

Analytical Report Number : 24-032504

Project / Site name: Ickleford Mill, Arlesey Road, Ickleford

* 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 *
267095	BH01	None Supplied	0.30-0.70	Brown clay and loam with gravel and stones
267096	BH02A	None Supplied	0.00-0.30	Brown loam with vegetation
267097	BH03	None Supplied	0.20-0.50	Brown clay and loam with stones
267098	BH04	None Supplied	0.30-0.50	Brown sand with gravel and stones
267099	BH04	None Supplied	0.50-0.70	Brown clay and loam with gravel

Analytical Report Number : 24-032504

Project / Site name: Ickleford Mill, Arlesey Road, Ickleford

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
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.	L019B	D	NONE
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	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Pesticides by GC-MS/MS	Determination of Pesticides in soil by GC MS/MS	In-house method	L055B	W	NONE
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088	D/W	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	L080	W	MCERTS

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Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

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

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



4041



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Analytical Report Number : 24-032958

Project / Site name:	Ickleford Mill, Arlesey Road, Ickleford	Samples received on:	24/07/2024
Your job number:	CRM.1027.189	Samples instructed on/ Analysis started on:	26/07/2024
Your order number:		Analysis completed by:	01/08/2024
Report Issue Number:	1	Report issued on:	01/08/2024
Samples Analysed:	3 water samples		

Signed:



Joanna Wawrzeczko
Senior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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.



4041



Analytical Report Number: 24-032958
Project / Site name: Ickleford Mill, Arlesey Road, Ickleford

Lab Sample Number				269358	269359	269360
Sample Reference				SW101	SW102	SW103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				18/07/2024	18/07/2024	18/07/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status			

General Inorganics

pH (L099)	pH Units	N/A	ISO 17025	8.2	8.1	8
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	2.4	1.77	1.79

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01 ##	< 0.01 ##	< 0.01 ##
Fluorene	µg/l	0.01	ISO 17025	< 0.01 ##	< 0.01 ##	< 0.01 ##
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01 ##	< 0.01 ##	< 0.01 ##
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.32	0.27	0.26
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.2	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	1.5	2.1	0.7
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	< 0.5	1.3	< 0.5
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6	< 0.6	< 0.6
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.2	0.2	0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.7	2.6	1.6

Boron (dissolved)	µg/l	10	ISO 17025	21	20	20
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0



4041



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Lab Sample Number				269358	269359	269360
Sample Reference				SW101	SW102	SW103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				18/07/2024	18/07/2024	18/07/2024
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status			

Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC12 - EC16 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC16 - EC21 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC21 - EC35 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10

TPH - Aromatic >EC5 - EC7 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC12 - EC16 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC16 - EC21 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC21 - EC35 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH - Aromatic >EC5 - EC35 _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0

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



4041



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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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	L012B	W	ISO 17025
Total organic carbon in water	Determination of total organic carbon in water by TOC/DOC NDIR analyser.Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	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	L039B	W	ISO 17025
Total petroleum hydrocarbons with carbon banding by GC-MS in water	Determination of total petroleum hydrocarbons in water by GC-MS/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L070B	W	NONE
BTEX and/or 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 USEPA 8260	L073B	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW	L080	W	ISO 17025
Total petroleum hydrocarbons by GC-MS HS in water	Determination of total petroleum hydrocarbons in water by GC-MS HS	In-house method	L088B	W	ISO 17025
pH at 20°C in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method	L099	W	ISO 17025



4041



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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated PAHs and/or Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds (including PAH) in leachate by extraction in dichloromethane followed by GC-MS	In-house method based on USEPA 8270	L102B	W	ISO 17025

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

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

- Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.



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Analytical Report Number : 24-034207

Project / Site name:	Ickleford Mill	Samples received on:	24/07/2024
Your job number:	CRM.1027.189	Samples instructed on/ Analysis started on:	02/08/2024
Your order number:	CRM.1027.189	Analysis completed by:	13/08/2024
Report Issue Number:	1	Report issued on:	13/08/2024
Samples Analysed:	14 soil samples		

Signed:

Joanna Szwagrzak
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

Analytical Report Number: 24-034207

Project / Site name: Ickleford Mill

Your Order No: CRM.1027.189

Lab Sample Number				276157	276158	276159	276160	276161
Sample Reference				WS101	WS103	WS103A	WS105	WS106
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.40	0.70	0.40	0.50
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	56.5
Moisture Content	%	0.01	NONE	13	14	12	20	8.5
Total mass of sample received	kg	0.1	NONE	1.3	1.3	1.3	1.3	1.3

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	DSO	DSO	DSO	DSO	DSO
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	8.4	-	-	10.5
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	210	-	-	450
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	106	-	-	224

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.1	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.14	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.11	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.8	0.05	0.39
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.48	< 0.05	0.08
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	4.2	0.15	1.1
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	3.7	0.11	0.95
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.06	2.1	0.13	0.57
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	2	0.06	0.71
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	2.3	0.08	0.79
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	1.1	< 0.05	0.38
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	2.1	0.07	0.63
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.1	0.07	0.37
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.29	< 0.05	0.13
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.1	0.07	0.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	22.4	0.8	6.5
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Analytical Report Number: 24-034207

Project / Site name: Ickleford Mill

Your Order No: CRM.1027.189

Lab Sample Number				276157	276158	276159	276160	276161
Sample Reference				WS101	WS103	WS103A	WS105	WS106
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.40	0.70	0.40	0.50
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.6	10	19	6.5	18
Boron (water soluble)	mg/kg	0.2	MCERTS	2.9	1.1	1.9	2.9	1.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	22	21	19	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	11	8.4	25	8.4	92
Lead (aqua regia extractable)	mg/kg	1	MCERTS	33	15	92	12	51
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	19	21	17	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	45	51	110	38	100

Petroleum Hydrocarbons

TPH (>EC5 - EC7) HS_ID_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (>EC7 - EC8) HS_ID_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (>EC8 - EC10) HS_ID_TOTAL	mg/kg	0.02	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
TPH (>EC10 - EC12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (>EC12 - EC16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (>EC16 - EC21) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	24	13	14
TPH (>EC21 - EC35) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10	87	14	81
TPH (>EC35 - EC44) EH_CU_ID_TOTAL	mg/kg	10	NONE	< 10	< 10	88	< 10	< 10

TPH Total >EC5 - EC44 EH_CU+HS_ID_TOTAL	mg/kg	10	NONE	< 10	< 10	200	27	110
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034207

Project / Site name: Ickleford Mill

Your Order No: CRM.1027.189

Lab Sample Number				276162	276163	276164	276165	276166
Sample Reference				WS107	WS108	WS109	WS110	WS111
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.90	0.80	0.50	0.70	1.00
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	49.7	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	2.6	16	12	17
Total mass of sample received	kg	0.1	NONE	1.3	1.3	1.3	1.3	1.3

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	WEM	WEM	WEM	WEM	WEM
Actinolite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	Detected	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	Loose Fibres	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	-	-	7.9	8
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	480	77
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	241	38.5

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.09	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.06	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.49	0.27	0.13	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.12	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.2	0.73	0.45	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	1	0.7	0.38	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.68	0.35	0.28	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.79	0.4	0.23	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.79	0.49	0.34	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.44	0.24	0.11	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.7	0.47	0.27	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.39	0.28	0.17	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.14	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.4	0.37	0.2	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	7.27	4.3	2.56	< 0.80	< 0.80
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Analytical Report Number: 24-034207

Project / Site name: Ickleford Mill

Your Order No: CRM.1027.189

Lab Sample Number				276162	276163	276164	276165	276166
Sample Reference				WS107	WS108	WS109	WS110	WS111
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.90	0.80	0.50	0.70	1.00
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	13	13	11	12
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	2.3	1.3	3.8	2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	25	27	22	30
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	16	15	5.2	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	94	22	22	12	14
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21	21	26	18	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	1.2	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	76	73	61	36	40

Petroleum Hydrocarbons

TPH (>EC5 - EC7) HS_ID_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (>EC7 - EC8) HS_ID_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (>EC8 - EC10) HS_ID_TOTAL	mg/kg	0.02	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
TPH (>EC10 - EC12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (>EC12 - EC16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	24	4.5	< 4.0	< 4.0	< 4.0
TPH (>EC16 - EC21) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	77	28	< 10	< 10	< 10
TPH (>EC21 - EC35) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	390	400	< 10	< 10	< 10
TPH (>EC35 - EC44) EH_CU_ID_TOTAL	mg/kg	10	NONE	75	810	< 10	< 10	< 10

TPH Total >EC5 - EC44 EH_CU+HS_ID_TOTAL	mg/kg	10	NONE	590	1200	< 10	< 10	< 10
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 24-034207

Project / Site name: Ickleford Mill

Your Order No: CRM.1027.189

Lab Sample Number				276167	276168	276169	276170
Sample Reference				WS112	WS113	WS114	WS115
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.30	0.40	0.30
Date Sampled				Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	35.5	< 0.1	59.9	< 0.1
Moisture Content	%	0.01	NONE	7.6	8.6	6.3	9.2
Total mass of sample received	kg	0.1	NONE	1.3	1.3	1.3	1.3

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	EWS	EWS	EWS	EWS
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	-

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	0.07
Acenaphthene	mg/kg	0.05	MCERTS	0.08	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.09	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.85	< 0.05	< 0.05	0.25
Anthracene	mg/kg	0.05	MCERTS	0.27	< 0.05	< 0.05	0.07
Fluoranthene	mg/kg	0.05	MCERTS	1.7	< 0.05	0.06	0.62
Pyrene	mg/kg	0.05	MCERTS	1.5	< 0.05	0.06	0.62
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.72	< 0.05	< 0.05	0.41
Chrysene	mg/kg	0.05	MCERTS	0.74	< 0.05	< 0.05	0.42
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.82	< 0.05	< 0.05	0.62
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.43	< 0.05	< 0.05	0.33
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.76	< 0.05	< 0.05	0.57
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.37	< 0.05	< 0.05	0.37
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.07	< 0.05	< 0.05	0.06
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.49	< 0.05	< 0.05	0.44

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	8.82	< 0.80	< 0.80	4.89
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Analytical Report Number: 24-034207

Project / Site name: Ickleford Mill

Your Order No: CRM.1027.189

Lab Sample Number				276167	276168	276169	276170
Sample Reference				WS112	WS113	WS114	WS115
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.30	0.40	0.30
Date Sampled				Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	27	32	22
Boron (water soluble)	mg/kg	0.2	MCERTS	2.9	0.8	2	2.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	29	24	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	15	15	19	24
Lead (aqua regia extractable)	mg/kg	1	MCERTS	26	13	42	57
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	17	40	24	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.3	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	73	83	92	110

Petroleum Hydrocarbons

TPH (>EC5 - EC7) HS_1D_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
TPH (>EC7 - EC8) HS_1D_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
TPH (>EC8 - EC10) HS_1D_TOTAL	mg/kg	0.02	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02
TPH (>EC10 - EC12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPH (>EC12 - EC16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
TPH (>EC16 - EC21) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	17	< 10	< 10	< 10
TPH (>EC21 - EC35) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	97	< 10	< 10	66
TPH (>EC35 - EC44) EH_CU_1D_TOTAL	mg/kg	10	NONE	160	< 10	< 10	110

TPH Total >EC5 - EC44 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	280	< 10	< 10	180
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



Analytical Report Number : 24-034207

Project / Site name: Ickleford Mill

* 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 *
276157	WS101	None Supplied	0.8	Brown clay and loam with gravel and vegetation
276158	WS103	None Supplied	0.4	Brown clay and loam with gravel and vegetation
276159	WS103A	None Supplied	0.7	Brown loam and sand with gravel and vegetation
276160	WS105	None Supplied	0.4	Brown clay and sand with gravel
276161	WS106	None Supplied	0.5	Brown loam and sand with gravel and vegetation
276162	WS107	None Supplied	1.9	Brown clay and sand with gravel
276163	WS108	None Supplied	0.8	Brown loam and gravel with vegetation and stones
276164	WS109	None Supplied	0.5	Brown clay and loam with vegetation
276165	WS110	None Supplied	0.7	Brown clay and sand with gravel
276166	WS111	None Supplied	1	Brown clay and loam with vegetation
276167	WS112	None Supplied	0.4	Brown sand with gravel and stones
276168	WS113	None Supplied	0.3	Brown clay and sand with gravel
276169	WS114	None Supplied	0.4	Brown loam with vegetation and stones
276170	WS115	None Supplied	0.3	Brown loam with gravel and vegetation

Analytical Report Number : 24-034207

Project / Site name: Ickleford Mill

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
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.	L019B	D	NONE
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	L038B	D	MCERTS
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	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazine followed by colorimetry	In-house method	L080	W	MCERTS

Analytical Report Number : 24-034207

Project / Site name: Ickleford Mill

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



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Analytical Report Number : 24-034208

Project / Site name:	Ickleford Mill	Samples received on:	24/07/2024
Your job number:	CRM.1027.189	Samples instructed on/ Analysis started on:	02/08/2024
Your order number:	CRM.1027.189	Analysis completed by:	13/08/2024
Report Issue Number:	1	Report issued on:	13/08/2024
Samples Analysed:	5 10:1 WAC samples		

Signed:

Joanna Szwagrzak
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



4041



Environmental Science

Analytical Report Number: 24-034208

Project / Site name: Ickleford Mill

Your Order No: CRM.1027.189

Lab Sample Number				276171	276172	276173	276174	276175
Sample Reference				WS101	WS103A	WS107	WS108	WS109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.70	1.90	0.80	0.50
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	49.7	< 0.1
Moisture Content	%	0.01	NONE	13	12	14	2.6	16
Total mass of sample received	kg	0.1	NONE	1.3	1.3	1.3	1.3	0.8

General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	8.1	8.2	9.9	9.2	8.2
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1	2.8	1.4	3.1	1.1
Loss on Ignition @ 450°C	%	0.2	MCERTS	2.5	6.5	3.1	5.5	3.6
Acid Neutralisation Capacity	mmol/kg	>999	NONE	26	11	210	15	120

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.09	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.07	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.15	0.1	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.11	0.09	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	1.7	0.5	0.25	0.13
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.54	0.11	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	3.8	1.2	0.74	0.43
Pyrene	mg/kg	0.05	MCERTS	< 0.05	3.2	1	0.72	0.38
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	1.8	0.67	0.38	0.28
Chrysene	mg/kg	0.05	MCERTS	< 0.05	2	0.81	0.41	0.22
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	2.1	0.86	0.46	0.32
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	1	0.37	0.29	0.11
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	2	0.7	0.5	0.25
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.96	0.38	0.28	0.17
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.26	0.12	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.96	0.41	0.37	0.2
Coronene	mg/kg	0.05	NONE	< 0.05	0.27	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	20.7	7.44	-	2.48
Total WAC-17 PAHs	mg/kg	0.85	NONE	< 0.85	21	7.44	4.4	2.48

Petroleum Hydrocarbons

Mineral Oil (EC10 - EC40) _{EH,CU,10,AL}	mg/kg	10	NONE	< 10	< 10	340	260	< 10
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VOCs

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Total BTEX	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
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PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001



Analytical Report Number: 24-034208

Project / Site name: Ickleford Mill

Your Order No: CRM.1027.189

Lab Sample Number				276171	276172	276173	276174	276175
Sample Reference				WS101	WS103A	WS107	WS108	WS109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	0.70	1.90	0.80	0.50
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		
PCB Congener 138				mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 153				mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 180				mg/kg	0.001	MCERTS	< 0.001	< 0.001
Total PCBs				mg/kg	0.007	MCERTS	< 0.007	< 0.007

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

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Waste Acceptance Criteria Analytical Results

Report No:	24-034208					
				Client: ENZYGOE		
Location	Ickleford Mill					
Lab Reference (Sample Number)	276171			Landfill Waste Acceptance Criteria		
Sampling Date	/ /			Limits		
Sample ID	WS101			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)	0.80					
Solid Waste Analysis						
TOC (%)**	1.0			3%	5%	6%
Loss on Ignition (%) **	2.5			--	--	10%
BTEX (µg/kg) **	< 5.0			6000	--	--
Sum of PCBs (mg/kg) **	< 0.007			1	--	--
Mineral Oil (mg/kg) EH, ID, CU, AL	< 10			500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85			100	--	--
pH (units)**	8.1			--	>6	--
Acid Neutralisation Capacity (mmol / kg)	26			--	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)				using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
	mg/l			mg/kg		
Arsenic *	0.00382			0.0382	0.5	2
Barium *	0.00864			0.0864	20	100
Cadmium *	< 0.000100			< 0.00100	0.04	1
Chromium *	0.00097			0.0097	0.5	10
Copper *	0.0036			0.036	2	50
Mercury *	< 0.000500			< 0.00500	0.01	0.2
Molybdenum *	0.00539			0.0539	0.5	10
Nickel *	0.00092			0.0092	0.4	10
Lead *	< 0.0010			< 0.010	0.5	10
Antimony *	< 0.0017			< 0.017	0.06	0.7
Selenium *	< 0.0040			< 0.040	0.1	0.5
Zinc *	0.0019			0.019	4	50
Chloride *	3.3			33	800	15000
Fluoride*	0.12			1.2	10	150
Sulphate *	39			390	1000	20000
TDS*	110			1100	4000	60000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-
DOC	17.6			176	500	800
Leach Test Information						
Stone Content (%)	< 0.1					
Sample Mass (kg)	1.3					
Dry Matter (%)	87					
Moisture (%)	13					
Results are expressed on a dry weight basis, after correction for moisture content where applicable.						
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation						

*= UKAS accredited (liquid eluate analysis only)

** = MCERTS accredited

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Waste Acceptance Criteria Analytical Results

Report No:	24-034208						
				Client: ENZYGOGEO			
Location	Ickleford Mill						
Lab Reference (Sample Number)	276172			Landfill Waste Acceptance Criteria			
Sampling Date	/ /			Limits			
Sample ID	WS103A			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Depth (m)	0.70						
Solid Waste Analysis							
TOC (%)**	2.8			3%	5%	6%	
Loss on Ignition (%) **	6.5			--	--	10%	
BTEX (µg/kg) **	< 5.0			6000	--	--	
Sum of PCBs (mg/kg) **	< 0.007			1	--	--	
Mineral Oil (mg/kg) EH, ID, CU, AL	< 10			500	--	--	
Total PAH (WAC-17) (mg/kg)	21.0			100	--	--	
pH (units)**	8.2			--	>6	--	
Acid Neutralisation Capacity (mmol / kg)	11			--	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)					using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
	mg/l			mg/kg			
Arsenic *	0.00139			0.0139	0.5	2	25
Barium *	0.0116			0.116	20	100	300
Cadmium *	< 0.000100			< 0.00100	0.04	1	5
Chromium *	0.0019			0.019	0.5	10	70
Copper *	0.0069			0.069	2	50	100
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2
Molybdenum *	< 0.000400			< 0.00400	0.5	10	30
Nickel *	0.00098			0.0098	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 *	0.0034			0.034	4	50	200
Chloride *	2.5			25	800	15000	25000
Fluoride*	0.43			4.3	10	150	500
Sulphate *	5.9			59	1000	20000	50000
TDS*	62			620	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	13.3			133	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.3						
Dry Matter (%)	88						
Moisture (%)	12						
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			

