Analytical Report Number: 20-38049
Project / Site name: West Central Street and 1 Museum Street, Holborn, WC1A 1JP
Your Order No: P3094JJ2084.3

Lab Sample Number				1665371	1665372	1665373	1665374
Sample Reference				TP3	TP12	TP12	TP12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.85	0.15	0.30	0.60
Date Sampled				28/10/2020	28/10/2020	28/10/2020	28/10/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
VOCs							
Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	-	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	-	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	-	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	-	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	-	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Styrene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	-	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0

Analytical Report Number: 20-38049
Project / Site name: West Central Street and 1 Museum Street, Holborn, WC1A 1JP
Your Order No: P3094JJ2084.3

Lab Sample Number				1665371	1665372	1665373	1665374
Sample Reference				TP3	TP12	TP12	TP12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.85	0.15	0.30	0.60
Date Sampled				28/10/2020	28/10/2020	28/10/2020	28/10/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0
SVOCs							
Aniline	mg/kg	0.1	NONE	< 0.1	-	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	-	-	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	-	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	-	-	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	< 0.2

Analytical Report Number: 20-38049
Project / Site name: West Central Street and 1 Museum Street, Holborn, WC1A 1JP
Your Order No: P3094JJ2084.3

Lab Sample Number				1665371	1665372	1665373	1665374
Sample Reference				TP3	TP12	TP12	TP12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.85	0.15	0.30	0.60
Date Sampled				28/10/2020	28/10/2020	28/10/2020	28/10/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	-	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 20-38049
Project / Site name: West Central Street and 1 Museum Street, Holborn, WC1A 1JP

* 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 *
1665367	TP1	None Supplied	0.25	Brown clay and loam with gravel.
1665368	TP1	None Supplied	0.5	Brown sandy gravel.**
1665369	TP1	None Supplied	1	Brown sandy gravel.**
1665370	TP3	None Supplied	0.15	Brown clay and sand with gravel.
1665371	TP3	None Supplied	0.85	Brown gravelly sand.
1665372	TP12	None Supplied	0.15	Brown clay and sand with gravel.
1665373	TP12	None Supplied	0.3	Brown clay and sand with gravel.
1665374	TP12	None Supplied	0.6	Brown clay and sand with gravel.

**Non MCERTS matrix.

Analytical Report Number : 20-38049
Project / Site name: West Central Street and 1 Museum Street, Holborn, WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

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 disperion 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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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
Organic matter (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
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
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
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
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
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

Analytical Report Number : 20-38049
Project / Site name: West Central Street and 1 Museum Street, Holborn, WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
Sulphate, water soluble, in soil	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

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

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Analytical Report Number : 20-38793

Project / Site name:	West Central Street and 1 Museum Street, Holborn WC1A 1JP	**Samples received on:**	28/10/2020
Your job number:	JJ2084	**Samples instructed on/ Analysis started on:**	30/10/2020
Your order number:	P3094JJ2084.4	**Analysis completed by:**	06/11/2020
Report Issue Number:	1	**Report issued on:**	06/11/2020
Samples Analysed:	1 soil sample		

Signed: [redacted]

a Abdul Razzak
Senior Quality 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.

Analytical Report Number: 20-38793
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP
Your Order No: P3094JJ2084.4

Lab Sample Number				1669641
Sample Reference				TP6A
Sample Number				None Supplied
Depth (m)				0.90
Date Sampled				26/10/2020
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	8
Total mass of sample received	kg	0.001	NONE	1.2
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.7
Total Cyanide	mg/kg	1	MCERTS	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	1100
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.13
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	132

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15
Boron (water soluble)	mg/kg	0.2	MCERTS	1.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	29
Lead (aqua regia extractable)	mg/kg	1	MCERTS	190
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	210

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 20-38793
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

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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 *
1669641	TP6A	None Supplied	0.9	Brown sandy clay with gravel.

Analytical Report Number : 20-38793
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

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 disperion 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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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
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
Sulphate, water soluble, in soil	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

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

Sample Deviation Report

Analytical Report Number : 20-38793
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP6A	None Supplied	S	1669641	c	Total cyanide in soil	L080-PL	c

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GROUND INVESTIGATION FACTUAL REPORT

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Report Title: **Ground Investigation Factual Report for 1 Museum Street, Holborn, WC1A 1JP**

Report Status: **Final v1.0**

Job No: **P3094J2084/JWT**

Date: **02 August 2021**

QUALITY CONTROL - REVISIONS

Version	Date	Issued By

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1 INTRODUCTION

1.1 Terms of Reference

1.1.1 Labs Selkirk House & Sollidon Ltd ("The Client") has commissioned Jomas Associates Ltd, to undertake a ground investigation and factual reporting.

1.1.2 The scope of the investigation was specified by A-squared Studio Engineers Ltd within Ground Investigation Specification document (ref 1084-A2S-XX-XX-SP-Y-0001-00, dated October 2020).

1.1.3 The intrusive investigation was undertaken in accordance with Jomas proposal dated 03 November 2020 (ref 20203094/JWT/JF Rev4).

1.1.4 It should be noted that Jomas' proposal included works within the site referred to as West Central Street, which is undergoing redevelopment at the same time as 1 Museum Street (the subject site of this report), however due to programme and access issues, the West Central Street works are to be instructed at a later date, as detailed in Jomas' fee variation request document dated 04 March 2021 (ref P3094J2084/rs v2). This report relates solely to the ground investigation works undertaken at the site known as 1 Museum Street.

1.1.5 This work involves a summary of the ground conditions encountered along with factual geo-environmental and geotechnical data for interpretation by a third party.

1.2 Proposed Development

1.2.1 The proposed development for 1 Museum Street is understood to comprise a 'lifestyle' hotel with 425 to 460 rooms of up to 20m^2 alongside 1,500m^2 of public areas, a gym / spa and swimming pool, 1000m^2 to 2000m^2 of meeting and event space, and 8000m^2 of retail space on the ground floor. The scheme involves demolishing the existing tower and podium superstructures, and constructing a new tower of up to 21 storeys and a two- to four-storey podium in all other areas of the site. The existing basement and foundations will be reused with additional pile foundations installed in areas of the site where the existing raft is not present.

1.2.2 The proposed superstructure involves post-tensioned (PT) reinforced concrete for the slabs above ground and in-situ reinforced concrete for the vertical elements. In-situ reinforced concrete slabs are proposed for the ground floor and below ground.

1.2.3 Plans of the existing and proposed development are provided in Appendix 1.

1.3 Objectives

1.3.1 The objectives of Jomas' investigation were as follows:

- To conduct an intrusive investigation;

- To obtain geotechnical parameters to inform preliminary foundation design;
- To factually report information relating to land contamination.

1.4 Scope of Works

1.4.1 The following tasks were undertaken to achieve the objectives listed above:

- Intrusive ground investigation to determine shallow ground conditions;
- Undertaking of laboratory chemical and geotechnical testing upon samples obtained;
- The compilation of this report, which collects and discusses the above data, and presents an assessment of the site conditions, and geotechnical conclusions and recommendations.

1.5 Supplied Documentation

1.5.1 A report previously prepared by a third party was supplied to Jomas Associates at the commencement of this investigation. Table 1.1 details the documents supplied:

Table 1.1: Supplied Reports

Title	Author	Reference	Date
Geotechnical and Geo-environmental Desk Study Report for 1 Museum Street and West Central Street	A-squared Studio Engineers Ltd	1084-A2S-XX-XX-RP-Y-0001-00	October 2019

1.6 Limitations

1.6.1 Jomas Associates Ltd has prepared this report for the sole use of Labs Selkirk House & Sollidon Ltd, in accordance with the generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon by any other party without the explicit written agreement of Jomas Associates Limited. No other third party warranty, expressed or implied, is made as to the professional advice included in this report. This report must be used in its entirety.

1.6.2 The records search was limited to information available from public sources; this information is changing continually and frequently incomplete. Unless Jomas Associates Limited has actual knowledge to the contrary, information obtained from public sources or provided to Jomas Associates Limited by site personnel and other information sources, have been assumed to be correct. Jomas Associates Limited does not assume any liability for the misinterpretation of information or for items not visible, accessible or present on the subject property at the time of this study.

1.6.3 Whilst every effort has been made to ensure the accuracy of the data supplied, and any analysis derived from it, there may be conditions at the site that have not been disclosed by the investigation, and could not therefore be taken into account. As with any site, there may be differences in soil conditions between exploratory hole positions. Furthermore, it should be noted that groundwater conditions may vary due to seasonal and other effects and may at times be significantly different from those measured by the investigation. No liability can be accepted for any such variations in these conditions.

1.6.4 Any reports provided to Jomas Associates Limited have been reviewed in good faith. Jomas Associates Limited cannot be held liable for any errors or omissions in these reports, or for any incorrect interpretation contained within them.

1.6.5 This investigation and report has been carried out in accordance with the relevant standards and guidance in place at the time of the works. Future changes to these may require a re-assessment of the recommendations made within this report.

1.6.6 ***This report is not an engineering design and the figures and calculations contained in the report should be used by the Structural Engineer, taking note that variations may apply, depending on variations in design loading, in techniques used, and in site conditions. Our recommendations should therefore not supersede the Engineer's design.***

2 SITE SETTING

2.1 Site Information

2.1.1 The site location plan is presented in Figure 1, Appendix 1.

Table 2.1: Site Information

Name of Site	-
Address of Site	1 Museum Street Holborn WC1A 1JP
Approx. National Grid Ref.	530184 , 181386
Site Area (Approx.)	0.3ha
Site Occupation	Former Travelodge and NCP car park; site is currently vacant

2.2 Solid and Drift Geology

2.2.1 With reference to British Geological Survey (BGS) mapping, the geology of the site was anticipated to comprise superficial geology of the Lynch Hill Gravel Member. This overlies solid geology of the London Clay Formation, underlain by the Lambeth Group, which in turn is underlain by the Thanet Formation.

2.2.2 Given that the site has been developed previously, a mantle of Made Ground could also be present overlying the natural soils.

2.2.3 BS5930:2015 defines **Made Ground** as anthropogenic ground in which the material has been placed without engineering control and/or manufactured by man in some way, such as through crushing or washing, or arising from an industrial process. Great variations in material type, thickness and degree of compaction invariably occur.

2.2.4 The **Lynch Hill Gravel Member** deposits have an average thickness 7m, with a range of 1m to 12m thickness, and are described as sand and gravel, locally with lenses of silt, clay or peat.

2.2.5 The **London Clay Formation** comprises a stiff grey fissured clay, weathering to brown near surface. Concretions of argillaceous limestone in nodular form (Claystones) occur throughout the formation. Crystals of gypsum (Selenite) are often found within the weathered part of the London Clay, and precautions against sulphate attack to concrete are sometimes required. The lowest part of the formation is a sandy bed with black rounded gravel and occasional layers of sandstone and is known as the Basement Beds. In the north London area, the upper part of the London Clay has been disturbed by glacial action and may contain pockets of sand and gravel.

2.2.6 The **Lambeth Group** comprises a mixture of stiff to hard red, blue/grey and brown mottled clays with basal beds of sand and gravel which vary greatly both laterally and

vertically. Locally, these sediments are cemented with calcium carbonate, iron oxides and silica to form materials with relatively high strength.

2.2.7 The **Thanet Formation** comprises glauconite-coated, nodular flint at base, overlain by pale yellow-brown, fine-grained sand that can be clayey and glauconitic. Rare calcareous or siliceous sandstones.

2.3 Desk Study (A-squared Studio Engineers Ltd, 2020)

2.3.1 A Desk Study report has been produced for the site and issued separately (A-Squared, 2020). Reference should be made to that document for details.

2.4 Geo-Environmental Soil Sampling (Jomas, November 2020)

2.4.1 Jomas Associates were commissioned to undertake geo-environmental soil sampling of soils exposed in exploratory trial pits undertaken by others in a previous phase of investigation at the site.

2.4.2 Jomas' scope of works comprised sampling of the exposed soils, scheduling of chemical laboratory analysis as specified by A-squared Studio Engineers Ltd, and factual reporting of the encountered ground conditions and results of laboratory analysis.

2.4.3 Reference should be made to Jomas' Geo-Environmental Soil Sampling Letter Report (ref P3094J2084/JWT v1.1, dated 11 November 2020) for detailed information.

2.5 Concrete Probing (Jomas, 2020)

2.5.1 On 2nd December 2020, a Jomas engineer and operatives attended the site with an operated Hilti drill and specialist diamond tipped drill bits to undertake proof drilling of the concrete floor slab.

2.5.2 The works were undertaken at 5No proposed exploratory positions (WS101, WS102, WS110, BH103, WS103) on the external access ramp to the basement carpark to assess the thickness of slab at these locations, and establish if a void was present beneath the slab.

2.5.3 The 5No. positions were completed along with probing of an additional 3No. positions (TP6, WS107, BH102), also to establish the slab thickness at these locations. The results of the works undertaken are summarised below in Table 2.2.

Table 2.2: Summary of Concrete Probing

Position	Concrete slab thickness (mm)	Underlain by void	Depth to base of void (mm)
WS101	>960	No	-
WS110	400	Yes	1900
WS102	320	Yes	940
WS103	400	Possible – loose material infill	1060
BH103	360	No	-
TP6	>900	No	-
BH102	>340	No	-
WS107	>550	No	-

2.5.4 The results of the probing exercise confirmed the presence of a void beneath exploratory positions WS102 and WS110, and that coring equipment would be required to mitigate the thickness of concrete and allow progression of the exploratory boreholes.

3 GROUND INVESTIGATION

3.1 Rationale for Ground Investigation

3.1.1 The site investigation has been undertaken generally in accordance with Contaminated Land Report 11, BS10175, NHBC Standards Chapter 4.1, and other associated Statutory Guidance.

3.1.2 The soil sampling rationale for the site investigation was developed with reference to EA guidance 'Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination' (Technical Report P5-066/TR).

3.1.3 The sampling proposal was designed in order to gather data representative of the site conditions.

3.2 Scope of Ground Investigation

3.2.1 The ground investigation was undertaken on 6th – 9th and 12th – 16th April, and 11th – 13th, 18th – 21st and 24th – 25th May 2021.

3.2.2 The work was undertaken in accordance with BS5930 'Code of Practice for Site Investigation' and BS10175 'Investigation of Potentially Contaminated Sites'. All works were completed without incident.

3.2.3 A summary of the fieldwork carried out at the site is offered in Table 3.1 below.

Table 3.1: Scope of Intrusive Investigation

Investigation Type	Number of Exploratory Holes Achieved	Exploratory Hole Designation	Depth Achieved (m BGL)
Cable Percussive Boreholes	2	BH102A – BH103	BH102A – 20.0m bgl BH103 – 50.0m bgl
Windowless Sampler Boreholes	9	WS101 – WS105, WS107 – WS110	Up to 2.4m bgl
Monitoring Well Installations	9	BH102A – BH103, WS101 – WS105, WS107, WS108	Up to 7.0m bgl

3.2.4 Note that boreholes BH103, WS101 and WS110 were drilled from street level, boreholes WS102, WS103 and WS104 were drilled on the sloping external ramp to the basement, boreholes WS108 and WS109 were drilled from basement level one, WS105 and BH102 were drilled from basement level two, and WS107 was drilled from basement level three. All depths given as m bgl are relative to the ground level (i.e. street or basement) at which the borehole was drilled.

3.2.5 In all cases, all holes were logged in accordance with BS5930:2015.

3.2.6 The exploratory hole locations were specified by A-squared Studio Engineers Ltd, and marked onsite and cleared of utilities by a specialist utilities surveyor, as shown in the exploratory hole location plan presented in Figure 2, Appendix 1. The exploratory hole records are included in Appendix 2.

3.2.7 Where monitoring well installations were not installed, the exploratory holes were backfilled with the arisings (in the reverse order in which they were drilled) and the ground surface was reinstated so that no depression was left.

3.3 In-situ Geotechnical Testing

3.3.1 In-situ geotechnical testing included Standard Penetration Tests. The determined 'N' values have been used to determine the relative density of granular materials and have been used with standard correlations to infer various other derived geotechnical parameters including the undrained shear strength of the cohesive strata. The results of the individual tests are on the appropriate exploratory hole logs in Appendix 2.

3.4 Sampling Rationale

3.4.1 The exploratory holes were positioned as specified by A-squared Studio Engineers Ltd within Ground Investigation Specification document (ref 1084-A2S-XX-XX-SP-Y-0001-00, dated October 2020).

3.4.2 Soil samples were taken from across the site at various depths as shown in the exploratory hole logs.

3.4.3 Jomas Associates Limited's engineers normally collect samples at appropriate depths based on field observations such as:

- appearance, colour and odour of the strata and other materials, and changes in these;
- the presence or otherwise of sub-surface features such as pipework, tanks, foundations and walls; and,
- areas of obvious damage, e.g. to the building fabric.

3.4.4 Soil samples were taken from across the site at various depths as shown in the exploratory hole logs (copies of which are provided in Appendix 2). The methodology used and type of samples taken were chosen to allow the Sampling category to be A or B according to EN ISO 22475-1. This in turn allows suitable geotechnical testing to be carried out.

3.4.5 Groundwater strikes noted during drilling, are recorded within the exploratory hole records in Appendix 2.

3.4.6 Samples were stored in cool boxes (<4°C) and preserved in accordance with laboratory guidance.

3.5 Sampling Limitations

3.5.1 It should be noted that due to the necessity of a street works license, and anticipated thickness of concrete, exploratory positions BH101 and WS106 are to be undertaken by means of a subsequent phase of investigation, the findings of which will be reported separately.

3.5.2 Significant thicknesses of concrete were encountered at the internal exploratory positions located within the basement. Specialist coring equipment was utilised to mitigate the thickness.

3.5.3 At BH102, the concrete slab was proven at 2.40mbgl, however due to the presence of reinforcing bar it was not possible to retrieve the core and so the position was terminated and an alternate location (BH102A) undertaken approximately 2m northeast.

3.5.4 WS101 terminated at 1.10m bgl due to equipment refusal in very dense gravelly sand subbase-type material.

3.5.5 At WS102, a void was encountered directly beneath the floor slab (extending from 0.33m – 0.80m bgl). The borehole terminated at 2.20mbgl due to equipment refusal on a concrete obstruction.

3.5.6 WS103 terminated at 2.00m bgl due to equipment refusal in very dense sandy gravel.

3.5.7 WS104 terminated at 1.00m bgl due to equipment refusal on a concrete obstruction.

3.5.8 Due to site constraints WS105, WS107 and WS108 were undertaken using hand-held windowless sampling equipment. These positions terminated at depths of 2.20m, 1.80m and 2.03m bgl due to equipment refusal in very stiff consistency clay (WS105) and on concrete obstructions (WS107 and WS108).

3.5.9 At WS110 a void was encountered directly beneath the floor slab (extending from 0.40m – 2.02m bgl). The borehole terminated at 2.30mbgl due to equipment refusal in very dense sandy gravel.

3.5.10 BH103 was drilled in the proposed location, to the proposed depth.

3.6 Laboratory Analysis

3.6.1 A programme of chemical laboratory testing, scheduled by A-squared Studio Engineers Ltd, was carried out on selected samples of Made Ground and natural strata.

Chemical Testing

3.6.2 Soil samples were submitted to i2 Analytical (a UKAS and MCerts accredited laboratory), for analysis.

3.6.3 The samples were analysed for a wide range of contaminants as shown in Table 3.2 below, as scheduled by A-squared Studio Engineers Ltd:

Table 3.2: Chemical Tests Scheduled

	No. of tests	
Test Suite	**Made Ground / Topsoil**	**Natural**
Basic Suite	7	3
TPHCWG (inc BTEX)	7	0
VOC/SVOC	7	0
Total Organic Carbon (TOC)	8	0
Soil Organic Matter (SOM)	9	0
BRE-SD1	3	14
Asbestos Screen & ID	8	0
Polychlorinated Biphenyls (PCBs)	1	0

3.6.4 The determinands contained in the basic suite are as detailed in Table 3.3 below:

Table 3.3: Basic Suite of Determinands

DETERMINAND	LIMIT OF DETECTION (mg/kg)	UKAS ACCREDITATION	TECHNIQUE
Arsenic	1	Y (MCERTS)	ICPMS
Cadmium	0.2	Y (MCERTS)	ICPMS
Chromium	1	Y (MCERTS)	ICPMS
Chromium (Hexavalent)	4	Y (MCERTS)	Colorimetry
Lead	1	Y (MCERTS)	ICPMS
Mercury	0.3	Y (MCERTS)	ICPMS
Nickel	1	Y (MCERTS)	ICPMS
Selenium	1	Y (MCERTS)	ICPMS
Copper	1	Y (MCERTS)	ICPMS
Zinc	1	Y (MCERTS)	ICPMS
Boron (Water Soluble)	0.2	Y (MCERTS)	ICPMS
pH Value	0.1 units	Y (MCERTS)	Electrometric
Sulphate (Water Soluble)	0.0125g/l	Y (MCERTS)	Ion Chromatography
Total Cyanide	1	Y (MCERTS)	Colorimetry
Speciated/Total PAH	0.05/0.80	Y (MCERTS)	GCFID
Phenols	1	Y (MCERTS)	HPLC
Total Petroleum Hydrocarbons (banded)	-	N Y (MCERTS)	Gas Chromatography

3.6.5 Laboratory test results are summarised in Section 5, with raw laboratory data included in Appendix 3.

Geotechnical Laboratory Testing

3.6.6 Soil samples were obtained and submitted to the UKAS Accredited laboratory of i2 Analytical Ltd. for a series of analyses.

3.6.7 The following laboratory geotechnical testing was carried out, as scheduled by A-squared Studio Engineers Ltd:

Table 3.4 Laboratory Geotechnical Analysis

Methodology	Test Description	Number of tests
BS EN 17892	Moisture Content Determination	19
BS1377:1990	Liquid and Plastic Limit Determination (Atterberg Limits)	19
BS1377:1990	Particle Size Distribution - Sieving	10
BS1377:1990	Particle Size Distribution - Sedimentation	10
BS1377:1990	Determination of the one-dimensional consolidation properties by Oedometer	2
BS1377:1990	Determination of the undrained shear strength in triaxial compression with single stage loading and without measurement of pore pressure	11
BS1377:1990	Consolidated undrained triaxial compression with measurement of pore pressure	2

3.6.8 The results of the geotechnical laboratory testing are summarised in Section 7, with raw laboratory data included in Appendix 4.

4 GROUND CONDITIONS

4.1.1 A factual record of the conditions encountered during the physical investigation of the site is presented in the following section.

4.1.2 For further details of the ground conditions, reference should be made to the exploratory hole location plan presented in Appendix 1, exploratory hole logs presented in Appendix 2, the chemical testing results in Appendix 3 and the geotechnical testing results in Appendix 4.

4.2 Ground Conditions

4.2.1 The ground conditions encountered were broadly consistent with those anticipated and are summarised in Table 4.1 below.

Table 4.1: Ground Conditions Encountered

Stratum and Description	Encountered from (mbsl)	Encountered from (mOD)	Base of strata (mbsl)	Base of Strata (m AOD)	Thickness range (m)
Concrete / reinforced concrete / void over brown sandy gravel with low to moderate cobble content / dark brown gravelly sand / dark grey mottled brown clay. Sand is fine to coarse. Gravel consists of fine to coarse angular to sub-rounded brick, concrete, flint and sandstone. Cobbles consist of brick and concrete. (MADE GROUND) Encountered to base of BH102, WS101, WS102, WS104, WS108, WS109 and WS110.	0.0 – 4.7	+25.37 - +16.65	>1.0 – >2.3	+23.67 - +19.59	>1.0 – >2.3
Medium dense to very dense orange brown sandy GRAVEL / gravelly SAND. Sand is fine to coarse. Gravel consists of fine to coarse angular to rounded flint. (LYNCH HILL GRAVEL MEMBER) Encountered in BH103 and WS103 only, and to the base of WS103.	1.7 – 5.2	+23.67 - +20.10	>5.8 – 6.8	<+19.55 - +18.57	>0.55 – 5.1
Stiff to very stiff consistency grey brown silty slightly sandy CLAY. (LONDON CLAY FORMATION) Encountered in BH102A, BH103, WS105 and WS107 only, and to the base of BH102A, WS105 and WS107.	6.8 – 10.8	+18.57 - +14.55	>11.1 – 27.9	<+17.04 - <-2.59	>0.3 – 16.8
Stiff to very stiff consistency* multi-coloured silty CLAY with off-white silty sandy layers. (LAMBETH GROUP) Encountered in BH103 only.	23.6	+1.77	41.5	-16.13	17.9
Very dense yellow-brown silty slightly gravelly SAND. Sand is fine to coarse. Gravel consists of fine flint. (THANET FORMATION) Encountered in BH103 only, to base of the position.	41.5	-16.13	>50.0 (base not proven)	<-24.63 (base not proven)	>8.5 (thickness not proven)

**Field description.*
Note: mbsl = metres below street level

4.2.2 Coring carried out at basement level within boreholes BH102, BH102A, WS105, WS107, WS108 and WS109 encountered concrete to thicknesses ranging between 0.45m and 2.2m. We understand from email correspondence with the design engineers that there is a suspicion there could be 6m thickness of concrete at exploratory positions BH101 and WS106, as historic drawings indicate the sides of the retaining walls were backfilled with a mass concrete pour.

4.2.3 Please note that depths have been given as approximate metres below street level (m bsl) in order to provide a clearer summary when accounting for the boreholes drilled from the various basement levels. The spot height on the topographic survey in the vicinity of BH103 (+25.37mOD) has been utilised as the approximate street level datum.

4.3 Hydrogeology

4.3.1 Groundwater strikes and groundwater monitoring are summarised below.

Table 4.2: Groundwater Strikes During Drilling

Exploratory Hole ID	Depth Encountered (mbsl)	Depth Encountered (mOD)	Depth After 20mins (mbsl)	Depth After 20mins (mOD)	Stratum
BH102	9.71	+15.56	-	-	London Clay Formation
BH103	6.50	+18.87	5.90	+19.47	Lynch Hill Gravel Member
WS107	10.82	+14.55	-	-	London Clay Formation

4.3.2 7No return groundwater monitoring visits have been undertaken between 04/06/21 and 30/07/21.

Table 4.3: Groundwater Monitoring Records

Exploratory Hole ID	Depth Encountered (mbsl)	Depth Encountered (mOD)	Depth to Base of Well (mbsl)	Depth to Base of Well (mOD)	Strata targeted by response zone
BH102A	9.81 – 11.92	+13.45 - +15.56	12.82 – 12.85	+12.53 - +12.55	London Clay Formation
BH103	3.81 - 5.86	+19.51 - +21.56	6.74 – 6.75	+18.62 - +18.63	Lynch Hill Gravel Member
WS101	Dry	-	0.55	+24.9	Made Ground
WS102	Dry – 3.84	+21.49 - +21.51	3.86 – 3.88	+21.49 - +21.51	Made Ground
WS103	5.19 – 5.21	+20.16 - + 20.18	5.27 – 5.29	+20.08 - +20.10	Made Ground and Lynch Hill Gravel Member
WS104	5.71 – 5.72	+19.65 - +19.66	5.72 – 5.73	+19.64 - + 19.65	Made Ground
WS105	7.47 – 8.17	+17.20 - +17.90	8.50 – 8.51	+16.87 - +16.88	London Clay Formation
WS107	8.72 – 8.73	+16.04 - +16.65	10.58 – 10.61	+14.76 - +14.79	London Clay Formation
WS108	7.38 – 7.48	+17.89 - +17.99	8.59 – 8.60	+16.77 - +16.78	Made Ground

4.3.3 It should be noted that changes in groundwater levels can occur for a number of reasons including seasonal effects and variations in drainage. Such fluctuations may only be recorded by the measurement of the groundwater level within a standpipe or piezometer installed within appropriate response zones. Changes in groundwater level can have a direct effect on excavation stability and dewatering requirements, and cohesive soils can soften under rising or high groundwater levels.

4.4 Physical and Olfactory Evidence of Contamination

4.4.1 Visual or olfactory evidence of contamination was not observed during the course of the investigation.

5 CHEMICAL LABORATORY TEST RESULTS

5.1 Soil Chemical Analysis Results

5.1.1 Laboratory analysis for soils are summarised in Tables 6.1 to 6.3. Raw laboratory data is included in Appendix 3.

Table 5.1: Soil Laboratory Analysis Results – Metals, Metalloids, Phenol, Cyanide

Determinand	Unit	No. samples tested	Min	Max
Arsenic	mg/kg	11	10	20
Cadmium	mg/kg	11	<0.2	<0.2
Chromium	mg/kg	11	<4.0	<4.0
Lead	mg/kg	11	14	740
Mercury	mg/kg	11	<0.3	2.9
Nickel	mg/kg	11	13	43
Copper	mg/kg	11	15	130
Zinc	mg/kg	11	33	180
Total Cyanide [A]	mg/kg	11	<1.0	<1.0
Selenium	mg/kg	11	<1.0	2.6
Boron Water Soluble	mg/kg	11	0.4	3.3
Phenols	mg/kg	11	<1.0	<1.0

Table 5.2: Soil Laboratory Analysis Results – Polycyclic Aromatic Hydrocarbons (PAHs)

Determinand	Unit	No. Samples Tested	Min	Max
Naphthalene	mg/kg	11	<0.05	<0.05
Acenaphthylene	mg/kg	11	<0.05	<0.05
Acenaphthene	mg/kg	11	<0.05	<0.05
Fluorene	mg/kg	11	<0.05	<0.05
Phenanthrene	mg/kg	11	<0.05	0.55
Anthracene	mg/kg	11	<0.05	0.2
Fluoranthene	mg/kg	11	<0.05	1.1
Pyrene	mg/kg	11	<0.05	0.99
Benzo(a)anthracene	mg/kg	11	<0.05	0.43
Chrysene	mg/kg	11	<0.05	0.38
Benzo(b)fluoranthene	mg/kg	11	<0.05	0.35
Benzo(k)fluoranthene	mg/kg	11	<0.05	0.25
Benzo(a)pyrene	mg/kg	11	<0.05	0.28
Indeno(123-cd)pyrene	mg/kg	11	<0.05	<0.05

Determinand	Unit	No. Samples Tested	Min	Max
Dibenzo(ah)anthracene	mg/kg	11	<0.05	<0.05
Benzo(ghi)perylene	mg/kg	11	<0.05	<0.05
Total PAH	mg/kg	11	<0.80	4.23

Table 5.3: Soil Laboratory Analysis Results – Total Petroleum Hydrocarbons (TPH)

TPH Band	Unit	No. Samples Tested	Min	Max
C_8-C_{10}	mg/kg	4	<0.1	<0.1
>C_{10}-C_{12}	mg/kg	4	<2.0	<2.0
>C_{12}-C_{16}	mg/kg	4	<4.0	<4.0
>C_{16}-C_{21}	mg/kg	4	<1.0	27
>C_{21}-C_{35}	mg/kg	4	<10	77
Total TPH	mg/kg	4	<17.1	<128.1

Table 5.4: Soil Laboratory Analysis Results – Total Petroleum Hydrocarbons (TPHCWG)

TPH Band	Unit	No. Samples Tested	Min	Max
>C_5-C_6 Aliphatic	mg/kg	10	<0.001	<0.001
>C_6-C_8 Aliphatic	mg/kg	10	<0.001	<0.001
>C_8-C_{10} Aliphatic	mg/kg	10	<0.001	<0.001
>C_{10}-C_{12} Aliphatic	mg/kg	10	<1.0	5.7
>C_{12}-C_{16} Aliphatic	mg/kg	10	<2.0	3.4
>C_{16}-C_{21} Aliphatic	mg/kg	10	<8.0	12
>C_{21}-C_{35} Aliphatic	mg/kg	10	<8.0	78
>C_5-C_7 Aromatic	mg/kg	10	<0.001	<0.001
>C_7-C_8 Aromatic	mg/kg	10	<0.001	<0.001
>C_8-C_{10} Aromatic	mg/kg	10	<0.001	<0.001
>C_{10}-C_{12} Aromatic	mg/kg	10	<1.0	<1.0
>C_{12}-C_{16} Aromatic	mg/kg	10	<2.0	6.3
>C_{16}-C_{21} Aromatic	mg/kg	10	<10	42
>C_{21}-C_{35} Aromatic	mg/kg	10	<10	140
Total TPH (Ali/Aro)	mg/kg	10	<20	289

5.2 Volatile Organic Compounds and Semi-Volatile Organic Compounds

5.2.1 In addition to the suites outlined previously, 7No samples were tested for the presence of volatile organic compounds (VOCs), including BTEX compounds (benzene, toluene, ethylbenzene, xylene), and semi volatile organic compounds (SVOCs).

5.2.2 No VOCs were reported above the laboratory detection limit within any tested sample.

5.2.3 A number of SVOCs were detected within a single sample, however it should be noted that the only SVOCs above laboratory limit of detection are polycyclic aromatic hydrocarbons (PAHs). These concentrations are reported in Table 5.2 above.

5.3 Asbestos in Soil

5.3.1 8No samples of the Made Ground were screened in the laboratory for the presence of asbestos. The results of the analysis are summarised below in Table 5.4 below

Table 5.5: Asbestos Analysis – Summary

Sample (m)	Screening result.	Quantification result (%)	Comments
BH103 – 0.40	None Detected	N/A	N/A
BH103 – 1.10	Detected	<0.001	Chrysotile - Loose Fibres
WS101 – 1.00	None Detected	N/A	N/A
WS102 – 1.15	None Detected	N/A	N/A
WS103 – 1.00	Detected	<0.001	Amosite - Loose Fibres
WS104 – 0.50	None Detected	N/A	N/A
WS108 – 1.00	Detected	N/A	N/A
WS110 – 2.30	None Detected	<0.001	Chrysotile - Loose Fibres

5.4 Groundwater Chemical Analysis Results

5.4.1 Samples of groundwater were obtained from the borehole installations installed within exploratory locations BH102A, BH103, WS105, WS107 and WS108. The other monitoring well installations were dry or had insufficient groundwater present to obtain a sample.

5.4.2 The samples were obtained using low-flow equipment.

5.4.3 The results of the laboratory testing are summarised in Tables 5.6 to 5.8 below, with the raw chemical testing data presented in Appendix 3.

Table 5.6: Groundwater Laboratory Analysis Results

Determinand	Unit	No. samples tested	Min	Max
Arsenic	µg/l	5	1.53	3.13
Cadmium	µg/l	5	<0.02	0.04
Chromium	µg/l	5	0.6	1.9
Lead	µg/l	5	<0.2	0.4

Determinand	Unit	No. samples tested	Min	Max
Nickel	µg/l	5	2.8	8.4
Copper	µg/l	5	2.3	31
Zinc	µg/l	5	2.3	7.4
Mercury	µg/l	5	<0.05	0.05
Selenium	µg/l	5	0.9	4.4
Boron	µg/l	5	37	480
Cyanide (Total)	µg/l	5	<1.0	7.2
Phenols (Total)	µg/l	5	<10	<10

Table 5.7: Groundwater Analysis Results – Polycyclic Aromatic Hydrocarbons (PAHs)

Determinand	Unit	No. samples tested	Min.	Max.
Naphthalene	µg/l	5	<0.01	<0.01
Acenaphthylene	µg/l	5	<0.01	<0.01
Acenaphthene	µg/l	5	<0.01	<0.01
Fluorene	µg/l	5	<0.01	<0.01
Phenanthrene	µg/l	5	<0.01	<0.01
Anthracene	µg/l	5	<0.01	<0.01
Fluoranthene	µg/l	5	<0.01	<0.01
Pyrene	µg/l	5	<0.01	<0.01
Benzo(a)anthracene	µg/l	5	<0.01	<0.01
Chrysene	µg/l	5	<0.01	<0.01
Sum of four Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(ghi)perylene Indeno(123-cd)pyrene	µg/l	5	<0.04	<0.04
Benzo(a)pyrene	µg/l	5	<0.01	<0.01
Dibenzo(ah)anthracene	µg/l	5	<0.01	<0.01
Dibenzo(ah)anthracene	µg/l	5	<0.01	<0.01

Table 5.8: Groundwater Analysis Results – TPHCWG

Determinand	Unit	No. Samples tested	Min.	Max.
>C5-C6 Aliphatic	µg/l	5	<1.0	<1.0
>C6-C8 Aliphatic	µg/l	5	<1.0	<1.0
>C8-C10 Aliphatic	µg/l	5	<1.0	<1.0
>C10-C12 Aliphatic	µg/l	5	<10	<10
>C12-C16 Aliphatic	µg/l	5	<10	<10

Determinand	Unit	No. Samples tested	Min.	Max.
>C16-C21 Aliphatic	µg/l	5	<10	<10
>C21-C35 Aliphatic	µg/l	5	<10	<10
>C5-C7 Aromatic	µg/l	5	<1.0	<1.0
>C7-C8 Aromatic	µg/l	5	<1.0	<1.0
>C8-C10 Aromatic	µg/l	5	<1.0	<1.0
>C10-C12 Aromatic	µg/l	5	<10	<10
>C12-C16 Aromatic	µg/l	5	<10	<10
>C16-C21 Aromatic	µg/l	5	<10	<10
>C21-C35 Aromatic	µg/l	3	<20	<20

5.4.4 In addition to the suite outlined above, the four water samples were also analysed for a suite of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). None of the compounds analysed for were reported above the laboratory method detection limit.

5.4.5 Similarly, for the BTEX (Benzene, Toluene, Ethylbenzene and Xylene) compounds, none of the results were reported above the laboratory method of detection.

5.5 Waste Characterisation and Disposal

5.5.1 The following comments are given as guidance and should be confirmed by the waste disposal facility accepting the waste. The waste disposal facility may have their own classification methodology and are under no obligation to honour the comments given below.

5.5.2 A hazardous waste assessment of the chemical soil analysis obtained from the Jomas ground investigation has been undertaken in accordance with WM3, the results of which are summarised in the table below.

5.5.3 A total of 11No samples have been assessed, all of which have been determined as “non-hazardous waste”. The full Waste Classification Report is presented in Appendix 5.

5.5.4 In addition, 9No soil samples (BH103 – 0.40m, BH103 – 1.00m, BH103 – 1.75m, WS101 – 1.00m, WS103 – 1.95m, WS104 – 0.50m, WS107 – 2.40m, WS108 – 1.00m and WS110 – 2.30m) were submitted to a UKAS and MCERTS accredited laboratory for Waste Acceptance Criteria testing. The results of this analysis are presented in Appendix 3.

