-1.30		D	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									
Originator	Checked & Approved																
CD	CD 05/08/2021																








**SUMMARY OF GEOTECHNICAL TESTS**

		Site		Contract No		~ Indicates test not carried out														
		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		B26845																
Client		Engineer		Applied Geology Limited		Other Tests														
		Applied Geology Limited																		
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Atterberg limits				Particle Density Mg/m <sup>3</sup>	Density		Total Stress			PSD CBR			
							Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %		Atterberg Classification	Bulk Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa		Angle of Shearing Resistance Phi		
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	?	?	?	?	?	?	?	?	?	?	?	?	?	
TP45	1.60-1.70		D	782541	Brown very sandy very clayey fine to coarse GRAVEL	8.5	?	?	?	?	?	?	?	?	?	?	?	?	?	
Notes		Opinions and interpretations are outside the scope of UKAS accreditation			UKAS Accredited Test Y/N		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	See individual report sheets
Originator	Checked & Approved																			
CD	 05/08/2021																			

**SUMMARY OF GEOTECHNICAL TESTS**





		Site		Contract No		B26845 ~ Indicates test not carried out															
		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY																			
Client		Engineer		Applied Geology Limited																	
Sample Identification		Lab Sample ID		Atterberg limits		Density		Total Stress		Other Tests											
Exploratory Hole	Depth m	Sample Ref	Sample Type	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					
TP46	0.50-0.60		D	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	12	?	?	?	?		?	?	?	?	?	?	PSD CBR				
TP48	0.50-0.60		D	Brown clayey very sandy fine to coarse GRAVEL	15.3	?	?	?	?		?	?	?	?	?	?					
TP49	1.20-1.50		D	Brown very gravelly very sandy CLAY. Gravel is fine to coarse	14.8	?	?	?	?		?	?	?	?	?	?					
TP5	0.60-0.70		D	Brown clayey very sandy fine to coarse GRAVEL	8.8	?	?	?	?		?	?	?	?	?	?					
TP5	1.90-2.00		D	Brown very 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									
Originator	Checked & Approved	<b>SUMMARY OF GEOTECHNICAL TESTS</b> 										Y		Y		Y		Y		Y	
CD	CD 05/08/2021											Y		Y		Y		Y		Y	

 SITE INVESTIGATION AND LABORATORY SERVICES		Site		Contract No		~ Indicates test not carried out																
		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		B26845																		
Client Engineer		Client		Applied Geology Limited																		
		Applied Geology Limited																				
Sample Identification		Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits				Density		Total Stress			Other Tests				
								%	Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification	Mg/m³	Particle Density	Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi		
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
Originator	Checked & Approved																					
CD	 05/08/2021		<b>SUMMARY OF GEOTECHNICAL TESTS</b>																	Sheet 19 of 28		

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY										Contract No B26845							
Site		Applied Geology Limited										~ Indicates test not carried out							
Client		Applied Geology Limited																	
Engineer																			
Sample Identification		Non Engineering Sample Description										Other Tests							
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification	Particle Density Mg/m <sup>3</sup>	Density Bulk Mg/m <sup>3</sup>	Density Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi			
TP55	0.90-1.00		D	782550	12	35	14	21	46	CL	?	?	?	?	?	?	CBR		
TP56	0.50-0.50		B	782551	20.2	?	?	?	?	?	?	?	?	?	?	?			
TP57	1.10-1.20		D	189011	7.7	?	?	?	?	?	?	?	?	?	?	?			
TP59	0.50-0.60		D	782552	14.2	?	?	?	?	?	?	?	?	?	?	?	PSD Compaction CBR		
TP60	0.70-0.80		B	782553	37.2	61	20	41	62	CH	2.62	?	?	?	?	?			
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	
Originator	Checked & Approved																		
CD	CD 05/08/2021																		






**SUMMARY OF GEOTECHNICAL TESTS**

		Site		Contract No		B26845 ~ Indicates test not carried out										
		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY														
Client		Engineer		Applied Geology Limited		Other Tests										
		Applied Geology Limited														
Sample Identification		Lab Sample ID		Atterberg limits		Total Stress										
Exploratory Hole	Depth m	Sample Ref	Sample Type	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification	Particle Density Mg/m³	Density Bulk Mg/m³	Density Dry Mg/m³	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	
TP61	1.20-1.30		D	15	?	?	?	?		?	?	?	?	?	?	
TP62	0.50-0.50		B	20.1	?	?	?	?		?	?	?	?	?	?	PSD CBR
TP63	1.60-1.70		D	18.1	?	?	?	?		?	?	?	?	?	?	
TP64	0.70-0.80		D	13	?	?	?	?		?	?	?	?	?	?	
TP66	1.50-1.60		D	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								
Originator	Checked & Approved															
CD	 05/08/2021															



**SUMMARY OF GEOTECHNICAL TESTS**

				Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY				Contract No <b>B26845</b>												
Client Applied Geology Limited				Engineer				~ Indicates test not carried out												
Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Atterberg limits				Particle Density Mg/m <sup>3</sup>	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 Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa		Angle of Shearing Resistance Phi		
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									
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				UKAS Accredited Test Y/N				Test details are given on the 'Notes on Laboratory Procedures' sheet												See individual report sheets
Originator CD	Checked & Approved  05/08/2021			<b>SUMMARY OF GEOTECHNICAL TESTS</b>																

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES		Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY		Contract No B26845													
Client Applied Geology Limited		~ Indicates test not carried out															
Engineer																	
Sample Identification		Lab Sample ID		Atterberg limits		Density		Total Stress		Other Tests							
Exploratory Hole	Depth m	Sample Ref	Sample Type	Non Engineering Sample Description	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification	Particle Density Mg/m <sup>3</sup>	Bulk Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	
TP71	0.60-0.70		D	Brown gravelly sandy CLAY. Gravel is fine to coarse	14	~	~	~	~	~	~	~	~	~	~	~	
TP72	1.50-1.60		D	Brown gravelly sandy CLAY. Gravel is fine to coarse	9.2	~	~	~	~	~	~	~	~	~	~	~	
TP73	1.20-1.30		D	Brown gravelly sandy CLAY. Gravel is fine to coarse	14	~	~	~	~	~	~	~	~	~	~	~	
TP74	0.40-0.40		D	Brown gravelly sandy very silty CLAY. Gravel is fine to medium	28.6	42	21	21	17	CI	~	~	~	~	~	~	
TP75	0.80-0.80		B	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										See individual report sheets	
Originator	Checked & Approved																
CD	CD 05/08/2021																



**SUMMARY OF GEOTECHNICAL TESTS**

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES				AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY										Contract No B26845					
Site				Applied Geology Limited										~ Indicates test not carried out					
Client				Engineer															
Sample Identification				Other Tests															
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Atterberg limits				Particle Density Mg/m <sup>3</sup>	Density		Total Stress			Other Tests		
							Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification		Bulk Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi		
TP76	0.80-0.90		D	782568	Brown sandy clayey fine to coarse GRAVEL	12	43	21	22	40	CI	2.60	?	?	?	?	?	?	PSD Compaction CBR
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	?	?	?				?	?	?	?	?		
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				UKAS Accredited Test Y/N										Test details are given on the 'Notes on Laboratory Procedures' sheet			See individual report sheets		
Opinions and interpretations are outside the scope of UKAS accreditation				Y										Y			Y		
Originator				Checked & Approved										CD			05/08/2021		
CD				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		Engineer		~ Indicates test not carried out												
Sample Identification		Lab Sample ID	Non Engineering Sample Description	Moisture Content	Atterberg limits		Density		Total Stress			Other Tests				
Exploratory Hole	Depth m	Sample Type		%	Liquid Limit	Plastic Limit	Plasticity Index	Percentage retained 425µm	Atterberg Classification	Particle Density	Bulk	Dry	Shear Strength	Apparent Cohesion C	Angle of Shearing Resistance Phi	
Notes	Opinions and interpretations are outside the scope of UKAS accreditation		UKAS Accredited Test Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	See individual report sheets
Originator	Checked & Approved		SUMMARY OF GEOTECHNICAL TESTS													
CD	CD 05/08/2021															
TP82	0.50-0.60	D	782574	28	38	21	17	51	CI	?	?	?	?	?	?	
TP83	0.50-0.60	D	782573	13.8	?	?	?	?		?	?	?	?	?	?	
TP84	0.80-0.90	D	782575	9.8	?	?	?	?		?	?	?	?	?	?	
TP86	0.90-1.00	D	782576	11	?	?	?	?		?	?	?	?	?	?	
TP87	1.10-1.20	D	782598	9.3	?	?	?	?		?	?	?	?	?	?	








				Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY Contract No <b>B26845</b> ~ Indicates test not carried out														
Client Applied Geology Limited Engineer																		
Sample Identification				Test details are given on the 'Notes on Laboratory Procedures' sheet														
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/m <sup>3</sup>	Bulk Density Mg/m <sup>3</sup>	Dry Density Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi	Other Tests
TP88	0.70-0.80		D	189013	Brown gravelly sandy very silty CLAY. Gravel is fine to medium	36	?	?	?	?	?	?	?	?	?	?	?	PSD CBR
TP89	0.80-0.80		B	782577	Brown clayey SAND and GRAVEL with cobbles. Gravel is fine to coarse	17	?	?	?	?	?	?	?	?	?	?	?	
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				UKAS Accredited Test Y/N														
Originator	Checked & Approved																	
CD	 05/08/2021																	
<b>SUMMARY OF GEOTECHNICAL TESTS</b>																		
																		
See individual report sheets																		

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES		AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY										Contract No B26845									
Site		Applied Geology Limited										~ Indicates test not carried out									
Client																					
Engineer																					
Sample Identification		Atterberg limits										Density		Total Stress		Other Tests					
Exploratory Hole	Depth m	Sample Ref	Sample Type	Lab Sample ID	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification	Particle Density Mg/m <sup>3</sup>	Bulk Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi					
TP92	0.80-0.90		D	782581	11																
TP93	0.60-0.70		D	782582	18.9																
TP94	0.70		Bx2	188976	14.8													PSD	CBR		
TP96	0.60-0.70		D	782583	17																
TP97	1.00-1.10		B	782584	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	
Originator	Checked & Approved																				
CD	CD 05/08/2021																				



**SUMMARY OF GEOTECHNICAL TESTS**

				AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY Contract No <b>B26845</b> ~ Indicates test not carried out													
				Site Client Engineer				Applied Geology Limited									
Sample Identification				Lab Sample ID	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	Angle of Shearing Resistance Phi	
TP98	0.60-0.70		D	782585	18												
TP99	0.90-1.00		D	782586	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	
Originator	Checked & Approved			<b>SUMMARY OF GEOTECHNICAL TESTS</b>  													
CD	 05/08/2021																



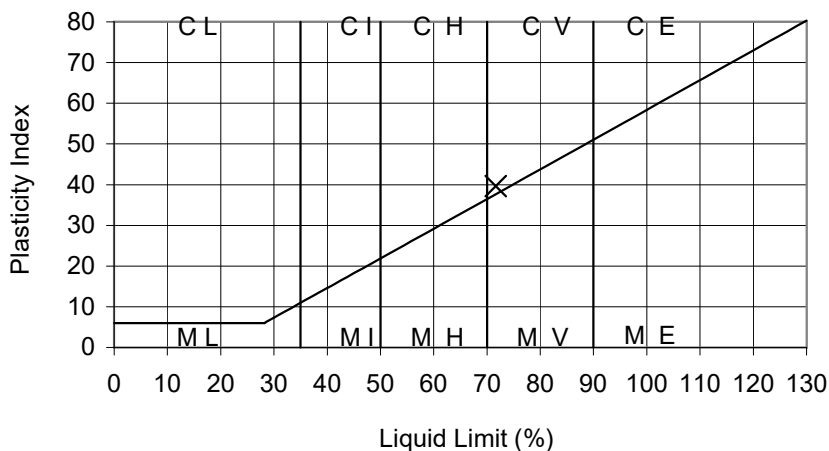
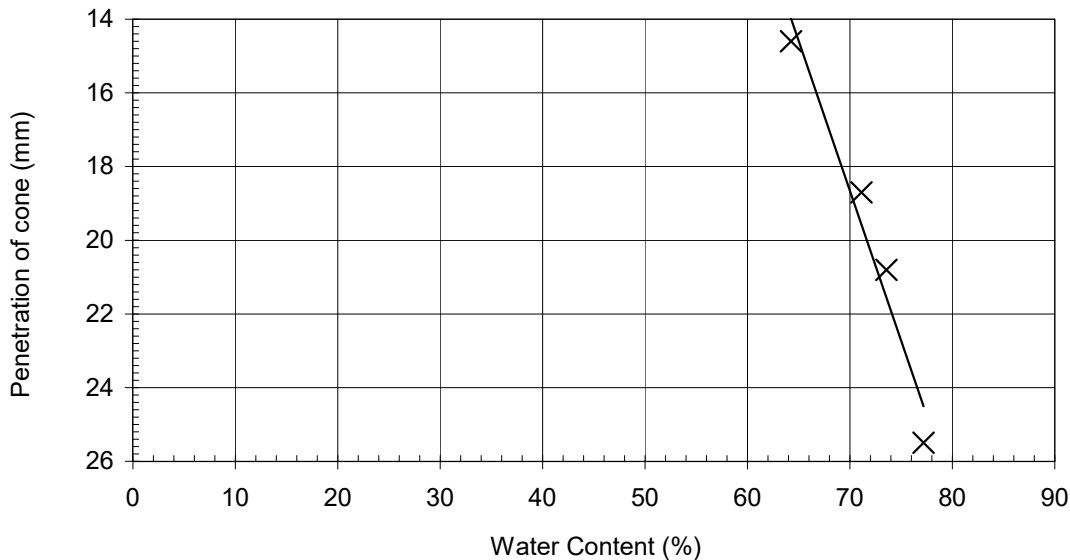
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP102
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
AK	CD 05/08/2021

**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





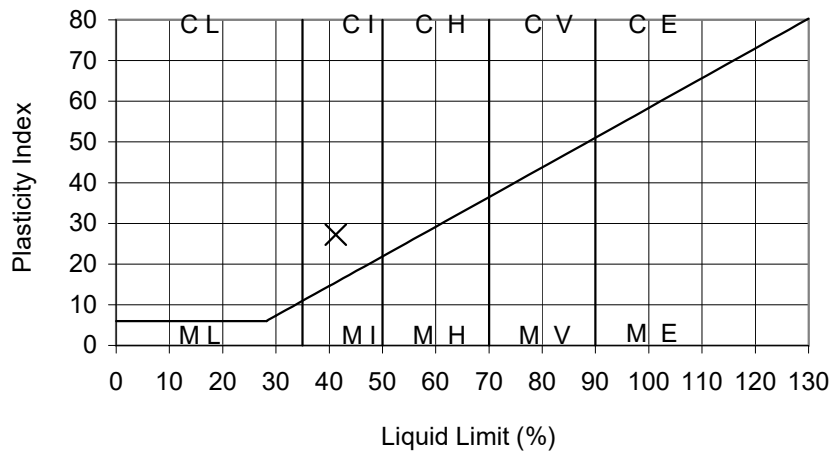
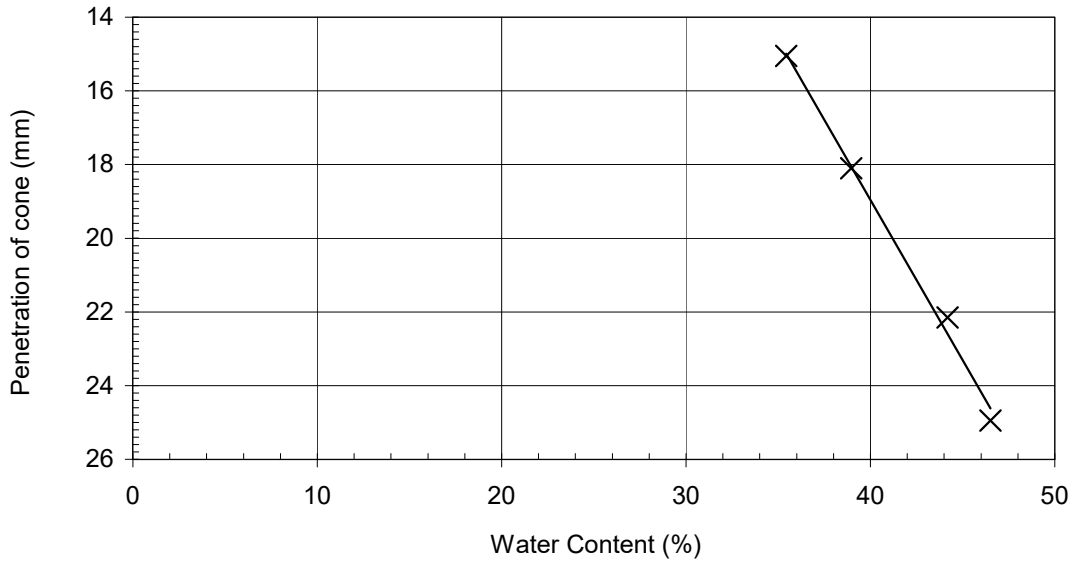
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP123
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
SR	CD 05/08/2021

**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





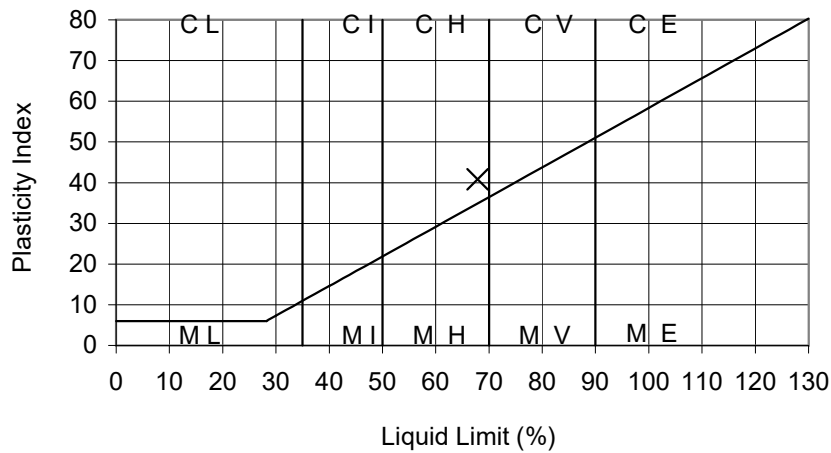
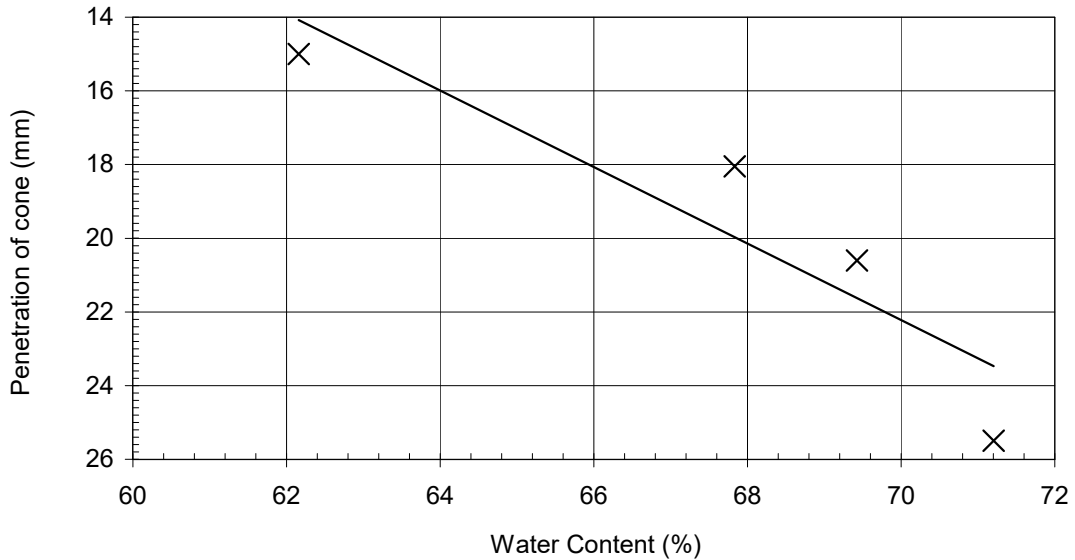
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP125
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
DW	CD 05/08/2021

**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





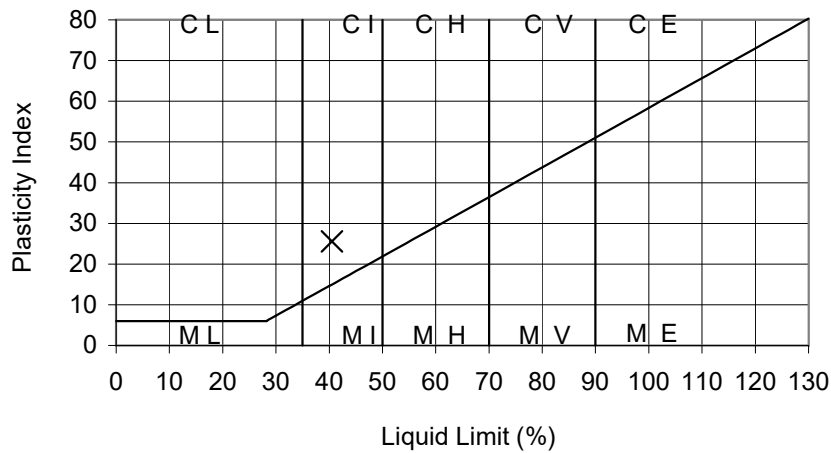
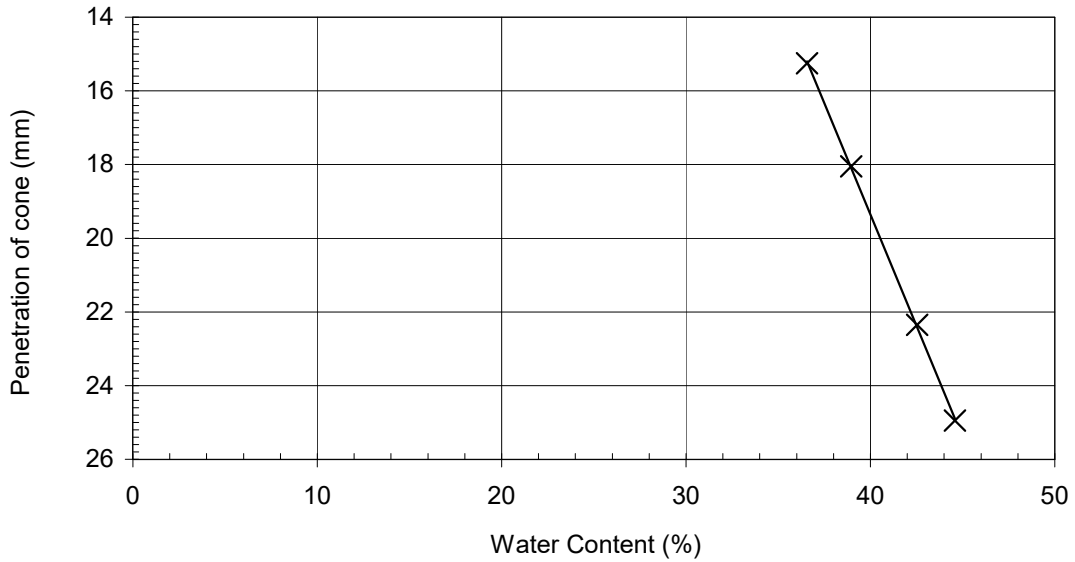
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP127
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
SR	CD 05/08/2021

**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





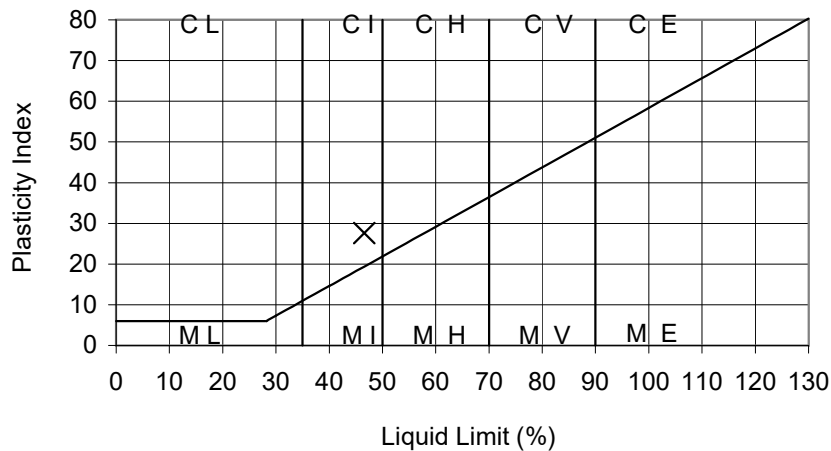
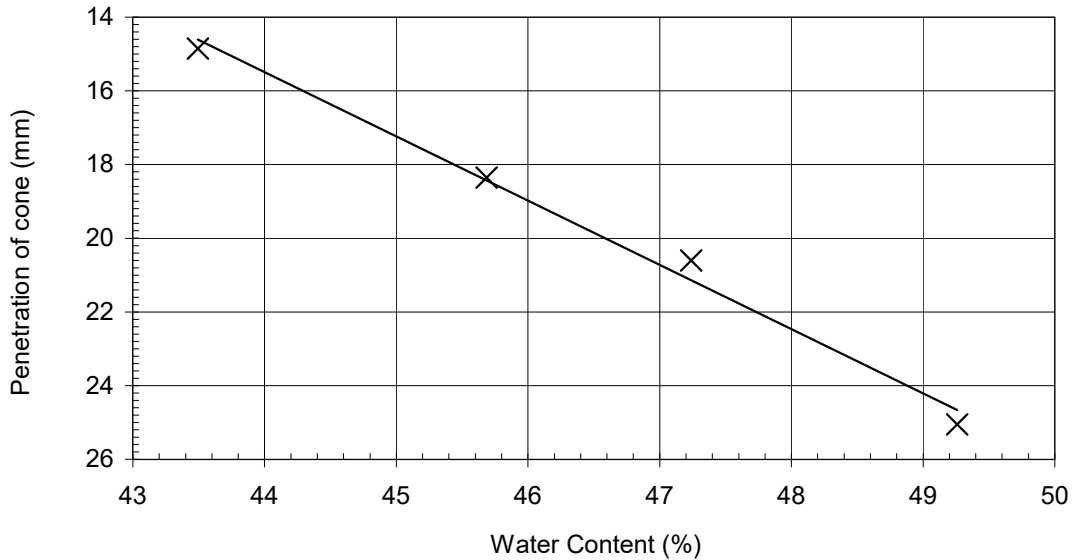
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP133
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
DW	CD 05/08/2021

**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







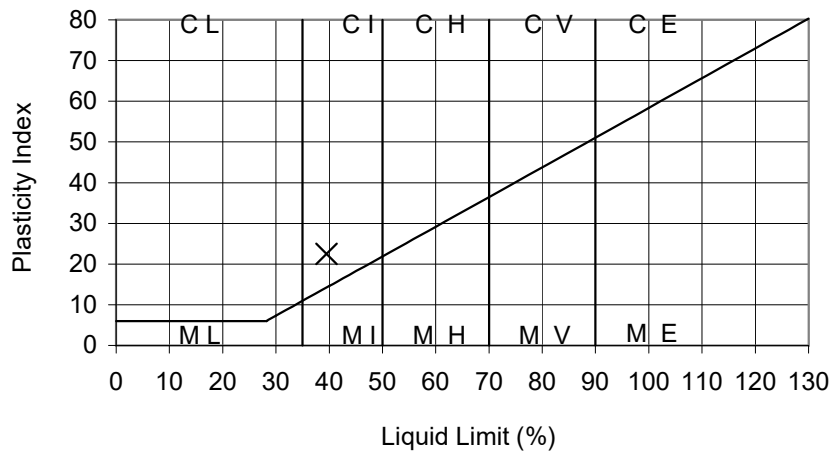
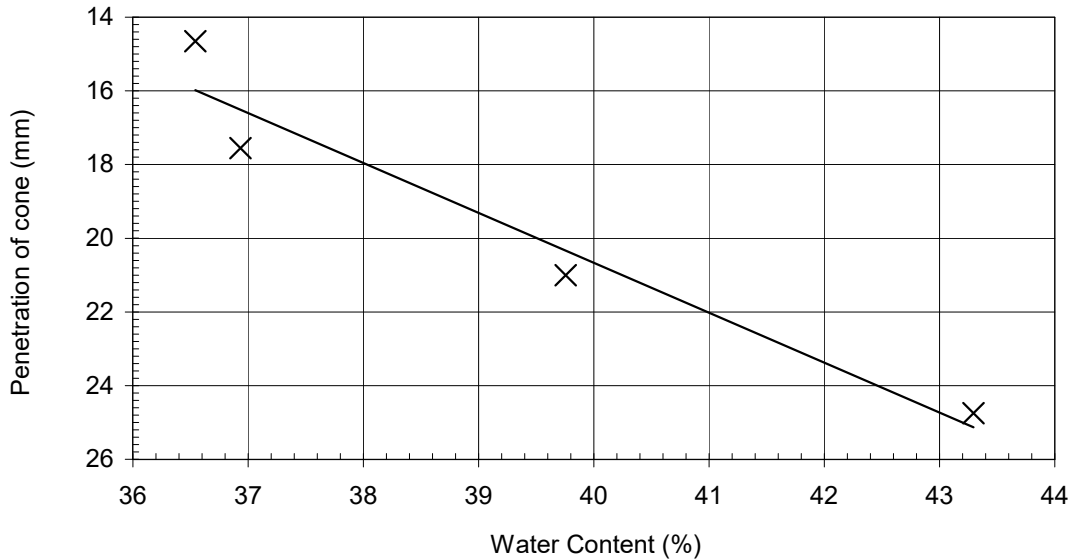
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP138
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
DW	CD 05/08/2021

**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





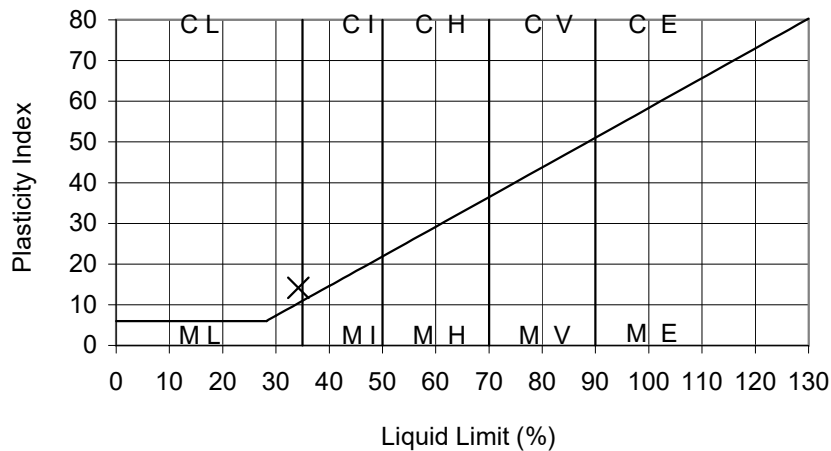
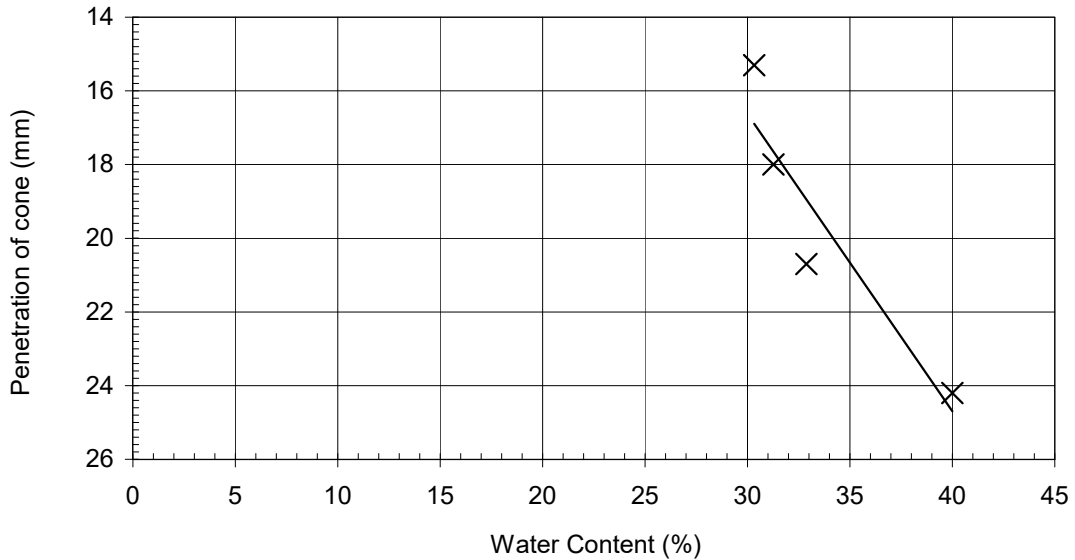
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP15
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
AK	CD 05/08/2021

