45 Cholmeley Crescent, London N6 5EX

Ground Investigation Factual Report

July 2023

MAUND GEO-CONSULTING

Produced for: Mr and Mrs Podpolny

Prepared by:

Julian Maund BSc PhD CEng MIMMM CGeol FGS
UK and Ireland Registered Ground Engineering Adviser

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MGC-132-GIFR-V1

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Report Title	Ground Investigation Factual Report	Site Address	45 Cholmeley Crescent, London N6 5EX
Work Stage	Investigation	Report Date	July 2023
Brief Description of the Report Contents	Report on a ground investigation comprising one borehole to a depth of 5.45m which was undertaken at the site on 03/07/23, to provide factual information on the ground conditions and foundation depths at the site.		

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Document Control Sheet

Project Title	45 Cholmeley Crescent, London N6 5EX
Report Title	Ground Investigation Factual report
Reference	MGC-132-GIFR-V1
Revision	1
Status	Final

Record of Issue

Issue	Status	Date	Author	
A	Final	28/07/23	Julian Maund BSc PhD CEng MIMMM CGeol FGS Registered Ground Engineering Adviser	

Distribution

Organisation	Contact
Client	Dmitry and Marina Podpolny
Scenario Architects	Luca Dalmasso
SD Engineers	Mario Ferreira

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1 Introduction

1.1 Terms of Reference

Maund Geo-Consulting Ltd (MGC) was instructed on 30/01/2023 by Scenario Architects , to undertake a ground investigation for the site at 45 Cholmeley Crescent. The objective of the ground investigation was to determine the ground conditions at the site for support of a Basement Impact Assessment (BIA) for the London Borough of Haringey.

1.2 Terms and Conditions

This report has been prepared for Mr and Mrs Podpolny in consideration of the proposed further development of the site. The geotechnical information relates to the site only and should not be used in a different context without reference to MGC.

The report has been prepared for the exclusive benefit of Mr and Mrs Podpolny. The report contents should only be used in that context. Furthermore, new information, changed practices or new legislation may necessitate revised interpretation of the report after the date of its submission.

MGC has used reasonable skill, care and diligence in the design of the investigation of the site. The inherent variation of ground conditions allows only definition of the actual conditions at the locations and depths at the time of the investigation. At intermediate locations, conditions can only be inferred.

2 Information on the Site

2.1 Location

45 Cholmeley Crescent is located within Highgate, within the London Borough of Haringey. The ground level is approximately 98.30 m AOD at the front of the property.

2.2 Description

The current building is a residential dwelling and forms a semi deteched house comprising four storeys. Due to the change in ground level the ground floor at the front of the property comprising a garage, becoming a basement to the rear. The front elevation is indicated in Figure 2.1. The ground level ranges from approximately 98m AOD at the front of the house to 100.50m AOD at the rear.

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Figure 2.1 45 Cholmeley Crescent (July 2023)

2.3 Present use

A residential dwelling.

2.4 Proposed development

The proposed development is understood to provide an extension to the existing basement, extending to the rear of the property.

2.5 Geology

Geological information obtained from http://mapapps.bgs.ac.uk/geologyofbritain3d/ British Geological Survey (BGS) mapping at 1 50 000 scale shows the site to be directly underlain by the Claygate Member of the London Clay Formation (LFC) . The BGS Geoindex describes the Claygate Member to comprises dark grey clays with sand laminae, passing up into thin alternations of clays, silts and fine-grained sand, with beds of bioturbated silt.

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2.6 Hydrogeology/groundwater

The property is located on the bedrock geology of the LCF which is classified as an 'unproductive stratum' which is effectively impermeable. The site does not lie within a ground water protection zone.

3 Ground Investigation

A ground investigation was undertaken by PM Sampling Ltd on behalf of MGC on 03/07/23. The exploratory holes are indicated in Figure 3.1. The factual information of the exploratory holes records is included in Appendix A and laboratory testing results are included in Appendix B.

The site investigation comprised:

- 1 No. Inspection Pit to 1.00m
- 1 No. modular Nordmeyer borehole to 5.45 m bgl.
- The in-situ strengths determined by standard penetration testing
- Disturbed soil samples were obtained from the exploratory holes for laboratory geotechnical testing and further examination.
- A 20 mm diameter groundwater monitoring well was installed to 4.0 m

The borehole was located to the rear of the property on the patio at a ground level of approximately 100.50 m AOD, as indicated in Figure 3.1

Figure 3.1 Exploratory Hole Location

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4 Laboratory Testing

Laboratory tests to determine the geotechnical properties of the soil were scheduled by MGC and carried out by i2 Laboratories Ltd generally in accordance with BS1377:1990 and UKAS. The tests included:

Test type	No. of tests	Test Method
Moisture Content	5	BS1377:1990
Plasticity Index - 1 point Liquid Limit	5	BS1377:1990
pH, and water-soluble sulphate,	2	BRE SD1
Standard Spectrum Suite: Asbestos Screen & ID , pH, TOC, Total Sulphate, Sulphide, Monohydric Phenols, Total Cyanide, W/S Boron, As, Cr, Cu, Pb, Se, Zn, Cd, Hg, Ni, Speciated PAH, TPH1 & TPH CWG	1	MCERTS
WAC Full Solid Suite	1	ISO 17025

The laboratory test reports are included in Appendix B.