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Waste Acceptance Criteria Analytical Results

Report No:	24-034208					
				Client: ENZYGOE		
Location	Ickleford Mill					
Lab Reference (Sample Number)	276173			Landfill Waste Acceptance Criteria		
Sampling Date	/ /			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS107					
Depth (m)	1.90					
Solid Waste Analysis						
TOC (%)**	1.4			3%	5%	6%
Loss on Ignition (%) **	3.1			--	--	10%
BTEX (µg/kg) **	< 5.0			6000	--	--
Sum of PCBs (mg/kg) **	< 0.007			1	--	--
Mineral Oil (mg/kg) EH, ID, CU, AL	340			500	--	--
Total PAH (WAC-17) (mg/kg)	7.44			100	--	--
pH (units)**	9.9			--	>6	--
Acid Neutralisation Capacity (mmol / kg)	210			--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1		10:1	Limit values for compliance leaching test		
	mg/l		mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0207		0.207	0.5	2	25
Barium *	0.0199		0.199	20	100	300
Cadmium *	< 0.000100		< 0.00100	0.04	1	5
Chromium *	0.00081		0.0081	0.5	10	70
Copper *	0.025		0.25	2	50	100
Mercury *	< 0.000500		< 0.00500	0.01	0.2	2
Molybdenum *	0.0145		0.145	0.5	10	30
Nickel *	0.0074		0.074	0.4	10	40
Lead *	0.0038		0.038	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 *	0.0034		0.034	4	50	200
Chloride *	48		480	800	15000	25000
Fluoride*	0.20		2.0	10	150	500
Sulphate *	220		2200	1000	20000	50000
TDS*	140		1400	4000	60000	100000
Phenol Index (Monohydric Phenols) *	0.021		0.21	1	-	-
DOC	18.9		189	500	800	1000
Leach Test Information						
Stone Content (%)	< 0.1					
Sample Mass (kg)	1.3					
Dry Matter (%)	86					
Moisture (%)	14					
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		

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Waste Acceptance Criteria Analytical Results

Report No:	24-034208					
				Client: ENZYGOE		
Location	Ickleford Mill					
Lab Reference (Sample Number)	276174			Landfill Waste Acceptance Criteria		
Sampling Date	/ /			Limits		
Sample ID	WS108			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)	0.80					
Solid Waste Analysis						
TOC (%)**	3.1			3%	5%	6%
Loss on Ignition (%) **	5.5			--	--	10%
BTEX (µg/kg) **	< 5.0			6000	--	--
Sum of PCBs (mg/kg) **	< 0.007			1	--	--
Mineral Oil (mg/kg) EH, ID, CU, AL	260			500	--	--
Total PAH (WAC-17) (mg/kg)	4.40			100	--	--
pH (units)**	9.2			--	>6	--
Acid Neutralisation Capacity (mmol / kg)	15			--	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 *	0.00343		0.0343	0.5	2	25
Barium *	0.00709		0.0709	20	100	300
Cadmium *	< 0.000100		< 0.00100	0.04	1	5
Chromium *	0.00060		0.0060	0.5	10	70
Copper *	0.010		0.10	2	50	100
Mercury *	< 0.000500		< 0.00500	0.01	0.2	2
Molybdenum *	0.00101		0.0101	0.5	10	30
Nickel *	0.00094		0.0094	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 *	0.0032		0.032	4	50	200
Chloride *	2.7		27	800	15000	25000
Fluoride*	0.21		2.1	10	150	500
Sulphate *	23		230	1000	20000	50000
TDS*	79		790	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010		< 0.10	1	-	-
DOC	12.9		129	500	800	1000
Leach Test Information						
Stone Content (%)	49.7					
Sample Mass (kg)	1.3					
Dry Matter (%)	97					
Moisture (%)	2.6					
Results are expressed on a dry weight basis, after correction for moisture content where applicable.						
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation						
				** = MCERTS accredited		

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Waste Acceptance Criteria Analytical Results

Report No:	24-034208					
				Client: ENZYGOE		
Location	Ickleford Mill					
Lab Reference (Sample Number)	276175			Landfill Waste Acceptance Criteria		
Sampling Date	/ /			Limits		
Sample ID	WS109			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)	0.50					
Solid Waste Analysis						
TOC (%)**	1.1			3%	5%	6%
Loss on Ignition (%) **	3.6			--	--	10%
BTEX (µg/kg) **	< 5.0			6000	--	--
Sum of PCBs (mg/kg) **	< 0.007			1	--	--
Mineral Oil (mg/kg) EH, ID, CU, AL	< 10			500	--	--
Total PAH (WAC-17) (mg/kg)	2.48			100	--	--
pH (units)**	8.2			--	>6	--
Acid Neutralisation Capacity (mmol / kg)	120			--	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)					using BS EN 12457-2 at L/S 10 l/kg (mg/kg)	
	mg/l			mg/kg		
Arsenic *	< 0.00100			< 0.0100	0.5	2
Barium *	0.0160			0.160	20	100
Cadmium *	< 0.000100			< 0.00100	0.04	1
Chromium *	0.0020			0.020	0.5	10
Copper *	0.0081			0.081	2	50
Mercury *	< 0.000500			< 0.00500	0.01	0.2
Molybdenum *	0.00130			0.0130	0.5	10
Nickel *	0.0037			0.037	0.4	10
Lead *	< 0.0010			< 0.010	0.5	10
Antimony *	< 0.0017			< 0.017	0.06	0.7
Selenium *	< 0.0040			< 0.040	0.1	0.5
Zinc *	0.0068			0.068	4	50
Chloride *	3.2			32	800	15000
Fluoride*	0.50			5.0	10	150
Sulphate *	3.0			30	1000	20000
TDS*	62			620	4000	60000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-
DOC	17.0			170	500	800
Leach Test Information						
Stone Content (%)	< 0.1					
Sample Mass (kg)	0.8					
Dry Matter (%)	84					
Moisture (%)	16					
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		

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Analytical Report Number : 24-034208

Project / Site name: Ickleford Mill

* 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 *
276171	WS101	None Supplied	0.8	Brown clay and loam with gravel and vegetation
276172	WS103A	None Supplied	0.7	Brown loam and sand with gravel and vegetation
276173	WS107	None Supplied	1.9	Brown clay and sand with gravel
276174	WS108	None Supplied	0.8	Brown loam and gravel with vegetation and stones
276175	WS109	None Supplied	0.5	Brown clay and loam with vegetation

Analytical Report Number : 24-034208

Project / Site name: Ickleford Mill

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH at 20°C in soil	Determination of pH in soil by addition of water followed by electrometric measurement	In-house method	L005B	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 (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
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.	L019B	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
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	L031B	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1 ratio 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	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR Analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	NONE
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	L039B	W	ISO 17025
Sample Preparation		In-house method	L043B	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 on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046B	W	NONE
Loss on ignition of soil @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	In-house method	L047	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	NONE

Analytical Report Number : 24-034208

Project / Site name: Ickleford Mill

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

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

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



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Analytical Report Number : 24-034759

Project / Site name:	Ickleford Mill	Samples received on:	24/07/2024
Your job number:	CRM.1027.189	Samples instructed on/ Analysis started on:	02/08/2024
Your order number:	CRM.1027.189	Analysis completed by:	12/08/2024
Report Issue Number:	1	Report issued on:	12/08/2024
Samples Analysed:	5 soil samples		

Signed:

Joanna Szwagrzak
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

Analytical Report Number: 24-034759
Project / Site name: Ickleford Mill
Your Order No: CRM.1027.189

Lab Sample Number				279166	279167	279168	279169	279170
Sample Reference				WS101	WS103	WS107	WS107	WS108
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.65	2.30	0.50
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	39.6	< 0.1	59.6	< 0.1	49.7
Moisture Content	%	0.01	NONE	6.9	16	13	16	6.5
Total mass of sample received	kg	0.1	NONE	0.5	0.4	0.5	0.4	0.5

Asbestos

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.07	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.05	< 0.05	0.08	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.56	1.2	0.67	0.3
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.13	0.38	0.12	0.07
Fluoranthene	mg/kg	0.05	MCERTS	0.07	0.72	2	1.1	0.91
Pyrene	mg/kg	0.05	MCERTS	0.06	0.58	1.8	0.9	0.86
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.08	0.31	0.81	0.57	0.49
Chrysene	mg/kg	0.05	MCERTS	0.07	0.29	0.85	0.52	0.52
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.1	0.3	0.88	0.55	0.74
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.15	0.44	0.36	0.25
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.26	0.8	0.54	0.58
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.06	0.14	0.39	0.28	0.32
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.09	0.08	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.08	0.15	0.46	0.33	0.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	3.64	10.1	6.14	5.44
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Analytical Report Number: 24-034759

Project / Site name: Ickleford Mill

Your Order No: CRM.1027.189

Lab Sample Number				279166	279167	279168	279169	279170
Sample Reference				WS101	WS103	WS107	WS107	WS108
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.65	2.30	0.50
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	25	11	19	14	10
Boron (water soluble)	mg/kg	0.2	MCERTS	1.2	1.4	4.4	1.9	2.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	26	21	33	24	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	35	11	22	12	18
Lead (aqua regia extractable)	mg/kg	1	MCERTS	26	17	58	22	32
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	30	21	24	23	18
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	180	49	84	63	69

Petroleum Hydrocarbons

TPH (>EC5 - EC7) HS_1D_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (>EC7 - EC8) HS_1D_TOTAL	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (>EC8 - EC10) HS_1D_TOTAL	mg/kg	0.02	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
TPH (>EC10 - EC12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	130	2.4	< 2.0
TPH (>EC12 - EC16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	< 4.0	14	550	13	< 4.0
TPH (>EC16 - EC21) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	20	1500	32	12
TPH (>EC21 - EC35) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	20	20	550	180	240
TPH (>EC35 - EC44) EH_CU_1D_TOTAL	mg/kg	10	NONE	< 10	< 10	26	41	560

TPH Total >EC5 - EC44 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	35	61	1200	270	810
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-034759

Project / Site name: Ickleford Mill

* 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 *
279166	WS101	None Supplied	0.5	Brown gravelly sand with stones
279167	WS103	None Supplied	0.5	Brown clay with gravel
279168	WS107	None Supplied	0.65	Brown gravelly clay with stones
279169	WS107	None Supplied	2.3	Brown clay with gravel
279170	WS108	None Supplied	0.5	Brown sand with gravel and vegetation

Analytical Report Number : 24-034759

Project / Site name: Ickleford Mill

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
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.	L019B	D	NONE
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	L038B	D	MCERTS
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	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	MCERTS

Analytical Report Number : 24-034759

Project / Site name: Ickleford Mill

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080	W	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



4041



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Analytical Report Number : 24-035012

Project / Site name: Ickleford Mill

Samples received on: 07/08/2024

Your job number: CRM-1027-189

**Samples instructed on/
Analysis started on:** 07/08/2024

Your order number: CRM-1027-189

Analysis completed by: 16/08/2024

Report Issue Number: 1

Report issued on: 16/08/2024

Samples Analysed: 10 water samples

Signed:

Claire Bancroft
Customer Service Advisor
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.



4041



Analytical Report Number: 24-035012
Project / Site name: Ickleford Mill

Your Order No: CRM-1027-189

Lab Sample Number				280181	280182	280183	280184	280185
Sample Reference				WS101	WS103	WS105	WS107	WS109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.15	1.40	1.60	1.72	2.10
Date Sampled				07/08/2024	07/08/2024	06/08/2024	06/08/2024	06/08/2024
Time Taken				0915	0809	1602	1233	1140
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status					

General Inorganics

Alkalinity as CaCO ₃	mgCaCO ₃ /l	3	ISO 17025	250	220	430	410	430
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	15	23	35	110	26
BOD (Biochemical Oxygen Demand) (Total) - PL (L086B)	mg/l	1	ISO 17025	4.1	5.7	10	7.5	13
Hardness - Total	mgCaCO ₃ /l	1	ISO 17025	824	523	384	198	459

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
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	0.12	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	0.07	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	0.13	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	0.07	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
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
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

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	0.39	< 0.16
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.48	2.9	8.3	10.6	7.91
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	1.3	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	3	< 0.5	< 0.5	1	< 0.5
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	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	9.5	2.4	7.3	10	< 0.5
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6	1.5	< 0.6	9.5	< 0.6
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	5.5	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	12	5.6	3	2.4	0.8

Boron (dissolved)	µg/l	10	ISO 17025	140	56	170	120	37
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0



4041



Analytical Report Number: 24-035012
Project / Site name: Ickleford Mill

Your Order No: CRM-1027-189

Lab Sample Number				280181	280182	280183	280184	280185
Sample Reference				WS101	WS103	WS105	WS107	WS109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.15	1.40	1.60	1.72	2.10
Date Sampled				07/08/2024	07/08/2024	06/08/2024	06/08/2024	06/08/2024
Time Taken				0915	0809	1602	1233	1140
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC12 - EC16 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC16 - EC21 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC21 - EC35 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH - Aromatic >EC5 - EC7 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aromatic >EC12 - EC16 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aromatic >EC16 - EC21 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aromatic >EC21 - EC35 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aromatic >EC5 - EC35 _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0

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



4041



Analytical Report Number: 24-035012
Project / Site name: Ickleford Mill

Your Order No: CRM-1027-189

Lab Sample Number				280186	280187	280188	280189	280190
Sample Reference				WS110	WS111	BH01	BH03	BH04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.85	1.95	12.20	2.10	1.71
Date Sampled				06/08/2024	06/08/2024	07/08/2024	06/07/2028	06/08/2024
Time Taken				1259	1344	1024	1422	1140
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status					

General Inorganics

Alkalinity as CaCO ₃	mgCaCO ₃ /l	3	ISO 17025	280	400	110	270	350
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	17	16000	23	22	32
BOD (Biochemical Oxygen Demand) (Total) - PL (L086B)	mg/l	1	ISO 17025	4.4	3.3	8.3	5.1	5.5
Hardness - Total	mgCaCO ₃ /l	1	ISO 17025	426	445	494	322	417

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
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
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
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
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
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
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

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	5.23	2.62	1.94	3.73	5.47
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.02	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.3	< 0.2	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	0.8	2.6	1.8	1	< 0.5
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.2	< 0.2	< 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	13	3.6	25	10	21
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6	7.8	9.9	< 0.6	1.2
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.3	1.5	2.9	0.2	1.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	11	5	4.2	2.5	2.6

Boron (dissolved)	µg/l	10	ISO 17025	61	87	110	110	120
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0



4041



Analytical Report Number: 24-035012
Project / Site name: Ickleford Mill

Your Order No: CRM-1027-189

Lab Sample Number				280186	280187	280188	280189	280190
Sample Reference				WS110	WS111	BH01	BH03	BH04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.85	1.95	12.20	2.10	1.71
Date Sampled				06/08/2024	06/08/2024	07/08/2024	06/07/2028	06/08/2024
Time Taken				1259	1344	1024	1422	1140
Analytical Parameter (Water Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Petroleum Hydrocarbons

TPH - Aliphatic >EC5 - EC6 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC6 - EC8 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC12 - EC16 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC16 - EC21 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC21 - EC35 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic >EC5 - EC35 _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH - Aromatic >EC5 - EC7 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aromatic >EC12 - EC16 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aromatic >EC16 - EC21 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aromatic >EC21 - EC35 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aromatic >EC5 - EC35 _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0

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



4041



Analytical Report Number : 24-035012

Project / Site name: Ickleford Mill

Water matrix abbreviations:

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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	L012B	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	L039B	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045B	W	ISO 17025
Chemical Oxygen Demand in water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065	W	ISO 17025
Total petroleum hydrocarbons with carbon banding by GC-MS in water	Determination of total petroleum hydrocarbons in water by GC-MS/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L070B	W	NONE
BTEX and/or 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 USEPA 8260	L073B	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW	L080	W	ISO 17025
Alkalinity in water (by discrete analyser)	Determination of Alkalinity by discrete analyser (colorimetry). Accredited matrices: SW,PW, GW,FSE,LL	In-house method based on MEWAM & USEPA Method 310.2	L082B	W	ISO 17025
Biological oxygen demand (total) of water	Determination of biochemical oxygen demand in water (5 days). Accredited matrices: SW, PW, GW	In-house method based on standard method 5210B	L086B	W	ISO 17025
Total petroleum hydrocarbons by GC-MS HS in water	Determination of total petroleum hydrocarbons in water by GC-MS HS	In-house method	L088B	W	ISO 17025



4041



Analytical Report Number : 24-035012
Project / Site name: Ickleford Mill

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated PAHs and/or Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds (including PAH) in leachate by extraction in dichloromethane followed by GC-MS	In-house method based on USEPA 8270	L102B	W	ISO 17025

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

Enzygo Geoenvironmental Ltd
The Byre
Woodend Lane
Cromhall
Gloucestershire
GL12 8AA

e: Richard.hamilton@enzygo.com

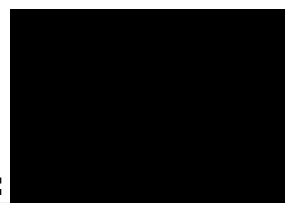
i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

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

Analytical Report Number : 24-035270

Project / Site name:	Ickleford Mill	Samples received on:	07/08/2024
Your job number:	CRM.1027.189	Samples instructed on/ Analysis started on:	08/08/2024
Your order number:	CRM.1027.189	Analysis completed by:	16/08/2024
Report Issue Number:	1	Report issued on:	16/08/2024
Samples Analysed:	7 soil samples		

Signed:



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

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

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

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

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

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: 24-035270
Project / Site name: Ickleford Mill
Your Order No: CRM.1027.189