6 SOIL GAS MONITORING

6.1 Soil Gas Results

6.1.1 Six return monitoring visits have been undertaken, between 4th June and 30th July 2021, to monitor wells installed within boreholes at the site for soil gas concentrations and groundwater levels.

6.1.2 During these visits atmospheric pressure ranged between 999mb and 1020mb. During these visits pressure trends observed were rising.

6.1.3 The results of the monitoring undertaken thus far are summarised in Table 6.1 below, with the monitoring records presented in Appendix 6.

Table 6.1: Summary of Gas Monitoring Data

Hole No.	CH_4 (%)	CO_2 (%)	O_2 (%)	H_2S (ppm)	VOCs (ppm)	Steady Flow Rate (l/hr)	Peak Flow Rate (l/hr)	Depth to water (mbsl)	Depth of installation (mbsl)
BH102A	0.0 – 0.7	0.4 - 0.9	19.5 – 20.1	0	0.7 – 3.2	0.0 - +0.1	0.0 - +0.1	9.81 – 11.92	12.82 – 12.85
BH103	0.0 -0.7	0.3 - 0.4	16.9 – 18.2	0	1.5 – 2.0	0.0	0.0	3.81 - 5.86	6.74 – 6.75
WS101	0.1 – 0.7	0.0 – 0.1	20.6 - 21.3	0	0.4 – 15.0	0.0 - -0.7	0.0 - -0.7	Dry	0.55
WS102	0.0 – 0.7	0.0 – 0.1	20.3 - 21.3	0	0.3 – 5.7	-0.1 – +0.1	-0.1 – +0.1	Dry – 3.84	3.86 – 3.88
WS103	0.0 – 0.8	0.1	20.7 - 21.7	0	0.3 – 5.0	0.0	0.0	5.19 – 5.21	5.27 – 5.29
WS104	0.0 - 0.7	0.1 – 0.2	20.7 - 21.8	0	0.2 – 4.5	0.0 - +0.1	0.0 - +0.1	5.71 – 5.72	5.72 – 5.73
WS105	0.1 – 0.7	0.0 - 0.1	21.4 – 22.0	0	0.2 – 4.0	-0.3 - +0.1	-0.2 - +0.1	7.47 – 8.17	8.50 – 8.51
WS107	0.6	0.1	21.2	4	0.7	+0.1	+0.1	8.72 – 8.73	10.58 – 10.61
WS108	0.0 - 0.6	0.1 – 0.3	20.8 - 21.2	0	1.0 – 3.0	-0.1 - -1.5	-0.1 - -1.5	7.38 – 7.48	8.59 – 8.60

7 GEOTECHNICAL TESTING RESULTS

7.1 Data Summary

7.1.1 The results of the ground investigation revealed a ground profile comprising a variable thickness of **Made Ground** up to 2.3 metres below street level (mbsl), overlying medium dense to very dense orange brown sandy gravel / gravelly sand (**Lynch Hill Gravel Member**) encountered up to 6.8mbsl. This was overlying stiff to very stiff consistency grey brown silty slightly sandy clay (**London Clay Formation**) to depths of up to 27.9mbsl over stiff to very stiff consistency multi-coloured silty clay with off-white silty sandy layers (**Lambeth Group**) encountered up to 41.5mbsl, which in turn was underlain by very dense yellow-brown silty slightly gravelly sand (**Thanet Formation**) encountered up to 50.0mbsl.

7.2 Geotechnical Laboratory Testing Results

7.2.1 The results of the geotechnical laboratory testing reported to date are summarised in Table 7.1. Further geotechnical laboratory testing is ongoing at the time of writing and the results, together with our assessments and recommendations, will be provided in a subsequent issue of this report.

Table 7.1: Summary of Geotechnical Test Results

Parameter		Made Ground	Lynch Hill Gravel Member	London Clay Formation	Lambeth Group	Thanet Formation
Moisture Content (%)		30 - 35	-	25 - 38	19 - 25	-
Liquid Limit (%)		64 - 67	-	64 - 73	55 - 59	-
Plastic Limit (%)		24 – 28	-	23 - 31	25 - 27	-
Plasticity Index (%)		39 - 40	-	35 - 44	28 - 34	-
Measured Shear Strength (kPa)		-	-	69 - 315	171 - 418	-
Particle Size Distribution	Very coarse (%)	69	0	-	-	0
	Gravel (%)	15	54 - 73	-	-	2 - 3
	Sand (%)	13	26 - 35	-	-	50 - 72
	Fines <0.063mm (%)	4	2 - 11	-	-	26 - 47
	Silt (%)	-	5	-	-	14 - 21
	Clay (%)	-	6	-	-	12 - 26
pH		8.2 – 11.3	10.0 – 10.1	8.7 – 9.6	8.3 – 8.5	-
Water soluble sulphate (mg/l)		112 - 1520	33 - 395	220 - 511	520 - 640	-
SPT (N) values		11 - 50	25 - 50	11 - 43	44 - 50	50
Modulus of Volume Compressibility, mv (m2/MN)		-	-	0.039 - 0.23	-	-

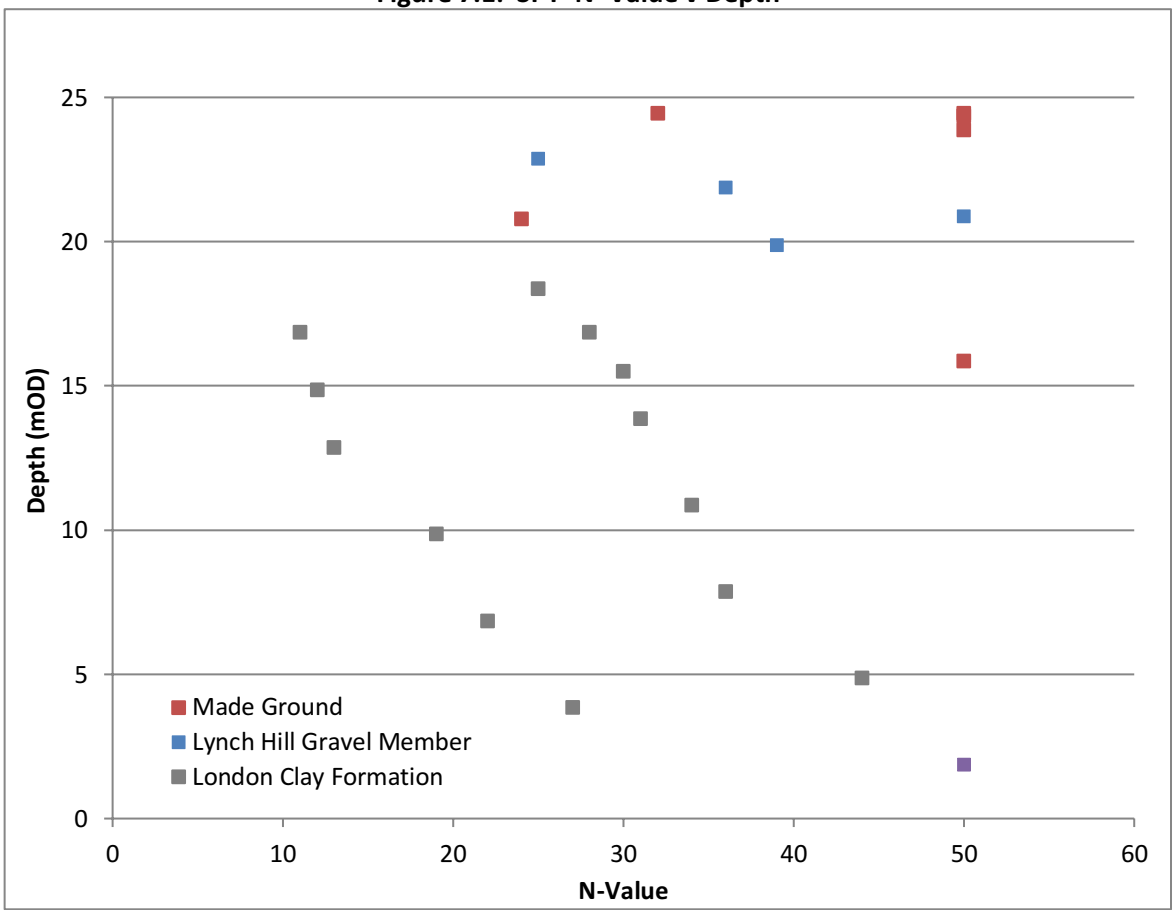
7.2.2 It should be noted that Atterberg limit analysis scheduled on samples WS105 – 1.70m bgl and WS107 – 2.40m bgl, as well as particle size distribution on sample WS101 – 1.00m bgl, could not be undertaken due to insufficient sample remaining after the scheduled chemical analysis had been completed.

7.3 Standard Penetration Tests

7.3.1 Standard Penetration Tests were undertaken at regular intervals throughout the cable percussive boreholes and windowless sampler holes. The results of the SPTs are plotted against depth in Figure 7.1 below.

7.3.2 Due to the similarity of their measured geotechnical properties, despite observational differences, the strata have been grouped into "Made Ground", "Lynch Hill Gravel Member", "London Clay Formation" and "Lambeth Group".

Figure 7.1: SPT 'N' Value v Depth



7.3.3 As shown in the graph above, there is some variability of SPT 'N' values within the deposits of Made Ground and Lynch Hill Gravel Member. A progressive increase with depth is shown within the deposits of London Clay Formation and Lambeth Group.

7.3.4 SPT 'N' values of 50 were recorded from 26.5mbsl (+1.87mOD), including throughout the deposits of the Thanet Formation encountered from 41.5mbsl (-16.13mOD) to the

base of BH103 at 50.0mbsl (-24.63mOD). These results have been omitted from the graph above to provide better resolution to the other results.

8 REFERENCES

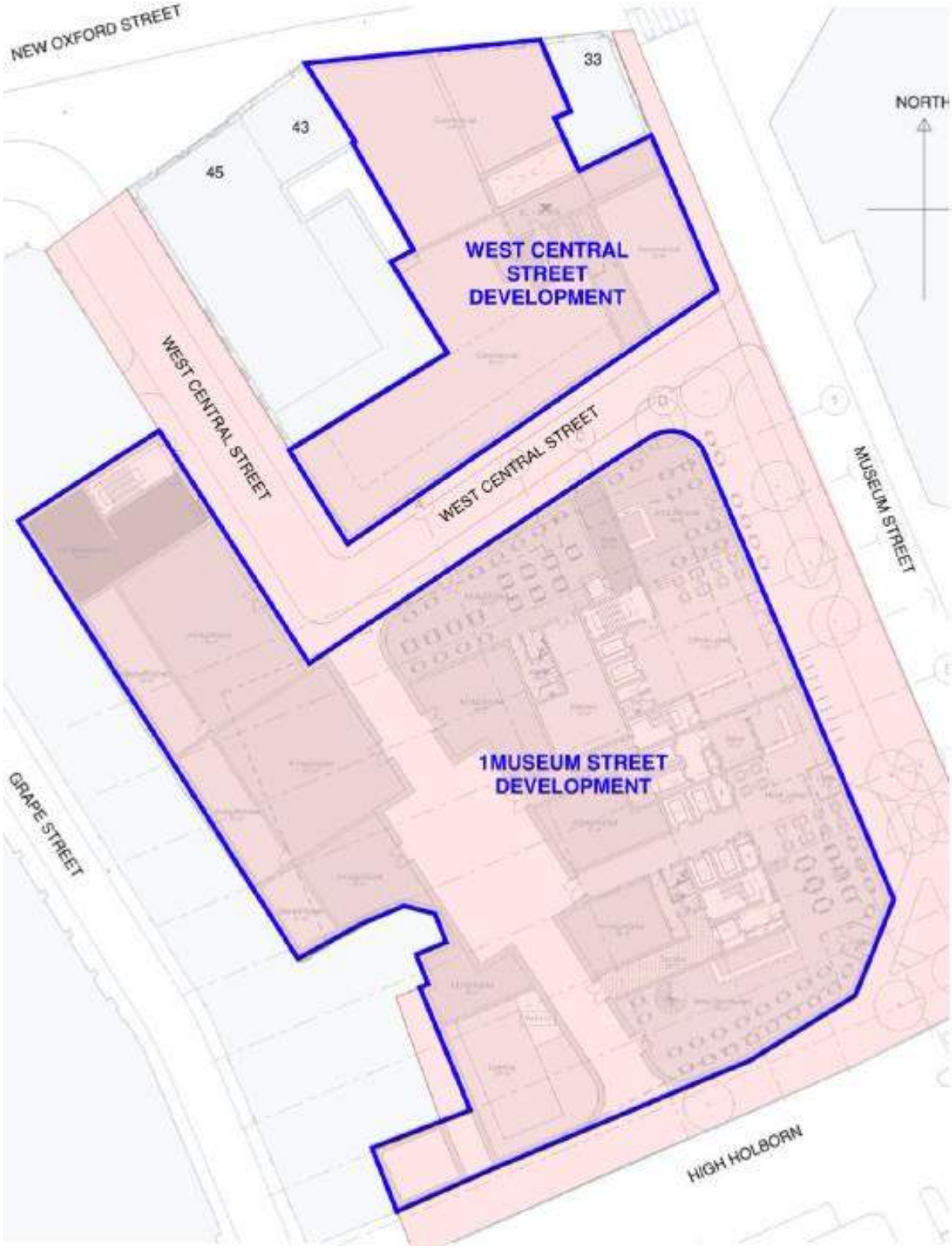
AGS Guidelines for Good Practice in Geotechnical Ground Investigation, 2016

British Standards Institution (2011) BS 10175:2011+A2:2017 Code of practice for the investigation of potentially contaminated sites. Milton Keynes: BSI

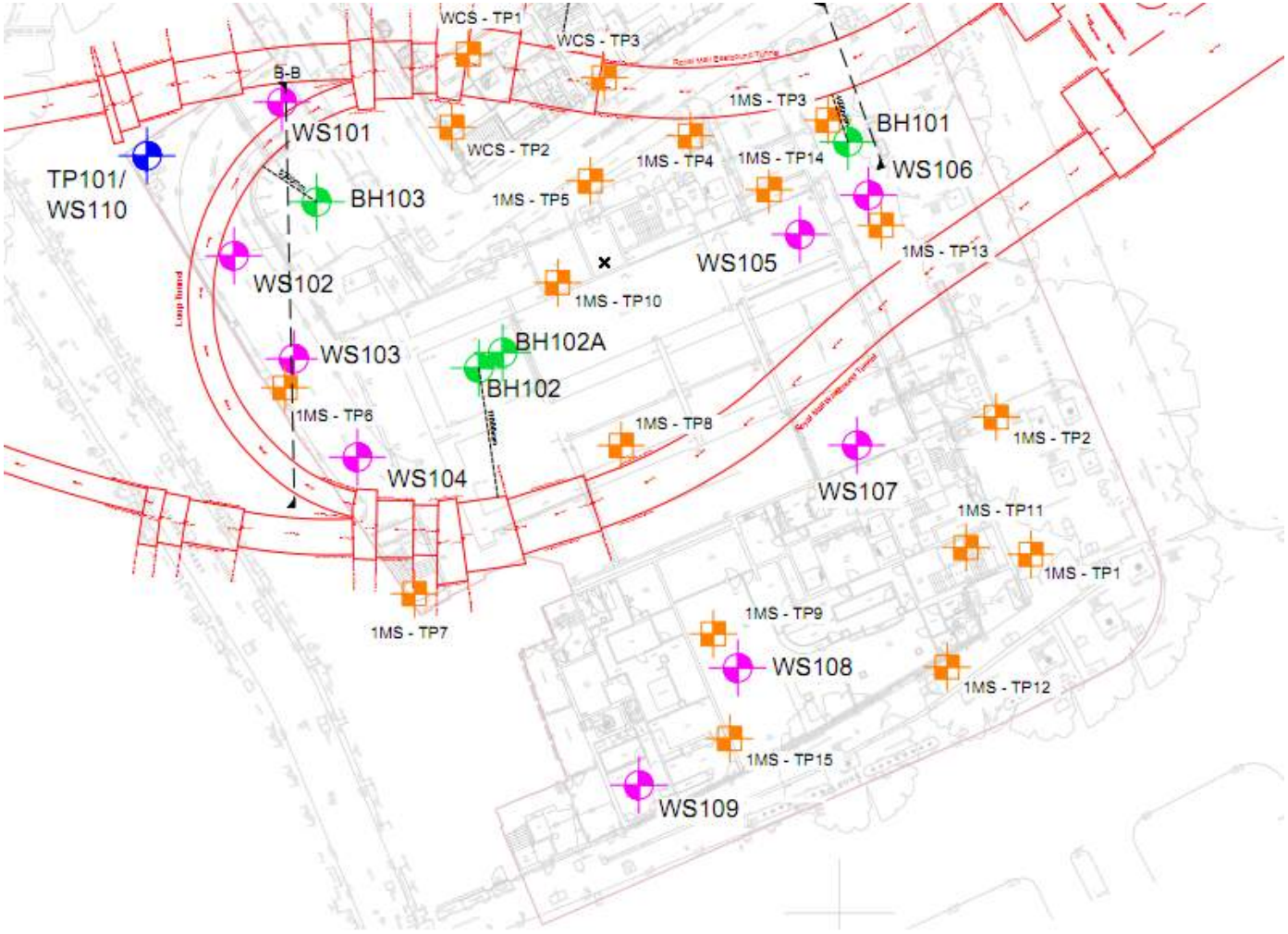
British Standards Institution BS 5930:2015+A1:2020 Code of practice for ground investigations. Milton Keynes: BSI

APPENDIX 1 – FIGURES

PROJECT NAME:	West Central Street and 1 Museum Street, Holborn, WC1A 1JP	**CLIENT:**	Labs Selkirk House & Sollidon Ltd
TITLE:	Site Location Plan	**PROJECT NO.**	P3094J2084
DATE:	October 2020	**FIGURE:**	1



PROJECT NAME	1 Museum Street, Holborn, WC1A 1JP	**CLIENT**	Labs Selkirk House & Sollidon Ltd
TITLE	Completed GI Plan	**PROJECT NO.**	P3094J2084
DATE	June 2021	**FIGURE NO.**	2



APPENDIX 2 – EXPLORATORY HOLE RECORDS

CABLE PERCUSSION BOREHOLE RECORD

		Exploratory Hole No:	**BH102**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+17.86mOD
Logged By:	JH	Date Commenced:	06/04/2021
Checked By:	JT	Date Completed:	24/05/2021
Type and diameter of equipment:	Standalone corer	Sheet No:	1 Of 1

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: Groundwater encountered directly beneath slab.

2: 5No days taken to core out position and attempting to retrieve core from base.

3: Unable to retrieve core due to depth, and presence of rebar in the slab.

4:

Sample or Tests									Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									0.00				Reinforced concrete with several layers of rebar, diameter of rebar ranging 12mm-30mm. (MADE GROUND).	
									0.50					
									1.00					
									1.50					
											1.85		Grey gravel. Gravel consists of fine to coarse sub-rounded to angular flint and concrete. (MADE GROUND - possible sub base / leaner mix concrete).	
									2.00		1.90			
											2.20		Concrete. (MADE GROUND).	
									2.50					
									3.00					
									3.50					
									4.00					
									4.50					
									5.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

Jomas Associates Ltd - Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD
T: 0843 289 2187 E: info@jomasassociates.com W: www.jomasassociates.com

CABLE PERCUSSION BOREHOLE RECORD

		Exploratory Hole No:	**BH102A**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+17.86mOD
Logged By:	LH	Date Commenced:	11/05/2021
Checked By:	JT	Date Completed:	13/05/2021
Type and diameter of equipment:	Modular Dando 2000	Sheet No:	1 Of 5

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: No groundwater reported.
2: *Field observations
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N	0.00					
											0.45		Concrete. (MADE GROUND).	
ES	0.50	0ppm	VOC						0.50				Soft consistency* brown silty CLAY. (LONDON CLAY FORMATION).	
SPT	1.00	2	2	3	3	2	3	11	1.00		1.10			
D														
ES		0ppm	VOC										Soft to firm consistency* grey silty CLAY. (LONDON CLAY FORMATION).	
D	1.50								1.50					
ES		0ppm	VOC											
U100	2.00								2.00					
	29 blows for 0.45m recovery.													
D	2.50								2.50					
ES		0ppm	VOC											
SPT	3.00	2	3	3	3	3	3	12	3.00					
D														
D	3.50								3.50					
U100	4.00								4.00					
	39 blows for 0.35m recovery.													
D	4.50								4.50					
SPT	5.00	2	3	3	3	4	3	13	5.00					
D														
ES		0ppm	VOC											

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

CABLE PERCUSSION BOREHOLE RECORD

		Exploratory Hole No:	**BH102A**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+17.86mOD
Logged By:	LH	Date Commenced:	11/05/2021
Checked By:	JT	Date Completed:	13/05/2021
Type and diameter of equipment:	Modular Dando 2000	Sheet No:	2 Of 5

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: No groundwater reported.
2: *Field observations
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
SPT	5.00	2	3	3	3	4	3	13	5.00				Soft to firm consistency* grey silty CLAY. (LONDON CLAY FORMATION).	
D														
ES		0ppm	VOC											
									5.50					
D	6.00								6.00					
											6.50			
U100	6.50								6.50				Grey CLAYSTONE. (LONDON CLAY FORMATION).	
	56 blows for 0.30m recovery.										6.75			
													Firm becoming stiff consistency* grey silty CLAY. (LONDON CLAY FORMATION).	
									7.00					
D	7.50								7.50					
SPT	8.00	3	4	4	5	5	5	19	8.00					
D														
									8.50					
D	9.00								9.00					
U100	9.50								9.50					
	69 blows for 0.40m recovery.													
									10.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

CABLE PERCUSSION BOREHOLE RECORD

		Exploratory Hole No:	**BH102A**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+17.86mOD
Logged By:	LH	Date Commenced:	11/05/2021
Checked By:	JT	Date Completed:	13/05/2021
Type and diameter of equipment:	Modular Dando 2000	Sheet No:	3 Of 5

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: No groundwater reported.
2: *Field observations
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N	10.00				Firm becoming stiff consistency* grey silty CLAY. (LONDON CLAY FORMATION).	
D	10.50								10.50					
SPT	11.00	4	4	5	5	5	7	22	11.00					
D														
									11.50					
D	12.00								12.00					
U100	12.50								12.50					
	87 blows for 0.45m recovery.													
									13.00					
D	13.50								13.50					
SPT	14.00	4	5	5	7	7	8	27	14.00					
D														
									14.50					
D	15.00								15.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

CABLE PERCUSSION BOREHOLE RECORD

		Exploratory Hole No:	**BH102A**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+17.86mOD
Logged By:	LH	Date Commenced:	11/05/2021
Checked By:	JT	Date Completed:	13/05/2021
Type and diameter of equipment:	Modular Dando 2000	Sheet No:	4 Of 5

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: No groundwater reported.
2: *Field observations
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
D	15.00								15.00				Firm becoming stiff consistency* grey silty CLAY. (LONDON CLAY FORMATION).	
SPT (cone)	15.50	5	8	8	9	11	11	39	15.50					
U100														
	100 blows for no recovery.													
D									16.00					
D	16.50								16.50					
D	17.00								17.00					
SPT		5	5	5	8	8	9	30						
									17.50					
D	18.00								18.00					
U100	18.50								18.50					
	100 blows for 0.45m recovery.													
									19.00					
D	19.50								19.50					
SPT	20.00	5	5	7	8	10	10	35	20.00					
D														

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

		CABLE PERCUSSION BOREHOLE RECORD	
		Exploratory Hole No:	**BH102A**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+17.86mOD
Logged By:	LH	Date Commenced:	11/05/2021
Checked By:	JT	Date Completed:	13/05/2021
Type and diameter of equipment:	Modular Dando 2000	Sheet No:	5 Of 5

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: No groundwater reported.
2: *Field observations
3:
4:

Sample or Tests										Strata				
Type	**Depth (mbgl)**	**Result**								**Legend**	**Depth (mbgl)**	**Water Strikes (mbgl)**	**Strata Description**	**Installation**
		75	75	75	75	75	75	N						
SPT D	20.00	5	5	7	8	10	10	35	20.00		20.45		Firm becoming stiff consistency* grey silty CLAY. (LONDON CLAY FORMATION).	
									20.50					
									21.00					
									21.50					
									22.00					
									22.50					
									23.00					
									23.50					
									24.00					
									24.50					
									25.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

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CABLE PERCUSSION BOREHOLE RECORD

Exploratory Hole No:	**BH103**		
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+25.37mOD
Logged By:	BD	Date Commenced:	12/04/2021
Checked By:	JT	Date Completed:	14/04/2021
Type and diameter of equipment:	Dando D175	Sheet No:	1 Of 10

Water levels recorded during boring, m

Date:	12/04/2021					
Hole depth:	50.00					
Casing depth:	6.50					
Level water on strike:	6.5					
Water Level after 20mins:	5.9					

Remarks

1: Water seeping in between 6.5-7.0mbgl.
2: *Field description.
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									0.00					
											0.32		Concrete. (MADE GROUND).	
ES	0.40	0ppm	VOC						0.50				Medium brown sandy gravel. Sand is coarse. Gravel consists of fine to coarse sub-angular to sub-rounded flint, brick and concrete. (MADE GROUND).	
											0.49		Concrete. (MADE GROUND).	
											0.80		Very dense dark brown sandy gravel with low cobble content. Sand is fine to coarse. Gravel consists of fine to coarse angular to sub-rounded brick, concete, flint and sandstone. Cobbles consist of brick and concrete. (MADE GROUND).	
B	1.00								1.00					
ES	1.10	0ppm	VOC											
ES	1.40	0ppm	VOC											
CPT	1.50	7	11	15	20	15		50	1.50					
	50 blows for 196mm total penetration										1.70			
B ES	1.75	0ppm	VOC										Medium dense to very dense orange-brown very gravelly SAND. Sand is medium to coarse. Gravel consists of fine to coarse sub-angular to rounded flints. (LYNCH HILL GRAVEL MEMBER).	
									2.00					
CPT	2.50	3	3	5	6	7	7	25	2.50					
B														
									3.00					
CPT	3.50	4	5	7	9	9	11	36	3.50					
B														
									4.00					
CPT	4.50	8	11	11	13	13	13	50	4.50					
	50 blows for 238mm total penetration													
B														
									5.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

CABLE PERCUSSION BOREHOLE RECORD

Exploratory Hole No:	**BH103**		
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+25.37mOD
Logged By:	BD	Date Commenced:	12/04/2021
Checked By:	JT	Date Completed:	14/04/2021
Type and diameter of equipment:	Dando D175	Sheet No:	2 Of 10

Water levels recorded during boring, m

Date:	12/04/2021					
Hole depth:	50.00					
Casing depth:	6.50					
Level water on strike:	6.5					
Water Level after 20mins:	5.9					

Remarks

1: Water seeping in between 6.5-7.0mbgl.
2: *Field description.
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N	5.00					
CPT B	5.50	7	10	10	10	9	10	39	5.50				Medium dense to very dense orange-brown very gravelly SAND. Sand is medium to coarse. Gravel consists of fine to coarse sub-angular to rounded flints. (LYNCH HILL GRAVEL MEMBER).	
									6.00					
									6.50		6.80			
SPT B	7.00	3	5	5	6	7	7	25	7.00				Firm to stiff consistency* light brown silty fissured CLAY. (LONDON CLAY FORMATION).	
									7.50		7.60			
									8.00				Stiff becoming very stiff consistency* grey silty CLAY. Becoming slightly sandy from 22mbgl. Occasional claystone encountered at 16.8m, 21.0m and 23.7mbgl. (LONDON CLAY FORMATION).	
SPT B	8.50	4	5	6	7	7	8	28	8.50					
									9.00					
									9.50					
U100	10.00								10.00					
	75 blows for 100% recovery.													

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

CABLE PERCUSSION BOREHOLE RECORD

Exploratory Hole No:	**BH103**		
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+25.37mOD
Logged By:	BD	Date Commenced:	12/04/2021
Checked By:	JT	Date Completed:	14/04/2021
Type and diameter of equipment:	Dando D175	Sheet No:	3 Of 10

Water levels recorded during boring, m

Date:	12/04/2021					
Hole depth:	50.00					
Casing depth:	6.50					
Level water on strike:	6.5					
Water Level after 20mins:	5.9					

Remarks

1: Water seeping in between 6.5-7.0mbgl.
2: *Field description.
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
U100	10.00								10.00				Stiff becoming very stiff consistency* grey silty CLAY. Becoming slightly sandy from 22mbgl. Occasional claystone encountered at 16.8m, 21.0m and 23.7mbgl. (LONDON CLAY FORMATION).	
	75 blows for 100% recovery.													
B	10.50								10.50					
									11.00					
SPT	11.50	4	6	6	7	9	9	31	11.50					
B														
									12.00					
									12.50					
U100	13.00								13.00					
	80 blows for 100% recovery.													
D	13.50								13.50					
									14.00					
S	14.50	5	5	7	9	9	9	34	14.50					
B														
									15.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

CABLE PERCUSSION BOREHOLE RECORD

Exploratory Hole No:	**BH103**		
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+25.37mOD
Logged By:	BD	Date Commenced:	12/04/2021
Checked By:	JT	Date Completed:	14/04/2021
Type and diameter of equipment:	Dando D175	Sheet No:	4 Of 10

Water levels recorded during boring, m

Date:	12/04/2021					
Hole depth:	50.00					
Casing depth:	6.50					
Level water on strike:	6.5					
Water Level after 20mins:	5.9					

Remarks

1: Water seeping in between 6.5-7.0mbgl.
2: *Field description.
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									15.00				Stiff becoming very stiff consistency* grey silty CLAY. Becoming slightly sandy from 22mbgl. Occasional claystone encountered at 16.8m, 21.0m and 23.7mbgl. (LONDON CLAY FORMATION).	
									15.50					
U100	16.00								16.00					
	80 blows for 100% recovery.													
D	16.50								16.50					
									17.00					
SPT B	17.50	5	6	8	9	9	10	36	17.50					
									18.00					
									18.50					
U100	19.00								19.00					
	95 blows for 100% recovery.													
D	19.50								19.50					
									20.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

CABLE PERCUSSION BOREHOLE RECORD

		Exploratory Hole No:	**BH103**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+25.37mOD
Logged By:	BD	Date Commenced:	12/04/2021
Checked By:	JT	Date Completed:	14/04/2021
Type and diameter of equipment:	Dando D175	Sheet No:	5 Of 10

Water levels recorded during boring, m

Date:	12/04/2021					
Hole depth:	50.00					
Casing depth:	6.50					
Level water on strike:	6.5					
Water Level after 20mins:	5.9					

Remarks

1: Water seeping in between 6.5-7.0mbgl.
2: *Field description.
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									20.00				Stiff becoming very stiff consistency* grey silty CLAY. Becoming slightly sandy from 22mbgl. Occasional claystone encountered at 16.8m, 21.0m and 23.7mbgl. (LONDON CLAY FORMATION).	
SPT B	20.50	6	6	9	10	11	13	43	20.50					
									21.00					
									21.50					
U100	22.00								22.00					
	90 blows for 90% recovery.													
D	22.50								22.50					
									23.00					
SPT B	23.50	6	7	10	10	11	13	44	23.50		23.60		Stiff to very stiff consistency* multicoloured silty CLAY. (LAMBETH GROUP).	
									24.00					
									24.50					
U100	25.00								25.00					
	110 blows for no recovery.													

B

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

CABLE PERCUSSION BOREHOLE RECORD

Exploratory Hole No:	**BH103**		
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+25.37mOD
Logged By:	BD	Date Commenced:	12/04/2021
Checked By:	JT	Date Completed:	14/04/2021
Type and diameter of equipment:	Dando D175	Sheet No:	6 Of 10

Water levels recorded during boring, m

Date:	12/04/2021					
Hole depth:	50.00					
Casing depth:	6.50					
Level water on strike:	6.5					
Water Level after 20mins:	5.9					

Remarks

1: Water seeping in between 6.5-7.0mbgl.
2: *Field description.
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
U100	25.00								25.00				Stiff to very stiff consistency* multicoloured silty CLAY. (LAMBETH GROUP).	
	110 blows for no recovery.													
B									25.50					
									26.00					
SPT	26.50	8	9	11	13	15	11	50	26.50					
	50 blows for 249mm total penetration.													
B									27.00					
									27.50					
U100	28.00								28.00					
	100 blows for 90% recovery.													
D	28.50								28.50					
									29.00					
SPT	29.50	9	11	11	14	16	9	50	29.50					
	50 blows for 271mm total penetration													
B														
									30.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

CABLE PERCUSSION BOREHOLE RECORD

Exploratory Hole No:	**BH103**		
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+25.37mOD
Logged By:	BD	Date Commenced:	12/04/2021
Checked By:	JT	Date Completed:	14/04/2021
Type and diameter of equipment:	Dando D175	Sheet No:	7 Of 10

Water levels recorded during boring, m

Date:	12/04/2021					
Hole depth:	50.00					
Casing depth:	6.50					
Level water on strike:	6.5					
Water Level after 20mins:	5.9					

Remarks

1: Water seeping in between 6.5-7.0mbgl.
2: *Field description.
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									30.00				Stiff to very stiff consistency* multicoloured silty CLAY. (LAMBETH GROUP).	
									30.50					
U100	31.00								31.00					
	110 blows for 90% recovery.													
									31.50					
									32.00					
SPT	32.50	9	11	13	17	17	3	50	32.50					
	50 blows for 255mm total penetration													
B														
									33.00					
									33.50					
U100	34.00								34.00					
	120 blows for 90% recovery.													
D	34.50								34.50		34.60			
													Stiff to very stiff consistency* mottled blue CLAY with offwhite silty sandy layers. (LAMBETH GROUP).	
									35.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

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CABLE PERCUSSION BOREHOLE RECORD

Exploratory Hole No:	**BH103**		
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+25.37mOD
Logged By:	BD	Date Commenced:	12/04/2021
Checked By:	JT	Date Completed:	14/04/2021
Type and diameter of equipment:	Dando D175	Sheet No:	8 Of 10

Water levels recorded during boring, m

Date:	12/04/2021					
Hole depth:	50.00					
Casing depth:	6.50					
Level water on strike:	6.5					
Water Level after 20mins:	5.9					

Remarks

1: Water seeping in between 6.5-7.0mbgl.
2: *Field description.
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									35.00				Stiff to very stiff consistency* mottled blue CLAY with offwhite silty sandy layers. (LAMBETH GROUP).	
SPT	35.50	10	10	15	16	19		50	35.50					
	50 blows for 168mm total penetration.													
B														
									36.00					
											36.50			
									36.50				Very stiff consistency* multicoloured silty CLAY. (LAMBETH GROUP).	
U100	37.00								37.00					
	120 blows for 90% recovery.													
D	37.50								37.50					
									38.00					
B	38.50								38.50					
SPT		11	12	16	17	17		50						
	50 blows for 203mm total penetration.													
									39.00					
									39.50					
U100	40.00								40.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

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CABLE PERCUSSION BOREHOLE RECORD

Exploratory Hole No:	**BH103**		
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+25.37mOD
Logged By:	BD	Date Commenced:	12/04/2021
Checked By:	JT	Date Completed:	14/04/2021
Type and diameter of equipment:	Dando D175	Sheet No:	9 Of 10

Water levels recorded during boring, m

Date:	12/04/2021					
Hole depth:	50.00					
Casing depth:	6.50					
Level water on strike:	6.5					
Water Level after 20mins:	5.9					

Remarks

1: Water seeping in between 6.5-7.0mbgl.
2: *Field description.
3:
4:

Sample or Tests									Strata				
Type	Depth (mbgl)	Result							Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N					
U100	40.00											Very stiff consistency* multicoloured silty CLAY. (LAMBETH GROUP).	
										41.50			
												Very dense yellow-brown silty slightly gravelly SAND. Sand is fine to coarse. Gravel consists of fine flint. (THANET FORMATION).	
B	42.00												
CPT		12	13	19	20	11		50					
	50 blows for 205mm total penetration.												
B	43.50												
CPT		11	14	18	22	10		50					
	50 blows for 202mm total penetration.												
B	45.00												
CPT		10	15	19	23	8		50					
	50 blows for 163mm total penetration.												

40.00
40.50
41.00
41.50
42.00
42.50
43.00
43.50
44.00
44.50
45.00

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

CABLE PERCUSSION BOREHOLE RECORD

		Exploratory Hole No:	**BH103**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+25.37mOD
Logged By:	BD	Date Commenced:	12/04/2021
Checked By:	JT	Date Completed:	14/04/2021
Type and diameter of equipment:	Dando D175	Sheet No:	10 Of 10

Water levels recorded during boring, m

Date:	12/04/2021					
Hole depth:	50.00					
Casing depth:	6.50					
Level water on strike:	6.5					
Water Level after 20mins:	5.9					

Remarks

1: Water seeping in between 6.5-7.0mbgl.
2: *Field description.
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
B	45.00								45.00					
CPT		10	15	19	23	8		50					Very dense yellow-brown silty slightly gravelly SAND. Sand is fine to coarse. Gravel consists of fine flint. (THANET FORMATION).	
	50 blows for 163mm total penetration.													
									45.50					
									46.00					
CPT	46.50	11	16	20	20	10		50	46.50					
	50 blows for 173mm total penetration.													
B														
									47.00					
									47.50					
B	48.00								48.00					
CPT		13	12	23	21			44						
	50 blows for 156mm total penetration.													
									48.50					
									49.00					
CPT	49.50	13	12	22	23	5		50	49.50					
	50 blows for 208mm total penetration.													
B														
											50.00			
									50.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

WINDOW/WINDOWLESS SAMPLING BOREHOLE RECORD

		Exploratory Hole No:	**WS101**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+25.45mOD
Logged By:	IKL	Date Commenced:	25/05/2021
Checked By:	JT	Date Completed:	25/05/2021
Type and diameter of equipment:	Bolt-on corer & windowless sampler	Sheet No:	1 Of 1

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: No groundwater reported.

2: Borehole terminated at 1.10mbgl due to equipment refusal on very dense/weakly cemented gravel.

