

ANNEX F
Groundwater Chemical Test
Results



Certificate of Analysis

Certificate Number 18-29247

24-Dec-18

Client Terra Firma (Wales) Ltd
5 Deryn Court
Wharfdale Road
Pentwyn
Cardiff
CF23 7HB

Our Reference 18-29247

Client Reference (not supplied)

Order No 14958

Contract Title Celsa

Description One Water sample.

Date Received 13-Dec-18

Date Started 13-Dec-18

Date Completed 24-Dec-18

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

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Water Samples

Our Ref 18-29247

Client Ref

Contract Title Celsa

Lab No	1435398
Sample ID	BH03 D
Depth	
Other ID	
Sample Type	WATER
Sampling Date	11/12/18
Sampling Time	n/s

Test	Method	LOD	Units	
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	14
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.07
Chromium, Dissolved	DETSC 2306	0.25	ug/l	15
Chromium III, Dissolved	DETSC 2306*	1	ug/l	15
Chromium, Hexavalent	DETSC 2203	0.007	mg/l	< 0.007
Copper, Dissolved	DETSC 2306	0.4	ug/l	4.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	1.2
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	23
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.9
Zinc, Dissolved	DETSC 2306	1.3	ug/l	270
Inorganics				
Conductivity	DETSC 2009	1	uS/cm	27500
pH	DETSC 2008			7.4
Biochemical Oxygen Demand, Total	DETSC 2031	1	mg/l	36
Chemical Oxygen Demand, Total	DETSC 2032	10	mg/l	890
Cyanide, Total	DETSC 2130	40	ug/l	< 40
Hardness	DETSC 2303	0.1	mg/l	2760
Sulphate as SO4	DETSC 2055	0.1	mg/l	500
Sulphide	DETSC 2208	10	ug/l	< 10
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10
EPH (C10-C40)	DETSC 3311	10	ug/l	< 10
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05

Summary of Chemical Analysis

Water Samples

Our Ref 18-29247

Client Ref

Contract Title Celsa

Lab No	1435398
Sample ID	BH03 D
Depth	
Other ID	
Sample Type	WATER
Sampling Date	11/12/18
Sampling Time	n/s

Test	Method	LOD	Units	
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.04
Fluorene	DETSC 3304	0.01	ug/l	0.03
Phenanthrene	DETSC 3304	0.01	ug/l	0.07
Anthracene	DETSC 3304	0.01	ug/l	0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.02
Pyrene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	0.23
PCBs				
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0
Phenols				
Phenol	DETSC 3451*	0.1	ug/l	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10

Information in Support of the Analytical Results

Our Ref 18-29247

Client Ref

Contract Celsa

Containers Received & Deviating Samples

Lab No	Sample ID	Date		Holding time exceeded for tests	Inappropriate container for tests
		Sampled	Containers Received		
1435398	BH03 D WATER	11/12/18	GB 1L, PB 1L		
<p>Key: G-Glass P-Plastic B-Bottle</p> <p>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.</p>					

Disposal

<p>From the issue date of this test certificate, samples will be held for the following times prior to disposal :-</p> <p>Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months</p>
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Certificate of Analysis

Certificate Number 19-00123

11-Jan-19

Client Terra Firma (Wales) Ltd
5 Deryn Court
Wharfdale Road
Pentwyn
Cardiff
CF23 7HB

Our Reference 19-00123

Client Reference (not supplied)

Order No 14958

Contract Title CELSA

Description 4 Water samples.

