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Analytical Report Number : 20-30822

Replaces Analytical Report Number: 20-30822, issue no. 1

Client references/information amended.

Project / Site name:	Clarendon Road	Samples received on:	18/09/2020
Your job number:	6075	Samples instructed on/ Analysis started on:	18/09/2020
Your order number:	6075-00005	Analysis completed by:	23/09/2020
Report Issue Number:	2	Report issued on:	24/09/2020
Samples Analysed:	9 leachate samples - 9 soil samples		

Signed: *A. Czerwińska*

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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



Analytical Report Number: 20-30822

Project / Site name: Clarendon Road

Your Order No: 6075-00005

Lab Sample Number				1623925	1623926	1623927	1623928
Sample Reference				VS-J7	VS-I7	VS-I7-E	VS-I8-E
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				18/09/2020	18/09/2020	18/09/2020	18/09/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status	

General Inorganics

Sulphate as SO ₄	mg/l	0.1	ISO 17025	45.7	143	102	124
Ammonium as NH ₄	µg/l	15	NONE	14000	39000	27000	38000

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



Analytical Report Number: 20-30822
Project / Site name: Clarendon Road

Your Order No: 6075-00005

Lab Sample Number				1623929	1623930	1623931	1623932
Sample Reference				VS-K7	VS-J8	VS-J7-BASE	VS-J7-EAST
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				18/09/2020	18/09/2020	18/09/2020	18/09/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status	

General Inorganics

Sulphate as SO ₄	mg/l	0.1	ISO 17025	54.8	109	279	115
Ammonium as NH ₄	µg/l	15	NONE	12000	16000	76000	14000

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



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Your Order No: 6075-00005

Lab Sample Number				1623933
Sample Reference				VS-J7-WEST
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				18/09/2020
Time Taken				None Supplied
Analytical Parameter (Leachate Analysis)				
Units				
Limit of detection				
Accreditation Status				

General Inorganics

Sulphate as SO ₄	mg/l	0.1	ISO 17025	125
Ammonium as NH ₄	µg/l	15	NONE	84

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



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Lab Sample Number				1623916	1623917	1623918	1623919
Sample Reference				VS-J7	VS-I7	VS-I7-E	VS-I8-E
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				18/09/2020	18/09/2020	18/09/2020	18/09/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	14	11	15
Total mass of sample received	kg	0.001	NONE	2	2	2	2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	0.054
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	0.054

General Inorganics

Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.43	1.3	1.1	2.2
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	850	2600	2100	4500
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	425	1310	1060	2230
Ammonium as NH4	mg/kg	0.5	MCERTS	180	610	300	500

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Lab Sample Number				1623920	1623921	1623922	1623923
Sample Reference				VS-K7	VS-J8	VS-J7-BASE	VS-J7-EAST
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				18/09/2020	18/09/2020	18/09/2020	18/09/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	9.5	17	16	20
Total mass of sample received	kg	0.001	NONE	2	2	2	2

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

General Inorganics

Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.28	0.91	2	0.84
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	560	1800	3900	1700
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	281	912	1970	844
Ammonium as NH4	mg/kg	0.5	MCERTS	120	110	850	140

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Project / Site name: Clarendon Road

Your Order No: 6075-00005

Lab Sample Number				1623924
Sample Reference				VS-J7-WEST
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				18/09/2020
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	N/A	NONE	22
Total mass of sample received	kg	0.001	NONE	2

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

General Inorganics

Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.89
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	1800
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	893
Ammonium as NH ₄	mg/kg	0.5	MCERTS	12

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Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

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

Quantitative Analysis

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

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

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

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
1623919	VS-I8-E		134	Loose Fibrous Debris	Chrysotile	0.054	0.054

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

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1623916	VS-J7	None Supplied	None Supplied	Light brown clay and sand with gravel.
1623917	VS-I7	None Supplied	None Supplied	Light brown clay and sand with gravel.
1623918	VS-I7-E	None Supplied	None Supplied	Light brown clay and sand with gravel.
1623919	VS-I8-E	None Supplied	None Supplied	Light brown clay and sand with gravel.
1623920	VS-K7	None Supplied	None Supplied	Light brown clay and sand with gravel.
1623921	VS-J8	None Supplied	None Supplied	Light brown clay and sand with gravel.
1623922	VS-J7-BASE	None Supplied	None Supplied	Light brown clay and sand with gravel.
1623923	VS-J7-EAST	None Supplied	None Supplied	Light brown clay and sand with gravel.
1623924	VS-J7-WEST	None Supplied	None Supplied	Light brown clay and sand with gravel.



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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	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.	L019-UK/PL	D	NONE
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE
Ammonium as NH4 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	ISO 17025
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS

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

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

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