**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





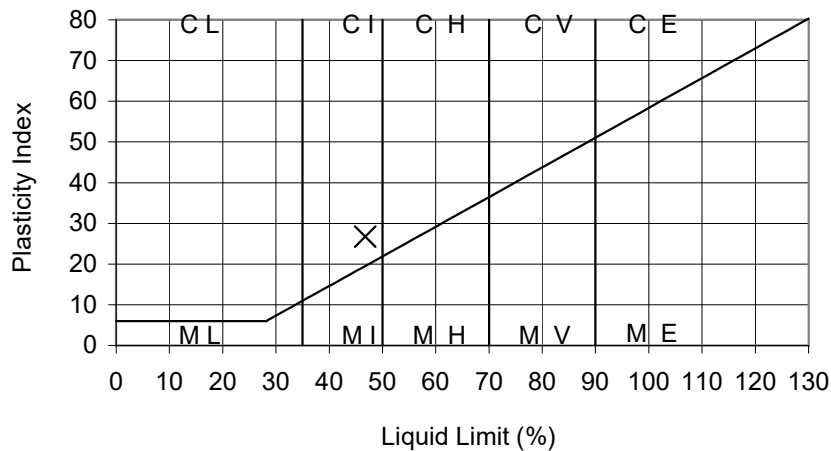
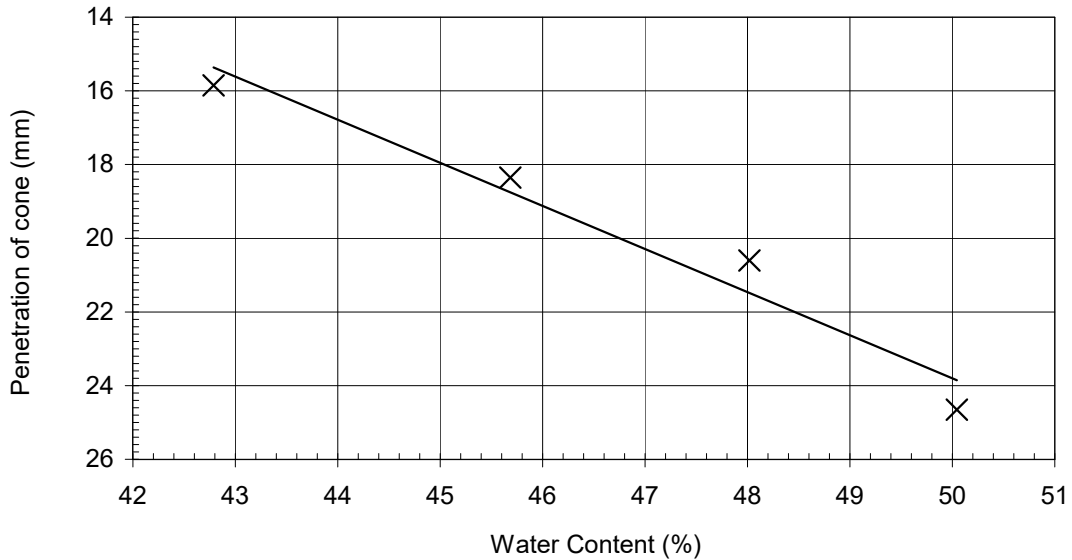
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP18
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
DW	CD 05/08/2021

**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





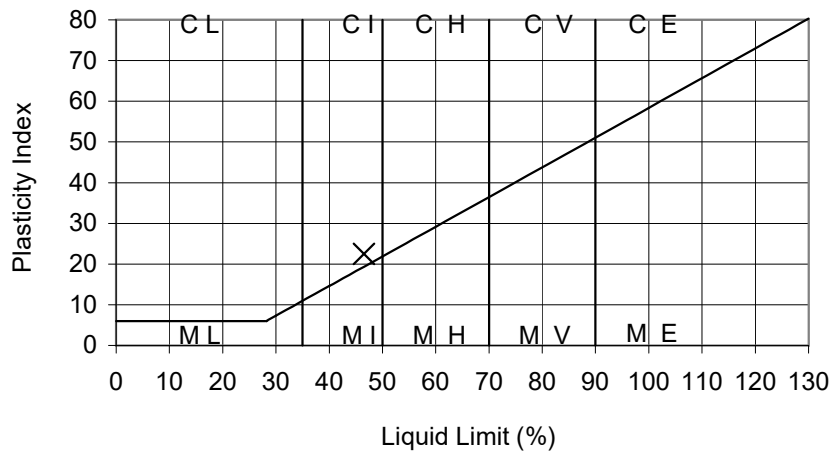
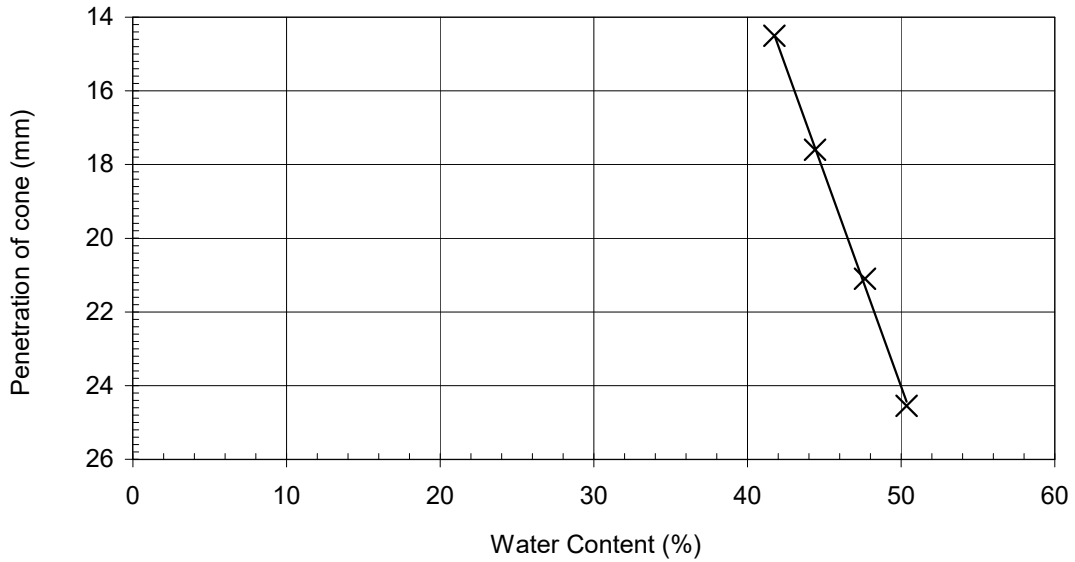
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP24
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
DW	CD 05/08/2021

**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





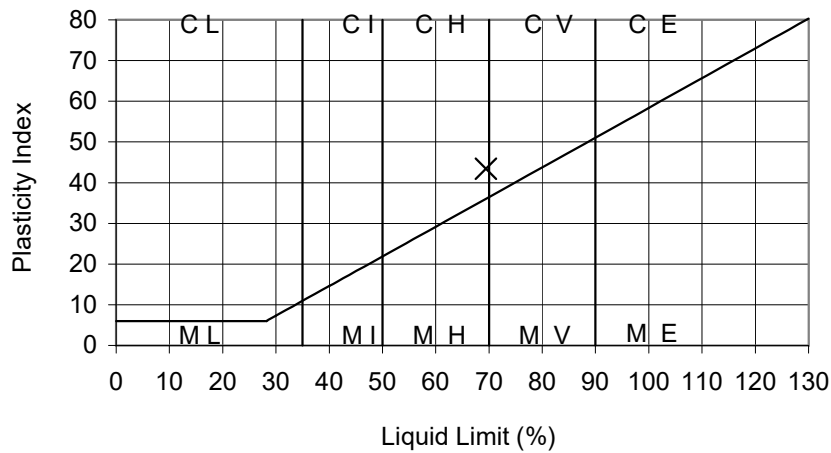
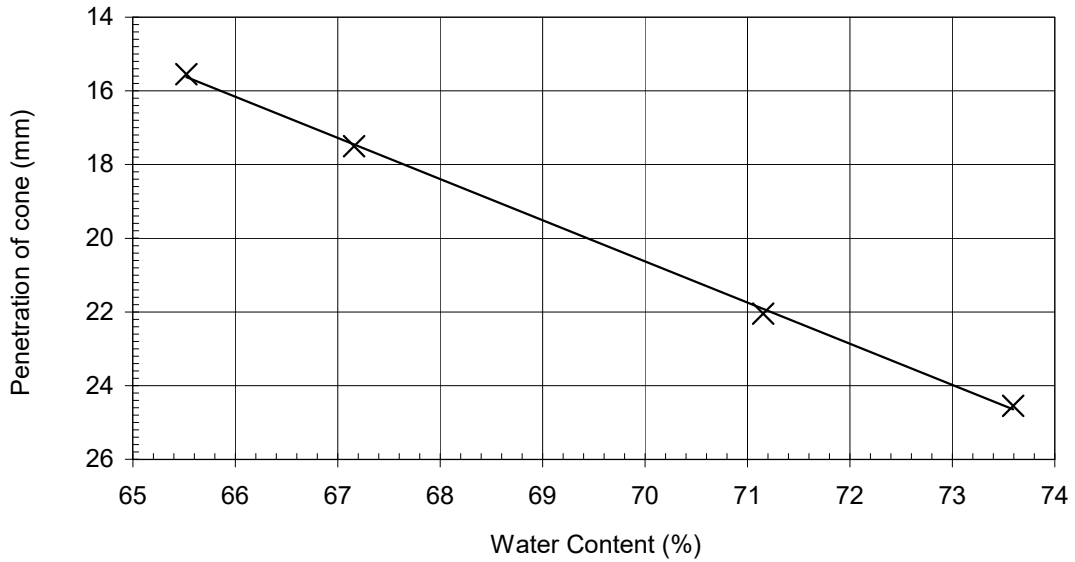
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP24
Sample Ref	
Depth (m)	2.40-2.80
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)	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
DW	CD 05/08/2021

**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





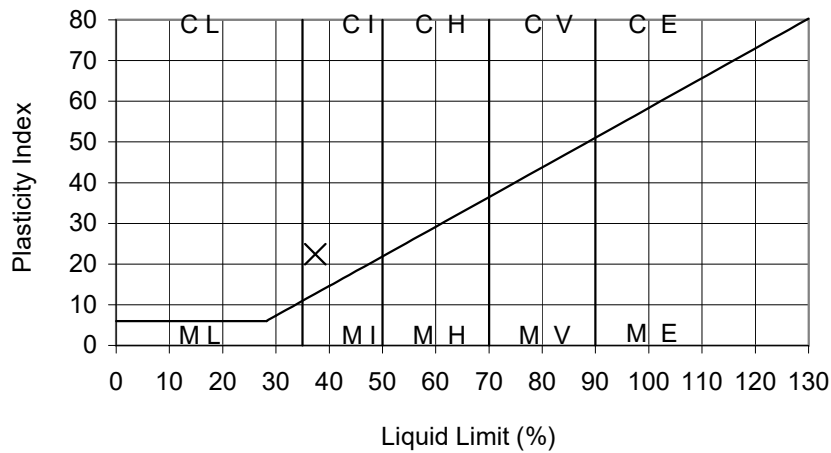
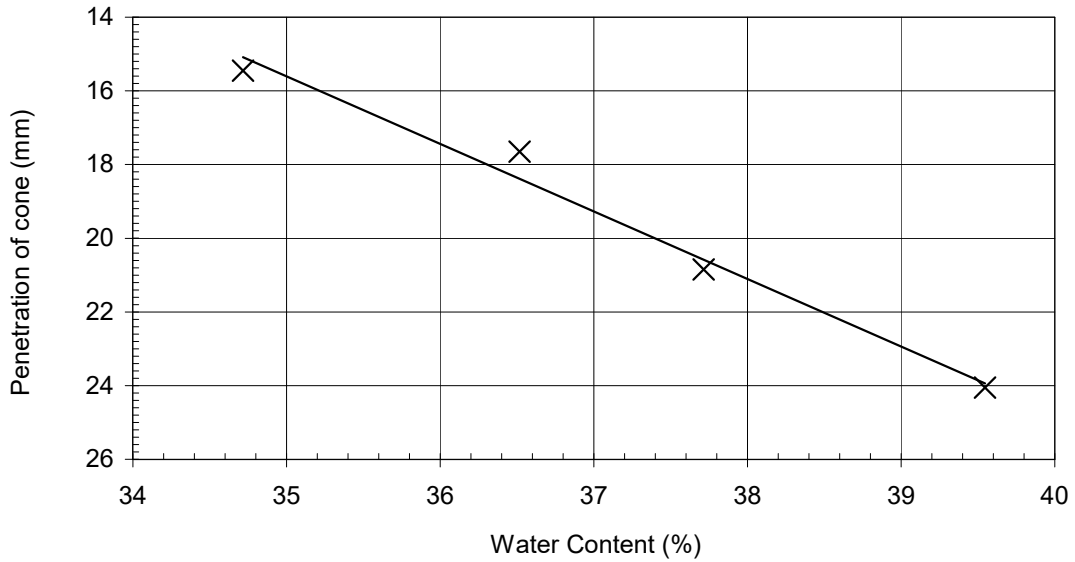
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP28
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
DW	CD 05/08/2021

**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





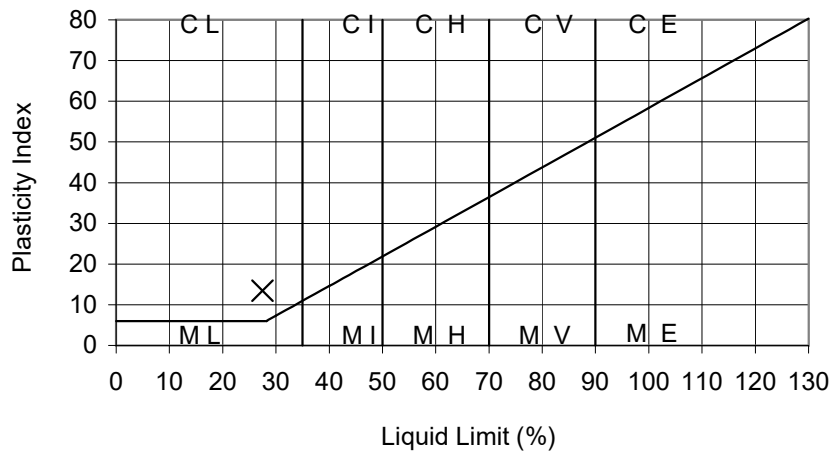
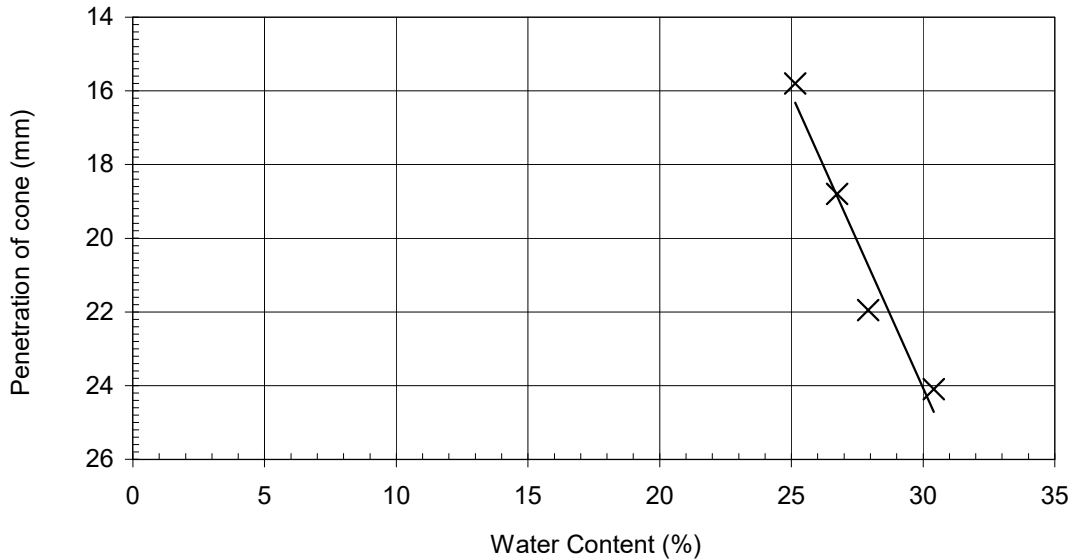
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP31
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
DW	CD 05/08/2021

**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





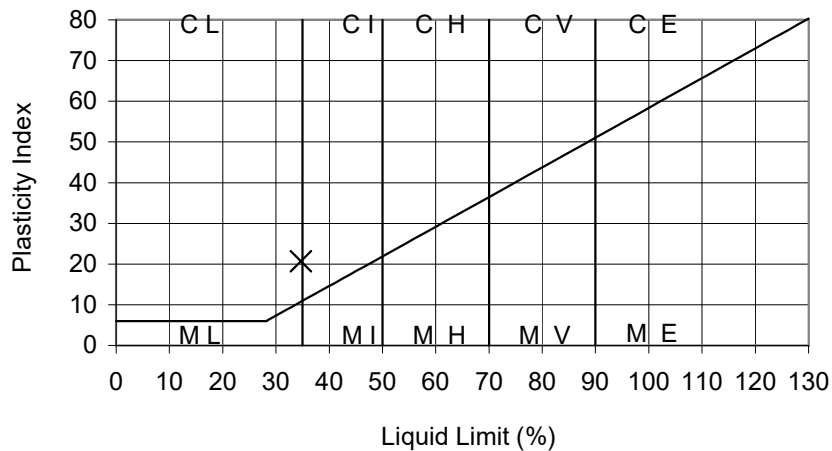
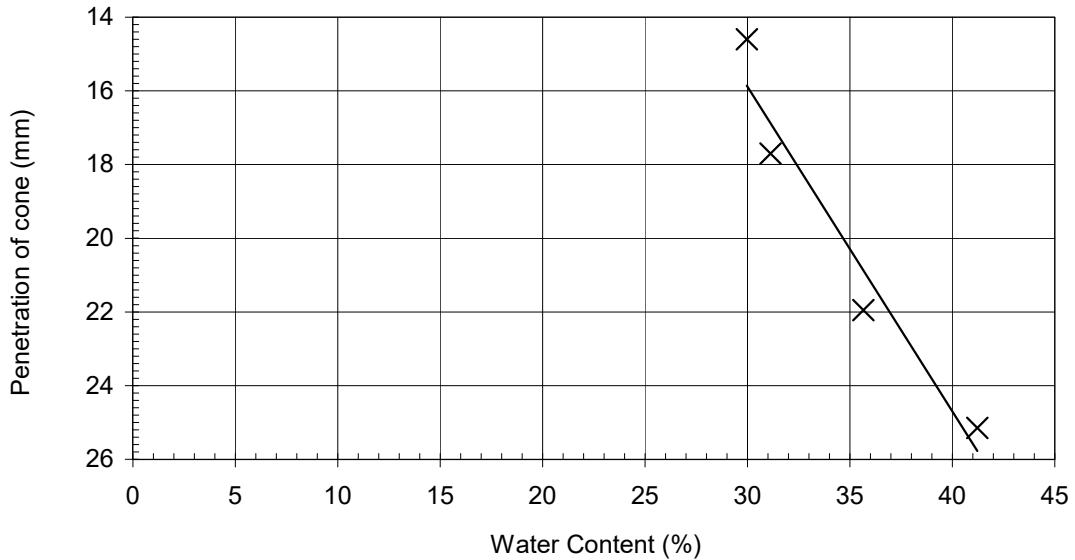
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP56
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
DW	CD 05/08/2021

**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







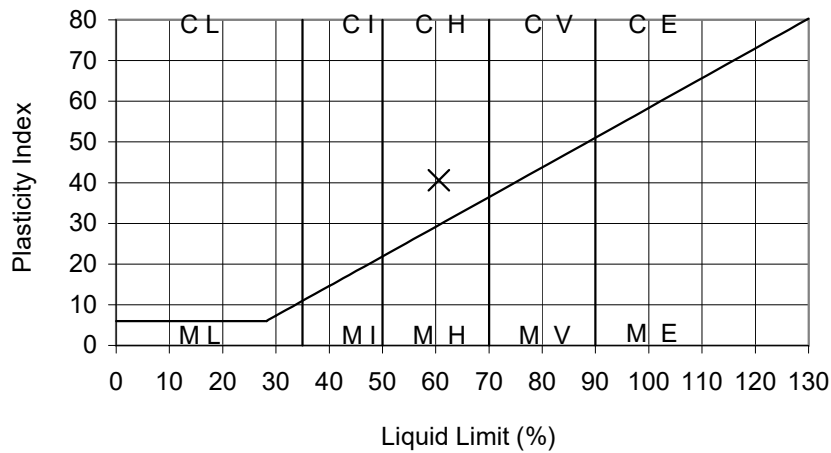
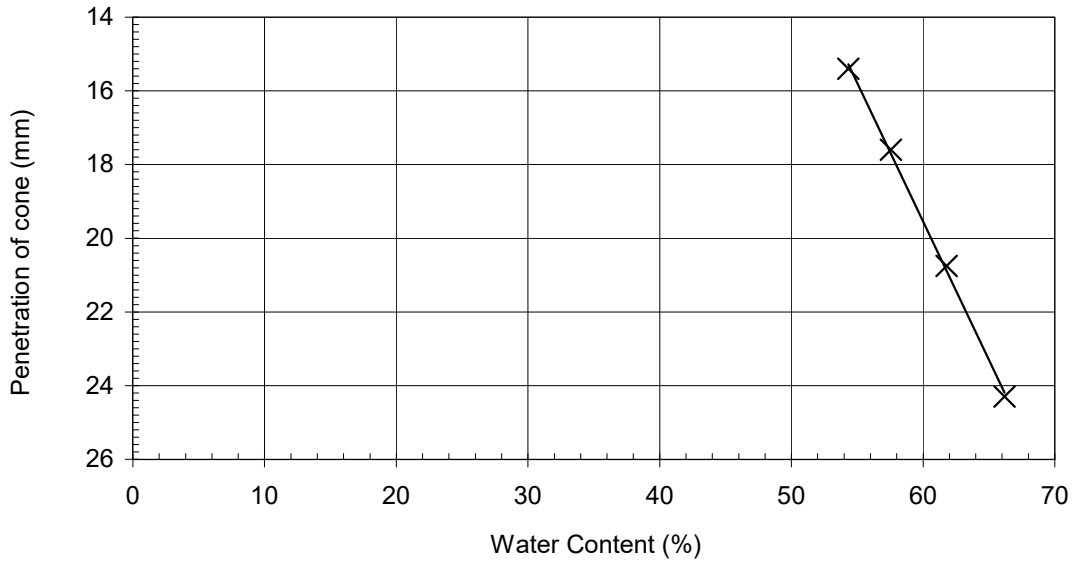
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP60
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
DW	CD 05/08/2021

**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





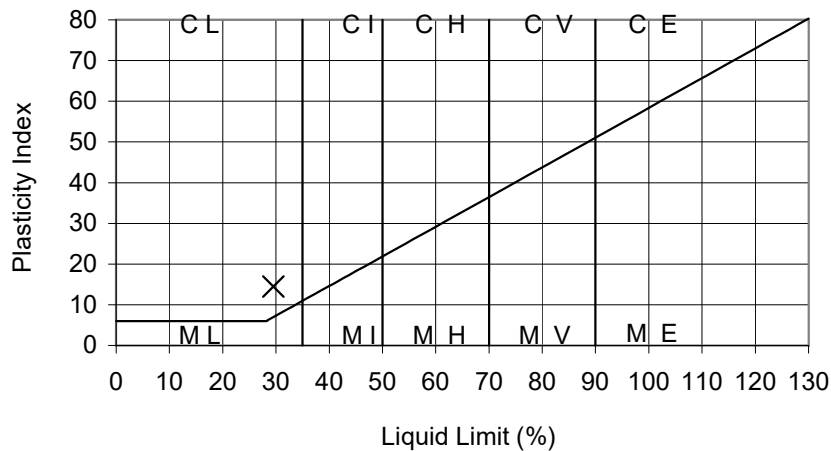
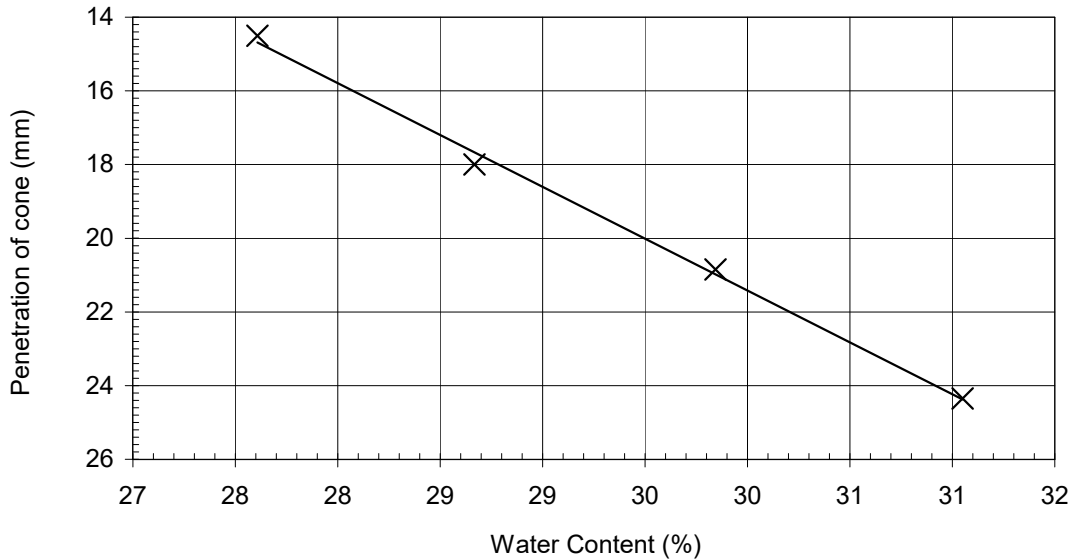
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP69
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
DW	CD 05/08/2021

**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





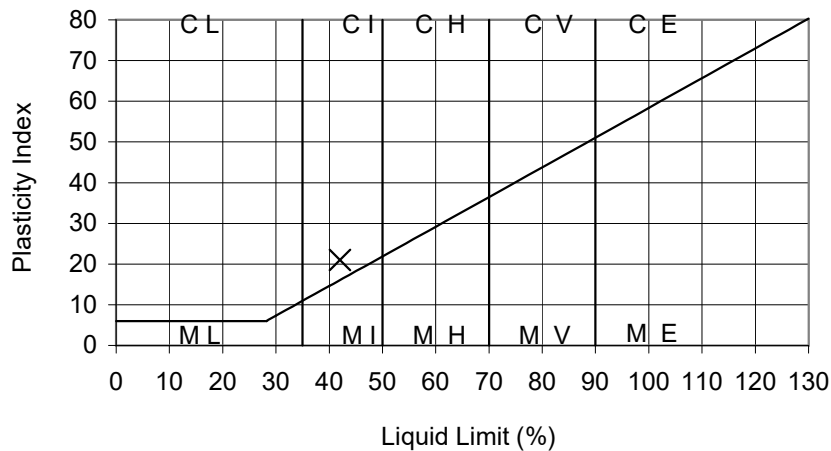
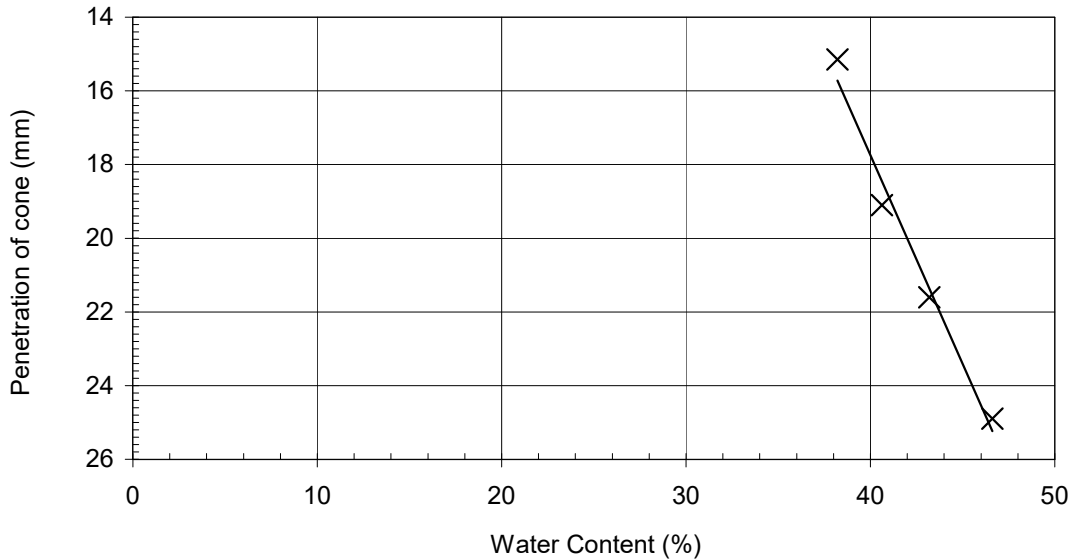
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP74
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
AK	CD 05/08/2021

**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





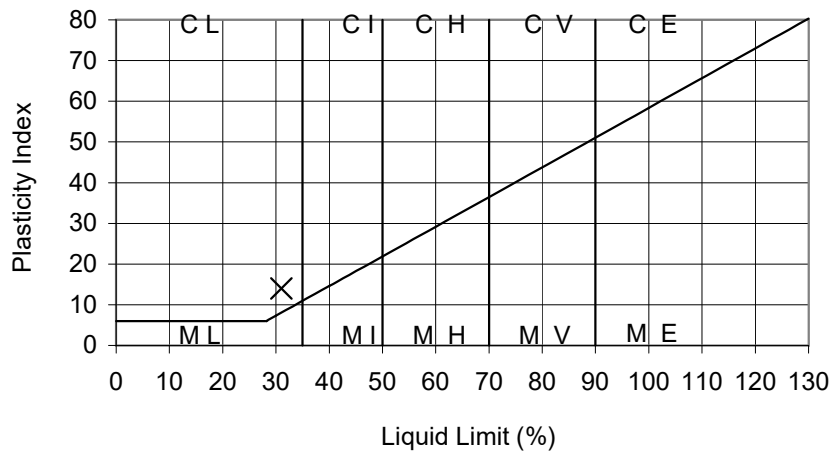
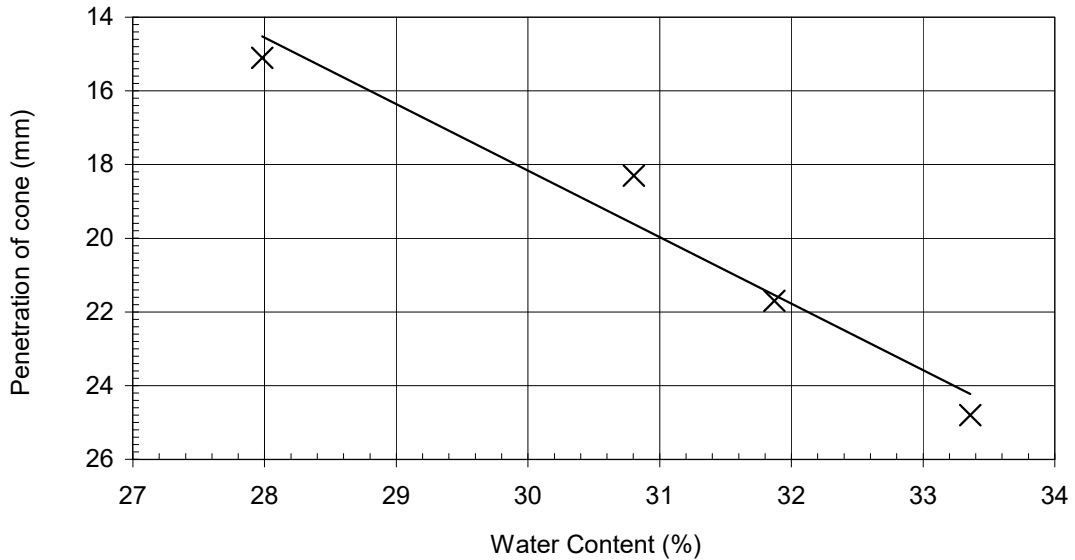
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP75
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
AK	CD 05/08/2021