Lab Sample Number				281441	281442	281443	281444	281445
Sample Reference				WS114	BH103	BH103	BH103	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.75	2.75	6.00	9.00
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.6	17	16	11	12
Total mass of sample received	kg	0.1	NONE	0.8	1.3	0.8	0.8	1

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.2	8.4	8.3	8.1	8
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	27	370	220	590	890
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	13.4	184	110	294	443

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



Analytical Report Number: 24-035270
Project / Site name: Ickleford Mill
Your Order No: CRM.1027.189

Lab Sample Number				281446	281447
Sample Reference				BH103	BH103
Sample Number				None Supplied	None Supplied
Depth (m)				15.00	20.00
Date Sampled				Deviating	Deviating
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection
				Test Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	16
Total mass of sample received	kg	0.1	NONE	1.1	1.1

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.2	8.4
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	1100	590
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	543	297

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



Analytical Report Number : 24-035270
Project / Site name: Ickleford Mill

* 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 *
281441	WS114	None Supplied	0.5	Brown loam and sand with gravel and vegetation
281442	BH103	None Supplied	1.75	Brown clay
281443	BH103	None Supplied	2.75	Brown clay
281444	BH103	None Supplied	6	Brown clay
281445	BH103	None Supplied	9	Brown clay
281446	BH103	None Supplied	15	Brown clay
281447	BH103	None Supplied	20	Brown clay

Analytical Report Number : 24-035270
Project / Site name: Ickleford Mill

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
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.	L019B	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS

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

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
 The result for sum should be interpreted with caution

Appendix 4 – Geotechnical Testing

Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 13/08/2024
Sampled By: Not Given

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

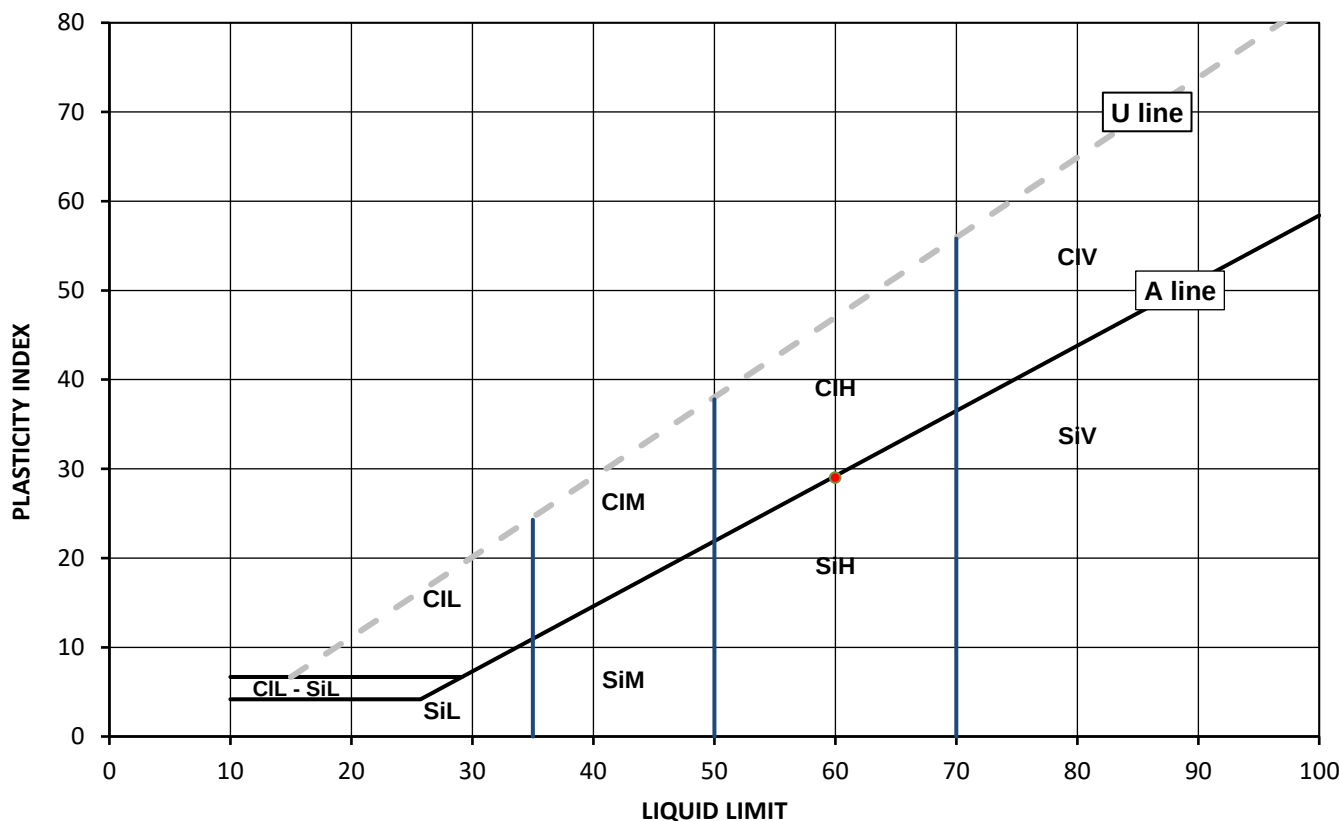
Test Results:

Laboratory Reference: 281416
Hole No.: WS103A
Sample Reference: Not Given
Sample Description: Brown slightly gravelly slightly silty CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
21.5	60	1.018	31	29	-0.31	1.31	69



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

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

Note: Water Content by BS EN 17892-1: 2014; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

Remarks:

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

Signed:

[Signature]

Katarzyna Koziel
Senior Reporting Specialist

for and on behalf of i2 Analytical Ltd

Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 13/08/2024
Sampled By: Not Given

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

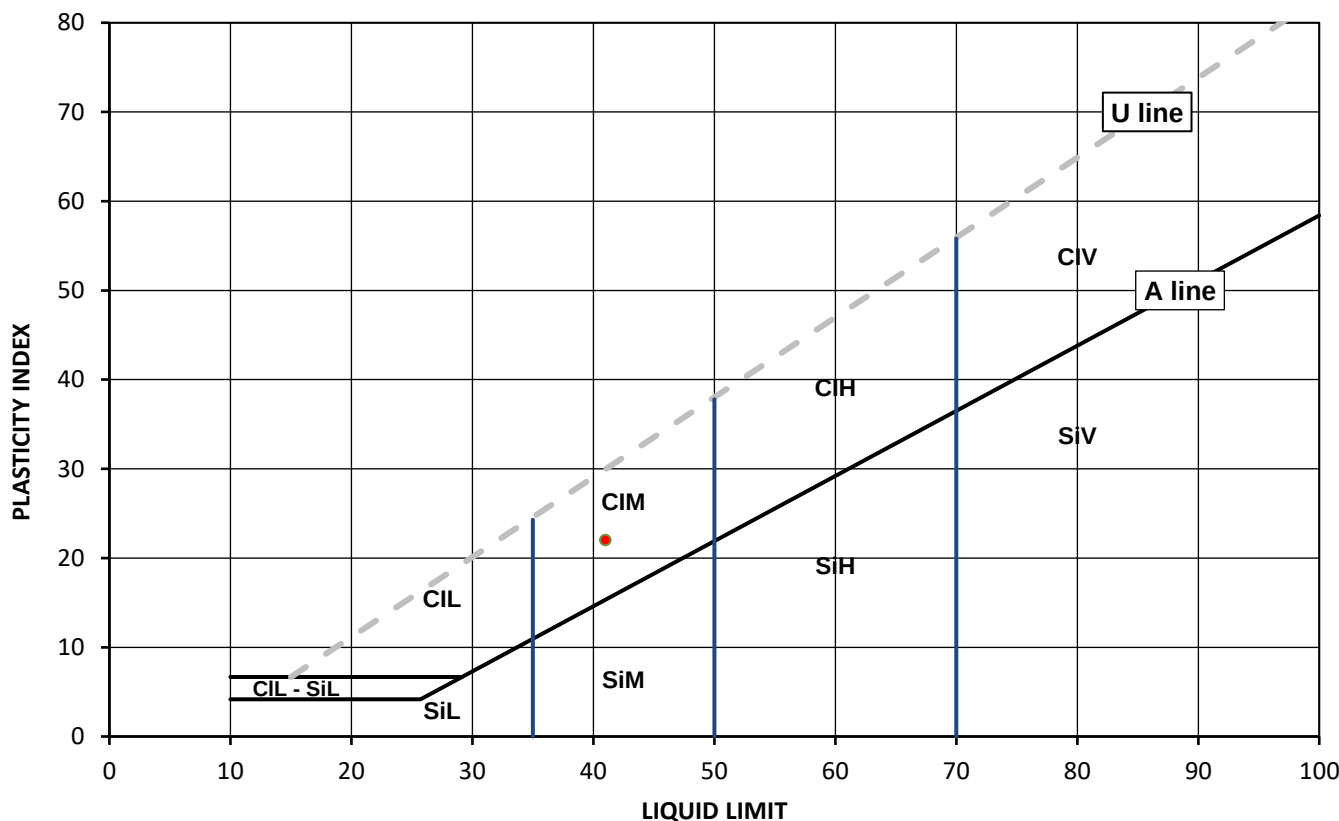
Test Results:

Laboratory Reference: 281420
Hole No.: WS113
Sample Reference: Not Given
Sample Description: Brown very gravelly sandy CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
12.3	41	1.058	19	22	-0.32	1.32	39



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

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

Note: Water Content by BS EN 17892-1: 2014; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

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Signed:

[Signature]

Katarzyna Koziel
Senior Reporting Specialist

for and on behalf of i2 Analytical Ltd

Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 13/08/2024
Sampled By: Not Given

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

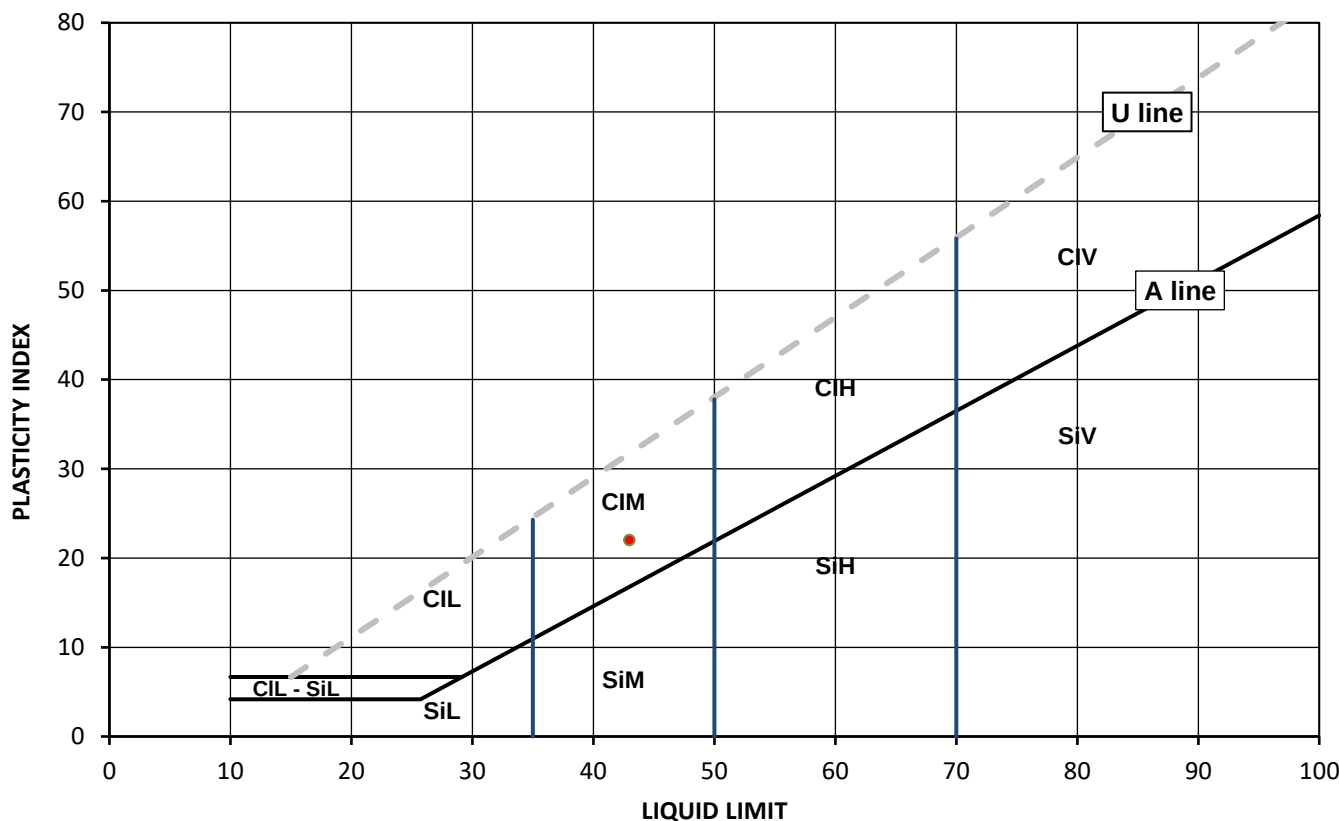
Test Results:

Laboratory Reference: 281422
Hole No.: WS115
Sample Reference: Not Given
Sample Description: Brown slightly gravelly sandy CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
12.1	43	0.984	21	22	-0.41	1.41	71



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

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

Note: Water Content by BS EN 17892-1: 2014; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

Remarks:

Signed:

Katarzyna Koziel
Senior Reporting Specialist

for and on behalf of i2 Analytical Ltd

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Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 13/08/2024
Sampled By: Not Given

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

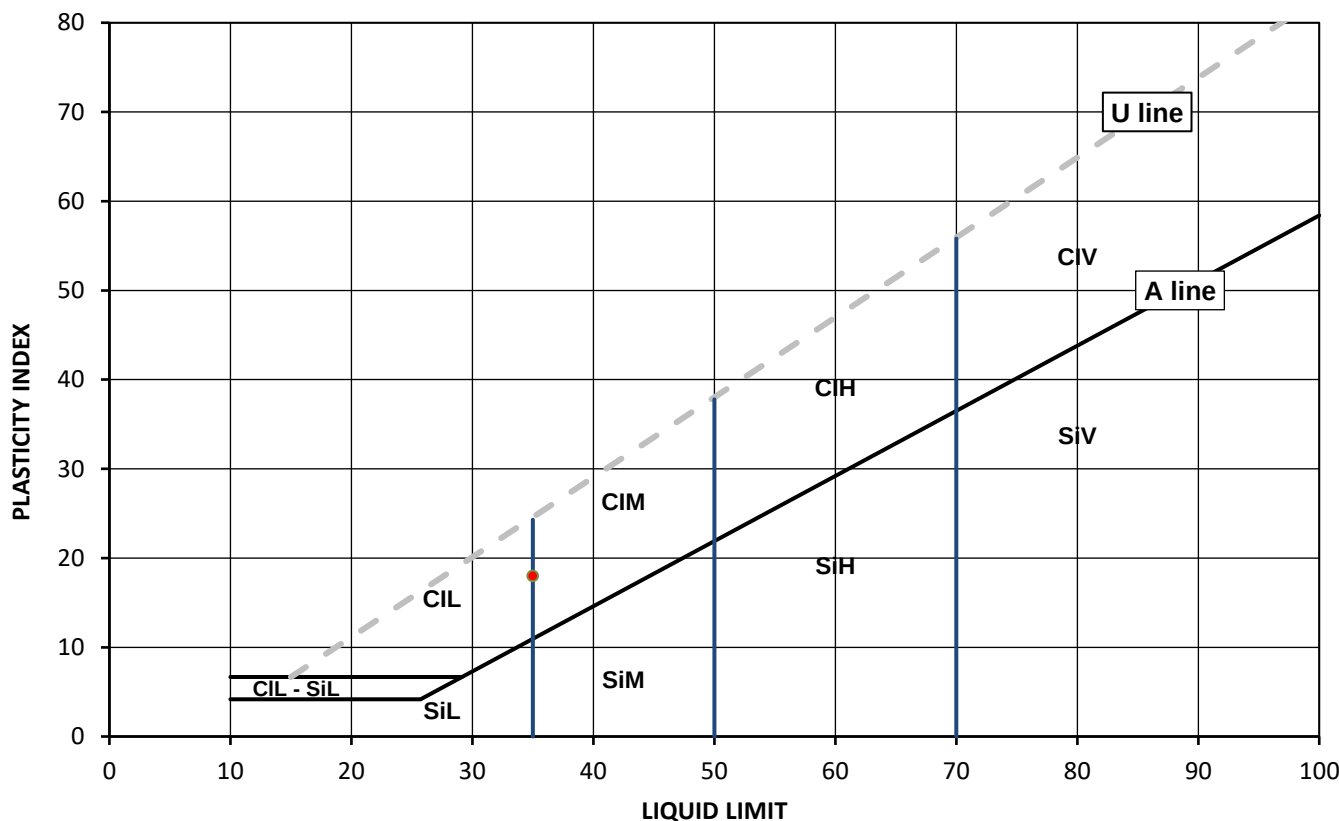
Test Results:

Laboratory Reference: 281426
Hole No.: BH103
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly sandy CLAY with fragments of chalk

Sample Preparation: Tested after >0.425 mm removed by hand;
Cone Type: 80g/30deg

Depth Top [m]: 6.00
Depth Base [m]: Not Given
Sample Type: D

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
15.4	35	1.000	17	18	-0.11	1.11	91



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

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

Note: Water Content by BS EN 17892-1: 2014; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

