TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS EN ISO 17892-12:2018+A2:2022, cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022, cl 5.2 and 6

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

4041

Client:	GEO2 Remediation Ltd	Client Reference:	4383
Client Address:	Coniston House, Louisa Street, Idle, BD10 8NE	Job Number:	25-000812-1
		Date Sampled:	09/01/2024
		Date Received:	10/01/2025
Contact:	Megan Okelly	Date Tested:	16/01/2025
Site Address:	Ruislip	Sampled By:	Not Given

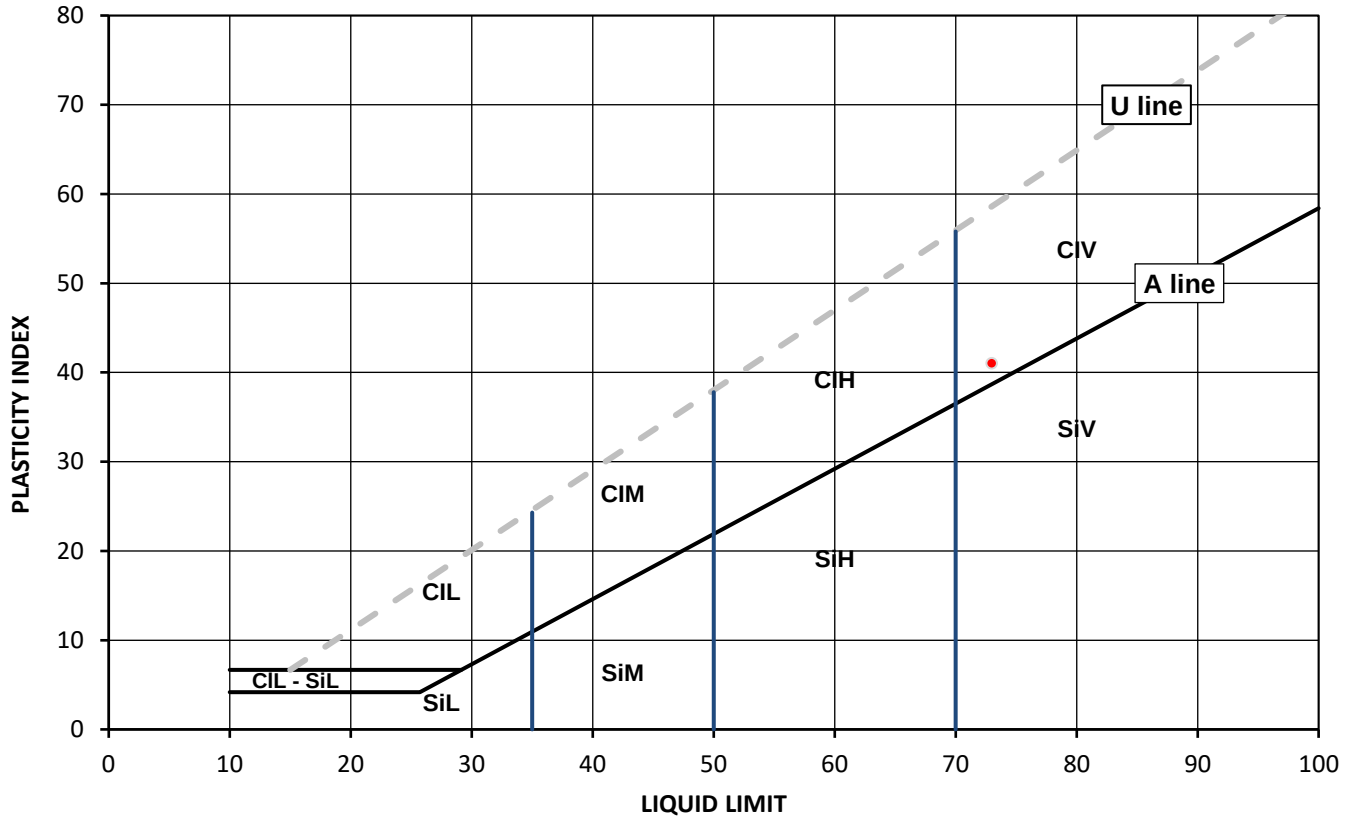
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	421235	Depth Top [m]:	4.00
Hole No.:	DS104	Depth Base [m]:	4.10
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Brownish grey slightly gravelly silty CLAY		