**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





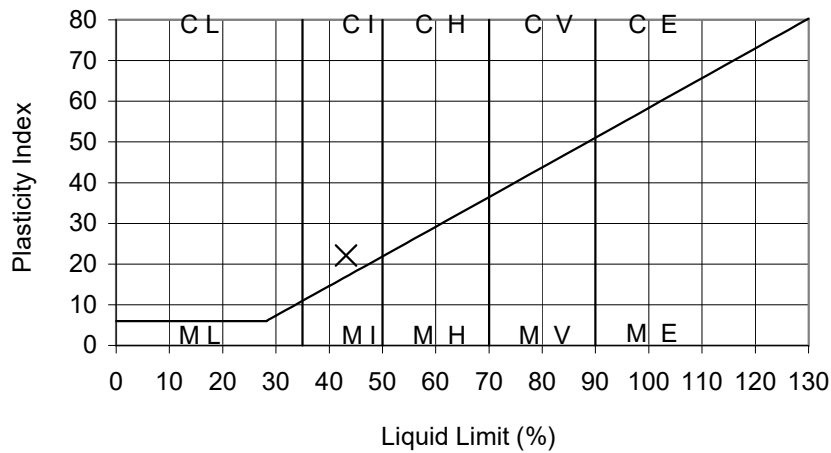
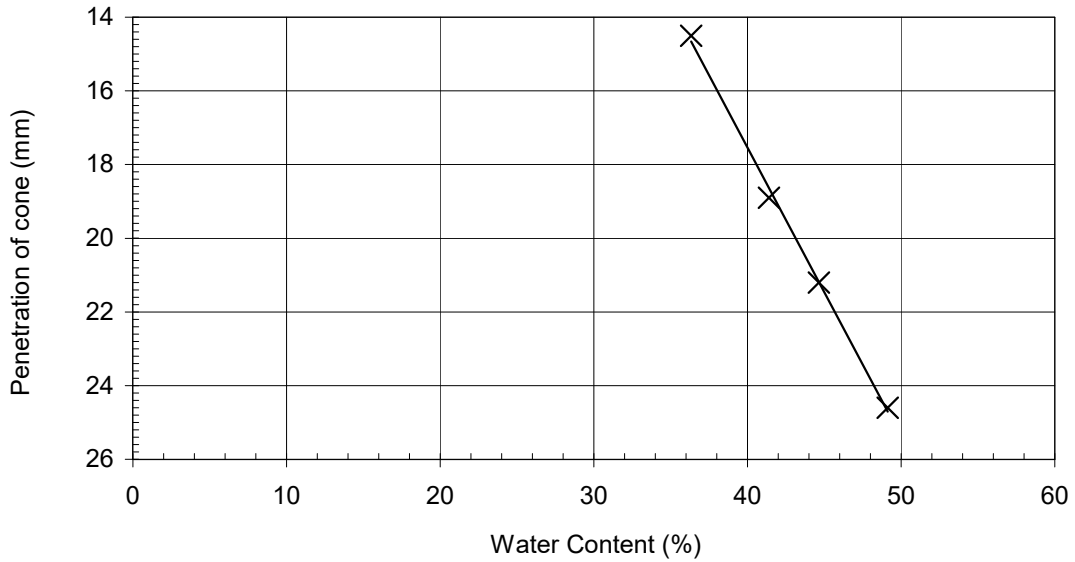
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP79
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
AK	CD 05/08/2021

**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





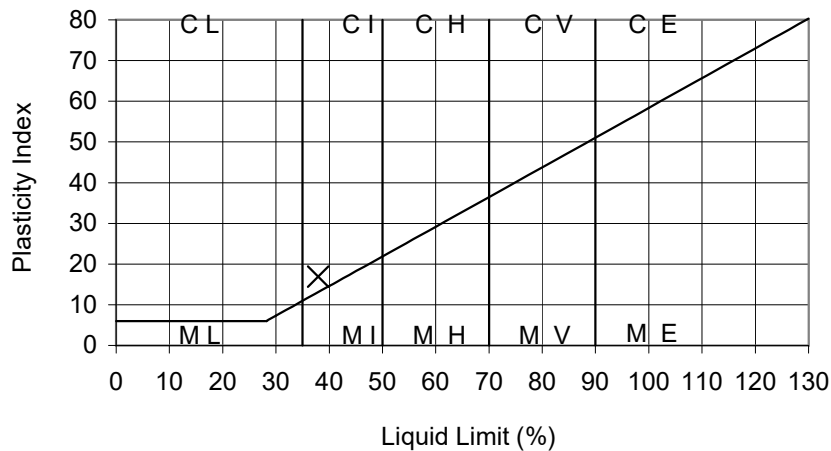
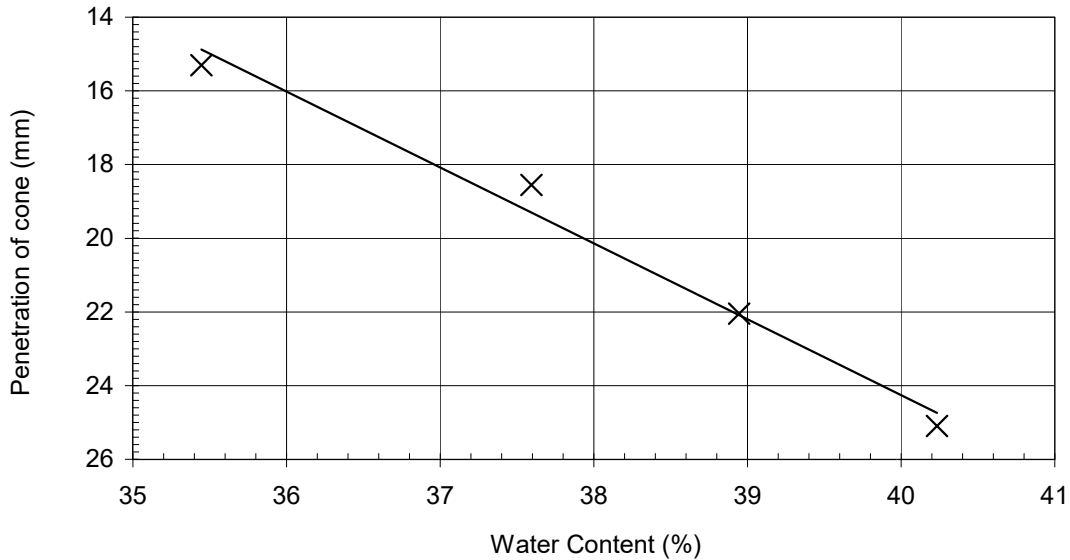
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP82
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
DW	CD 05/08/2021

**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





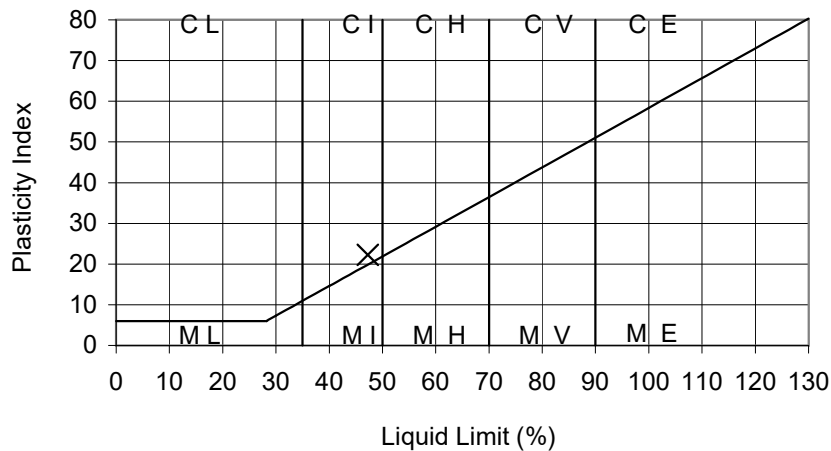
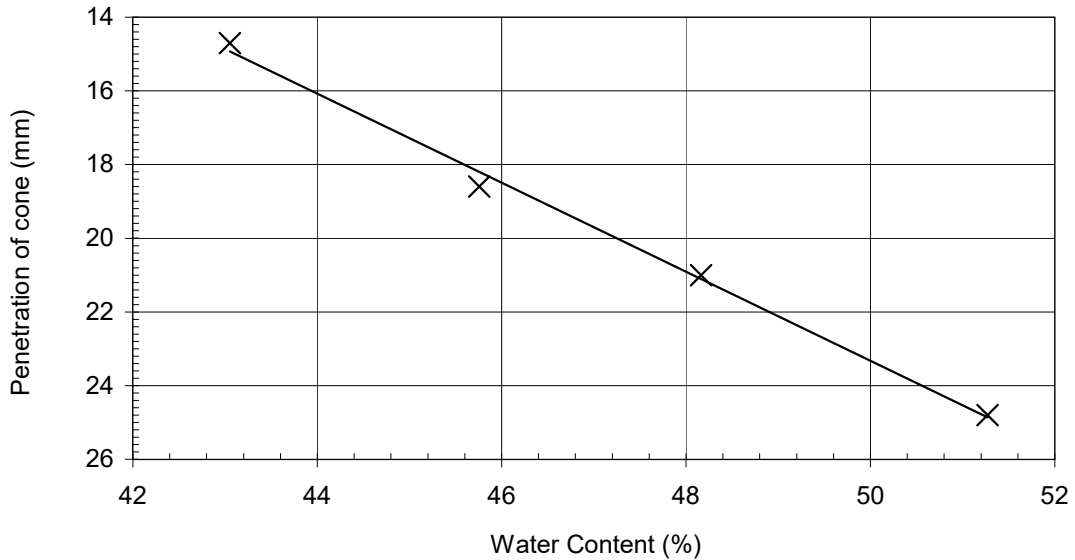
SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No.</b>	<b>B26845</b>
Hole ID	TP97
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
AK	CD 05/08/2021

**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





SITE INVESTIGATION AND LABORATORY SERVICES

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

Contract No **B26845**

Hole TP102

Client Applied Geology Limited

Sample Ref

Depth (m) 0.80-0.90

Engineer

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

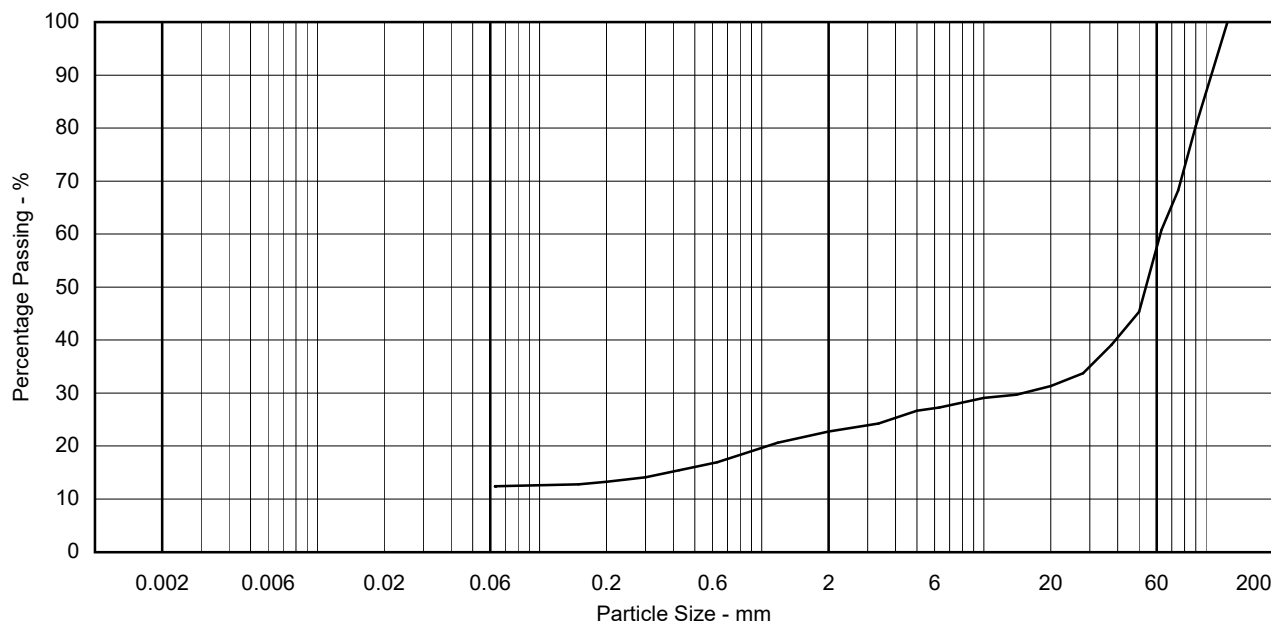
Non Engineering Description
Brown sandy clayey fine to coarse GRAVEL with cobbles and organic matter

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 <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
Silt			Sand			Gravel				



Originator	Checked & Approved
TP	CD 05/08/2021

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







SITE INVESTIGATION AND LABORATORY SERVICES

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

Contract No **B26845**

Hole TP108

Client Applied Geology Limited

Sample Ref

Engineer

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

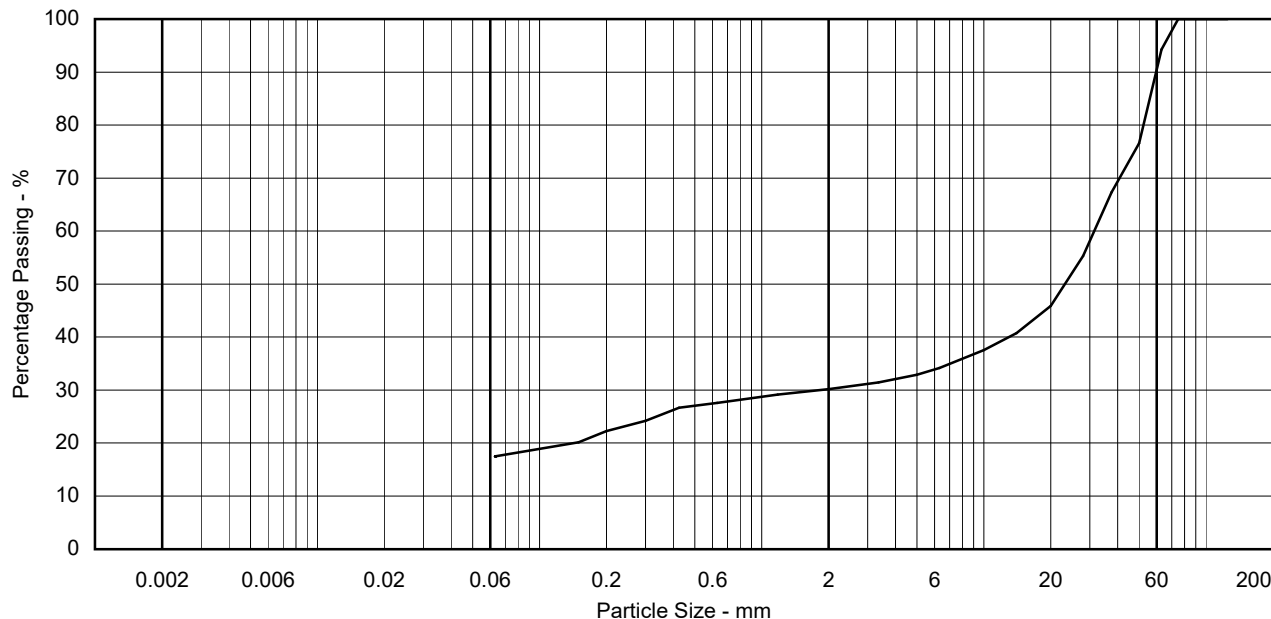
Non Engineering Description
Brown sandy clayey fine to coarse GRAVEL with cobbles

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 <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
Silt			Sand			Gravel				



Originator	Checked & Approved
TP	CD 05/08/2021

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





SITE INVESTIGATION AND LABORATORY SERVICES

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

Contract No **B26845**

Hole TP125

Client Applied Geology Limited

Sample Ref

Depth (m) 0.90-1.00

Engineer

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 - %**

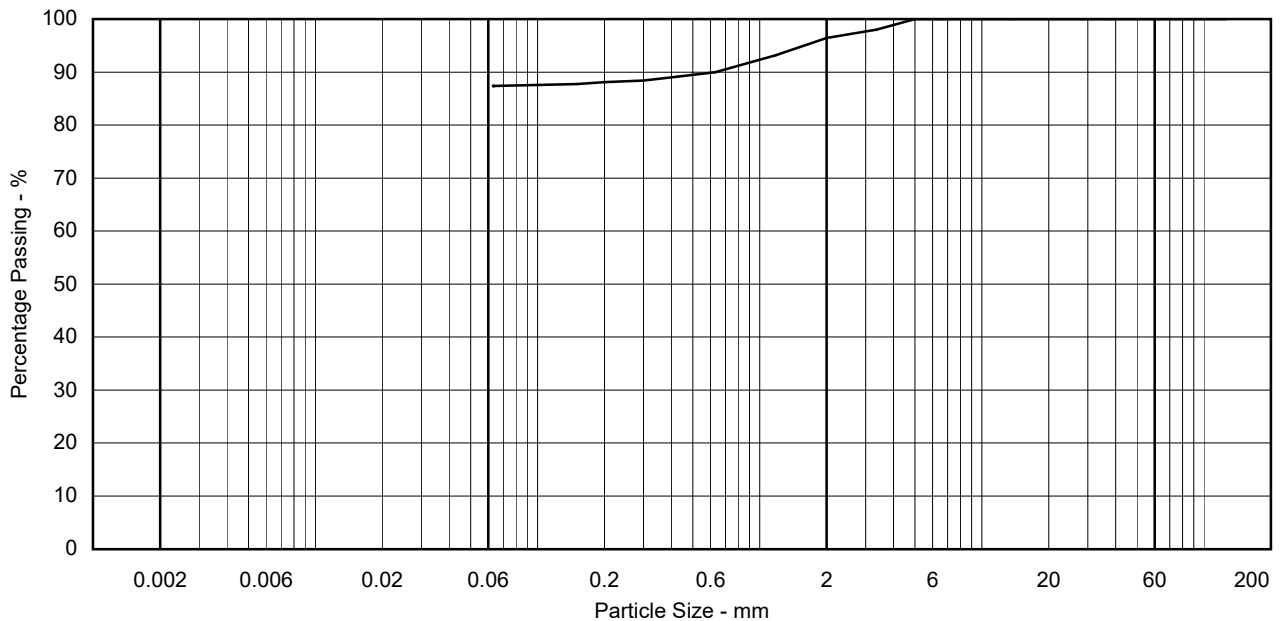
Cobbles	0.0
Gravel	3.6
Sand	9.1
Silt & Clay	87.4

**Particle Diameter - mm**

D100	5.0
D60	
D10	
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

**Notes**


Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved
TP	CD 05/08/2021

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



 SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	Contract No	<b>B26845</b>
	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

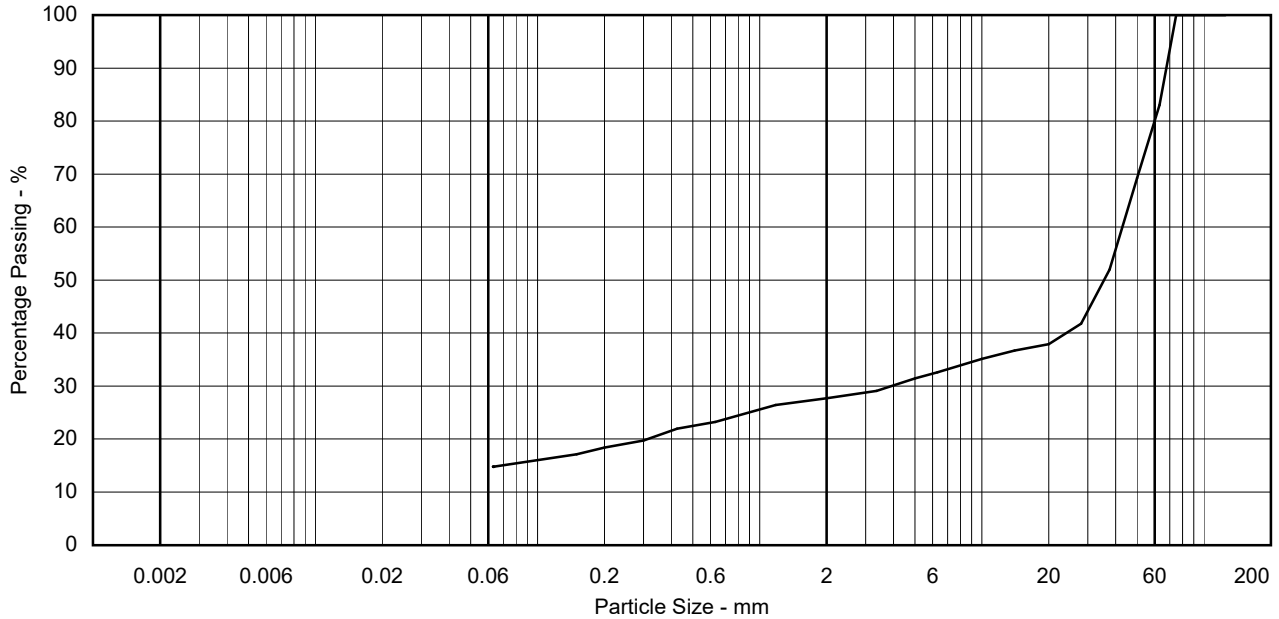
**Particle Diameter - mm**


D100	75
D60	43
D10	
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

**Notes**

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved	<b>PARTICLE SIZE DISTRIBUTION</b> BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method	
TP	 05/08/2021		

**TERRA TEK**

SITE INVESTIGATION AND LABORATORY SERVICES

Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40,  
ARDLEYContract 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

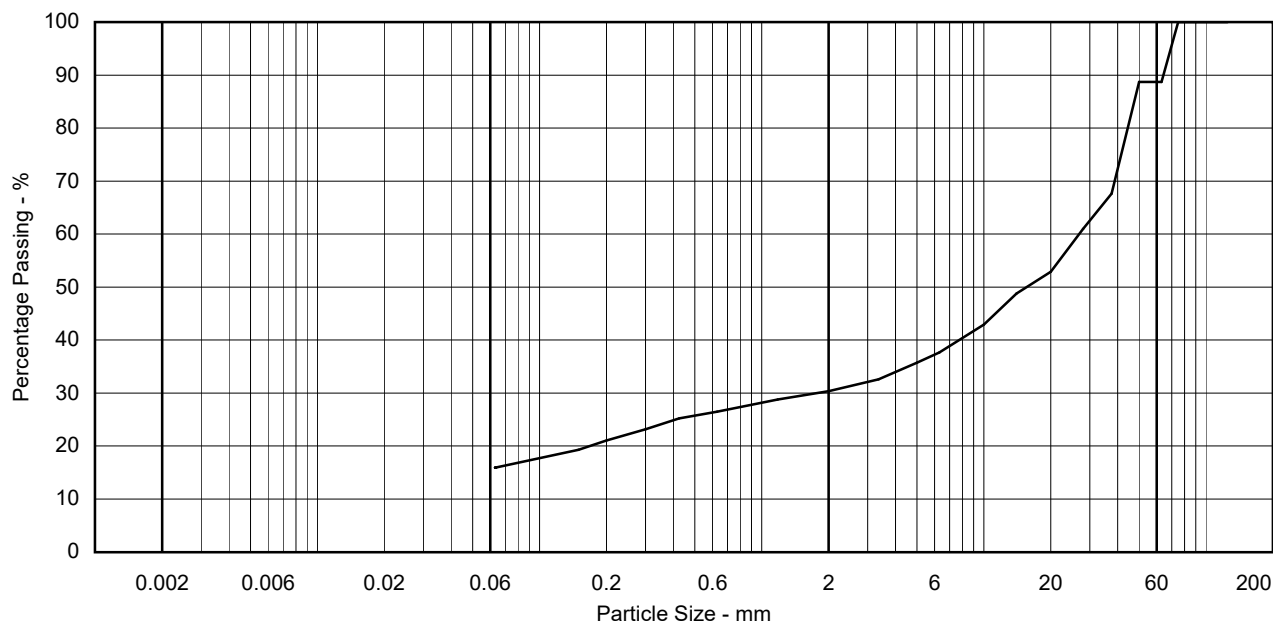
## Particle Diameter - mm

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator

Checked &  
Approved

TP

CD  
05/08/2021

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



Sheet 1 of 1

**TERRA TEK**

SITE INVESTIGATION AND LABORATORY SERVICES

Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40,  
ARDLEYContract 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

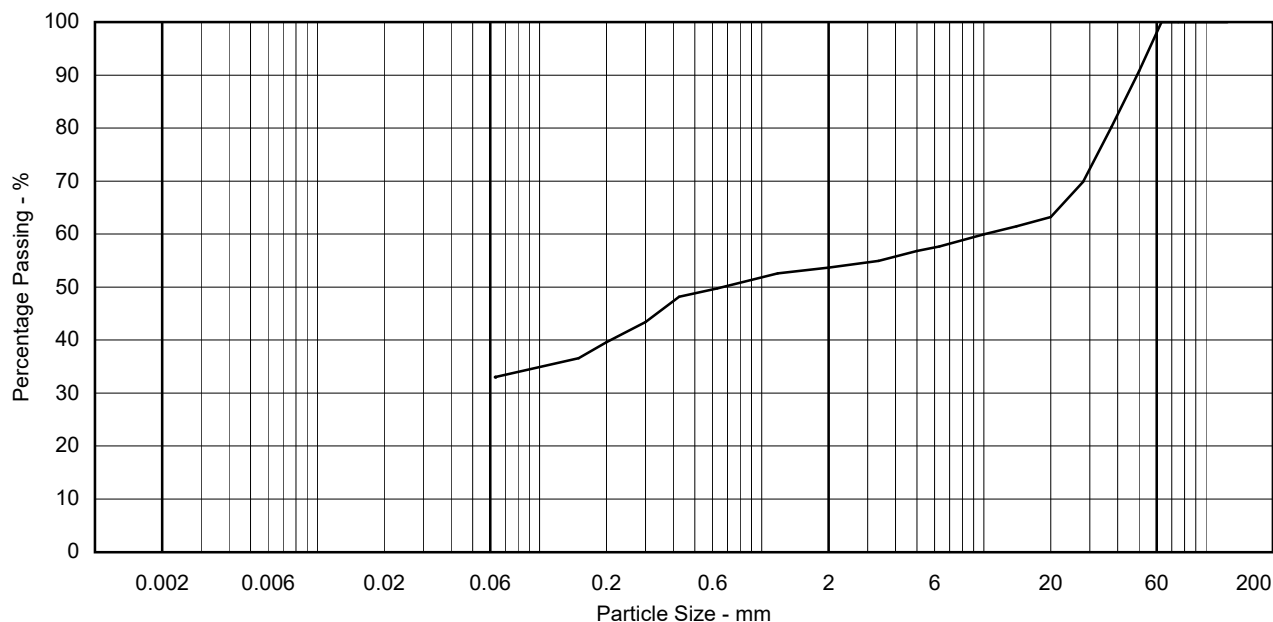
## Particle Diameter - mm

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			




Originator

Checked &  
Approved

TP

CD  
05/08/2021**PARTICLE SIZE DISTRIBUTION**  
BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method**TK**

Sheet 1 of 1

 SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	Contract No	<b>B26845</b>
	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

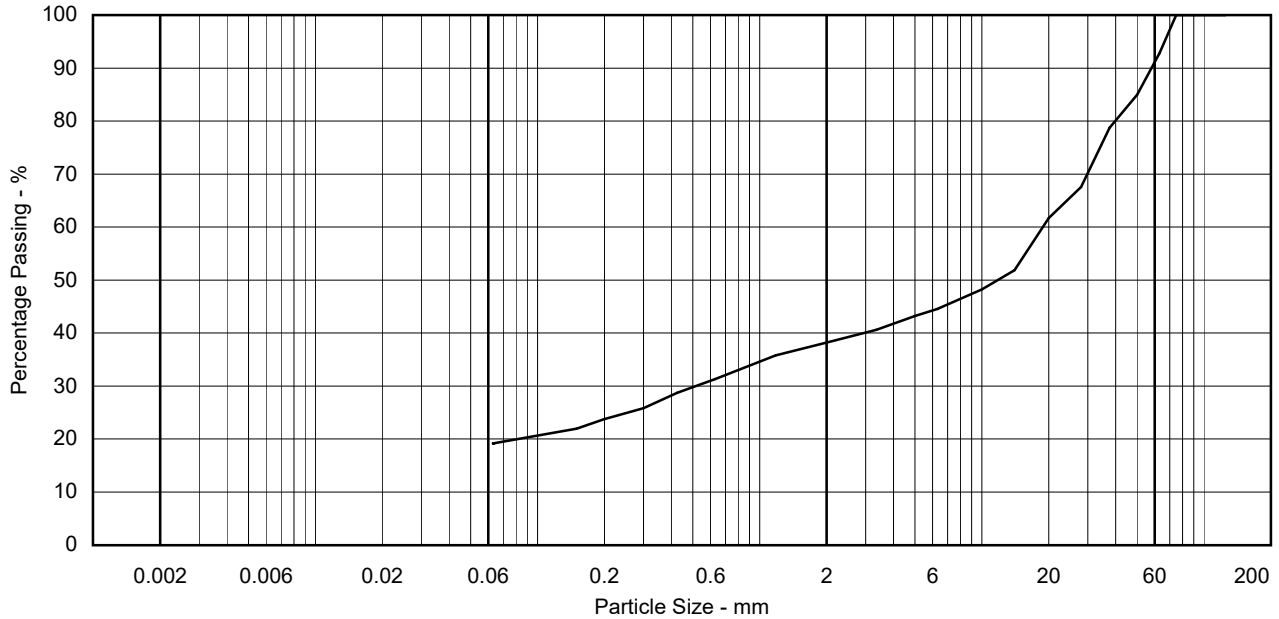
Non Engineering Description
Brown sandy clayey fine to coarse GRAVEL with cobbles



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 <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

Notes

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved	<b>PARTICLE SIZE DISTRIBUTION</b> BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method	
TP	 05/08/2021		

 SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	Contract No	<b>B26845</b>
	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 - %**

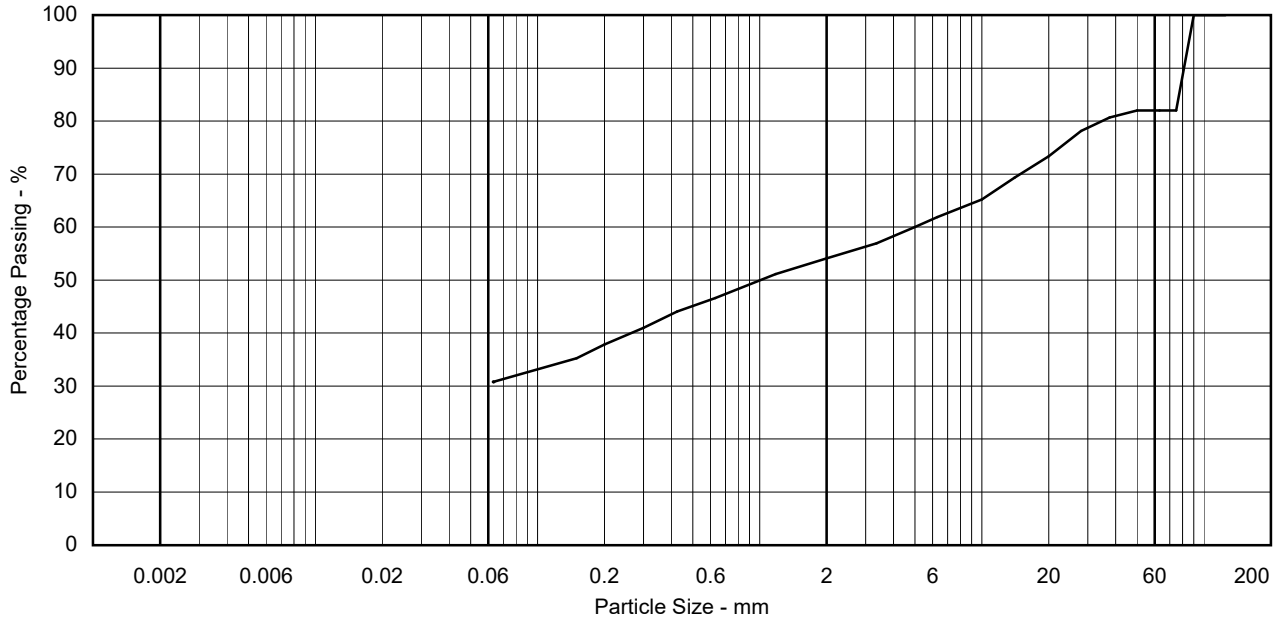
Cobbles	18.0
Gravel	27.9
Sand	23.3
Silt & Clay	30.8