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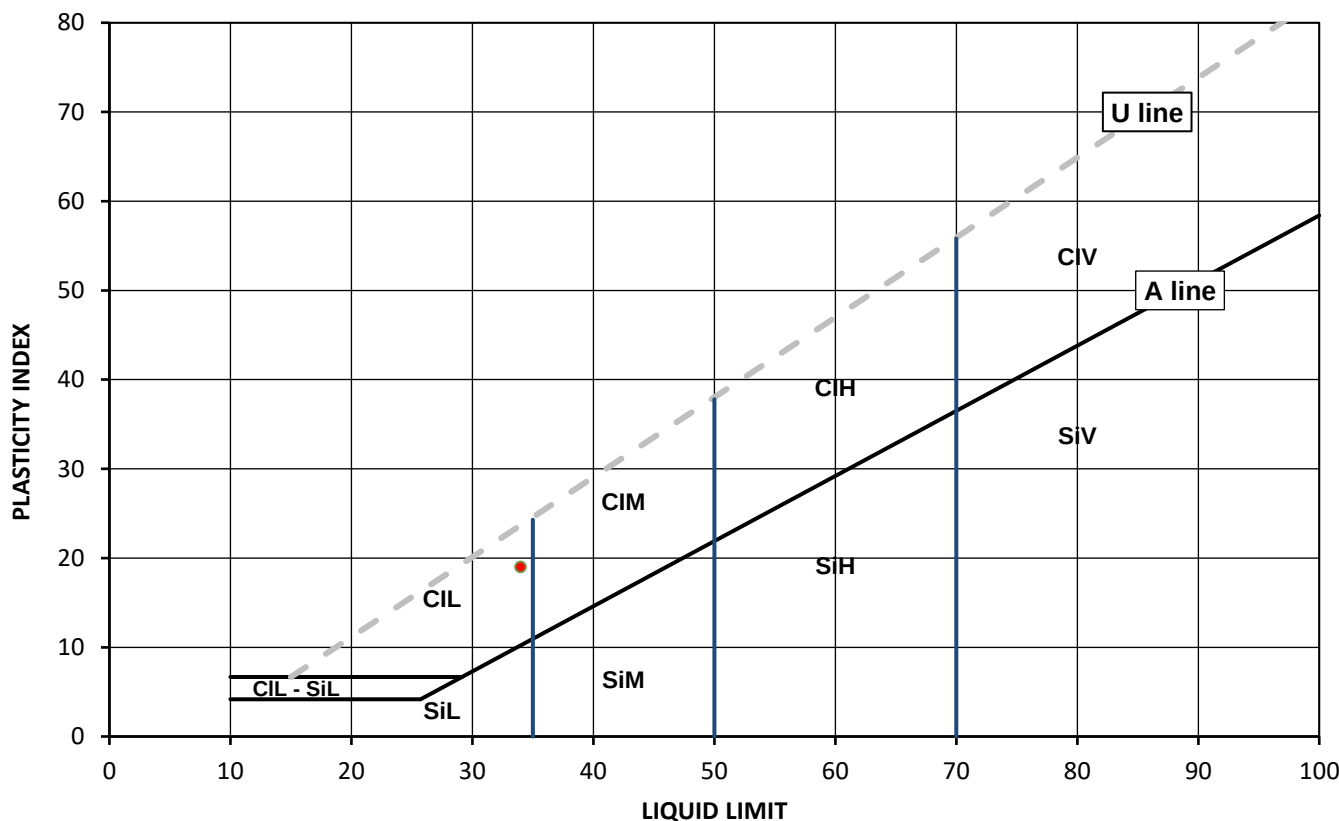
Test Results:

Laboratory Reference: 281427
Hole No.: BH103
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly very sandy CLAY with fragments of chalk

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

Depth Top [m]: 11.00
Depth Base [m]: Not Given
Sample Type: D

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
16.5	34	1.042	15	19	0.11	0.89	83



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

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

Note: Water Content by BS EN 17892-1: 2014; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

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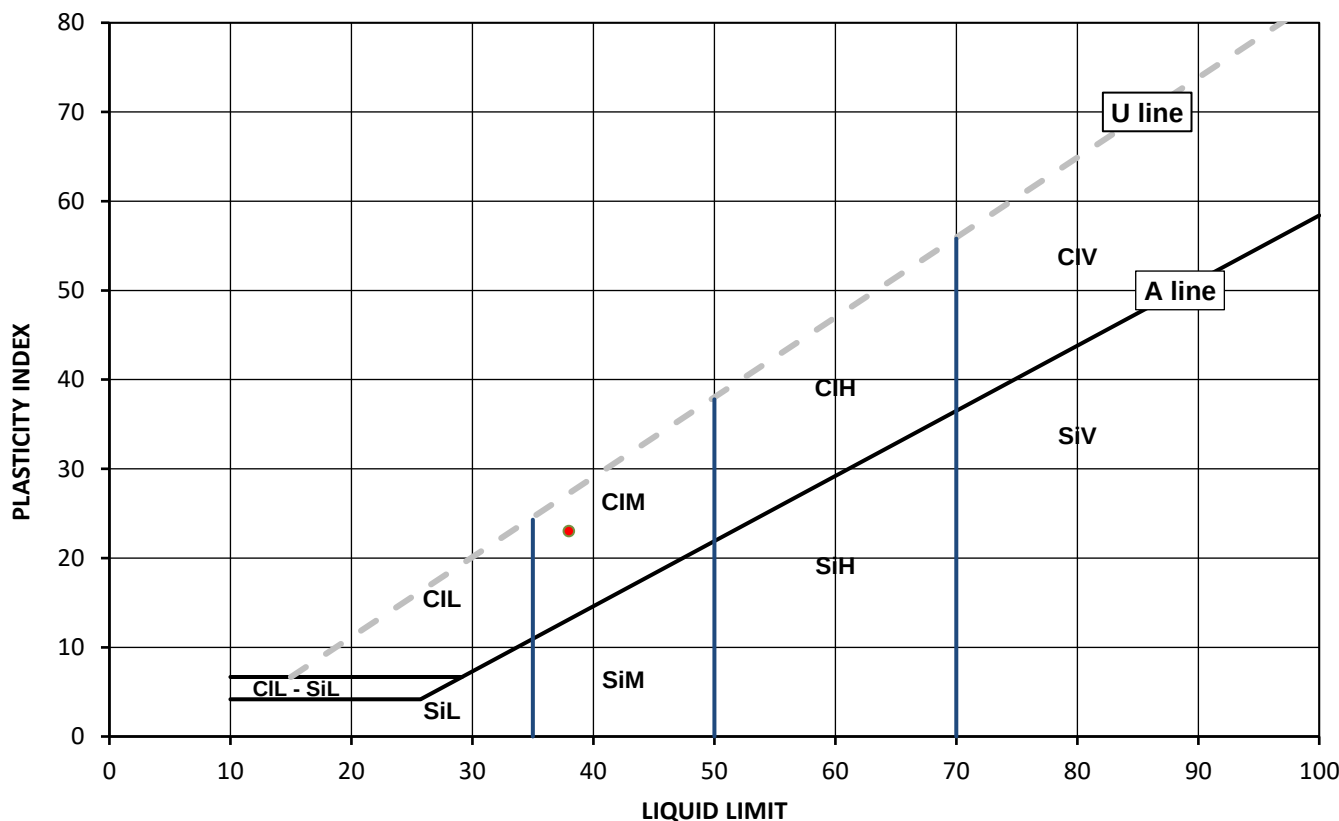
Test Results:

Laboratory Reference: 281428
Hole No.: BH103
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly sandy CLAY with fragments of chalk

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

Depth Top [m]: 18.00
Depth Base [m]: Not Given
Sample Type: D

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
16.4	38	1.058	15	23	0.04	0.96	89



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

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

Note: Water Content by BS EN 17892-1: 2014; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

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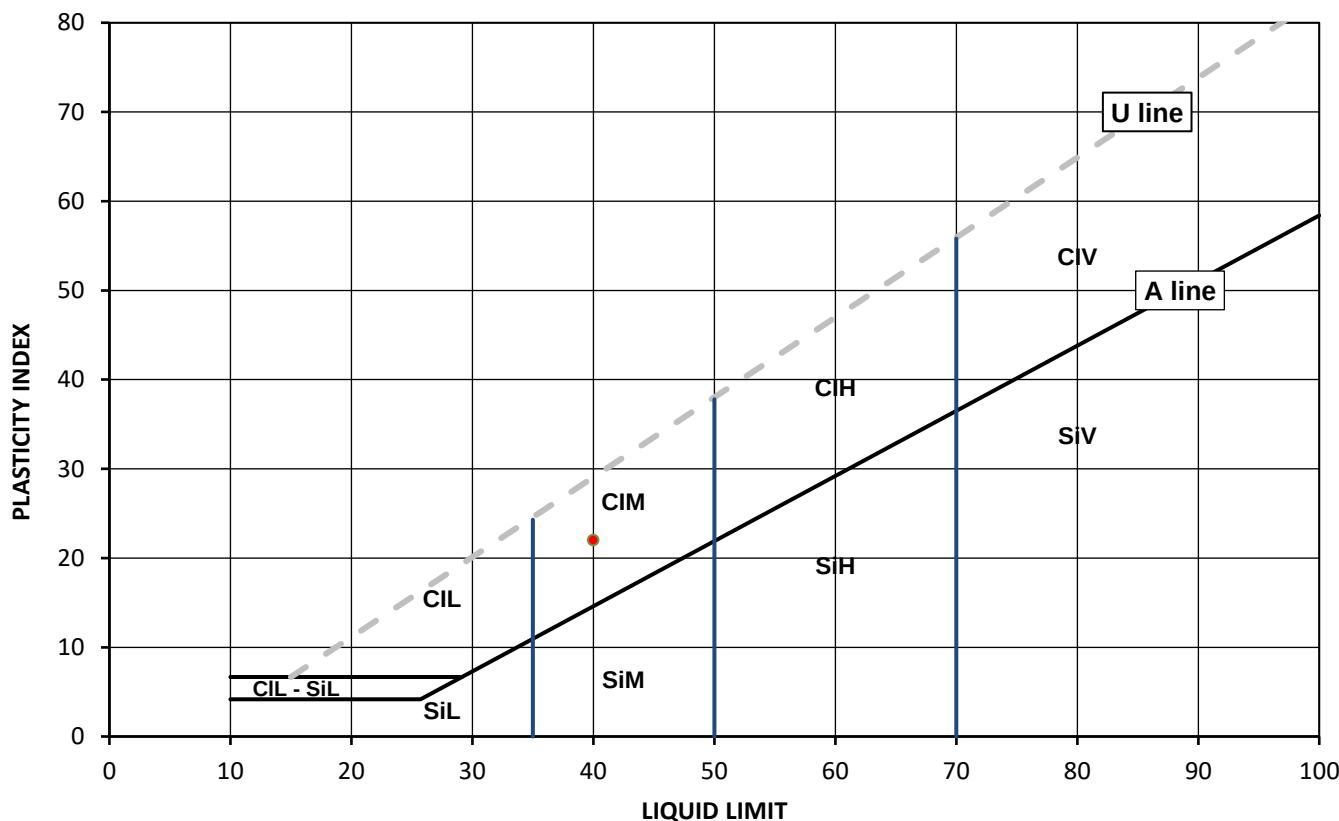
Test Results:

Laboratory Reference: 281429
Hole No.: BH102A
Sample Reference: Not Given
Sample Description: Dark brown slightly gravelly sandy CLAY with fragments of chalk

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

Depth Top [m]: 2.00
Depth Base [m]: Not Given
Sample Type: U

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
17.4	40	0.984	18	22	-0.05	1.05	80



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

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

Note: Water Content by BS EN 17892-1: 2014; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

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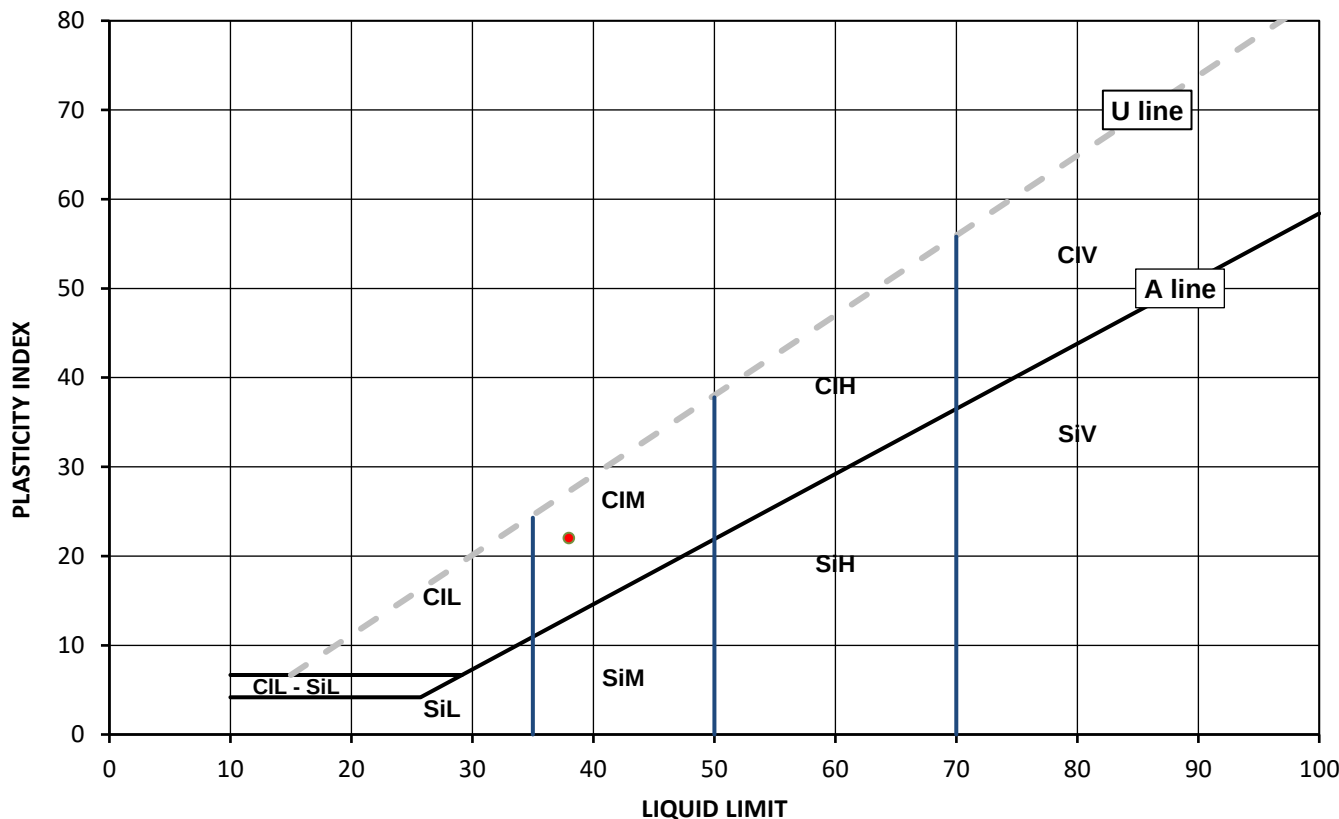
Test Results:

Laboratory Reference: 281430
Hole No.: BH102A
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly sandy CLAY with fragments of chalk

Depth Top [m]: 3.75
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
15.5	38	1.023	16	22	0.00	1.00	99



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

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

Note: Water Content by BS EN 17892-1: 2014; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

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Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 13/08/2024
Sampled By: Not Given

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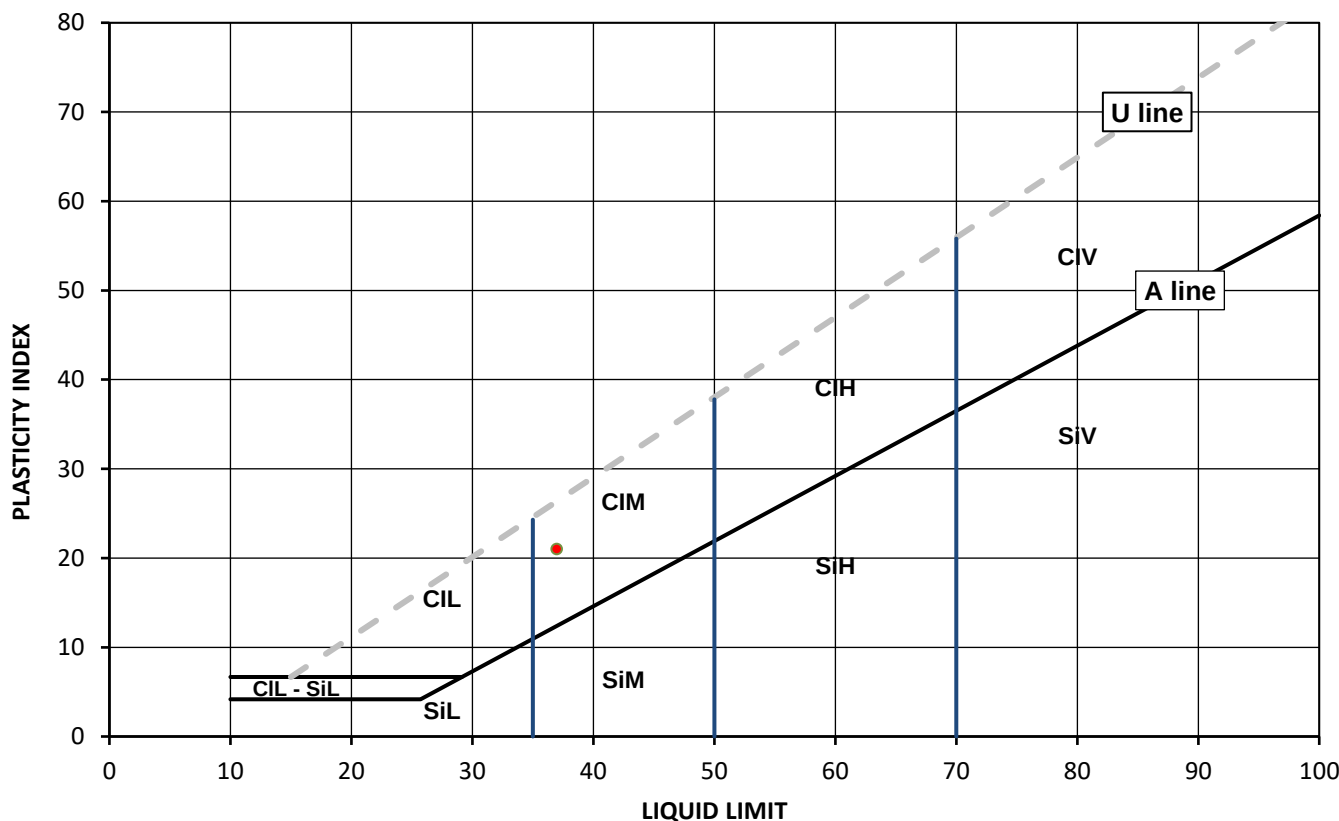
Test Results:

Laboratory Reference: 281431
Hole No.: BH102A
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly sandy CLAY with fragments of chalk

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

Depth Top [m]: 9.00
Depth Base [m]: Not Given
Sample Type: D

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
18.2	37	1.039	16	21	0.10	0.90	95



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

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

Note: Water Content by BS EN 17892-1: 2014; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

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Contact: Richard Hamilton
Site Address: Ickleford Mill