Sample Preparation: Tested after >0.425mm removed by hand; The water content in the sample was increased
Cone Type: 80g/30deg

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity Index [IL] % #	Consistency Index [IC] % #	% Passing 425µm BS Test Sieve
33.0	73	32	41	0.02	0.98	95



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 ISO 17892-1:2014+A1:2022, BS 1377-2:2022; # Non accredited

Remarks:

Signed: Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

Date Reported: 29/01/2025

GF 337.14

SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

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

4041

Client: GEO2 Remediation Ltd

Client Address: Coniston House, Louisa Street, Idle, BD10 8NE

Contact: Megan Okelly

Site Address: Ruislip

BS EN ISO 17892-12:2018+A2:2022 cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022, cl 5.2 and 6. W by BS EN ISO 17892-1:2014+A1:2022.

Client Reference: 4383
Job Number: 25-000812-1
Date Sampled: 08/01 - 09/01/2024
Date Received: 10/01/2025
Date Tested: 16/01/2025
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 m	Depth Base m	Type			%	% Passing 425um %	WL* %	Correlation Factor	Wp %	Ip %	Cone type	Sample Preparation	bulk Mg/m3	dry Mg/m3	PD Mg/m3
421232	DS101	Not Given	0.50	0.60	D	Light brown slightly gravelly CLAY	Atterberg 4 Point	34.2	94	77	-	29	48	80g/30 deg	R / I			
421233	DS102	Not Given	2.00	2.10	D	Brownish grey slightly gravelly CLAY	Atterberg 4 Point	31.1	95	75	-	28	47	80g/30 deg	R / I			
421234	DS103	Not Given	1.20	1.30	D	Brownish grey CLAY	Atterberg 4 Point	28.7	100	69	-	26	43	80g/30 deg	N / I			
421235	DS104	Not Given	4.00	4.10	D	Brownish grey slightly gravelly silty CLAY	Atterberg 4 Point	33.0	95	73	-	32	41	80g/30 deg	R / I			
421236	DS103	Not Given	2.00	3.00	B	Brownish grey silty CLAY		28.6										

Note: # Non accredited; NP - Non plastic; N - Tested in natural condition, R - Tested after >0,425mm removed by hand, WR - Tested after washing to remove >425mm; I - The water content in the sample was increased , D - The water content in the sample was decreased; * - 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
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

Date Reported: 29/01/2025 **GF 362.16**

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

4041

Client: GEO2 Remediation Ltd

Client Address: Coniston House, Louisa Street,
Idle, BD10 8NE

Contact: Megan Okelly

Site Address: Ruislip

Client Reference: 4383
Job Number: 25-000812-1
Date Sampled: 08/01 - 09/01/2024
Date Received: 10/01/2025
Date Tested: 16/01/2025
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 m	Depth Base m	Type			%											
421232	DS101	Not Given	0.50	0.60	D	Light brown slightly gravelly CLAY		34.2											
421233	DS102	Not Given	2.00	2.10	D	Brownish grey slightly gravelly CLAY		31.1											
421234	DS103	Not Given	1.20	1.30	D	Brownish grey CLAY		28.7											
421235	DS104	Not Given	4.00	4.10	D	Brownish grey slightly gravelly silty CLAY		33.0											
421236	DS103	Not Given	2.00	3.00	B	Brownish grey silty CLAY		28.6											

Comments:

Signed:

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

Date Reported: 29/01/2025

GF 126.18

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016, BS 1377-2:2022 cl. 10

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

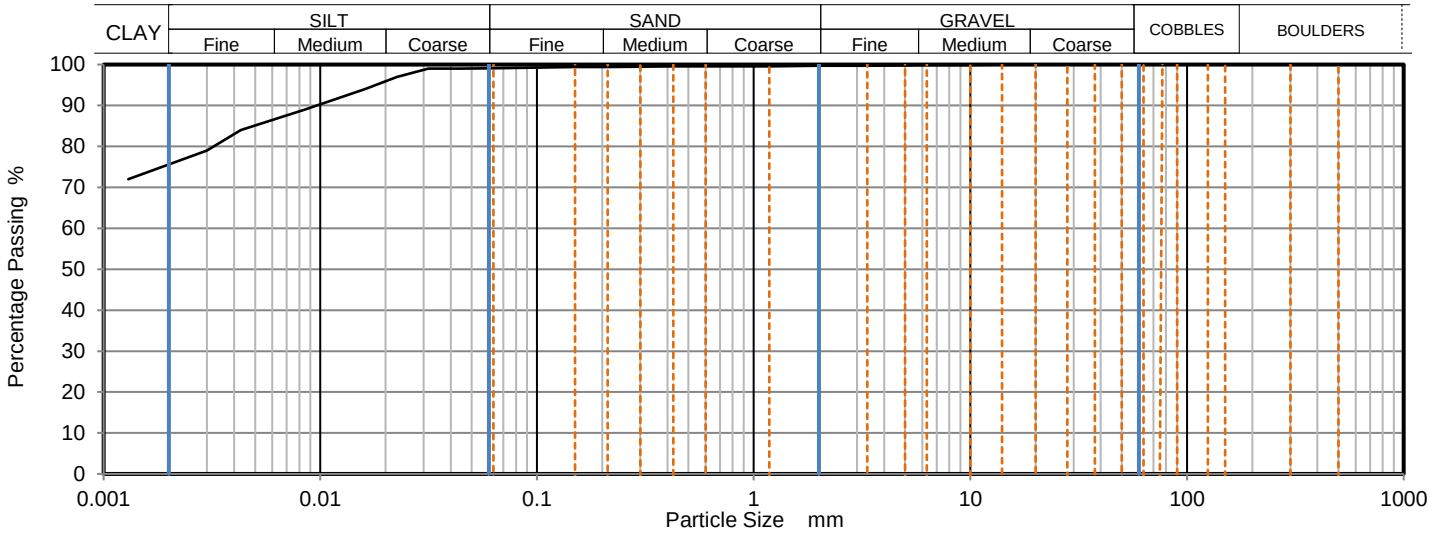
4041

Client:	GEO2 Remediation Ltd	Client Reference:	4383
Client Address:	Coniston House, Louisa Street, Idle, BD10 8NE	Job Number:	25-000812-1
		Date Sampled:	09/01/2024
		Date Received:	10/01/2025
Contact:	Megan Okelly	Date Tested:	16/01/2025
Site Address:	Ruislip	Sampled By:	Not Given

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

Test Results:

Laboratory Reference:	421236	Depth Top [m]:	2.00
Hole No.:	DS103	Depth Base [m]:	3.00
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brownish grey silty CLAY		
Sample Preparation:	Sample was quartered, oven dried at 108.2 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0447	99
300	100	0.0315	99
150	100	0.0226	97
125	100	0.0161	94
90	100	0.0085	89
75	100	0.0043	84
63	100	0.0030	79
50	100	0.0013	72
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100	Particle density	(assumed)
0.425	100	2.65	Mg/m3
0.3	100		
0.212	99		
0.15	99		
0.063	99		

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	1
Silt	23
Clay	76

Grading Analysis		
D100	mm	14
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		
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 and hydrometer sedimentation

Remarks:

Signed: Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

Date Reported: 29/01/2025

GF 366.12

Appendix I – Groundwater Results

UKAS TESTING
4041

GEO2 Remediation Ltd
Coniston House
Louisa Street
Idle
BD10 8NE

e: Megan.OKelly@geo2.co.uk
Tom.Horner@geo2.co.uk

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 : 25-003371

Project / Site name:	Ruislip	**Samples received on:**	23/01/2025
Your job number:	4383	**Samples instructed on/ Analysis started on:**	27/01/2025
Your order number:	3510	**Analysis completed by:**	30/01/2025
Report Issue Number:	1	**Report issued on:**	30/01/2025
Samples Analysed:	2 water samples		