**Particle Diameter - mm**

D100	90
D60	5.0
D10	
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

**Notes**

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved	<p align="center"><b>PARTICLE SIZE DISTRIBUTION</b></p> <p align="center">BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method</p>	
TP	 05/08/2021		



SITE INVESTIGATION AND LABORATORY SERVICES

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

Contract No **B26845**

Client Applied Geology Limited

Hole TP2  
 Sample Ref  
 Depth (m) 0.90-0.90  
 Sample Type B

Engineer

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

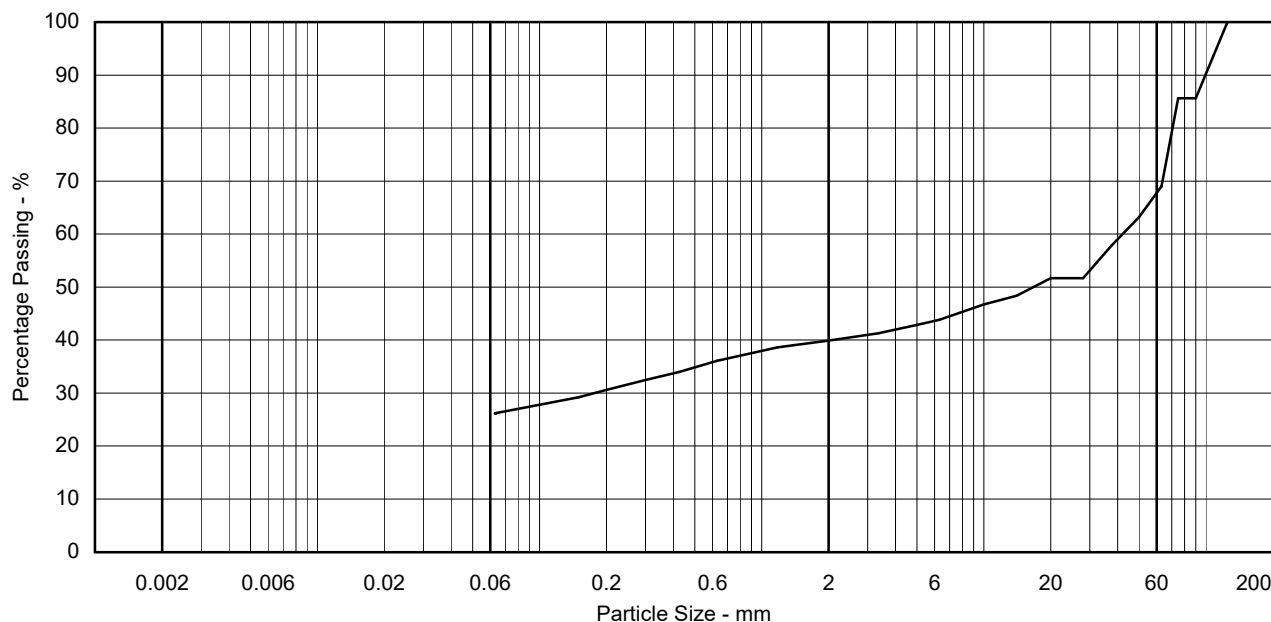
**Particle Diameter - mm**

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

**Notes**

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved
TP	CD 05/08/2021

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







SITE INVESTIGATION AND LABORATORY SERVICES

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

Contract No **B26845**

Client Applied Geology Limited

Hole TP28  
 Sample Ref  
 Depth (m) 0.50-0.60  
 Sample Type B

Engineer

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

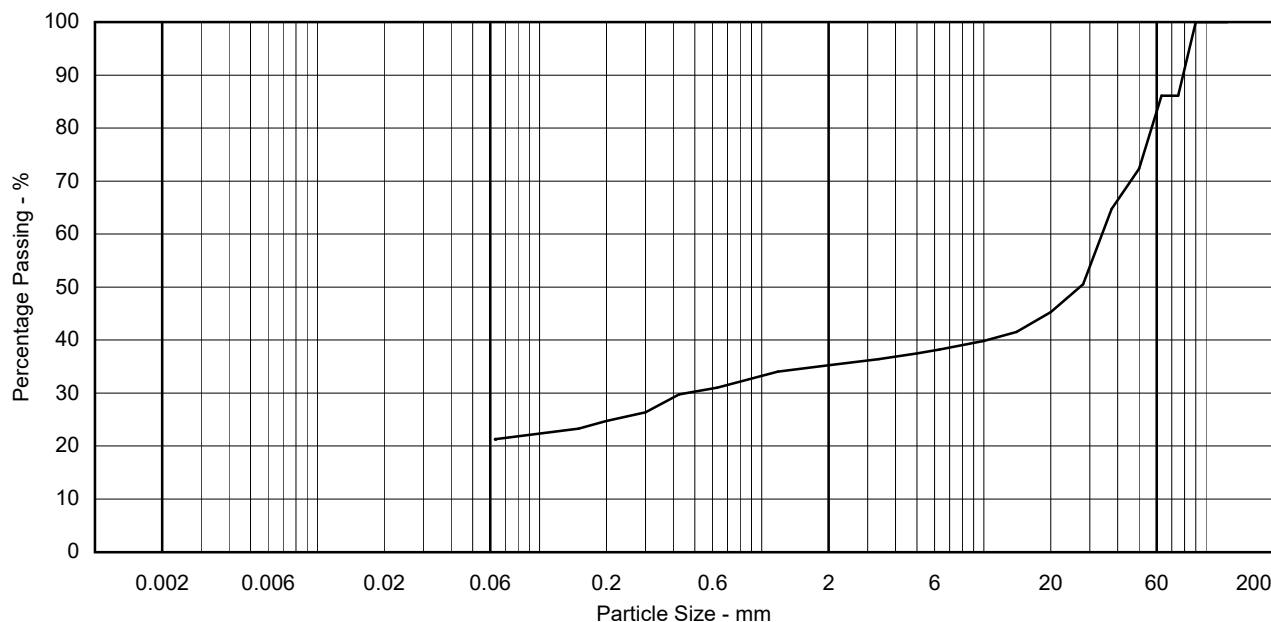
Non Engineering Description
Brown sandy very clayey fine to coarse GRAVEL with cobbles

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 <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
Silt			Sand			Gravel				



Originator	Checked & Approved
TP	CD 05/08/2021

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





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

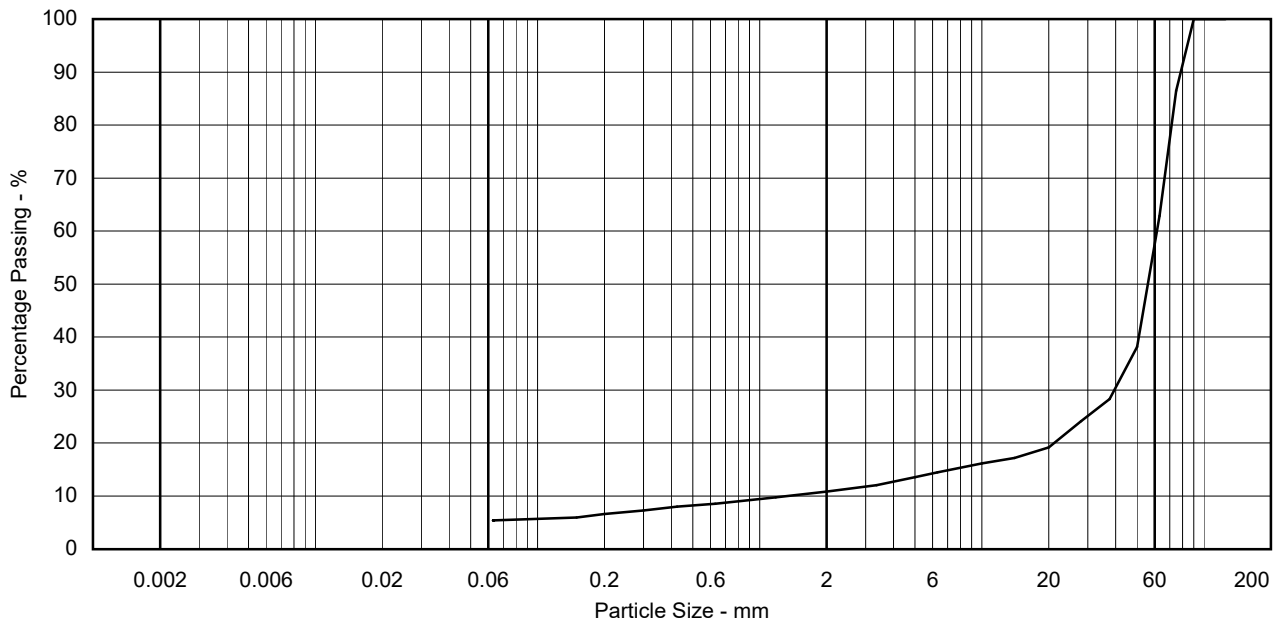
Non Engineering Description
Brown sandy clayey fine to coarse GRAVEL with cobbles

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 <small>(SHW series 600, Table 6/1, footnote 5)</small>	46.9

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved
TP	CD 05/08/2021

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





SITE INVESTIGATION AND LABORATORY SERVICES

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

Contract No **B26845**

Client Applied Geology Limited

Hole TP44  
 Sample Ref  
 Depth (m) 0.40-0.50  
 Sample Type B

Engineer

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

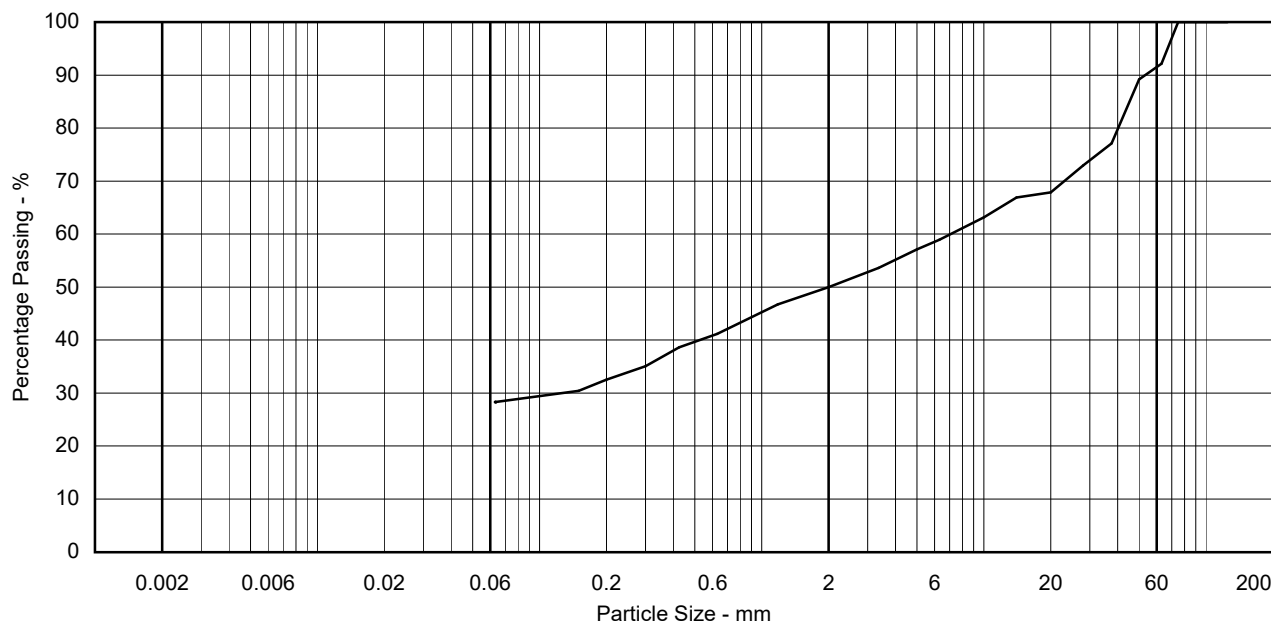
**Particle Diameter - mm**

D100	75
D60	7.1
D10	
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

**Notes**

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved
TP	CD 05/08/2021

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





SITE INVESTIGATION AND LABORATORY SERVICES

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

Contract No **B26845**

Client Applied Geology Limited

Hole TP48  
 Sample Ref  
 Depth (m) 0.50-0.60  
 Sample Type D

Engineer

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

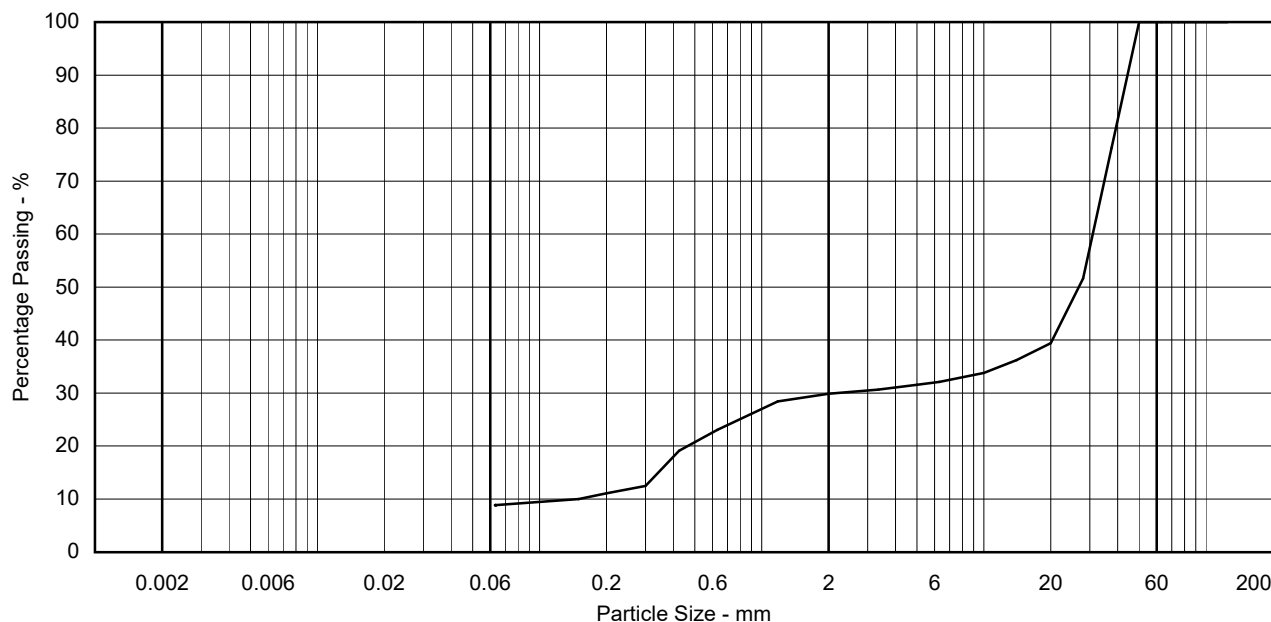
Non Engineering Description
Brown clayey very sandy fine to coarse GRAVEL

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 <small>(SHW series 600, Table 6/1, footnote 5)</small>	206.7

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
Silt			Sand			Gravel				



Originator	Checked & Approved
TP	CD 05/08/2021

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





SITE INVESTIGATION AND LABORATORY SERVICES

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

Contract No **B26845**

Client Applied Geology Limited

Hole TP60  
 Sample Ref  
 Depth (m) 0.70-0.80  
 Sample Type B

Engineer

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 - %**

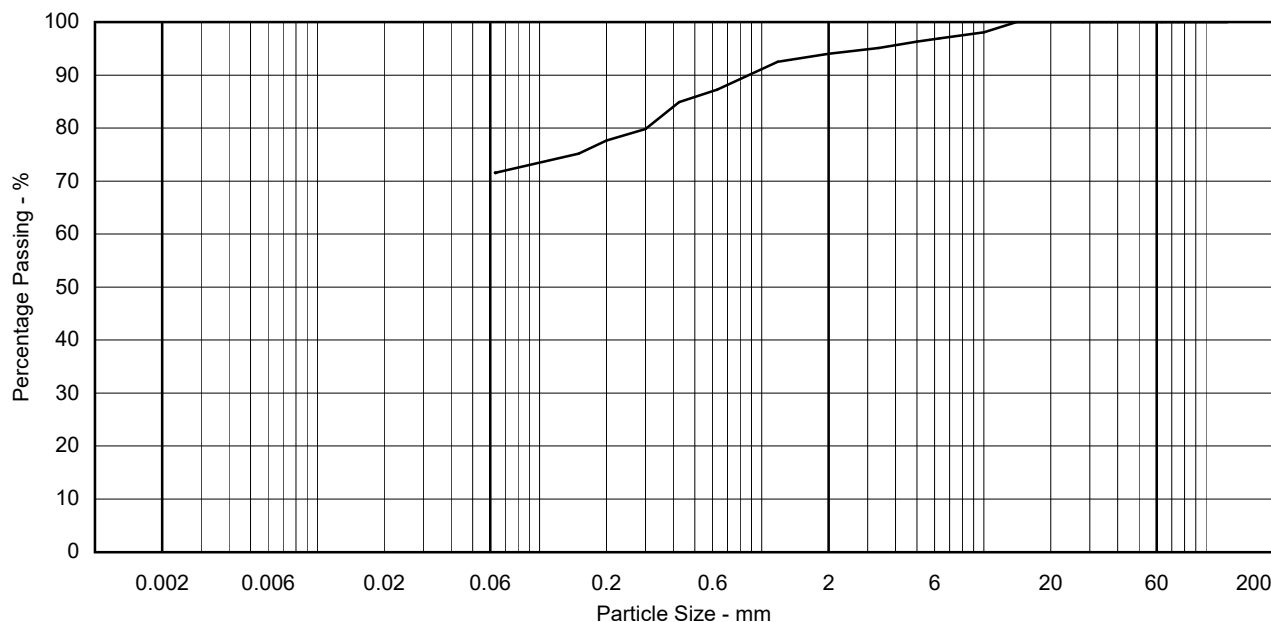
Cobbles	0.0
Gravel	6.0
Sand	22.4
Silt & Clay	71.5

**Particle Diameter - mm**

D100	14
D60	
D10	
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

**Notes**

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved
TP	CD 05/08/2021

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



**TERRA TEK**

SITE INVESTIGATION AND LABORATORY SERVICES

Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40,  
ARDLEYContract No **B26845**

Client Applied Geology Limited

Hole TP62  
Sample Ref  
Depth (m) 0.50-0.50  
Sample Type B

Engineer

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

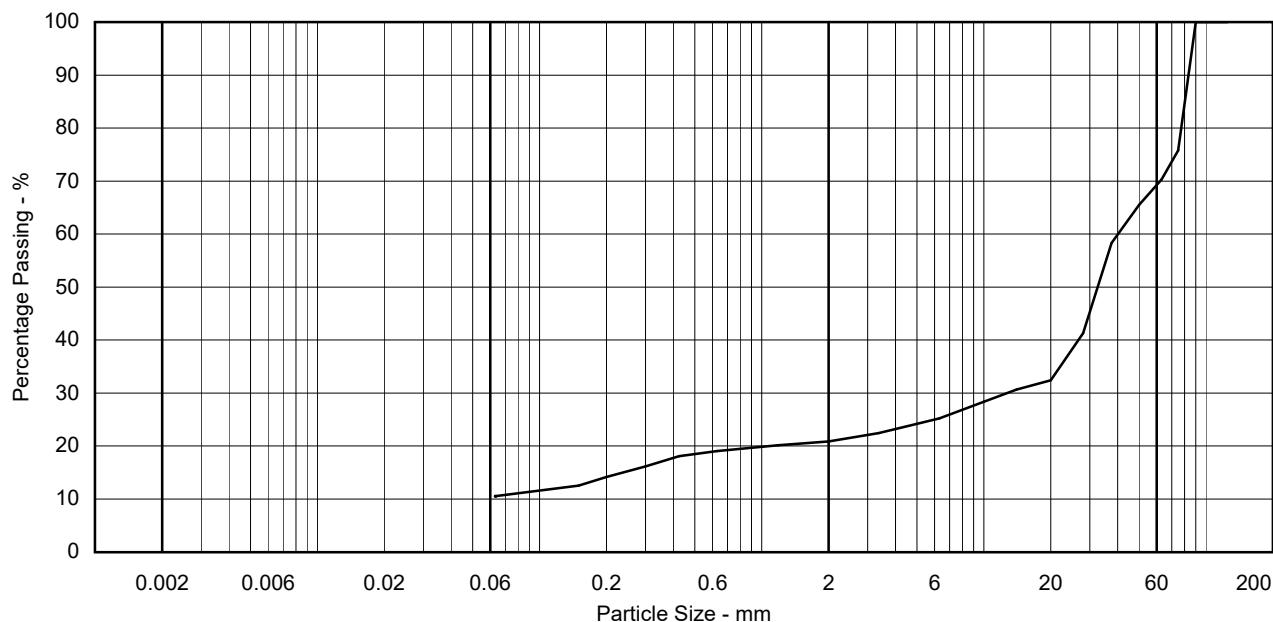
## Particle Diameter - mm

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator

Checked &  
Approved

TP

CD  
05/08/2021**PARTICLE SIZE DISTRIBUTION**  
BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method**TK**

Sheet 1 of 1



SITE INVESTIGATION AND LABORATORY SERVICES

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

Contract No **B26845**

Client Applied Geology Limited

Hole TP75  
 Sample Ref  
 Depth (m) 0.80-0.80  
 Sample Type B

Engineer

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

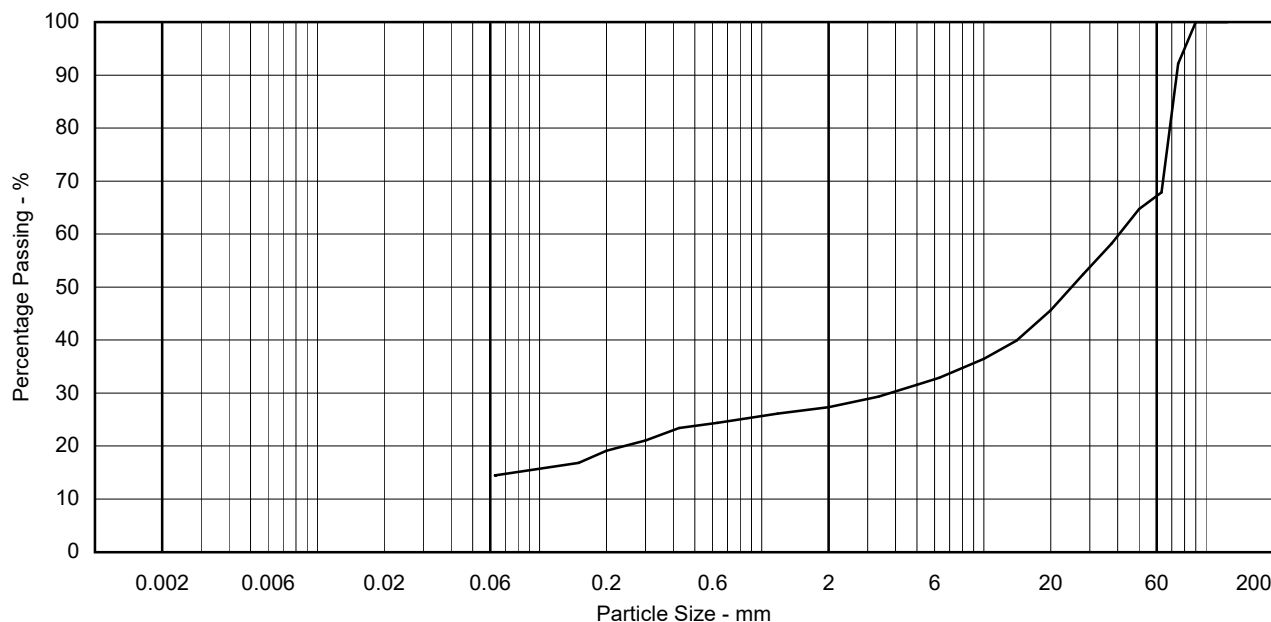
Non Engineering Description
Brown sandy clayey fine to coarse GRAVEL with cobbles

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 <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

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


Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
Silt			Sand			Gravel				



Originator	Checked & Approved
TP	CD 05/08/2021

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



 SITE INVESTIGATION AND LABORATORY SERVICES	Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY	Contract No	<b>B26845</b>
	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 - %**

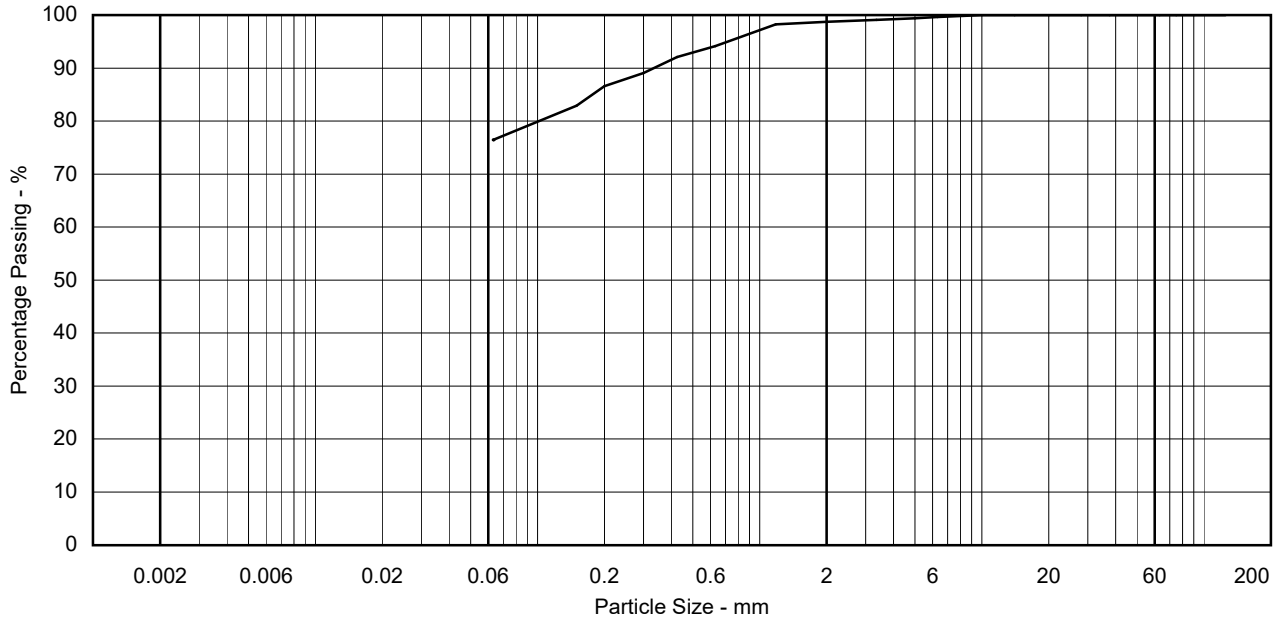
Cobbles	0.0
Gravel	1.2
Sand	22.3
Silt & Clay	76.5



**Particle Diameter - mm**

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

**Notes**

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved	<b>PARTICLE SIZE DISTRIBUTION</b> BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method	
TP	 05/08/2021		





SITE INVESTIGATION AND LABORATORY SERVICES

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

Contract No **B26845**

Client Applied Geology Limited

Hole TP89  
 Sample Ref  
 Depth (m) 0.80-0.80  
 Sample Type B

Engineer

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

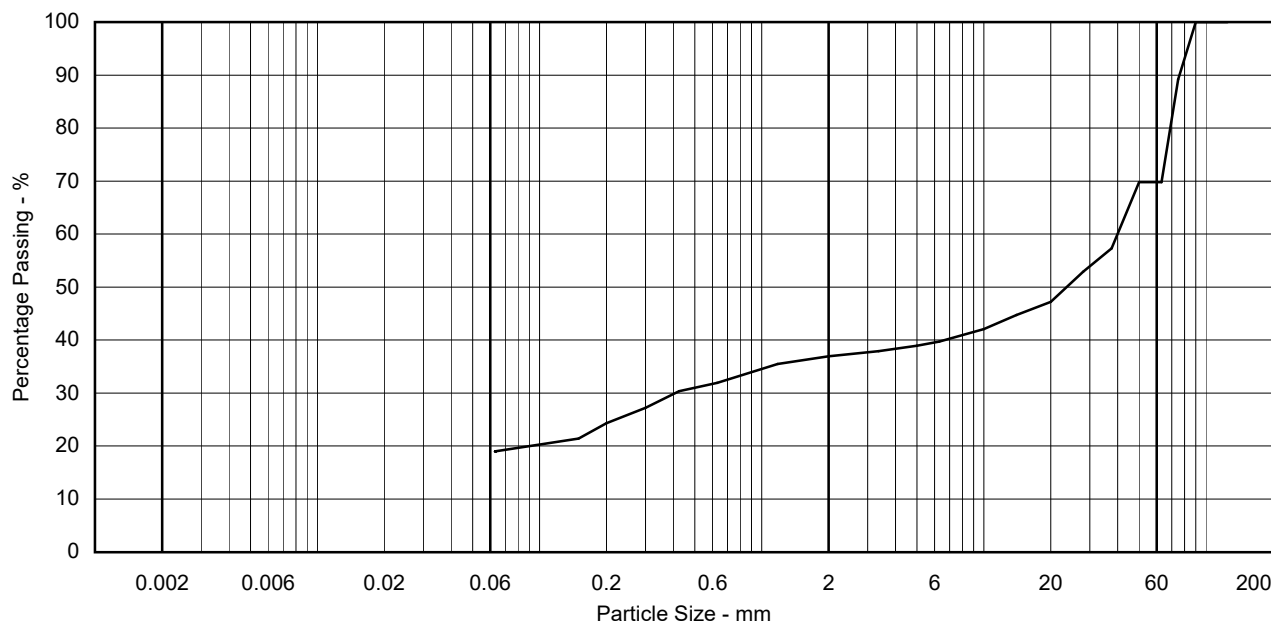
**Particle Diameter - mm**

D100	90
D60	40
D10	
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

**Notes**

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved
TP	CD 05/08/2021

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





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

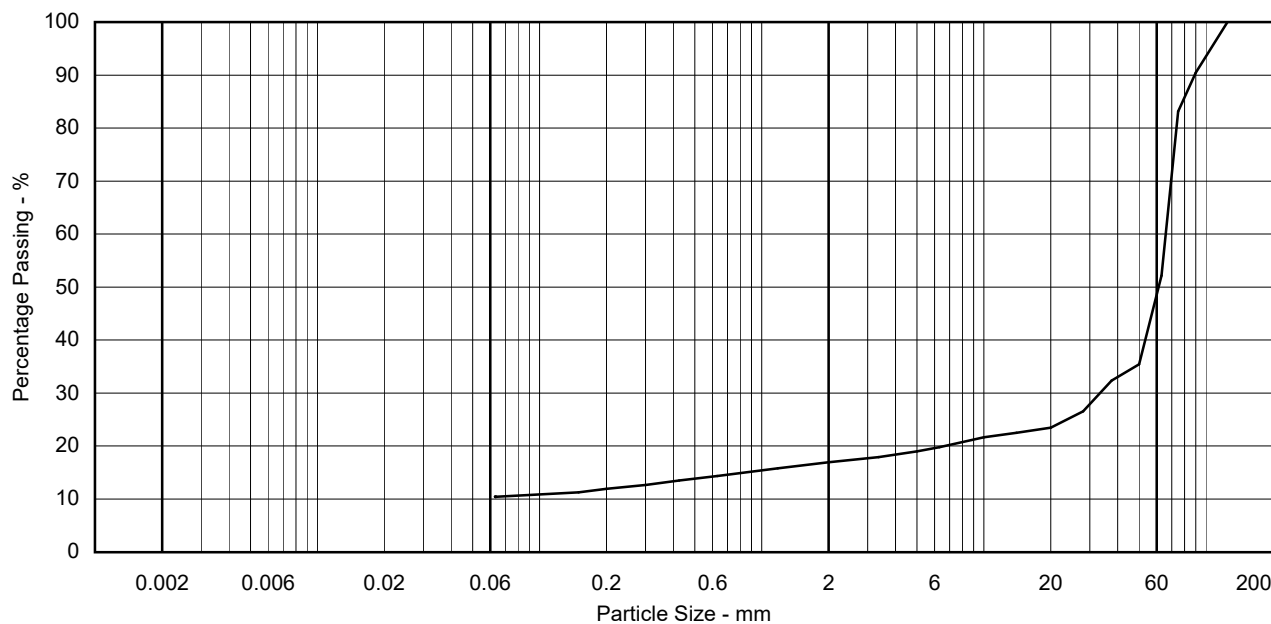
Non Engineering Description
COBBLES with brown sandy clayey fine to coarse gravel