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Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
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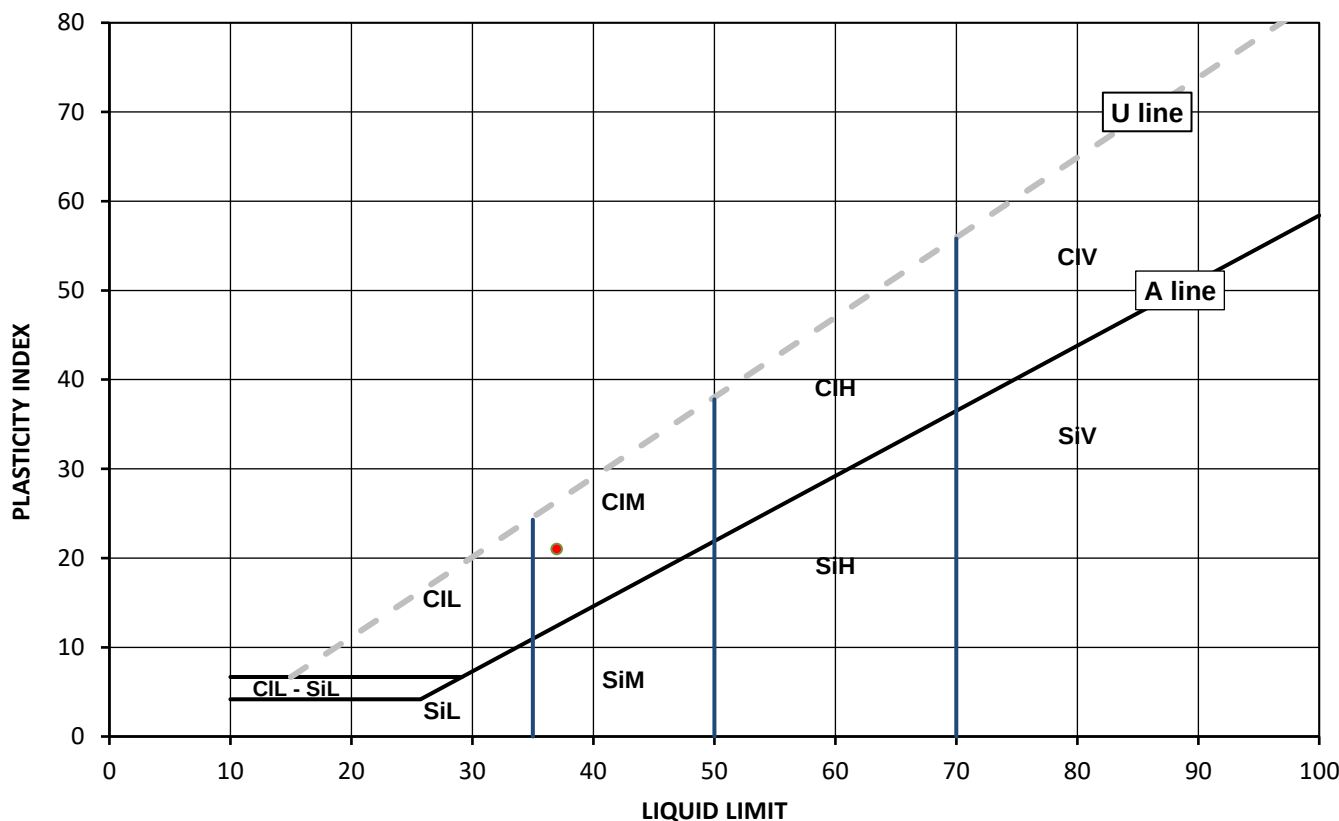
Test Results:

Laboratory Reference: 281432
Hole No.: BH102A
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly sandy CLAY with fragments of chalk

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

Depth Top [m]: 12.50
Depth Base [m]: Not Given
Sample Type: D

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
21.7	37	1.039	16	21	0.29	0.71	86



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

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

Note: Water Content by BS EN 17892-1: 2014; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

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Contact: Richard Hamilton
Site Address: Ickleford Mill

Client Reference: CRM.1027.189
Job Number: 24-035269-1
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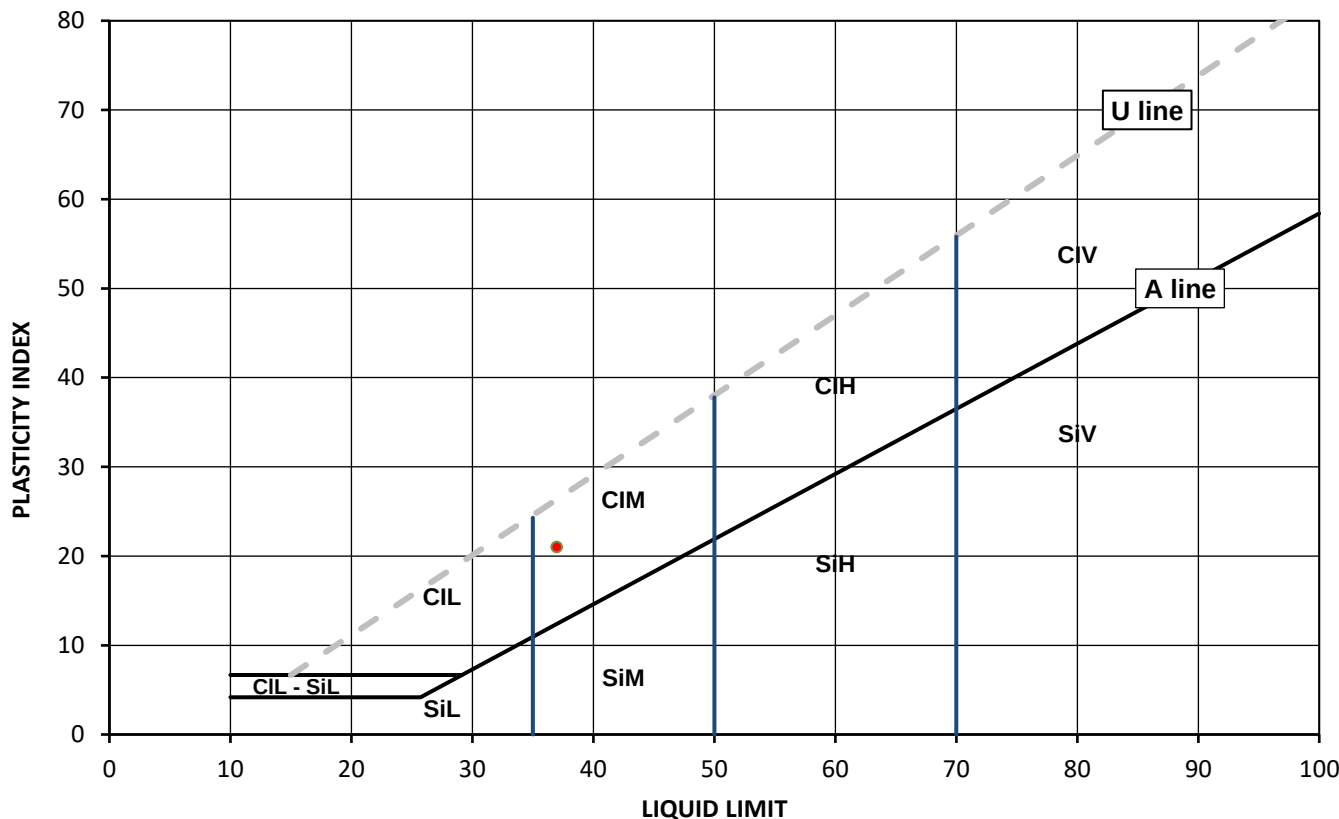
Test Results:

Laboratory Reference: 281433
Hole No.: BH102A
Sample Reference: Not Given
Sample Description: Brownish grey gravelly sandy CLAY

Depth Top [m]: 20.00
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
16.2	37	1.039	16	21	0.00	1.00	60



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

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

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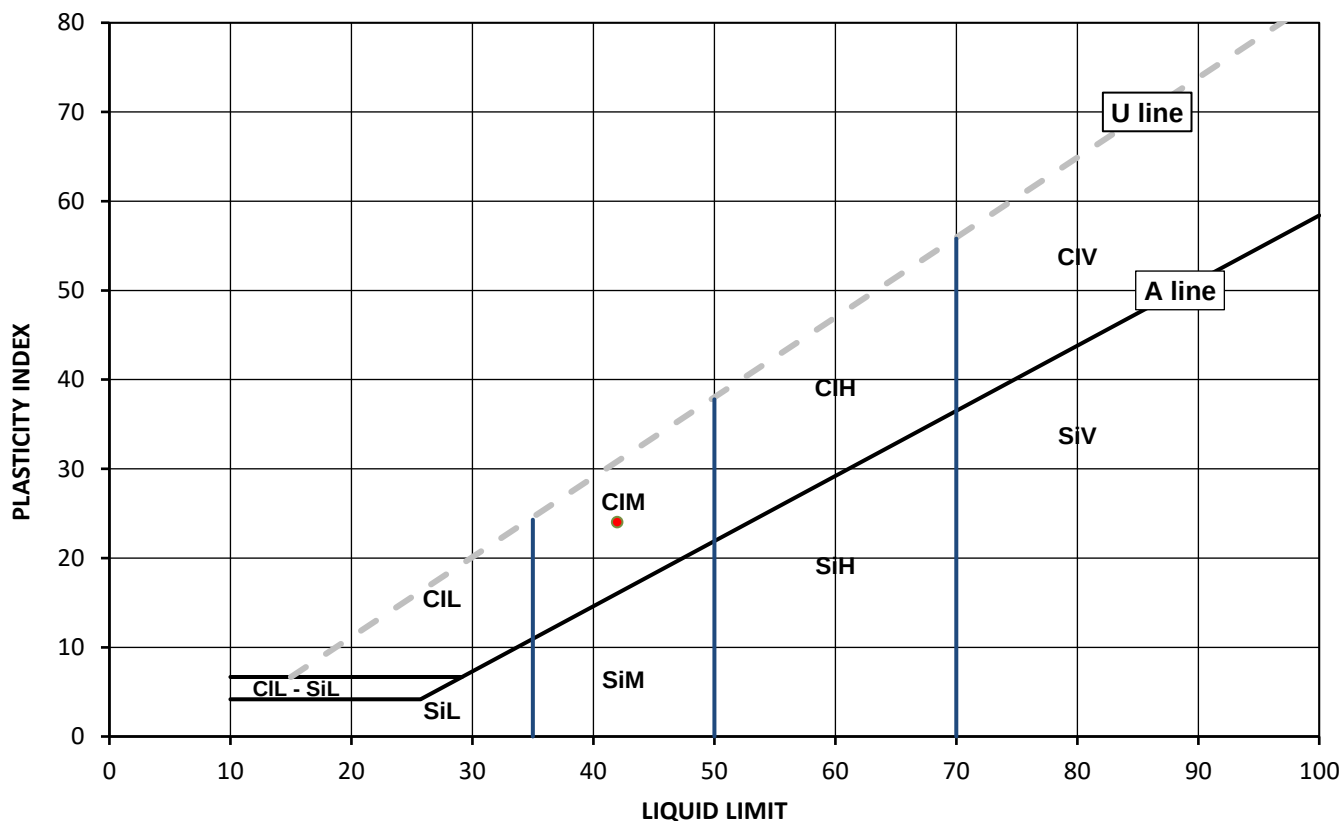
Test Results:

Laboratory Reference: 281434
Hole No.: BH104
Sample Reference: Not Given
Sample Description: Dark grey slightly gravelly sandy CLAY with fragments of chalk

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

Depth Top [m]: 3.00
Depth Base [m]: Not Given
Sample Type: U

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
17.2	42	1.000	18	24	-0.04	1.04	90



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

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

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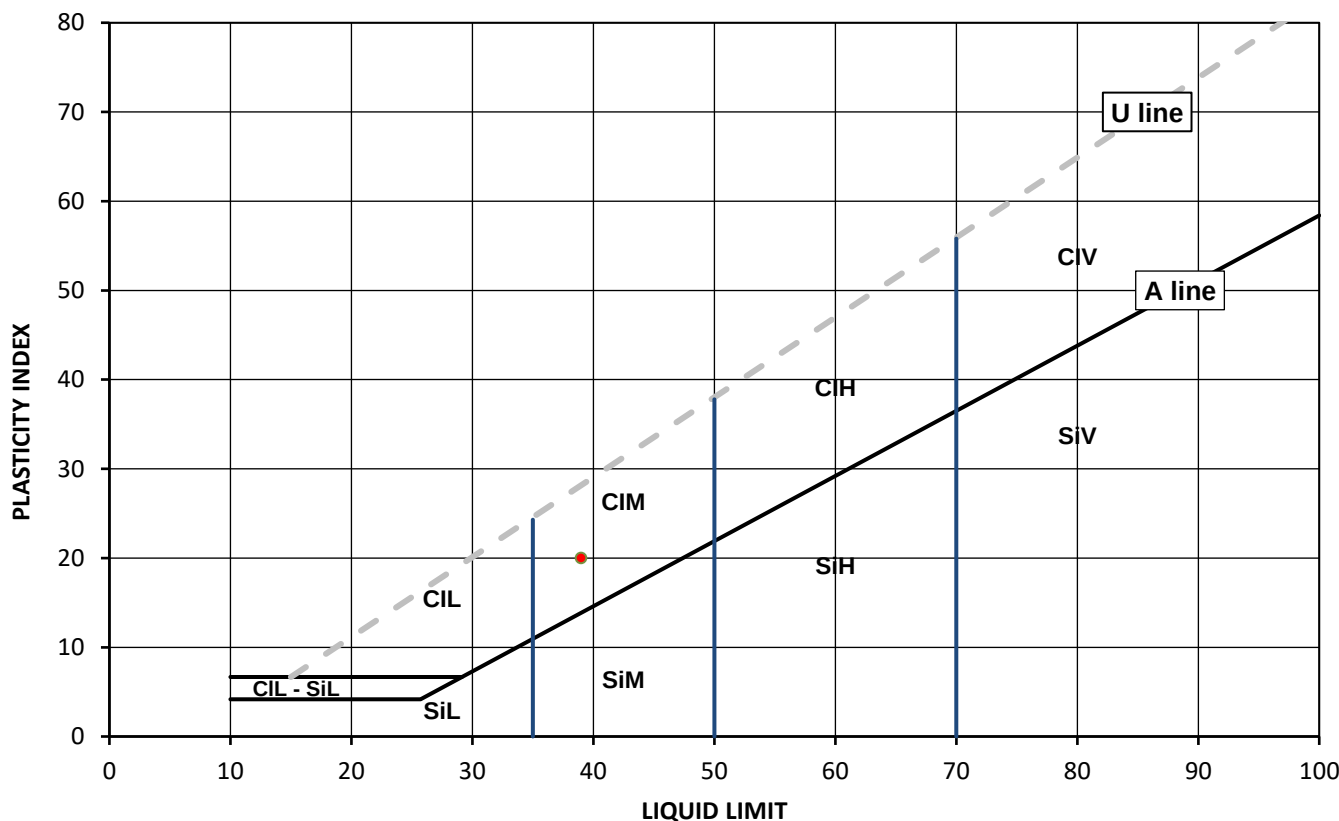
Test Results:

Laboratory Reference: 281436
Hole No.: BH101
Sample Reference: Not Given
Sample Description: Brownish grey gravelly sandy CLAY

Depth Top [m]: 1.75
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
18.5	39	1.039	19	20	0.00	1.00	62



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

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

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Sampled By: Not Given

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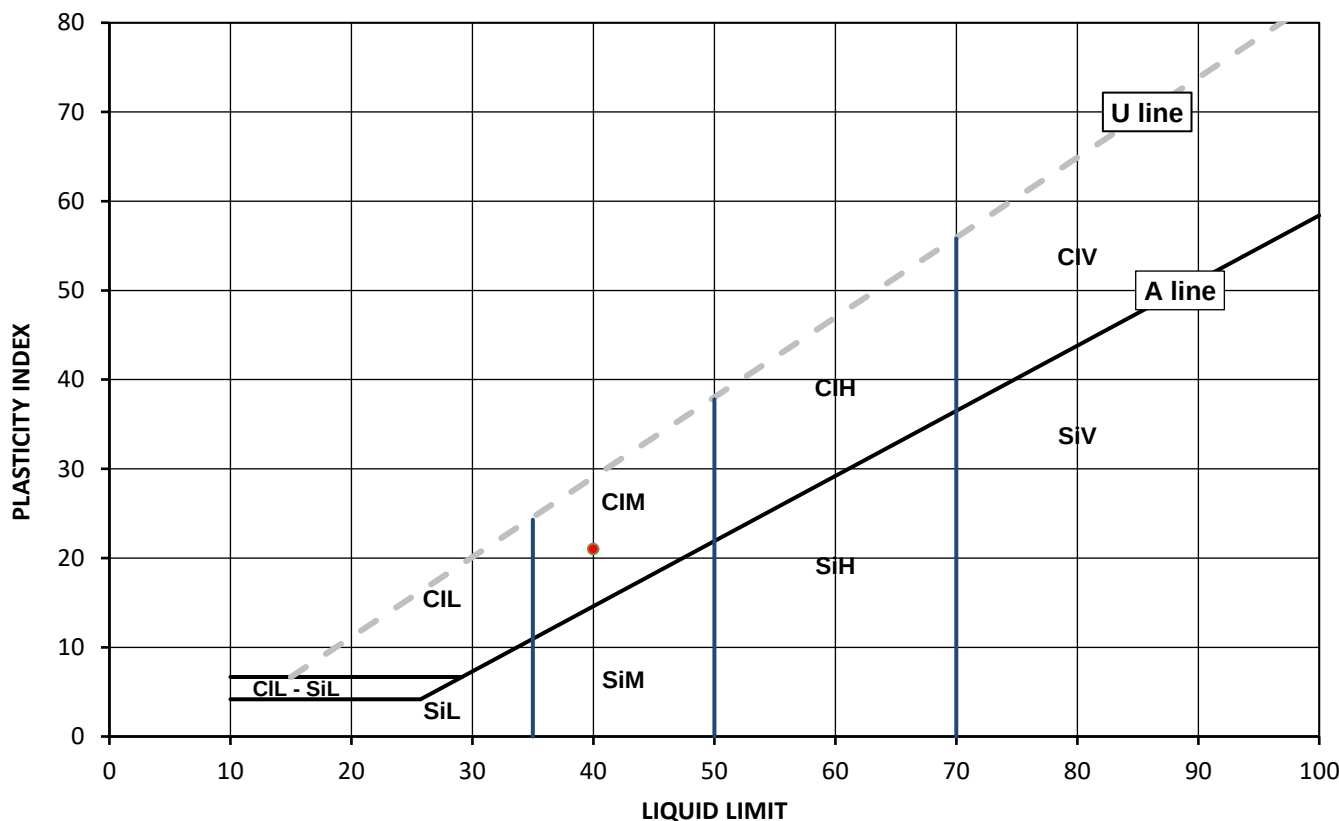
Test Results:

Laboratory Reference: 281437
Hole No.: BH101
Sample Reference: Not Given
Sample Description: Brown slightly gravelly sandy CLAY

Depth Top [m]: 2.75
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
17.9	40	1.039	19	21	-0.05	1.05	82



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

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

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Sampled By: Not Given

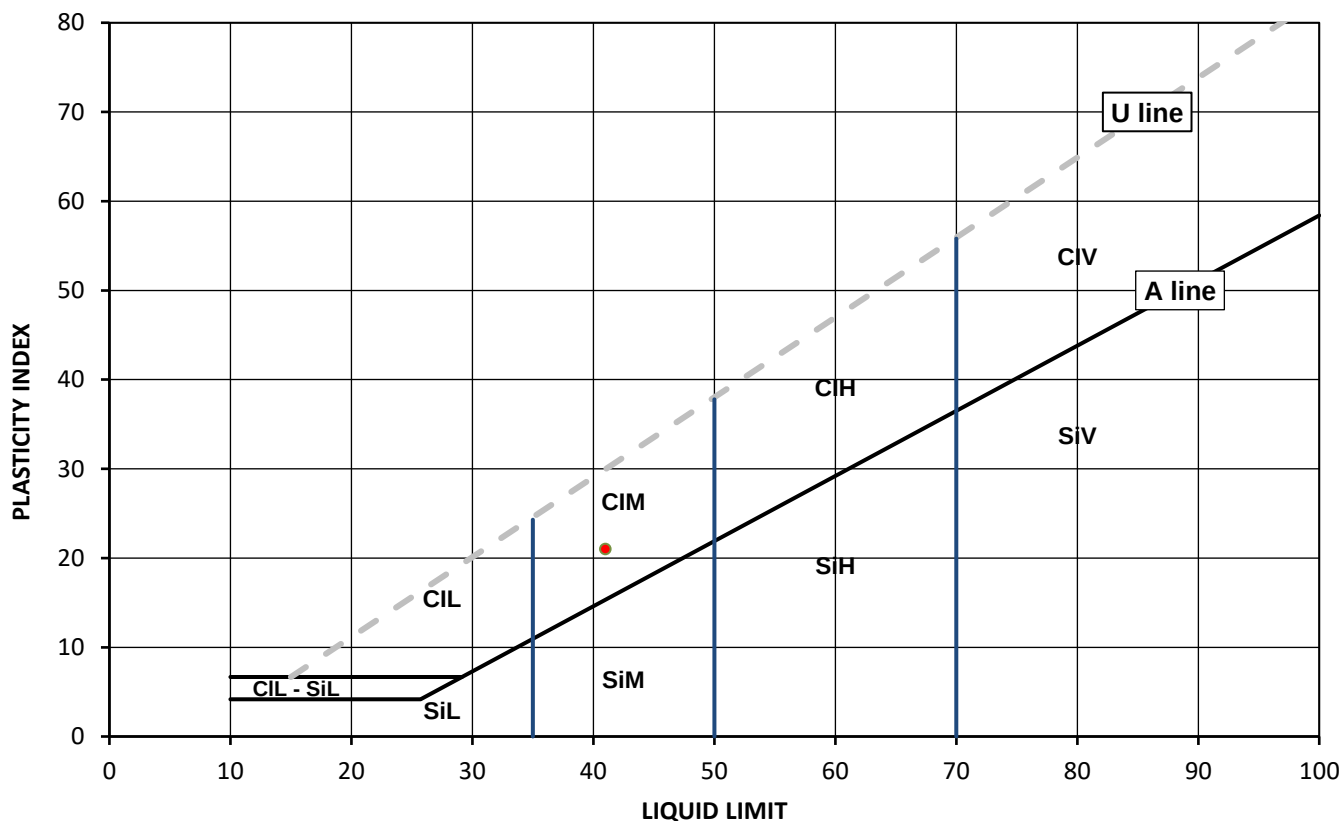
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 281438
Hole No.: BH101
Sample Reference: Not Given
Sample Description: Dark grey slightly gravelly sandy CLAY with fragments of chalk
Sample Preparation: Tested after washing to remove >0.425 mm;
Cone Type: 80g/30deg

Depth Top [m]: 8.00
Depth Base [m]: Not Given
Sample Type: U

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
16.0	41	1.039	20	21	-0.19	1.19	90



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

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

Note: Water Content by BS EN 17892-1: 2014; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

Remarks:

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Signed:

[Signature]

Katarzyna Koziel
Senior Reporting Specialist

for and on behalf of i2 Analytical Ltd

Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 13/08/2024
Sampled By: Not Given

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

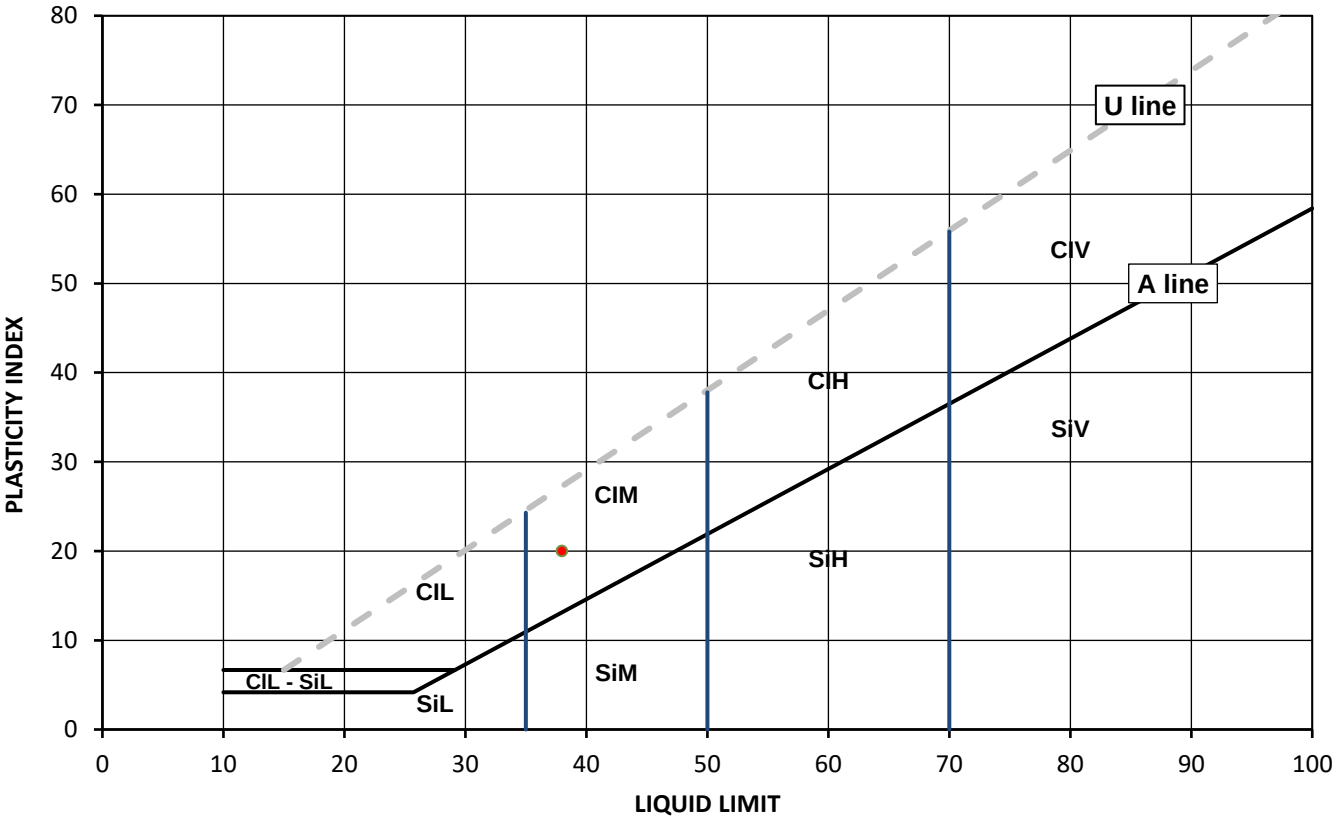
Test Results:

Laboratory Reference: 281440
Hole No.: BH101
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly sandy CLAY with fragments of chalk

Sample Preparation: Tested after >0.425 mm removed by hand;
Cone Type: 80g/30deg

Depth Top [m]: 15.00
Depth Base [m]: Not Given
Sample Type: D

As Received Water Content [W] %	Corrected Liquid Limit [WL] %	Correlation Factor	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity index [IL] % #	Consistency index [IC] % #	% Passing 425µm BS Test Sieve
16.3	38	1.039	18	20	-0.10	1.10	92



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

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

Note: Water Content by BS EN 17892-1: 2014; Correlation Factor by Clayton C.R.I and Jukes A.W (1978); # Non accredited

Remarks:

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Signed:



Katarzyna Koziel

Senior Reporting Specialist

for and on behalf of i2 Analytical Ltd



4041



SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

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



Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Richard Hamilton

Site Address: Ickleford Mill

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

BS EN ISO 17892-12:2018+A2:2022, cl 5.3.14, 5.5, Fall Cone Method, 1 Pt Test, BS 1377-2:2022, cl 5.3, 6. Correlation Factor by Clayton C.R.I and Jukes A.W (1978). W by BS EN ISO 17892-1:2014+A1:2022.

Client Reference: CRM.1027.189

Job Number: 24-035269-1

Date Sampled: Not Given

Date Received: 07/08/2024

Date Tested: 13/08/2024

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	W	Liquid & Plastic Limit							Density		
		Reference	Depth Top	Depth Base	Type				% Passing 425um	WL*	Correlation Factor	Wp	Ip	Cone type	Sample Preparation	bulk	dry	PD
			m	m					%	%		%	%			Mg/m3	Mg/m3	Mg/m3
281422	WS115	Not Given	0.50	Not Given	B	Brown slightly gravelly sandy CLAY	Atterberg 1 Point	12.1	71	43	0.984	21	22	80g/30 deg	W			
281420	WS113	Not Given	0.50	Not Given	B	Brown very gravelly sandy CLAY	Atterberg 1 Point	12.3	39	41	1.058	19	22	80g/30 deg	W			
281416	WS103A	Not Given	0.50	Not Given	B	Brown slightly gravelly slightly silty CLAY	Atterberg 1 Point	21.5	69	60	1.018	31	29	80g/30 deg	W			
281428	BH103	Not Given	18.00	Not Given	D	Brownish grey slightly gravelly sandy CLAY with fragments of chalk	Atterberg 1 Point	16.4	89	38	1.058	15	23	80g/30 deg	W			
281429	BH102A	Not Given	2.00	Not Given	U	Dark brown slightly gravelly sandy CLAY with fragments of chalk	Atterberg 1 Point	17.4	80	40	0.984	18	22	80g/30 deg	W			
281430	BH102A	Not Given	3.75	Not Given	D	Brownish grey slightly gravelly sandy CLAY with fragments of chalk	Atterberg 1 Point	15.5	99	38	1.023	16	22	80g/30 deg	W			
281431	BH102A	Not Given	9.00	Not Given	D	Brownish grey slightly gravelly sandy CLAY with fragments of chalk	Atterberg 1 Point	18.2	95	37	1.039	16	21	80g/30 deg	W			
281432	BH102A	Not Given	12.50	Not Given	D	Brownish grey slightly gravelly sandy CLAY with fragments of chalk	Atterberg 1 Point	21.7	86	37	1.039	16	21	80g/30 deg	W			
281427	BH103	Not Given	11.00	Not Given	D	Brownish grey slightly gravelly very sandy CLAY with fragments of chalk	Atterberg 1 Point	16.5	83	34	1.042	15	19	80g/30 deg	W			
281426	BH103	Not Given	6.00	Not Given	D	Brownish grey slightly gravelly sandy CLAY with fragments of chalk	Atterberg 1 Point	15.4	91	35	1.000	17	18	80g/30 deg	R			

Note: # Non accredited; NP - Non plastic; N - Tested in natural condition, R - Tested after >0.425mm removed by hand, W - Tested after washing to remove >425mm; * - One point liquid limit corrected as per the report Correlation Factor by Clayton C.R.I and Jukes A.W (1978)

Comments:

Signed:

Katarzyna Koziel
Senior Reporting Specialist

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for and on behalf of i2 Analytical Ltd

SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

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

Tested in Accordance with:

Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

BS EN ISO 17892-12:2018+A2:2022, cl 5.3.14, 5.5, Fall Cone Method, 1 Pt Test, BS 1377-2:2022, cl 5.3, 6. Correlation Factor by Clayton C.R.I and Jukes A.W (1978). W by BS EN ISO 17892-1:2014+A1:2022.

Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 13/08/2024
Sampled By: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	W	Liquid & Plastic Limit								Density		
		Reference	Depth Top	Depth Base	Type				% Passing 425um	WL*	Correlation Factor	Wp	Ip	Cone type	Sample Preparation	bulk	dry	PD	
			m	m					%	%		%	%			Mg/m3	Mg/m3	Mg/m3	
281433	BH102A	Not Given	20.00	Not Given	D	Brownish grey gravelly sandy CLAY	Atterberg 1 Point	16.2	60	37	1.039	16	21	80g/30 deg	W				
281434	BH104	Not Given	3.00	Not Given	U	Dark grey slightly gravelly sandy CLAY with fragments of chalk	Atterberg 1 Point	17.2	90	42	1.000	18	24	80g/30 deg	W				
281436	BH101	Not Given	1.75	Not Given	D	Brownish grey gravelly sandy CLAY	Atterberg 1 Point	18.5	62	39	1.039	19	20	80g/30 deg	W				
281437	BH101	Not Given	2.75	Not Given	D	Brown slightly gravelly sandy CLAY	Atterberg 1 Point	17.9	82	40	1.039	19	21	80g/30 deg	W				
281438	BH101	Not Given	8.00	Not Given	U	Dark grey slightly gravelly sandy CLAY with fragments of chalk	Atterberg 1 Point	16.0	90	41	1.039	20	21	80g/30 deg	W				
281440	BH101	Not Given	15.00	Not Given	D	Brownish grey slightly gravelly sandy CLAY with fragments of chalk	Atterberg 1 Point	16.3	92	38	1.039	18	20	80g/30 deg	R				

Note: # Non accredited; NP - Non plastic; N - Tested in natural condition, R - Tested after >0.425mm removed by hand, W - Tested after washing to remove >425mm; * - One point liquid limit corrected as per the report Correlation Factor by Clayton C.R.I and Jukes A.W (1978)

Comments:

Signed:

Katarzyna Koziel
Senior Reporting Specialist

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for and on behalf of i2 Analytical Ltd



SUMMARY REPORT
DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS EN ISO 17892-1:2014+A1:2022, BS 1377-2: 2022, clause 4.1

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



Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 13/08/2024
Sampled By: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC											
		Reference	Depth Top	Depth Base	Type														
			m	m				%											
281436	BH101	Not Given	1.75	Not Given	D	Brownish grey gravelly sandy CLAY		18.5											
281437	BH101	Not Given	2.75	Not Given	D	Brown slightly gravelly sandy CLAY		17.9											
281438	BH101	Not Given	8.00	Not Given	U	Dark grey slightly gravelly sandy CLAY with fragments of chalk		16.0											
281440	BH101	Not Given	15.00	Not Given	D	Brownish grey slightly gravelly sandy CLAY with fragments of chalk		16.3											
281429	BH102A	Not Given	2.00	Not Given	U	Dark brown slightly gravelly sandy CLAY with fragments of chalk		17.4											
281430	BH102A	Not Given	3.75	Not Given	D	Brownish grey slightly gravelly sandy CLAY with fragments of chalk		15.5											
281431	BH102A	Not Given	9.00	Not Given	D	Brownish grey slightly gravelly sandy CLAY with fragments of chalk		18.2											
281432	BH102A	Not Given	12.50	Not Given	D	Brownish grey slightly gravelly sandy CLAY with fragments of chalk		21.7											
281433	BH102A	Not Given	20.00	Not Given	D	Brownish grey gravelly sandy CLAY		16.2											
281426	BH103	Not Given	6.00	Not Given	D	Brownish grey slightly gravelly sandy CLAY with fragments of chalk		15.4											

Comments:

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Signed:



Katarzyna Koziel
Senior Reporting Specialist

for and on behalf of i2 Analytical Ltd

SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS EN ISO 17892-1:2014+A1:2022, BS 1377-2: 2022, clause 4.1

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



Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 13/08/2024
Sampled By: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC											
		Reference	Depth Top	Depth Base	Type														
			m	m				%											
281427	BH103	Not Given	11.00	Not Given	D	Brownish grey slightly gravelly very sandy CLAY with fragments of chalk		16.5											
281428	BH103	Not Given	18.00	Not Given	D	Brownish grey slightly gravelly sandy CLAY with fragments of chalk		16.4											
281434	BH104	Not Given	3.00	Not Given	U	Dark grey slightly gravelly sandy CLAY with fragments of chalk		17.2											
281416	WS103A	Not Given	0.50	Not Given	B	Brown slightly gravelly slightly silty CLAY		21.5											
281420	WS113	Not Given	0.50	Not Given	B	Brown very gravelly sandy CLAY		12.3											
281422	WS115	Not Given	0.50	Not Given	B	Brown slightly gravelly sandy CLAY		12.1											

Comments:

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Signed:


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

Client:

Enzygo Geoenvironmental Ltd

Client Address:

The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact:

Richard Hamilton

Site Address:

Ickleford Mill

Client Reference:

CRM.1027.189

Job Number:

24-035269-1

Date Sampled:

Not Given

Date Received:

07/08/2024

Date Tested:

13/08/2024

Sampled By:

Not Given

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

Test Results:

Laboratory Reference:

281417

Hole No.:

WS106

Sample Reference:

Not Given

Sample Description:

Brown gravelly slightly sandy CLAY with fragments of bricks

Sample Preparation:

Sample was quartered, oven dried at 106.3 °C and broken down by hand.