Signed: _____

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

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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: 25-003371
Project / Site name: Ruislip

Your Order No: 3510

Lab Sample Number				433983	433984
Sample Reference				DS101	DS104
Sample Number				None Supplied	None Supplied
Water Matrix				Ground water	Ground water
Depth (m)				None Supplied	None Supplied
Date Sampled				23/01/2025	23/01/2025
Time Taken				0900	0900
Analytical Parameter (Water Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**		
General Inorganics					
pH (L099)	pH Units	N/A	ISO 17025	7.2	7.4
Sulphate as SO_4	mg/l	0.045	ISO 17025	2580 $	1640
Speciated PAHs					
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	0.04
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	0.07
Pyrene	µg/l	0.01	ISO 17025	< 0.01	0.08
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Total PAH					
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	0.19
Heavy Metals / Metalloids					
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.35	2.99
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.09	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.9	0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	2.4	2.2
Lead (dissolved)	µg/l	0.2	ISO 17025	0.2	49
Mercury (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	6.7	4.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	5.1	22
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0

Analytical Report Number: 25-003371
Project / Site name: Ruislip

Your Order No: 3510

Lab Sample Number				433983	433984
Sample Reference				DS101	DS104
Sample Number				None Supplied	None Supplied
Water Matrix				Ground water	Ground water
Depth (m)				None Supplied	None Supplied
Date Sampled				23/01/2025	23/01/2025
Time Taken				0900	0900
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
TPH - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH - Aliphatic >EC10 - EC12 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC12 - EC16 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC16 - EC21 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC21 - EC35 $_{EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10
TPH - Aliphatic >EC5 - EC35 $_{HS+EH\_1D\_AL\_MS}$	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH - Aromatic >EC10 - EC12 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC12 - EC16 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC16 - EC21 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC21 - EC35 $_{EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10
TPH - Aromatic >EC5 - EC35 $_{HS+EH\_1D\_AR\_MS}$	µg/l	10	NONE	< 10	< 10
VOCs					
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0
Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0

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

Analytical Report Number : 25-003371
Project / Site name: Ruislip

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI 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, PW, GW, 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 Petroleum Hydrocarbons with carbon banding in water by GC-MS	Determination of total petroleum hydrocarbons in water by GC-MS with carbon banding aliphatic and aromatic	In-house method	L070B	W	NONE
TPH Chromatogram in water	TPH Chromatogram in water	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. Accredited matrices: SW, PW, GW, FSE, LL	In-house method by continuous flow analyser	L080-PL	W	ISO 17025
Total Petroleum Hydrocarbons in water by HS-GC-MS	Determination of total petroleum hydrocarbons in water by headspace GC-MS. Accredited matrices: SW, PW, GW	In-house method	L088-PL	W	ISO 17025
pH of water at 20°C (automated)	Determination of pH of water by electrochemical measurement. Accredited matrices: SW, PW, GW, FSE, LL	In-house method	L099-PL	W	ISO 17025
Speciated PAHs and/or Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds (including PAHs) in water by extraction in dichloromethane followed by GC-MS. Accredited matrices (PAHs): SW, PW, GW	In-house method based on USEPA 8270	L102B	W	ISO 17025

Analytical Report Number : 25-003371
Project / Site name: Ruislip

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited matrices: SW, PW, GW, PrW, DI PrW, FSE, LL	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	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

$$ - Result was reported from high dilution. The result should be interpreted with caution.