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 <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

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

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
Silt			Sand			Gravel				



Originator	Checked & Approved
TP	CD 05/08/2021

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





SITE INVESTIGATION AND LABORATORY SERVICES

Site AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY  
 Client Applied Geology Limited  
 Engineer

Contract No **B26845**  
 Hole TP97  
 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

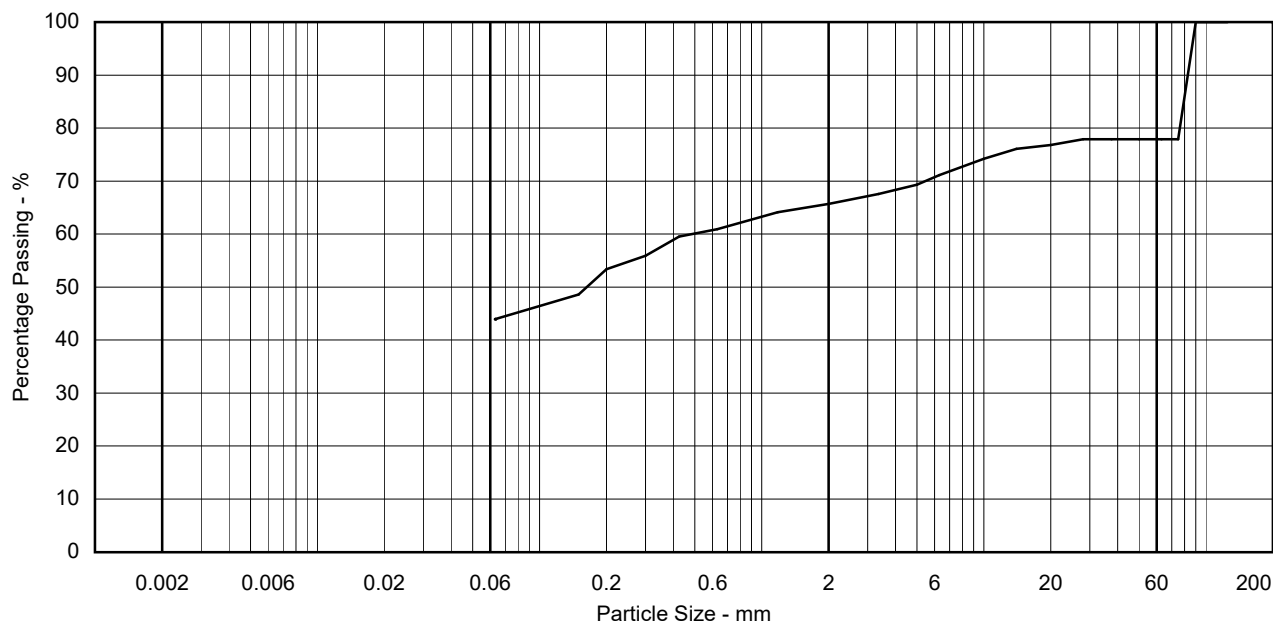
Non Engineering Description
Brown gravelly very sandy very silty CLAY with cobbles. Gravel is fine to coarse

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 <small>(SHW series 600, Table 6/1, footnote 5)</small>	N/A

Notes

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles



Originator	Checked & Approved
TP	CD 05/08/2021

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

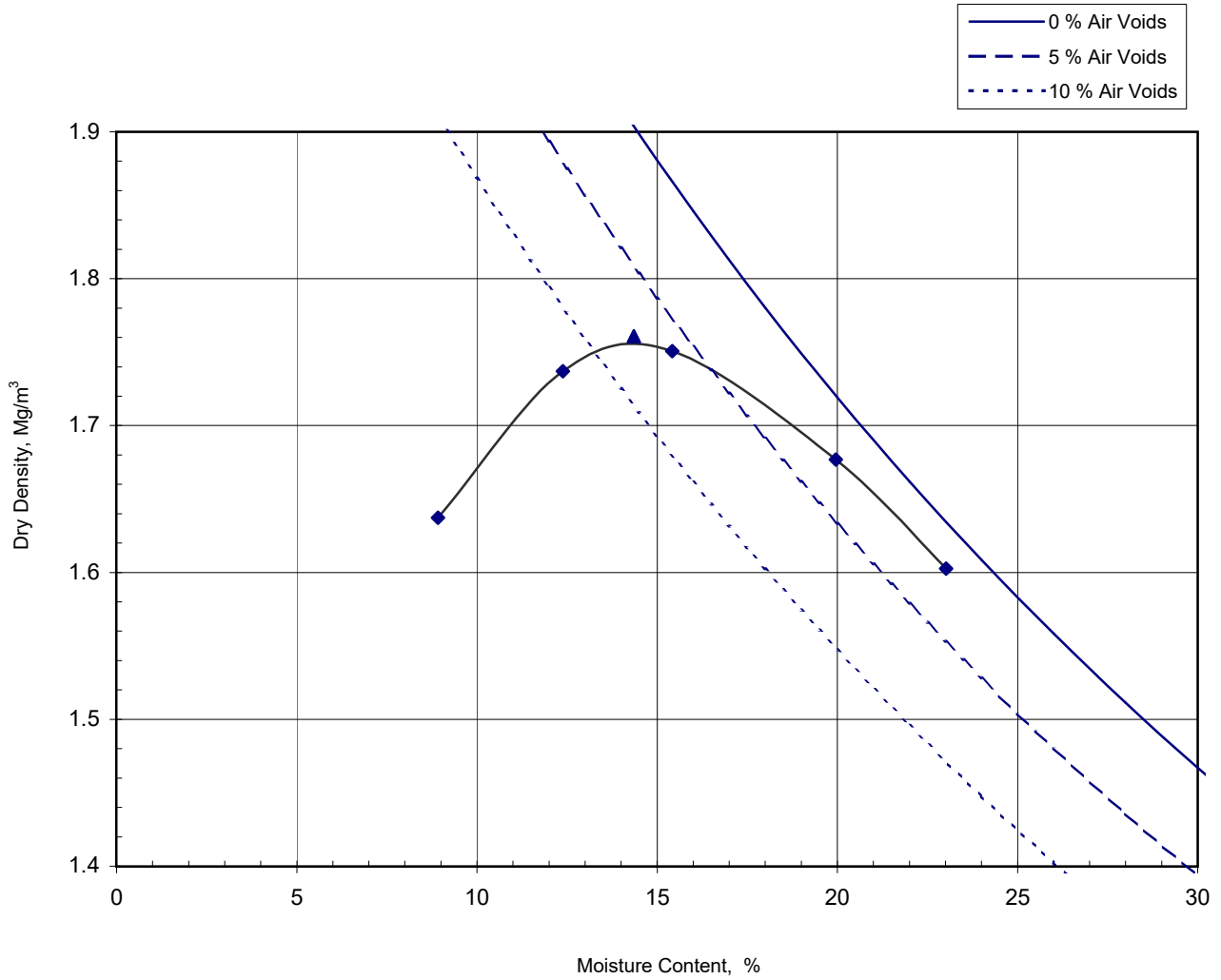




SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

Contract No	<b>B26845</b>
Hole	TP125
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	2.62
Natural Moisture Content	49
Maximum Dry Density	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



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

 Contract No **B26845**

Client Applied Geology Limited

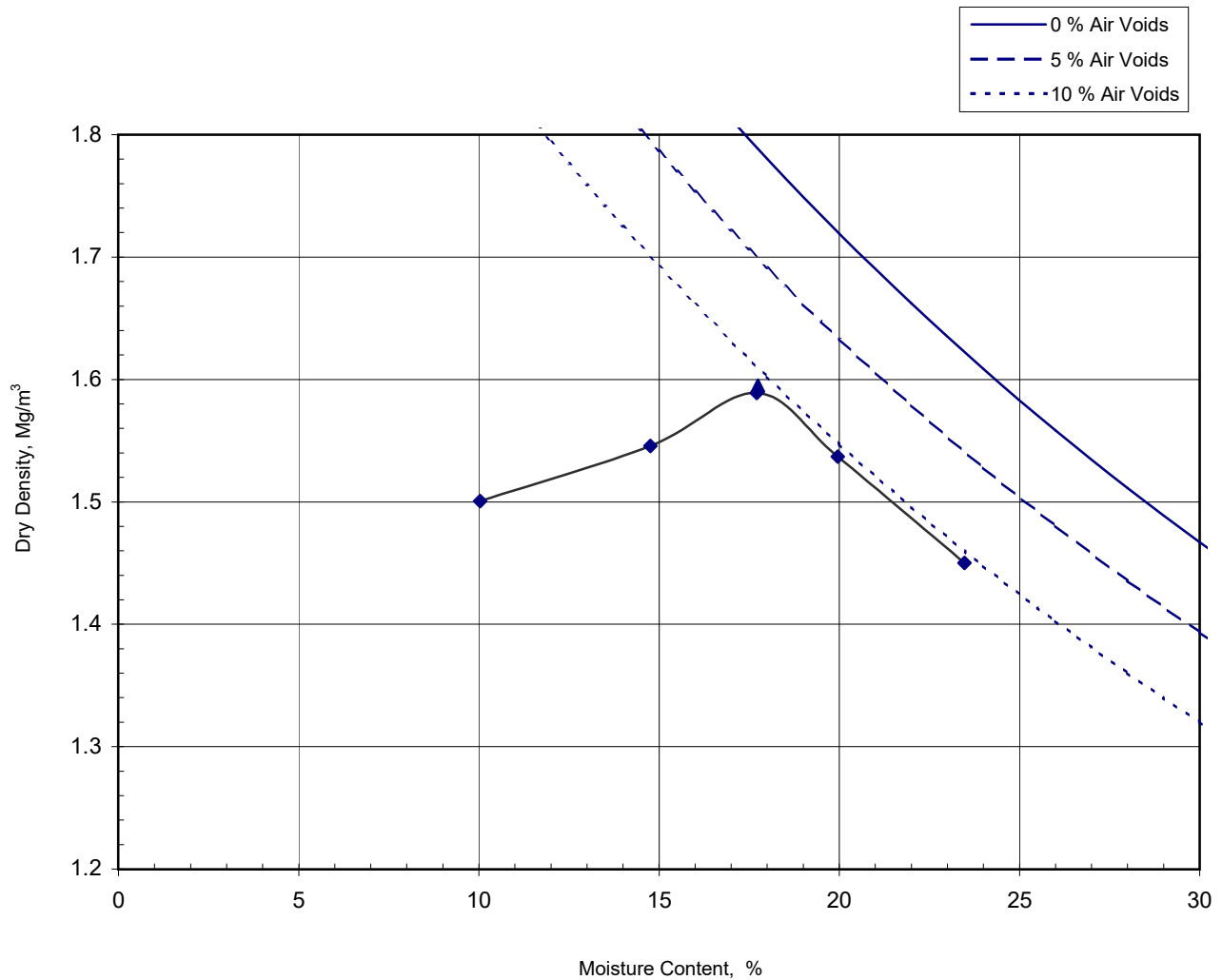
Hole TP125

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

**Moisture Content / Dry Density Relationship**

BS1377:Part 4:1990 Clause 3.3



SK

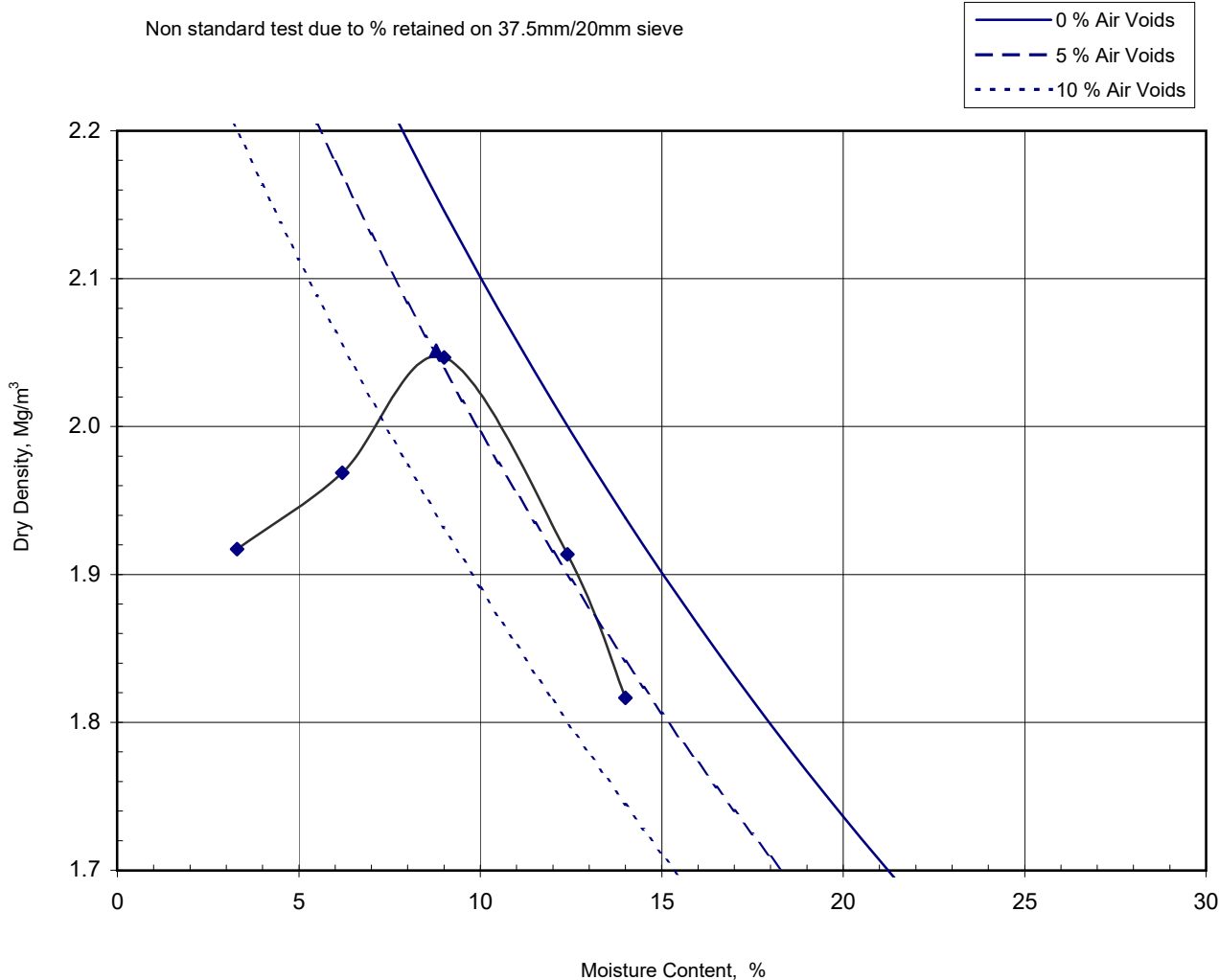
 CD  
 05/08/2021



SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

Contract No	<b>B26845</b>
Hole	TP138
Sample Ref	
Depth (m)	0.60-0.60
Sample Type	B



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

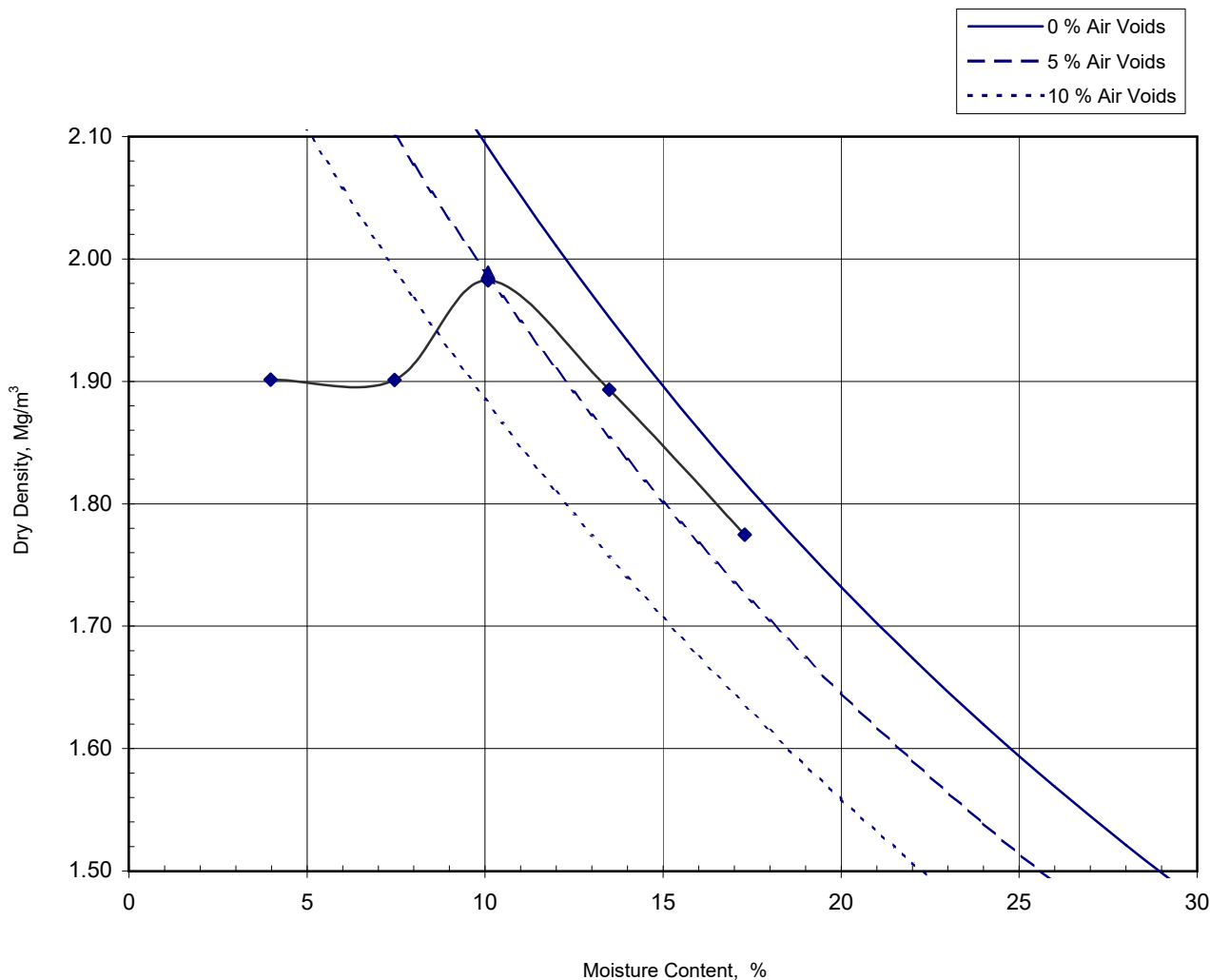




SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

Contract No	<b>B26845</b>
Hole	TP15
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	2.65 Mg/m³
Natural Moisture Content	16 %
Maximum Dry Density	1.99 Mg/m³
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

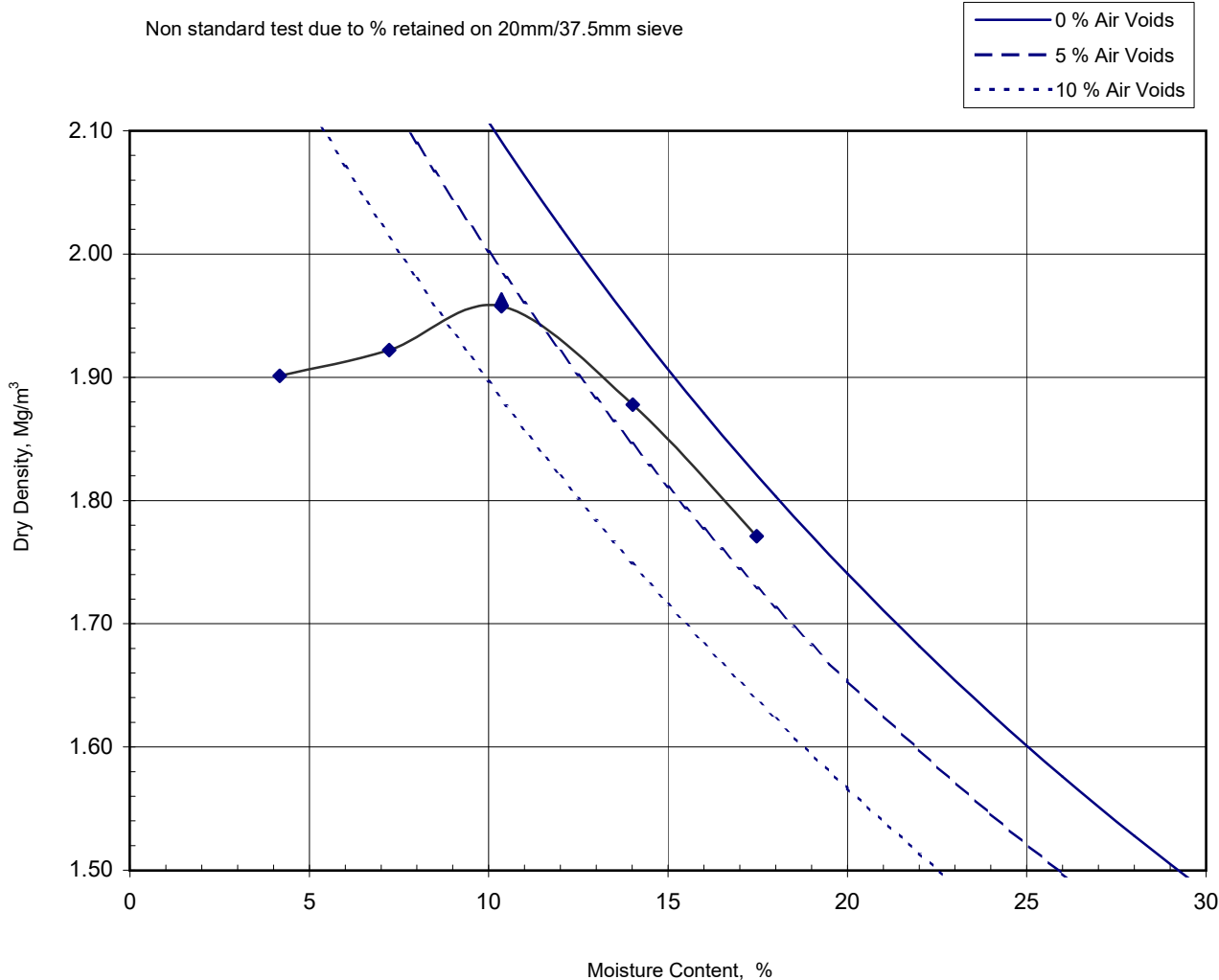




SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

Contract No	<b>B26845</b>
Hole	TP28
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	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



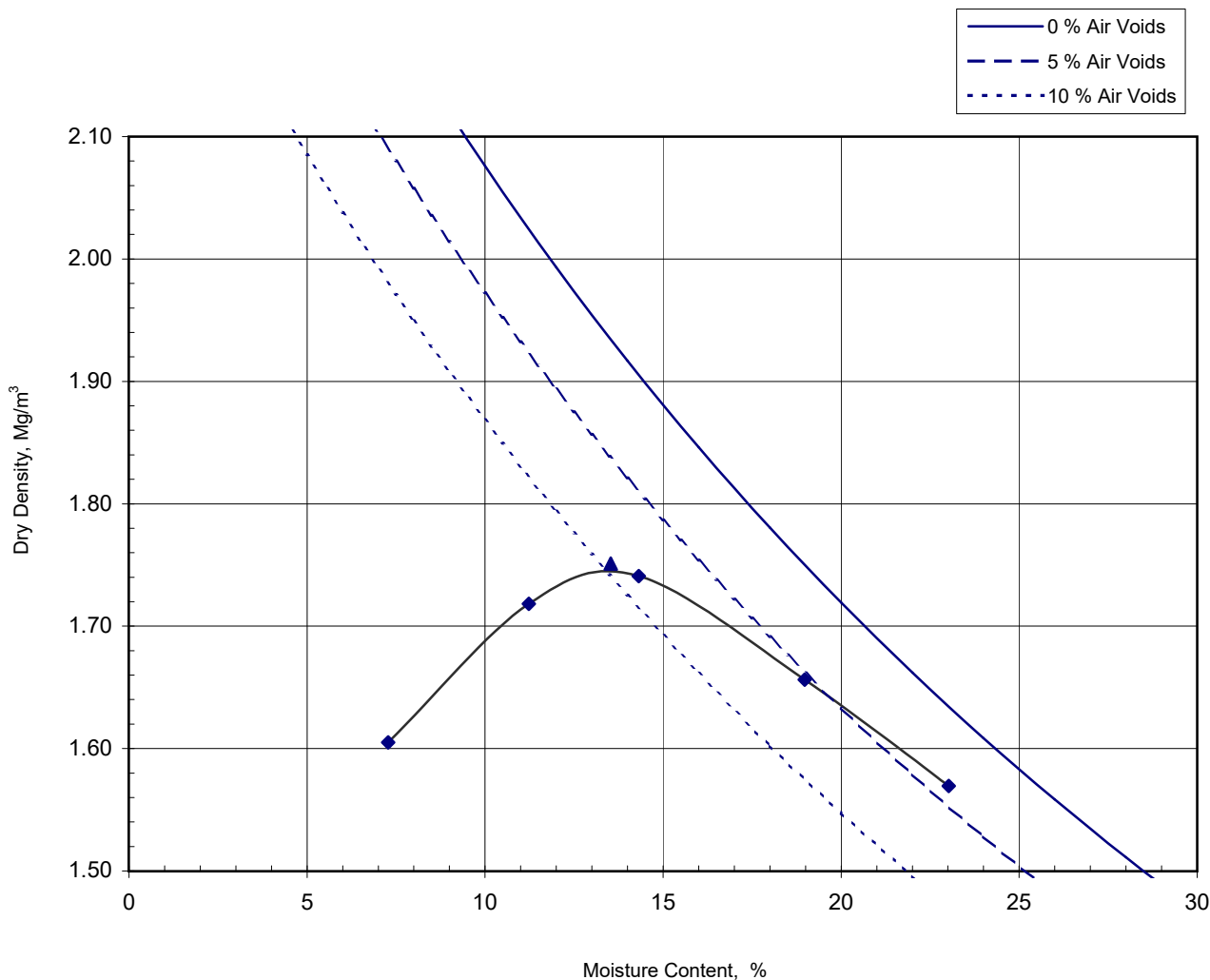




SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

Contract No	<b>B26845</b>
Hole	TP60
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/m <sup>3</sup>	2.62
Natural Moisture Content	%	37
Maximum Dry Density	Mg/m <sup>3</sup>	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



**TERRA TEK**

SITE INVESTIGATION AND LABORATORY SERVICES

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

Client Applied Geology Limited

Engineer

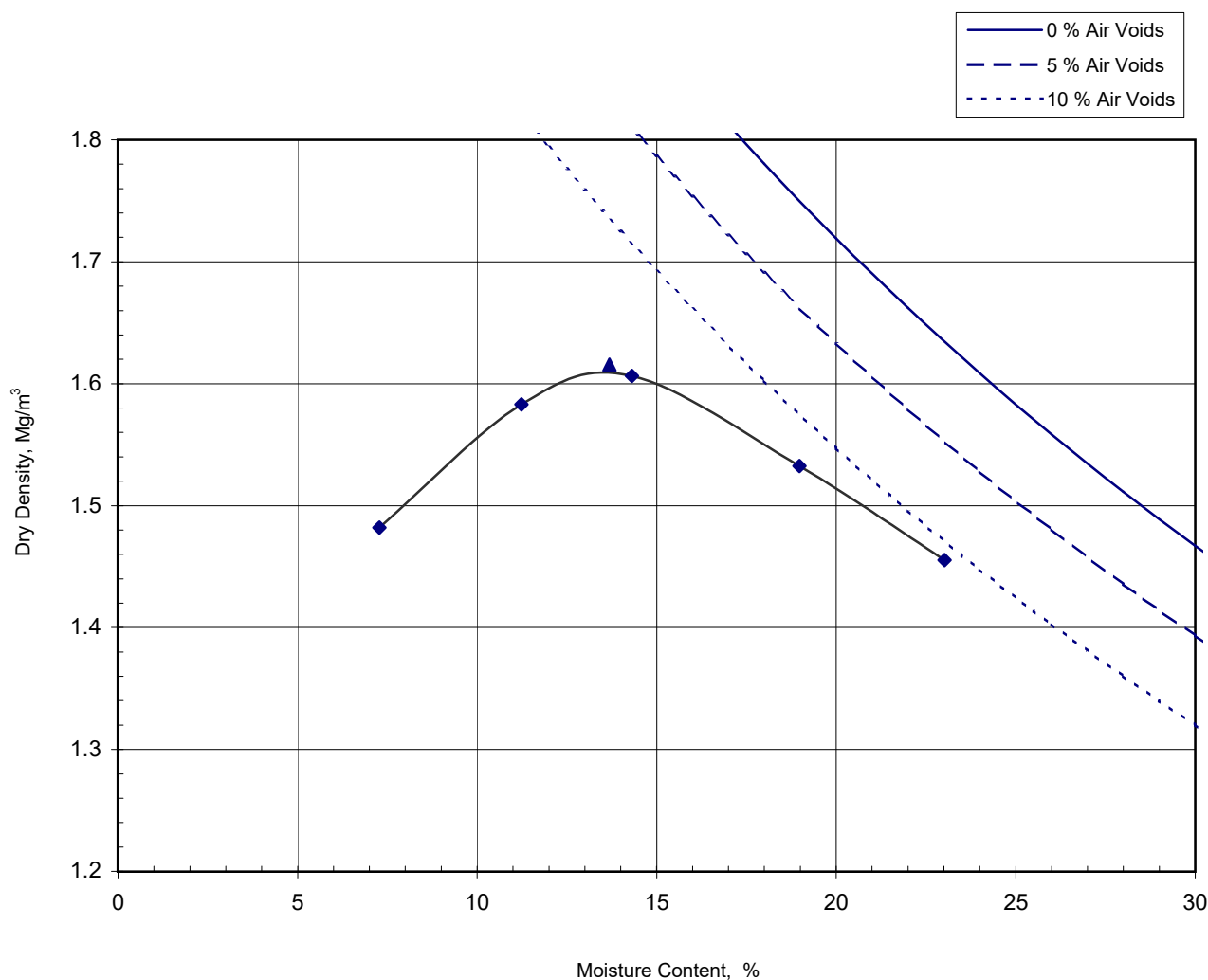
Contract No **B26845**

Hole TP60

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/m <sup>3</sup>	2.62
Natural Moisture Content	%	37
Maximum Dry Density	Mg/m <sup>3</sup>	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