5 Groundwater Monitoring

The groundwater level was monitored in the borehole installation on completion of drilling. On completion of drilling the borehole was dry to 5.45m. A groundwater monitoring installation was installed to 4.00m. The installation comprised a gravel pack from 4.00 to 2.00m depth with a slotted pipe from 4.00 to 2.00m and solid pipe in bentonite to ground level. The pipe had a rubber bung sealing the top and was protected by a stock cock cover. The results of the monitoring shown in Table 5.1 indicate groundwater is at 0.96m bgl or about 99.54m AOD. A further monitoring visit is to be undertaken and will be reported in the BIA.

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Table 5.1 Groundwater Monitoring

Date of Monitoring	Groundwater (depth metres below ground level)
03/07/23	Borehole was damp from 4.00m
14/07/23	0.94

6 References

BS 1377:1990. British Standard Methods of test for soils for Civil engineering purposes. British Standards Institution.

BS 5930: 2015. *Code of practice for Ground Investigation.* British Standards Institution.

BS EN 1997-2 Eurocode 7 Geotechnical Design Part 2 Ground Investigation and Testing – inc. corrigendum 2010

BGS Geology of Britain Viewer (*http://mapapps.bgs.ac.uk/geologyofbritain/home.html)*

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Appendix A: Exploratory Hole Record

© Maund Geo-Consulting 2023

MAUND GEO-CONSULTING

Julian Maund BSc PhD MIMMM CEng FGS CGeol
Registered Ground Engineering Adviser

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julian.maund@gmail.com

Borehole No.
BH01
Sheet 1 of 1

Project Name:	45 Cholmeley Crescent N6 5EX	Project No:	MGC-132	Co -ords 528553 , 187665	Hole Type: Nordmeyer LMSR-H Modular
Location:	Rear garden terrace			Level: (m AOD) 100.50 (Approx.)	Hole Diameter: 100 mm
Client:	Ms M. Podpolny			Date Drilled: 03/07/2023	Logged By: JGM

Well	Water Strikes	Sampling and Insitu Testing: Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
		0.35	D1 + E1		0.35	100.15		Made Ground: Stone slab 50mm thick over sandy clayey fine to coasre gravel of brick, concrete and flint
		1.00	D2	N=8 (1/2,2, 2, 2, 2)	1.10	99.40		Soft to firm brown mottled yellow silty fine sandy CLAY (Claygate Member)
		2.00	D3	N=5 (1/1,1, 1, 1, 2)				Soft to firm brown grey silty fine sandy CLAY (Claygate Member)
		3.00	D4	N= 8 (2/2, 2, 2, 2, 2)				… becoming green grey silty fine sandy CLAY at 2.5m
		4.00	D5	N=8 (1/2, 1, 2, 2, 3)				… becoming moist from 4.0m
		5.00	D6	N= 14 (2/2, 3, 3, 4, 4)				
					5.45	95.05		Borehole complete at 5.45 m

Remarks

Inspection pit to 1.0 m.
Borehole showed slight seepage at 4.0m.
Standpipe Piezometer installed to depth of 4.0m. Bentonite/clay seal from 2.0 to 0.3 m. Gas bung and flat cover

Appendix B: Laboratory Test Reports

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with:BS 1377-2:1990:Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