3: Unable to core further due to gravel jamming core barrel.

4:

Sample or Tests									Strata				
Type	Depth (mbgl)	Result							Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N					
										0.00			
												Concrete. (MADE GROUND).	
										0.55			
												Very dense dark brown gravelly sand. Sand is coarse. Gravel consists of fine to medium sub-angular to sub-rounded flint. Appers to be weakly cemented with lean-mix concrete. (MADE GROUND - Subbase)	
ES	1.00	0ppm	VOC							1.00			
D										1.10			
CPT		25		50				50					
	50 blows for 50mm total penetration.												
										1.50			
										2.00			
										2.50			
										3.00			
										3.50			
										4.00			
										4.50			
										5.00			

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

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WINDOW/WINDOWLESS SAMPLING BOREHOLE RECORD

		Exploratory Hole No:	**WS102**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+23.50mOD
Logged By:	IKL	Date Commenced:	09/04/2021
Checked By:	JT	Date Completed:	09/04/2021
Type and diameter of equipment:	Bolt-on corer & windowless sampler	Sheet No:	1 Of 1

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: No groundwater reported.
2: Position terminated at 2.20mbgl due to refusal on concrete.
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									0.00				Concrete. (MADE GROUND).	
											0.33			
									0.50				Void.	
											0.80			
													Concrete. (MADE GROUND).	
SPT	1.00	0	3	6	5	12	9	32	1.00		1.09			
ES D	1.15	0ppm	VOC										Dense to very dense brown-red silty sandy gravel with moderate cobble content. Sand is coarse. Gravel consists of fine to coarse sub-rounded to sub-angular flint, concrete, red brick and clinker. Cobbles consists of sub-rounded brick. (MADE GROUND).	
									1.50					
ES	1.90	0ppm	VOC											
SPT	2.00	6	13	50				50	2.00					
	50 blows for 200mm total penetration.										2.20			
									2.50					
									3.00					
									3.50					
									4.00					
									4.50					
									5.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

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WINDOW/WINDOWLESS SAMPLING BOREHOLE RECORD

		Exploratory Hole No:	**WS103**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+22.00mOD
Logged By:	IKL	Date Commenced:	08/04/2021
Checked By:	JT	Date Completed:	08/04/2021
Type and diameter of equipment:	Bolt-on corer & windowless sampler	Sheet No:	1 Of 1

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: No groundwater reported.

2: Position terminated at 2.45mbgl due to equipment refusal in very dense gravel.

3:

4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									0.00					
											0.04		Concrete. (MADE GROUND).	
													Reinforced concrete. (MADE GROUND).	
											0.40			
ES D	0.50	0ppm	VOC						0.50				Medium brown-red silty sandy gravel with moderate cobble content. Sand is coarse. Gravel consists of fine to coarse sub-rounded to sub-angular flint, concrete, red brick and clinker. Cobbles consist of sub-rounded brick. (MADE GROUND).	
ES D	1.00	0ppm	VOC						1.00					
SPT	1.20	1	1	2	3	4	15	24						
D	1.50								1.50					
											1.90			
ES SPT D	1.95 2.00	0ppm 8	VOC 9	12	15	16	18	61	2.00				Very dense dark brown-orange sandy gravel. Sand is fine to coarse. Gravel consists of fine to coarse, angular to rounded flint. (LYNCH HILL GRAVEL MEMBER).	
											2.45			
									2.50					
									3.00					
									3.50					
									4.00					
									4.50					
									5.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

Jomas Associates Ltd - Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD
T: 0843 289 2187 E: info@jomasassociates.com W: www.jomasassociates.com

WINDOW/WINDOWLESS SAMPLING BOREHOLE RECORD

		Exploratory Hole No:	**WS104**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+20.59mOD
Logged By:	IKL	Date Commenced:	08/04/2021
Checked By:	JT	Date Completed:	08/04/2021
Type and diameter of equipment:	Bolt-on corer & windowless sampler	Sheet No:	1 Of 1

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: No groundwater reported.
2: Borehole terminated at 1.00mbgl due to equipment refusal on concrete.
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									0.00					
											0.04		Concrete. (MADE GROUND).	
													Reinforced concrete. (MADE GROUND).	
											0.40			
ES	0.50	0ppm	VOC						0.50				Very dense brown-red silty sandy gravel with moderate cobble content. Sand is coarse. Gravel consists of fine to coarse sub-rounded to sub-angular flint, concrete, red brick, glass and clinker. Cobbles consist of sub-rounded brick. (MADE GROUND).	
D														
ES	1.00	0ppm	VOC						1.00		1.00			
SPT				50				50						
	50 blows for no penetration.													
D														
									1.50					
									2.00					
									2.50					
									3.00					
									3.50					
									4.00					
									4.50					
									5.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

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WINDOW/WINDOWLESS SAMPLING BOREHOLE RECORD

		Exploratory Hole No:	**WS105**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+18.67mOD
Logged By:	DB	Date Commenced:	15/04/2021
Checked By:	JT	Date Completed:	21/05/2021
Type and diameter of equipment:	Bolt-on corer and hand held windowless sampler	Sheet No:	1 Of 1

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: *Field description.

2: No groundwater reported.

3: Borehole terminated at 2.20mbgl due to equipment refusal in very stiff clay.

4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									0.00				Reinforced concrete. (MADE GROUND).	
									0.50					
									1.00					
									1.50		1.63			
D	1.70												Stiff to very stiff consistency* grey brown silty CLAY. (LONDON CLAY FORMATION).	
ES		0ppm	VOC											
									2.00					
ES	2.15	0ppm	VOC								2.20			
D														
									2.50					
									3.00					
									3.50					
									4.00					
									4.50					
									5.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

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WINDOW/WINDOWLESS SAMPLING BOREHOLE RECORD

Exploratory Hole No:	**WS107**		
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+16.65mOD
Logged By:	DB	Date Commenced:	26/05/2021
Checked By:	JT	Date Completed:	26/05/2021
Type and diameter of equipment:	Standalone corer and hand held windowless sampler	Sheet No:	1 Of 1

Water levels recorded during boring, m

Date:	26/05/2021					
Hole depth:	2.40					
Casing depth:						
Level water on strike:	2.10					
Water Level after 20mins:						

Remarks

1: *Field description.
2: Groundwater encountered at 2.10mbgl.
3:
4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									0.00				Reinforced concrete. (MADE GROUND).	
									0.50					
									1.00					
									1.50					
									2.00		2.10			
ES D	2.40										2.40		Very stiff consistency* grey slightly sandy CLAY. Sand is fine. (LONDON CLAY FORMATION).	
									2.50					
									3.00					
									3.50					
									4.00					
									4.50					
									5.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

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	WINDOW/WINDOWLESS SAMPLING BOREHOLE RECORD	
	Exploratory Hole No:	**WS108**

Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+18.58mOD
Logged By:	DB	Date Commenced:	12/04/2021
Checked By:	JT	Date Completed:	25/05/2021
Type and diameter of equipment:	Standalone corer and hand held windowless sampler	Sheet No:	1 Of 1

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: No groundwater reported.

2: Borehole terminated at 1.80mbgl due to equipment refusal on suspected concrete.

3:

4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									0.00				Concrete. (MADE GROUND).	
											0.50			
									0.50				Soft consistency* dark grey mottled brown CLAY. Possibly reworked. (MADE GROUND).	
ES D	1.00	0ppm	VOC						1.00					
									1.50					
ES D	1.80	0ppm	VOC								1.80			
									2.00					
									2.50					
									3.00					
									3.50					
									4.00					
									4.50					
									5.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

Jomas Associates Ltd - Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD
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WINDOW/WINDOWLESS SAMPLING BOREHOLE RECORD

		Exploratory Hole No:	**WS109**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+18.54mOD
Logged By:	BD	Date Commenced:	12/04/2021
Checked By:	JT	Date Completed:	25/05/2021
Type and diameter of equipment:	Standalone corer and modular windowless sampler	Sheet No:	1 Of 1

Water levels recorded during boring, m

Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: No groundwater reported.
2: Borehole terminated at 2.03mbgl due to equipment refusal on concrete.
3:
4:

Sample or Tests									Strata				
Type	Depth (mbgl)	Result							Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N					
SPT	2.00	12		50				50		2.00		Reinforced concrete. (MADE GROUND).	
	50 blows for 0mm penetration.									2.03		Grey brown gravel. Gravel consist of fine to coarse angular to sub-angular concrete. (MADE GROUND - possible lean mix concrete)	

0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

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		WINDOW/WINDOWLESS SAMPLING BOREHOLE RECORD	
		Exploratory Hole No:	**WS110**
Site Address:	1 Museum Street, Holborn, WC1A 1JP	Project No:	P3094J2084
Client:	Labs Selkirk House & Sollidon Ltd	Ground Level:	+24.67mOD
Logged By:	BD	Date Commenced:	07/04/2021
Checked By:	JT	Date Completed:	25/05/2021
Type and diameter of equipment:	Standalone corer & windowless sampler	Sheet No:	1 Of 1

Water levels recorded during boring, m						
Date:						
Hole depth:						
Casing depth:						
Level water on strike:						
Water Level after 20mins:						

Remarks

1: No groundwater reported.

2: Borehole terminated at 2.30mbgl due to equipment refusal on brick obstruction/very dense sand and gravel.

3:

4:

Sample or Tests										Strata				
Type	Depth (mbgl)	Result								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
		75	75	75	75	75	75	N						
									0.00				Concrete. (MADE GROUND).	
											0.40			
									0.50				Void. (MADE GROUND).	
									1.00					
									1.50					
									2.00		2.02			
											2.14		Concrete. (MADE GROUND).	
SPT	2.30	21	32	40	13			53					Very dense red brown sandy gravel. Sand is coarse. Gravel consists of fine to coarse brick and flint. (MADE GROUND).	
	53 blows for 100mm total penetration.										2.30			
ES		0ppm	VOC						2.50					
D														
									3.00					
									3.50					
									4.00					
									4.50					
									5.00					

Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample

Jomas Associates Ltd - Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD
T: 0843 289 2187 E: info@jomasassociates.com W: www.jomasassociates.com

APPENDIX 3 – CHEMICAL LABORATORY TEST RESULTS

Accounts
Jomas Associates Ltd
Lakeside House
1 Furzeground Way
Stockley Park
UB11 1BD

e: Jomas Associates -

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

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

Analytical Report Number : 21-69414

Replaces Analytical Report Number: 21-69414, issue no. 1
Additional analysis undertaken.

Project / Site name:	West Central Street and 1 Museum Street, Holborn WC1A 1JP	**Samples received on:**	19/04/2021
Your job number:	JJ2084	**Samples instructed on/ Analysis started on:**	19/04/2021
Your order number:	P3094JJ2084.18	**Analysis completed by:**	12/05/2021
Report Issue Number:	2	**Report issued on:**	12/05/2021
Samples Analysed:	7 soil samples		

Signed:

Joanna Wawrzeczko
Technical Reviewer (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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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.

Analytical Report Number: 21-69414
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP
Your Order No: P3094JJ2084.18

Lab Sample Number				1840719	1840720	1840721	1840722	1840723
Sample Reference				BH103	BH103	BH103	WS102	WS103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.10	1.75	1.15	1.00
Date Sampled				15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.5	8.1	8.6	8.7	17
Total mass of sample received	kg	0.001	NONE	1.8	1.8	1.5	1.8	1.5

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	-	-	Amosite
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	-	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	-	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	-	-	< 0.001

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	10.3	10.1	10.9	9.7
Total Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	-	4500	2400	5300	1500
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.59	0.40	0.25	0.11
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	591	395	245	112
Organic Matter	%	0.1	MCERTS	0.4	1.9	-	0.3	1.3
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.3	1.1	-	0.2	0.7

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	0.55	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	0.71	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	0.57	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	0.28	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	0.20	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	0.35	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	0.08	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	0.26	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	-	3.00	-	-

Analytical Report Number: 21-69414
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP
Your Order No: P3094JJ2084.18

Lab Sample Number				1840719	1840720	1840721	1840722	1840723
Sample Reference				BH103	BH103	BH103	WS102	WS103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.10	1.75	1.15	1.00
Date Sampled				15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	12	13	10	11
Boron (water soluble)	mg/kg	0.2	MCERTS	-	1.8	1.3	1.8	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	19	20	21	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	24	28	39	46
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	46	63	740	58
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	13	17	18	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	49	60	89	60
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	5.7	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	3.4	-	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	12	-	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	78	-	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	99	-	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	6.3	-	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	42	-	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	140	-	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	190	-	< 10	< 10
TPH (C10 - C12)	mg/kg	2	MCERTS	-	-	< 2.0	-	-
TPH (C12 - C16)	mg/kg	4	MCERTS	-	-	< 4.0	-	-
TPH (C16 - C21)	mg/kg	1	MCERTS	-	-	27	-	-
TPH (C21 - C40)	mg/kg	10	MCERTS	-	-	77	-	-

Analytical Report Number: 21-69414
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP
Your Order No: P3094JJ2084.18

Lab Sample Number				1840719	1840720	1840721	1840722	1840723
Sample Reference				BH103	BH103	BH103	WS102	WS103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.10	1.75	1.15	1.00
Date Sampled				15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0	-	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Styrene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	< 1.0
o-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0

Analytical Report Number: 21-69414
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP
Your Order No: P3094JJ2084.18

Lab Sample Number				1840719	1840720	1840721	1840722	1840723
Sample Reference				BH103	BH103	BH103	WS102	WS103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.10	1.75	1.15	1.00
Date Sampled				15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	< 1.0

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Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP
Your Order No: P3094JJ2084.18

Lab Sample Number				1840719	1840720	1840721	1840722	1840723
Sample Reference				BH103	BH103	BH103	WS102	WS103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.10	1.75	1.15	1.00
Date Sampled				15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2	-	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2	-	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	-	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	0.2	-	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	0.23	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	0.45	-	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	0.5	-	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	< 0.3	-	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	-	0.42	-	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	-	7.1	-	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	1.8	-	< 0.05	< 0.05
Carbazole	mg/kg	0.3	MCERTS	-	0.6	-	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	-	0.7	-	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	9.5	-	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	7.4	-	< 0.05	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	< 0.3	-	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	3.6	-	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	2.8	-	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	3.8	-	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	1.4	-	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	2.7	-	< 0.05	< 0.05

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Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP
Your Order No: P3094JJ2084.18

Lab Sample Number				1840719	1840720	1840721	1840722	1840723
Sample Reference				BH103	BH103	BH103	WS102	WS103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.10	1.75	1.15	1.00
Date Sampled				15/04/2021	15/04/2021	15/04/2021	15/04/2021	15/04/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	1.4	-	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	0.46	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	1.5	-	< 0.05	< 0.05
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	< 0.007

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-69414
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1
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Lab Sample Number				1840724	1840725
Sample Reference				WS103	WS104
Sample Number				None Supplied	None Supplied
Depth (m)				1.95	0.50
Date Sampled				15/04/2021	15/04/2021
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	4.2	3.7
Total mass of sample received	kg	0.001	NONE	1.2	1.7

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	10.0	10.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	1100	2200
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.11	0.50
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	111	501
Organic Matter	%	0.1	MCERTS	-	1.6
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	0.9

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	-

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Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1
Your Order No: P3094JJ2084.18

Lab Sample Number				1840724	1840725
Sample Reference				WS103	WS104
Sample Number				None Supplied	None Supplied
Depth (m)				1.95	0.50
Date Sampled				15/04/2021	15/04/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Heavy Metals / Metalloids					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	13
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	1.0
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	15	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15	160
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	34	18
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	2.6	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	33	36
Monoaromatics & Oxygenates					
Benzene	µg/kg	1	MCERTS	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0
Petroleum Hydrocarbons					
Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	2.3
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	21
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	-
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	-
TPH (C16 - C21)	mg/kg	1	MCERTS	< 1.0	-
TPH (C21 - C40)	mg/kg	10	MCERTS	< 10	-

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Lab Sample Number				1840724	1840725
Sample Reference				WS103	WS104
Sample Number				None Supplied	None Supplied
Depth (m)				1.95	0.50
Date Sampled				15/04/2021	15/04/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
VOCs					
Chloromethane	µg/kg	1	ISO 17025	-	< 1.0
Chloroethane	µg/kg	1	NONE	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0
Benzene	µg/kg	1	MCERTS	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0
Styrene	µg/kg	1	MCERTS	-	< 1.0
Tribromomethane	µg/kg	1	NONE	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0

Analytical Report Number: 21-69414
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1
Your Order No: P3094JJ2084.18

Lab Sample Number				1840724	1840725
Sample Reference				WS103	WS104
Sample Number				None Supplied	None Supplied
Depth (m)				1.95	0.50
Date Sampled				15/04/2021	15/04/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0

Analytical Report Number: 21-69414
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1
Your Order No: P3094JJ2084.18

Lab Sample Number				1840724	1840725
Sample Reference				WS103	WS104
Sample Number				None Supplied	None Supplied
Depth (m)				1.95	0.50
Date Sampled				15/04/2021	15/04/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
SVOCs					
Aniline	mg/kg	0.1	NONE	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	-	< 0.2
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05
Carbazole	mg/kg	0.3	MCERTS	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05

Analytical Report Number: 21-69414
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1
Your Order No: P3094JJ2084.18

Lab Sample Number				1840724	1840725
Sample Reference				WS103	WS104
Sample Number				None Supplied	None Supplied
Depth (m)				1.95	0.50
Date Sampled				15/04/2021	15/04/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-

Total PCBs by GC-MS

Total PCBs	mg/kg	0.007	MCERTS	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-69414
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP
Your Order No: P3094JJ2084.18

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
1840720	BH103	1.10	101	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
1840723	WS103	1.00	177	Loose Fibres	**Amosite**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Analytical Report Number : 21-69414
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

* 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 *
1840719	BH103	None Supplied	0.4	Brown sand with gravel.
1840720	BH103	None Supplied	1.1	Brown clay and sand with gravel.
1840721	BH103	None Supplied	1.75	Brown loam and sand with gravel.
1840722	WS102	None Supplied	1.15	Brown clay and sand with gravel.
1840723	WS103	None Supplied	1	Brown clay and sand with gravel.
1840724	WS103	None Supplied	1.95	Brown clay and sand with gravel.
1840725	WS104	None Supplied	0.5	Brown clay and sand with gravel.

Analytical Report Number : 21-69414
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
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
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion 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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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
Organic matter (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
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
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-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
PRO (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	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
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
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

Analytical Report Number : 21-69414
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	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
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Sulphate, water soluble, in soil	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

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

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Analytical Report Number : 21-78539

Replaces Analytical Report Number: 21-78539, issue no. 2
Additional analysis undertaken.

Project / Site name:	West Central Street and 1 Museum Street Holborn WC1A 1JP	**Samples received on:**	27/05/2021
Your job number:	JJ2084	**Samples instructed on/ Analysis started on:**	01/06/2021
Your order number:	P3094JJ2084 26	**Analysis completed by:**	24/06/2021
Report Issue Number:	3	**Report issued on:**	24/06/2021
Samples Analysed:	4 soil samples		

Signed: [redacted]

Karolina Marek
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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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.

Analytical Report Number: 21-78539
Project / Site name: West Central Street and 1 Museum Street Holborn WC1A 1JP
Your Order No: P3094JJ2084 26

Lab Sample Number				1889896	1889897	1889898	1890061
Sample Reference				WS101	WS107	WS110	WS105
Sample Number				ES	ES	ES	ES
Depth (m)				1.00	2.40	2.30	1.70
Date Sampled				25/05/2021	26/05/2021	25/05/2021	21/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	5.8	16	16	18
Total mass of sample received	kg	0.001	NONE	1.7	0.80	0.90	1.2
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Detected	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	< 0.001	-
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	11.3	8.7	8.9	9.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	2600	1200	11000	950
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.14	0.46	1.5	0.51
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	145	457	1520	511
Organic Matter	%	0.1	MCERTS	0.1	-	0.6	1.3
Total Organic Carbon (TOC)	%	0.1	MCERTS	< 0.1	-	0.3	-
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.56	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.92	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.74	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.60	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.52	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.77	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.26	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.64	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.35	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.43	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	5.79	< 0.80

Analytical Report Number: 21-78539
Project / Site name: West Central Street and 1 Museum Street Holborn WC1A 1JP
Your Order No: P3094JJ2084 26

Lab Sample Number				1889896	1889897	1889898	1890061
Sample Reference				WS101	WS107	WS110	WS105
Sample Number				ES	ES	ES	ES
Depth (m)				1.00	2.40	2.30	1.70
Date Sampled				25/05/2021	26/05/2021	25/05/2021	21/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20	11	17	16
Boron (water soluble)	mg/kg	0.2	MCERTS	1.3	3.3	2.9	1.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	39	20	50
Copper (aqua regia extractable)	mg/kg	1	MCERTS	110	29	130	66
Lead (aqua regia extractable)	mg/kg	1	MCERTS	14	29	410	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	2.9	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	39	22	43
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	36	80	180	89
Monoaromatics & Oxygenates							
Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Petroleum Hydrocarbons							
Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	35	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	42	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	12	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	37	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	49	-
TPH (C10 - C12)	mg/kg	2	MCERTS	-	< 2.0	-	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	-	< 4.0	-	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0
TPH (C21 - C40)	mg/kg	10	MCERTS	-	< 10	-	< 10

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Lab Sample Number				1889896	1889897	1889898	1890061
Sample Reference				WS101	WS107	WS110	WS105
Sample Number				ES	ES	ES	ES
Depth (m)				1.00	2.40	2.30	1.70
Date Sampled				25/05/2021	26/05/2021	25/05/2021	21/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
VOCs							
Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Chloroethane	µg/kg	1	NONE	< 1.0	-	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	< 1.0	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	-	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	< 1.0	-
Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	< 1.0	-	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Styrene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Tribromomethane	µg/kg	1	NONE	< 1.0	-	< 1.0	-
o-Xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-

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Project / Site name: West Central Street and 1 Museum Street Holborn WC1A 1JP
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Lab Sample Number				1889896	1889897	1889898	1890061
Sample Reference				WS101	WS107	WS110	WS105
Sample Number				ES	ES	ES	ES
Depth (m)				1.00	2.40	2.30	1.70
Date Sampled				25/05/2021	26/05/2021	25/05/2021	21/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-
SVOCs							
Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.56	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3

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Project / Site name: West Central Street and 1 Museum Street Holborn WC1A 1JP
Your Order No: P3094JJ2084 26

Lab Sample Number				1889896	1889897	1889898	1890061
Sample Reference				WS101	WS107	WS110	WS105
Sample Number				ES	ES	ES	ES
Depth (m)				1.00	2.40	2.30	1.70
Date Sampled				25/05/2021	26/05/2021	25/05/2021	21/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.92	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.74	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.60	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.52	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.77	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.26	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.64	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.35	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.43	< 0.05

U/S = Unsuitable Sample I/S = Insufficient Sample

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Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
1889898	WS110	2.30	133	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

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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 *
1889896	WS101	ES	1	Brown sandy gravel.**
1889897	WS107	ES	2.4	Grey clay.
1889898	WS110	ES	2.3	Grey sandy gravel.**
1890061	WS105	ES	1.7	Grey clay.

** Non MCERTS matrix

Analytical Report Number : 21-78539
Project / Site name: West Central Street and 1 Museum Street Holborn WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
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
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion 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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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
Organic matter (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
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
PRO (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	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
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
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
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

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Project / Site name: West Central Street and 1 Museum Street Holborn WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	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
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Sulphate, water soluble, in soil	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

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

Sample Deviation Report

Analytical Report Number : 21-78539
Project / Site name: West Central Street and 1 Museum Street Holborn WC1A 1JP

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS101	ES	S	1889896	c	Total cyanide in soil	L080-PL	c
WS105	ES	S	1890061	c	Total cyanide in soil	L080-PL	c
WS110	ES	S	1889898	c	Total cyanide in soil	L080-PL	c

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Analytical Report Number : 21-78966

Replaces Analytical Report Number: 21-78966, issue no. 1
Client sampling date amended.

Project / Site name:	West Central Street and I Museum Street, Holborn, WC1A 1JP	**Samples received on:**	27/05/2021
Your job number:	JJ2084	**Samples instructed on/ Analysis started on:**	03/06/2021
Your order number:	P3094JJ2084 26	**Analysis completed by:**	22/06/2021
Report Issue Number:	2	**Report issued on:**	22/06/2021
Samples Analysed:	1 soil sample		

Signed: [redacted]

Agnieszka Czerwińska
Technical Reviewer (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

Excel copies of reports are only valid when accompanied by this PDF certificate.

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.

Analytical Report Number: 21-78966
Project / Site name: West Central Street and I Museum Street, Holborn, WC1A 1JP
Your Order No: P3094JJ2084 26

Lab Sample Number				1891727
Sample Reference				WS108
Sample Number				ES
Depth (m)				1.00
Date Sampled				26/05/2021
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	22
Total mass of sample received	kg	0.001	NONE	1.0

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

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	1300
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.75
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	746
Organic Matter	%	0.1	MCERTS	1.6
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.0

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	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80

Analytical Report Number: 21-78966
Project / Site name: West Central Street and I Museum Street, Holborn, WC1A 1JP
Your Order No: P3094JJ2084 26

Lab Sample Number				1891727
Sample Reference				WS108
Sample Number				ES
Depth (m)				1.00
Date Sampled				26/05/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14
Boron (water soluble)	mg/kg	0.2	MCERTS	2.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	49
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	39
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	79
Monoaromatics & Oxygenates				
Benzene	µg/kg	1	MCERTS	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0
Petroleum Hydrocarbons				
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10

Analytical Report Number: 21-78966
Project / Site name: West Central Street and I Museum Street, Holborn, WC1A 1JP
Your Order No: P3094JJ2084 26

Lab Sample Number				1891727
Sample Reference				WS108
Sample Number				ES
Depth (m)				1.00
Date Sampled				26/05/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
VOCs				
Chloromethane	µg/kg	1	ISO 17025	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	< 1.0
Styrene	µg/kg	1	MCERTS	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0
o-Xylene	µg/kg	1	MCERTS	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0
Butylbenzene	µg/kg	1	MCERTS	< 1.0

Analytical Report Number: 21-78966
Project / Site name: West Central Street and I Museum Street, Holborn, WC1A 1JP
Your Order No: P3094JJ2084 26

Lab Sample Number				1891727
Sample Reference				WS108
Sample Number				ES
Depth (m)				1.00
Date Sampled				26/05/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-78966
Project / Site name: West Central Street and I Museum Street, Holborn, WC1A 1JP

* 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 *
1891727	WS108	ES	1	Brown clay.

Analytical Report Number : 21-78966
Project / Site name: West Central Street and I Museum Street, Holborn, WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

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 disperion 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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	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
Organic matter (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
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
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
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	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 : 21-78966
Project / Site name: West Central Street and I Museum Street, Holborn, WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil	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

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

Sample Deviation Report

Analytical Report Number : 21-78966
Project / Site name: West Central Street and I Museum Street, Holborn, WC1A 1JP

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS108	ES	S	1891727	c	Total cyanide in soil	L080-PL	c

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Analytical Report Number : 21-83645

Project / Site name:	West Central Street and 1 Museum Street, Holborn, WC1A 1JP	**Samples received on:**	28/06/2021
Your job number:	JJ2084	**Samples instructed on/ Analysis started on:**	28/06/2021
Your order number:	P3094JJ2084.29	**Analysis completed by:**	06/07/2021
Report Issue Number:	1	**Report issued on:**	06/07/2021
Samples Analysed:	1 soil sample		

Signed: [redacted]

Karol na Marek
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

Excel copies of reports are only valid when accompanied by this PDF certificate.

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.

Analytical Report Number: 21-83645
Project / Site name: West Central Street and 1 Museum Street, Holborn, WC1A 1JP
Your Order No: P3094JJ2084.29

Lab Sample Number				1918689
Sample Reference				WS108
Sample Number				None Supplied
Depth (m)				2.80
Date Sampled				Deviating
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	19
Total mass of sample received	kg	0.001	NONE	0.50

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.5
Total Sulphate as SO4	%	0.005	MCERTS	0.179
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.66
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	664
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	9.1
Total Sulphur	%	0.005	MCERTS	0.424
Ammoniacal Nitrogen as NH4	mg/kg	0.5	MCERTS	< 0.5
Ammonium as NH4 (10:1 leachate equivalent)	mg/l	0.05	MCERTS	< 0.05
Water Soluble Nitrate (2:1) as NO3	mg/kg	2	NONE	2.5
Water Soluble Nitrate (2:1) as NO3 (leachate equivalent)	mg/l	5	NONE	< 5.0

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	33
Magnesium (leachate equivalent)	mg/l	2.5	NONE	16

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-83645
Project / Site name: West Central Street and 1 Museum Street, Holborn, WC1A 1JP

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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 *
1918689	WS108	None Supplied	2.8	Brown loam and clay.

Analytical Report Number : 21-83645
Project / Site name: West Central Street and 1 Museum Street, Holborn, WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Nitrate, water soluble, in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	D	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
Ammonium as NH4 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
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
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
Water Soluble Nitrate (leachate equivalent)	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	D	NONE
Sulphate, water soluble, in soil	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

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

Sample Deviation Report

Analytical Report Number : 21-83645
Project / Site name: West Central Street and 1 Museum Street, Holborn, WC1A 1JP

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS108	None Supplied	S	1918689	a	None Supplied	None Supplied	None Supplied

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Analytical Report Number : 21-71080

Replaces Analytical Report Number: 21-71080, issue no. 1
Client sampling date amended.

Project / Site name:	West Central Street and 1 Museum Street , Holborn, WC1A 1JP	**Samples received on:**	22/04/2021
Your job number:	JJ2084	**Samples instructed on/ Analysis started on:**	22/04/2021
Your order number:	P3094JJ2084.20	**Analysis completed by:**	12/05/2021
Report Issue Number:	2	**Report issued on:**	28/06/2021
Samples Analysed:	7 soil samples		

Signed: [redacted]

Joanna Wawrzeczko
Technical Reviewer (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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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.

Analytical Report Number: 21-71080
Project / Site name: West Central Street and 1 Museum Street , Holborn, WC1A 1JP
Your Order No: P3094JJ2084.20

Lab Sample Number				1850053	1850054	1850055	1850056	1850057
Sample Reference				BH103	BH103	BH103	BH103	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				13.00-13.45	1.00	2.50	5.50	8.50
Date Sampled				12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	21	11	10	6.9	21
Total mass of sample received	kg	0.001	NONE	0.50	0.50	0.50	0.50	0.50

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.5	9.8	10.3	8.2	8.1
Total Sulphate as SO4	%	0.005	MCERTS	0.074	0.385	0.309	0.021	0.075
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.22	0.68	0.58	0.033	0.26
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	16	48	37	4.3	32
Total Sulphur	%	0.005	MCERTS	1.02	0.160	0.113	0.020	0.404
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	37	< 5.0	8.3	6.5	35
Magnesium (leachate equivalent)	mg/l	2.5	NONE	18	< 2.5	4.2	3.2	17

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-71080
Project / Site name: West Central Street and 1 Museum Street , Holborn, WC1A
Your Order No: P3094JJ2084.20

Lab Sample Number				1850058	1850059
Sample Reference				BH103	BH103
Sample Number				None Supplied	None Supplied
Depth (m)				19.50	25.00
Date Sampled				13/04/2021	13/04/2021
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	18	20
Total mass of sample received	kg	0.001	NONE	0.50	0.50

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.3	8.5
Total Sulphate as SO4	%	0.005	MCERTS	0.143	0.313
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.64	0.52
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	37	35
Total Sulphur	%	0.005	MCERTS	1.49	0.461
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	74	60
Magnesium (leachate equivalent)	mg/l	2.5	NONE	37	30

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-71080
Project / Site name: West Central Street and 1 Museum Street , Holborn, WC1A 1JP

* 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 *
1850053	BH103	None Supplied	13.00-13.45	Brown clay.
1850054	BH103	None Supplied	1	Brown loam and clay with gravel and vegetation.
1850055	BH103	None Supplied	2.5	Brown clay and loam with gravel and vegetation.
1850056	BH103	None Supplied	5.5	Brown sand with gravel.
1850057	BH103	None Supplied	8.5	Brown clay.
1850058	BH103	None Supplied	19.5	Brown clay.
1850059	BH103	None Supplied	25	Brown clay.

Analytical Report Number : 21-71080
Project / Site name: West Central Street and 1 Museum Street , Holborn, WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

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
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
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
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	W	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

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Analytical Report Number : 21-79225

Replaces Analytical Report Number: 21-79225, issue no. 1
Client references/information amended.

Project / Site name:	West Central Street and 1 Museum St, Holburn, WC1A 1JP	**Samples received on:**	18/05/2021
Your job number:	JJ2084	**Samples instructed on/ Analysis started on:**	28/05/2021
Your order number:	P3094JJ2084 25	**Analysis completed by:**	28/07/2021
Report Issue Number:	2	**Report issued on:**	28/07/2021
Samples Analysed:	4 soil samples		

[redacted]

Joanna Wawrzeczko
Technical Reviewer (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.

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

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Analytical Report Number: 21-79225
Project / Site name: West Central Street and 1 Museum St, Holburn, WC1A 1JP
Your Order No: P3094JJ2084 25

Lab Sample Number				1893083	1893084	1893085	1893086
Sample Reference				BH102A	BH102A	BH102A	BH102A
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	5.00	11.00	16.00
Date Sampled				28/05/2021	28/05/2021	28/05/2021	28/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	20	18	19	19
Total mass of sample received	kg	0.001	NONE	1.0	1.0	1.0	1.0

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.9	8.6	8.6	8.7
Total Sulphate as SO4	%	0.005	MCERTS	0.097	0.062	0.059	0.065
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.48	0.30	0.30	0.34
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	481	300	303	336
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	25	23	28	22
Total Sulphur	%	0.005	MCERTS	0.315	0.274	0.339	0.359
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	19	39	40	43
Magnesium (leachate equivalent)	mg/l	2.5	NONE	9.7	19	20	22

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-79225
Project / Site name: West Central Street and 1 Museum St, Holburn, WC1A 1JP

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Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1893083	BH102A	None Supplied	1	Brown clay.
1893084	BH102A	None Supplied	5	Brown clay.
1893085	BH102A	None Supplied	11	Brown clay.
1893086	BH102A	None Supplied	16	Brown clay.

Analytical Report Number : 21-79225
Project / Site name: West Central Street and 1 Museum St, Holburn, WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
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
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
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
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	W	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
Sulphate, water soluble, in soil	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

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Analytical Report Number : 21-69420

Project / Site name:	West Central Street and 1 Museum Street. Holborn WC1A 1JP	**Samples received on:**	19/04/2021
Your job number:	JJ2084	**Samples instructed on/ Analysis started on:**	19/04/2021
Your order number:	P3094JJ2084.19	**Analysis completed by:**	27/04/2021
Report Issue Number:	1	**Report issued on:**	27/04/2021
Samples Analysed:	5 10:1 WAC samples		

[redacted]
eszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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Waste Acceptance Criteria Analytical Results

Report No:	**21-69420**						
					Client: JOMASASSOC		
Location	**West Central Street and 1 Museum Street. Holborn WC1A 1JP**						
Lab Reference (Sample Number)	1840755 / 1840756				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	15/04/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH103						
Depth (m)	0.40						
Solid Waste Analysis							
TOC (%)**	0.2				3%	5%	6%
Loss on Ignition (%) **	1.3				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	15.1				100	--	--
pH (units)**	10.6				--	>6	--
Acid Neutralisation Capacity (mol / kg)	60				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0025			0.0240	0.5	2	25
Barium *	0.0143			0.137	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0047			0.045	0.5	10	70
Copper *	0.0072			0.069	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0040			0.0385	0.5	10	30
Nickel *	0.0013			0.013	0.4	10	40
Lead *	0.0020			0.019	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 *	0.0052			0.050	4	50	200
Chloride *	2.5			24	800	15000	25000
Fluoride	0.13			1.2	10	150	500
Sulphate *	44			420	1000	20000	50000
TDS*	190			1800	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	4.39			42.0	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.8						
Dry Matter (%)	90						
Moisture (%)	10						

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 discrepancies 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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Waste Acceptance Criteria Analytical Results

Report No:	**21-69420**						
					Client:	**JOMASASSOC**	
Location	**West Central Street and 1 Museum Street. Holborn WC1A 1JP**						
Lab Reference (Sample Number)	1840757 / 1840758				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	15/04/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH103						
Depth (m)	1.00						
Solid Waste Analysis							
TOC (%)**	1.6				3%	5%	6%
Loss on Ignition (%) **	3.3				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	140				500	--	--
Total PAH (WAC-17) (mg/kg)	16.4				100	--	--
pH (units)**	10.3				--	>6	--
Acid Neutralisation Capacity (mol / kg)	74				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0051			0.0497	0.5	2	25
Barium *	0.0143			0.138	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0036			0.035	0.5	10	70
Copper *	0.011			0.10	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0053			0.0512	0.5	10	30
Nickel *	0.0019			0.018	0.4	10	40
Lead *	0.0033			0.032	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 *	0.0055			0.053	4	50	200
Chloride *	15			140	800	15000	25000
Fluoride	0.27			2.6	10	150	500
Sulphate *	170			1600	1000	20000	50000
TDS*	300			2900	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	6.45			62.2	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.7						
Dry Matter (%)	90						
Moisture (%)	10						

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

Report No:	**21-69420**						
					Client:	**JOMASASSOC**	
Location	**West Central Street and 1 Museum Street. Holborn WC1A 1JP**						
Lab Reference (Sample Number)	1840759 / 1840760				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	15/04/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH103						
Depth (m)	1.75						
Solid Waste Analysis							
TOC (%)**	0.5				3%	5%	6%
Loss on Ignition (%) **	1.8				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	120				500	--	--
Total PAH (WAC-17) (mg/kg)	6.38				100	--	--
pH (units)**	10.8				--	>6	--
Acid Neutralisation Capacity (mol / kg)	73				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0061			0.0549	0.5	2	25
Barium *	0.0114			0.103	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0049			0.044	0.5	10	70
Copper *	0.013			0.12	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0073			0.0658	0.5	10	30
Nickel *	0.0024			0.022	0.4	10	40
Lead *	0.0035			0.032	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 *	0.0056			0.051	4	50	200
Chloride *	7.0			64	800	15000	25000
Fluoride	0.21			1.9	10	150	500
Sulphate *	63			570	1000	20000	50000
TDS*	280			2500	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	5.47			49.6	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.5						
Dry Matter (%)	91						
Moisture (%)	9.2						

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

Report No:	**21-69420**						
					Client: JOMASASSOC		
Location	**West Central Street and 1 Museum Street. Holborn WC1A 1JP**						
Lab Reference (Sample Number)	1840761 / 1840762				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	15/04/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS103						
Depth (m)	1.95						
Solid Waste Analysis							
TOC (%)**	0.1				3%	5%	6%
Loss on Ignition (%) **	1.2				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	9.1				--	>6	--
Acid Neutralisation Capacity (mol / kg)	5.7				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0038			0.0359	0.5	2	25
Barium *	0.0197			0.187	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0009			0.0085	0.5	10	70
Copper *	0.0031			0.030	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0049			0.0467	0.5	10	30
Nickel *	0.0024			0.023	0.4	10	40
Lead *	< 0.0010			< 0.010	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 *	0.0020			0.019	4	50	200
Chloride *	1.1			10	800	15000	25000
Fluoride	0.13			1.3	10	150	500
Sulphate *	6.5			62	1000	20000	50000
TDS*	58			550	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	8.57			81.2	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.2						
Dry Matter (%)	96						
Moisture (%)	3.6						

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

Report No:	**21-69420**						
					Client:	**JOMASASSOC**	
Location	**West Central Street and 1 Museum Street. Holborn WC1A 1JP**						
Lab Reference (Sample Number)	1840763 / 1840764				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	15/04/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS104						
Depth (m)	0.50						
Solid Waste Analysis							
TOC (%)**	0.4				3%	5%	6%
Loss on Ignition (%) **	1.4				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	8.7				--	>6	--
Acid Neutralisation Capacity (mol / kg)	7.7				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0022			0.0209	0.5	2	25
Barium *	0.0135			0.130	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0020			0.020	0.5	10	70
Copper *	0.0059			0.057	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0054			0.0521	0.5	10	30
Nickel *	0.0026			0.025	0.4	10	40
Lead *	0.0087			0.083	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 *	0.0094			0.091	4	50	200
Chloride *	5.1			49	800	15000	25000
Fluoride	0.057			0.54	10	150	500
Sulphate *	120			1200	1000	20000	50000
TDS*	160			1500	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	7.17			69.0	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.7						
Dry Matter (%)	96						
Moisture (%)	3.7						

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Analytical Report Number : 21-69420
Project / Site name: West Central Street and 1 Museum Street. Holborn WC1A 1JP

* 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 *
1840755	BH103	None Supplied	0.4	Brown sand with gravel.
1840757	BH103	None Supplied	1	Brown clay and sand with gravel.
1840759	BH103	None Supplied	1.75	Brown clay and sand with gravel.
1840761	WS103	None Supplied	1.95	Brown clay and sand with gravel.
1840763	WS104	None Supplied	0.5	Brown clay and sand with gravel.