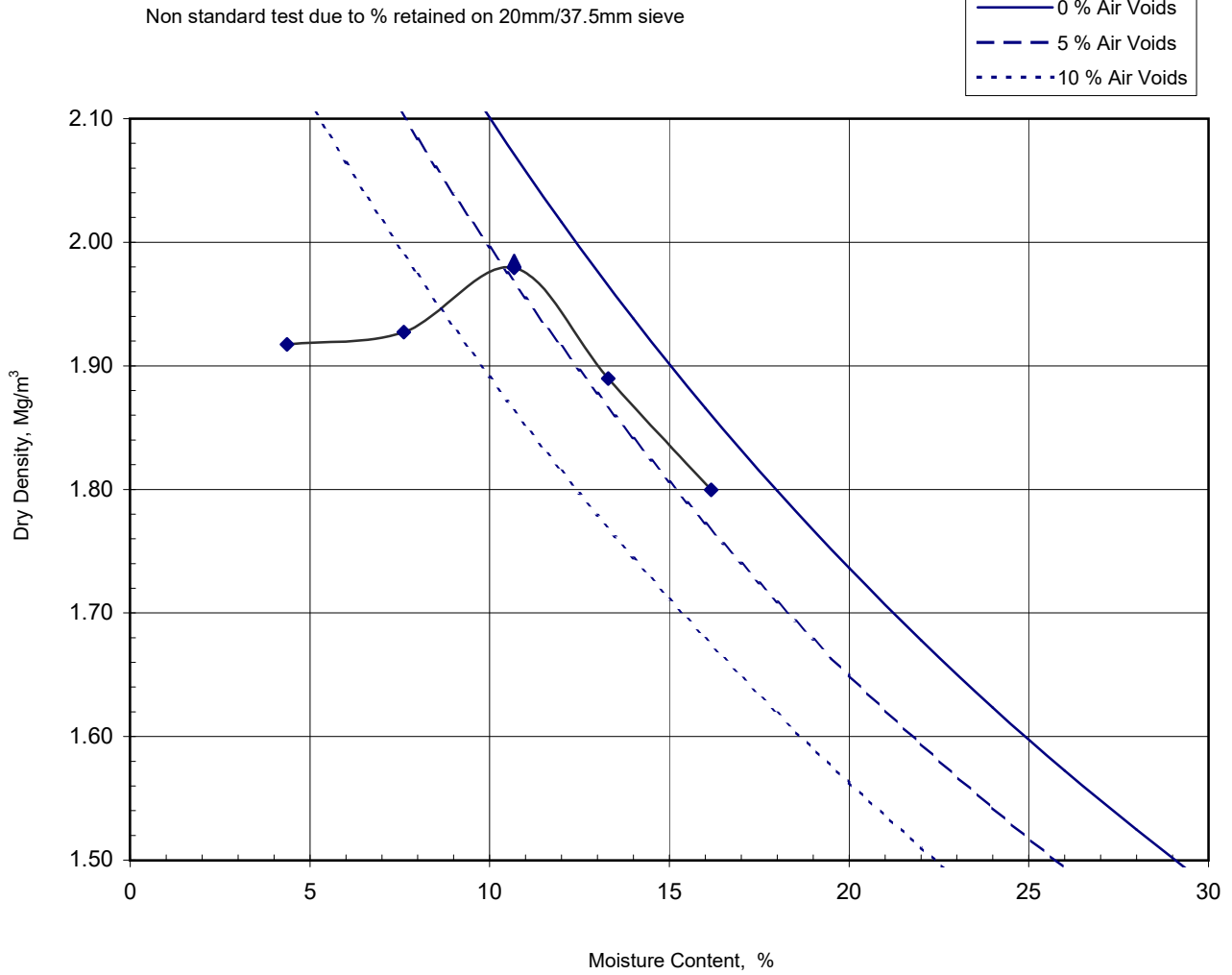




SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

Contract No	<b>B26845</b>
Hole	TP75
Sample Ref	
Depth (m)	0.80-0.80
Sample Type	B



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

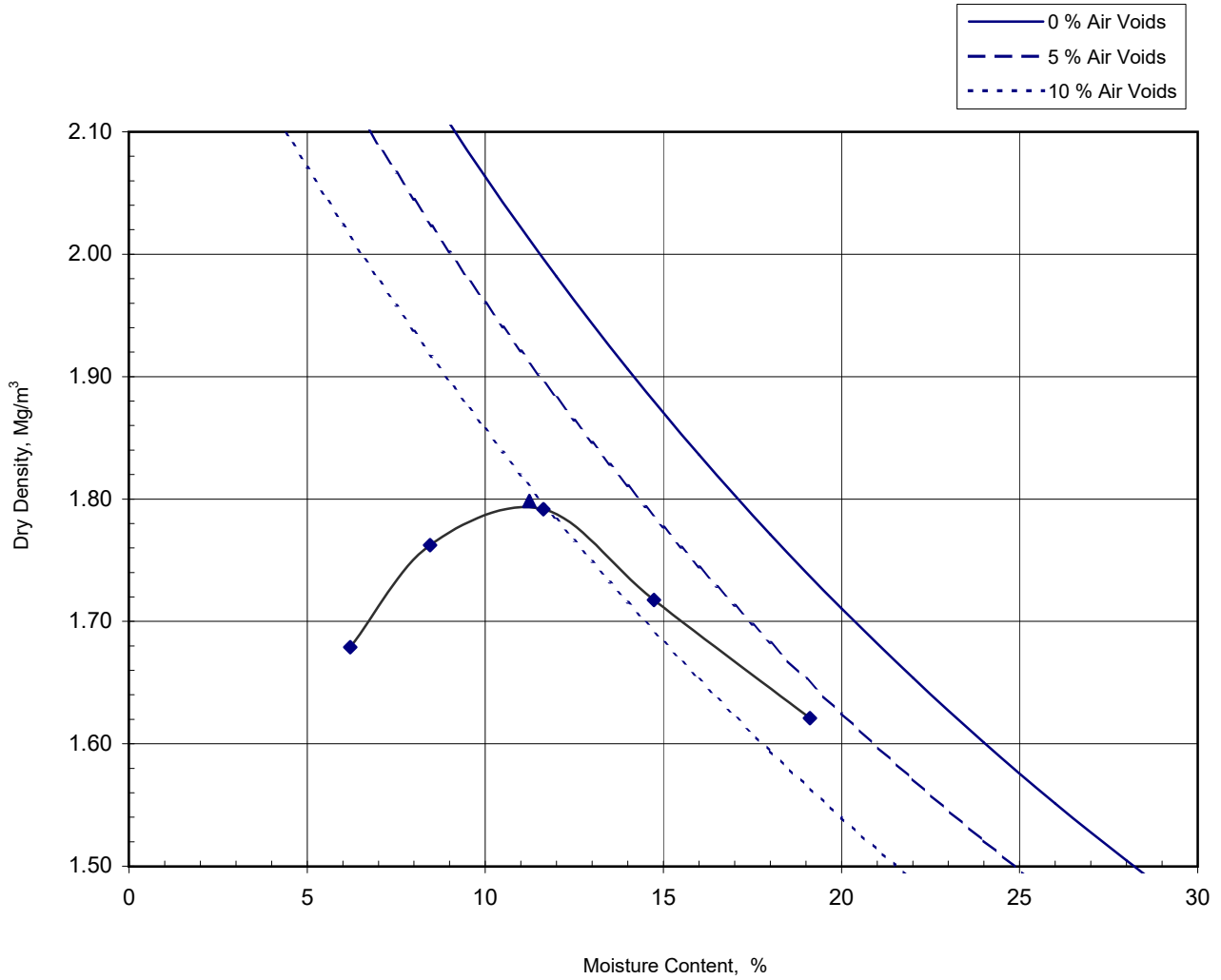




SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

Contract No	<b>B26845</b>
Hole	TP79
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/m <sup>3</sup>	2.60
Natural Moisture Content	%	20
Maximum Dry Density	Mg/m <sup>3</sup>	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



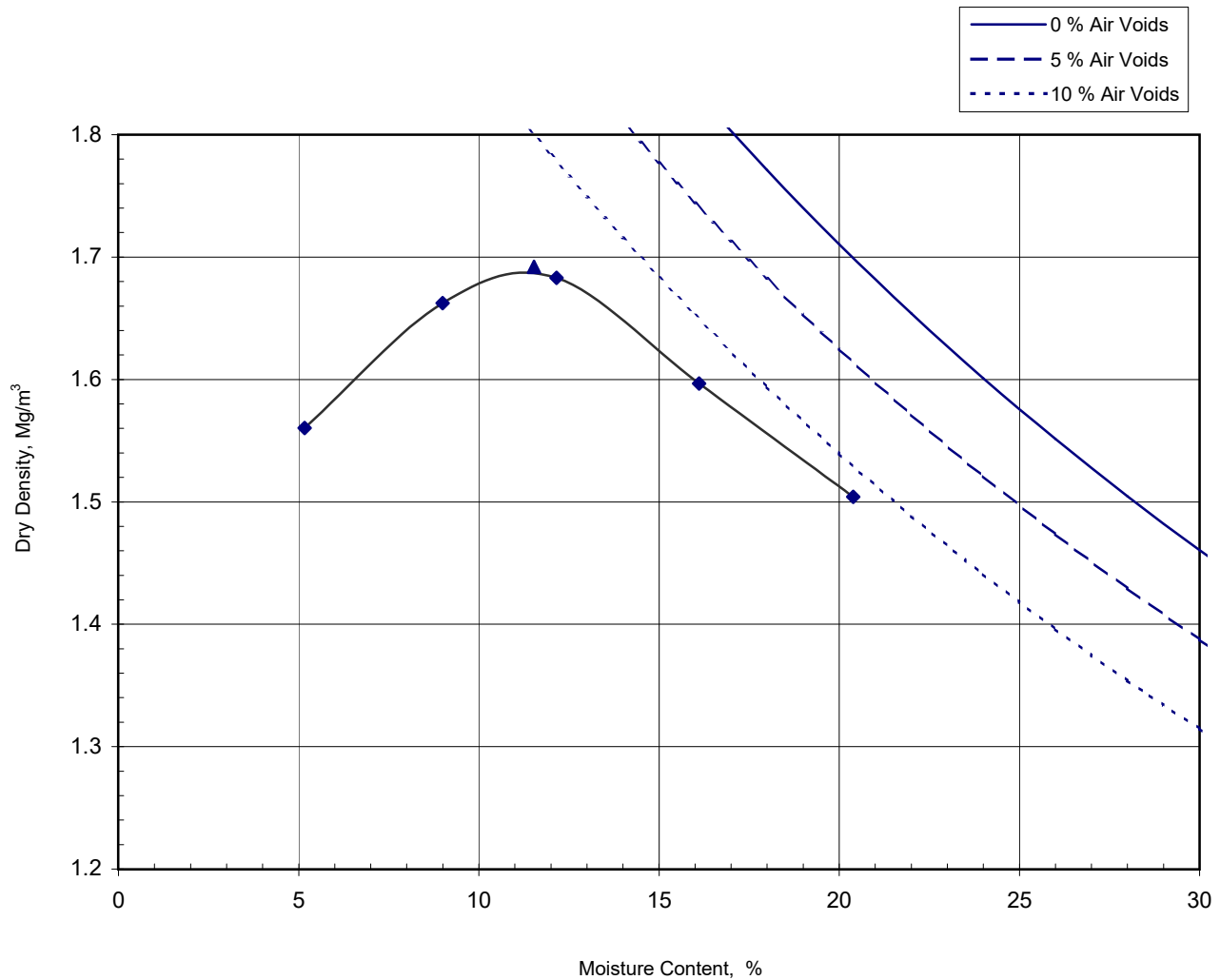
# TERRA TEK

SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

**Contract No B26845**

Hole	TP79
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/m <sup>3</sup> 2.60
Natural Moisture Content	% 20
Maximum Dry Density	Mg/m <sup>3</sup> 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



Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP108
Sample No	
Depth (m)	0.90-0.90
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 2.12 Mg/m<sup>3</sup>

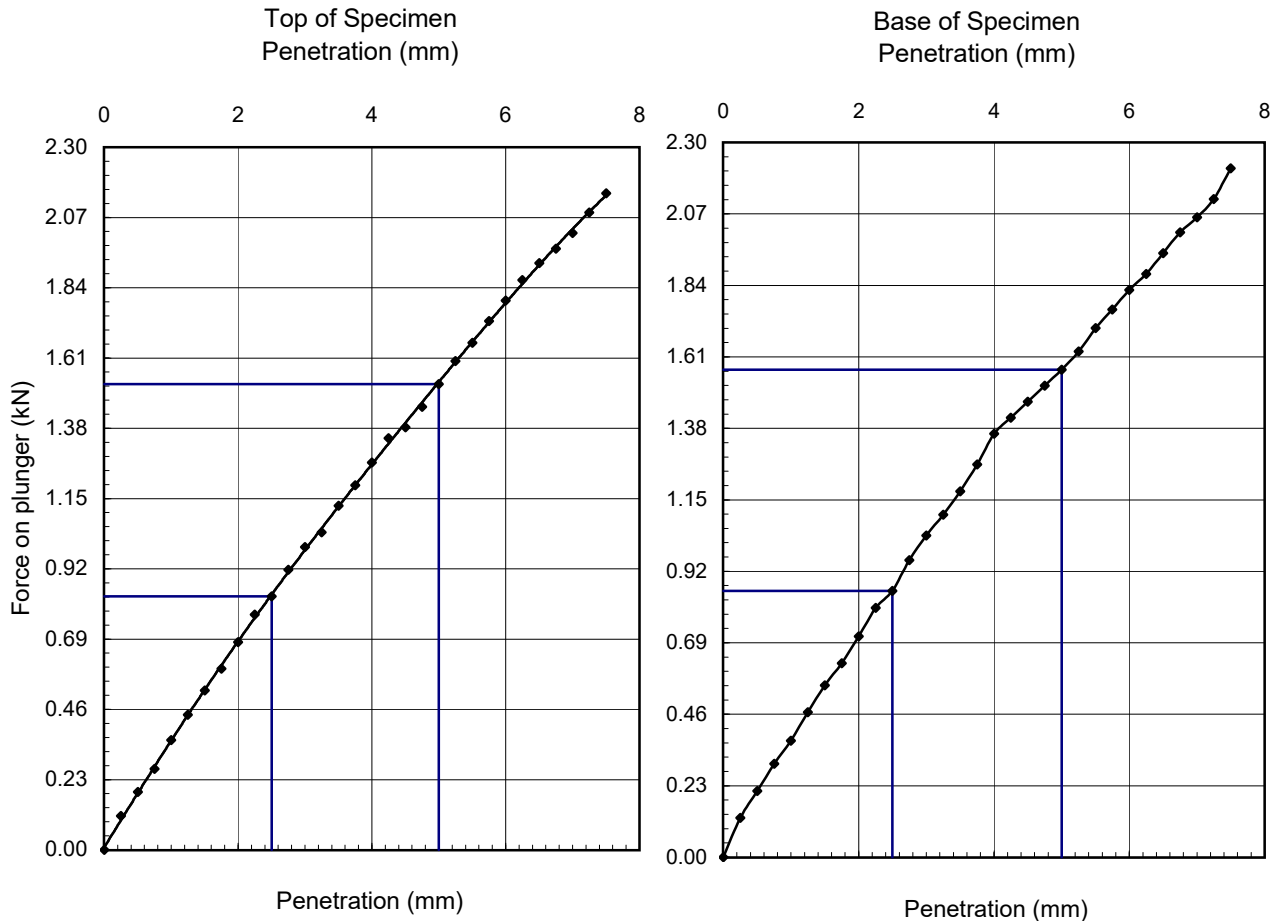
Specimen Dry Density 1.90 Mg/m<sup>3</sup>

Mass of sample > 20 mm 55.4 %

Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	13	%	11	%
CBR Value:	7.6	%	7.8	%



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



Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP125
Sample No	
Depth (m)	0.90-1.00
Sample Type	B

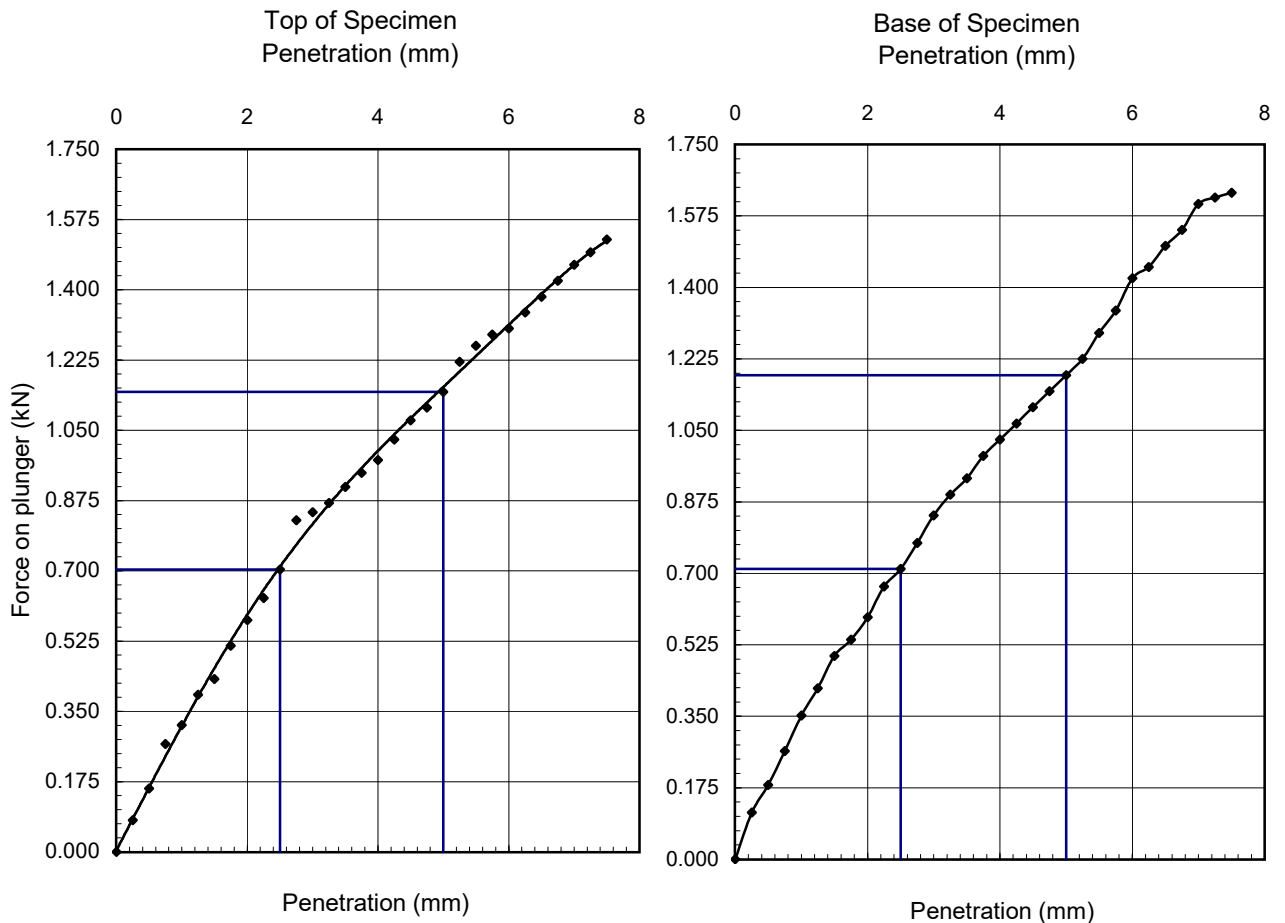
**Non Engineering**

**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/m<sup>3</sup>  
 Specimen Dry Density 1.77 Mg/m<sup>3</sup>  
 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 %



Originator	Checked & Approved
SM	CD 10/08/2021



SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP13
Sample No	
Depth (m)	0.70-0.70
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/m<sup>3</sup>

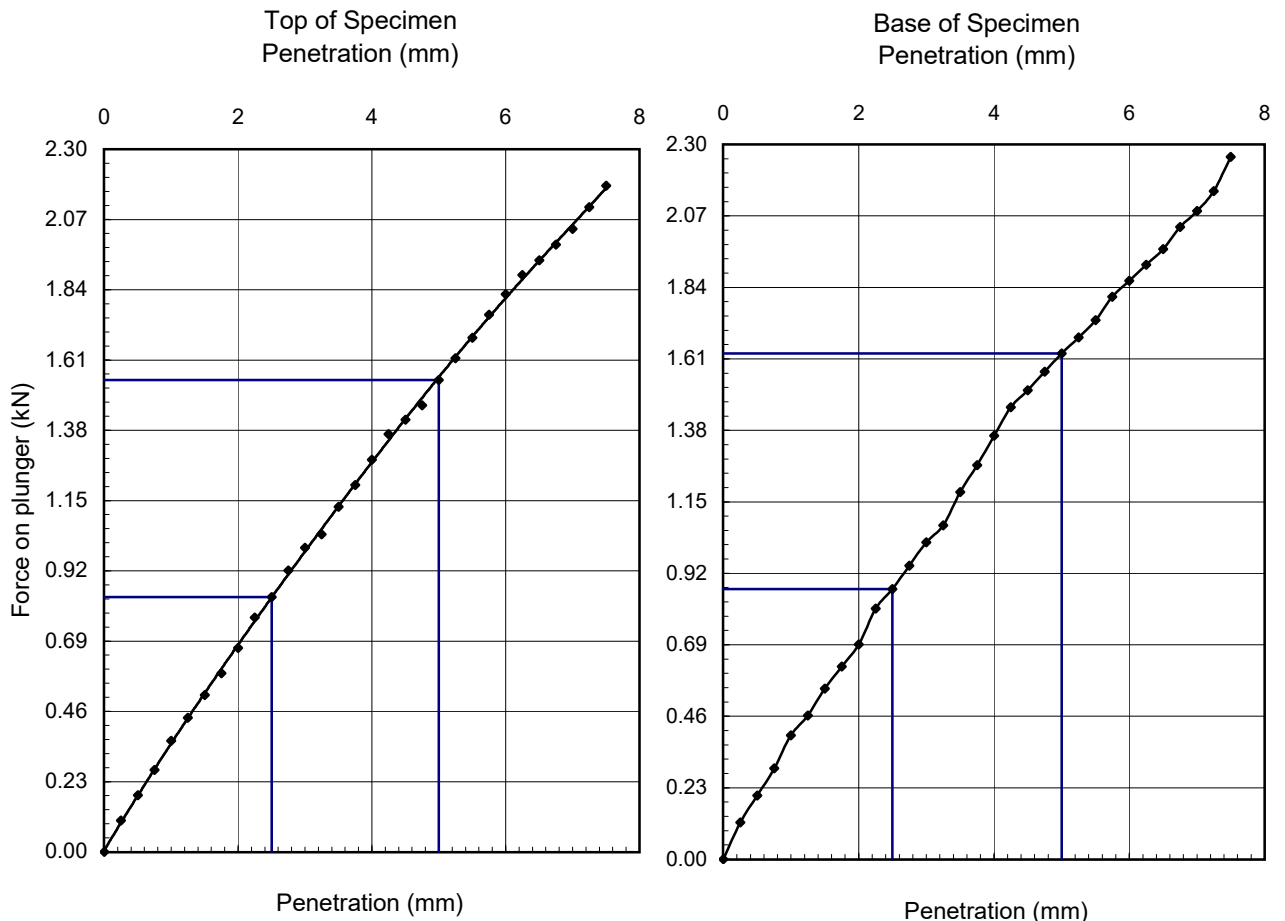
Specimen Dry Density 1.87 Mg/m<sup>3</sup>

Mass of sample > 20 mm 58.0 %

Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	15	%	12	%
CBR Value:	7.7	%	8.1	%



**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





1440 - CBR Lab TP138 00.60 B - B26845-782498.xls : Sample ID 782498



SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP138
Sample No	
Depth (m)	0.60-0.60
Sample Type	B

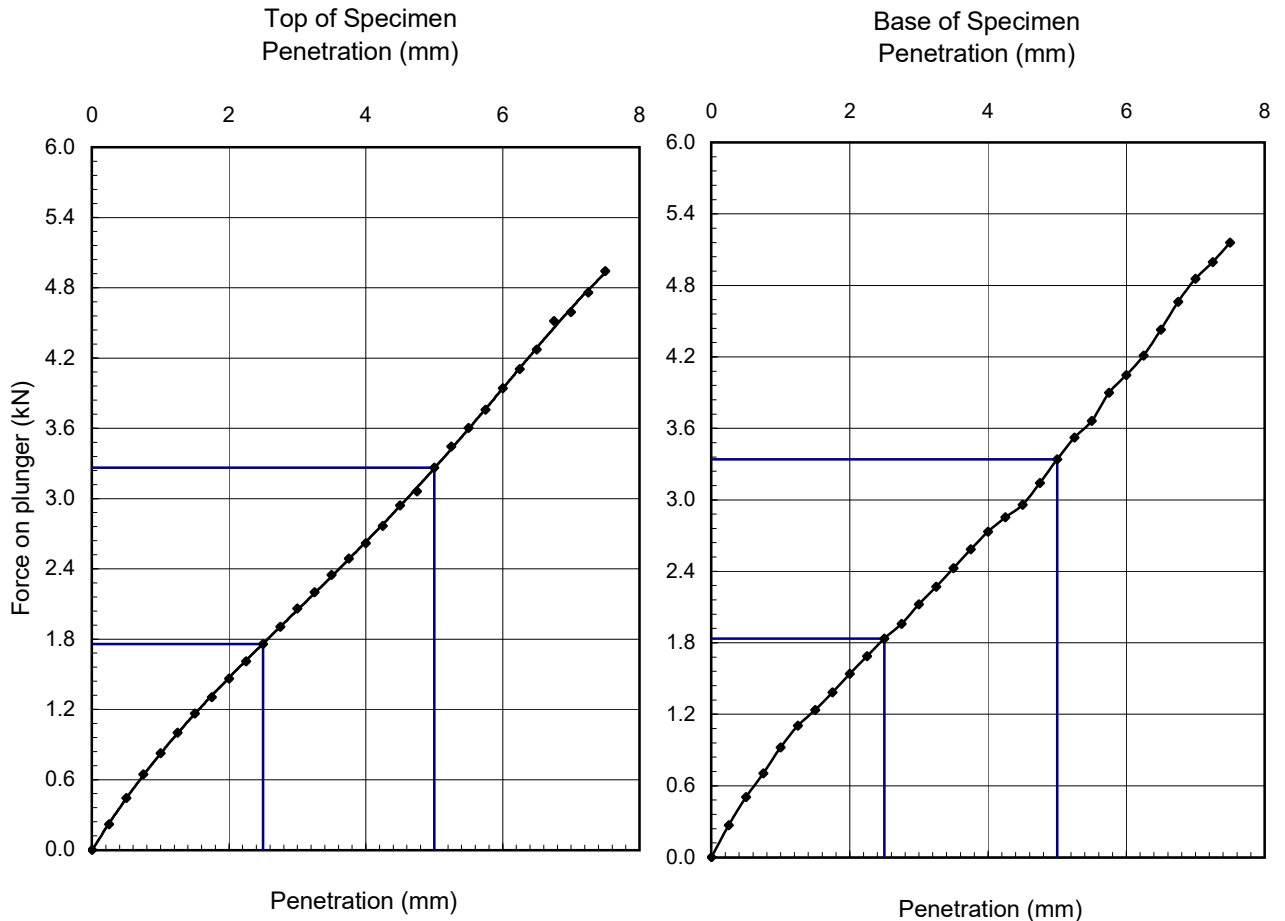
**Non Engineering**

**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 2.20 Mg/m<sup>3</sup>  
 Specimen Dry Density 2.02 Mg/m<sup>3</sup>  
 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

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



62 Rochsolloch Road, Airdrie, ML6 9BG  
 Lab Project No B26845 : 10/08/2021 19:07:54



SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP142
Sample No	
Depth (m)	0.60-0.60
Sample Type	B

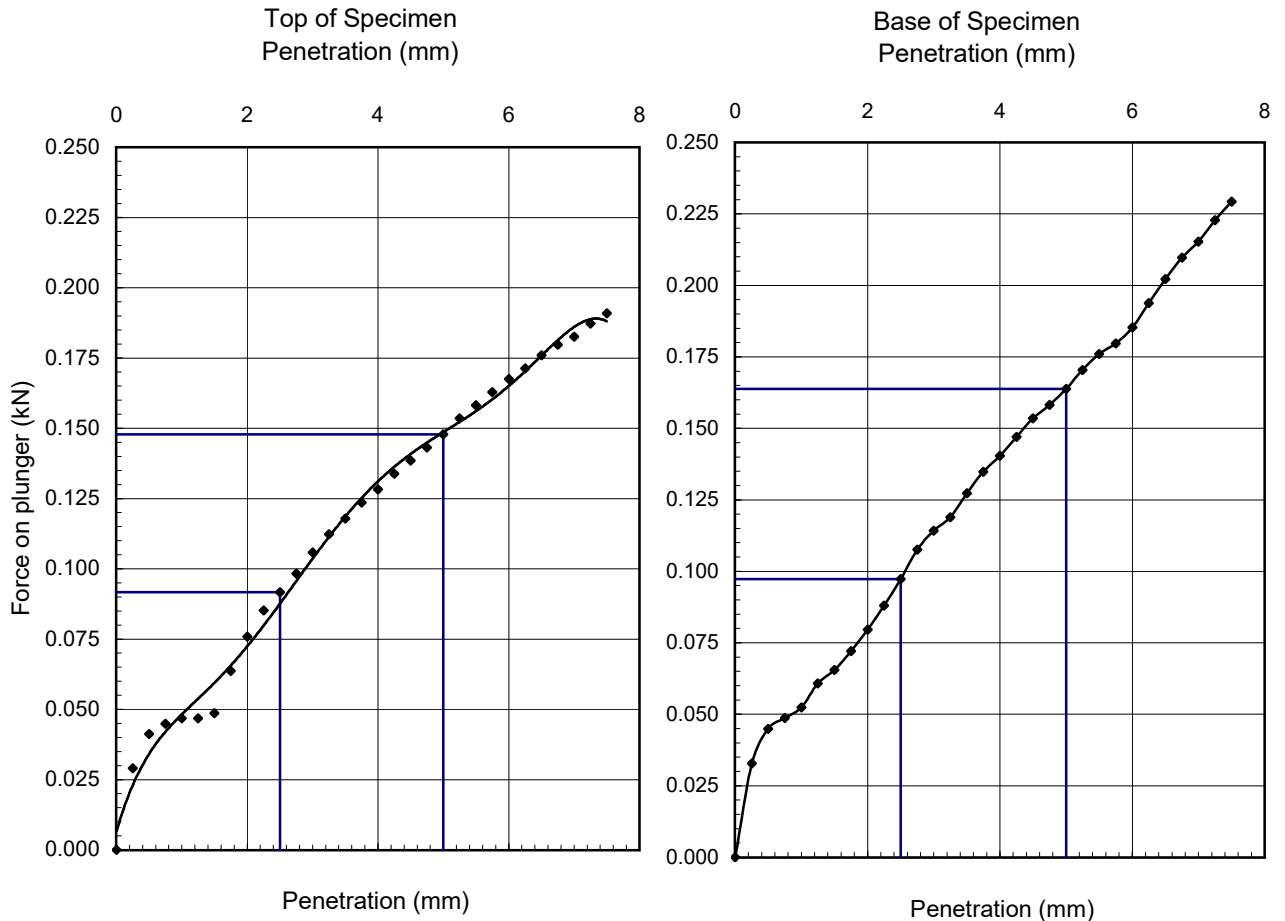
**Non Engineering**

**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/m<sup>3</sup>  
 Specimen Dry Density 1.49 Mg/m<sup>3</sup>  
 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 %



**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



Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP145
Sample No	
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/m<sup>3</sup>

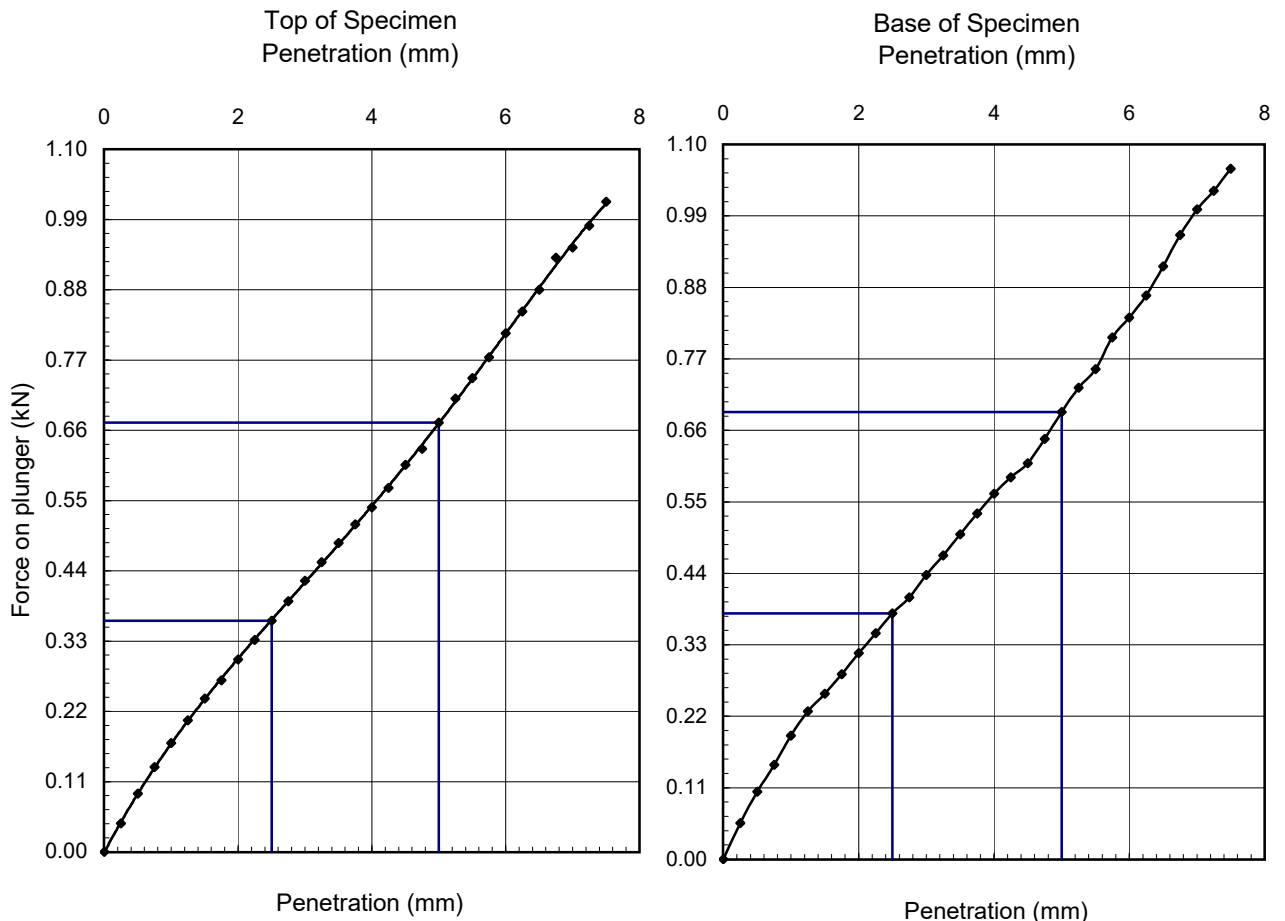
Specimen Dry Density 1.91 Mg/m<sup>3</sup>