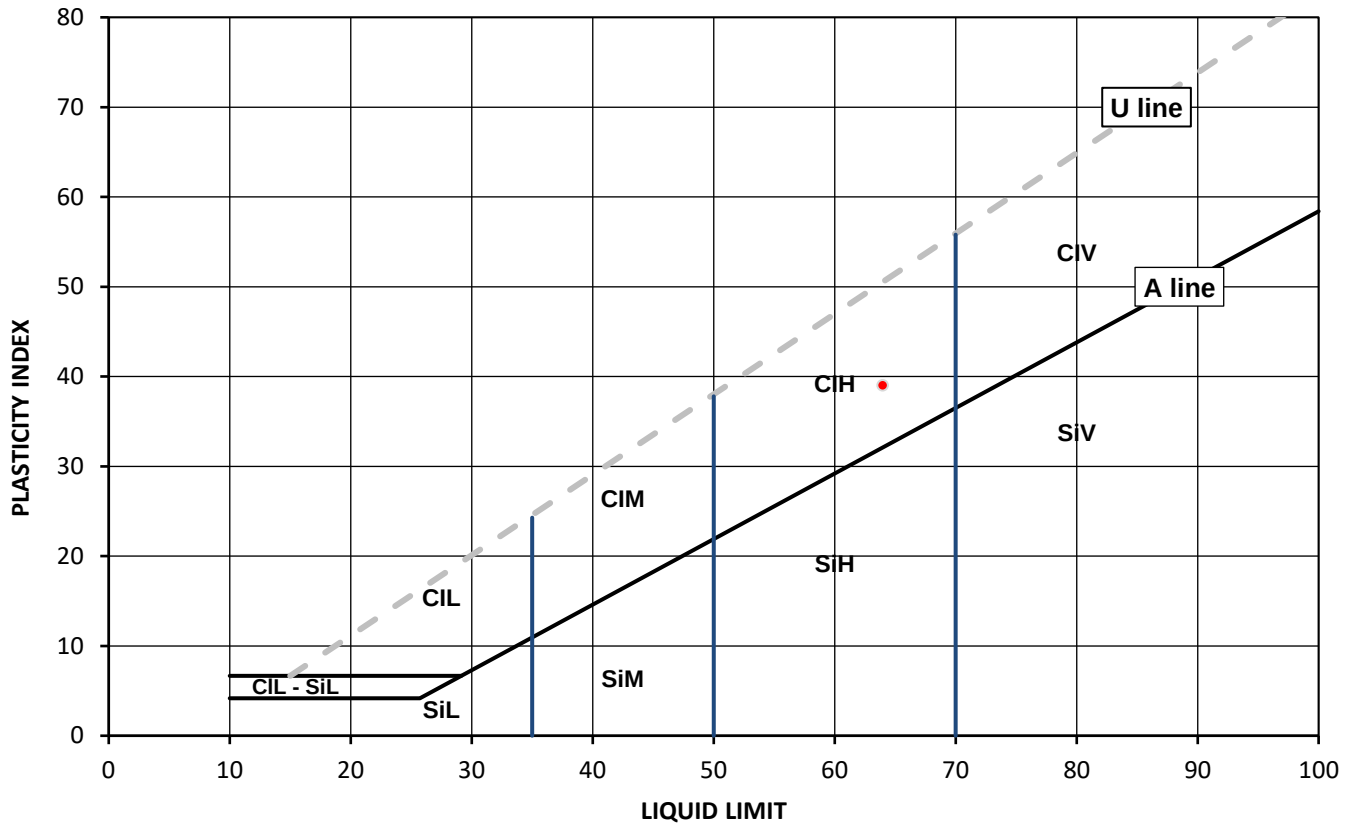
Client:	Maund GeoConsulting Ltd	Client Reference:	MGC-132
Client Address:	3 Coopers Square, Chipping Norton, Oxfordshire, OX7 5DG	Job Number:	23-43112-1
		Date Sampled:	03/07/2023
		Date Received:	04/07/2023
Contact:	Julian Maund	Date Tested:	13/07/2023
Site Address:	45 Cholmeley Crescent N6 5EX	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2736725	Depth Top [m]:	1.00
Hole No.:	BH1	Depth Base [m]:	1.45
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Brown slightly gravelly CLAY		
Sample Preparation:	Tested after >425 µm removed by hand		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
19	64	25	39	97



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 25/07/2023

GF 232.13

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with:BS 1377-2:1990:Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

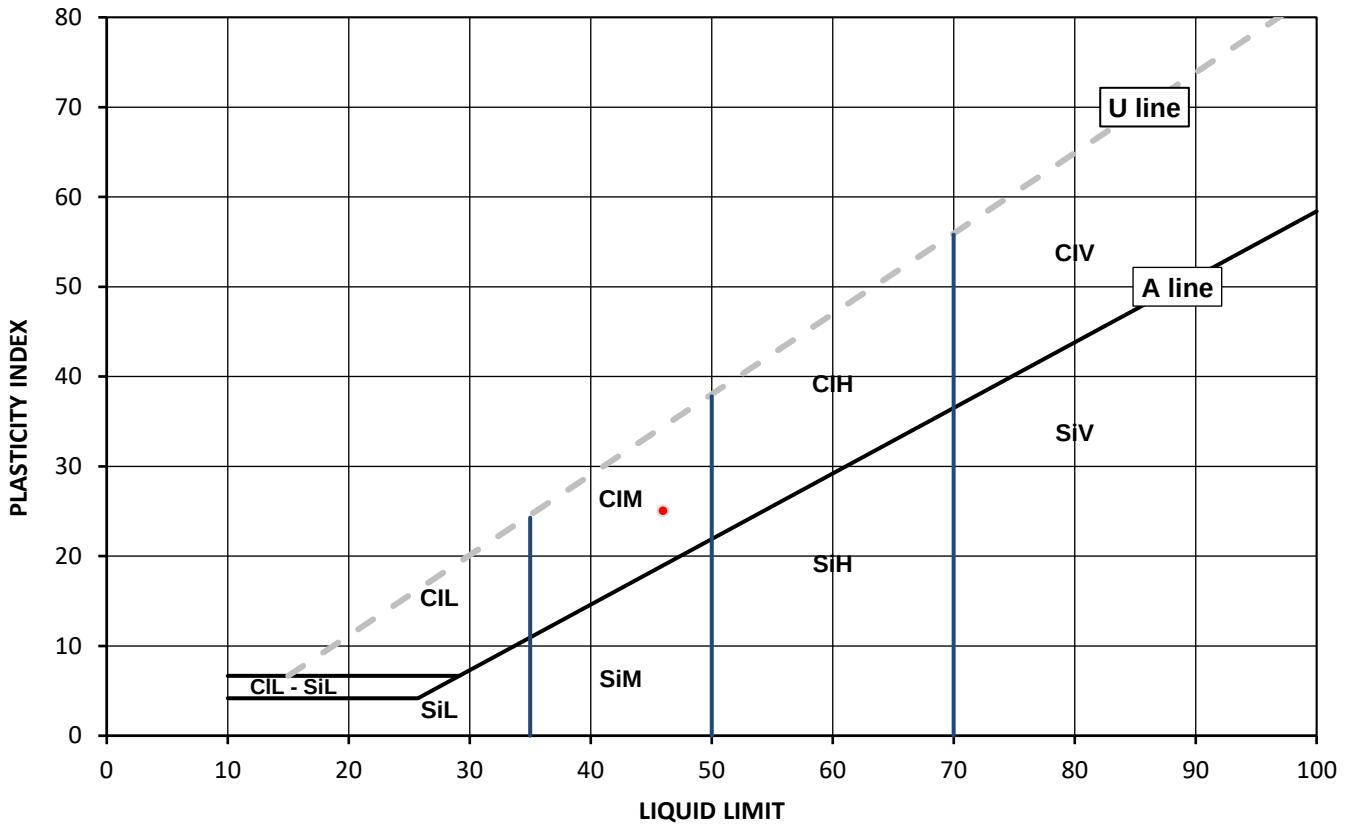
Client:	Maund GeoConsulting Ltd	Client Reference:	MGC-132
Client Address:	3 Coopers Square, Chipping Norton, Oxfordshire, OX7 5DG	Job Number:	23-43112-1
		Date Sampled:	03/07/2023
		Date Received:	04/07/2023
Contact:	Julian Maund	Date Tested:	13/07/2023
Site Address:	45 Cholmeley Crescent N6 5EX	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2736726	Depth Top [m]:	2.00
Hole No.:	BH1	Depth Base [m]:	2.45
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Brown slightly gravelly slightly sandy CLAY		
Sample Preparation:	Tested after >425 µm removed by hand		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
30	46	21	25	99