Depth Top [m]:

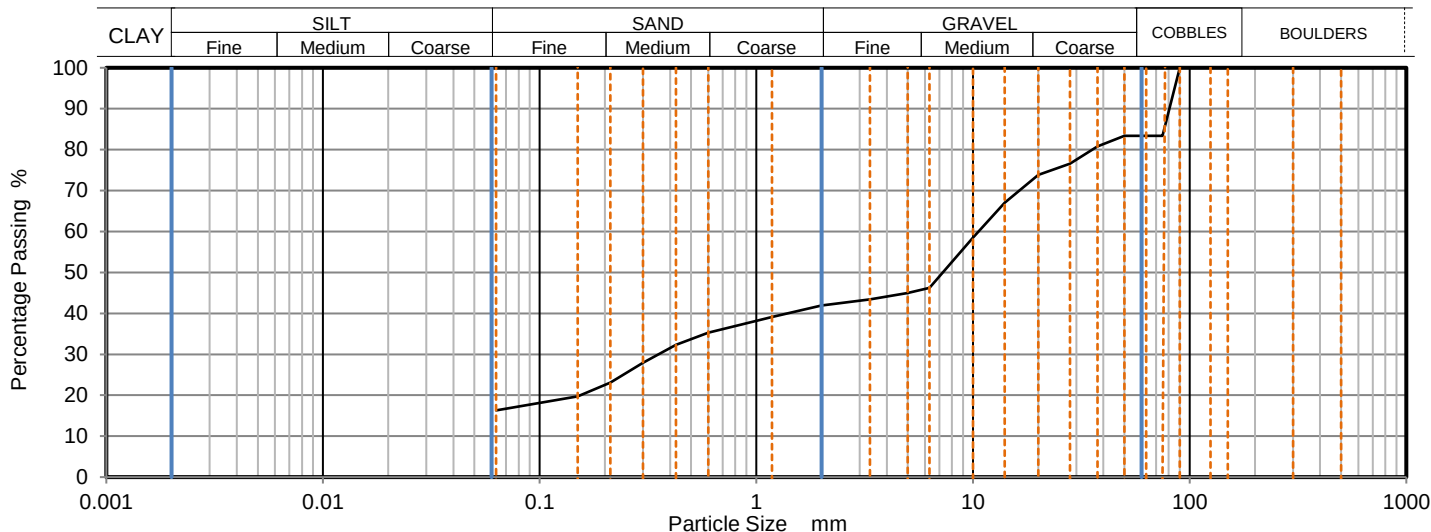
0.50

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	100		
90	100		
75	83		
63	83		
50	83		
37.5	81		
28	77		
20	74		
14	67		
10	59		
6.3	46		
5	45		
3.35	43		
2	42		
1.18	39		
0.6	35		
0.425	32		
0.3	28		
0.212	23		
0.15	20		
0.063	16		

Sample Proportions	% dry mass
Very coarse	17.00
Gravel	41.00
Sand	26.00
Fines <0.063 mm	16.00

Grading Analysis		
D100	mm	90
D60	mm	10.6
D30	mm	0.354
D10	mm	
Uniformity Coefficient		170
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS EN ISO 17892-4:2016 Table 1.

Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

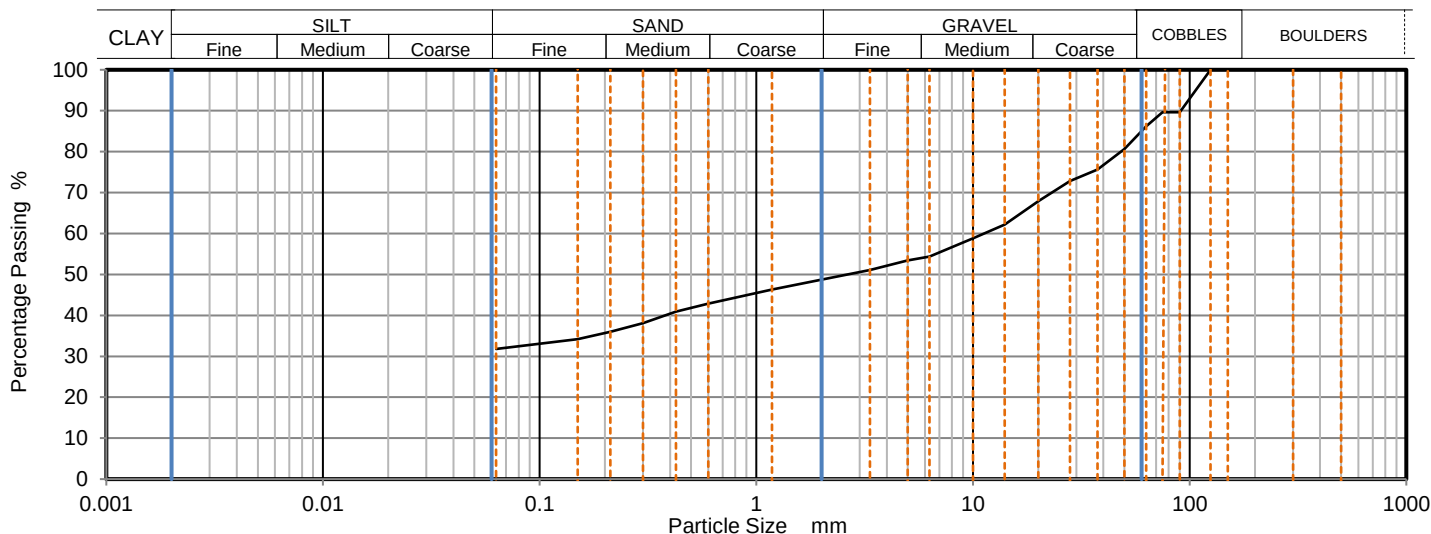
Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 13/08/2024
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 281423
Hole No.: BH103
Sample Reference: Not Given
Sample Description: Brown gravelly slightly sandy CLAY with cobbles
Sample Preparation: Sample was quartered, oven dried at 108.8 °C and broken down by hand.

Depth Top [m]: 0.50
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	100		
90	90		
75	90		
63	86		
50	81		
37.5	76		
28	73		
20	68		
14	62		
10	59		
6.3	54		
5	53		
3.35	51		
2	49		
1.18	46		
0.6	43		
0.425	41		
0.3	38		
0.212	36		
0.15	34		
0.063	32		

Sample Proportions	% dry mass
Very coarse	14.00
Gravel	37.00
Sand	17.00
Fines <0.063 mm	32.00

Grading Analysis		
D100	mm	125
D60	mm	11.3
D30	mm	
D10	mm	
Uniformity Coefficient		180
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS EN ISO 17892-4:2016 Table 1.

Signed: [Signature]

Katarzyna Koziel
Senior Reporting Specialist

for and on behalf of i2 Analytical Ltd

Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

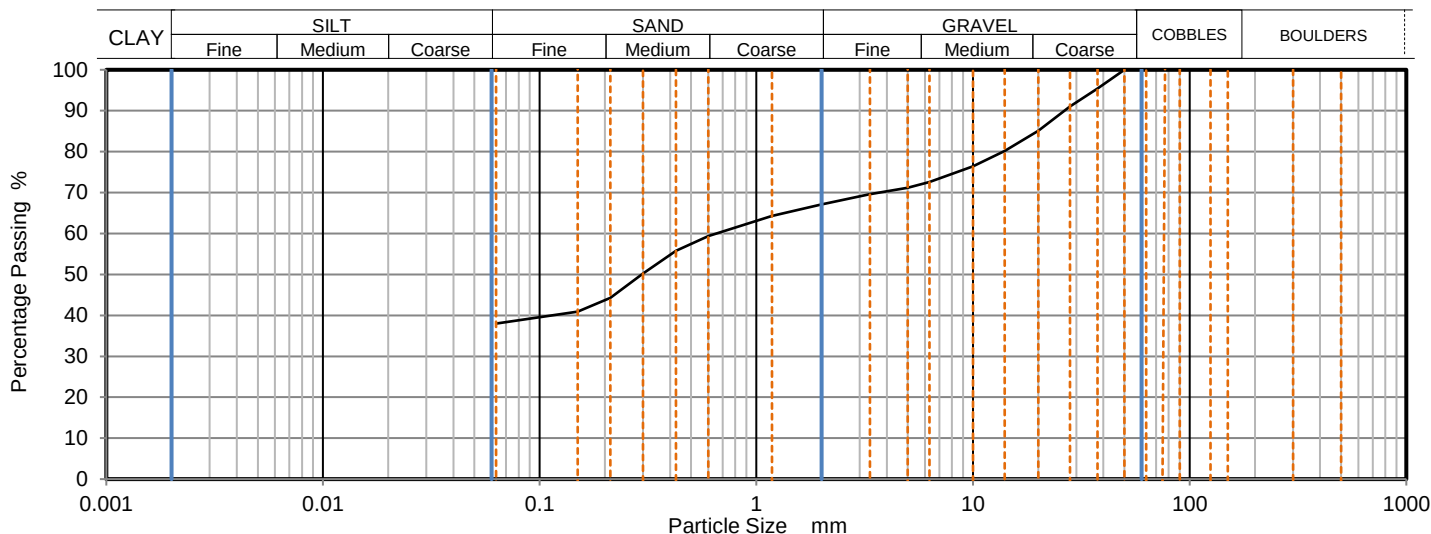
Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 13/08/2024
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 281424
Hole No.: BH103
Sample Reference: Not Given
Sample Description: Brown slightly gravelly slightly sandy CLAY
Sample Preparation: Sample was quartered, oven dried at 108.8 °C and broken down by hand.

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



Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

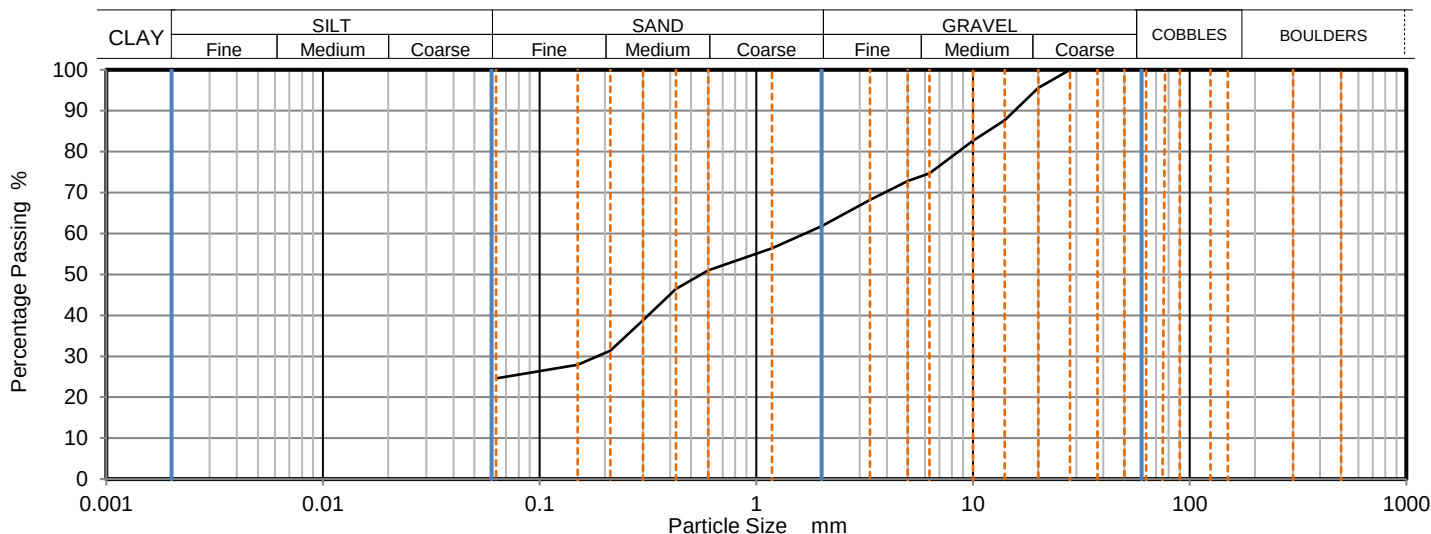
Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 13/08/2024
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 281435
Hole No.: BH104
Sample Reference: Not Given
Sample Description: Yellowish brown gravelly sandy CLAY
Sample Preparation: Sample was quartered, oven dried at 108.8 °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	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	96		
14	88		
10	83		
6.3	75		
5	73		
3.35	68		
2	62		
1.18	56		
0.6	51		
0.425	47		
0.3	39		
0.212	31		
0.15	28		
0.063	25		

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	38.00
Sand	37.00
Fines <0.063 mm	25.00

Grading Analysis		
D100	mm	28
D60	mm	1.67
D30	mm	0.185
D10	mm	
Uniformity Coefficient		27
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed:

Katarzyna Koziel
Senior Reporting Specialist

for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT
DETERMINATION OF BULK DENSITY - IMMERSION IN FLUID METHOD
Tested in Accordance with: BS EN ISO 17892-2: 2014: Clause 5.2

Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 14/08/2024
Sampled By: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Bulk density Mg/m3	Dry density Mg/m3	WC %	Preparation		
		Reference	Depth Top m	Depth Base m	Type								
281425	BH103	Not Given	2.75	Not Given	D	Brownish grey with silty CLAY with fragmets of chalk		2.03	1.68	21.0			
281427	BH103	Not Given	11.00	Not Given	D	Brownish grey slightly gravelly very sandy CLAY with fragments of chalk		2.16	1.86	16.1			

Note: WC - Water Content by BS EN ISO 17892-1

Comments:

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Signed:


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

Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA
Contact: Richard Hamilton
Site Address: Ickleford Mill

Client Reference: CRM.1027.189
Job Number: 24-035269-1
Date Sampled: Not Given
Date Received: 07/08/2024
Date Tested: 19/08/2024
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 281424
Hole No.: BH103
Sample Reference: Not Given
Sample Description: Brown slightly gravelly slightly sandy CLAY

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

Specimen Preparation:

Condition Remoulded
Details Recompacted with specified standard effort using 2.5kg rammer

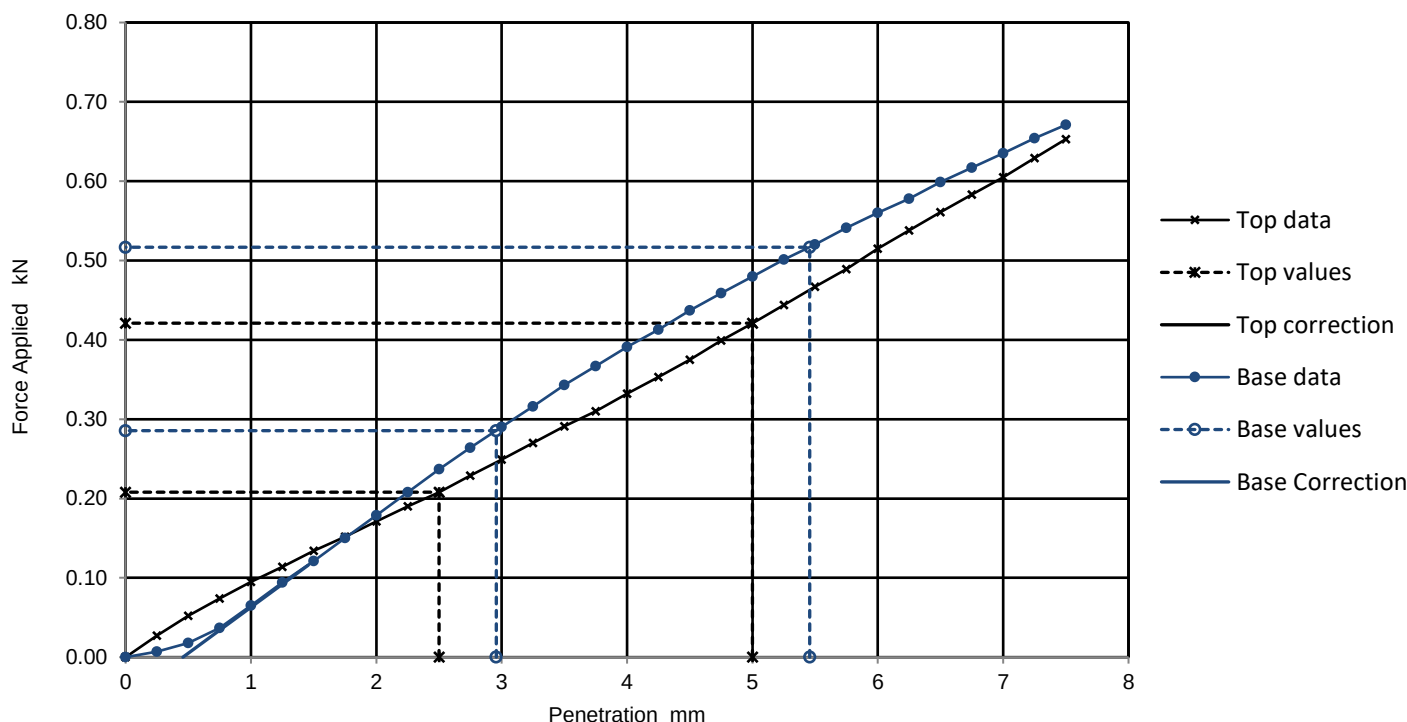
Soaking details Not soaked
Period of soaking days
Time to surface days
Amount of swell recorded mm
Dry density after soaking Mg/m3

Material retained on 20mm sieve removed 15 %

Initial Specimen details Bulk density 2.07 Mg/m3
Dry density 1.75 Mg/m3
Water content 19 %

Surcharge applied 8 kg
4.9 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	1.6	2.1	2.1	
Yes	2.2	2.6	2.6	

Water Content %
19
18

Remarks:

Test/ Specimen specific remarks:

Signed:

Katarzyna Koziel
Senior Reporting Specialist

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for and on behalf of i2 Analytical Ltd