Analytical Report Number : 21-69420
Project / Site name: West Central Street and 1 Museum Street. Holborn WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

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
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated WAC-17 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. MCERTS accredited except Coronene.	L064-PL	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073-PL	W	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 electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	ISO 17025

Analytical Report Number : 21-69420
Project / Site name: West Central Street and 1 Museum Street. Holborn WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

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Analytical Report Number : 21-78544

Project / Site name:	West Central Street and 1 Museum Street Holborn WC1A 1JP	**Samples received on:**	27/05/2021
Your job number:	JJ2084	**Samples instructed on/ Analysis started on:**	01/06/2021
Your order number:	P3094JJ2084 26	**Analysis completed by:**	08/06/2021
Report Issue Number:	1	**Report issued on:**	08/06/2021
Samples Analysed:	3 10:1 WAC samples		

[redacted]

Joanna Wawrzeczko
Technical Reviewer (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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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:	**21-78544**						
					Client:	**JOMASASSOC**	
Location	**West Central Street and 1 Museum Street Holborn WC1A 1JP**						
Lab Reference (Sample Number)	1889913 / 1889914				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date					Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS101 ES						
Depth (m)	1.00						
Solid Waste Analysis							
TOC (%)**	< 0.1				3%	5%	6%
Loss on Ignition (%) **	2.5				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	47				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	11.8				--	>6	--
Acid Neutralisation Capacity (mol / kg)	200				--	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 *	< 0.0010			< 0.0100	0.5	2	25
Barium *	0.0343			0.325	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.013			0.13	0.5	10	70
Copper *	0.012			0.11	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	< 0.0004			< 0.0040	0.5	10	30
Nickel *	0.0017			0.016	0.4	10	40
Lead *	< 0.0010			< 0.010	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 *	0.0038			0.036	4	50	200
Chloride *	15			140	800	15000	25000
Fluoride	0.14			1.3	10	150	500
Sulphate *	13			120	1000	20000	50000
TDS*	680			6400	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	3.85			36.4	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.7						
Dry Matter (%)	94						
Moisture (%)	5.8						

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

Report No:	**21-78544**						
					Client:	**JOMASASSOC**	
Location	**West Central Street and 1 Museum Street Holborn WC1A 1JP**						
Lab Reference (Sample Number)	1889915 / 1889916				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date					Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS107 ES						
Depth (m)	2.40						
Solid Waste Analysis							
TOC (%)**	0.7				3%	5%	6%
Loss on Ignition (%) **	4.1				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	8.2				--	>6	--
Acid Neutralisation Capacity (mol / kg)	2.1				--	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 *	0.0020			0.0154	0.5	2	25
Barium *	0.0274			0.214	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	< 0.0004			< 0.0040	0.5	10	70
Copper *	0.0057			0.045	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0093			0.0723	0.5	10	30
Nickel *	0.0043			0.033	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	0.019			0.15	0.1	0.5	7
Zinc *	0.013			0.099	4	50	200
Chloride *	12			91	800	15000	25000
Fluoride	0.52			4.1	10	150	500
Sulphate *	74			580	1000	20000	50000
TDS*	130			1000	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	6.70			52.3	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.80						
Dry Matter (%)	84						
Moisture (%)	16						

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

Report No:	**21-78544**						
					Client:	**JOMASASSOC**	
Location	**West Central Street and 1 Museum Street Holborn WC1A 1JP**						
Lab Reference (Sample Number)	1889917 / 1889918				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date					Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS110 ES						
Depth (m)	2.30						
Solid Waste Analysis							
TOC (%)**	0.3				3%	5%	6%
Loss on Ignition (%) **	1.9				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	40				500	--	--
Total PAH (WAC-17) (mg/kg)	5.69				100	--	--
pH (units)**	8.6				--	>6	--
Acid Neutralisation Capacity (mol / kg)	15				--	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 *	0.0046			0.0385	0.5	2	25
Barium *	0.0300			0.252	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0043			0.036	0.5	10	70
Copper *	0.0093			0.078	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	< 0.0004			< 0.0040	0.5	10	30
Nickel *	0.0019			0.016	0.4	10	40
Lead *	0.0018			0.016	0.5	10	50
Antimony *	0.0057			0.048	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0048			0.041	4	50	200
Chloride *	2.8			24	800	15000	25000
Fluoride	0.17			1.4	10	150	500
Sulphate *	770			6400	1000	20000	50000
TDS*	610			5200	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	3.41			28.6	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.90						
Dry Matter (%)	84						
Moisture (%)	16						

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Analytical Report Number : 21-78544
Project / Site name: West Central Street and 1 Museum Street Holborn WC1A 1JP

* 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 *
1889913	WS101	ES	1	Brown sandy gravel.**
1889915	WS107	ES	2.4	Grey clay.
1889917	WS110	ES	2.3	Grey sandy gravel.**

**Non MCERTS Matrix

Analytical Report Number : 21-78544
Project / Site name: West Central Street and 1 Museum Street Holborn WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

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
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated WAC-17 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. MCERTS accredited except Coronene.	L064-PL	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073-PL	W	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	L004-PL	W	ISO 17025

Analytical Report Number : 21-78544
Project / Site name: West Central Street and 1 Museum Street Holborn WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

Sample Deviation Report

Analytical Report Number : 21-78544
Project / Site name: West Central Street and 1 Museum Street Holborn WC1A 1JP

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS101	ES	L	1889914	a	None Supplied	None Supplied	None Supplied
WS101	ES	S	1889913	a	None Supplied	None Supplied	None Supplied
WS107	ES	L	1889916	a	None Supplied	None Supplied	None Supplied
WS107	ES	S	1889915	a	None Supplied	None Supplied	None Supplied
WS110	ES	L	1889918	a	None Supplied	None Supplied	None Supplied
WS110	ES	S	1889917	a	None Supplied	None Supplied	None Supplied

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Analytical Report Number : 21-78968

Project / Site name:	West Central Street and I Museum Street, Holborn, WC1A 1JP	**Samples received on:**	27/05/2021
Your job number:	JJ2084	**Samples instructed on/ Analysis started on:**	03/06/2021
Your order number:	P3094JJ2084 27	**Analysis completed by:**	10/06/2021
Report Issue Number:	1	**Report issued on:**	10/06/2021
Samples Analysed:	10:1 WAC sample		

Signed: [redacted]

Agnieszka Czerwińska
Technical Reviewer (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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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:	**21-78968**						
					Client:	**JOMASASSOC**	
Location	**West Central Street and I Museum Street, Holborn, WC1A 1JP**						
Lab Reference (Sample Number)	1891783 / 1891784				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date					Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS108 ES						
Depth (m)	1.00						
Solid Waste Analysis							
TOC (%)**	1.0				3%	5%	6%
Loss on Ignition (%) **	5.9				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	7.9				--	>6	--
Acid Neutralisation Capacity (mol / kg)	2.4				--	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 *	< 0.0010			< 0.0100	0.5	2	25
Barium *	0.0279			0.223	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0006			0.0045	0.5	10	70
Copper *	0.0035			0.028	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0047			0.0374	0.5	10	30
Nickel *	0.0036			0.029	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	0.012			0.099	0.1	0.5	7
Zinc *	0.0018			0.015	4	50	200
Chloride *	14			110	800	15000	25000
Fluoride	0.26			2.1	10	150	500
Sulphate *	98			780	1000	20000	50000
TDS*	170			1400	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	4.22			33.7	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.0						
Dry Matter (%)	78						
Moisture (%)	22						

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 discrepancies 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.

Analytical Report Number : 21-78968
Project / Site name: West Central Street and I Museum Street, Holborn, WC1A 1JP

* 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 *
1891783	WS108	ES	1	Brown clay.

Analytical Report Number : 21-78968
Project / Site name: West Central Street and I Museum Street, Holborn, WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

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
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated WAC-17 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. MCERTS accredited except Coronene.	L064-PL	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
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
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073-PL	W	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	L004-PL	W	ISO 17025

Analytical Report Number : 21-78968
Project / Site name: West Central Street and I Museum Street, Holborn, WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

Sample Deviation Report

Analytical Report Number : 21-78968
Project / Site name: West Central Street and I Museum Street, Holborn, WC1A 1JP

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS108	ES	L	1891784	a	None Supplied	None Supplied	None Supplied
WS108	ES	S	1891783	a	None Supplied	None Supplied	None Supplied

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Analytical Report Number : 21-80882

Project / Site name:	West Central Street and 1 Museum Street, Holborn WC1A 1JP	**Samples received on:**	14/06/2021
Your job number:	JJ2084	**Samples instructed on/ Analysis started on:**	14/06/2021
Your order number:	P3094JJ2084.31	**Analysis completed by:**	21/06/2021
Report Issue Number:	1	**Report issued on:**	21/06/2021
Samples Analysed:	5 water samples		

Signed:

Joanna Wawrzeczko
Technical Reviewer (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

Excel copies of reports are only valid when accompanied by this PDF certificate.

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.

Analytical Report Number: 21-80882
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

Your Order No: P3094JJ2084.31

Lab Sample Number				1901959	1901960	1901961	1901962	1901963
Sample Reference				BH102	BH103	WS105	WS107	WS108
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				11/06/2021	11/06/2021	11/06/2021	11/06/2021	11/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.7	7.9	12.2	12.1	8.0
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1200	920	3700	2100	1300
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	1.2	7.2	< 1.0	1.2	< 1.0
Sulphate as SO4	µg/l	45	ISO 17025	219000	209000	20000	49200	330000
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	30	50	3000	1600	150
Hardness - Total	mgCaCO3/l	1	ISO 17025	474	404	683	487	459
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10	< 10
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	480	120	38	37	220
Calcium (dissolved)	mg/l	0.012	ISO 17025	130	140	270	190	150
Magnesium (dissolved)	mg/l	0.005	ISO 17025	34	12	0.020	0.018	23
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.53	2.12	2.27	3.13	2.41
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.04	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	1.1	1.0	1.9	1.0	0.6
Copper (dissolved)	µg/l	0.5	ISO 17025	2.9	4.5	31	9.0	2.3
Lead (dissolved)	µg/l	0.2	ISO 17025	0.4	< 0.2	0.4	0.4	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	4.0	8.4	3.5	2.8	5.7
Selenium (dissolved)	µg/l	0.6	ISO 17025	2.2	4.2	3.2	4.4	0.9
Zinc (dissolved)	µg/l	0.5	ISO 17025	4.3	7.4	2.3	2.7	4.6
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 21-80882
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

Your Order No: P3094JJ2084.31

Lab Sample Number				1901959	1901960	1901961	1901962	1901963
Sample Reference				BH102	BH103	WS105	WS107	WS108
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				11/06/2021	11/06/2021	11/06/2021	11/06/2021	11/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

Analytical Report Number: 21-80882
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

Your Order No: P3094JJ2084.31

Lab Sample Number				1901959	1901960	1901961	1901962	1901963
Sample Reference				BH102	BH103	WS105	WS107	WS108
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				11/06/2021	11/06/2021	11/06/2021	11/06/2021	11/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 21-80882
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

Your Order No: P3094JJ2084.31

Lab Sample Number				1901959	1901960	1901961	1901962	1901963
Sample Reference				BH102	BH103	WS105	WS107	WS108
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				11/06/2021	11/06/2021	11/06/2021	11/06/2021	11/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 21-80882
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

Your Order No: P3094JJ2084.31

Lab Sample Number				1901959	1901960	1901961	1901962	1901963
Sample Reference				BH102	BH103	WS105	WS107	WS108
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				11/06/2021	11/06/2021	11/06/2021	11/06/2021	11/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Analytical Report Number: 21-80882
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

Your Order No: P3094JJ2084.31

Lab Sample Number				1901959	1901960	1901961	1901962	1901963
Sample Reference				BH102	BH103	WS105	WS107	WS108
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				11/06/2021	11/06/2021	11/06/2021	11/06/2021	11/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-80882
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonium as NH4 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Low level total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

Sample Deviation Report

Analytical Report Number : 21-80882
Project / Site name: West Central Street and 1 Museum Street, Holborn WC1A 1JP

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH102	None Supplied	W	1901959	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH102	None Supplied	W	1901959	c	Ammonium as NH4 in water	L082-PL	c
BH102	None Supplied	W	1901959	c	Electrical conductivity at 20oC of water	L031-PL	c
BH102	None Supplied	W	1901959	c	pH at 20oC in water (automated)	L099-PL	c
BH103	None Supplied	W	1901960	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH103	None Supplied	W	1901960	c	Ammonium as NH4 in water	L082-PL	c
BH103	None Supplied	W	1901960	c	Electrical conductivity at 20oC of water	L031-PL	c
BH103	None Supplied	W	1901960	c	pH at 20oC in water (automated)	L099-PL	c
WS105	None Supplied	W	1901961	c	Ammoniacal Nitrogen as N in water	L082-PL	c
WS105	None Supplied	W	1901961	c	Ammonium as NH4 in water	L082-PL	c
WS105	None Supplied	W	1901961	c	Electrical conductivity at 20oC of water	L031-PL	c
WS105	None Supplied	W	1901961	c	pH at 20oC in water (automated)	L099-PL	c
WS107	None Supplied	W	1901962	c	Ammoniacal Nitrogen as N in water	L082-PL	c
WS107	None Supplied	W	1901962	c	Ammonium as NH4 in water	L082-PL	c
WS107	None Supplied	W	1901962	c	Electrical conductivity at 20oC of water	L031-PL	c
WS107	None Supplied	W	1901962	c	pH at 20oC in water (automated)	L099-PL	c
WS108	None Supplied	W	1901963	c	Ammoniacal Nitrogen as N in water	L082-PL	c
WS108	None Supplied	W	1901963	c	Ammonium as NH4 in water	L082-PL	c
WS108	None Supplied	W	1901963	c	Electrical conductivity at 20oC of water	L031-PL	c
WS108	None Supplied	W	1901963	c	pH at 20oC in water (automated)	L099-PL	c

APPENDIX 4 – GEOTECHNICAL LABORATORY TEST RESULTS

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	04/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

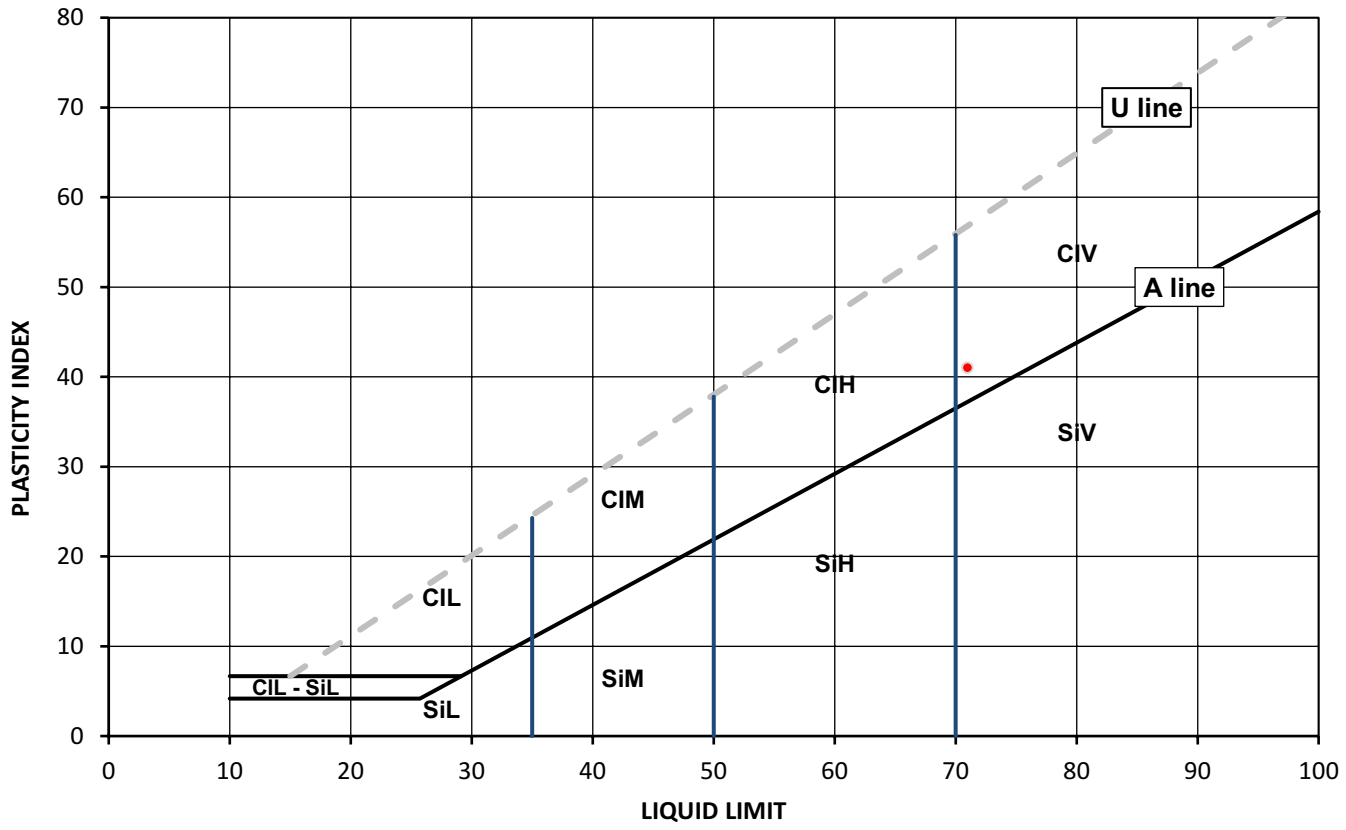
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849953	Depth Top [m]:	10.00
Hole No.:	BH103	Depth Base [m]:	10.45
Sample Reference:	Not Given	Sample Type:	U
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
27	71	30	41	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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	04/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

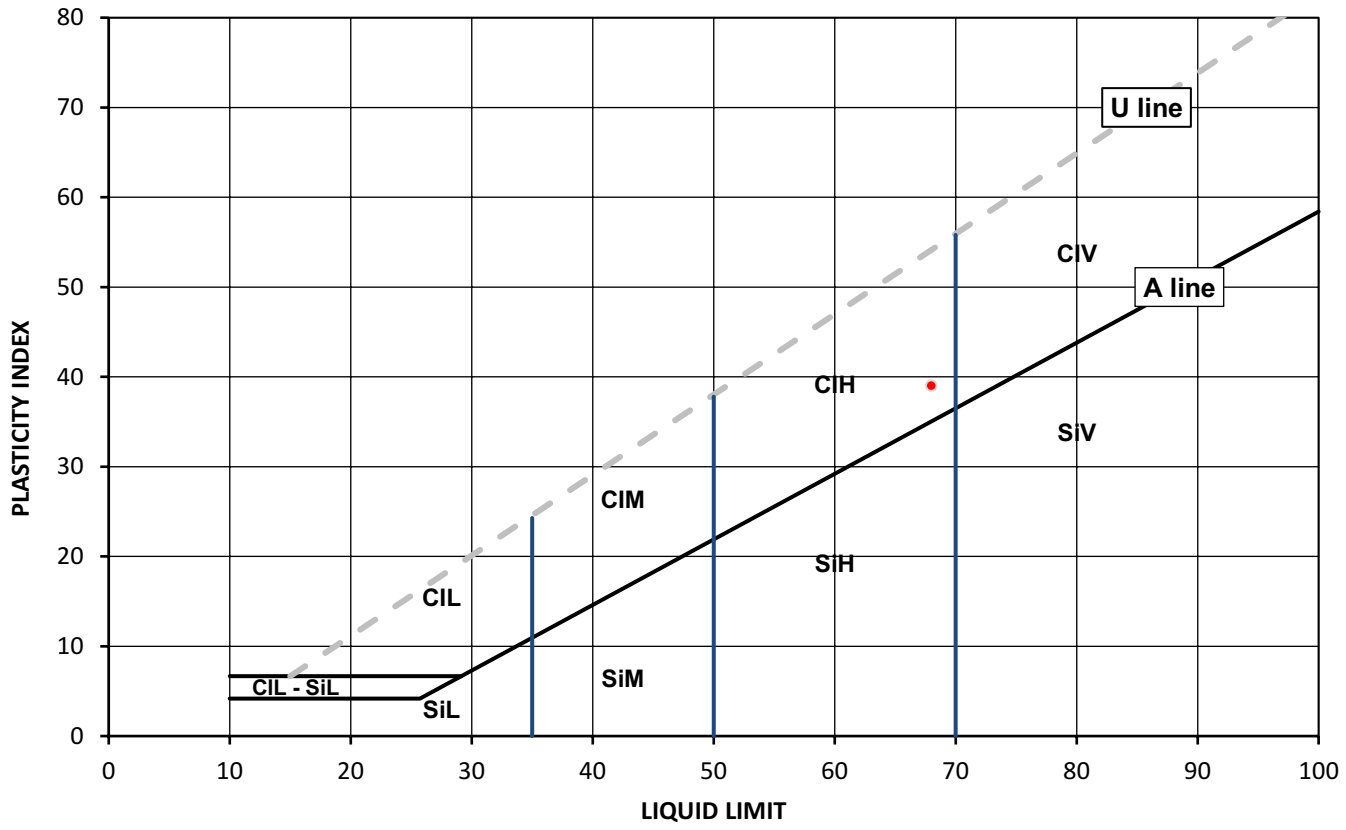
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849957	Depth Top [m]:	22.00
Hole No.:	BH103	Depth Base [m]:	22.45
Sample Reference:	Not Given	Sample Type:	U
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
30	68	29	39	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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

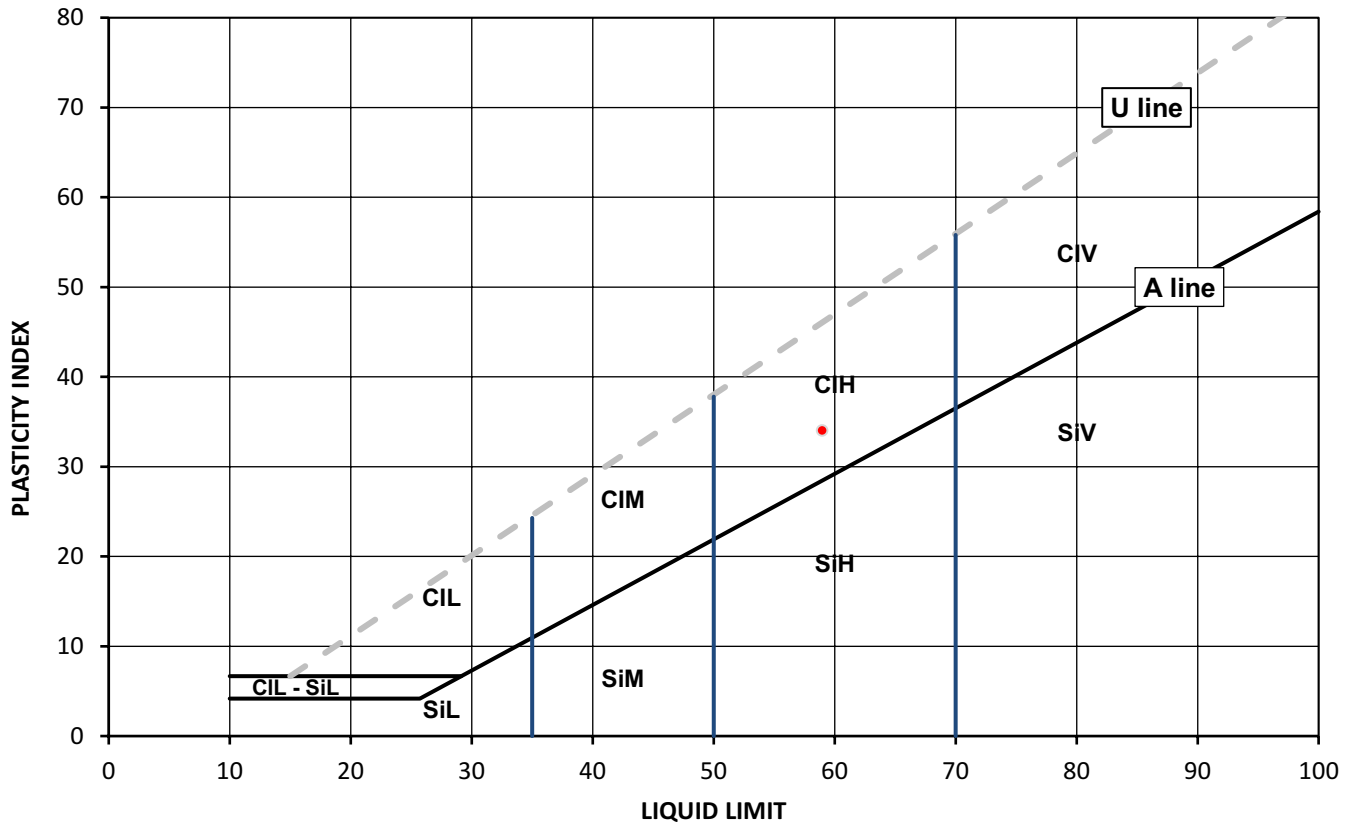
Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	04/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849958	Depth Top [m]:	28.00
Hole No.:	BH103	Depth Base [m]:	28.45
Sample Reference:	Not Given	Sample Type:	U
Soil Description:	Brown slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
19	59	25	34	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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

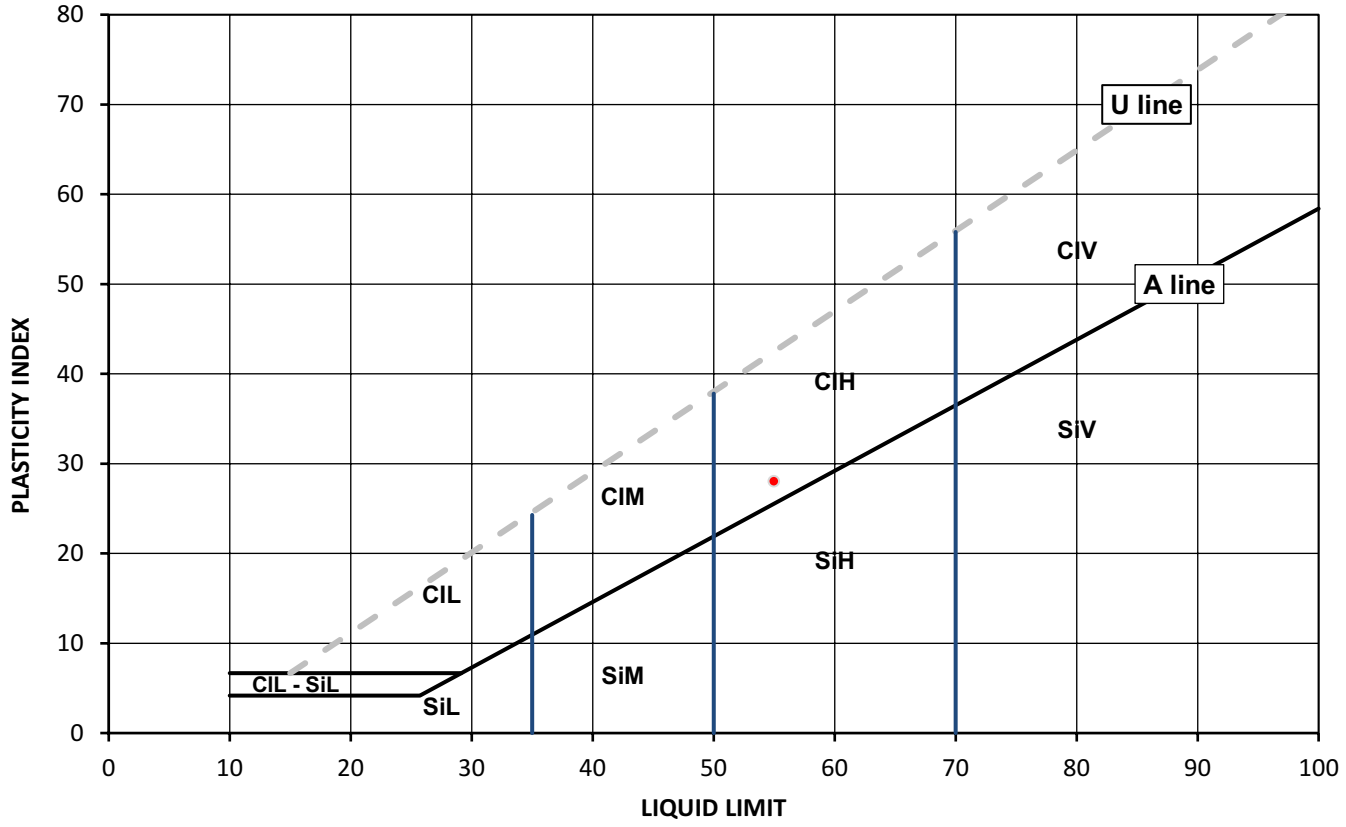
Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	05/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849960	Depth Top [m]:	34.00
Hole No.:	BH103	Depth Base [m]:	34.45
Sample Reference:	Not Given	Sample Type:	U
Soil Description:	Dark grey slightly gravelly slightly sandy CLAY		
Sample Preparation:	Tested after >425um removed by hand		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
25	55	27	28	91



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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	24/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

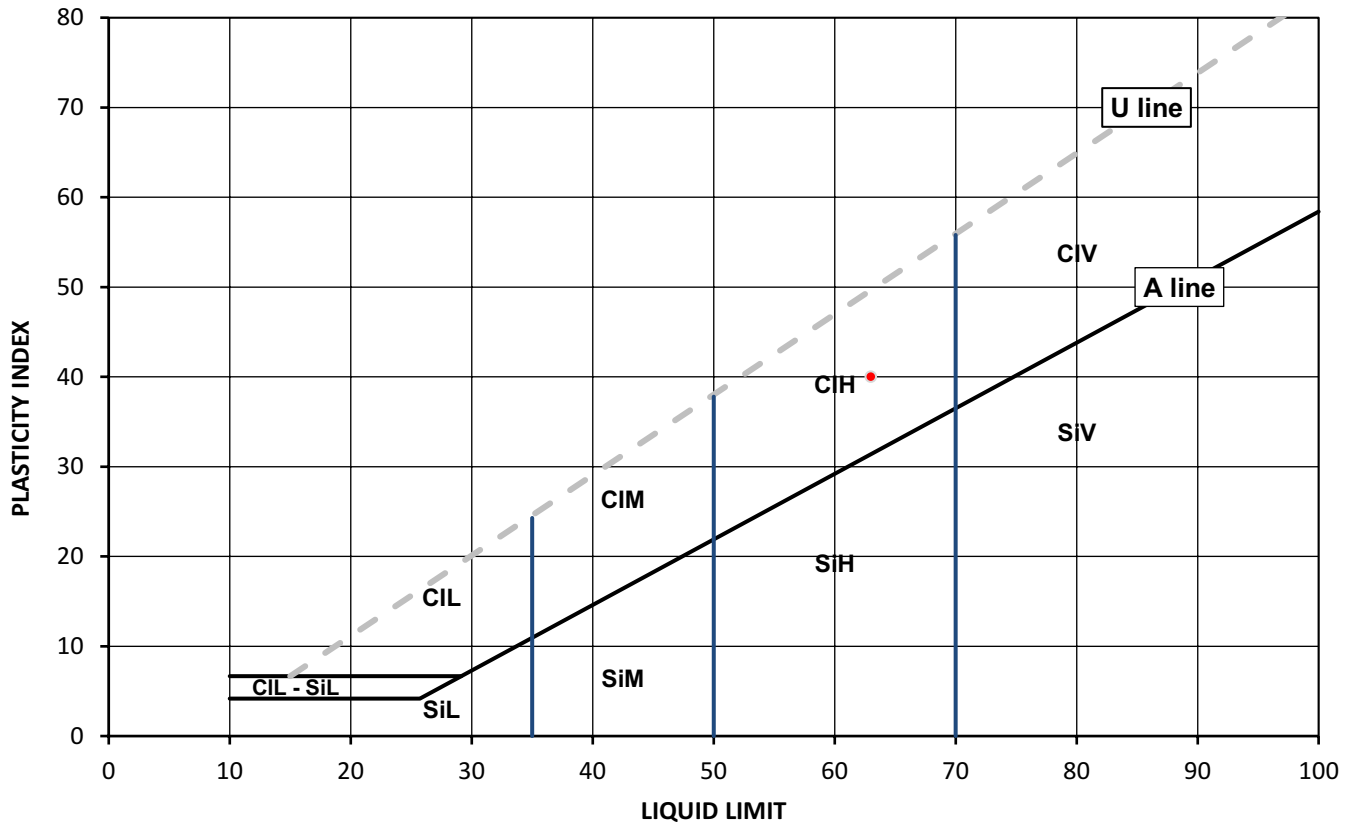
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849968	Depth Top [m]:	19.50
Hole No.:	BH103	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Soil Description:	Dark brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
25	63	23	40	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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	24/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

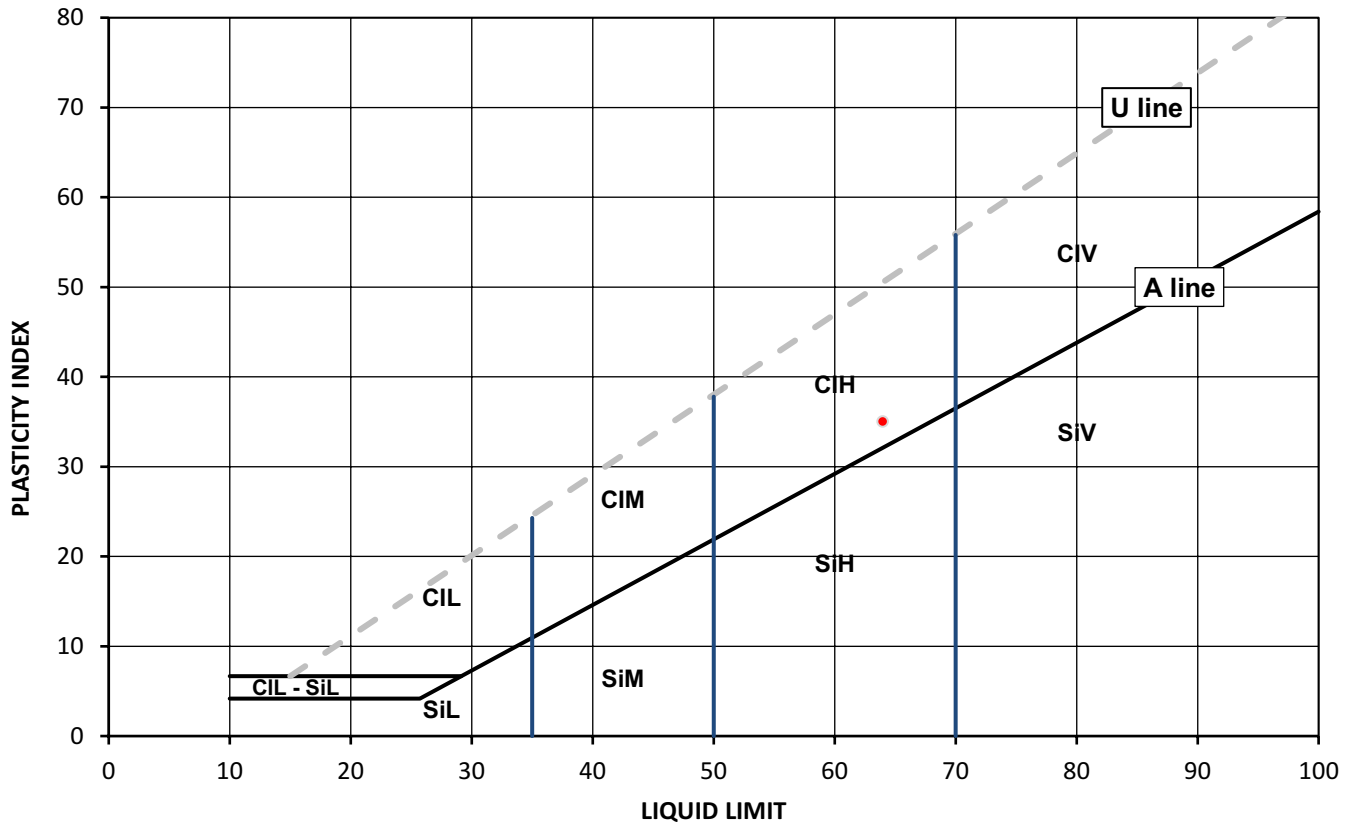
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849969	Depth Top [m]:	7.00
Hole No.:	BH103	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Soil Description:	Brown slightly gravelly CLAY		