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

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DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with:BS 1377-2:1990:Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Environmental Science

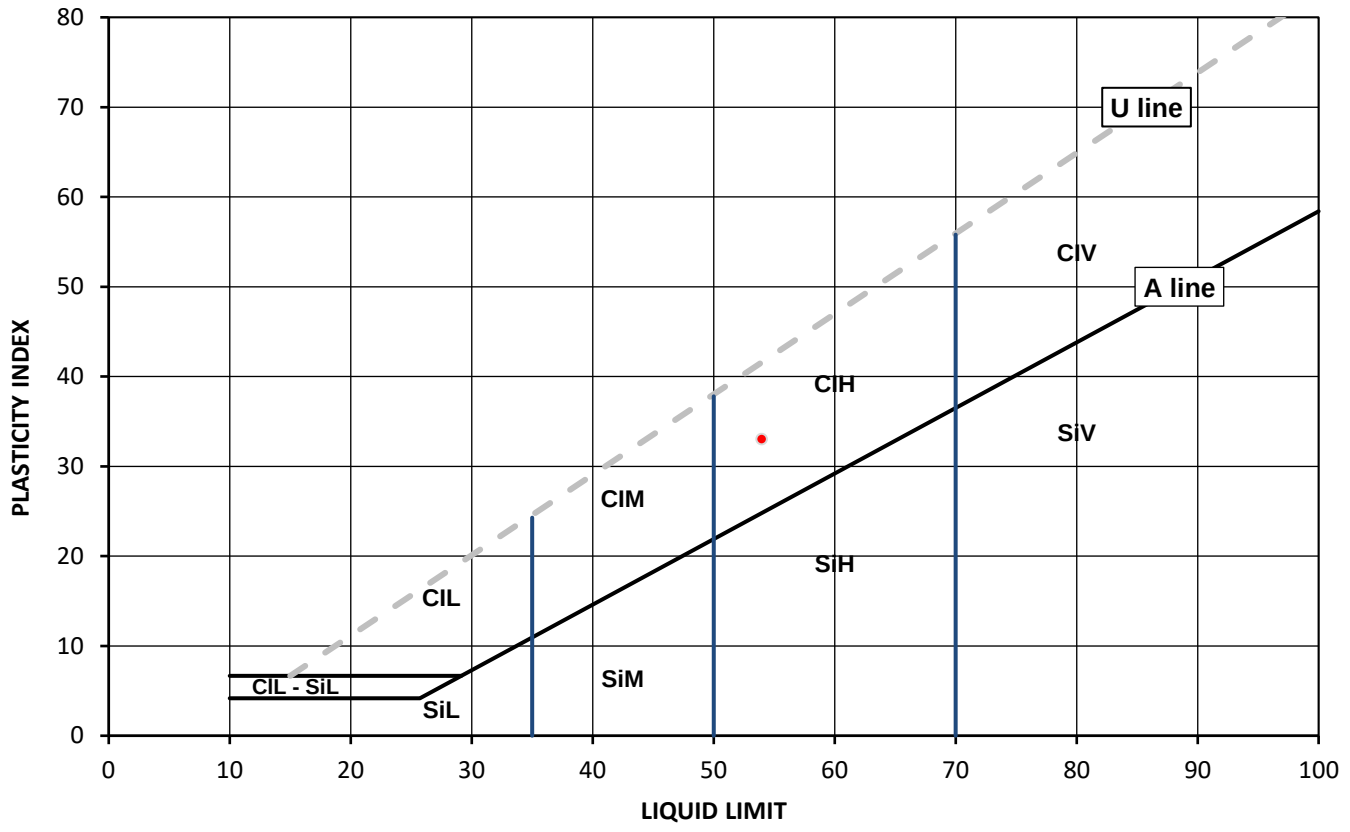
Client:	Maund GeoConsulting Ltd	Client Reference:	MGC-132
Client Address:	3 Coopers Square, Chipping Norton, Oxfordshire, OX7 5DG	Job Number:	23-43112-1
		Date Sampled:	03/07/2023
		Date Received:	04/07/2023
Contact:	Julian Maund	Date Tested:	13/07/2023
Site Address:	45 Cholmeley Crescent N6 5EX	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2736727	Depth Top [m]:	3.00
Hole No.:	BH1	Depth Base [m]:	3.45
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Brown slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
28	54	21	33	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