Mass of sample > 20 mm 20.1 %

Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	13	%	13	%
CBR Value:	3.4	%	3.4	%



Originator	Checked & Approved
SK	CD 10/08/2021



SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP15
Sample No	
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 Details:**

Specimen was prepared at Natural Moisture Content

Compaction using 2.5kg compactive effort

Specimen Bulk Density 2.03 Mg/m<sup>3</sup>

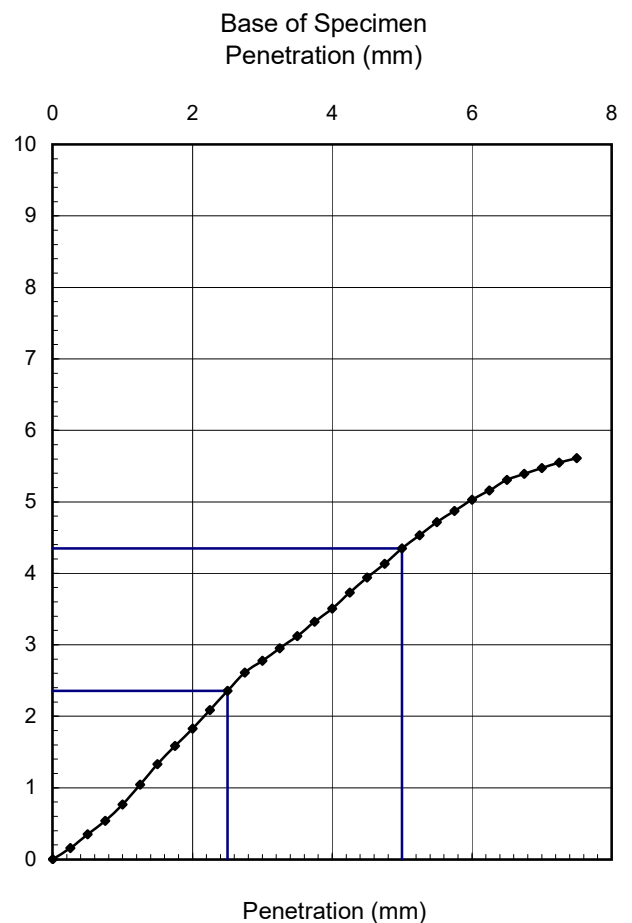
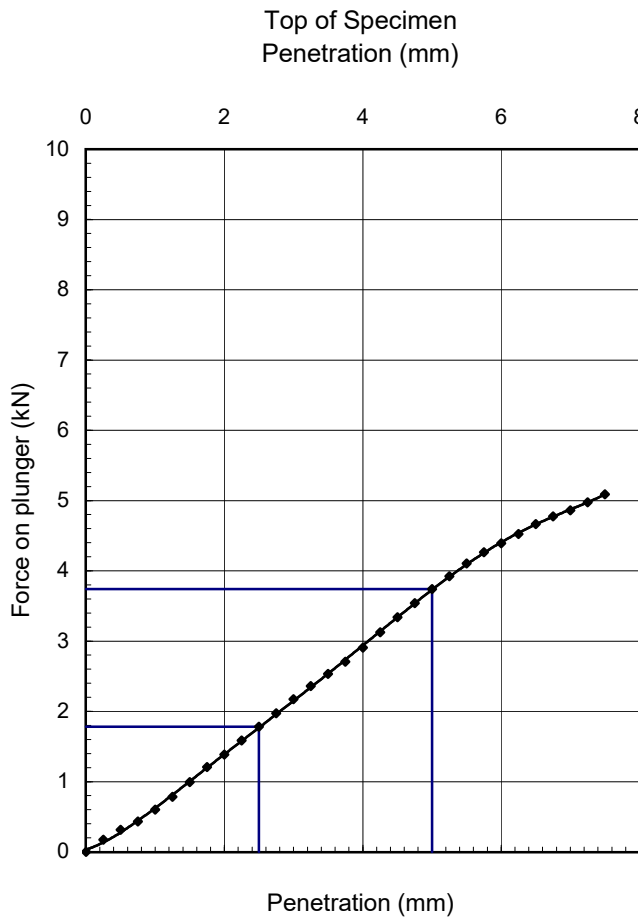
Specimen Dry Density 1.84 Mg/m<sup>3</sup>

Mass of sample > 20 mm 26.0 %

Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	10.0	%	10	%
CBR Value:	18.7	%	21.8	%



**Non standard test due to % retained on 20mm sieve**

Originator	Checked & Approved
SM	CD 10/08/2021

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





SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP2
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/m<sup>3</sup>

Specimen Dry Density 1.50 Mg/m<sup>3</sup>

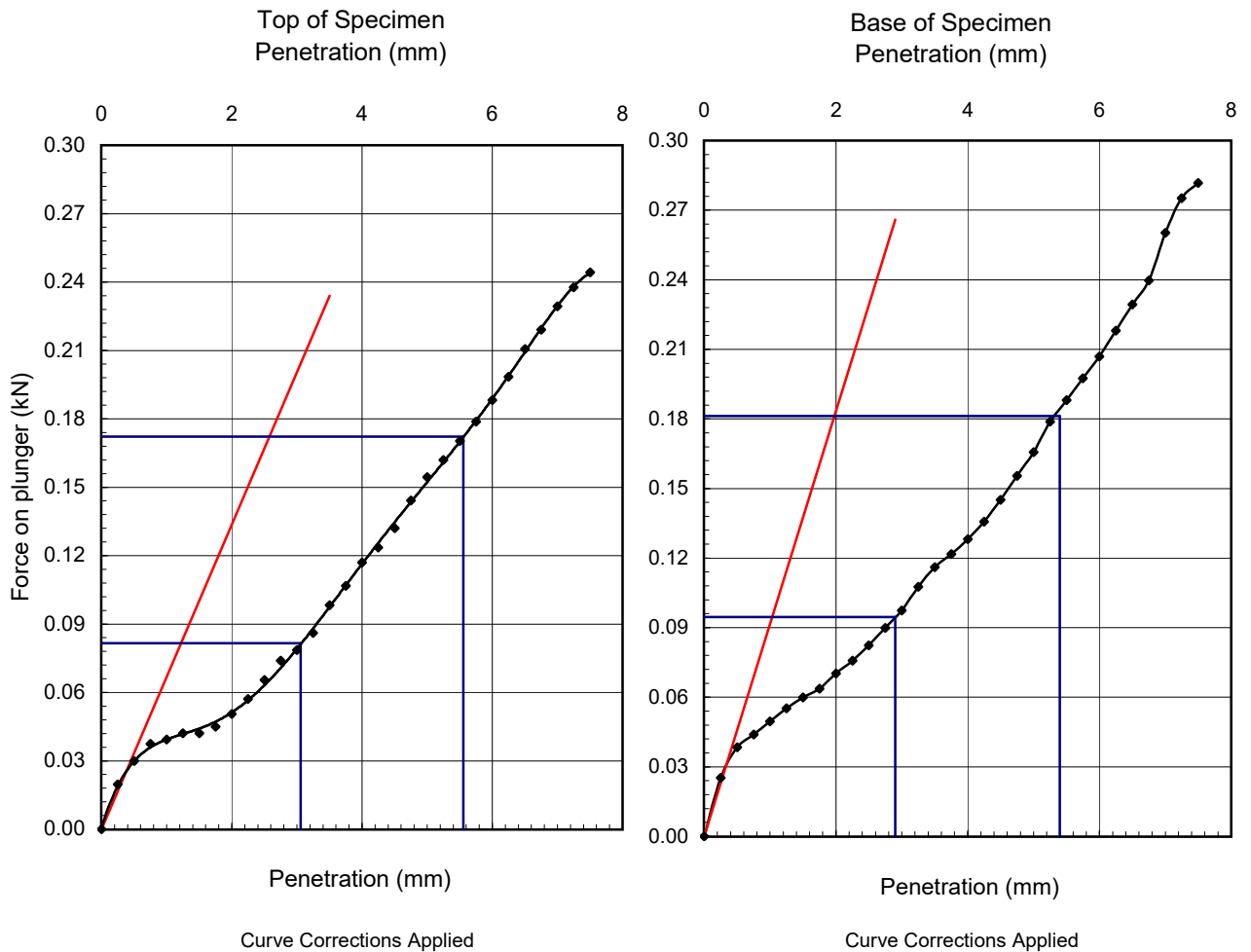
Mass of sample > 20 mm 21.3 %

Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	10	N	10	N
Moisture Content:	26	%	28	%

CBR Value: 0.9 %



Originator	Checked & Approved
SK	CD 10/08/2021

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





SITE INVESTIGATION AND LABORATORY SERVICES

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

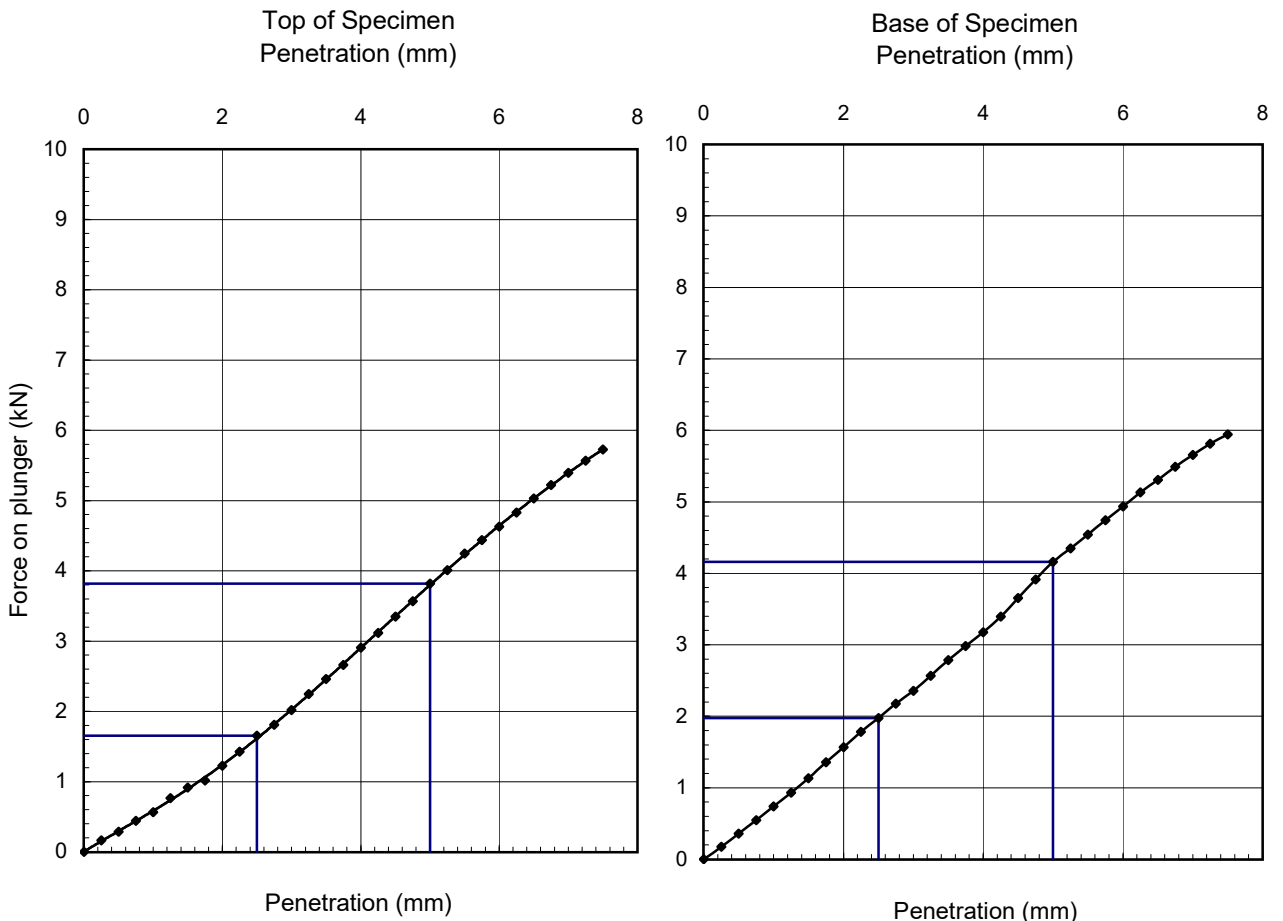
**Non Engineering**

**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/m<sup>3</sup>  
 Specimen Dry Density 1.74 Mg/m<sup>3</sup>  
 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 %



Non standard test due to % retained on 20mm sieve

Originator	Checked & Approved	<b>CALIFORNIA BEARING RATIO</b> BS1377 : Part 4 : Clause 7 : 1990	
SM	CD 10/08/2021		



SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP31
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/m<sup>3</sup>

Specimen Dry Density 1.76 Mg/m<sup>3</sup>

Mass of sample > 20 mm 26.2 %

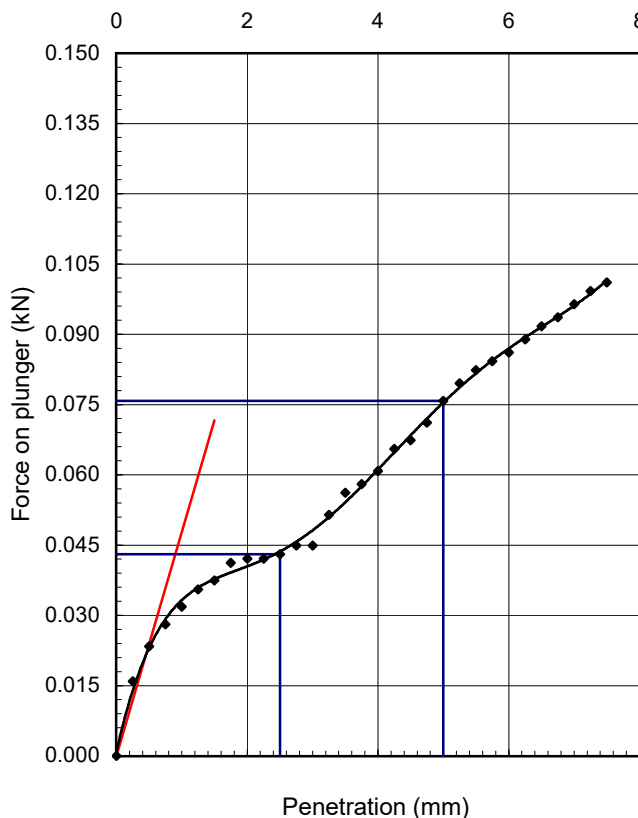
Specimen Unsoaked

**Test Details:**

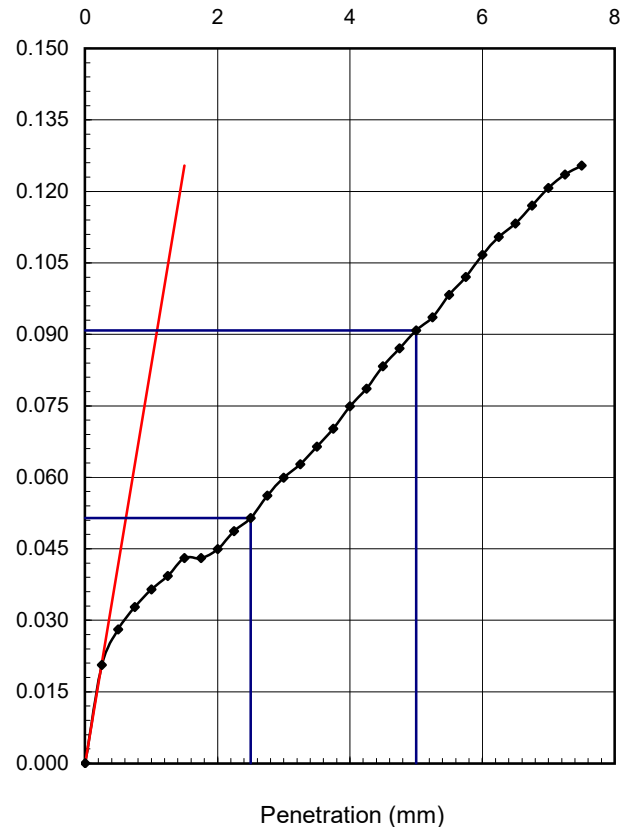
	<b>Top</b>		<b>Base</b>	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	10	N	10	N
Moisture Content:	18	%	18	%
CBR Value:	0.4	%	0.5	%

Top of Specimen Penetration (mm)

Base of Specimen Penetration (mm)



Curve Corrections Applied



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





SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP37
Sample No	
Depth (m)	0.40-0.50
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 0.44 Mg/m<sup>3</sup>

Specimen Dry Density 0.38 Mg/m<sup>3</sup>

Mass of sample > 20 mm 14.3 %

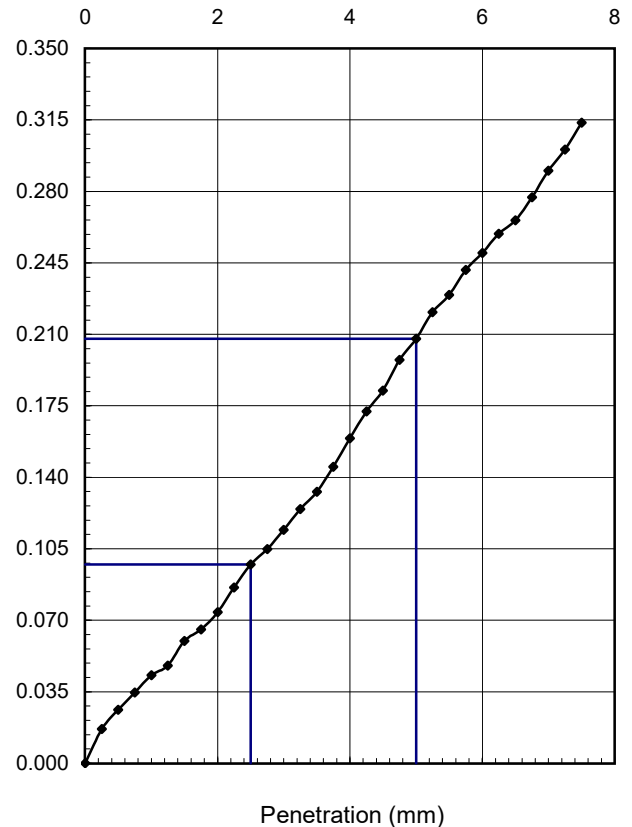
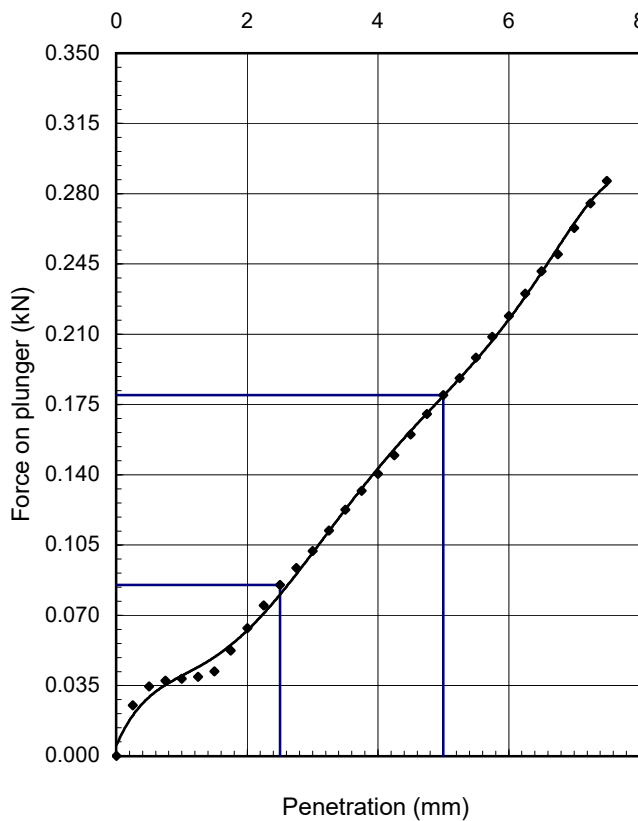
Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
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
SK	CD 10/08/2021

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







SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP44
Sample No	
Depth (m)	0.40-0.50
Sample Type	B

**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/m<sup>3</sup>

Specimen Dry Density 1.92 Mg/m<sup>3</sup>

Mass of sample > 20 mm 29.3 %

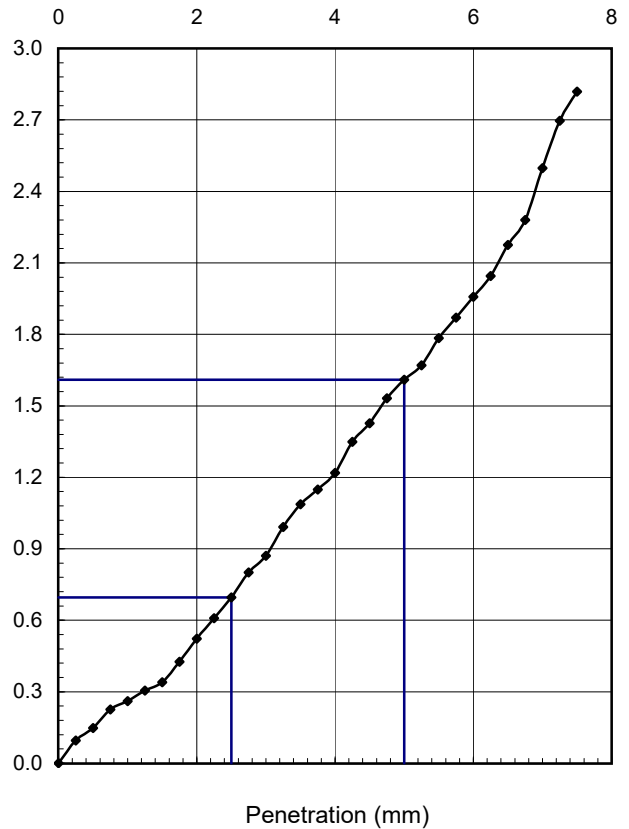
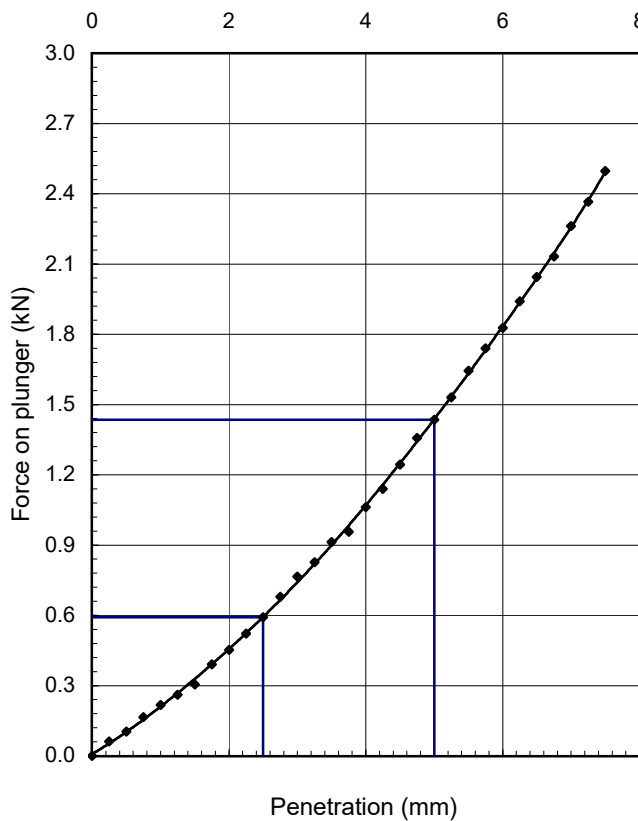
Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
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**

Originator	Checked & Approved
SK	CD 10/08/2021

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





SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP48
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/m<sup>3</sup>

Specimen Dry Density 1.70 Mg/m<sup>3</sup>

Mass of sample > 20 mm 42.0 %

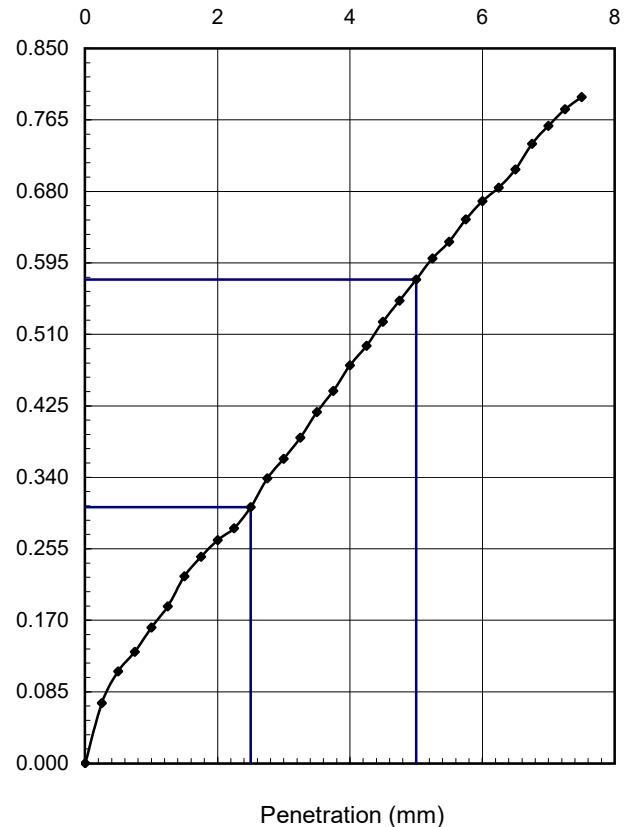
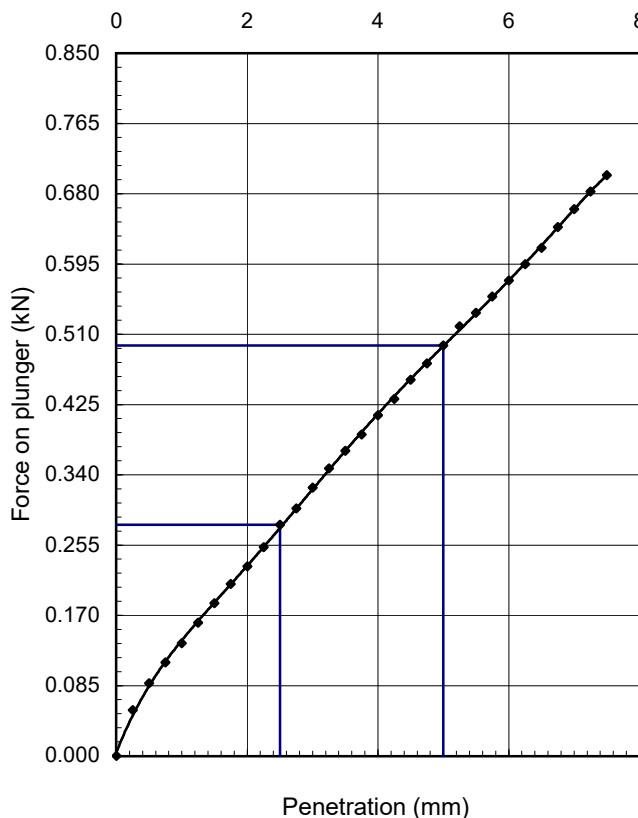
Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	18	%	20	%
CBR Value:	2.5	%	2.9	%

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





SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP56
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/m<sup>3</sup>

Specimen Dry Density 1.62 Mg/m<sup>3</sup>

Mass of sample > 20 mm 2.3 %

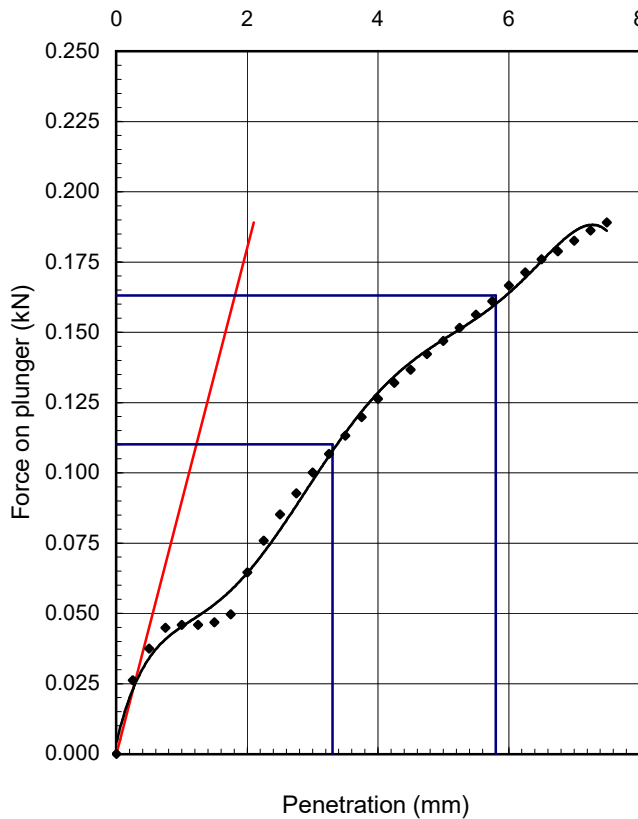
Specimen Unsoaked

**Test Details:**

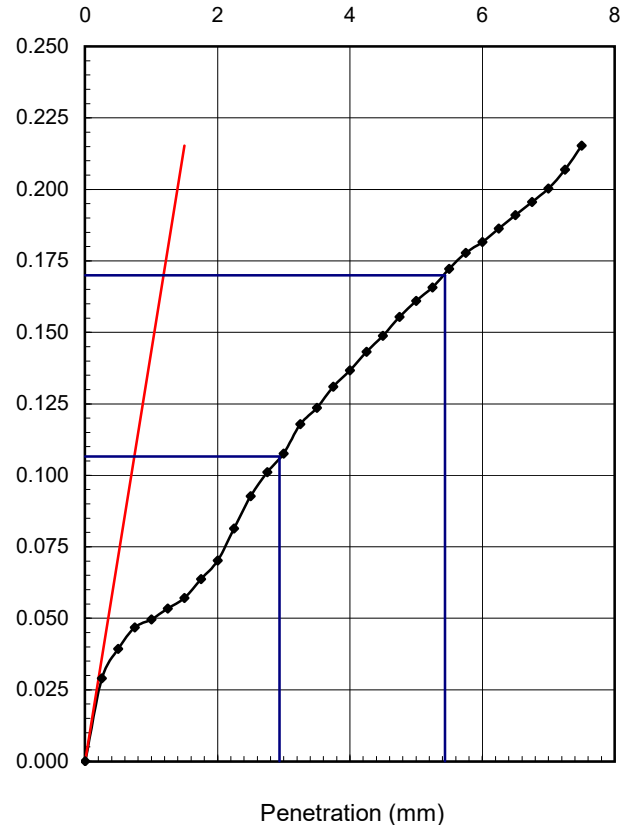
	<b>Top</b>		<b>Base</b>	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	10	N	10	N
Moisture Content:	20	%	20	%
CBR Value:	0.8	%	0.8	%

Top of Specimen Penetration (mm)

Base of Specimen Penetration (mm)