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
27	64	29	35	82



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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

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

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	25/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

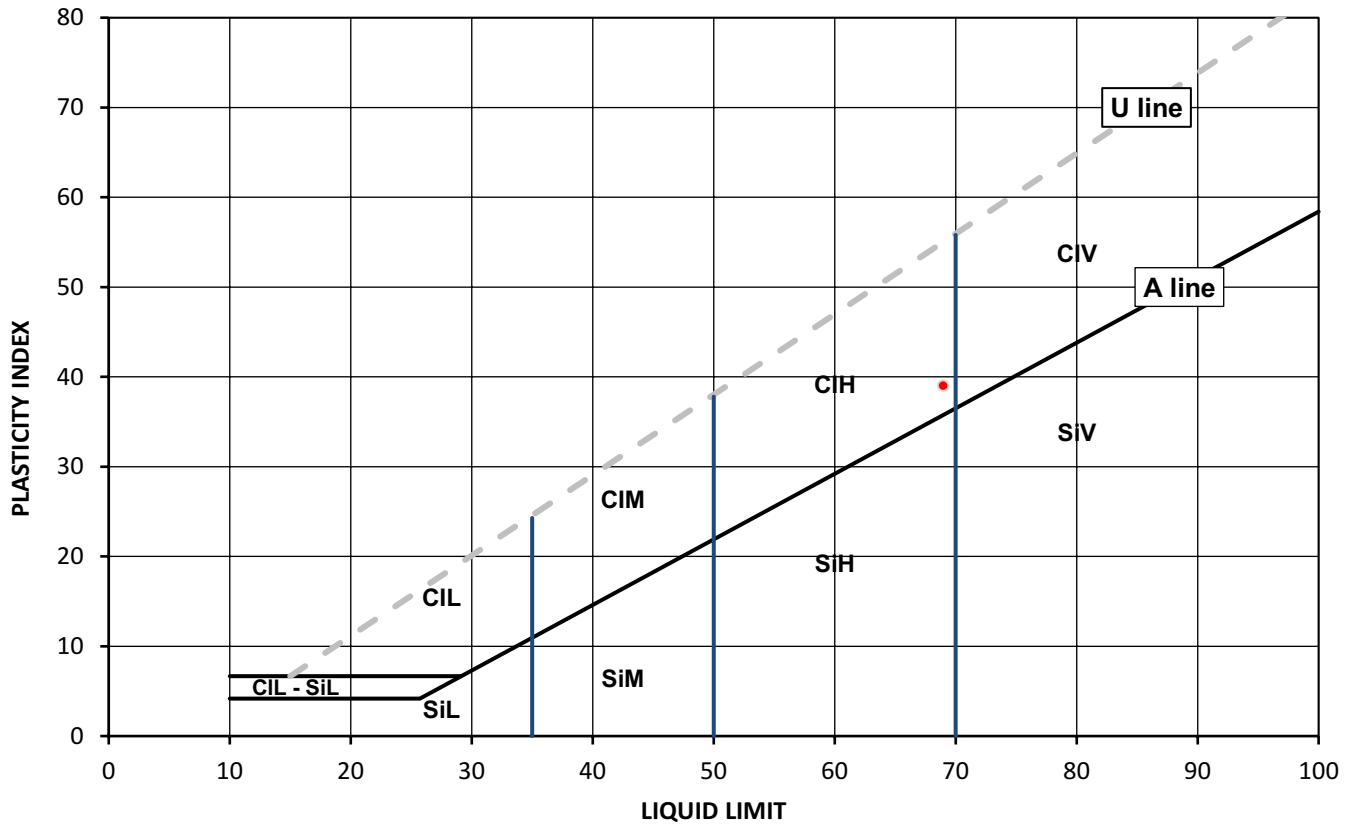
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849970	Depth Top [m]:	13.50
Hole No.:	BH103	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
27	69	30	39	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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 232.10

SUMMARY REPORT

Summary of Classification Test Results

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

4041

Tested in Accordance with:

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: Jomas Associates Ltd

Client Address: Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD

Contact: Josephine Whitehead

Site Address: West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: JJ2084
Job Number: 21-71065
Date Sampled: Not Given
Date Received: 22/04/2021
Date Tested: 04/05 - 25/05/2021
Sampled By: Client

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top m	Depth Base m	Type			%	%	% Passing 425um %	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3	%		
1849969	BH103	Not Given	7.00	Not Given	B	Brown slightly gravelly CLAY	Atterberg 1 Point	27		82	64	29	35						
1849953	BH103	Not Given	10.00	10.45	U	Brown CLAY	Atterberg 1 Point	27		100	71	30	41						
1849970	BH103	Not Given	13.50	Not Given	B	Brown CLAY	Atterberg 1 Point	27		100	69	30	39						
1849968	BH103	Not Given	19.50	Not Given	B	Dark brown CLAY	Atterberg 1 Point	25		100	63	23	40						
1849957	BH103	Not Given	22.00	22.45	U	Brown CLAY	Atterberg 1 Point	30		100	68	29	39						
1849958	BH103	Not Given	28.00	28.45	U	Brown slightly sandy CLAY	Atterberg 1 Point	19		100	59	25	34						
1849960	BH103	Not Given	34.00	34.45	U	Dark grey slightly gravelly slightly sandy CLAY	Atterberg 1 Point	25		91	55	27	28						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 234.12

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

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

4041

Client: Jomas Associates Ltd

Client Address: Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD

Contact: Josephine Whitehead

Site Address: West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP

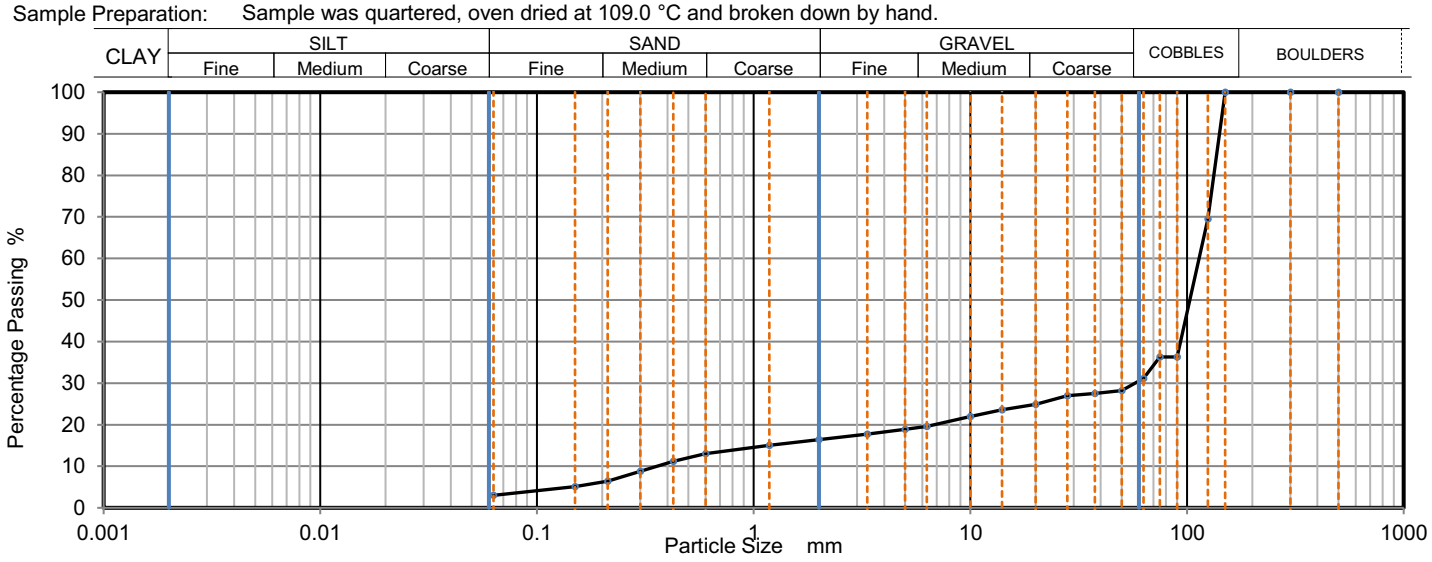
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: JJ2084
Job Number: 21-71065
Date Sampled: Not Given
Date Received: 22/04/2021
Date Tested: 25/05/2021
Sampled By: Client

Test Results:

Laboratory Reference: 1849962
Hole No.: BH103
Sample Reference: Not Given
Sample Description: Brown slightly clayey sandy COBBLES with gravel
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.00
Depth Base [m]: Not Given
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	70		
90	36		
75	36		
63	31		
50	28		
37.5	28		
28	27		
20	25		
14	24		
10	22		
6.3	20		
5	19		
3.35	18		
2	16		
1.18	15		
0.6	13		
0.425	11		
0.3	9		
0.212	6		
0.15	5		
0.063	4		

Sample Proportions	% dry mass
Very coarse	69
Gravel	15
Sand	13
Fines <0.063mm	4

Grading Analysis		
D100	mm	300
D60	mm	114
D30	mm	57.9
D10	mm	0.359
Uniformity Coefficient		320
Curvature Coefficient		82

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

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

4041

Client: Jomas Associates Ltd

Client Address: Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD

Contact: Josephine Whitehead

Site Address: West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP

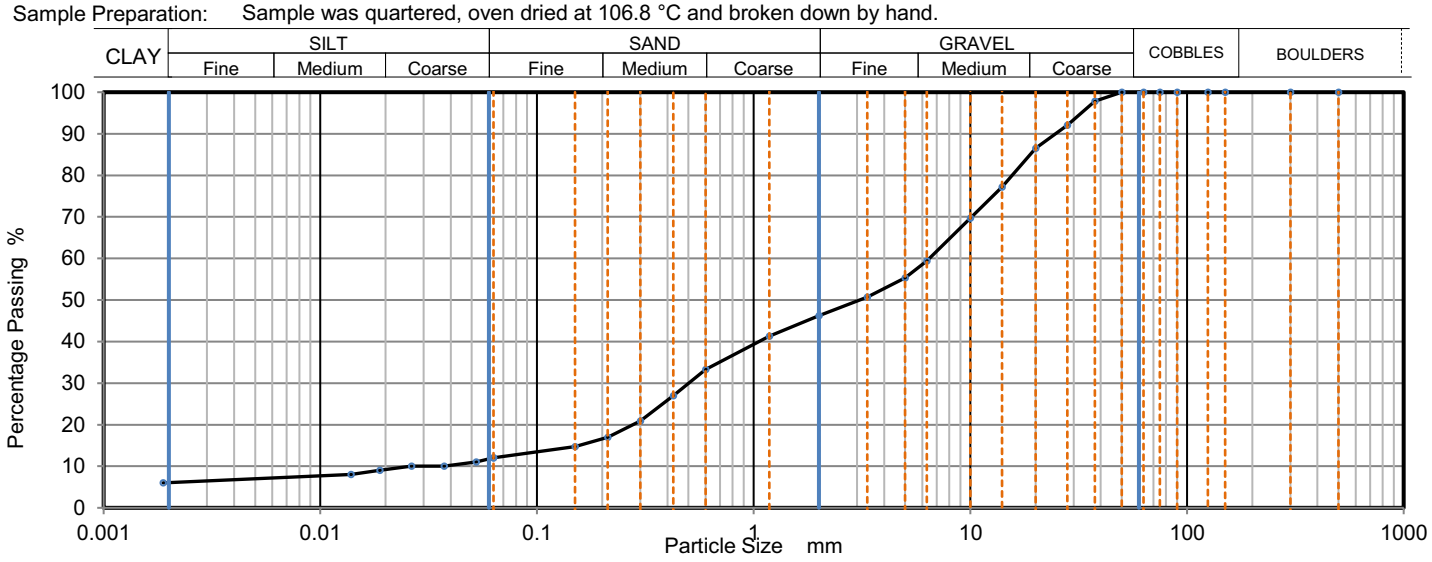
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: JJ2084
Job Number: 21-71065
Date Sampled: Not Given
Date Received: 22/04/2021
Date Tested: 25/05/2021
Sampled By: Client

Test Results:

Laboratory Reference: 1849963
Hole No.: BH103
Sample Reference: Not Given
Sample Description: Brown slightly clayey slightly silty very sandy GRAVEL
Sample Preparation: Sample was quartered, oven dried at 106.8 °C and broken down by hand.

Depth Top [m]: 2.50
Depth Base [m]: Not Given
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	12
300	100	0.0524	11
150	100	0.0372	10
125	100	0.0263	10
90	100	0.0188	9
75	100	0.0138	8
63	100	0.0019	6
50	100		
37.5	98		
28	92		
20	87		
14	77		
10	70		
6.3	59		
5	55		
3.35	51	Particle density	(assumed)
2	46	2.65	Mg/m3
1.18	41		
0.6	33		
0.425	27		
0.3	21		
0.212	17		
0.15	15		
0.063	12		

Sample Proportions	% dry mass
Very coarse	0
Gravel	54
Sand	35
Silt	5
Clay	6

Grading Analysis		
D100	mm	50
D60	mm	6.47
D30	mm	0.501
D10	mm	0.0249
Uniformity Coefficient		260
Curvature Coefficient		1.6

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

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

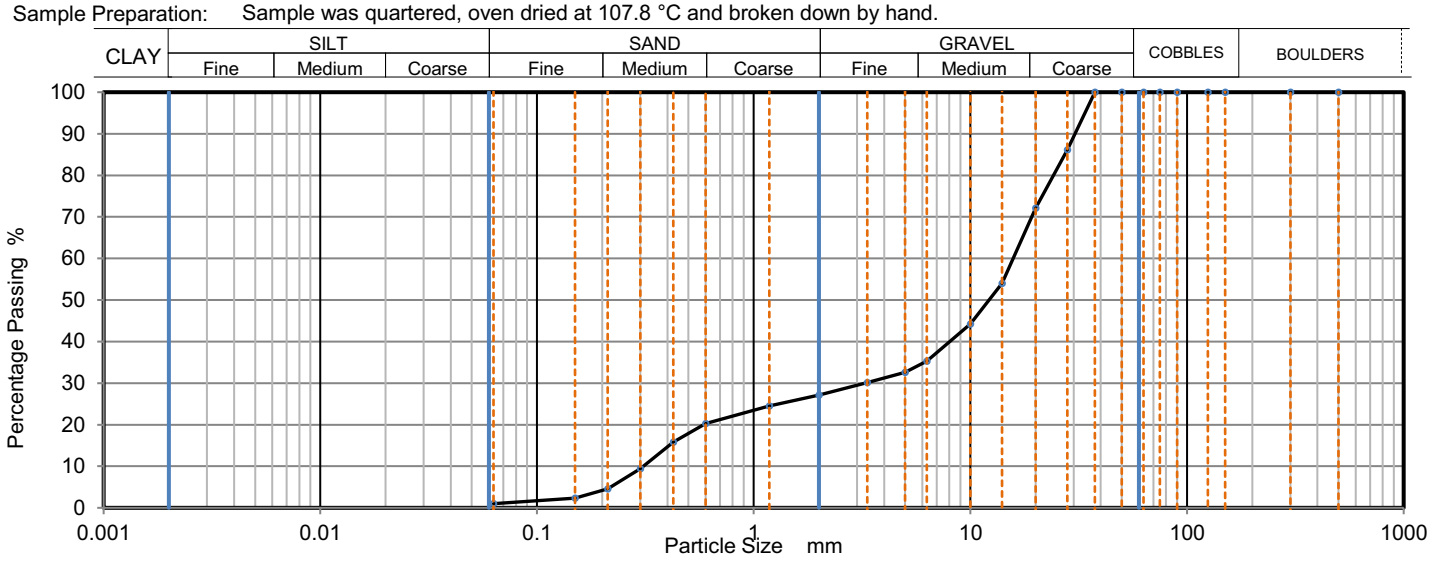
4041

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	24/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849964	Depth Top [m]:	5.50
Hole No.:	BH103	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brown slightly clayey sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 107.8 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	86		
20	72		
14	54		
10	44		
6.3	35		
5	33		
3.35	30		
2	27		
1.18	25		
0.6	20		
0.425	16		
0.3	9		
0.212	5		
0.15	2		
0.063	2		

Sample Proportions	% dry mass
Very coarse	0
Gravel	73
Sand	26
Fines <0.063mm	2

Grading Analysis		
D100	mm	37.5
D60	mm	15.8
D30	mm	3.28
D10	mm	0.309
Uniformity Coefficient		51
Curvature Coefficient		2.2

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

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

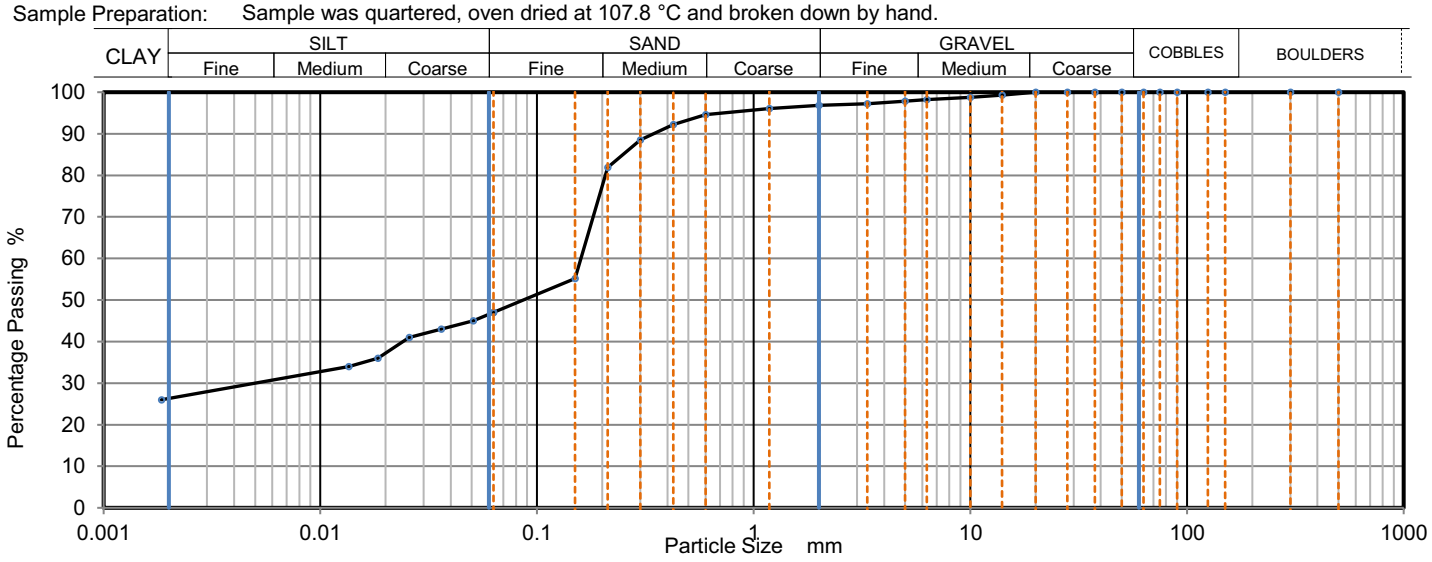
4041

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	24/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849965	Depth Top [m]:	42.00
Hole No.:	BH103	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brown to grey slightly gravelly silty very clayey SAND		
Sample Preparation:	Sample was quartered, oven dried at 107.8 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	47
300	100	0.0508	45
150	100	0.0361	43
125	100	0.0257	41
90	100	0.0184	36
75	100	0.0135	34
63	100	0.0018	26
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	99		
6.3	98		
5	98		
3.35	97	Particle density	(assumed)
2	97	2.65	Mg/m3
1.18	96		
0.6	95		
0.425	92		
0.3	89		
0.212	82		
0.15	55		
0.063	47		

Sample Proportions	% dry mass
Very coarse	0
Gravel	3
Sand	50
Silt	21
Clay	26

Grading Analysis		
D100	mm	20
D60	mm	0.16
D30	mm	0.00511
D10	mm	
Uniformity Coefficient		> 86
Curvature Coefficient		

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

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

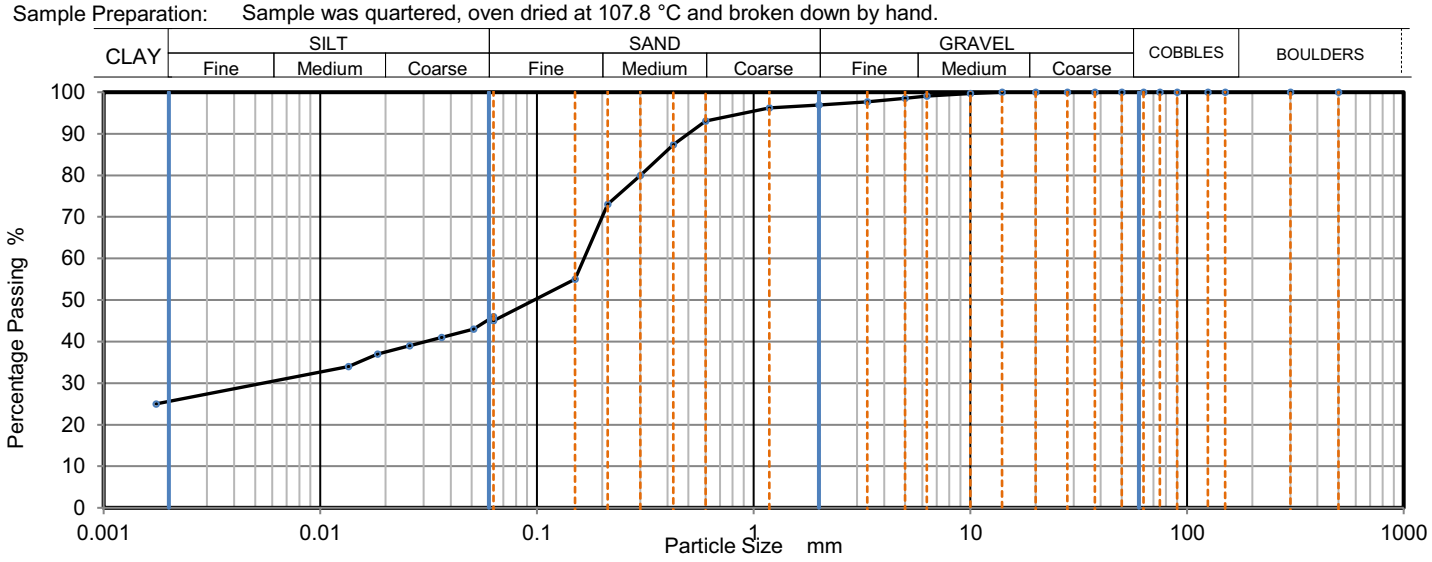
4041

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	24/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849966	Depth Top [m]:	45.00
Hole No.:	BH103	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brown slightly gravelly silty very clayey SAND		
Sample Preparation:	Sample was quartered, oven dried at 107.8 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	46
300	100	0.0510	43
150	100	0.0363	41
125	100	0.0258	39
90	100	0.0184	37
75	100	0.0135	34
63	100	0.0017	25
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	98	Particle density	(assumed)
2	97	2.65	Mg/m3
1.18	96		
0.6	93		
0.425	87		
0.3	80		
0.212	73		
0.15	55		
0.063	46		

Sample Proportions	% dry mass
Very coarse	0
Gravel	3
Sand	51
Silt	20
Clay	26

Grading Analysis		
D100	mm	14
D60	mm	0.165
D30	mm	0.00518
D10	mm	
Uniformity Coefficient		> 95
Curvature Coefficient		

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 100.20

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

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

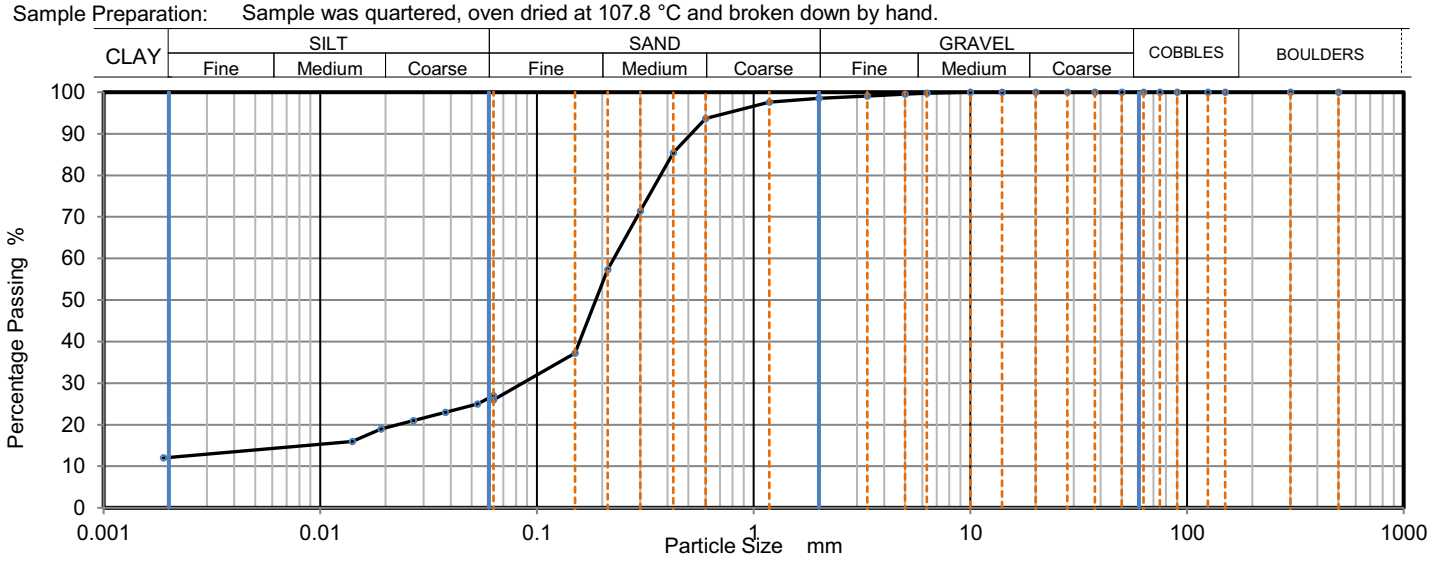
4041

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	24/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849967	Depth Top [m]:	48.00
Hole No.:	BH103	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brown slightly gravelly silty clayey SAND		
Sample Preparation:	Sample was quartered, oven dried at 107.8 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	27
300	100	0.0531	25
150	100	0.0378	23
125	100	0.0269	21
90	100	0.0191	19
75	100	0.0140	16
63	100	0.0019	12
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99	Particle density	(assumed)
2	99	2.65	Mg/m3
1.18	98		
0.6	94		
0.425	85		
0.3	71		
0.212	57		
0.15	37		
0.063	27		

Sample Proportions	% dry mass
Very coarse	0
Gravel	2
Sand	72
Silt	14
Clay	12

Grading Analysis		
D100	mm	10
D60	mm	0.227
D30	mm	0.0822
D10	mm	
Uniformity Coefficient		> 120
Curvature Coefficient		

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 100.20

TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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

UKAS TESTING 4041

Environmental Science

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	04/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

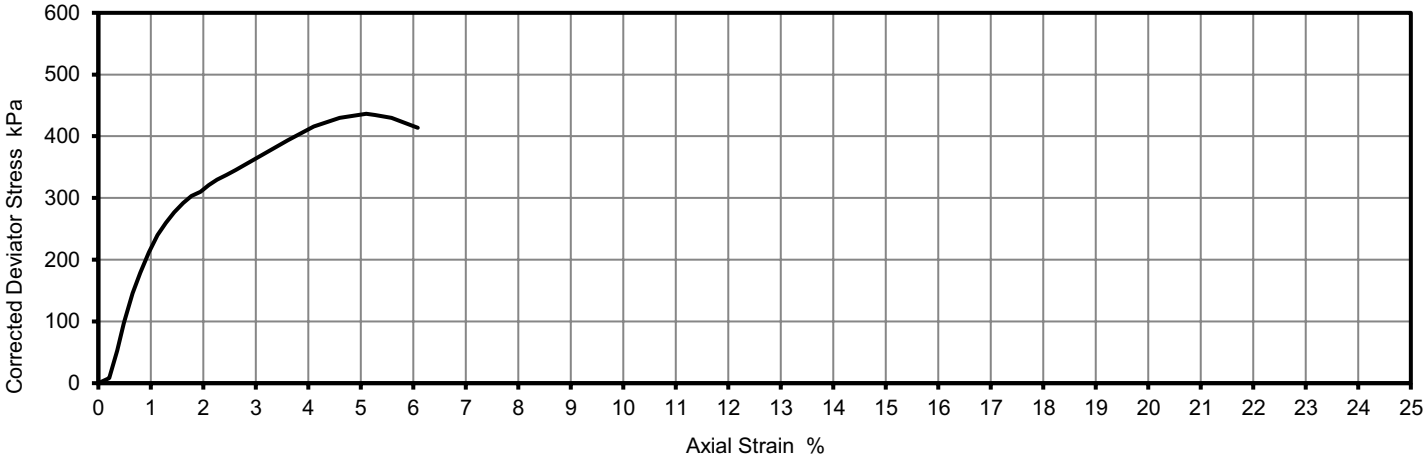
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

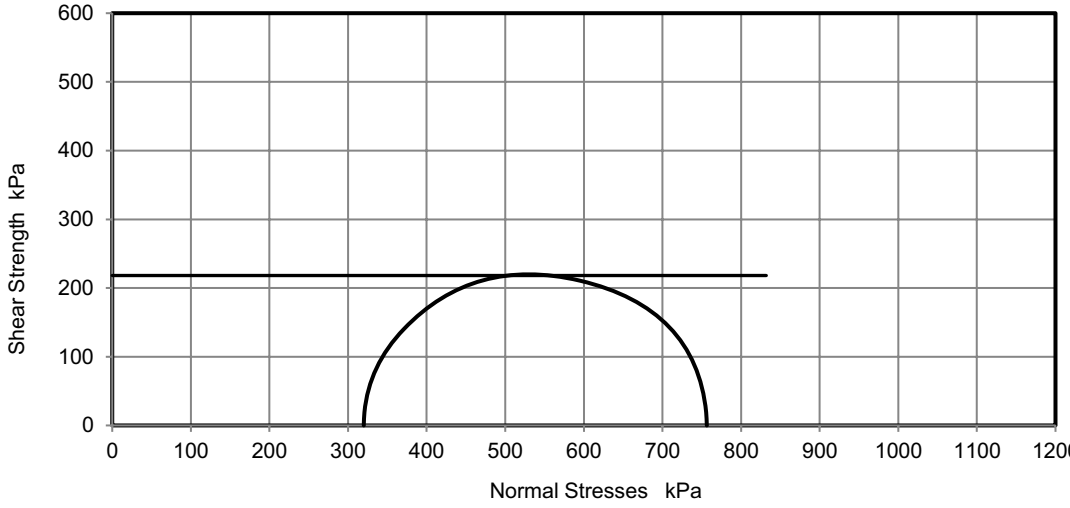
Laboratory Reference:	1849955	Depth Top [m]:	16.00
Hole No.:	BH103	Depth Base [m]:	16.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Brown CLAY		

Test Number	1		Rate of Strain	2.00	%/min	
Length	200.36	mm	Cell Pressure	320	kPa	
Diameter	102.93	mm	Axial Strain at failure	5.1	%	
Bulk Density	2.03	Mg/m3	Deviator Stress, (σ1 - σ3)f	436	kPa	
Moisture Content	27	%	Undrained Shear Strength, cu	218	kPa	½(σ1 - σ3)f
Dry Density	1.60	Mg/m3	Mode of Failure	Brittle		
Membrane Correction	0.42	kPa	Membrane thickness	0.30	mm	

Deviator Stress v Axial Strain



Mohr Circles



Position within sample

Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 184.11

TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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

UKAS TESTING 4041

Environmental Science

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	04/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

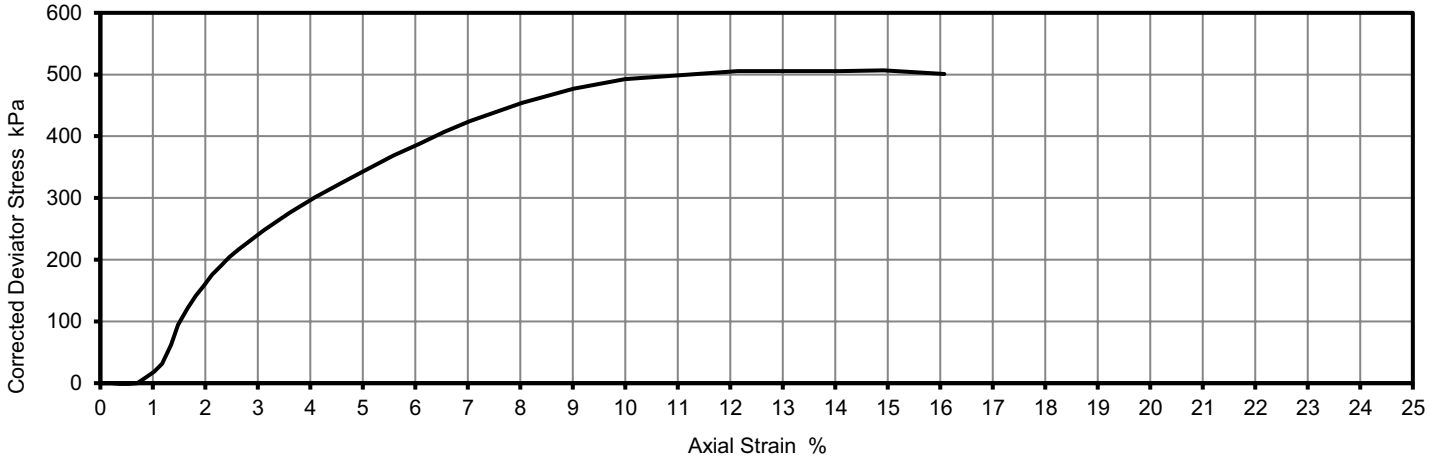
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

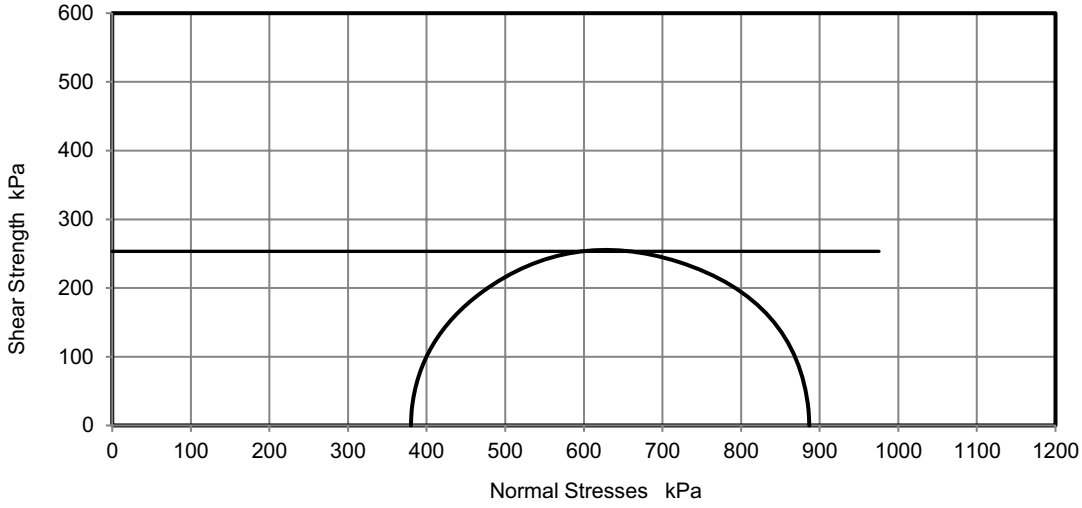
Laboratory Reference:	1849956	Depth Top [m]:	19.00
Hole No.:	BH103	Depth Base [m]:	19.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Brown CLAY		

Test Number	1		Rate of Strain	1.99	%/min	
Length	201.04	mm	Cell Pressure	380	kPa	
Diameter	103.40	mm	Axial Strain at failure	14.9	%	
Bulk Density	2.01	Mg/m3	Deviator Stress, (σ1 - σ3)f	507	kPa	
Moisture Content	23	%	Undrained Shear Strength, cu	253	kPa	½(σ1 - σ3)f
Dry Density	1.63	Mg/m3	Mode of Failure	Compound		
Membrane Correction	0.82	kPa	Membrane thickness	0.28	mm	

Deviator Stress v Axial Strain



Mohr Circles



Position within sample

Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 184.11

TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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

UKAS TESTING 4041

Environmental Science

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	04/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