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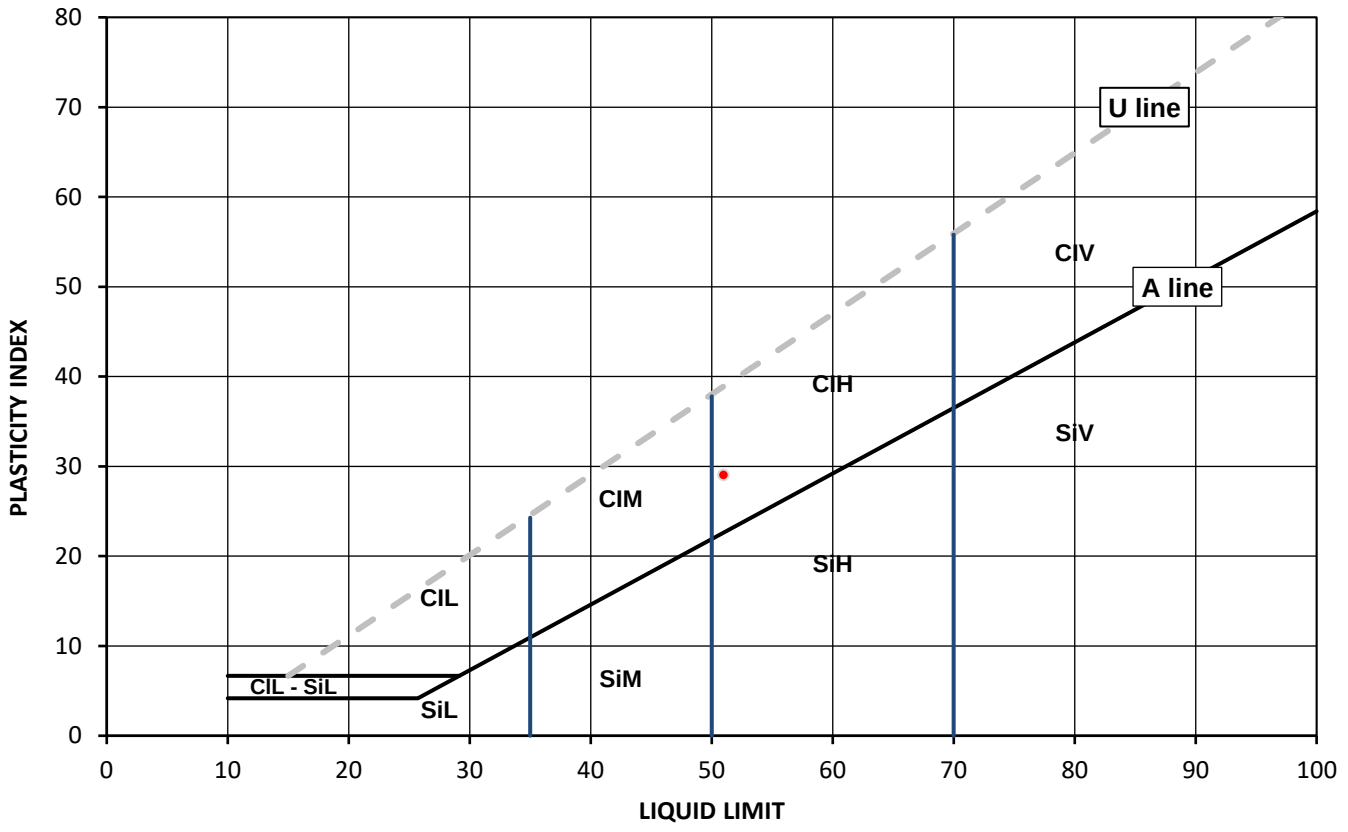
		Date Sampled:	03/07/2023
		Date Received:	04/07/2023
Contact:	Julian Maund	Date Tested:	13/07/2023
Site Address:	45 Cholmeley Crescent N6 5EX	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2736728	Depth Top [m]:	4.00
Hole No.:	BH1	Depth Base [m]:	4.45
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Brownish grey slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
23	51	22	29	100