Sample Deviation Report

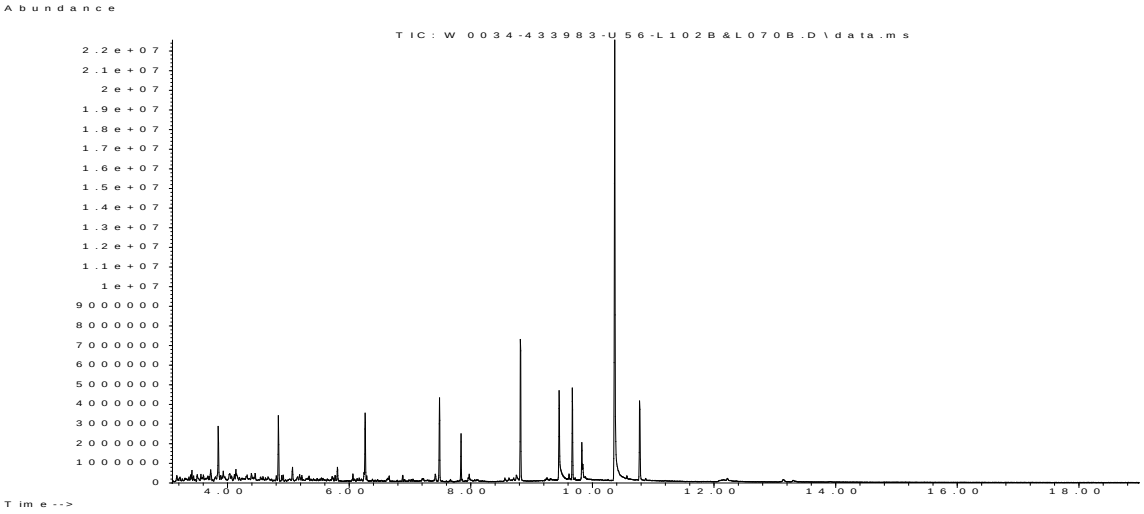
Analytical Report Number : 25-003371

Project / Site name: Ruislip

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

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

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
DS101	N/A	W	433983	c	pH of water at 20°C (automated)	L099-PL	c
DS104	N/A	W	433984	c	pH of water at 20°C (automated)	L099-PL	c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2.1e+07
2e+07
1.9e+07
1.8e+07
1.7e+07
1.6e+07
1.5e+07
1.4e+07
1.3e+07
1.2e+07
1.1e+07
1e+07
9000000
8000000
7000000
6000000
5000000
4000000
3000000
2000000
1000000
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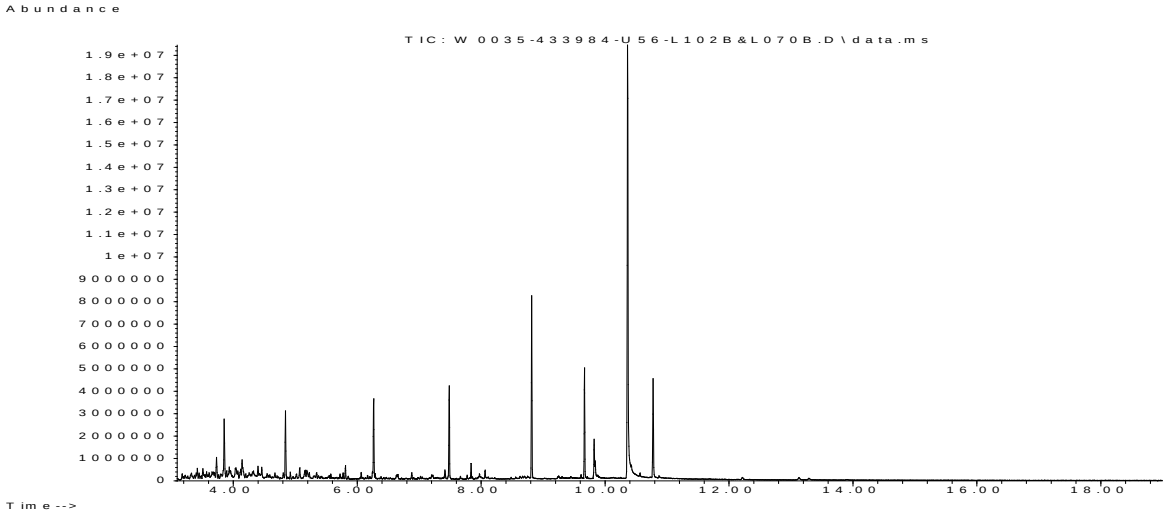
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
Time-->


