

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 20/02660
Issue Number: 1
Date: 26 March, 2020

Client: Spectrum Geo Services
Foxglove Cottage
Cwm Risca Lane
Tondu
Wales
CF32 0EH

Project Manager: Rob Griffiths
Project Name: Britton Ferry
Project Ref: 2012
Order No: 2012/01
Date Samples Received: 17/03/20
Date Instructions Received: 17/03/20
Date Analysis Completed: 25/03/20

Prepared by:


Melanie Marshall
Laboratory Coordinator

Approved by:


Sophie France
Client Service Manager

Envirolab Job Number: 20/02660

Client Project Name: Britton Ferry

Client Project Ref: 2012

Lab Sample ID	20/02660/1	20/02660/2	20/02660/3	20/02660/4	20/02660/5	20/02660/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS01	WS03	WS04	WS08	WS10	WS12A				
Depth to Top	1.40	0.50	2.00	1.00	0.10	0.50				
Depth To Bottom	1.50	0.70	2.40	1.20	0.30	0.80				
Date Sampled	13-Mar-20	13-Mar-20	13-Mar-20	13-Mar-20	13-Mar-20	13-Mar-20				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4AB	6AE	5A	4AB	6ABE	6AE				
% Stones >10mm _A	19.3	3.7	<0.1	4.4	2.5	<0.1		% w/w	0.1	A-T-044
pH _D ^{M#}	7.57	7.19	5.96	7.65	7.26	8.06		pH	0.01	A-T-031s
Sulphate (acid soluble) _D ^{M#}	610	860	1400	910	670	800		mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1	8	12	10		mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		mg/kg	0.2	A-T-050s
Organic matter _D ^{M#}	33.2	60.6	42.4	64.1	54.6	22.0		% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	10	32	22	54	45	23		mg/kg	1	A-T-024s
Copper _D ^{M#}	67	229	25	222	232	212		mg/kg	1	A-T-024s
Chromium _D ^{M#}	15	16	20	27	22	16		mg/kg	1	A-T-024s
Lead _D ^{M#}	93	906	34	246	488	257		mg/kg	1	A-T-024s
Mercury _D	<0.17	0.18	<0.17	<0.17	<0.17	<0.17		mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	31	53	25	35	57	36		mg/kg	1	A-T-024s

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Date Sampled	13-Mar-20	13-Mar-20	13-Mar-20	13-Mar-20	13-Mar-20	13-Mar-20				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4AB	6AE	5A	4AB	6ABE	6AE				
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	NAD	NAD	Chrysotile				A-T-045
Asbestos Matrix (microscope) _D	-	-	-	-	-	Loose Fibres				A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A	N/A	N/A	N/A				A-T-045

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Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4AB	6AE	5A	4AB	6ABE	6AE				
PAH-16MS										
Acenaphthene _A ^{M#}	0.02	<0.10	<0.01	<0.01	0.07	0.12		mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.02	0.36	<0.01	<0.01	0.27	0.34		mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.07	3.21	<0.02	<0.02	0.43	0.53		mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.44	15.4	<0.04	0.06	2.94	4.02		mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.61	11.8	<0.04	<0.04	3.30	3.97		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.67	15.8	<0.05	0.06	4.29	5.25		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.48	4.75	<0.05	<0.05	1.38	2.02		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.20	6.41	<0.07	<0.07	1.32	1.55		mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.54	17.3	<0.06	0.09	3.36	4.05		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.08	1.14	<0.04	<0.04	0.30	0.42		mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.48	29.8	<0.08	0.12	5.80	7.03		mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	0.22	<0.01	<0.01	0.10	0.16		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.56	7.12	<0.03	0.04	1.94	2.82		mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.05	0.49	<0.03	<0.03	0.16	0.23		mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.25	5.97	0.09	0.08	2.22	2.02		mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.45	25.1	<0.07	<0.07	4.78	6.17		mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	4.92	145	0.09	0.45	32.7	40.7		mg/kg	0.01	A-T-019s

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Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4AB	6AE	5A	4AB	6ABE	6AE				
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	4	<1	<1	4	4		mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	4	<1	<1	2	4		mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	2	9	<1	1	4	8		mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	3	8	5	6	6	12		mg/kg	1	A-T-055s
Ali >C21-C35 _A	8	13	28	129	114	150		mg/kg	1	A-T-055s
Total Aliphatics _A	16	36	32	138	130	179		mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	4	6	5	5	7	10		mg/kg	1	A-T-055s
Aro >C10-C12 _A ^{M#}	2	5	<1	<1	4	5		mg/kg	1	A-T-055s
Aro >C12-C16 _A	5	14	2	3	11	18		mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	42	141	5	15	43	67		mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	169	485	46	53	224	327		mg/kg	1	A-T-055s
Total Aromatics _A	222	654	57	76	289	427		mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	238	690	87	214	418	606		mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

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CF32 0EH

Project: Britton Ferry

Clients Project No: 2012

Project No: 20/02660

Date Received: 17/03/2020 (am)

Cool Box Temperatures (°C): 10.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.