Curve Corrections Applied



Curve Corrections Applied

Originator	Checked & Approved
SK	CD 10/08/2021

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



Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP60
Sample No	
Depth (m)	0.70-0.80
Sample Type	B

**Non Engineering**

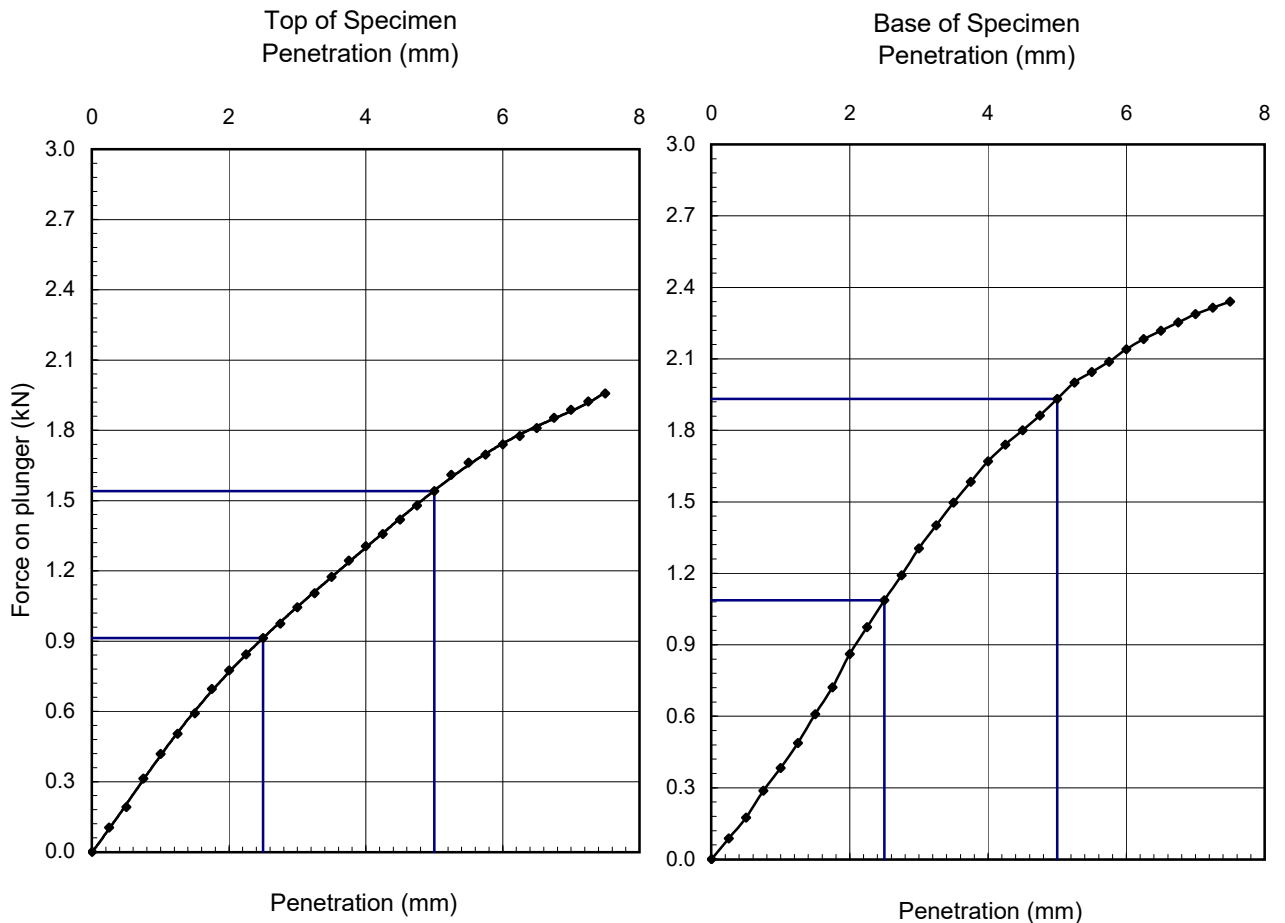
**Description:** Brown gravelly very sandy very silty CLAY. Gravel is fine to medium

**Preparation Details:**

Specimen was initially oven-dried  
 Compaction using 2.5kg compactive effort  
 Specimen Bulk Density 1.98 Mg/m<sup>3</sup>  
 Specimen Dry Density 1.74 Mg/m<sup>3</sup>  
 Mass of sample > 20 mm 0.0 %  
 Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	14	%	14	%
CBR Value:	7.7	%	9.7	%



Originator	Checked & Approved
SM	CD 10/08/2021



SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP62
Sample No	
Depth (m)	0.50-0.50
Sample Type	B

**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/m<sup>3</sup>

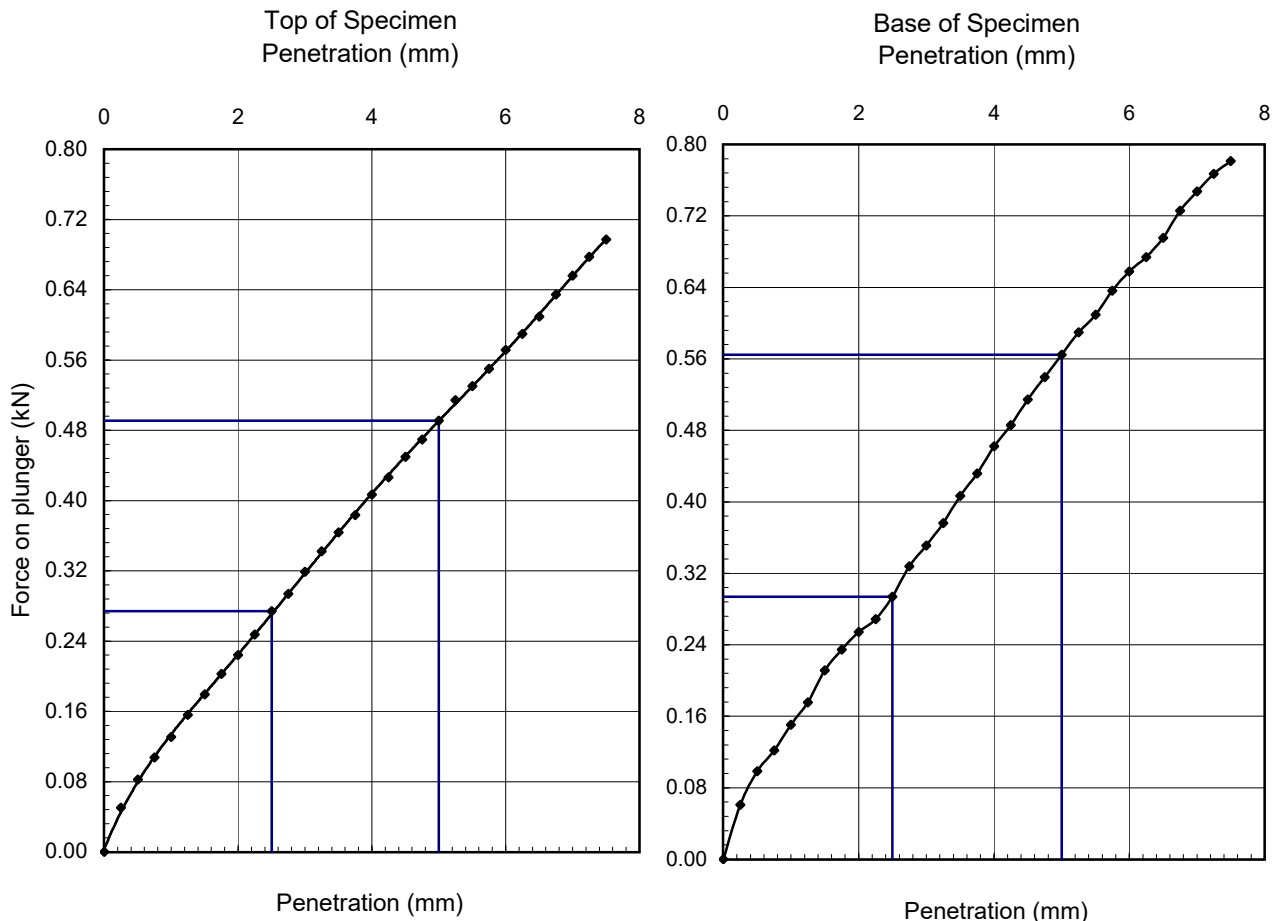
Specimen Dry Density 1.68 Mg/m<sup>3</sup>

Mass of sample > 20 mm 58.2 %

Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	50	N	50	N
Moisture Content:	21	%	20	%
CBR Value:	2.5	%	2.8	%



**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





SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

Contract No	<b>B26845</b>
Hole ID	TP70
Sample No	
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/m<sup>3</sup>

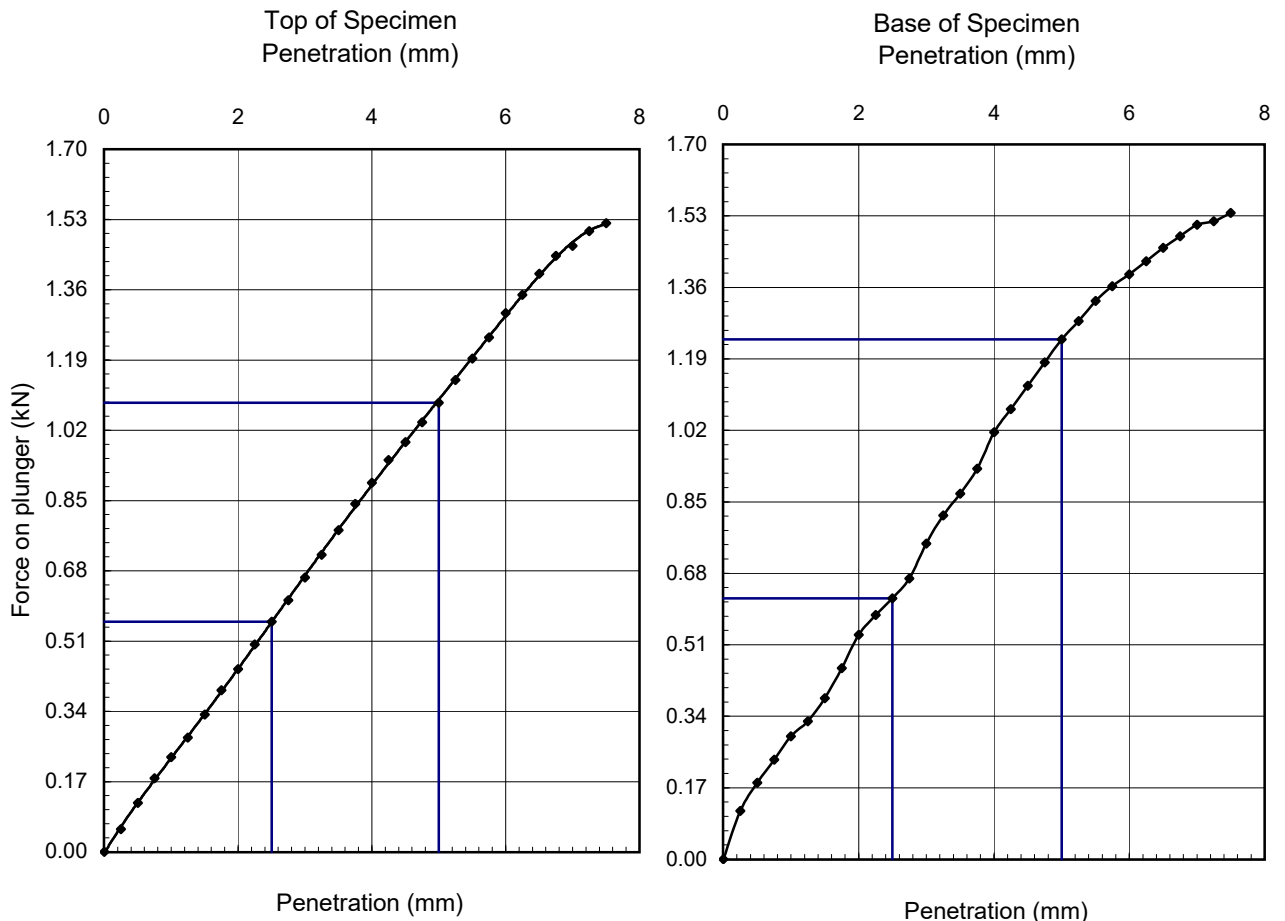
Specimen Dry Density 1.83 Mg/m<sup>3</sup>

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 %



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



Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP75
Sample No	
Depth (m)	0.80-0.80
Sample Type	B

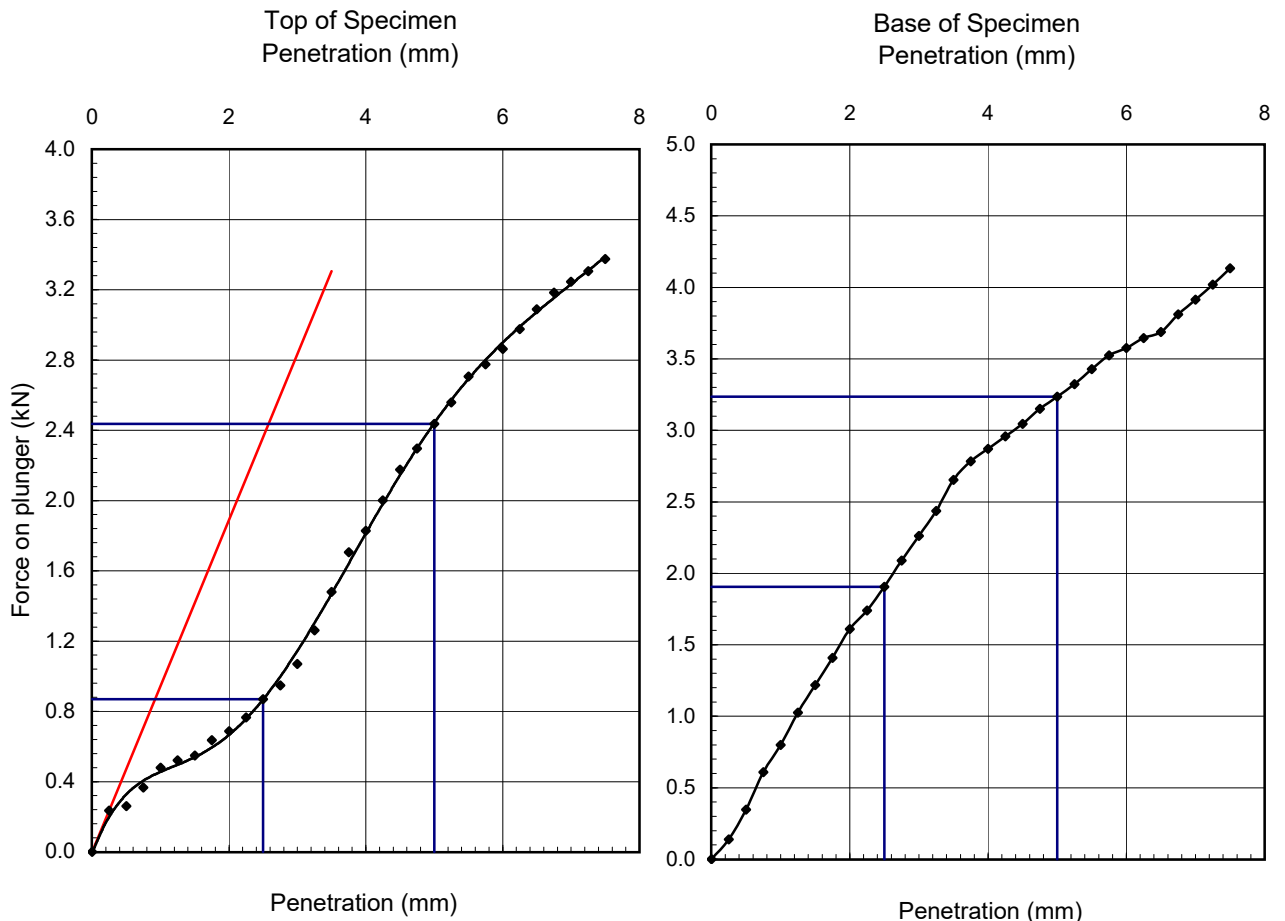
**Non Engineering**

**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/m<sup>3</sup>  
 Specimen Dry Density 1.92 Mg/m<sup>3</sup>  
 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 %



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



Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP79
Sample No	
Depth (m)	0.90-0.90
Sample Type	B

**Non Engineering**

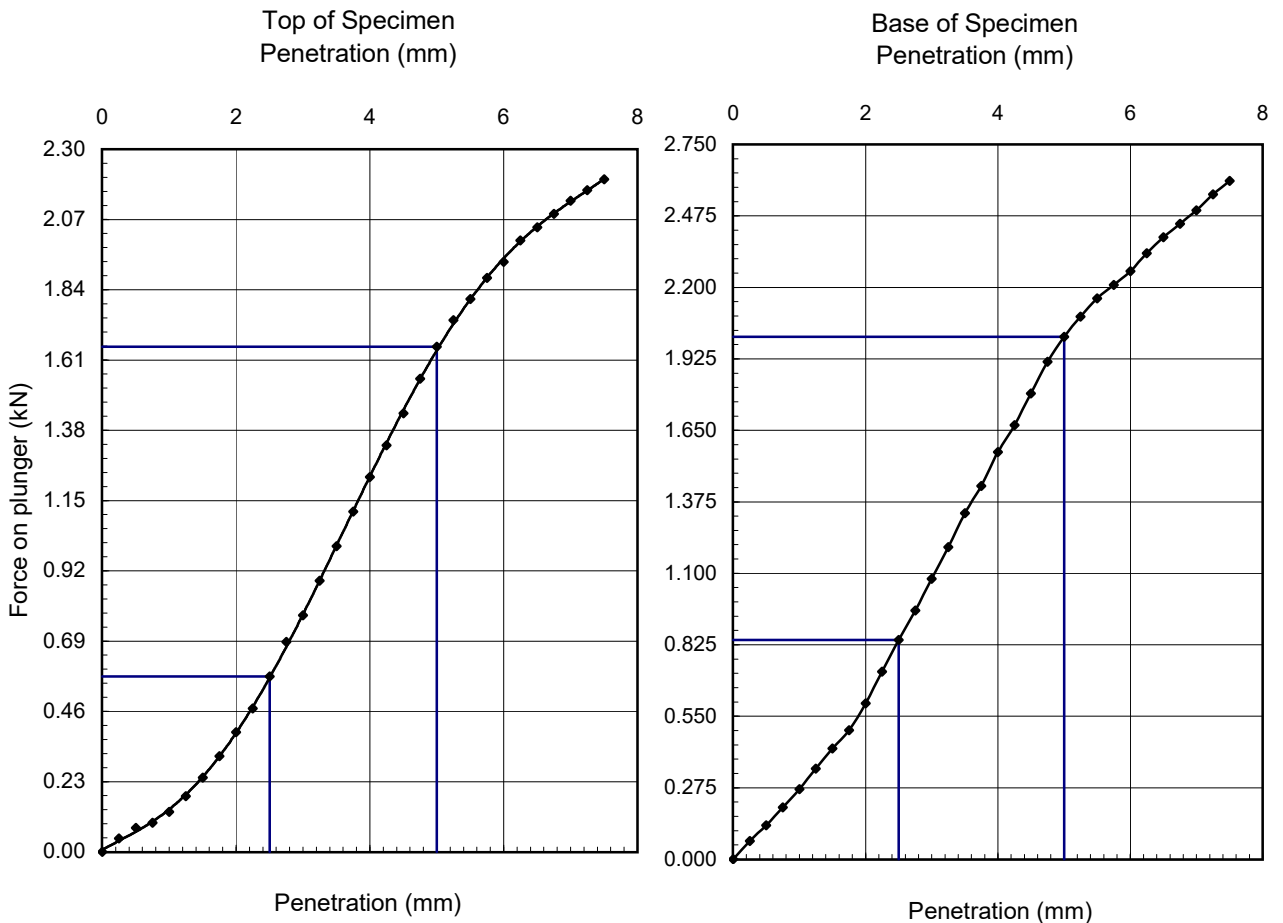
**Description:** Dark brown very gravelly very clayey SAND. Gravel is fine to coarse

**Preparation Details:**

Specimen was initially oven-dried  
 Compaction using 2.5kg compactive effort  
 Specimen Bulk Density 2.07 Mg/m<sup>3</sup>  
 Specimen Dry Density 1.86 Mg/m<sup>3</sup>  
 Mass of sample > 20 mm 0.0 %  
 Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
Surcharge:	2.0	kg	2.0	kg
Seating Load:	10	N	10	N
Moisture Content:	11	%	11	%
CBR Value:	8.3	%	10.0	%



Originator	Checked & Approved
SM	CD 10/08/2021





SITE INVESTIGATION AND LABORATORY SERVICES

Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP89
Sample No	
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/m<sup>3</sup>

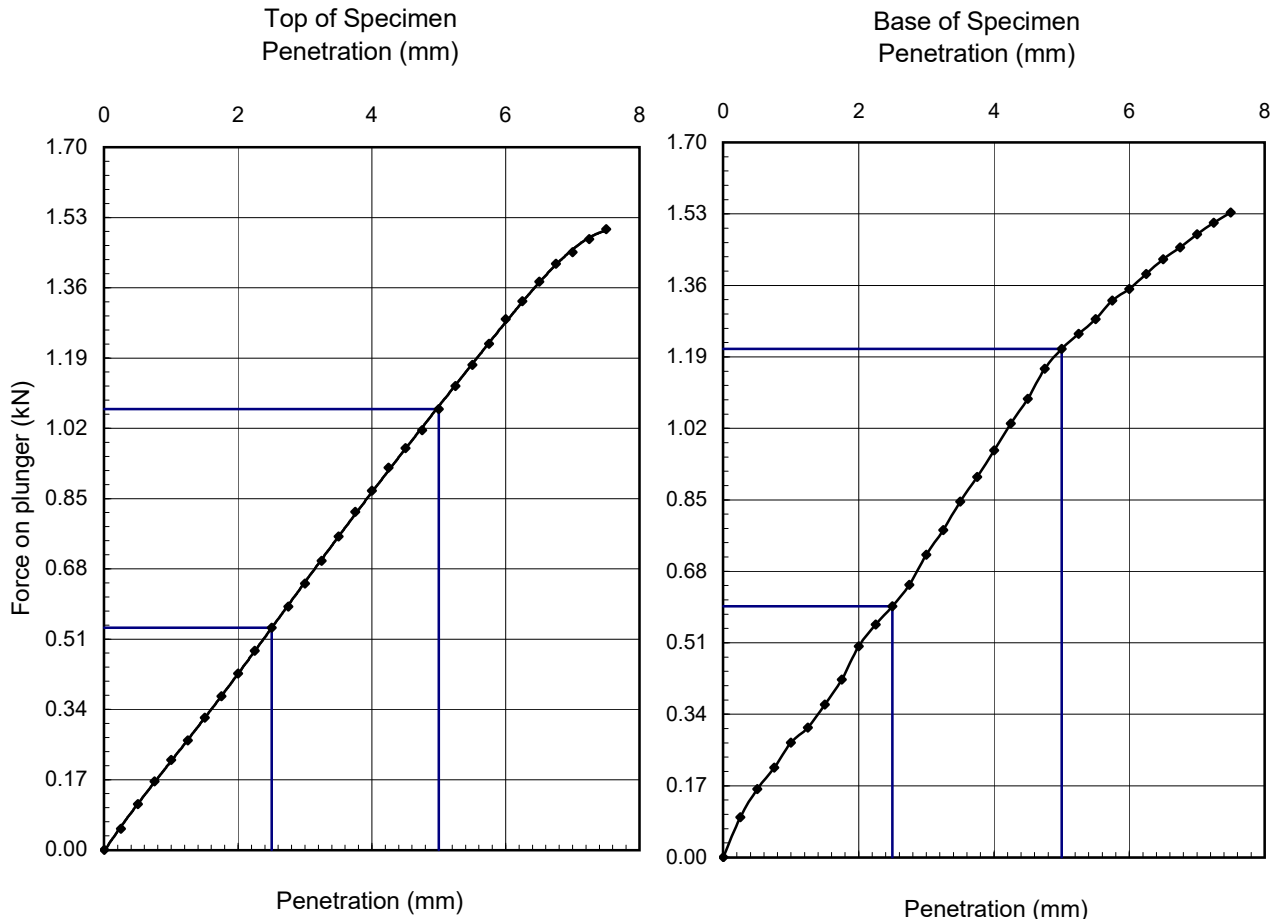
Specimen Dry Density 1.86 Mg/m<sup>3</sup>

Mass of sample > 20 mm 57.8 %

Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
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**

Originator	Checked & Approved
SK	CD 10/08/2021

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



Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP94
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/m<sup>3</sup>

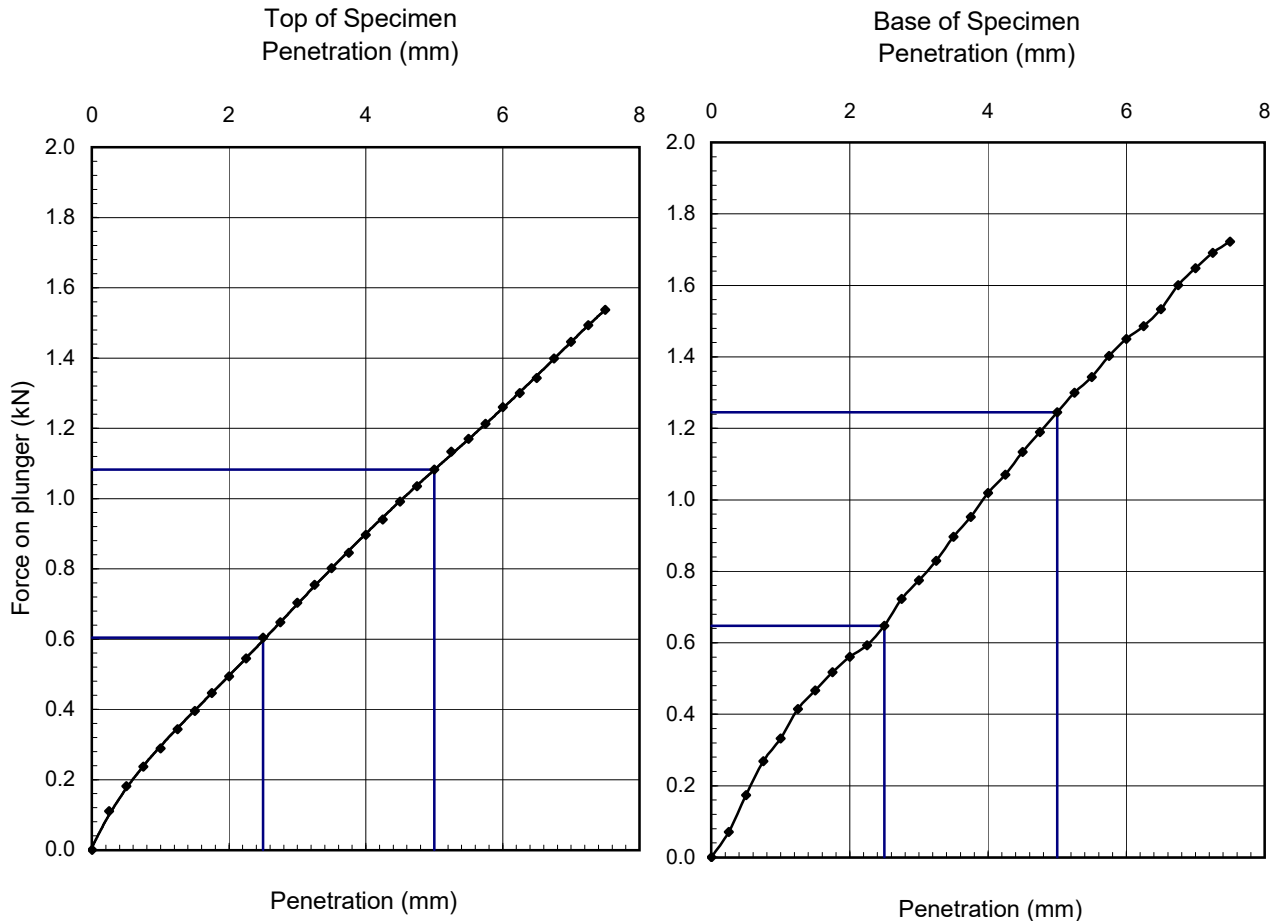
Specimen Dry Density 1.78 Mg/m<sup>3</sup>

Mass of sample > 20 mm 63.4 %

Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
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**

Originator	Checked & Approved
SK	CD 10/08/2021

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



Site	AG3268-21 LAND ADJACENT TO JUNCTION 10, M40, ARDLEY
Client	Applied Geology Limited
Engineer	

<b>Contract No</b>	<b>B26845</b>
Hole ID	TP97
Sample No	
Depth (m)	1.00-1.10
Sample Type	B

**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/m<sup>3</sup>

Specimen Dry Density 1.63 Mg/m<sup>3</sup>

Mass of sample > 20 mm 27.6 %

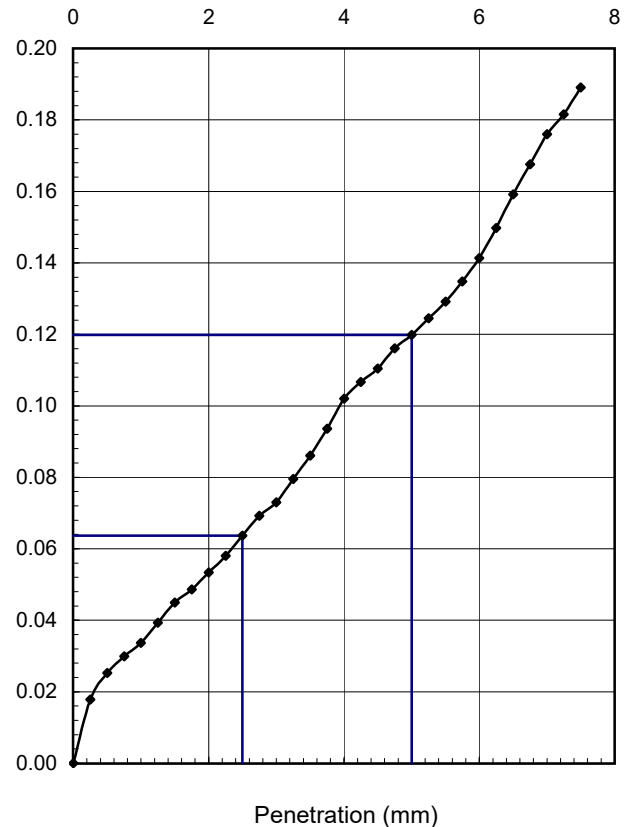
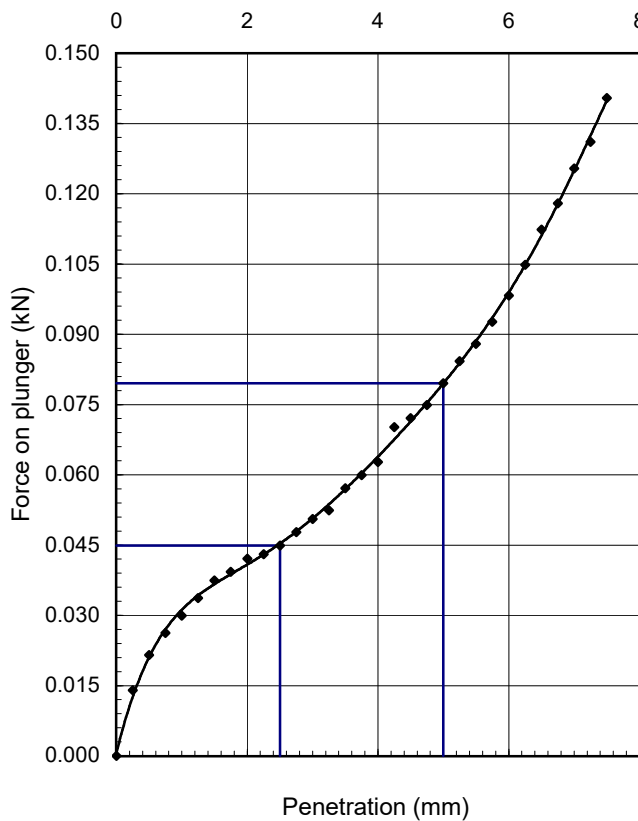
Specimen Unsoaked

**Test Details:**

	<b>Top</b>		<b>Base</b>	
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

Originator	Checked & Approved
SK	CD 10/08/2021

**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.

\*- © Land Quality Management Limited reproduced with permission; Publication Number S4UL3159. All rights reserved

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.