Abundance
TIC: W0035-433984-U56-L102B&L070B.D\data.ms
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1.8e+07
1.7e+07
1.6e+07
1.5e+07
1.4e+07
1.3e+07
1.2e+07
1.1e+07
1e+07
9000000
8000000
7000000
6000000
5000000
4000000
3000000
2000000
1000000
0
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
Time-->

Appendix J – Risk Assessment Terminology

Definitions and Classifications of Risk Assessment Terminology.

Probability

Probability can be defined as the chance of a particular event occurring in a given period of time.

Descriptions of each of the four qualitative terms to be use in this report to describe the perceived probability of any identified pollutant linkage becoming realised are shown below in Table W.

Term	Description
High Likelihood	There is pollutant linkage and an event would appear very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution.
Likely	There is pollutant linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.
Low Likelihood	There is pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term.
Unlikely	There is pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long-term.

Table W. Description of Probability Classifications

Severity

Severity (consequence) can be defined as the adverse effects (or harm) arising from a defined hazard, which impairs the quality of human health or the environment in the short or longer term.

Descriptions of each of the four qualitative terms to be use in this report to describe the perceived potential severity of any identified pollutant linkage becoming realised are shown below in Table X.

Term	Description
Severe	Highly elevated concentrations **likely** to result in "significant harm" to human health as defined by the EPA 1990, Part 2A, if exposure occurs. Equivalent to **EA Category 1** pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. Catastrophic damage to crops, buildings or property.
Medium	Elevated concentrations which could result in "significant harm" to human health as defined by the EPA 1990, Part 2A if exposure occurs. Equivalent to **EA Category 2** pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population. Significant damage to crops, buildings or property.
Mild	Exposure to human health **unlikely** to lead to "significant harm". Equivalent to **EA Category 3** pollution incident including minimal or short-lived effect on water quality; marginal effect on amenity value, agriculture or commerce. Minor or short-lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population. Minor damage to crops, buildings or property.
Minor	No measurable effect on humans. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services.

Table X. Description of Severity Classifications

Once the severity and probability of a pollutant linkage has been determined the risk can be assessed using the risk matrix shown overleaf on Table Y.

Risk Matrix

By cross referencing the derived severity and probability in Table Y, below the perceived potential risk can be determined.

		Severity			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

Table Y. Risk Assessment Matrix

The risk categories detailed above are defined below in the following Table Z.

Term	Description
Very High Risk	There is a high probability that significant harm could arise to a designated receptor from an identified hazard at the site without appropriate remedial action.
High Risk	Significant harm is likely to arise to a designated receptor from an identified hazard at the site without appropriate remedial action.
Moderate Risk	It is possible that without appropriate remedial action, harm could arise to a designated receptor but it is relatively unlikely that any such harm would be severe and if any harm were to occur, it is likely that such harm would be relatively mild.
Low Risk	It is possible that significant harm could arise to a designated receptor from an identified hazard but it is likely that at worst this harm if realised would normally be mild.
Very Low Risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

Table Z. Definition of Risk

Appendix K – Hotspot Protocol

Watching Brief Method Statement

This method statement aims to establish a structure by which site works / development contractors will be able to effectively meet the requirements of a watching brief. A watching brief is frequently proposed as part of planning conditions imposed onto any brownfield site, or a site potentially affected by contaminants. This methodology proposed a strategy which allows the site workers to effectively undertake these works themselves without the need for a full time environmental specialist.

Requirements of a Nominated Competent Person (CP)

The party undertaking the site works will nominate a Competent Person (CP) who will be responsible for providing a watching brief over all excavation, soil handling works associated with construction and for ensuring site workers conform to appropriate PPE requirements at all times. The CP will be on-site during all enabling, and construction works.