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		Plasticity		Liquid Limit
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Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS
Tested in Accordance with:BS 1377-2:1990:Clause 4.4 and 5

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Brackmills Industrial Estate
Northampton NN4 7EB

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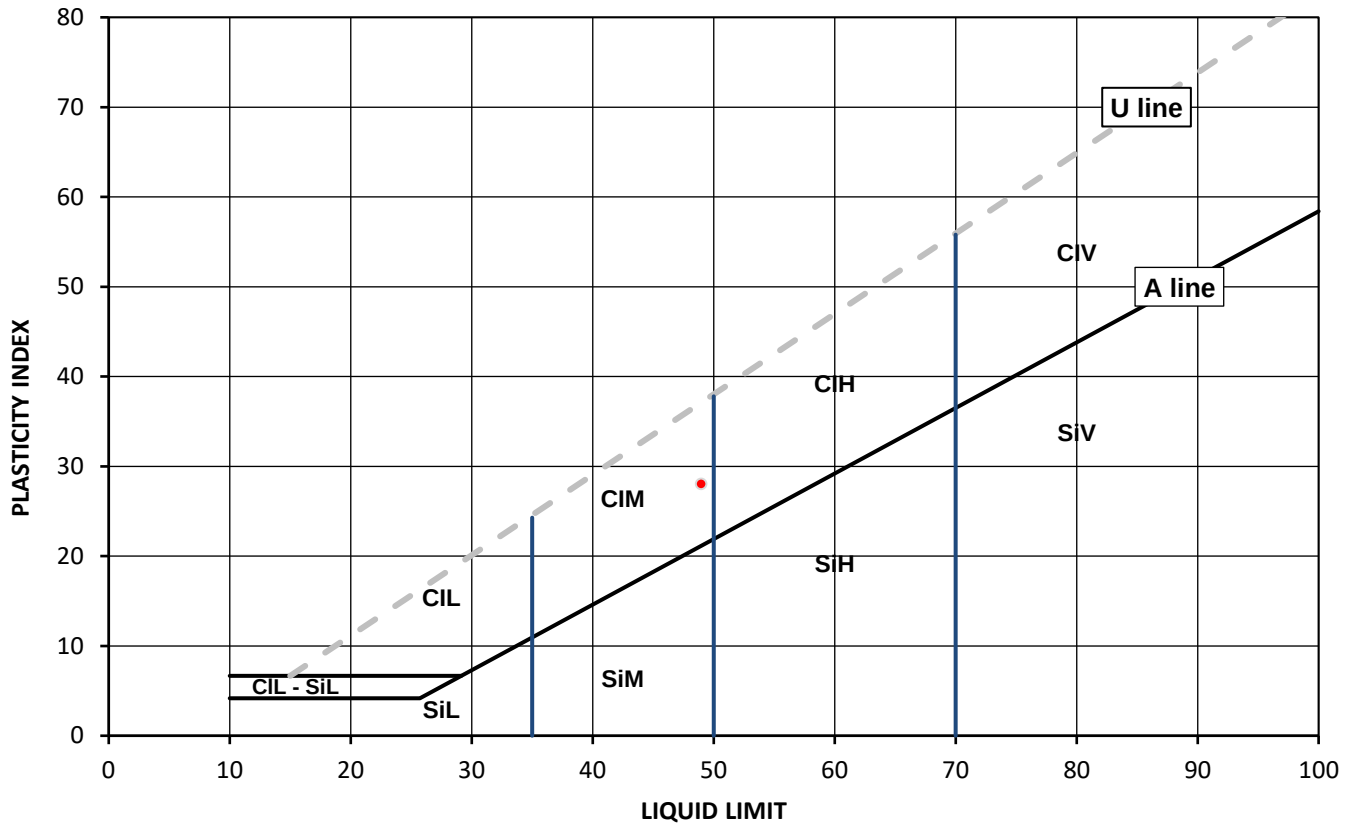
Client:	Maund GeoConsulting Ltd	Client Reference:	MGC-132
Client Address:	3 Coopers Square, Chipping Norton, Oxfordshire, OX7 5DG	Job Number:	23-43112-1
		Date Sampled:	03/07/2023
		Date Received:	04/07/2023
Contact:	Julian Maund	Date Tested:	13/07/2023
Site Address:	45 Cholmeley Crescent N6 5EX	Sampled By:	Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2736729	Depth Top [m]:	5.00
Hole No.:	BH1	Depth Base [m]:	5.45
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Brownish grey slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
22	49	21	28	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 25/07/2023

GF 232.13

SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

Water Content by BS 1377-2:1990: Clause 3.2Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Client: Maund GeoConsulting Ltd