SUMMARY REPORT

DETERMINATION OF UNDRAINED SHEAR STRENGTH USING HAND VANE APPARATUS

Tested in Accordance with: In-house Method G074*

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



Environmental Science

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Richard Hamilton

Site Address: Ickleford Mill

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

Client Reference: CRM.1027.189

Job Number: 24-035269-1

Date Sampled: Not Given

Date Received: 07/08/2024

Date Tested: 13/08/2024

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Shear Vane Reading 1	Shear Vane Reading 2	Shear Vane Reading 3	Shear Vane Reading 4	Shear Vane Reading Average	Tv	Sample Preparation
		Reference	Depth Top	Depth Base	Type									
			m	m				kPa	kPa	kPa	kPa	kPa	kPa	
281438	BH101	Not Given	8.00	Not Given	U	Dark grey slightly gravelly sandy CLAY with fragments of chalk		140	124	144	148	139		Sample was whole tested, tested as received
281439	BH101	Not Given	11.00	Not Given	U	Dark grey slightly gravelly CLAY with fragments of chalk		UTP	UTP	UTP	UTP	UTP		Sample was whole tested, tested as received
281429	BH102A	Not Given	2.00	Not Given	U	Dark brown slightly gravelly sandy CLAY with fragments of chalk		87	58	74	116	84		Sample was whole tested, tested as received
281434	BH104	Not Given	3.00	Not Given	U	Dark grey slightly gravelly sandy CLAY with fragments of chalk		92	100	91	116	100		Sample was whole tested, tested as received

Note: UTP - Unable To Penetrate; *Guideline for Hand Held Shear Vane Test, New Zealand Geotechnical Society INC, August 2001

Comments:

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Signed:



Katarzyna Koziel
Senior Reporting Specialist

for and on behalf of i2 Analytical Ltd

Appendix 5 – Contamination Assessment Reference Values

Determinant	Units	GAC Value Residential					
		With Plant Uptake			Without Plant Uptake		
Arsenic	mg/kg	37			40		
Cadmium	mg/kg	11			85		
Chromium	mg/kg	910			910		
Chromium VI	mg/kg	6			6		
Lead	mg/kg	200			310		
Mercury	mg/kg	40			56		
Nickel	mg/kg	180			180		
Selenium	mg/kg	250			430		
Copper	mg/kg	2400			7100		
Zinc	mg/kg	3700			40000		
Cyanide	mg/kg	791			800		
SOM	%	1	2.5	6	1	2.5	6
Phenol	mg/kg	120	200	380	440	690	1200
Napthalene	mg/kg	2.3	5.6	13	2.3	5.6	13
Acenaphtylene	mg/kg	170	420	920	2900	4600	6000
Acenaphthene	mg/kg	210	510	1100	3000	4700	6000
Flourene	mg/kg	170	400	860	2800	3800	4500
Phenanthrene	mg/kg	95	220	440	1300	1500	1500
Anthracene	mg/kg	2400	5400	11000	31000	35000	37000
Fluoranthene	mg/kg	280	560	890	1500	1600	1600
Pyrene	mg/kg	620	1200	2000	3700	3800	3800
Benzo(a)Anthracene	mg/kg	7.2	11	13	11	14	15
Chrysene	mg/kg	15	22	27	30	31	32
Benzo(b)Flouranthene	mg/kg	2.6	3.3	3.7	3.9	4.0	4.0
Benzo(k)Flouranthene	mg/kg	77	93	100	110	110	110
Benzo(a)Pyrene	mg/kg	2.2	2.7	3.0	3.2	3.2	3.2
Indeno(123-cd)Pyrene	mg/kg	27	36	41	45	46	46
Dibenzo(a,h)Anthracene	mg/kg	0.24	0.28	0.3	0.31	0.32	0.32
Benzo(ghi)Perylene	mg/kg	320	340	350	360	360	360
TPH C ₅ -C ₆ Aliphatic	mg/kg	42	78	160	42	78	160
TPH C ₆ -C ₈ Aliphatic	mg/kg	100	230	530	100	230	530
TPH C ₈ -C ₁₀ Aliphatic	mg/kg	27	65	150	27	65	150
TPH C ₁₀ -C ₁₂ Aliphatic	mg/kg	130	330	760	130	330	770
TPH C ₁₂ -C ₁₆ Aliphatic	mg/kg	1100	2400	4300	1100	2400	4400
TPH C ₁₆ -C ₃₅ Aliphatic	mg/kg	65000	92000	110000	65000	92000	110000
TPH C ₃₅ -C ₄₄ Aliphatic	mg/kg	65000	92000	110000	65000	92000	110000
TPH C ₅ -C ₇ Aromatic	mg/kg	70	140	300	370	690	1400
TPH C ₇ -C ₈ Aromatic	mg/kg	130	290	660	860	1800	3900
TPH C ₈ -C ₁₀ Aromatic	mg/kg	34	83	190	47	110	270
TPH C ₁₀ -C ₁₂ Aromatic	mg/kg	74	180	380	250	590	1200
TPH C ₁₂ -C ₁₆ Aromatic	mg/kg	140	330	660	1800	2300	2500
TPH C ₁₆ -C ₂₁ Aromatic	mg/kg	260	540	930	1900	1900	1900
TPH C ₂₁ -C ₃₅ Aromatic	mg/kg	1100	1500	1700	1900	1900	1900
TPH C ₃₅ -C ₄₄ Aromatic	mg/kg	1100	1500	1700	1900	1900	1900
Benzene	mg/kg	0.087	0.17	0.37	0.38	0.70	1.4
Toluene	mg/kg	130	290	660	880	1900	3900
Ethylebenzene	mg/kg	47	110	260	83	190	440
Xylene	mg/kg	56	130	310	79	180	430

Determinant	Units	GAC Value					
		Residential POS			Commercial		
Arsenic	mg/kg	79			640		
Cadmium	mg/kg	120			190		
Chromium	mg/kg	1500			8600		
Chromium VI	mg/kg	7.7			33		
Lead	mg/kg	630			2330		
Mercury	mg/kg	120			1100		
Nickel	mg/kg	230			980		
Selenium	mg/kg	1100			12000		
Copper	mg/kg	12000			68000		
Zinc	mg/kg	81000			730000		
Cyanide	mg/kg	N/A			16200		
SOM	%	1	2.5	6	1	2.5	6
Phenol	mg/kg	440	690	1300	440	690	1300
Napthalene	mg/kg	4900	4900	4900	190	460	1100
Acenaphtylene	mg/kg	15000	15000	15000	83000	97000	100000
Acenaphthene	mg/kg	15000	15000	15000	84000	97000	100000
Flourene	mg/kg	9900	9900	9900	63000	68000	71000
Phenanthrene	mg/kg	3100	3100	3100	22000	22000	23000
Anthracene	mg/kg	74000	74000	74000	520000	540000	540000
Fluoranthene	mg/kg	3100	3100	3100	23000	23000	23000
Pyrene	mg/kg	7400	7400	7400	54000	54000	54000
Benzo(a)Anthracene	mg/kg	29	29	29	170	170	180
Chrysene	mg/kg	57	57	57	350	350	350
Benzo(b)Flouranthene	mg/kg	7.1	7.2	7.2	44	44	45
Benzo(k)Flouranthene	mg/kg	190	190	190	1200	1200	1200
Benzo(a)Pyrene	mg/kg	5.7	5.7	5.7	35	35	36
Indeno(123-cd)Pyrene	mg/kg	82	82	82	500	510	510
Dibenzo(a,h)Anthracene	mg/kg	0.57	0.57	0.58	3.5	3.6	3.6
Benzo(ghi)Perylene	mg/kg	640	640	640	3900	4000	4000
TPH C ₅ -C ₆ Aliphatic	mg/kg	570000	590000	600000	3200	5900	12000
TPH C ₆ -C ₈ Aliphatic	mg/kg	600000	610000	620000	7800	17000	40000
TPH C ₈ -C ₁₀ Aliphatic	mg/kg	13000	13000	13000	2000	4800	11000
TPH C ₁₀ -C ₁₂ Aliphatic	mg/kg	13000	13000	13000	9700	23000	47000
TPH C ₁₂ -C ₁₆ Aliphatic	mg/kg	13000	13000	13000	59000	82000	90000
TPH C ₁₆ -C ₃₅ Aliphatic	mg/kg	250000	250000	250000	1600000	1700000	1800000
TPH C ₃₅ -C ₄₄ Aliphatic	mg/kg	250000	250000	250000	1600000	1700000	1800000
TPH C ₅ -C ₇ Aromatic	mg/kg	56000	56000	56000	26000	46000	86000
TPH C ₇ -C ₈ Aromatic	mg/kg	56000	56000	56000	56000	110000	180000
TPH C ₈ -C ₁₀ Aromatic	mg/kg	5000	5000	5000	3500	8100	17000
TPH C ₁₀ -C ₁₂ Aromatic	mg/kg	5000	5000	5000	16000	28000	34000
TPH C ₁₂ -C ₁₆ Aromatic	mg/kg	5100	5100	5000	36000	37000	38000
TPH C ₁₆ -C ₂₁ Aromatic	mg/kg	3800	3800	3800	28000	28000	28000
TPH C ₂₁ -C ₃₅ Aromatic	mg/kg	3800	3800	3800	28000	28000	28000
TPH C ₃₅ -C ₄₄ Aromatic	mg/kg	3800	3800	3800	28000	28000	28000
Benzene	mg/kg	72	72	73	27	47	90
Toluene	mg/kg	56000	56000	56000	56000	110000	180000
Ethylebenzene	mg/kg	24000	24000	25000	5700	13000	27000
Xylene	mg/kg	41000	42000	43000	5900	14000	30000

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Determinant	Units	GAC Value					
		Park POS			Allotments		
Arsenic	mg/kg	170			43		
Cadmium	mg/kg	532			1.9		
Chromium	mg/kg	33000			18000		
Chromium VI	mg/kg	220			1.8		
Lead	mg/kg	1300			80		
Mercury	mg/kg	240			19		
Nickel	mg/kg	3400			230		
Selenium	mg/kg	1800			88		
Copper	mg/kg	44000			520		
Zinc	mg/kg	170000			620		
Cyanide	mg/kg						
SOM	%	1	2.5	6	1	2.5	6
Phenol	mg/kg	440	690	1300	23	42	83
Napthalene	mg/kg	1200	1900	3000	4.1	10	24
Acenaphtylene	mg/kg	29000	30000	30000	28	69	160
Acenaphthene	mg/kg	29000	30000	30000	34	85	200
Flourene	mg/kg	20000	20000	20000	27	67	160
Phenanthrene	mg/kg	6200	6200	6300	15	38	90
Anthracene	mg/kg	150000	150000	150000	380	950	2200
Fluoranthene	mg/kg	6300	6300	6400	52	130	290
Pyrene	mg/kg	15000	15000	15000	110	270	620
Benzo(a)Anthracene	mg/kg	49	56	62	2.9	6.5	13
Chrysene	mg/kg	93	110	120	4.1	9.4	19
Benzo(b)Flouranthene	mg/kg	13	15	16	0.99	2.1	3.9
Benzo(k)Flouranthene	mg/kg	370	410	440	37	75	130
Benzo(a)Pyrene	mg/kg	11	12	13	0.97	2.0	3.5
Indeno(123-cd)Pyrene	mg/kg	150	170	180	9.5	21	39
Dibenzo(a,h)Anthracene	mg/kg	1.1	1.3	1.4	0.14	0.27	0.43
Benzo(ghi)Perylene	mg/kg	1400	1500	1600	290	470	640
TPH C ₅ -C ₆ Aliphatic	mg/kg	95000	130000	180000	730	1700	3900
TPH C ₆ -C ₈ Aliphatic	mg/kg	150000	220000	320000	2300	5600	13000
TPH C ₈ -C ₁₀ Aliphatic	mg/kg	14000	18000	21000	320	770	1700
TPH C ₁₀ -C ₁₂ Aliphatic	mg/kg	21000	23000	24000	2200	4400	7300
TPH C ₁₂ -C ₁₆ Aliphatic	mg/kg	25000	25000	26000	11000	13000	13000
TPH C ₁₆ -C ₃₅ Aliphatic	mg/kg	450000	480000	490000	260000	270000	270000
TPH C ₃₅ -C ₄₄ Aliphatic	mg/kg	450000	480000	490000	260000	270000	270000
TPH C ₅ -C ₇ Aromatic	mg/kg	76000	84000	92000	13	27	57
TPH C ₇ -C ₈ Aromatic	mg/kg	87000	95000	100000	22	51	120
TPH C ₈ -C ₁₀ Aromatic	mg/kg	7200	8500	9300	8.6	21	51
TPH C ₁₀ -C ₁₂ Aromatic	mg/kg	9200	9700	10000	13	31	74
TPH C ₁₂ -C ₁₆ Aromatic	mg/kg	10000	10000	10000	23	57	130
TPH C ₁₆ -C ₂₁ Aromatic	mg/kg	7600	7700	7800	46	110	260
TPH C ₂₁ -C ₃₅ Aromatic	mg/kg	7800	7800	7900	370	820	1600
TPH C ₃₅ -C ₄₄ Aromatic	mg/kg	7800	7800	7900	370	820	1600
Benzene	mg/kg	90	100	110	0.017	0.034	0.075
Toluene	mg/kg	87000	95000	100000	22	51	120
Ethylebenzene	mg/kg	17000	22000	27000	16	39	91
Xylene	mg/kg	17000	23000	31000	28	67	160

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GAC gqvap Threshold Values

Determinant	Unit	SoBRA Values GAC (gqvap)	
		Residential	Commercial
Benzene	ug/l	210	20000
Ethylbenzene	ug/l	10000	960000
Isopropylbenzene	ug/l	850	86000
Propylbenzene	ug/l	2700	240000
Styrene	ug/l	8800	810000
Toluene	ug/l	230000	21000000
TPH Aliphatic (EC5 – EC6)	ug/l	1900	190000
TPH Aliphatic (EC6 – EC8)	ug/l	1500	150000
TPH Aliphatic (EC8 – EC10)	ug/l	57	5700
TPH Aliphatic (EC10– EC12)	ug/l	37	3600
TPH Aromatic (EC5 – EC7)	ug/l	210000	20000000
TPH Aromatic (EC7 – EC8)	ug/l	220000	21000000
TPH Aromatic (EC8 – EC10)	ug/l	1900	190000
TPH Aromatic (EC10– EC12)	ug/l	6800	660000
TPH Aromatic (EC12– EC16)	ug/l	39000	3700000
M Xylene	ug/l	9500	940000
O Xylene	ug/l	12000	1100000
P Xylene	ug/l	9900	980000
1,2,4-Trimethylbenzene	ug/l	24	2200
Acenaphthene	ug/l	170000	15000000
Acenaphthylene	ug/l	220000	20000000
Fluorene	ug/l	210000	18000000
Napthalene	ug/l	220	23000
1,1,1,2-Tetrachloroethane	ug/l	240	22,000
1,1,1-Trichloroethane	ug/l	3,000	290,000
1,1,2,2-Tetrachloroethane	ug/l	1,600	150,000
1,1,2-Trichloroethane	ug/l	520	49,000
1,1-Dichloroethane	ug/l	2,700	260,000
1,1-Dichloroethene	ug/l	160	16,000
1,2,3,4-Tetrachlorobenzene	ug/l	240	31,000
1,2,3,5-Tetrachlorobenzene	ug/l	7.0	600
1,2,3-Trichlorobenzene	ug/l	35	3,100
1,2,4,5-Tetrachlorobenzene	ug/l	8.1	700
1,2,4-Trichlorobenzene	ug/l	68	7,200
1,2-Dichlorobenzene	ug/l	2,000	220,000
1,2-Dichloroethane	ug/l	8.9	850
1,2-Dichloropropane	ug/l	22	2,600
1,3,5-Trichlorobenzene	ug/l	7.4	660
1,3-Dichlorobenzene	ug/l	31	2,800
1,4-Dichlorobenzene	ug/l	5,000	460,000
Bromobenzene	ug/l	220	20,000
Bromodichloromethane	ug/l	17	1,600
Bromoform (Tribromomethane)	ug/l	3,100	400,000
Chlorobenzene	ug/l	98	15,000
Chloroethane	ug/l	10,000	1,000,000
Chloroethene (VinylChloride)	ug/l	0.62	63
Chloromethane	ug/l	14	1,400
cis-1,2-Dichloroethene	ug/l	130	13,000
Dichloromethane	ug/l	3,300	370,000
Hexachlorobenzene	ug/l	16	1,400
Hexachlorobutadiene	ug/l	1.7	230
Hexachloroethane	ug/l	8.5	740
Pentachlorobenzene	ug/l	140	12,000
Tetrachloroethene	ug/l	34	4,600
Tetrachloromethane (CarbonTetrachloride)	ug/l	5.3	770
trans-1,2-Dichloroethene	ug/l	160	16,000
Trichloroethene	ug/l	5.7	530
Trichloromethane(Chloroform)	ug/l	790	85,000
Mercury, elemental	ug/l	1.1	95
Methyl tertiary butyl ether(MTBE)	ug/l	83,000	7,800,000

Controlled Waters Assessment Reference Values

Determinant	Unit	EQS Freshwater						UK DWS	WHO
Hardness	mg/l	0-50	50-100	100-150	150-200	200-250	>250		
Arsenic	ug/l	50						10	10
Boron	ug/l	2000						1000	0.3
Cadmium	ug/l	5						5	3
Chromium	ug/l	2	10	10	20	20	20	50	50
Lead	ug/l	4	10	10	20	20	20	10	10
Mercury	ug/l	1						1	1
Selenium	ug/l							10	10
Copper	ug/l	0.5	3	3	3	8	12	20000	2000
Nickel	ug/l	8	20	20	40	40	40	20	70
Zinc	ug/l	8	15	15	50	50	50	5000	3000
Sulphate	mg/l	400						250	250
PAH	ug/l							0.1	
Anthracene	ug/l	0.02							
Naphthalene	ug/l	10							
Benzo(a)Pyrene	ug/l	0.03							0.01
Fluoranthene	ug/l	0.02							
Benzene	ug/l	30						1	10
Toluene	ug/l	50							
Ethylbenzene	ug/l	20							
Xylene	ug/l	30							
C ₅ – C ₆ Aliphatic	ug/l								15000
C ₆ – C ₈ Aliphatic	ug/l								15000
C ₈ – C ₁₀ Aliphatic	ug/l								300
C ₁₀ – C ₁₂ Aliphatic	ug/l								300
C ₁₂ – C ₁₆ Aliphatic	ug/l								300
C ₁₆ – C ₃₆ Aliphatic	ug/l								N/A
C ₆ – C ₇ Aromatic	ug/l								10
C ₇ – C ₈ Aromatic	ug/l	50							10
C ₈ – C ₁₀ Aromatic	ug/l	20							300
C ₁₀ – C ₁₂ Aromatic	ug/l								1000
C ₁₂ – C ₁₆ Aromatic	ug/l								1000
C ₁₆ – C ₂₁ Aromatic	ug/l								90
C ₂₁ – C ₃₅ Aromatic	ug/l								90



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