The CP will be briefed by Geo2 on environmental management during or in advance of the groundworks at an on-site meeting to be held prior to the commencement of works. This would typically address the following issues;

· A review of any existing site information with regard to areas of potential contamination both identified and unidentified,

· Types of contamination which may be encountered and also potential for unexpected contamination, and means of identification,

· Potential risks associated with contaminants, with regard to health and safety concerns of construction workers,

· Potential for waste disposal issues,

· Ensuring that the CP is confident and capable of undertaking the practical responsibilities identified,

· Any additional site-specific concerns or factors which may prove relevant to works, such as any visual monitoring / inspection requirements (e.g. daily observations of adjacent streams etc).

The CP would be required to maintain records of any issues, as detailed above, which would be encountered during the programme of works. Records should detail the time and date, nature of any incident, or detail of potentially contaminated soils encountered, location of this material, where possible extent and the actions undertaken to ensure this was appropriately classified. These would be required to be submitted to the Client and Geo2 to ensure that an appropriate validation report could be complied to enable the planning conditions to be lifted. Records should be available on-site at all times for inspection as required.

The CP is also responsible for contacting Geo2 in the event of encountering situations requiring environmental management.

Unexpected Contamination

Unexpected contamination may comprise impacted sub-soil, or structures such as underground storage tanks (UST), subsurface features, pipes, sumps or chambers with associated contamination observed beneath the site during the redevelopment works.

Where apparently contaminated sub-soils (or waters) are encountered, the permanent nominated CP should be contacted for assessment.

As a guide, apparently contaminated sub-soils or waters may comprise visually impacted and strongly odorous material. Encountered odours could be petrol, diesel, solvents or oil-like. Should materials of this description, or other description following a site-specific briefing, be encountered and this material be considered to be unidentified, Geo2 should be contacted. In such circumstances, the affected area should be isolated and work in the area stopped, pending the Geo2 consultant visit to sample or assess the soil. The area should remain isolated whilst the samples are analysed at an appropriate laboratory, if considered necessary.

Additionally, the Local Planning Authority (LPA) may need to be informed in writing upon the contractor encountering unexpected contamination. If necessary, following consultation with Geo², works are to stop in the area, with the exception of investigative works, until an updated Remediation Strategy can be updated, reissued and agreed by the LPA.

Based on the results, and in comparison with adopted screening criteria, Geo2 will determine whether the identified materials present a significant environmental risk. Should the soil need to be removed in line with the proposed development programme, or as a result of a risk-based analysis, validation samples will be collected from the edge and base, if appropriate, of the excavation by a Geo2 site engineer.

All waste should be appropriately isolated and stored to prevent spreading contamination across the site. Waste should then be classified and disposed of in accordance with the applicable waste management regulations under full duty of care documentation. Potential exists for hazardous waste to be present, and this should also be dealt with in accordance with the relevant legislation.

Should unidentified underground features be encountered, such as tanks or fuel delivery lines, that require removal in line with the proposed development, they should be appropriately decommissioned. Decommissioning should comprise pumping and removal of wastewater and any sediment in accordance with the applicable waste management regulations under full duty of care documentation. Water and sediment waste may need to be sampled and analysed to determine whether it needs to be disposed of as hazardous.

Should any structure encountered remain in situ, Geo2 should be contacted to ensure that any potential impact that may be associated with this feature can be appropriately addressed, if

necessary. This process may entail additional sampling works, which would require the identified area to be isolated until Geo2 site staff are able to attend site.

Following removal of any such structure, the CP should inspect the excavations for apparently impacted materials. Should apparently contaminated material be identified beneath or adjacent to the structure, Geo2 should be contacted to undertake further sampling and analysis. All results will be included in the Validation Report.

The relevant planning authorities will be notified should any unexpected contamination be identified and any remedial actions that are required as a result of encountered materials will be agreed prior to the work being carried out.

Sampling Procedure

All samples obtained by Geo2 will be stored in appropriate vessels for the required analysis and stored in controlled conditions prior to submission to an appropriately accredited laboratory. All samples will be obtained in line with standard industry guidance.

Geo2 Contact

A Geo2 contact will be prescribed to the site upon implementation of the watching brief.