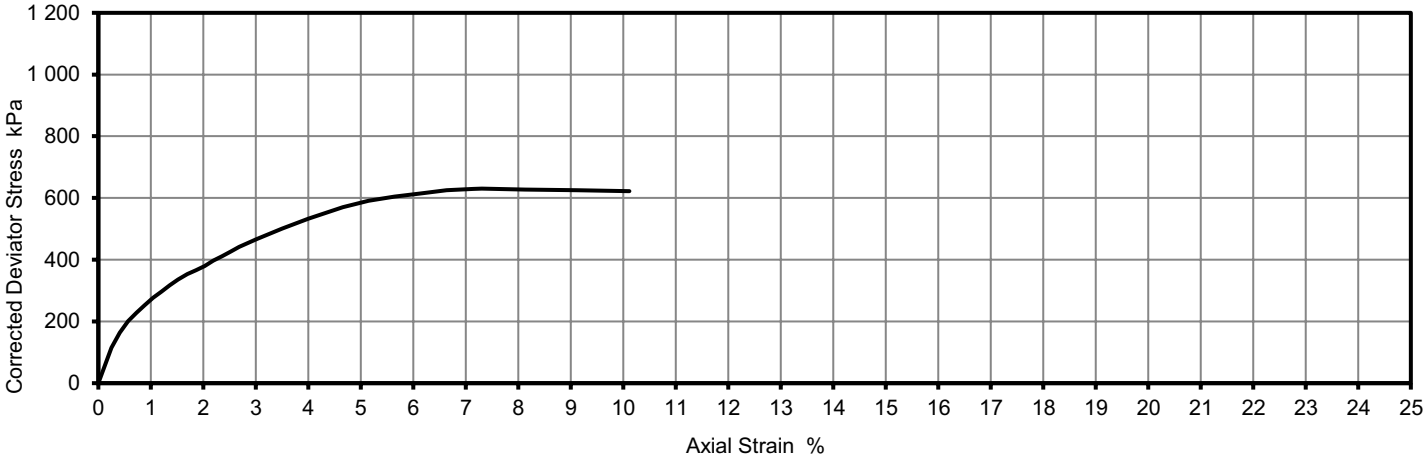
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

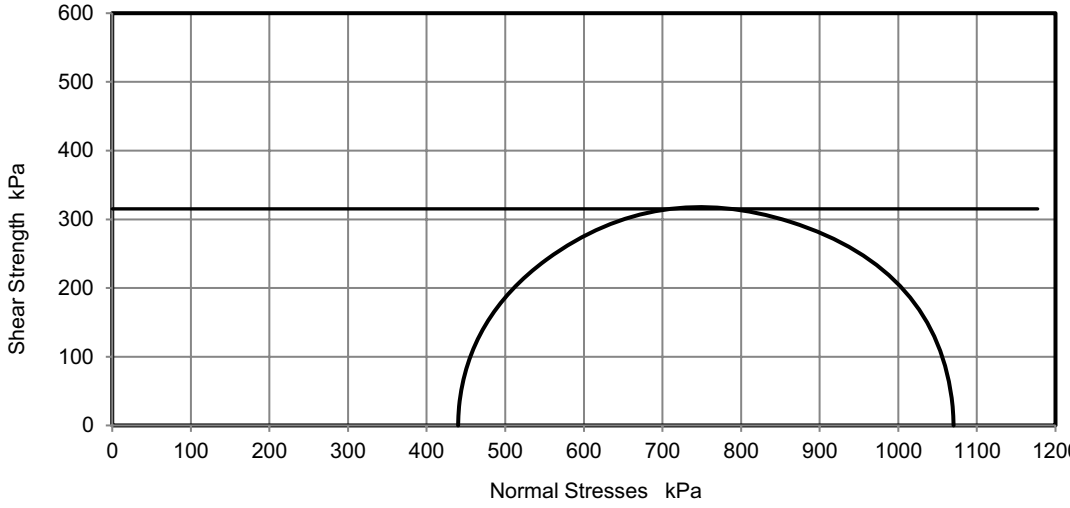
Laboratory Reference:	1849957	Depth Top [m]:	22.00
Hole No.:	BH103	Depth Base [m]:	22.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Brown CLAY		

Test Number	1		Rate of Strain	2.00	%/min	
Length	199.41	mm	Cell Pressure	440	kPa	
Diameter	102.87	mm	Axial Strain at failure	7.3	%	
Bulk Density	2.07	Mg/m3	Deviator Stress, (σ1 - σ3)f	630	kPa	
Moisture Content	30	%	Undrained Shear Strength, cu	315	kPa	½(σ1 - σ3)f
Dry Density	1.60	Mg/m3	Mode of Failure	Brittle		
Membrane Correction	0.50	kPa	Membrane thickness	0.29	mm	

Deviator Stress v Axial Strain



Mohr Circles



Position within sample

Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 184.11

TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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

UKAS TESTING 4041

Environmental Science

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	04/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

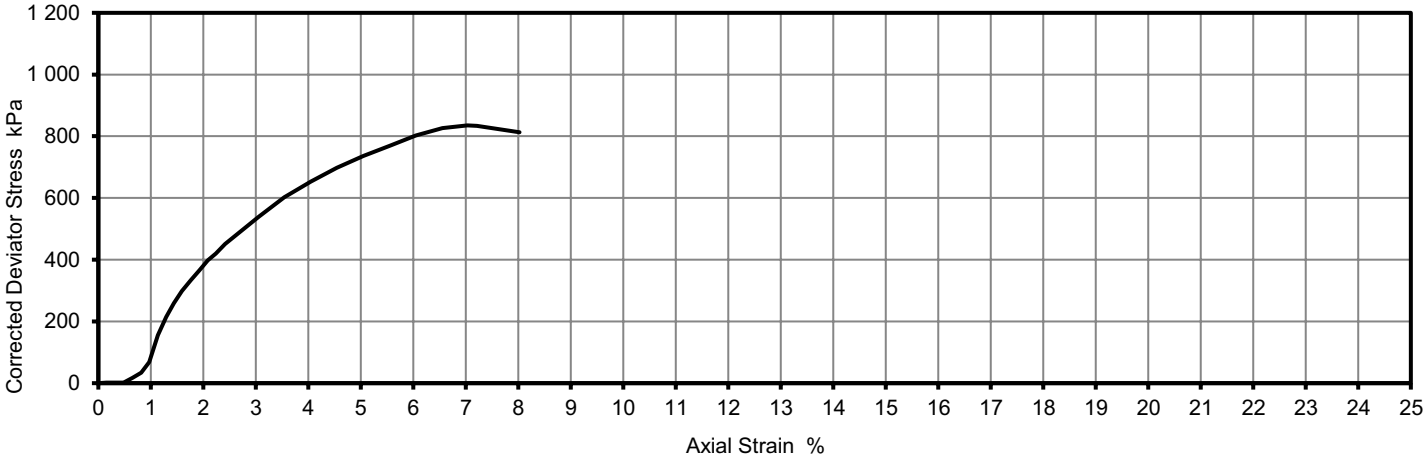
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

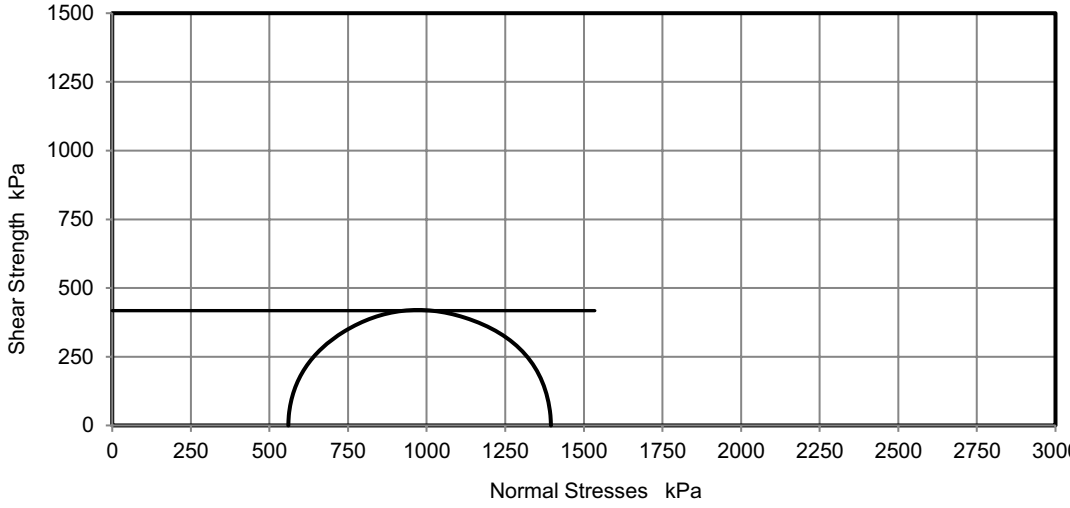
Laboratory Reference:	1849958	Depth Top [m]:	28.00
Hole No.:	BH103	Depth Base [m]:	28.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Brown slightly sandy CLAY		

Test Number	1		Rate of Strain	2.00	%/min	
Length	139.11	mm	Cell Pressure	560	kPa	
Diameter	70.07	mm	Axial Strain at failure	7.0	%	
Bulk Density	2.07	Mg/m3	Deviator Stress, (σ1 - σ3)f	835	kPa	
Moisture Content	19	%	Undrained Shear Strength, cu	418	kPa	½(σ1 - σ3)f
Dry Density	1.73	Mg/m3	Mode of Failure	Compound		
Membrane Correction	0.65	kPa	Membrane thickness	0.26	mm	

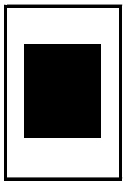
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 184.11

TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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

UKAS TESTING 4041

Environmental Science

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	05/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

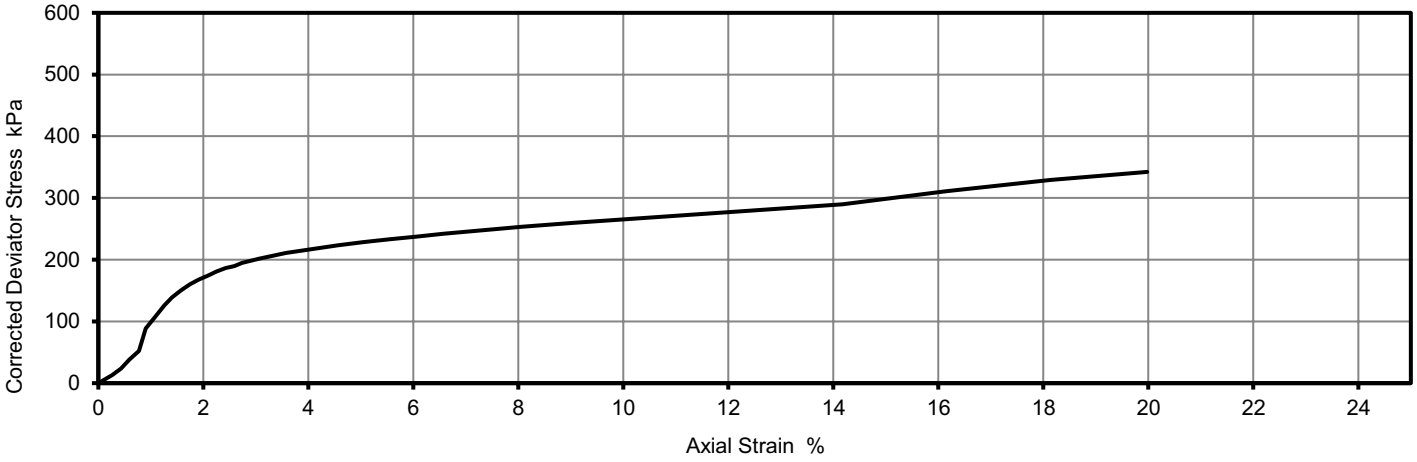
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

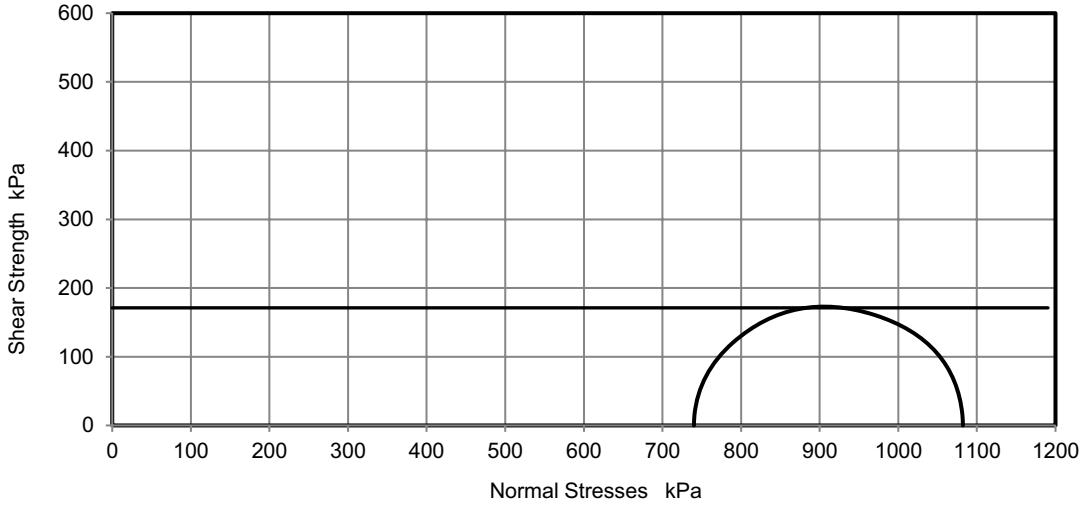
Laboratory Reference:	1849961	Depth Top [m]:	37.00
Hole No.:	BH103	Depth Base [m]:	37.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Multicolour CLAY		

Test Number	1		Rate of Strain	2.00	%/min	
Length	99.66	mm	Cell Pressure	740	kPa	
Diameter	49.27	mm	Axial Strain at failure	20.0	%	
Bulk Density	2.10	Mg/m3	Deviator Stress, (σ1 - σ3)f	342	kPa	
Moisture Content	22	%	Undrained Shear Strength, cu	171	kPa	½(σ1 - σ3)f
Dry Density	1.72	Mg/m3	Mode of Failure	Compound		
Membrane Correction	1.87	kPa	Membrane thickness	0.24	mm	

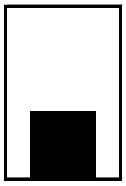
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 184.11

TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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

UKAS TESTING 4041

Environmental Science

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	04/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

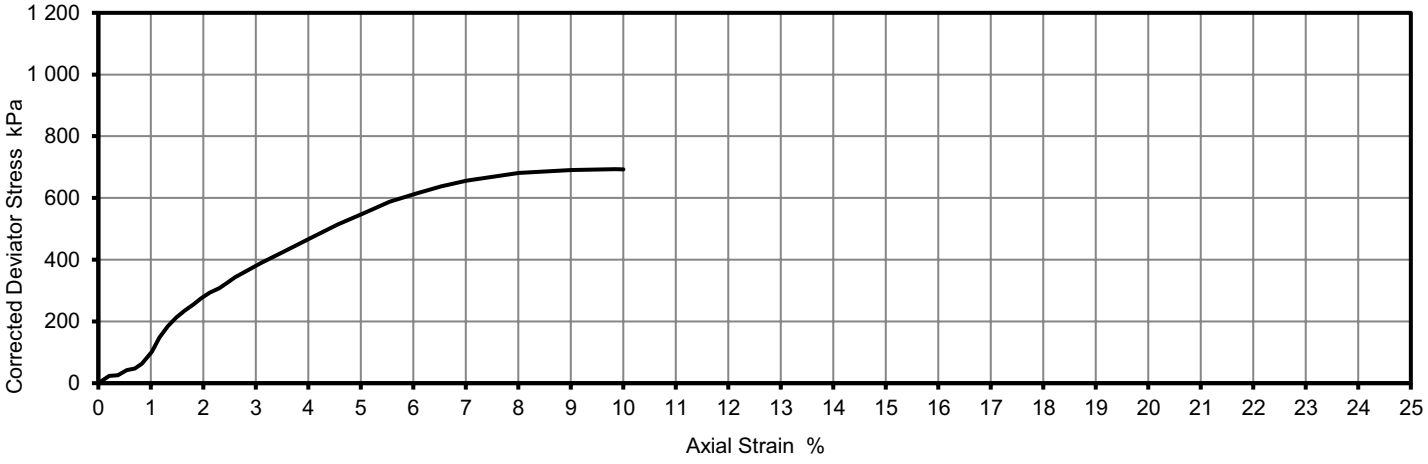
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

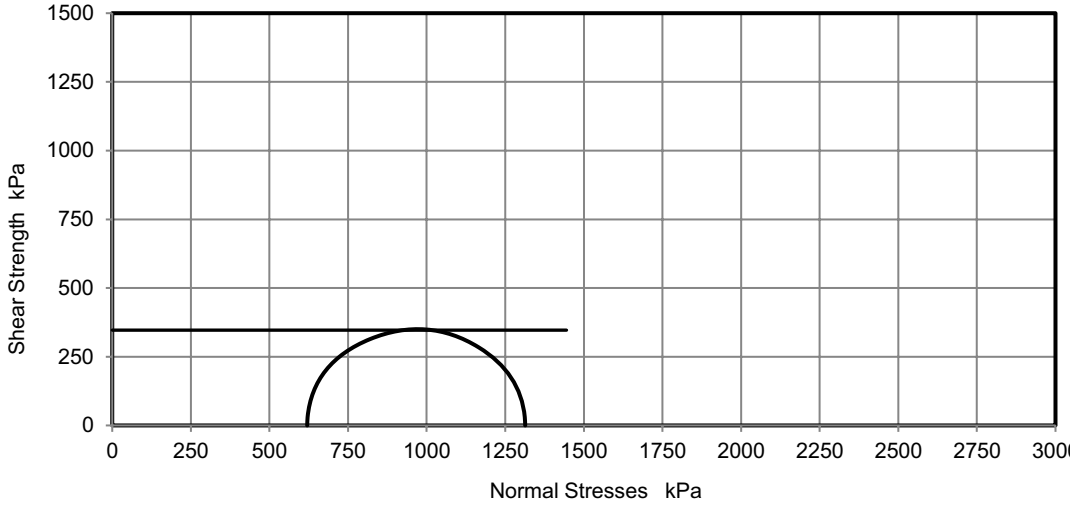
Laboratory Reference:	1849959	Depth Top [m]:	31.00
Hole No.:	BH103	Depth Base [m]:	31.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Multicolour CLAY		

Test Number	1		Rate of Strain	2.00	%/min	
Length	139.88	mm	Cell Pressure	620	kPa	
Diameter	69.61	mm	Axial Strain at failure	9.8	%	
Bulk Density	2.10	Mg/m3	Deviator Stress, (σ1 - σ3)f	693	kPa	
Moisture Content	16	%	Undrained Shear Strength, cu	347	kPa	½(σ1 - σ3)f
Dry Density	1.81	Mg/m3	Mode of Failure	Compound		
Membrane Correction	0.79	kPa	Membrane thickness	0.25	mm	

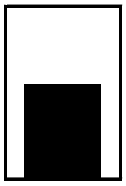
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 184.11

TEST CERTIFICATE

One Dimensional Consolidation Test

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

4041

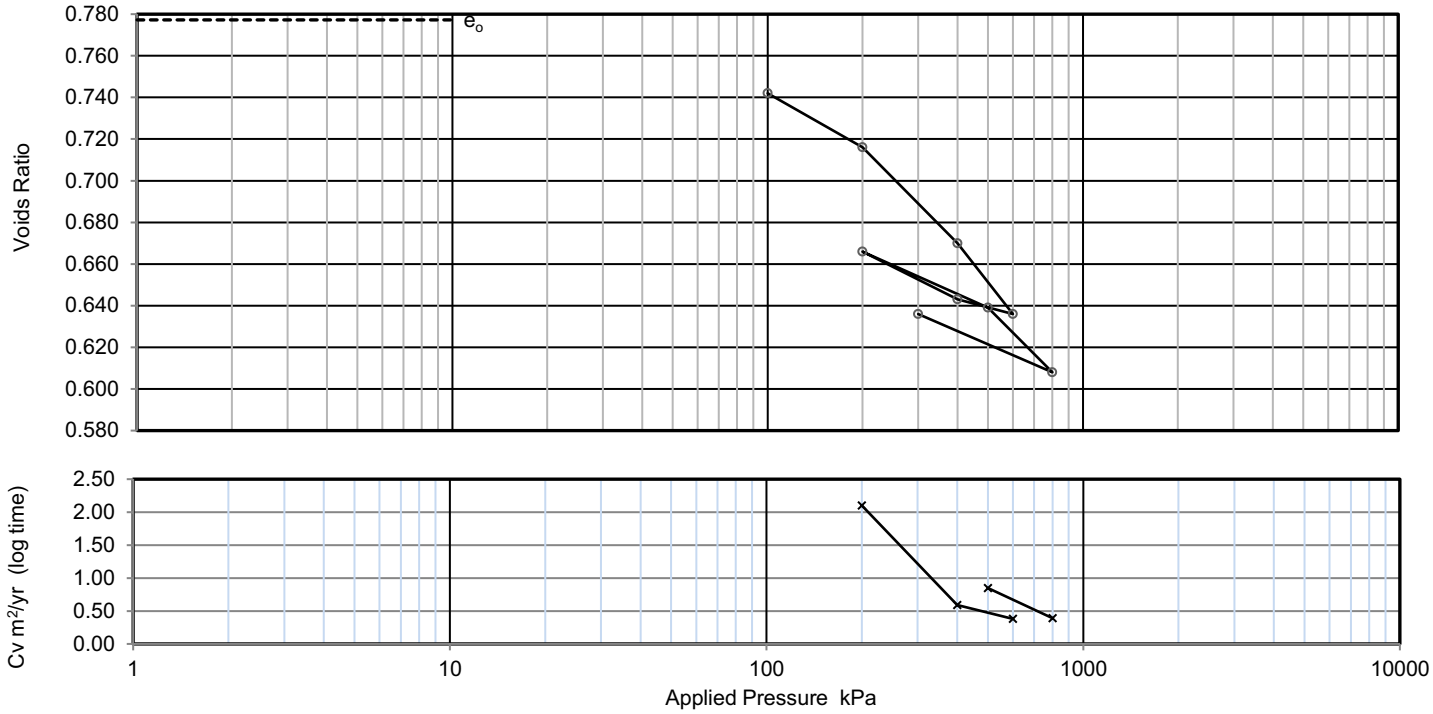
Tested in Accordance with: BS 1377-5: 1990: Clause 3

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	13/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849953	Depth Top [m]:	10.00
Hole No.:	BH103	Depth Base [m]:	10.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Brown CLAY		



Applied Pressure kPa	Voids ratio	Mv m2/MN	Cv (t50, log) m2/yr	Cv (t90, root m2/yr	Csec
0	0.777	-	-	-	-
100	0.742	0.2	N/A	N/A	N/A
200	0.716	0.15	2.1	12	0.00064
400	0.670	0.14	0.59	3.2	0.0019
600	0.636	0.1	0.38	0.3	0.0025
400	0.643	0.024			
200	0.666	0.068			
500	0.639	0.052	0.85	0.98	0.00062
800	0.608	0.064	0.39	0.44	0.0019
300	0.636	0.035			

Preparation

Index tests

Orientation of the sample	Vertical		
Particle density	assumed	2.65	Mg/m3
Liquid limit	N/A		%
Plastic limit	N/A		%

Specimen details	Initial	Final	
Diameter	50.00	-	mm
Height	20.00	18.41	mm
Moisture Content	30	28	%
Bulk density	1.94	2.07	Mg/m3
Dry density	1.49	1.62	Mg/m3
Voids Ratio	0.777	0.636	
Saturation	102	117	%
Avg. temperature for test	22.0		°C
Swelling Pressure	Not measured		kPa
Settlement on saturation			%

Note: Cv corrected to 20°C

Remarks: Stage 1 - swelling

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 172.15

TEST CERTIFICATE

Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

Tested in Accordance with:
BS 1377-8: 1990: Clauses 1 to 7

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

UKAS TESTING 4041

Environmental Science

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	06/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

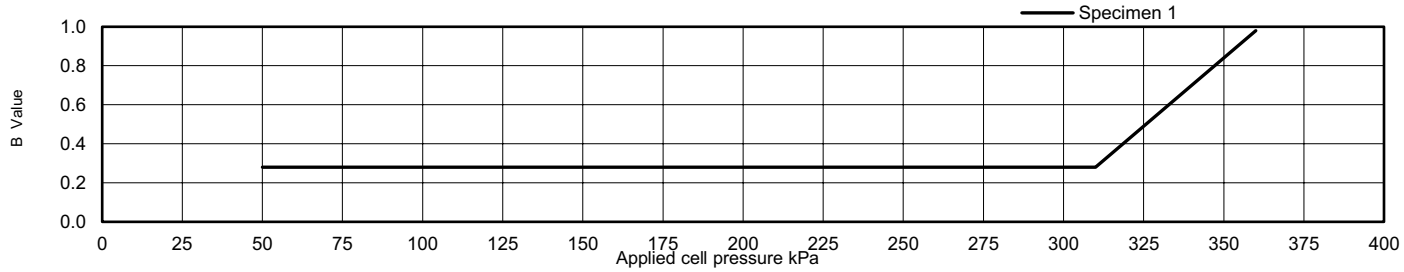
Test Results:

Laboratory Reference:	1849954	Depth Top [m]:	13.00
Hole No.:	BH103	Depth Base [m]:	13.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Greyish brown CLAY		

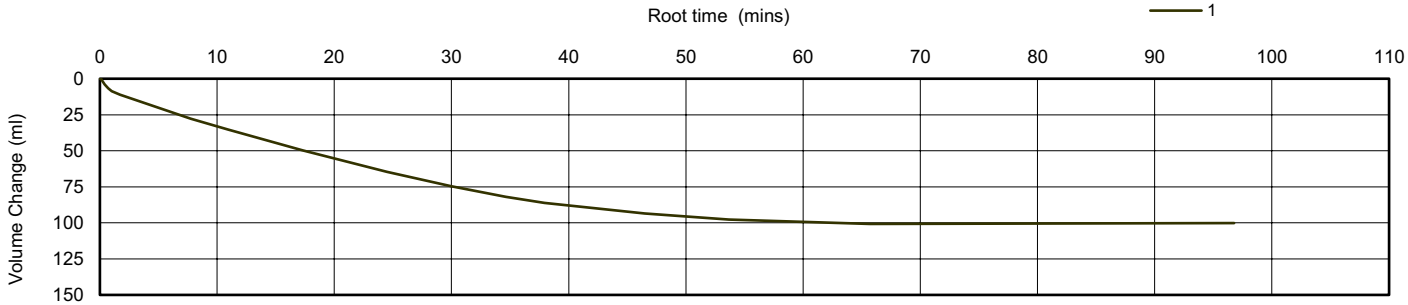
Specimen Type/Preparation	UNDISTURBED As BS 1377

Specimen Details			1		
Initial	Height	mm	205.4		
	Diameter	mm	102.6		
	Bulk Density	Mg/m³	1.99		
	Water Content	%	25.7		
	Dry density	Mg/m³	1.58		
	Membrane thickr	mm	0.22		
Final	Bulk Density	Mg/m³	1.98		
	Water Content	%	25.8		
	Dry density	Mg/m³	1.57		

Saturation Details		1		
Method		Cell Pressure and Back Pressure increased		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	360		
Final pore water pressure	kPa	349		
Final B Value		0.98		



Consolidation Details							
	Specimen No.		1				
	Drainage Conditions		Radial+1 end				
	Cell Pressure applied		610				kPa
	Back Pressure applied		350				kPa
	Effective Pressure		260				kPa
	Pore pressure at start of consolidation		592				kPa
	Pore pressure at end of consolidation		351				kPa
	Pore pressure dissipation at end of consolidation		99				%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation	Cvi	N/A	N/A	N/A		m2/year
	Coefficient of Compressibility	Mvi	0.23				m2/MN
	Coefficient of Permeability (calculated)	kvi	N/A	N/A	N/A		m/s



Note: All symbols used above are defined in BS 1377

Remarks: Deviator stresses corrected for area change, vertical side drains and up to 0.22 mm thick rubber membrane/

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 230.8

TEST CERTIFICATE

Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

Tested in Accordance with:
BS 1377-8: 1990: Clauses 1 to 7

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

UKAS TESTING 4041

Environmental Science

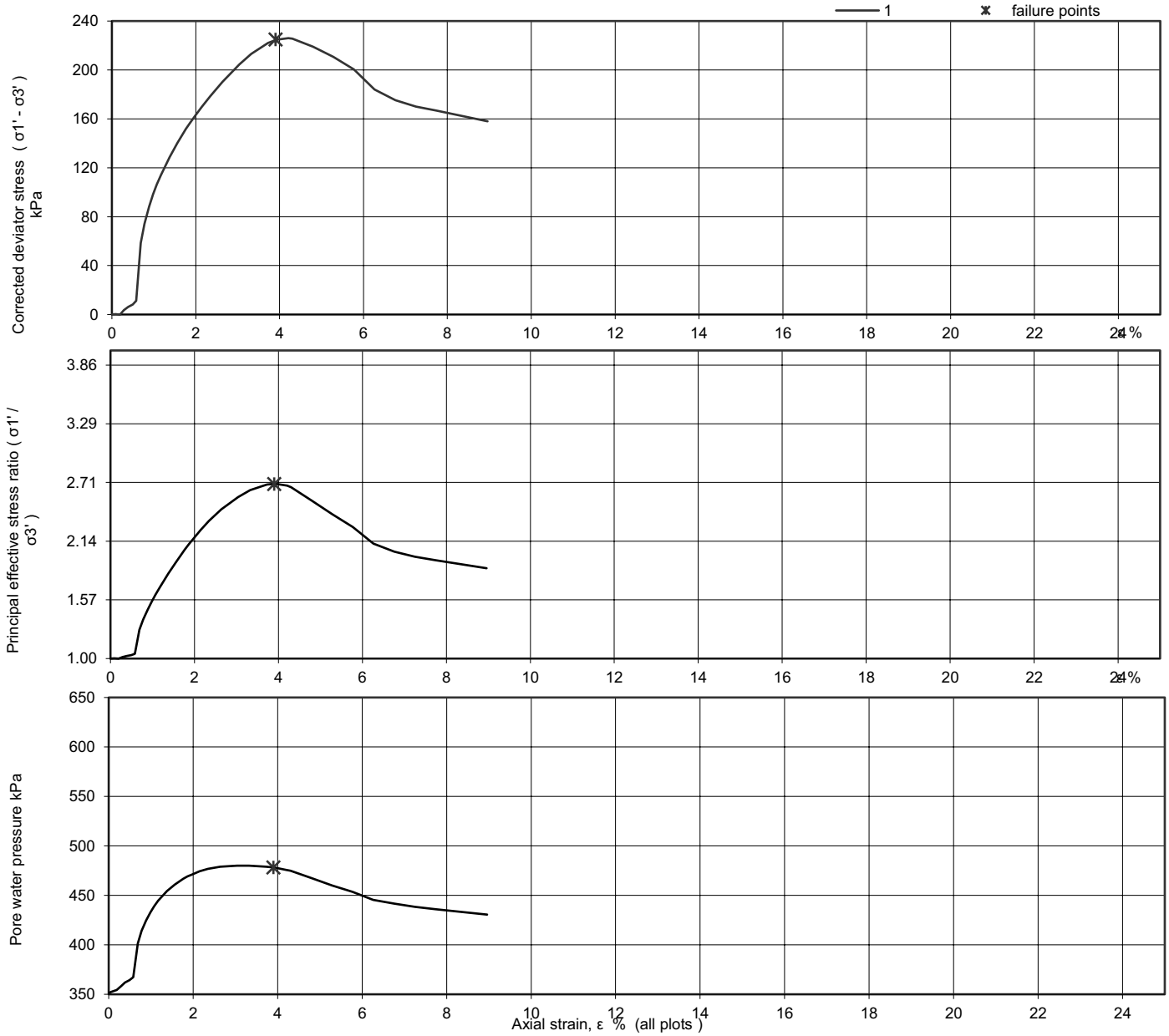
Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	06/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1849954	Depth Top [m]:	13.00
Hole No.:	BH103	Depth Base [m]:	13.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Greyish brown CLAY		

Compression stages - graphical data



Note: All symbols used above are defined in BS 1377

Remarks: Deviator stresses corrected for area change, vertical side drains and up to 0.22 mm thick rubber membrane/

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 230.8

TEST CERTIFICATE

Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

Tested in Accordance with:
BS 1377-8: 1990: Clauses 1 to 7

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

4041

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-71065
		Date Sampled:	Not Given
		Date Received:	22/04/2021
Contact:	Josephine Whitehead	Date Tested:	06/05/2021
Site Address:	West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

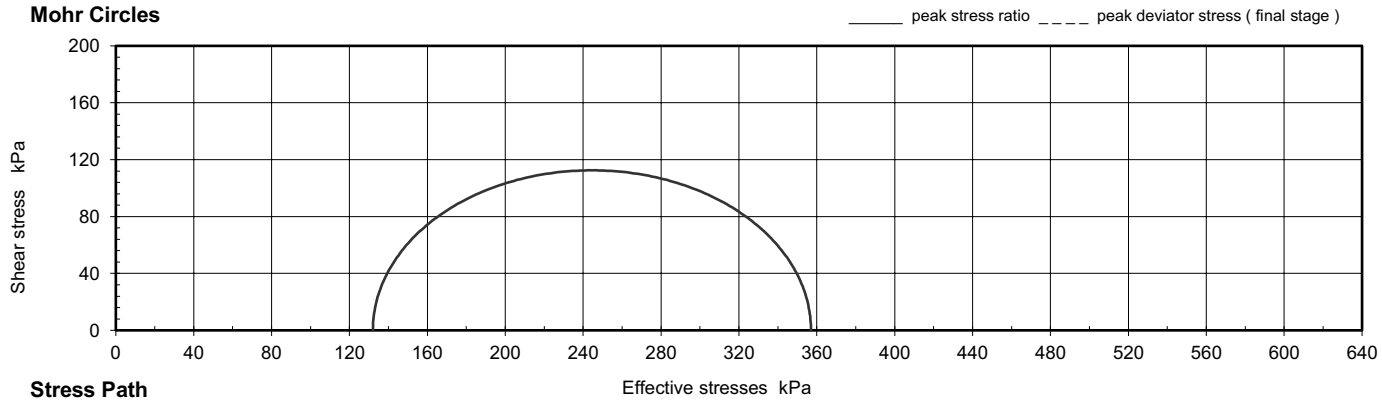
Laboratory Reference:	1849954	Depth Top [m]:	13.00
Hole No.:	BH103	Depth Base [m]:	13.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Greyish brown CLAY		

Compression stages - table of results and interpretation

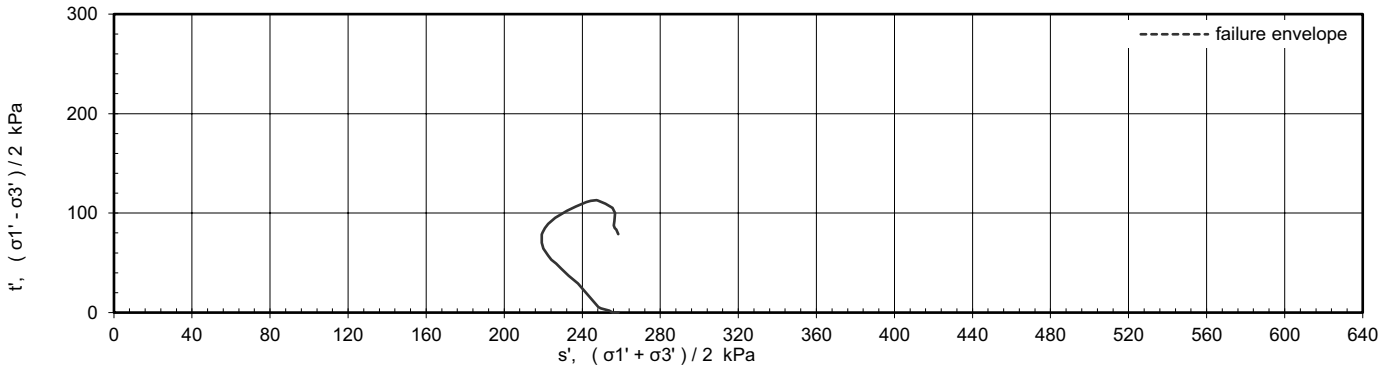
Failure criterion : Maximum effective principal stress ratio

Specimen	Cell pressure kPa	Initial pwp kPa	Initial σ3' kPa	Machine speed mm/min	Axial strain, εf %	(σ1' / σ3') f	(σ1' - σ3') f kPa	uf kPa	σ3' f kPa	σ1' f kPa	Af
1	610	351	260	0.00400	3.9	2.70	225	478	132	357	0.56

Mohr Circles



Stress Path



Shear Strength Parameters			Linear regression	Manual re-assessment
At Maximum effective principal s	c '	kPa	not assessed	-
	Ø '	degrees	not assessed	-

Specimen Remarks

Mode of failure

Compound

Note: All symbols used above are defined in BS 1377

Remarks: Deviator stresses corrected for area change, vertical side drains and up to 0.22 mm thick rubber membrane/

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 01/06/2021

GF 230.8

Geotechnical Test Amendment Form

i2 Project Reference: 21-71065

Client: Jomas Associates Ltd

Client Project Reference: West Central Street and 1 Museum Sreet, Holborn, WC1A 1JP

Please note the following sample/samples listed are unsuitable for the scheduled testing as indicated below.

