



Certificate of Analysis

Certificate Number 22-13216

Issued: 18-Jul-22

Client Earth Science Partnership
33 Cardiff Road
Taffs Well
Cardiff
CF15 7RB

Our Reference 22-13216

Client Reference 8159

Order No 10807

Contract Title FACTORY ROAD

Description 11 Soil samples.

Date Received 12-Jul-22

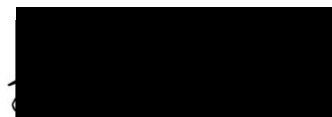
Date Started 12-Jul-22

Date Completed 18-Jul-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



2139

Summary of Chemical Analysis

Soil Samples

Our Ref 22-13216

Client Ref 8159

Contract Title FACTORY ROAD

Lab No	2031416	2031417	2031418	2031419	2031420	2031421
Sample ID	TP01	TP02	WS01	WS01	WS02	WS03
Depth	0.50	0.40	0.40	1.00	0.50	0.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	3.4	3.0	2.8	2.9	4.1	1.3
Barium	DETSC 2301#	1.5	mg/kg	140	150	390	670	730	140
Beryllium	DETSC 2301#	0.2	mg/kg	1.1	0.5	1.0	1.4	< 0.2	0.8
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.8	0.5	0.3	0.3	0.3	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.4	1.0	3.3	8.3	0.2
Chromium	DETSC 2301#	0.15	mg/kg	36	8.0	37	22	11	36
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	13	11	18	18	17	7.8
Lead	DETSC 2301#	0.3	mg/kg	17	25	30	36	94	12
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.07	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	41	7.4	43	12	8.7	42
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	1.0	0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	43	14	41	37	12	30
Zinc	DETSC 2301#	1	mg/kg	62	44	84	78	180	39
Inorganics									
pH	DETSC 2008#		pH	7.5	8.4	8.2	8.7	9.6	7.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	0.5	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	0.6	1.5	0.1	0.6	0.6	0.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l				360		
Sulphur as S, Total	DETSC 2320	0.01	%				0.16		
Sulphate as SO4, Total	DETSC 2321#	0.01	%				0.24		
PAHs									
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	1.2	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.18	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.45	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	1.9	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	3.4	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	3.6	< 0.03	0.03	0.04	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	1.9	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	1.6	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	2.6	< 0.03	0.03	0.04	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.40	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	3.8	< 0.03	0.04	0.06	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.81	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	1.3	< 0.03	< 0.03	< 0.03	< 0.03
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	2.4	< 0.03	< 0.03	0.05	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	3.0	< 0.03	0.04	0.05	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	28	< 0.10	< 0.15	< 0.22	< 0.10
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	0.5	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 22-13216

Client Ref 8159

Contract Title FACTORY ROAD

Lab No	2031422	2031423	2031424	2031425	2031426
Sample ID	WS04	WS02	WS03	TP01	TP02
Depth	0.50	0.90	1.40	1.20	1.70
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	29/06/2022	29/06/2022	29/06/2022	29/06/2022	29/06/2022
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	3.7				
Barium	DETSC 2301#	1.5	mg/kg	150				
Beryllium	DETSC 2301#	0.2	mg/kg	0.6				
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.3				
Cadmium	DETSC 2301#	0.1	mg/kg	0.1				
Chromium	DETSC 2301#	0.15	mg/kg	26				
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0				
Copper	DETSC 2301#	0.2	mg/kg	12				
Lead	DETSC 2301#	0.3	mg/kg	16				
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05				
Nickel	DETSC 2301#	1	mg/kg	26				
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5				
Vanadium	DETSC 2301#	0.8	mg/kg	38				
Zinc	DETSC 2301#	1	mg/kg	51				
Inorganics								
pH	DETSC 2008#		pH	7.9	7.8	6.8	7.7	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1				
Organic matter	DETSC 2002#	0.1	%	0.3				
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l		40	41	37	51
Sulphur as S, Total	DETSC 2320	0.01	%		0.01	< 0.01	0.02	0.02
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.04	0.03	0.04	0.04
PAHs								
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03				
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03				
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03				
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03				
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03				
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03				
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03				
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03				
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03				
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03				
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03				
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03				
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03				
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03				
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03				
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10				
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3				

Summary of Asbestos Analysis Soil Samples

Our Ref 22-13216

Client Ref 8159

Contract Title FACTORY ROAD

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2031416	TP01 0.50	SOIL	NAD	none	D Wilkinson
2031417	TP02 0.40	SOIL	NAD	none	D Wilkinson
2031418	WS01 0.40	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
2031419	WS01 1.00	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
2031420	WS02 0.50	SOIL	NAD	none	D Wilkinson
2031421	WS03 0.50	SOIL	NAD	none	D Wilkinson
2031422	WS04 0.50	SOIL	NAD	none	D Wilkinson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 22-13216
Client Ref 8159
Contract FACTORY ROAD

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2031416	TP01 0.50 SOIL	29/06/22	GJ 250ml, PT 1L	pH + Conductivity (7 days)	
2031417	TP02 0.40 SOIL	29/06/22	GJ 250ml, PT 1L	pH + Conductivity (7 days)	
2031418	WS01 0.40 SOIL	29/06/22	GJ 250ml, PT 1L	pH + Conductivity (7 days)	
2031419	WS01 1.00 SOIL	29/06/22	GJ 250ml, PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2031420	WS02 0.50 SOIL	29/06/22	GJ 250ml, PT 1L	pH + Conductivity (7 days)	
2031421	WS03 0.50 SOIL	29/06/22	GJ 250ml, PT 1L	pH + Conductivity (7 days)	
2031422	WS04 0.50 SOIL	29/06/22	GJ 250ml, PT 1L	pH + Conductivity (7 days)	
2031423	WS02 0.90 SOIL	29/06/22	GJ 250ml, PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2031424	WS03 1.40 SOIL	29/06/22	GJ 250ml, PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2031425	TP01 1.20 SOIL	29/06/22	GJ 250ml, PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2031426	TP02 1.70 SOIL	29/06/22	GJ 250ml, PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report