Client Address: 3 Coopers Square, Chipping Norton, Oxfordshire, OX7 5DG

Contact: Julian Maund

Site Address: 45 Cholmeley Crescent N6 5EX

Client Reference: MGC-132
Job Number: 23-43112-1
Date Sampled: 03/07/2023
Date Received: 04/07/2023
Date Tested: 13/07/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [W]	Water Content BS EN ISO 17892-1 [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m^3	Mg/m^3	Mg/m^3	%		
2736725	BH1	Not Given	1.00	1.45	D	Brown slightly gravelly CLAY	Atterberg 1 Point	19		97	64	25	39						
2736726	BH1	Not Given	2.00	2.45	D	Brown slightly gravelly slightly sandy CLAY	Atterberg 1 Point	30		99	46	21	25						
2736727	BH1	Not Given	3.00	3.45	D	Brown slightly sandy CLAY	Atterberg 1 Point	28		100	54	21	33						
2736728	BH1	Not Given	4.00	4.45	D	Brownish grey slightly sandy CLAY	Atterberg 1 Point	23		100	51	22	29						
2736729	BH1	Not Given	5.00	5.45	D	Brownish grey slightly sandy CLAY	Atterberg 1 Point	22		100	49	21	28						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Date Reported: 25/07/2023

GF 234.16

SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS 1377-2: 1990: Clause 3.2

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Client: Maund GeoConsulting Ltd

Client Address: 3 Coopers Square, Chipping Norton, Oxfordshire, OX7 5DG

Contact: Julian Maund

Site Address: 45 Cholmeley Crescent N6 5EX

Client Reference: MGC-132
Job Number: 23-43112-1
Date Sampled: 03/07/2023
Date Received: 04/07/2023
Date Tested: 13/07/2023
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC	Sample preparation / Oven temperature at the time of testing			
		Reference	Depth Top m	Depth Base m	Type			%				
2736725	BH1	Not Given	1.00	1.45	D	Brown slightly gravelly CLAY		19	Sample was quartered, oven dried at 106.2 °C			
2736726	BH1	Not Given	2.00	2.45	D	Brown slightly gravelly slightly sandy CLAY		30	Sample was quartered, oven dried at 106.2 °C			
2736727	BH1	Not Given	3.00	3.45	D	Brown slightly sandy CLAY		28	Sample was quartered, oven dried at 106.2 °C			
2736728	BH1	Not Given	4.00	4.45	D	Brownish grey slightly sandy CLAY		23	Sample was quartered, oven dried at 106.2 °C			
2736729	BH1	Not Given	5.00	5.45	D	Brownish grey slightly sandy CLAY		22	Sample was quartered, oven dried at 106.2 °C			

Comments:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Date Reported: 25/07/2023

GF 099.17

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e: julian.maund@gmail.com

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Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 23-43340

Project / Site name:	45 Cholmeley Crescent N6 5EX	**Samples received on:**	04/07/2023
Your job number:	MGC-132	**Samples instructed on/ Analysis started on:**	04/07/2023
Your order number:		**Analysis completed by:**	11/07/2023
Report Issue Number:	1	**Report issued on:**	13/07/2023
Samples Analysed:	1 10:1 WAC sample		

Signed:

Dominika Warjan
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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Waste Acceptance Criteria Analytical Results

Report No:	**23-43340**						
					Client:	**MAUNDGEO**	
Location	**45 Cholmeley Crescent N6 5EX**						
Lab Reference (Sample Number)	2737924 / 2737925				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	03/07/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH1						
Depth (m)	0.00-0.35						
Solid Waste Analysis							
TOC (%)**	0.5				3%	5%	6%
Loss on Ignition (%) **	2.4				--	--	10%
BTEX (µg/kg)**	-				6000	--	--
Sum of PCBs (mg/kg)**	-				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	-				500	--	--
Total PAH (WAC-17) (mg/kg)	-				100	--	--
pH (units)**	7.8				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	2.9				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0057			0.0438	0.5	2	25
Barium *	0.0209			0.161	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0076			0.058	0.5	10	70
Copper *	0.0093			0.072	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0010			0.0078	0.5	10	30
Nickel *	0.0015			0.012	0.4	10	40
Lead *	0.040			0.31	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.024			0.18	4	50	200
Chloride *	0.48			3.7	800	15000	25000
Fluoride*	0.39			3.0	10	150	500
Sulphate *	6.7			52	1000	20000	50000
TDS*	43			330	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	7.70			59.1	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.50						
Dry Matter (%)	85						
Moisture (%)	15						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*= UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepencies with current legislation

** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 23-43340
Project / Site name: 45 Cholmeley Crescent N6 5EX

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2737924	BH1	None Supplied	0.00-0.35	Brown clay and sand with gravel.