BH/TP No.	Samples ref.	Depth (m)	Depth Base (m)	Testing scheduled	Reason for unsuitability	Client response
BH103	1849960	34.00	34.45	Moisture Content, GEOPrep, Atterberg 1P, Triaxial Quick Undrained	TXL - Single Stage - Inappropriate material. Sample fell apart during preparation. We arent able to prepare sample for single Stage test.;	

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	09/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

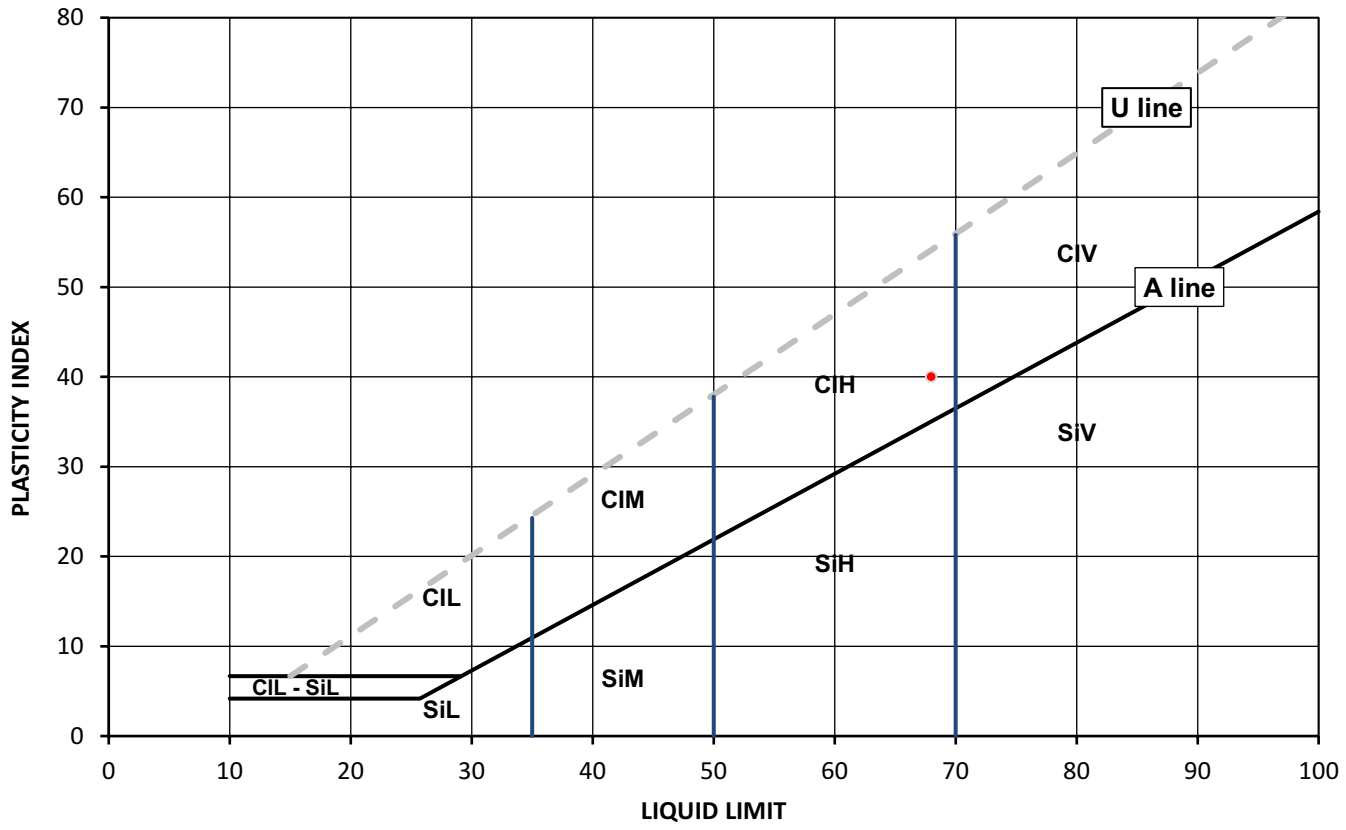
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1893117	Depth Top [m]:	1.50
Hole No.:	BH102A	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Greyish brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
30	68	28	40	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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 236.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

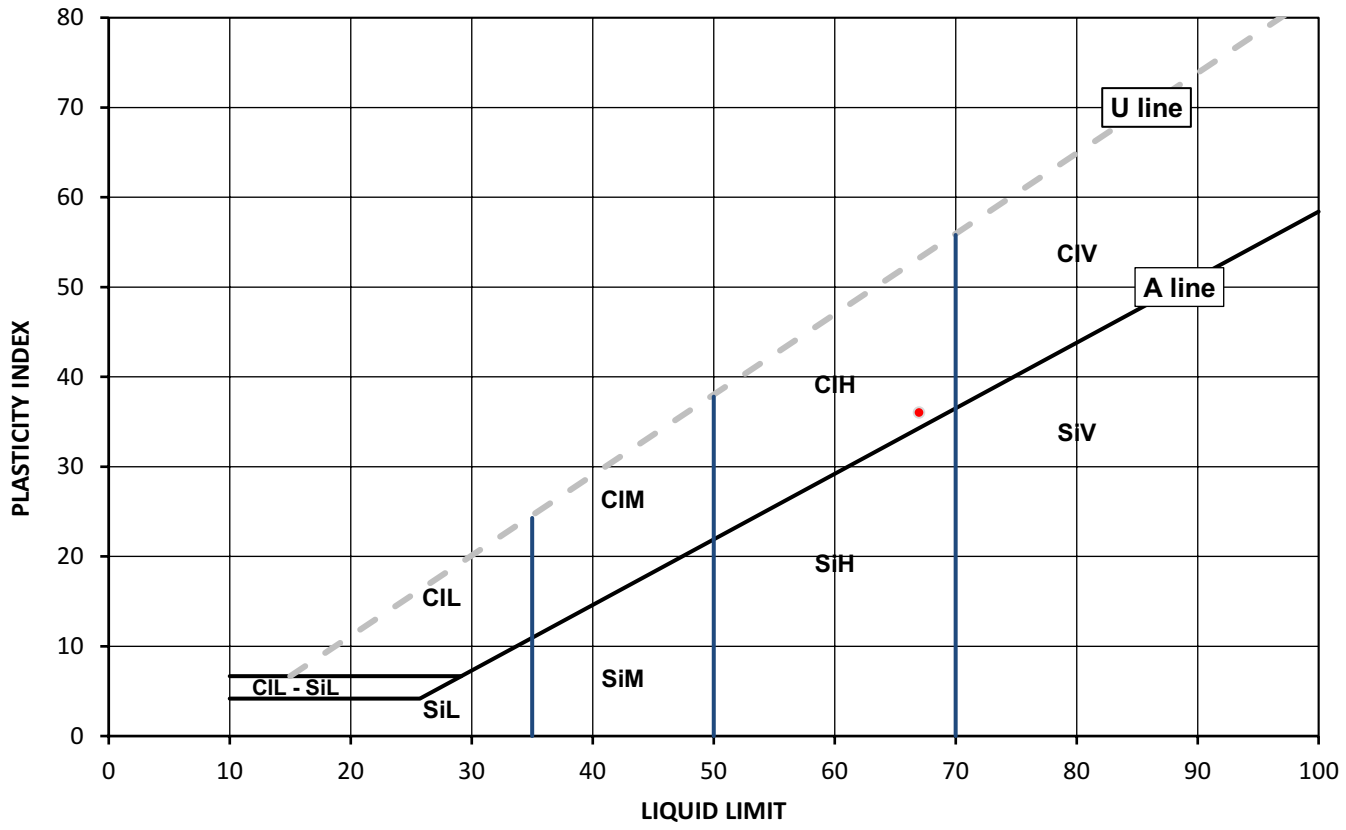
Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	09/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1893124	Depth Top [m]:	4.50
Hole No.:	BH102A	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Greyish brown slightly gravelly CLAY		
Sample Preparation:	Tested after >425um removed by hand		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
31	67	31	36	98



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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 236.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	09/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

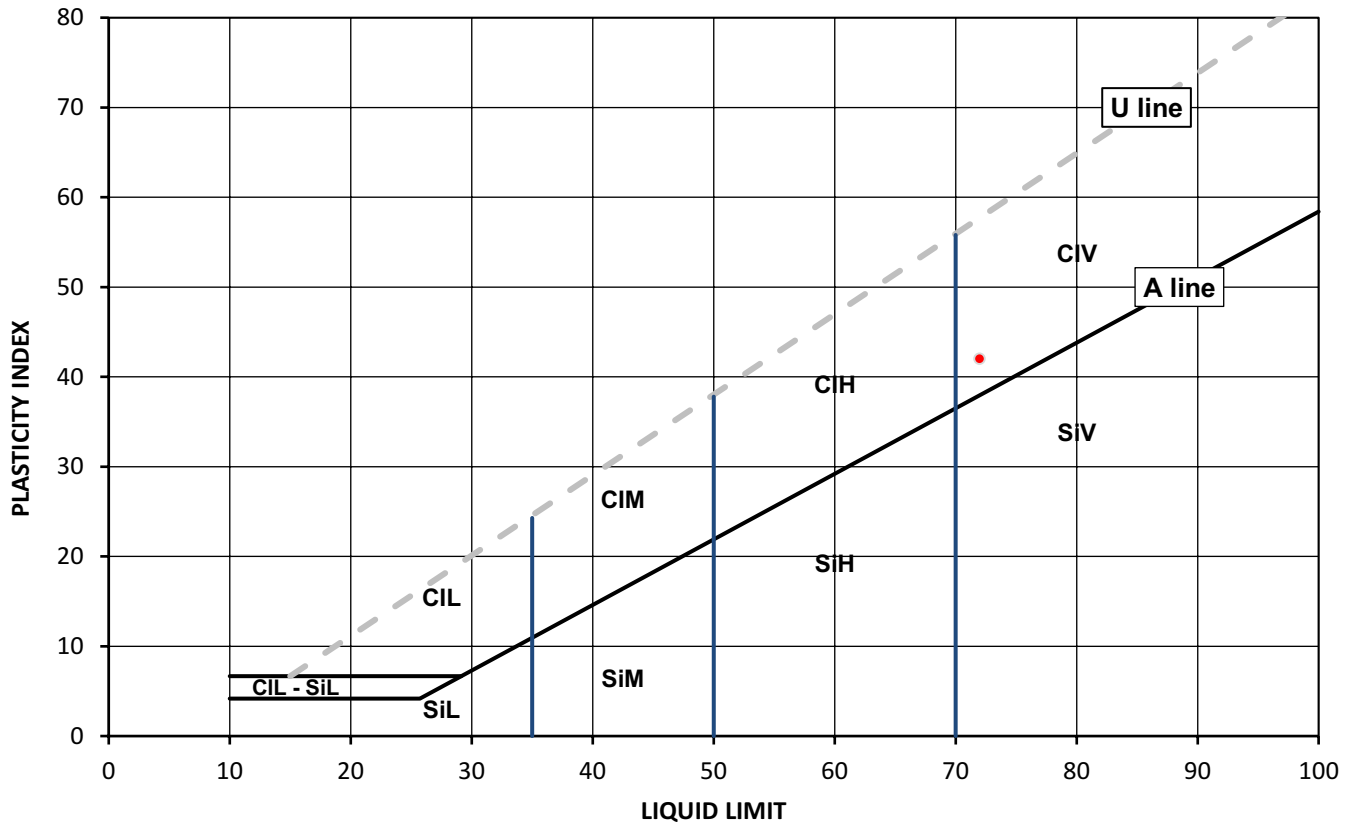
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1893125	Depth Top [m]:	9.00
Hole No.:	BH102A	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Greyish brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
29	72	30	42	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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 236.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	09/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

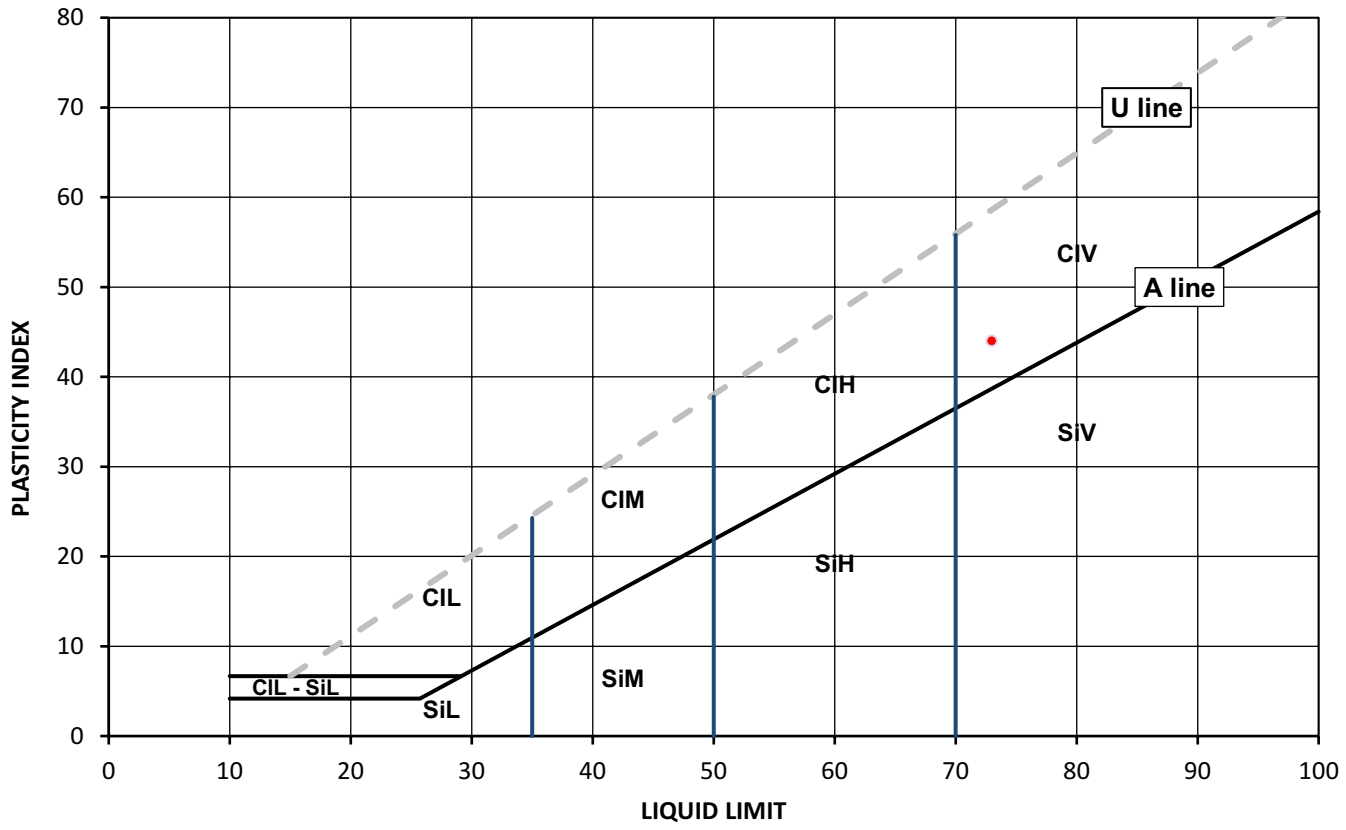
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1893126	Depth Top [m]:	13.50
Hole No.:	BH102A	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Greyish brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
31	73	29	44	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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 236.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	09/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

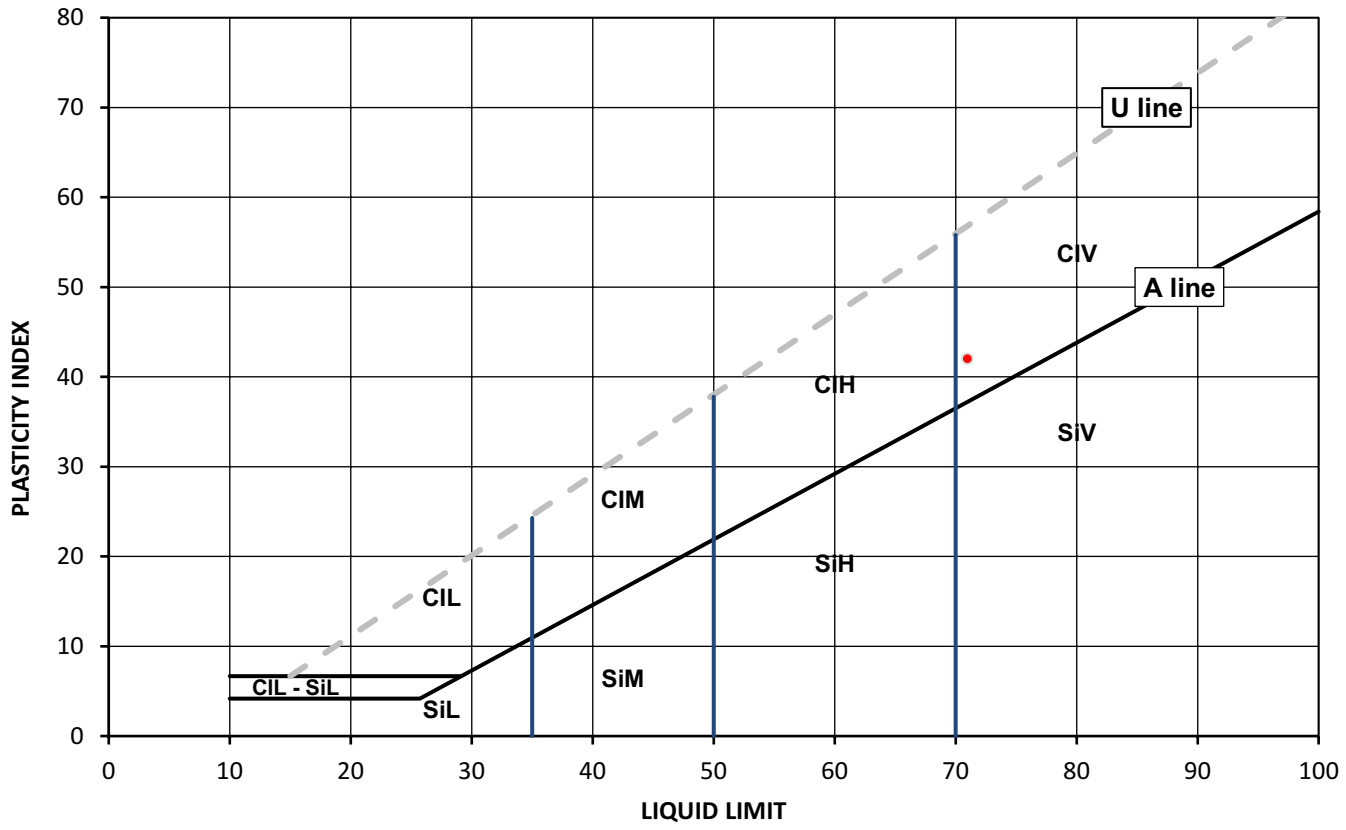
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1893127	Depth Top [m]:	18.00
Hole No.:	BH102A	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Greyish brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
36	71	29	42	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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 236.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	09/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

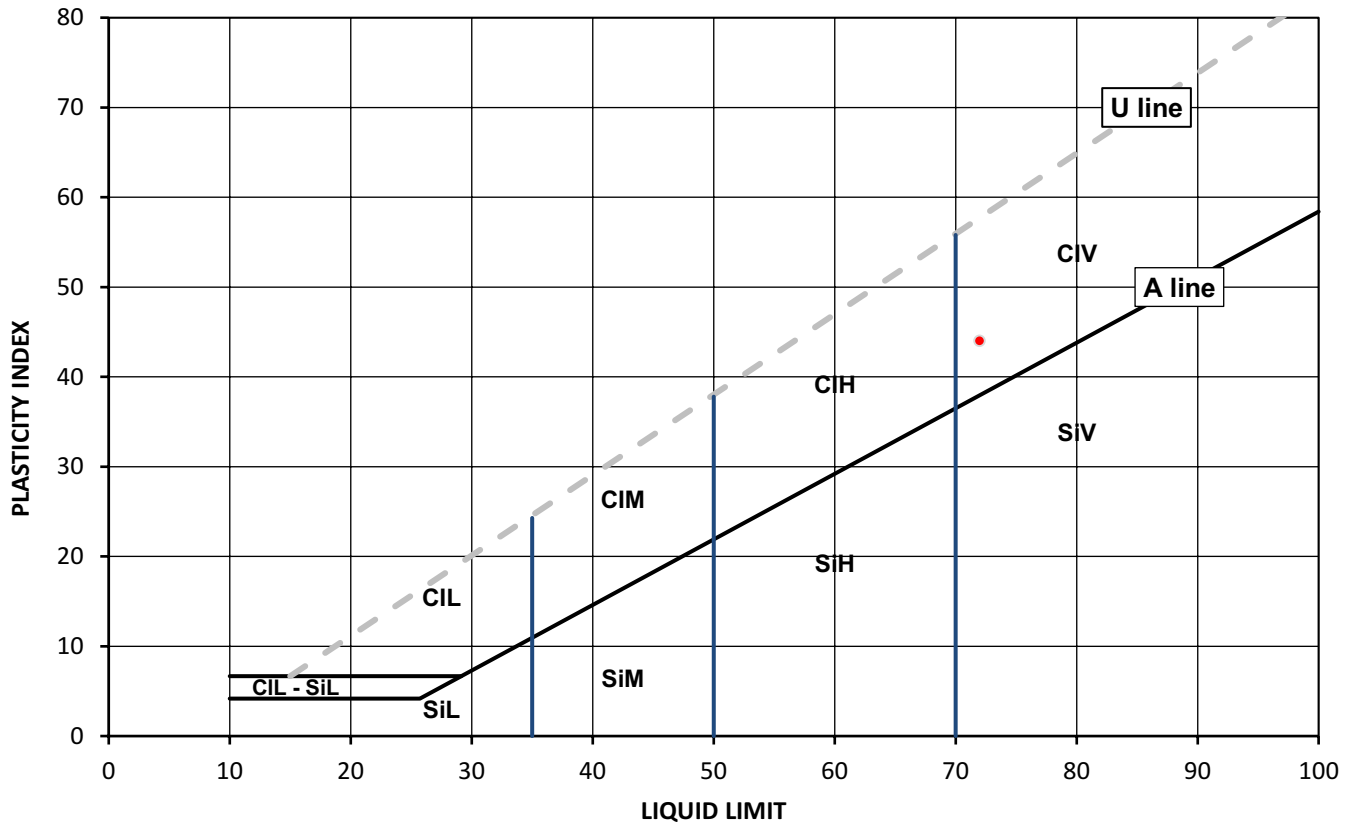
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1893128	Depth Top [m]:	20.00
Hole No.:	BH102A	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Greyish brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
38	72	28	44	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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 236.10

SUMMARY REPORT

Summary of Classification Test Results

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

4041

Tested in Accordance with:

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: Jomas Associates Ltd

Client Address: Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD

Contact: Josh Thomas

Site Address: West Central St and 1 Museum St

Client Reference: JJ2084
Job Number: 21-79236
Date Sampled: 28/05/2021
Date Received: 19/05/2021
Date Tested: 09/06/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top m	Depth Base m	Type			%	%	% Passing 425um %	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3	%		
1893117	BH102A	Not Given	1.50	Not Given	D	Greyish brown CLAY	Atterberg 4 Point	30		100	68	28	40						
1893124	BH102A	Not Given	4.50	Not Given	D	Greyish brown slightly gravelly CLAY	Atterberg 4 Point	31		98	67	31	36						
1893125	BH102A	Not Given	9.00	Not Given	D	Greyish brown CLAY	Atterberg 4 Point	29		100	72	30	42						
1893126	BH102A	Not Given	13.50	Not Given	D	Greyish brown CLAY	Atterberg 4 Point	31		100	73	29	44						
1893127	BH102A	Not Given	18.00	Not Given	D	Greyish brown CLAY	Atterberg 4 Point	36		100	71	29	42						
1893128	BH102A	Not Given	20.00	Not Given	D	Greyish brown CLAY	Atterberg 4 Point	38		100	72	28	44						

Note: # Non accredited; NP - Non plastic

Comments: Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 238.12

TEST CERTIFICATE

One Dimensional Consolidation Test

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

4041

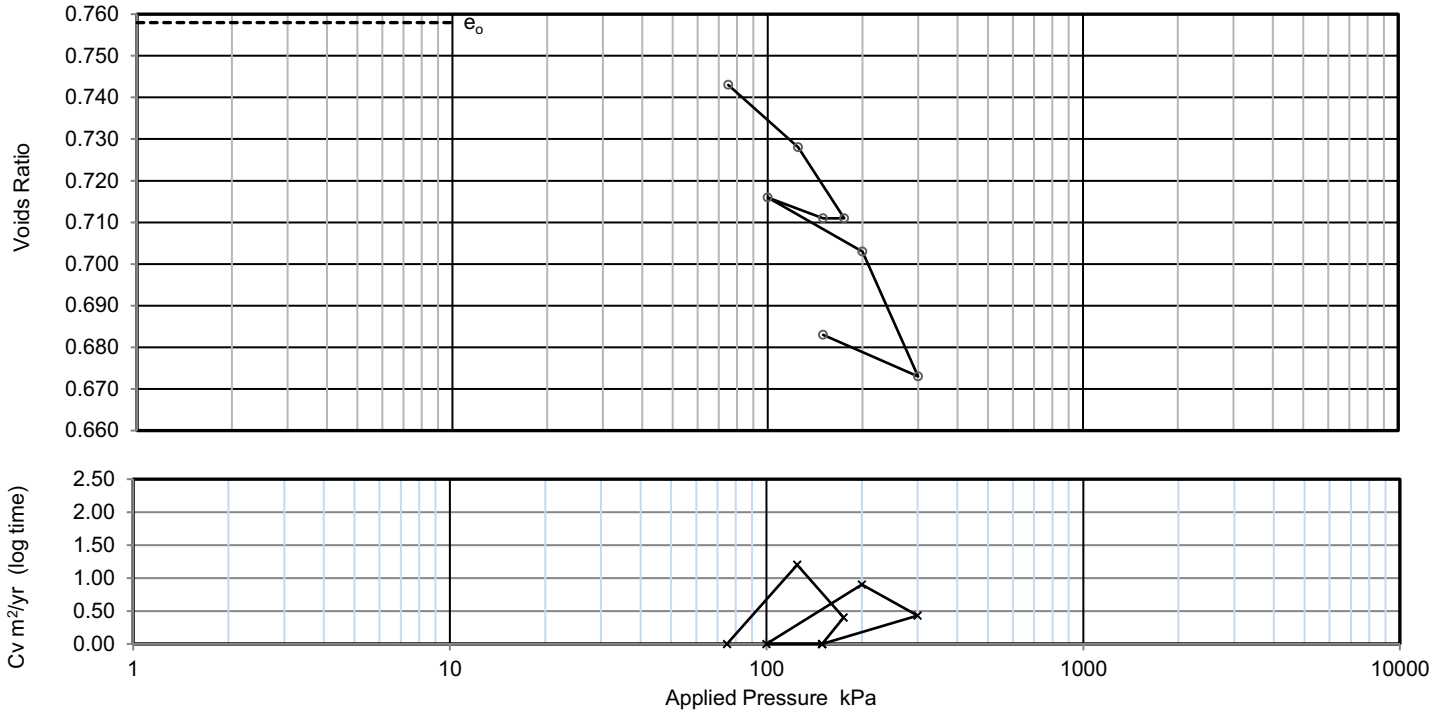
Tested in Accordance with: BS 1377-5: 1990: Clause 3

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	10/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1893120	Depth Top [m]:	6.50
Hole No.:	BH102A	Depth Base [m]:	6.95
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Brown CLAY		



Applied Pressure kPa	Voids ratio	M_v m²/MN	C_v ($t_{50, log}$) m²/yr	C_v ($t_{90, root}$) m²/yr	C_{sec}
0	0.758	-	-	-	-
75	0.743	0.12	N/A	N/A	N/A
125	0.728	0.17	1.2	1.0	0.0013
175	0.711	0.20	0.40	0.47	0.0013
150	0.711	0.016			
100	0.716	0.060			
200	0.703	0.075	0.90	0.98	0.0013
300	0.673	0.18	0.43	0.44	0.0019
150	0.683	0.039			

Preparation

Index tests

Orientation of the sample	Vertical		
Particle density	assumed	2.65	Mg/m³
Liquid limit	N/A		%
Plastic limit	N/A		%

Specimen details	Initial	Final	
Diameter	50.00	-	mm
Height	19.97	19.12	mm
Moisture Content	27	31	%
Bulk density	1.91	2.07	Mg/m³
Dry density	1.51	1.57	Mg/m³
Voids Ratio	0.758	0.683	
Saturation	94	122	%
Avg. temperature for test	22		°C
Swelling Pressure	Not measured		kPa
Settlement on saturation			%

Note: Cv corrected to 20°C

Remarks: Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 172.15

TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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

UKAS TESTING 4041

Environmental Science

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	14/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

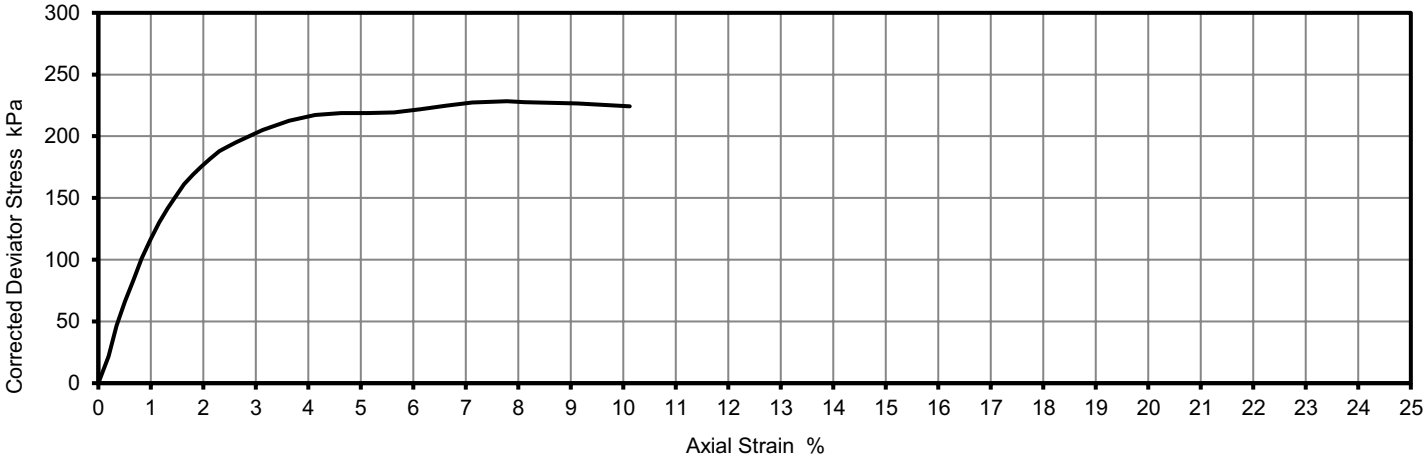
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

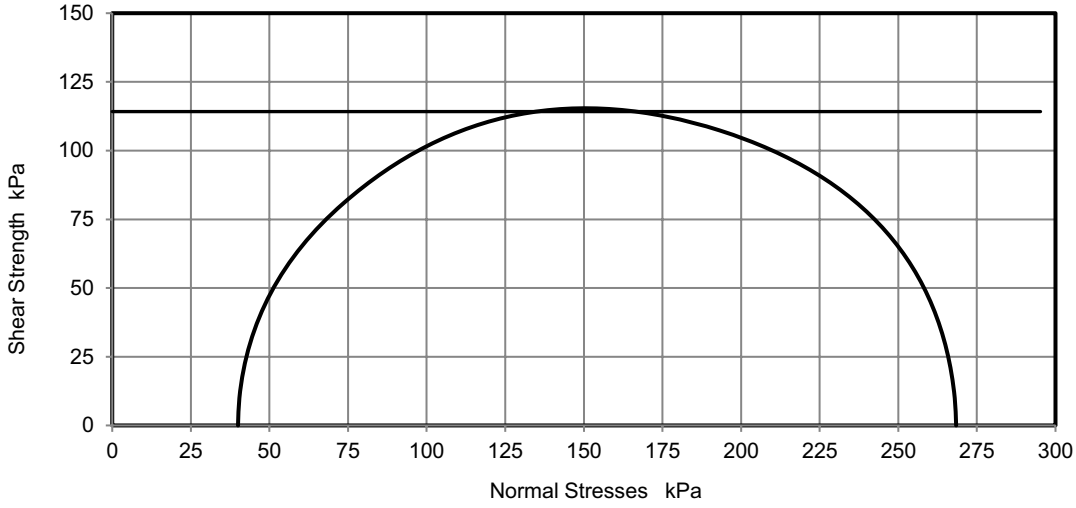
Laboratory Reference:	1893118	Depth Top [m]:	2.00
Hole No.:	BH102A	Depth Base [m]:	2.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Greyish brown CLAY		

Test Number	1		Rate of Strain	1.99	%/min	
Length	200.75	mm	Cell Pressure	40	kPa	
Diameter	102.20	mm	Axial Strain at failure	7.8	%	
Bulk Density	2.01	Mg/m3	Deviator Stress, (σ1 - σ3)f	228	kPa	
Moisture Content	28	%	Undrained Shear Strength, cu	114	kPa	½(σ1 - σ3)f
Dry Density	1.56	Mg/m3	Mode of Failure	Compound		
Membrane Correction	0.46	kPa	Membrane thickness	0.25	mm	

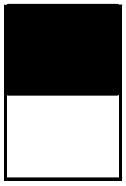
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks: Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 184.11

TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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

UKAS TESTING 4041

Environmental Science

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	14/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

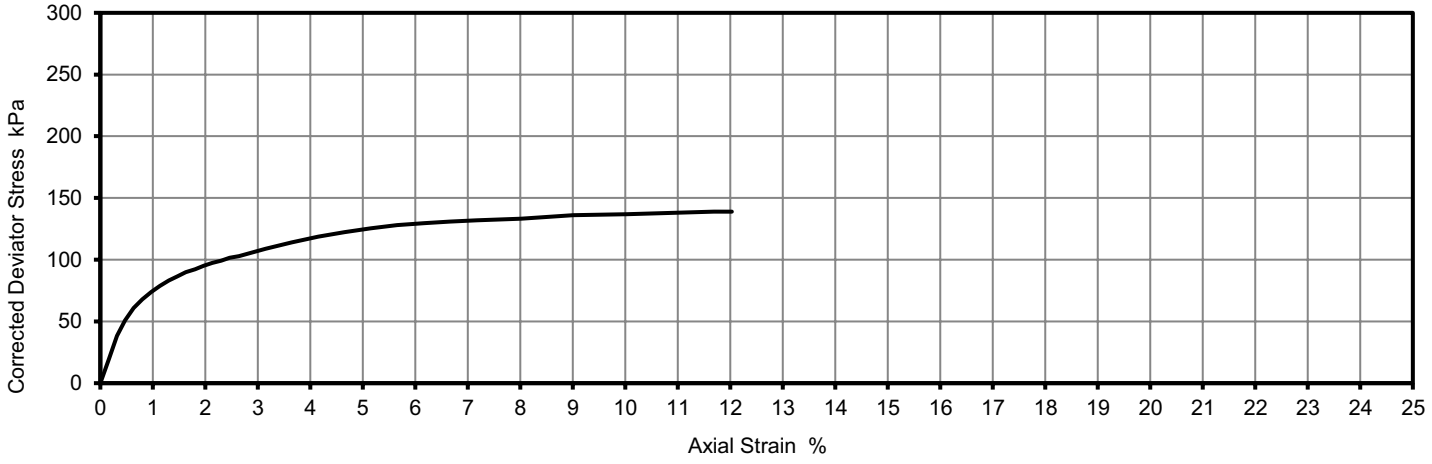
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

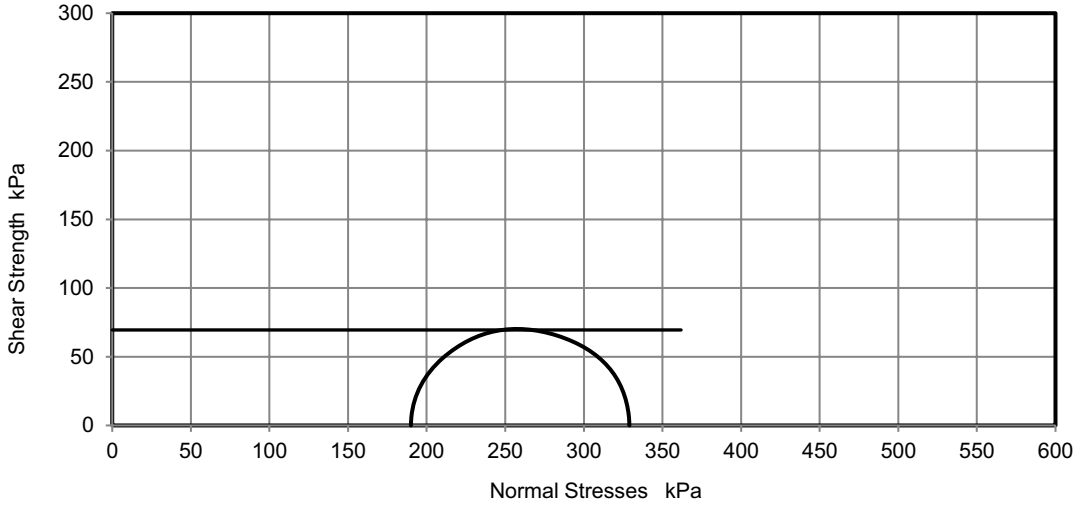
Laboratory Reference:	1893121	Depth Top [m]:	9.50
Hole No.:	BH102A	Depth Base [m]:	9.95
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Greyish brown CLAY		

Test Number	1		Rate of Strain	2.00	%/min	
Length	197.53	mm	Cell Pressure	190	kPa	
Diameter	102.59	mm	Axial Strain at failure	11.7	%	
Bulk Density	1.99	Mg/m3	Deviator Stress, (σ1 - σ3)f	139	kPa	
Moisture Content	28	%	Undrained Shear Strength, cu	69	kPa	½(σ1 - σ3)f
Dry Density	1.56	Mg/m3	Mode of Failure	Brittle		
Membrane Correction	0.58	kPa	Membrane thickness	0.24	mm	

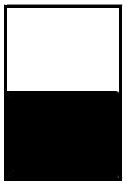
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks: Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 184.11

TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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

UKAS TESTING
4041

Environmental Science

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	14/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