Date Received 04-Jan-19

Date Started 04-Jan-19

Date Completed 11-Jan-19

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

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Water Samples

Our Ref 19-00123

Client Ref

Contract Title CELSA

Lab No	1441557	1441558	1441559	1441560
Sample ID	BH01 D	BH02 D	BH03 D	BH03 S
Depth				
Other ID				
Sample Type	WATER	WATER	WATER	WATER
Sampling Date	02/01/19	02/01/19	02/01/19	02/01/19
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	48	10	16	21
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	0.04
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.85	0.37	0.74
Chromium III, Dissolved	DETSC 2306*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Chromium, Hexavalent	DETSC 2203	0.007	mg/l	< 0.007	< 0.007	< 0.007	< 0.007
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.3	1.9	1.4	0.8
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.60	0.10	< 0.09	1.1
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	3.1	1.6	1.4	4.7
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.0	16	6.8	8.4
Zinc, Dissolved	DETSC 2306	1.3	ug/l	16	12	9.2	4.3
Inorganics							
Conductivity	DETSC 2009	1	uS/cm	2510	2210	2240	1820
pH	DETSC 2008			6.5	8.3	8.1	11.7
Biochemical Oxygen Demand, Total	DETSC 2031	1	mg/l	5.4	5.7	12	13
Chemical Oxygen Demand, Total	DETSC 2032	10	mg/l	25	72	42	150
Cyanide, Total	DETSC 2130	40	ug/l	93	220	320	220
Hardness	DETSC 2303	0.1	mg/l	337	425	456	225
Sulphate as SO4	DETSC 2055	0.1	mg/l	300	450	490	150
Sulphide	DETSC 2208	10	ug/l	< 10	< 10	< 10	60
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10
EPH (C10-C40)	DETSC 3311	10	ug/l	180	87	83	140
PAHs							
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05	0.95

Summary of Chemical Analysis

Water Samples

Our Ref 19-00123

Client Ref

Contract Title CELSA

Lab No	1441557	1441558	1441559	1441560
Sample ID	BH01 D	BH02 D	BH03 D	BH03 S
Depth				
Other ID				
Sample Type	WATER	WATER	WATER	WATER
Sampling Date	02/01/19	02/01/19	02/01/19	02/01/19
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.01	0.26
Acenaphthene	DETSC 3304	0.01	ug/l	0.12	< 0.01	< 0.01	3.5
Fluorene	DETSC 3304	0.01	ug/l	0.06	< 0.01	< 0.01	3.3
Phenanthrene	DETSC 3304	0.01	ug/l	0.03	< 0.01	0.02	5.0
Anthracene	DETSC 3304	0.01	ug/l	0.02	< 0.01	< 0.01	7.0
Fluoranthene	DETSC 3304	0.01	ug/l	0.02	< 0.01	< 0.01	0.90
Pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.50
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.16
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.24
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.27
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.37
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.14
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.15
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.15
PAH Total	DETSC 3304	0.2	ug/l	0.28	< 0.20	< 0.20	23
PCBs							
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6	< 0.6	< 0.6	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Phenols							
Phenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.13	< 0.10
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.13	< 0.10
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.13	< 0.10
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.13	< 0.10
p-cresol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.13	< 0.10
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.13	< 0.10
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.13	< 0.10
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.10	< 0.10	< 0.13	< 0.10

Information in Support of the Analytical Results

Our Ref 19-00123

Client Ref

Contract CELSA

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1441557	BH01 D WATER	02/01/19	GB 1L, PB 1L		
1441558	BH02 D WATER	02/01/19	GB 1L, PB 1L		
1441559	BH03 D WATER	02/01/19	GB 1L, PB 1L		
1441560	BH03 S WATER	02/01/19	GB 1L, PB 1L		

Key: G-Glass P-Plastic B-Bottle

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.

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



Certificate of Analysis

Certificate Number 19-00773

22-Jan-19

Client Terra Firma (Wales) Ltd
5 Deryn Court
Wharfdale Road
Pentwyn
Cardiff
CF23 7HB

Our Reference 19-00773

Client Reference (not supplied)

Order No 14958

Contract Title Celsa

Description 4 Water samples.

Date Received 16-Jan-19

Date Started 16-Jan-19

Date Completed 22-Jan-19

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

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Water Samples

Our Ref 19-00773

Client Ref

Contract Title Celsa

Lab No	1445474	1445475	1445476	1445477
Sample ID	BH01 D	BH02 D	BH03 D	BH03 S
Depth				
Other ID				
Sample Type	WATER	WATER	WATER	WATER
Sampling Date	15/01/19	15/01/19	15/01/19	15/01/19
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	25	12	18	22
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	0.04	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	11	< 0.25
Chromium III, Dissolved	DETSC 2306*	1	ug/l	< 1.0	< 1.0	11	< 1.0
Chromium, Hexavalent	DETSC 2203	0.007	mg/l	< 0.007	< 0.007	< 0.007	< 0.007
Copper, Dissolved	DETSC 2306	0.4	ug/l	< 0.4	< 0.4	2.2	< 0.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	0.40	0.41
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	2.6	0.8	4.2	2.2
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.25	0.34	6.4	2.3
Zinc, Dissolved	DETSC 2306	1.3	ug/l	16	150	30	1.8
Inorganics							
Conductivity	DETSC 2009	1	uS/cm	2550	2150	885	1500
pH	DETSC 2008			7.0	10.3	7.0	11.6
Biochemical Oxygen Demand, Total	DETSC 2031	1	mg/l	7.3	5.5	5.5	46
Chemical Oxygen Demand, Total	DETSC 2032	10	mg/l	59	10	11	310
Cyanide, Total	DETSC 2130	40	ug/l	46	420	80	190
Hardness	DETSC 2303	0.1	mg/l	413	487	157	206
Sulphate as SO4	DETSC 2055	0.1	mg/l	230	450	120	120
Sulphide	DETSC 2208	10	ug/l	13	< 10	< 10	410
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10
EPH (C10-C40)	DETSC 3311	10	ug/l	110	< 10	150	38
PAHs							
Naphthalene	DETSC 3304	0.05	ug/l	0.07	0.10	0.16	0.41

Summary of Chemical Analysis

Water Samples

Our Ref 19-00773

Client Ref

Contract Title Celsa

Lab No	1445474	1445475	1445476	1445477
Sample ID	BH01 D	BH02 D	BH03 D	BH03 S
Depth				
Other ID				
Sample Type	WATER	WATER	WATER	WATER
Sampling Date	15/01/19	15/01/19	15/01/19	15/01/19
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	0.05	< 0.01	0.06
Acenaphthene	DETSC 3304	0.01	ug/l	0.12	0.04	0.57	0.34
Fluorene	DETSC 3304	0.01	ug/l	0.08	0.03	0.09	0.32
Phenanthrene	DETSC 3304	0.01	ug/l	0.12	0.04	< 0.01	0.62
Anthracene	DETSC 3304	0.01	ug/l	0.02	< 0.01	< 0.01	0.12
Fluoranthene	DETSC 3304	0.01	ug/l	0.03	0.02	0.03	0.28
Pyrene	DETSC 3304	0.01	ug/l	< 0.01	0.02	< 0.01	0.19
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.12
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.13
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.18
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.09
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.13
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.09
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.09
PAH Total	DETSC 3304	0.2	ug/l	0.44	0.30	0.85	3.2
PCBs							
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6	< 0.6	< 0.6	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0
Phenols							
Phenol	DETSC 3451*	0.1	ug/l	< 0.20	< 0.20	< 0.50	< 0.20
4-Chloro-3-methylphenol	DETSC 3451*	0.1	ug/l	< 0.20	< 0.20	< 0.50	< 0.20
2,4-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.20	< 0.20	< 0.50	< 0.20
2,4-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.20	< 0.20	< 0.50	< 0.20
p-cresol	DETSC 3451*	0.1	ug/l	< 0.20	< 0.20	< 0.50	< 0.20
2,6-Dimethylphenol	DETSC 3451*	0.1	ug/l	< 0.20	< 0.20	< 0.50	< 0.20
2,6-Dichlorophenol	DETSC 3451*	0.1	ug/l	< 0.20	< 0.20	< 0.50	< 0.20
2,4,6-Trichlorophenol	DETSC 3451*	0.1	ug/l	< 0.20	< 0.20	< 0.50	< 0.20

Information in Support of the Analytical Results

Our Ref 19-00773

Client Ref

Contract Celsa

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1445474	BH01 D WATER	15/01/19	GB 1L, PB 1L		
1445475	BH02 D WATER	15/01/19	GB 1L, PB 1L		
1445476	BH03 D WATER	15/01/19	GB 1L x2		
1445477	BH03 S WATER	15/01/19	GB 1L, PB 1L		

Key: G-Glass P-Plastic B-Bottle

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.

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