Analytical Report Number : 23-43340
Project / Site name: 45 Cholmeley Crescent N6 5EX

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by EC probe using a factor of 0.6.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031	W	ISO 17025
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Analytical Report Number : 23-43340
Project / Site name: 45 Cholmeley Crescent N6 5EX

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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Analytical Report Number : 23-43339

Project / Site name:	45 Cholmeley Crescent N6 5EX	**Samples received on:**	04/07/2023
Your job number:	MGC-132	**Samples instructed on/ Analysis started on:**	04/07/2023
Your order number:		**Analysis completed by:**	12/07/2023
Report Issue Number:	1	**Report issued on:**	13/07/2023
Samples Analysed:	1 soil sample		

Signed:

Dominika Warjan
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

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Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 23-43339
Project / Site name: 45 Cholmeley Crescent N6 5EX

Lab Sample Number				2737923
Sample Reference				BH1
Sample Number				None Supplied
Depth (m)				0.00-0.35
Date Sampled				03/07/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	15
Total mass of sample received	kg	0.001	NONE	0.5

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSO

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	940
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.056
Sulphide	mg/kg	1	MCERTS	< 1.0
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.5

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.13
Acenaphthene	mg/kg	0.05	MCERTS	0.69
Fluorene	mg/kg	0.05	MCERTS	0.44
Phenanthrene	mg/kg	0.05	MCERTS	4.3
Anthracene	mg/kg	0.05	MCERTS	0.78
Fluoranthene	mg/kg	0.05	MCERTS	5.5
Pyrene	mg/kg	0.05	MCERTS	4.8
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.5
Chrysene	mg/kg	0.05	MCERTS	2.3
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	2.8
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.93
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.32
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.3

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	29.9

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	34
Copper (aqua regia extractable)	mg/kg	1	MCERTS	47
Lead (aqua regia extractable)	mg/kg	1	MCERTS	460
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	180

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Analytical Report Number: 23-43339
Project / Site name: 45 Cholmeley Crescent N6 5EX

Lab Sample Number				2737923
Sample Reference				BH1
Sample Number				None Supplied
Depth (m)				0.00-0.35
Date Sampled				03/07/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Monoaromatics & Oxygenates				
Benzene	µg/kg	5	MCERTS	< 5.0~
Toluene	µg/kg	5	MCERTS	< 5.0~
Ethylbenzene	µg/kg	5	NONE	< 5.0^
p & m-xylene	µg/kg	5	NONE	< 5.0^
o-xylene	µg/kg	5	NONE	< 5.0^
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0~
Petroleum Hydrocarbons				
TPH C10 - C40 $_{EH_CU_1D_TOTAL}$	mg/kg	10	MCERTS	39
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS_1D_AL}$	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS_1D_AL}$	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS_1D_AL}$	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH_CU_1D_AL}$	mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH_CU_1D_AL}$	mg/kg	2	MCERTS	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH_CU_1D_AL}$	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH_CU+HS_1D_AL}$	mg/kg	10	NONE	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS_1D_AR}$	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS_1D_AR}$	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS_1D_AR}$	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH_CU_1D_AR}$	mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH_CU_1D_AR}$	mg/kg	2	MCERTS	3.1
TPH-CWG - Aromatic >EC16 - EC21 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	13
TPH-CWG - Aromatic >EC21 - EC35 $_{EH_CU_1D_AR}$	mg/kg	10	MCERTS	23
TPH-CWG - Aromatic (EC5 - EC35) $_{EH_CU+HS_1D_AR}$	mg/kg	10	NONE	39

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number : 23-43339
Project / Site name: 45 Cholmeley Crescent N6 5EX

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Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2737923	BH1	None Supplied	0.00-0.35	Brown clay and sand with gravel.

Analytical Report Number : 23-43339
Project / Site name: 45 Cholmeley Crescent N6 5EX

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

Analytical Report Number : 23-43339
Project / Site name: 45 Cholmeley Crescent N6 5EX

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

~ - Quality control surrogate recovery outside of limits, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

^ - Data reported unaccredited due to quality control parameter failure associated with this result; The result should be considered as being deviating and may be compromised.

Sample Deviation Report

Analytical Report Number : 23-43339
Project / Site name: 45 Cholmeley Crescent N6 5EX

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH1	None Supplied	S	2737923	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
BH1	None Supplied	S	2737923	b	TPHCWG (Soil)	L088/76-PL	b

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Analytical Report Number : 23-43113

Project / Site name:	45 Cholmeley Crescent N6 5EX	**Samples received on:**	04/07/2023
Your job number:	MGC-132	**Samples instructed on/ Analysis started on:**	04/07/2023
Your order number:		**Analysis completed by:**	16/07/2023
Report Issue Number:	1	**Report issued on:**	22/07/2023
Samples Analysed:	2 soil samples		

Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 23-43113
Project / Site name: 45 Cholmeley Crescent N6 5EX

Lab Sample Number				2736730	2736731
Sample Reference				BH1	BH1
Sample Number				None Supplied	None Supplied
Depth (m)				1.00-1.45	3.00-3.45
Date Sampled				03/07/2023	03/07/2023
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	18
Total mass of sample received	kg	0.001	NONE	0.2	0.2

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.1	8.1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.059	0.04

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2736730	BH1	None Supplied	1.00-1.45	Brown clay and sand.
2736731	BH1	None Supplied	3.00-3.45	Brown clay and sand.

Analytical Report Number : 23-43113
Project / Site name: 45 Cholmeley Crescent N6 5EX

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.