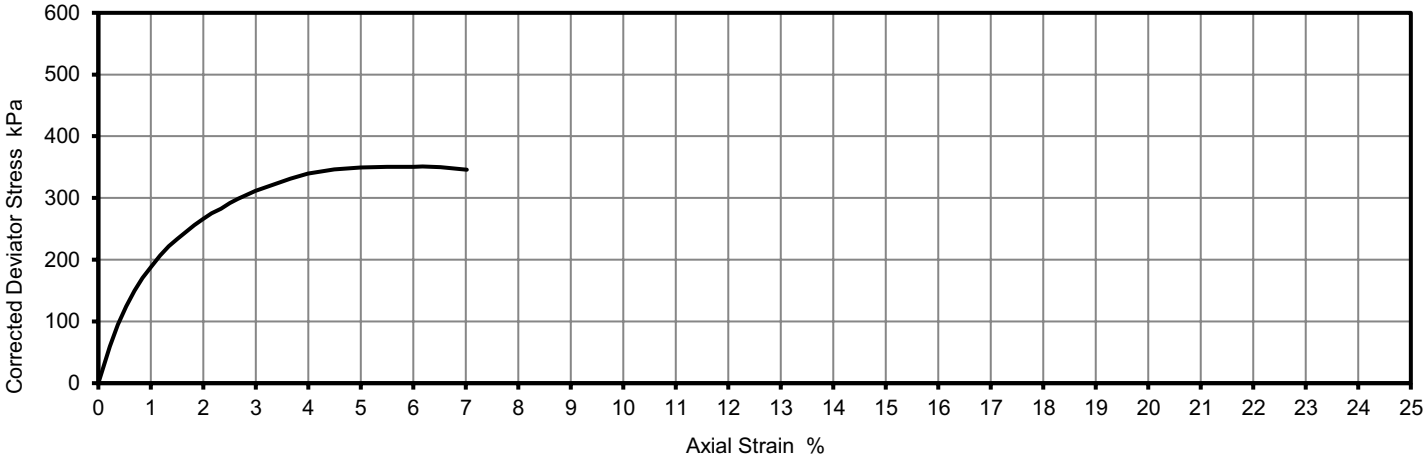
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

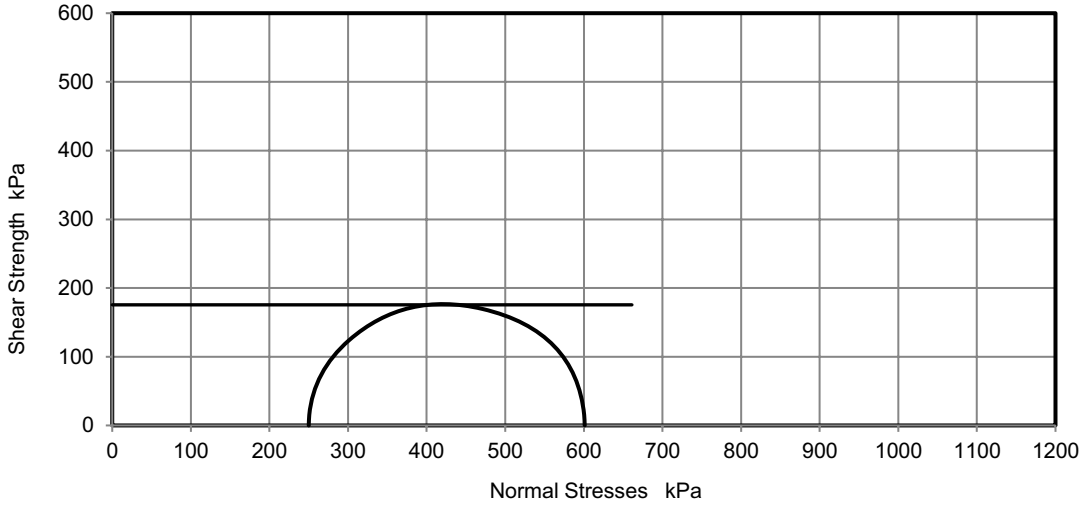
Laboratory Reference:	1893122	Depth Top [m]:	12.50
Hole No.:	BH102A	Depth Base [m]:	12.95
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Greyish brown CLAY		

Test Number	1		Rate of Strain	2.00	%/min	
Length	198.05	mm	Cell Pressure	250	kPa	
Diameter	102.91	mm	Axial Strain at failure	6.2	%	
Bulk Density	2.01	Mg/m3	Deviator Stress, (σ1 - σ3)f	351	kPa	
Moisture Content	27	%	Undrained Shear Strength, cu	176	kPa	½(σ1 - σ3)f
Dry Density	1.59	Mg/m3	Mode of Failure	Brittle		
Membrane Correction	0.42	kPa	Membrane thickness	0.27	mm	

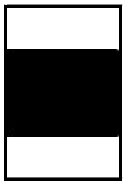
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks: Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 184.11

TEST CERTIFICATE

Unconsolidated Undrained

Triaxial Compression

Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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

4041

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	22/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

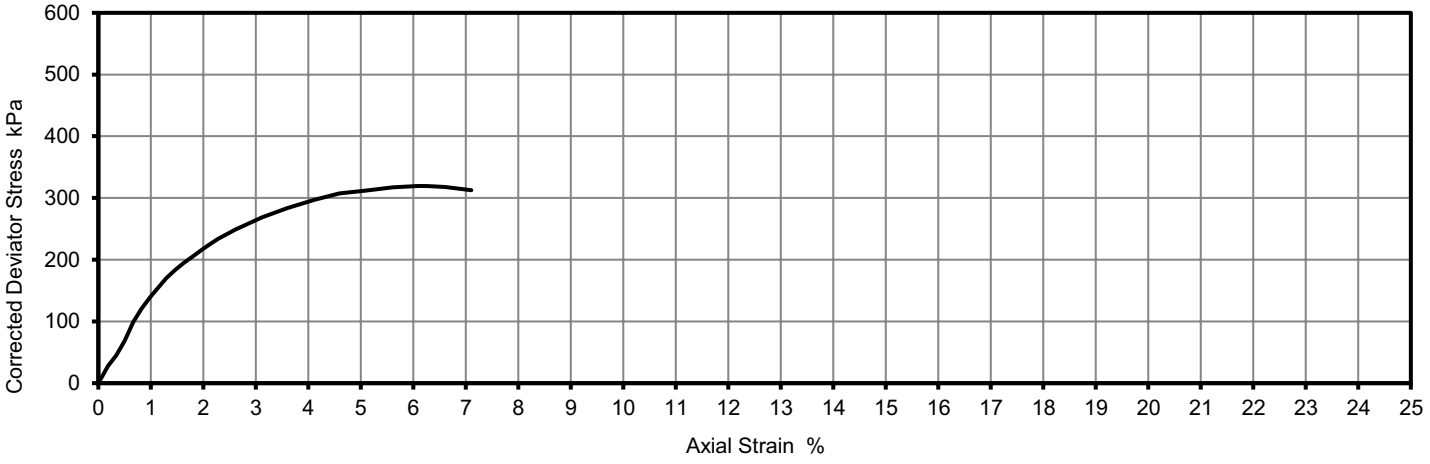
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

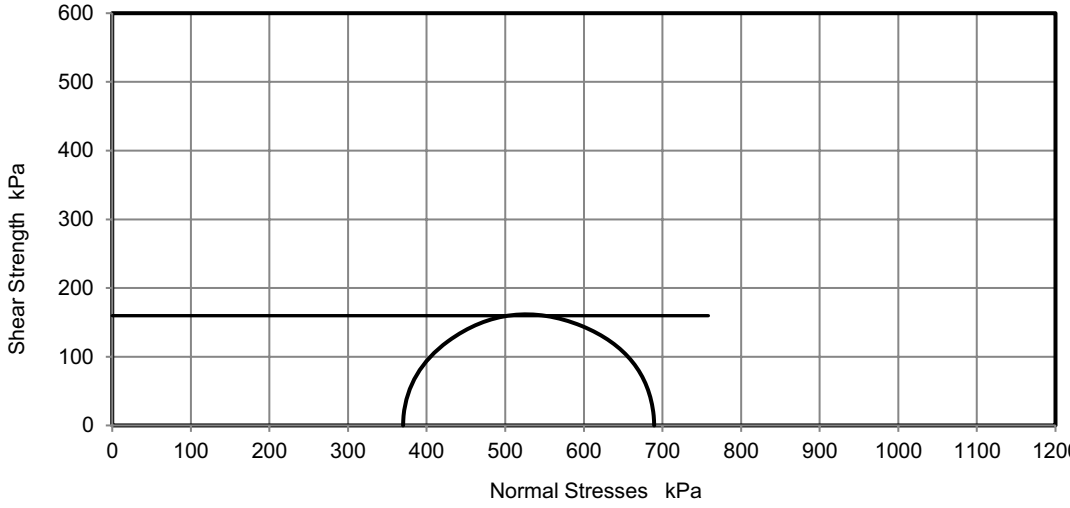
Laboratory Reference:	1893123	Depth Top [m]:	18.50
Hole No.:	BH102A	Depth Base [m]:	18.95
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Greyish brown CLAY		

Test Number	1		Rate of Strain	1.99	%/min	
Length	200.85	mm	Cell Pressure	370	kPa	
Diameter	102.06	mm	Axial Strain at failure	6.1	%	
Bulk Density	2.01	Mg/m3	Deviator Stress, (σ1 - σ3)f	319	kPa	
Moisture Content	24	%	Undrained Shear Strength, cu	160	kPa	½(σ1 - σ3)f
Dry Density	1.62	Mg/m3	Mode of Failure	Compound		
Membrane Correction	0.47	kPa	Membrane thickness	0.30	mm	

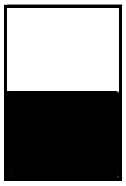
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks: Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 184.11

TEST CERTIFICATE

Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

Tested in Accordance with:
BS 1377-8: 1990: Clauses 1 to 7

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

4041

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	16/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

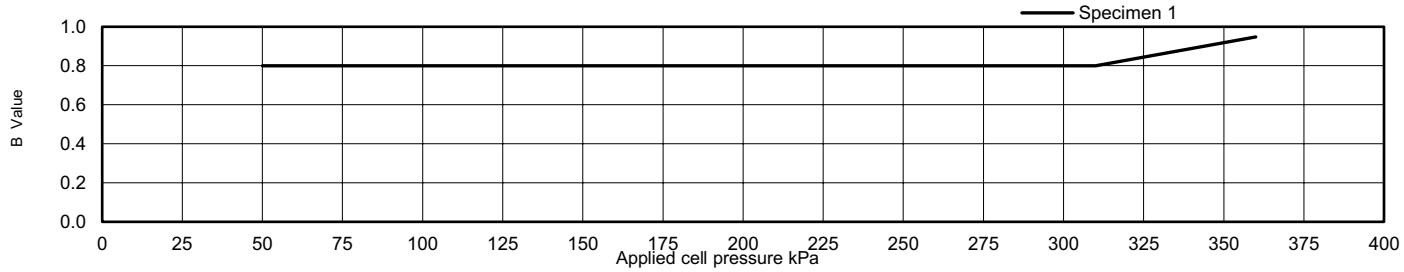
Test Results:

Laboratory Reference:	1893119	Depth Top [m]:	4.00
Hole No.:	BH102A	Depth Base [m]:	4.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Greyish brown CLAY		

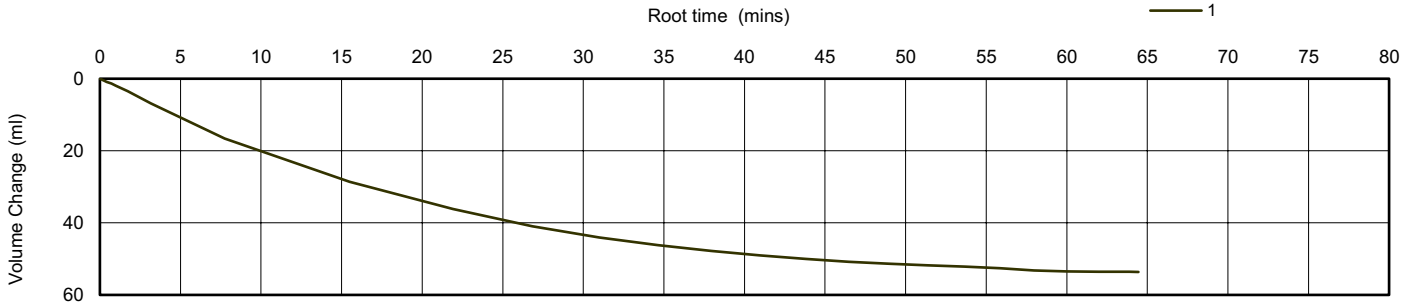
Specimen Type/Preparation	UNDISTURBED As BS 1377

Specimen Details			1		
Initial	Height	mm	203.9		
	Diameter	mm	102.8		
	Bulk Density	Mg/m³	1.95		
	Water Content	%	30.7		
	Dry density	Mg/m³	1.49		
	Membrane thickr	mm	0.21		
Final	Bulk Density	Mg/m³	1.92		
	Water Content	%	29.8		
	Dry density	Mg/m³	1.48		

Saturation Details		1		
Method		Cell Pressure and Back Pressure increased simultaneously		
Cell pressure increments	kPa	50		
Differential Pressure	kPa	10		
Final Cell Pressure	kPa	360		
Final pore water pressure	kPa	347		
Final B Value		0.95		



Consolidation Details							
	Specimen No.		1				
	Drainage Conditions		Radial+1 end				
	Cell Pressure applied		530				kPa
	Back Pressure applied		450				kPa
	Effective Pressure		80				kPa
	Pore pressure at start of consolidation		513				kPa
	Pore pressure at end of consolidation		453				kPa
	Pore pressure dissipation at end of consolidation		96				%
Consolidation parameters (see note to BS1377 : pt 8, clause 6.3.4)	Coefficient of Consolidation	Cvi	N/A	N/A	N/A		m2/year
	Coefficient of Compressibility	Mvi	0.51				m2/MN
	Coefficient of Permeability (calculated)	kvi	N/A	N/A	N/A		m/s



Note: All symbols used above are defined in BS 1377

Remarks: Deviator stresses corrected for area change, vertical side drains and up to 0.21 mm thick rubber membrane
Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 230.8

TEST CERTIFICATE

Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

Tested in Accordance with:
BS 1377-8: 1990: Clauses 1 to 7

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

4041

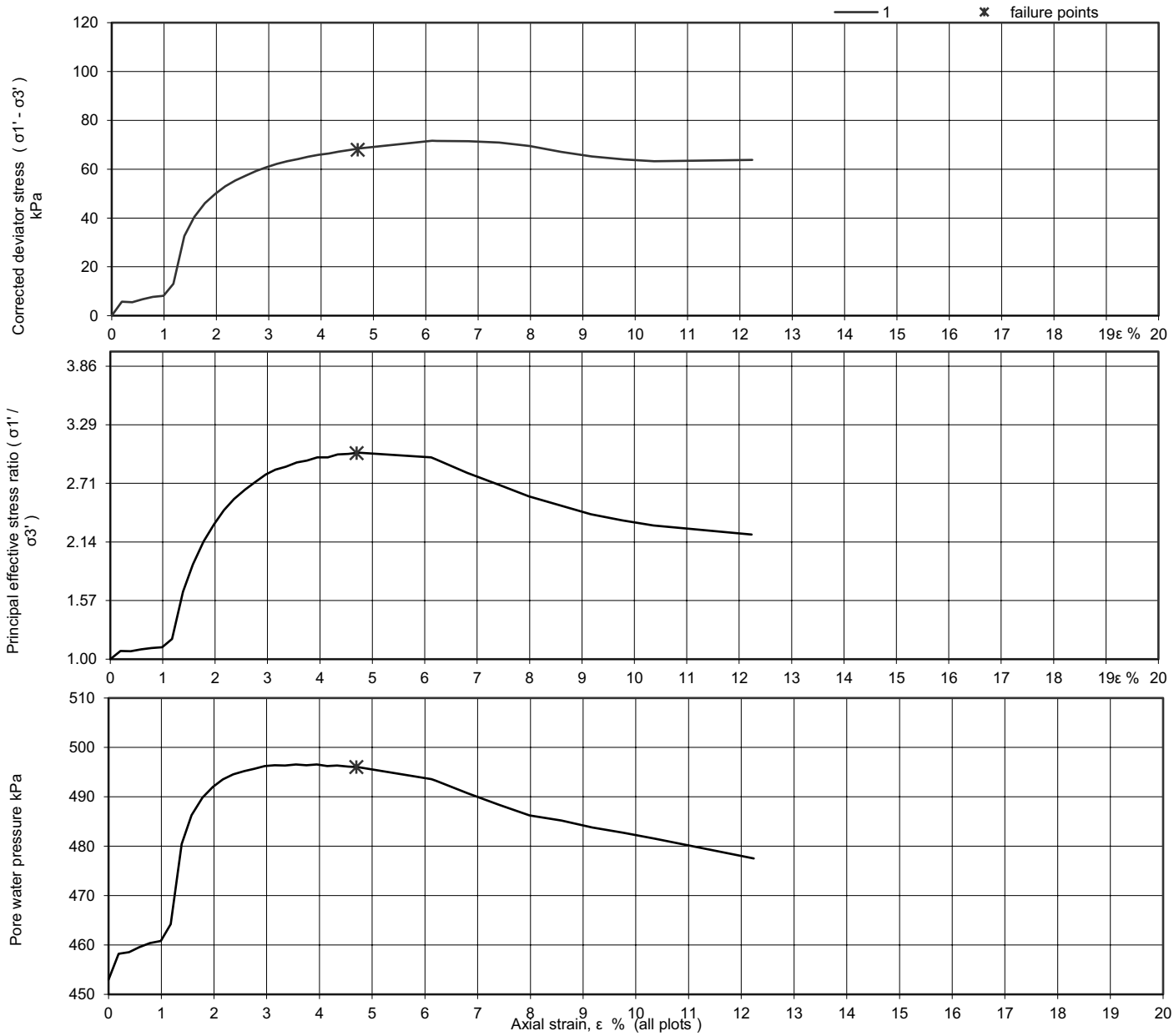
Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	16/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1893119	Depth Top [m]:	4.00
Hole No.:	BH102A	Depth Base [m]:	4.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Greyish brown CLAY		

Compression stages - graphical data



Note: All symbols used above are defined in BS 1377

Remarks: Deviator stresses corrected for area change, vertical side drains and up to 0.21 mm thick rubber membrane
Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 230.8

TEST CERTIFICATE

Consolidated Undrained Triaxial Compression Test with Measurement of Pore Pressure

Tested in Accordance with:
BS 1377-8: 1990: Clauses 1 to 7

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

4041

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-79236
		Date Sampled:	28/05/2021
		Date Received:	19/05/2021
Contact:	Josh Thomas	Date Tested:	16/06/2021
Site Address:	West Central St and 1 Museum St	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

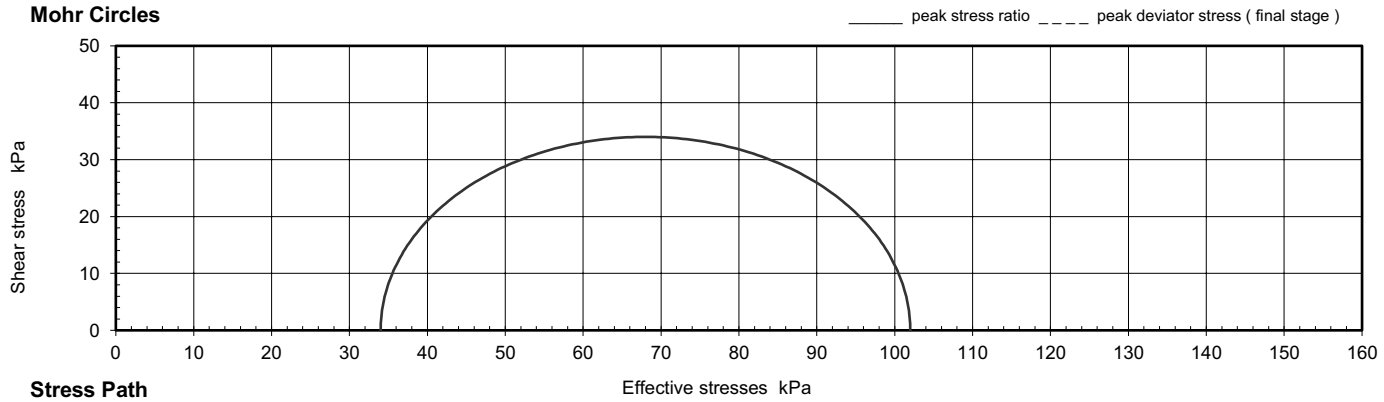
Laboratory Reference:	1893119	Depth Top [m]:	4.00
Hole No.:	BH102A	Depth Base [m]:	4.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Greyish brown CLAY		

Compression stages - table of results and interpretation

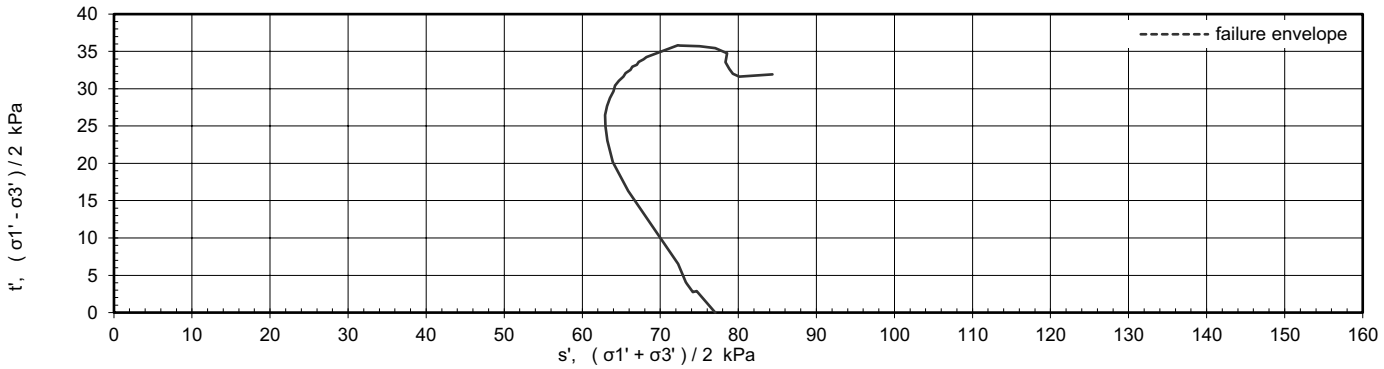
Failure criterion : Maximum effective principal stress ratio

Specimen	Cell pressure kPa	Initial pwp kPa	Initial σ3' kPa	Machine speed mm/min	Axial strain, εf %	(σ1' / σ3') f	(σ1' - σ3') f kPa	uf kPa	σ3' f kPa	σ1' f kPa	Af
1	530	453	80	0.00600	4.7	3.01	68	496	34	102	0.63

Mohr Circles



Stress Path



Shear Strength Parameters			Linear regression	Manual re-assessment
At Maximum effective principal s	c '	kPa	not assessed	-
	Ø '	degrees	not assessed	-

Specimen Remarks

Mode of failure

Compound

Note: All symbols used above are defined in BS 1377

Remarks: Deviator stresses corrected for area change, vertical side drains and up to 0.21 mm thick rubber membrane
Re-issue 1: Hole ID amended.

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 28/07/2021

GF 230.8

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

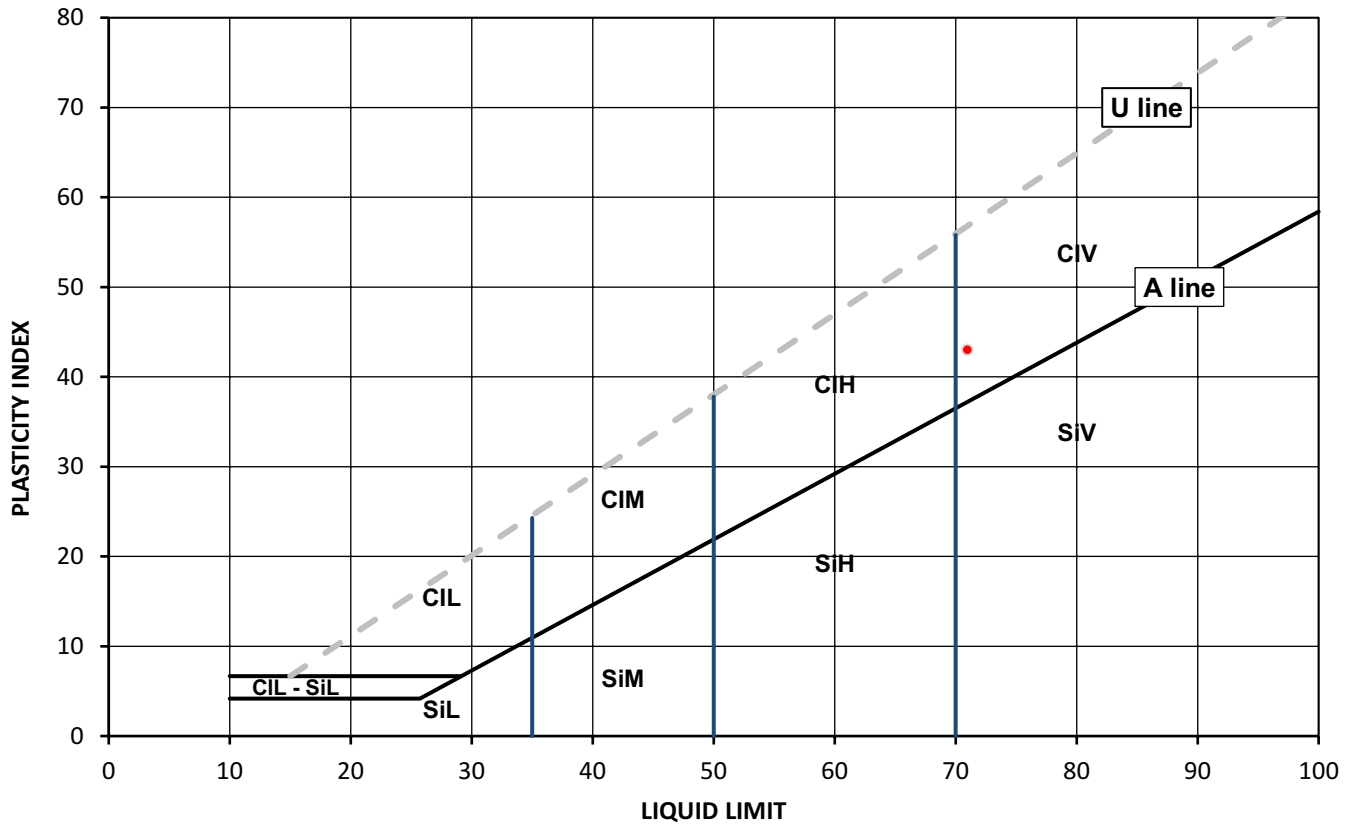
Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-83642
		Date Sampled:	Not Given
		Date Received:	28/06/2021
Contact:	Josephine Whitehead	Date Tested:	30/06/2021
Site Address:	West Central Street and 1 Museum Street, Holborn, WC1A 1JP	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1918672	Depth Top [m]:	2.15
Hole No.:	WS105	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Greyish brown slightly gravelly CLAY		
Sample Preparation:	Tested after >425um removed by hand		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
29	71	28	43	89



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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 09/07/2021

GF 236.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-83642
		Date Sampled:	Not Given
		Date Received:	28/06/2021
Contact:	Josephine Whitehead	Date Tested:	08/07/2021
Site Address:	West Central Street and 1 Museum Street, Holborn, WC1A 1JP	Sampled By:	Client

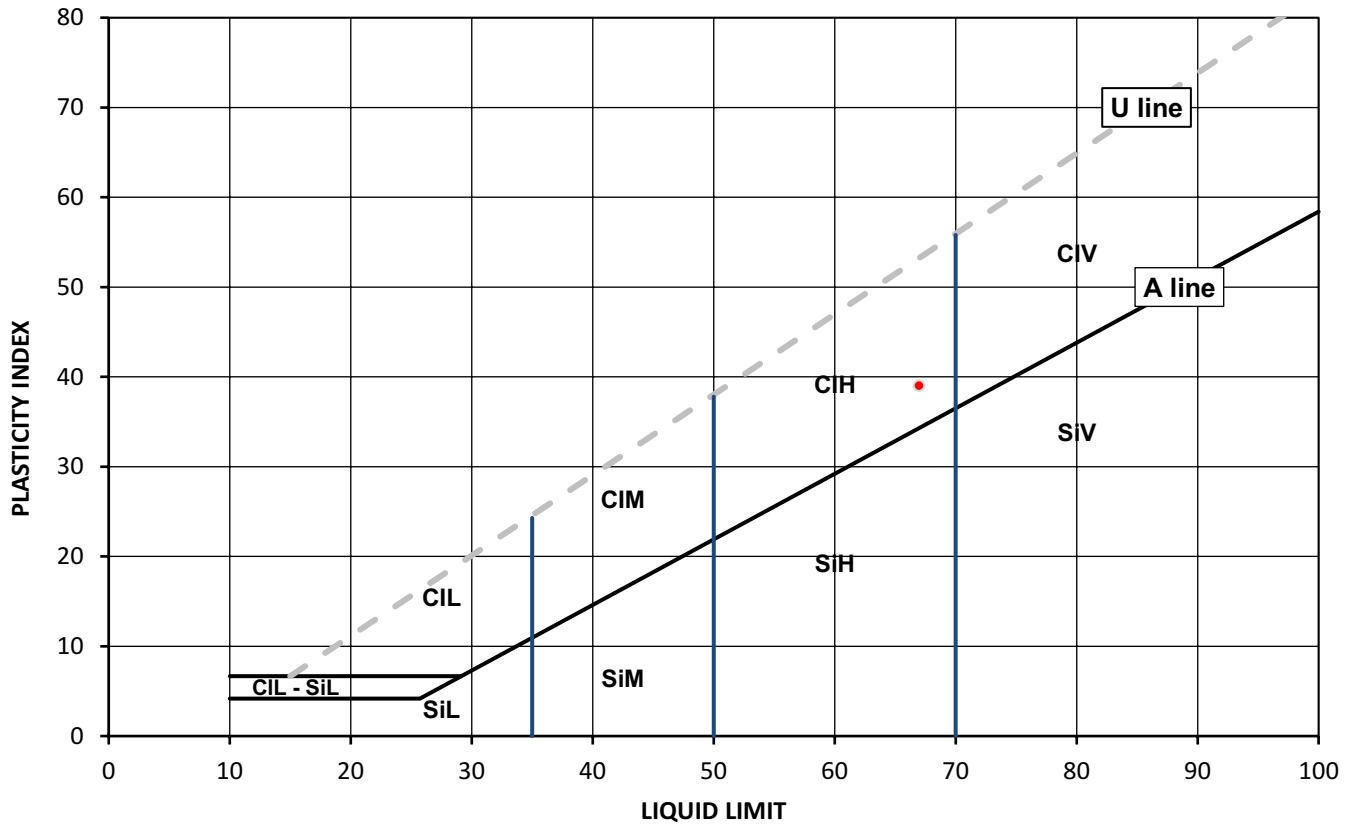
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1918673	Depth Top [m]:	1.00
Hole No.:	WS108	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
30	67	28	39	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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 09/07/2021

GF 236.10

TEST CERTIFICATE

Liquid and Plastic Limits

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

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Jomas Associates Ltd	Client Reference:	JJ2084
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number:	21-83642
		Date Sampled:	Not Given
		Date Received:	28/06/2021
Contact:	Josephine Whitehead	Date Tested:	30/06/2021
Site Address:	West Central Street and 1 Museum Street, Holborn, WC1A 1JP	Sampled By:	Client

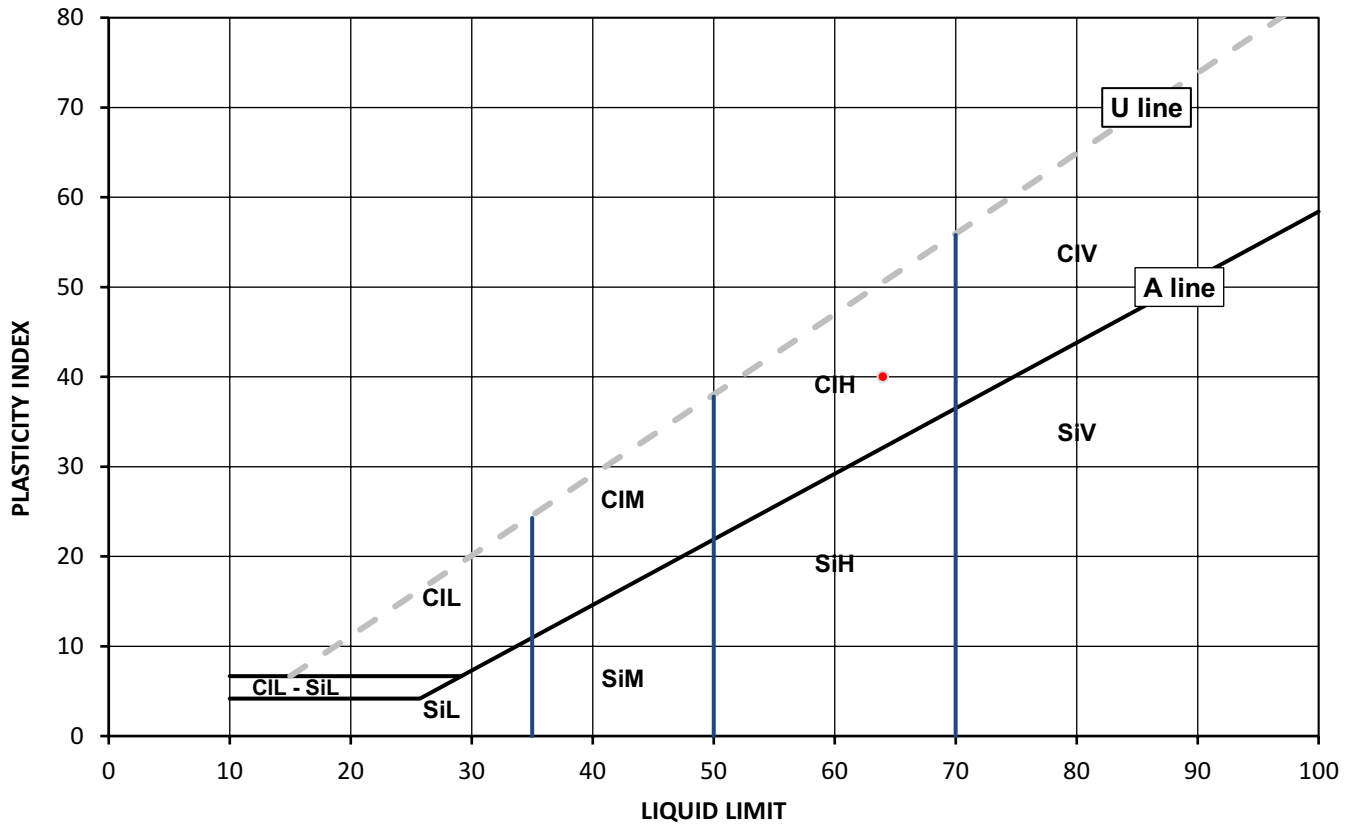
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1918674	Depth Top [m]:	1.80
Hole No.:	WS108	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown slightly gravelly CLAY		

Sample Preparation: Tested after >425um removed by hand

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
35	64	24	40	96



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: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 09/07/2021

GF 236.10

SUMMARY REPORT

Summary of Classification Test Results

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

UKAS TESTING 4041

Environmental Science

Tested in Accordance with:

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: Jomas Associates Ltd

Client Address: Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD

Contact: Josephine Whitehead

Site Address: West Central Street and 1 Museum Street, Holborn, WC1A 1JP

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: JJ2084
Job Number: 21-83642
Date Sampled: Not Given
Date Received: 28/06/2021
Date Tested: 30/06 - 08/07/2021
Sampled By: Client

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top m	Depth Base m	Type			%	%	% Passing 425um %	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3	%		
1918672	WS105	Not Given	2.15	Not Given	D	Greyish brown slightly gravelly CLAY	Atterberg 4 Point	29		89	71	28	43						
1918673	WS108	Not Given	1.00	Not Given	D	Brown CLAY	Atterberg 4 Point	30		100	67	28	39						
1918674	WS108	Not Given	1.80	Not Given	D	Brown slightly gravelly CLAY	Atterberg 4 Point	35		96	64	24	40						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Monika Janoszek
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Date Reported: 09/07/2021

GF 238.12

APPENDIX 5 – HAZARDOUS WASTE ASSESSMENT

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

JVHRG-Y8SVA-55YXP

Job name

P3094J2084 - Holborn

Description/Comments

Project

P3094J2084 - Holborn

Site

P3094J2084 - Holborn

Classified by

Name:
Tom Elbourne
Company:
JOMAS Associates Ltd
Date:
24 Jun 2021 13:14 GMT
Telephone:

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: -

Course	Date
Hazardous Waste Classification	-

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH103--15042021-1.10		Non Hazardous		2
2	BH103--15042021-1.75		Non Hazardous		8
3	WS102--15042021-1.15		Non Hazardous		10
4	WS103--15042021-1.00		Non Hazardous		15
5	WS103--15042021-1.95		Non Hazardous		21
6	WS104--15042021-0.50		Non Hazardous		23
7	WS108-ES-26052021-1.00		Non Hazardous		29
8	WS101 - 1.00		Non Hazardous		33
9	WS107 - 2.40		Non Hazardous		38
10	WS110 - 2.30		Non Hazardous		42
11	WS105 - 1.70		Non Hazardous		48

Related documents

#	Name	Description
1	21-69414-2_HWOL_Results.hwol	.hwol file used to create the Job
2	21-78966_HWOL_Results.hwol	.hwol file used to create the Job
3	21-78539_HWOL_Results.hwol	.hwol file used to create the Job

Report

Created by: Tom Elbourne

Created date: 24 Jun 2021 13:14 GMT

Classification of sample: BH103--15042021-1.10

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH103--15042021-1.10
Moisture content:
8.1%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 8.1% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12 mg/kg	1.32	14.561 mg/kg	0.00146 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.8 mg/kg	3.22	5.326 mg/kg	0.000533 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19 mg/kg	1.462	25.52 mg/kg	0.00255 %	✓	
5	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<4 mg/kg	1.923	<7.692 mg/kg	<0.000769 %		<LOD
6	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		24 mg/kg	3.929	86.659 mg/kg	0.00867 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	46 mg/kg		42.274 mg/kg	0.00423 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		13 mg/kg	2.976	35.557 mg/kg	0.00356 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
11	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		49 mg/kg	1.245	56.051 mg/kg	0.00561 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		289 mg/kg		265.591 mg/kg	0.0266 %	✓	
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
14	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
15	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
16	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD