

Our Ref: RH/12032/NHBC

Your Ref:

Contact: Ruth Howells

29th July 2020

NHBC

For the attention of Mr Stephen Moreby

Dear Stephen

HERBERT ROAD, NEWPORT

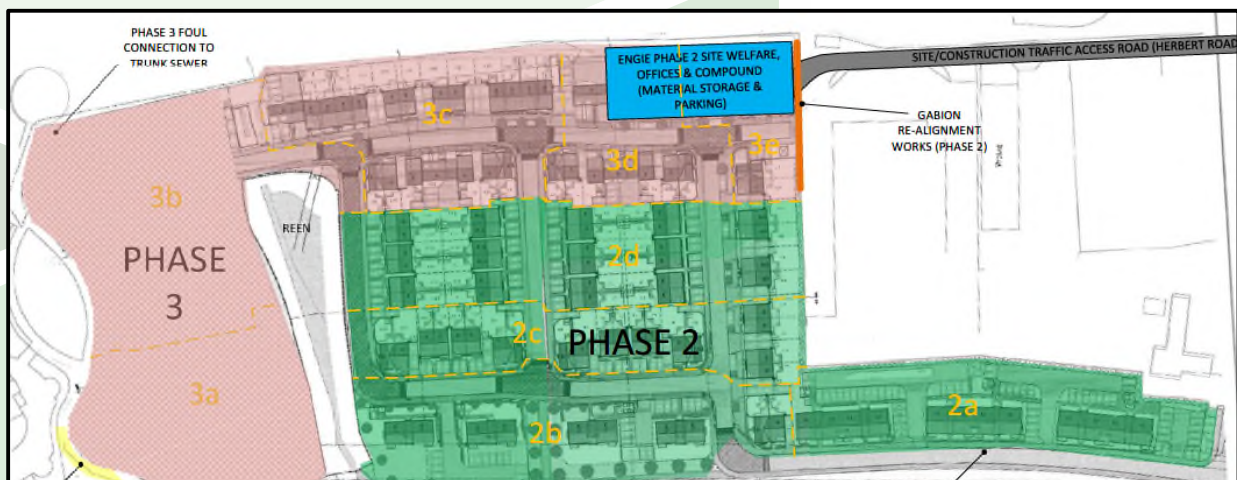
YOUR REF: SNIN: 0006119235 & SNIN: 000612379

I write with regards to the planning condition relating to capping of garden and landscaped areas of the development:

Condition

Verification report required for contamination remediation works. The report is to accord with NHBC Standards Chapter 4.1 and is to include verification of the following issues:

- *placement of min 600mm of clean capping soils above a geotextile/granular marker layer in all gardens/soft landscaped areas*
- *confirmation no additional contamination issues identified during groundworks*



For clarity, the table below summarises the site investigation works completed and the required remedial measures identified in relation to capping and a marker layer/no-dig barrier.

Report	Date	Area Covered	Conclusions
Geotechnical and Geo-environmental Report For Greenhill Construction	March 2013	Phases 2b – 2d and 3a-3e.	Site will be capped with imported fill as part of flood prevention
Remediation Strategy For Riversee Limited (Engie have reliance on this report)	August 2015	Phases 2b – 2d and 3c-3e.	Capping as part of flood prevention, to include 600mm clean fill in garden and landscaped areas
Earthworks Validation Report For Engie	July 2018	Phases 2b – 2d and 3c-3e.	All imported soils confirmed acceptable by Newport Council and NRW Final assessment on required capping in garden and landscaped areas dependent on last fill imported (piling mat – imported June 2017), which will lie directly below the capping layer
Letter 46 to Newport City Council	August 2017	Phases 2b – 2d and 3c-3e.	Letter details chemistry of the piling mat material imported June 2017 Confirms a few elevated levels of some PAHs, lead and one occurrence of an ACM fragment (from 30 samples) Concluded that a 600mm cap of imported clean soil would still be required in garden and landscaped areas No requirement for a marker layer/no-dig barrier
Geotechnical and Geo-environmental Report Phase 2a For Engie	July 2018	2a	600mm cap with clean imported soils and double no-dig barrier required
Geotechnical and Geo-environmental Report Phase 3 North of Reen For Engie	July 2018	3A & 3b	600mm cap with clean imported soils and double no-dig barrier required

I can confirm that there is no requirement for a marker layer/no-dig barrier at the base of the capping soils for Phases 2b – 2d and 3c-3e. Please see enclosed a copy of TFW Letter 46.

I would be grateful for confirmation that this recommendation meets your approval and for the Condition to be modified to omit the requirement for the marker layer in these areas.

I trust that the above is to your satisfaction, however, if you have any queries or require any further information please do not hesitate to contact me.

Yours sincerely

for: Terra Firma (Wales) Ltd



Mrs Ruth Howells

Our Ref: RH/12032/Let46

Your Ref:

Contact: Ruth Howells

Terra Firma (Wales) Ltd.

Consulting Geotechnical & Geo-Environmental Engineers
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24th August 2017

Via Email

Senior Scientific Officer
Newport City Council

For the attn. of Mr Peter Mackintosh

Dear Peter

HERBERT ROAD, NEWPORT: IMPORTED PILING MAT MATERIAL, MAIN SITE

A piling mat has been placed across the main area of the Herbert Road site (Phases 3, 4 and part of Phase 2).

A volume of 5000m³ of crushed material was sourced from Neal Soils for use as the piling mat. The piling mat will permanently remain on site.

Twenty representative samples were taken at source (Neal Soils) and 10 further samples were taken from across the site following import and placement. On-site samples were taken from the surface.

Test result certificates are provided in **Annex A**.

Results have been compared to residential thresholds (excluding plant uptake) as all garden areas are yet to be raised by a minimum of 600mm.

Table 1 on the following pages summarises the soil results of all 30 samples.

Table 1 Summary of Soil Chemical Test Results

Substance	SGV/GAC (mg/kg)	Source	Measured Concentrations of Tested Substances (mg/kg)		Number of Exceedences
			Minimum	Maximum	
Antimony	-	-	<1.0	22	0
Arsenic	32	CLEA	3.1	22	0
Beryllium	1.7	CIEH	<0.2	0.5	0
Boron	11000	CIEH	<0.2	1.7	0
Cadmium	10	CLEA	<0.1	0.7	0
Chromium III	910	CIEH	7.5	34	0
Chromium VI	6	CIEH	<1.0	<1.0	0
Copper	7100	CIEH	6.1	46	0
Lead	310	C4SL	8.3	2300	2
Mercury	170	CLEA	<0.05	0.08	0
Manganese	-	-	200	790	-
Molybdenum	-	-	0.6	1.2	-
Nickel	180	CIEH	4.9	13	0
Selenium	350	CLEA	<0.5	0.6	0
Zinc	40000	CIEH	22	150	0
Cyanide	8	CLEA	<0.1	0.2	0
Phenols	420	CLEA	<0.3	0.7	0
Sulphate	-	-	2300	22000	-
Organic Matter	-	-	0.2	2.6	-
pH	-	-	11.3	12.3	-
Asbestos	-	-	Not Detected	Board fragment containing amosite and chrysotile	1
Naphthalene	2.3	CIEH	<0.03	1.2	0
Acenaphthylene	2900	CIEH	<0.03	0.07	0
Acenaphthene	3000	CIEH	<0.03	1.7	0
Fluorene	2800	CIEH	<0.03	0.98	0
Phenanthrene	1300	CIEH	0.05	10	0
Anthracene	31000	CIEH	<0.03	2.3	0
Fluoranthene	1500	CIEH	0.07	17	0
Pyrene	3700	CIEH	0.06	13	0
Benzo(a)anthracene	11	CIEH	0.03	7.7	0
Chrysene	30	CIEH	0.11	7.0	0
Benzo(b)fluoranthene	3.9	CIEH	0.04	12	2
Benzo(k)fluoranthene	110	CIEH	<0.03	3.7	0
Benzo(a)pyrene	3.2	CIEH	0.03	6.6	2
Indeno(123cd)pyrene	46	CIEH	<0.03	3.9	0
Dibenzo(ah)anthracene	0.32	CIEH	<0.03	1.8	3
Benzo(ghi)perylene	360	CIEH	<0.03	4.6	0

Table 1 (Continued) Summary of Soil Chemical Test Results

Substance	GAC (mg/kg)	Source	Measured Concentrations of Tested Substances (mg/kg)		Number of Exceedences
			Minimum	Maximum	
Aliphatic PH					
PH C5 – C6 Ali	42	CIEH	<0.01	<0.01	0
PH C6 – C8 Ali	100	CIEH	<0.01	<0.01	0
PH C8 – C10 Ali	27	CIEH	<0.01	<0.01	0
PH C10 – C12 Ali	130	CIEH	<1.5	6.2	0
PH C12 – C16 Ali	1100	CIEH	<1.2	21	0
PH C16 – C21 Ali	65000*	CIEH	<1.5	20	0
PH C21 – C35 Ali	65000*	CIEH	<3.4	220	0
PH C35 – C44 Ali	65000	CIEH	<3.4	100	0
Aromatic PH					
PH C5 – C7 Arom	370	CIEH	<0.01	<0.01	0
PH C7 – C8 Arom	860	CIEH	<0.01	<0.01	0
PH C8 – C10 Arom	47	CIEH	<0.01	<0.01	0
PH C10 – C12 Arom	250	CIEH	<0.9	4.0	0
PH C12 – C16 Arom	1800	CIEH	<0.5	14	0
PH C16 – C21 Arom	1900	CIEH	1.1	68	0
PH C21 – C35 Arom	1900	CIEH	27	170	0
PH C35 – C44 Arom	1900	CIEH	6.4	68	0

Notes

- CIEH for PAH and petroleum hydrocarbons based on 1.0% SOM
- * - LQM for Ali C16 - 21 and C21 - C35 based on LQM for EC >16 - 35

Lead and several PAH species were found to exceed guideline values. One fragment of ACM was identified, but no asbestos was found in the other 29 samples.

Lead, PAHs and asbestos are identified as contaminants of concern in relation to human health.

For future residents potential source to receptor pathways considered are dermal contact with soil, inhalation of soil/soil dust, ingestion of soil/soil dust, inhalation of asbestos fibres and intake of affected potable water.

The intended minimum 600mm cap in all garden and landscaped areas will effectively form a barrier between the site residents and the materials preventing any risks from dermal contact, ingestion and inhalation.

Lead may present a risk to the potable water supply. Whilst the leachate values for lead fall below the Drinking Water Directive threshold of 10ug/l the Welsh Water 'action level' for lead is soil is 600mg/kg. In view of this it is recommended that if any potable water supply pipes that are to be laid at a depth that may bring them in to contact with the piling mat materials service trenches should be backfilled with suitable clean materials.

I trust that the above is to your satisfaction, however, if you have any queries or require any further information please do not hesitate to contact me.

Yours sincerely
for: Terra Firma (Wales) Ltd

R. Howells.

Mrs Ruth Howells

**Annex A
Laboratory Chemical Test
Results**



DETS

Certificate of Analysis

Certificate Number 17-99136-2

18-May-17

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

Our Reference 17-99136-2

Client Reference 12032

Order No 12032NS

Contract Title Herbert Road

Description 20 Soil samples, 20 Leachate samples.

Date Received Tuesday, May 9, 2017

Date Started Tuesday, May 9, 2017

Date Completed Thursday, May 18, 2017

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

Notes **This report supersedes 17-99136. Extra testing**

Opinions and interpretations are outside the scope of UKAS 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. Observations and interpretations are outside the scope of ISO 17025. 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

Matrix Descriptions

Our Ref 17-99136-2

Client Ref 12032

Contract Title Herbert Road

Sample ID	Lab No	Completed	Matrix Description
S1	1169919	17-May-17	Brown gravelly SAND (Made ground - brick) including odd rootlets
S2	1169920	17-May-17	Brown gravelly SAND (Made ground - brick)
S3	1169921	17-May-17	Brown gravelly SAND (Made ground - brick, metal)
S4	1169922	17-May-17	Brown gravelly SAND (Made ground - brick, metal)
S5	1169923	17-May-17	Brown gravelly SAND (Made ground - brick, glass)
S6	1169924	17-May-17	Brown gravelly SAND (Made ground - brick) including odd rootlets
S7	1169925	17-May-17	Brown gravelly SAND (Made ground - brick)
S8	1169926	17-May-17	Brown gravelly SAND (Made ground - brick, glass) including odd rootlets
S9	1169927	17-May-17	Brown gravelly SAND (Made ground - brick) including odd rootlets
S10	1169928	17-May-17	Brown gravelly SAND (Made ground - brick) including odd rootlets
S11	1169929	17-May-17	Brown gravelly SAND (Made ground - brick) including odd rootlets
S12	1169930	17-May-17	Brown gravelly SAND (Made ground - brick) including odd rootlets
S13	1169931	17-May-17	Brown gravelly SAND (Made ground - brick) including odd rootlets
S14	1169932	17-May-17	Brown gravelly SAND (Made ground - brick) including odd rootlets
S15	1169933	17-May-17	Brown gravelly SAND (Made ground - brick)
S16	1169934	17-May-17	Brown gravelly SAND (Made ground - plastic, brick)
S17	1169935	17-May-17	Brown gravelly SAND (Made ground - brick, slag)
S18	1169936	17-May-17	Brown gravelly SAND (Made ground - brick, slag) including odd rootlets
S19	1169937	17-May-17	Brown gravelly SAND (Made ground - brick, slag)
S20	1169938	17-May-17	Brown gravelly SAND (Made ground - brick, slag)



Summary of Chemical Analysis

Soil Samples

Our Ref 17-99136-2
 Client Ref 12032
 Contract Title Herbert Road

Lab No	1169919	1169920	1169921	1169922	1169923	1169924
Sample ID	S1	S2	S3	S4	S5	S6
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%	5.0	5.4	2.6	5.9	6.4	1.7
Metals									
Antimony	DETSC 2301*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	4.5	5.4	5.3	4.7	5.6	3.1
Beryllium	DETSC 2301#	0.2	mg/kg	0.3	0.2	0.2	0.3	0.3	< 0.2
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	1.1	0.2	0.7	1.3	0.7	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.2	0.2	0.3	0.4	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	15	13	10	9.8	13	6.7
Chromium III	DETSC 2301*	0.15	mg/kg	15	13	10	9.8	13	6.7
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	11	11	10	8.8	11	7.4
Lead	DETSC 2301#	0.3	mg/kg	12	40	12	11	24	8.3
Manganese	DETSC 2301#	20	mg/kg	470	610	320	290	380	200
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.9	0.7	0.8	0.7	0.9	0.6
Nickel	DETSC 2301#	1	mg/kg	7.0	7.6	6.7	6.5	7.1	5.1
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5
Zinc	DETSC 2301#	1	mg/kg	39	45	31	29	51	22
Inorganics									
pH	DETSC 2008#			12.0	11.6	12.1	12.1	12.0	12.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
FOC	DETSC 2002	0.001		0.005	0.002	0.003	0.001	0.004	0.002
Organic matter	DETSC 2002#	0.1	%	0.8	0.4	0.5	0.2	0.7	0.4
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.45	1.0	0.49	0.58	0.62	0.64
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	3.1	< 1.2	2.0	< 1.2	4.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	11	< 1.5	11	6.1	15
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	85	28	77	40	110
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4	20	8.9	18	12	47
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	100	28	90	47	130
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	4.0	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	10	2.1	< 0.5	3.0	3.0	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	36	12	5.2	13	13	11



Summary of Chemical Analysis

Soil Samples

Our Ref 17-99136-2
 Client Ref 12032
 Contract Title Herbert Road

Lab No	1169919	1169920	1169921	1169922	1169923	1169924
Sample ID	S1	S2	S3	S4	S5	S6
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	120	87	43	83	48	42
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	6.4	27	13	27	15	11
Aromatic C5-C35	DETSC 3072*	10	mg/kg	170	100	48	99	64	53
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	170	200	76	190	110	180
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.12	0.09	< 0.03	0.05	0.10	0.10
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.05
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.15	0.19	< 0.03	0.16	0.29	0.71
Fluorene	DETSC 3303	0.03	mg/kg	0.10	0.14	< 0.03	0.11	0.22	0.44
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.67	0.94	0.05	0.75	1.6	4.3
Anthracene	DETSC 3303	0.03	mg/kg	0.13	0.21	< 0.03	0.16	0.55	1.2
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.72	1.2	0.07	0.74	2.1	5.6
Pyrene	DETSC 3303#	0.03	mg/kg	0.56	0.86	0.06	0.55	1.7	4.7
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.35	0.53	0.03	0.39	0.81	2.1
Chrysene	DETSC 3303	0.03	mg/kg	0.40	0.57	0.04	0.41	0.84	2.0
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.48	0.70	0.04	0.50	1.2	3.0
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.18	0.26	< 0.03	0.14	0.36	1.3
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.34	0.47	0.03	0.32	0.80	2.4
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.17	0.25	< 0.03	0.16	0.40	1.2
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.08	0.12	< 0.03	0.08	0.17	0.37
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.21	0.28	< 0.03	0.19	0.49	1.5
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	4.7	6.8	0.33	4.7	12	31
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.5	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-99136-2
 Client Ref 12032
 Contract Title Herbert Road

Lab No	1169925	1169926	1169927	1169928	1169929	1169930
Sample ID	S7	S8	S9	S10	S11	S12
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%	5.0	4.6	4.8	6.4	2.8	2.3
Metals									
Antimony	DETSC 2301*	1	mg/kg	< 1.0	< 1.0	1.5	< 1.0	< 1.0	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	4.0	7.0	6.2	5.8	6.1	6.4
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	0.4	0.5	0.3	0.3	0.2
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	< 0.2	0.5	0.6	0.8	0.6	0.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.6	0.3	0.4	0.2	0.3
Chromium	DETSC 2301#	0.15	mg/kg	22	13	12	11	9.1	9.8
Chromium III	DETSC 2301*	0.15	mg/kg	22	13	12	11	9.1	9.8
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	6.5	13	15	12	7.8	11
Lead	DETSC 2301#	0.3	mg/kg	8.8	17	18	18	9.3	12
Manganese	DETSC 2301#	20	mg/kg	720	400	530	390	460	470
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.6	0.8	0.9	0.8	0.7	0.8
Nickel	DETSC 2301#	1	mg/kg	6.8	7.7	7.5	8.0	6.0	6.3
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	24	67	55	43	34	45
Inorganics									
pH	DETSC 2008#			12.2	12.0	11.9	11.8	12.1	12.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
FOC	DETSC 2002	0.001		0.005	0.007	0.008	0.009	0.010	0.008
Organic matter	DETSC 2002#	0.1	%	0.9	1.3	1.4	1.6	1.7	1.3
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.35	0.52	0.44	0.67	0.42	0.51
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	6.2	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	2.0	< 1.2	5.8	4.6	8.1	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	6.6	5.5	17	12	12	4.0
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	68	67	220	140	190	77
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	22	16	98	62	75	27
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	77	72	250	160	210	81
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	1.5	1.0	9.2	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	7.5	4.9	42	6.1	4.6	2.0



Summary of Chemical Analysis Soil Samples

Our Ref 17-99136-2

Client Ref 12032

Contract Title Herbert Road

Lab No	1169925	1169926	1169927	1169928	1169929	1169930
Sample ID	S7	S8	S9	S10	S11	S12
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	28	27	140	42	43	19
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	6.8	7.7	48	20	20	8.2
Aromatic C5-C35	DETSC 3072*	10	mg/kg	37	33	190	48	48	21
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	110	110	440	200	260	100
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.08	0.04	< 0.03	0.09	0.06	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.21	0.09	1.4	0.22	0.13	0.07
Fluorene	DETSC 3303	0.03	mg/kg	0.12	0.06	0.56	0.15	0.11	0.05
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.76	0.48	6.2	0.99	0.71	0.32
Anthracene	DETSC 3303	0.03	mg/kg	0.15	0.10	6.2	0.24	0.16	0.05
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.87	0.60	6.6	1.3	0.84	0.34
Pyrene	DETSC 3303#	0.03	mg/kg	0.64	0.46	4.9	1.1	0.64	0.25
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.42	0.29	2.6	0.56	0.43	0.15
Chrysene	DETSC 3303	0.03	mg/kg	0.43	0.29	2.5	0.57	0.47	0.19
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.62	0.40	3.4	0.74	0.63	0.31
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.23	0.12	1.2	0.28	0.25	0.27
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.40	0.27	2.3	0.55	0.40	0.11
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.23	0.15	1.1	0.26	0.19	0.09
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.11	0.07	0.47	0.13	0.09	0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.26	0.17	1.3	0.33	0.22	0.10
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	5.5	3.6	41	7.5	5.3	2.3
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.7	< 0.3	< 0.3	< 0.3	0.4	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-99136-2
 Client Ref 12032
 Contract Title Herbert Road

Lab No	1169931	1169932	1169933	1169934	1169935	1169936
Sample ID	S13	S14	S15	S16	S17	S18
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%	3.7	4.0	5.5	3.5	2.8	2.4
Metals									
Antimony	DETSC 2301*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	5.8	5.7	5.3	4.9	5.2	4.1
Beryllium	DETSC 2301#	0.2	mg/kg	0.3	0.4	0.3	0.2	0.3	0.4
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	0.9	0.5	0.7	0.6	0.8	0.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.2	0.6	0.2	0.3	0.2
Chromium	DETSC 2301#	0.15	mg/kg	14	11	12	11	8.4	7.5
Chromium III	DETSC 2301*	0.15	mg/kg	14	11	12	11	8.4	7.5
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	17	11	11	12	9.5	6.1
Lead	DETSC 2301#	0.3	mg/kg	25	12	17	15	13	11
Manganese	DETSC 2301#	20	mg/kg	480	450	390	460	400	530
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	1.0	0.7	0.7	0.8	0.8	0.5
Nickel	DETSC 2301#	1	mg/kg	7.3	6.3	8.6	6.3	6.1	4.9
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	0.6	< 0.5	< 0.5	0.6
Zinc	DETSC 2301#	1	mg/kg	50	32	42	35	36	25
Inorganics									
pH	DETSC 2008#			11.7	11.9	11.8	11.9	12.3	12.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
FOC	DETSC 2002	0.001		0.008	0.009	0.009	0.014	0.012	0.015
Organic matter	DETSC 2002#	0.1	%	1.3	1.6	1.5	2.4	2.1	2.6
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.45	0.47	0.70	0.33	0.61	0.36
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	4.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	5.1	21	3.4	< 1.2	6.4	3.3
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	20	11	14	5.2	14	8.9
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	120	140	180	65	110	78
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	40	100	80	33	37	30
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	140	180	200	70	130	91
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	2.5	6.7	1.2	0.7	14	5.4
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	16	15	8.8	5.2	68	30



Summary of Chemical Analysis

Soil Samples

Our Ref 17-99136-2
 Client Ref 12032
 Contract Title Herbert Road

Lab No	1169931	1169932	1169933	1169934	1169935	1169936
Sample ID	S13	S14	S15	S16	S17	S18
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	46	110	51	28	170	130
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	14	68	25	15	42	46
Aromatic C5-C35	DETSC 3072*	10	mg/kg	64	130	61	34	250	160
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	210	310	260	100	380	250
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	1.2	0.33	0.05	0.06	0.11	< 0.30
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.03	< 0.30	< 0.03	< 0.03	0.04	< 0.30
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.77	1.7	0.16	0.35	0.75	0.92
Fluorene	DETSC 3303	0.03	mg/kg	0.44	0.98	0.10	0.23	0.42	0.69
Phenanthrene	DETSC 3303#	0.03	mg/kg	3.7	8.4	0.80	2.3	3.4	10
Anthracene	DETSC 3303	0.03	mg/kg	1.0	8.6	0.19	0.60	1.0	1.9
Fluoranthene	DETSC 3303#	0.03	mg/kg	5.8	12	1.1	2.9	4.7	17
Pyrene	DETSC 3303#	0.03	mg/kg	5.0	11	0.91	2.4	4.0	13
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	2.0	4.1	0.46	0.88	1.5	7.7
Chrysene	DETSC 3303	0.03	mg/kg	1.9	3.9	0.46	0.85	1.5	7.0
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	2.6	6.2	0.66	1.1	2.1	12
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	1.0	1.8	0.21	0.43	0.66	3.7
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.9	4.5	0.40	0.78	1.5	6.6
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	1.0	2.4	0.24	0.44	0.87	3.9
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.27	0.78	0.10	0.13	0.27	1.8
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	1.3	2.8	0.31	0.53	1.1	4.6
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	30	70	6.2	14	24	< 90.51
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 17-99136-2
 Client Ref 12032
 Contract Title Herbert Road

Lab No	1169937	1169938
Sample ID	S19	S20
Depth		
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	08-May-17	08-May-17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Preparation					
Moisture Content	DETSC 1004	0.1	%	3.9	< 0.10
Metals					
Antimony	DETSC 2301*	1	mg/kg	< 1.0	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	5.1	4.2
Beryllium	DETSC 2301#	0.2	mg/kg	0.3	0.2
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	1.1	0.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	12	9.2
Chromium III	DETSC 2301*	0.15	mg/kg	12	9.2
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	9.1	8.8
Lead	DETSC 2301#	0.3	mg/kg	12	15
Manganese	DETSC 2301#	20	mg/kg	470	400
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	1.1	0.7
Nickel	DETSC 2301#	1	mg/kg	7.0	5.5
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	34	34
Inorganics					
pH	DETSC 2008#			12.1	11.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	< 0.2
FOC	DETSC 2002	0.001		0.004	0.013
Organic matter	DETSC 2002#	0.1	%	0.7	2.2
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.47	0.41
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	3.6
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	39	32
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	16	11
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	39	36
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	1.1	7.6

Summary of Chemical Analysis Soil Samples

Our Ref 17-99136-2
Client Ref 12032
Contract Title Herbert Road

Lab No	1169937	1169938
Sample ID	S19	S20
Depth		
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	08-May-17	08-May-17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	45	44
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	22	19
Aromatic C5-C35	DETSC 3072*	10	mg/kg	46	52
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	85	88
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.04	0.08
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.48
Fluorene	DETSC 3303	0.03	mg/kg	0.03	0.32
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.21	2.7
Anthracene	DETSC 3303	0.03	mg/kg	0.05	0.84
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.25	4.1
Pyrene	DETSC 3303#	0.03	mg/kg	0.19	3.5
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.11	1.4
Chrysene	DETSC 3303	0.03	mg/kg	0.11	1.3
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.13	1.9
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	0.68
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.08	1.3
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.05	0.73
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.23
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.06	0.89
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.4	20
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-99136-2

Client Ref 12032

Contract Title Herbert Road

Lab No	1169939	1169940	1169941	1169942	1169943	1169944
Sample ID	S1	S2	S3	S4	S5	S6
Depth						
Other ID						
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
NRA Leachate Preparation	DETS 036*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.53	0.56	0.41	0.58	0.56	0.52
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	2.5	2.9	0.89	1.7	3.9	1.9
Chromium III, Dissolved	DETSC 2302*	1	ug/l	1.3	1.5	< 1.0	1.6	2.3	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.2	1.6	0.7	0.8	1.7	1.0
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	0.8	0.6	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.38	0.42	< 0.25	< 0.25	0.30	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3	< 1.3	1.7	< 1.3	< 1.3
Inorganics									
pH	DETSC 2008			10.4	10.8	9.9	10.9	10.8	10.7
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40	< 40
Chloride	DETSC 2055	0.1	mg/l	2.6	3.7	2.2	4.1	3.4	2.2
Fluoride	DETSC 2055	0.1	mg/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Sulphate as SO4	DETSC 2055	0.1	mg/l	11	16	9.8	16	21	16
Total Organic Carbon	DETSC 2085	1	mg/l	3.3	4.9	2.0	8.5	4.3	6.5
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 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	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	6.5	< 1.0	< 1.0	< 1.0	< 1.0	11
Aliphatic C21-C35	DETSC 3072*	1	ug/l	2.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	12
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 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	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	12
PAHs									
Naphthalene	DETSC 3304	0.01	ug/l	0.04	0.09	0.15	0.10	0.11	0.42
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.02	< 0.01	0.03	0.03

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-99136-2

Client Ref 12032

Contract Title Herbert Road

Lab No	1169939	1169940	1169941	1169942	1169943	1169944
Sample ID	S1	S2	S3	S4	S5	S6
Depth						
Other ID						
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Acenaphthene	DETSC 3304	0.01	ug/l	0.10	0.15	0.17	0.24	0.28	0.32
Fluorene	DETSC 3304	0.01	ug/l	0.05	0.07	0.15	0.12	0.14	0.22
Phenanthrene	DETSC 3304	0.01	ug/l	0.13	0.21	0.22	0.29	0.26	0.43
Anthracene	DETSC 3304	0.01	ug/l	0.02	0.03	0.04	0.04	0.05	0.07
Fluoranthene	DETSC 3304	0.01	ug/l	0.06	0.07	0.07	0.09	0.10	0.11
Pyrene	DETSC 3304	0.01	ug/l	0.04	0.05	0.04	0.05	0.07	0.06
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 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	< 0.01	< 0.01	< 0.01
PAH Total	DETSC 3304	0.04	ug/l	0.44	0.66	0.87	0.92	1.0	1.7
Phenols									
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-99136-2

Client Ref 12032

Contract Title Herbert Road

Lab No	1169945	1169946	1169947	1169948	1169949	1169950
Sample ID	S7	S8	S9	S10	S11	S12
Depth						
Other ID						
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
NRA Leachate Preparation	DETS 036*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETS 2306	0.16	ug/l	0.72	0.74	0.97	0.73	0.42	0.54
Cadmium, Dissolved	DETS 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETS 2306	0.25	ug/l	1.8	1.9	3.8	3.2	1.6	2.2
Chromium III, Dissolved	DETS 2302*	1	ug/l	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0
Chromium, Hexavalent	DETS 2203	7	ug/l	9.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETS 2306	0.4	ug/l	1.1	1.3	2.3	1.7	1.1	1.3
Lead, Dissolved	DETS 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Mercury, Dissolved	DETS 2306	0.01	ug/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	2.1	1.2	1.0	0.74	0.48	0.44
Zinc, Dissolved	DETS 2306	1.3	ug/l	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Inorganics									
pH	DETS 2008			11.3	11.0	10.9	10.7	11.0	10.9
Cyanide, Total	DETS 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40	< 40
Chloride	DETS 2055	0.1	mg/l	2.2	2.4	3.9	3.4	1.9	2.3
Fluoride	DETS 2055	0.1	mg/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Sulphate as SO4	DETS 2055	0.1	mg/l	8.2	12	21	23	6.3	13
Total Organic Carbon	DETS 2085	1	mg/l	5.3	3.6	6.1	6.6	8.1	4.3
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	5.1	8.0	< 1.0
Aliphatic C21-C35	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETS 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETS 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETS 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
PAHs									
Naphthalene	DETS 3304	0.01	ug/l	0.06	0.05	0.17	0.28	0.03	0.03
Acenaphthylene	DETS 3304	0.01	ug/l	< 0.01	< 0.01	0.01	0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-99136-2

Client Ref 12032

Contract Title Herbert Road

Lab No	1169945	1169946	1169947	1169948	1169949	1169950
Sample ID	S7	S8	S9	S10	S11	S12
Depth						
Other ID						
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Acenaphthene	DETSC 3304	0.01	ug/l	0.14	0.16	0.46	0.26	< 0.01	0.08
Fluorene	DETSC 3304	0.01	ug/l	0.06	0.07	0.19	0.15	< 0.01	0.05
Phenanthrene	DETSC 3304	0.01	ug/l	0.18	0.21	0.56	0.28	0.07	0.16
Anthracene	DETSC 3304	0.01	ug/l	0.03	0.03	0.09	0.04	0.01	0.02
Fluoranthene	DETSC 3304	0.01	ug/l	0.08	0.10	0.18	0.08	0.04	0.06
Pyrene	DETSC 3304	0.01	ug/l	0.05	0.06	0.12	0.05	0.03	0.04
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.03	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 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	< 0.01	< 0.01	< 0.01
PAH Total	DETSC 3304	0.04	ug/l	0.60	0.68	1.8	1.2	0.18	0.43
Phenols									
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-99136-2

Client Ref 12032

Contract Title Herbert Road

Lab No	1169951	1169952	1169953	1169954	1169955	1169956
Sample ID	S13	S14	S15	S16	S17	S18
Depth						
Other ID						
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
NRA Leachate Preparation	DETS 036*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.51	0.53	0.64	0.46	0.42	0.36
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	2.5	1.6	1.6	2.1	1.7	1.1
Chromium III, Dissolved	DETSC 2302*	1	ug/l	1.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.0	1.6	1.3	1.4	1.4	1.0
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.45	0.33	0.35	0.33	0.29	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Inorganics									
pH	DETSC 2008			11.2	11.1	10.5	10.8	10.7	11.0
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40	< 40
Chloride	DETSC 2055	0.1	mg/l	3.9	2.0	2.5	2.6	2.0	2.2
Fluoride	DETSC 2055	0.1	mg/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Sulphate as SO4	DETSC 2055	0.1	mg/l	15	9.1	9.8	11	8.5	10
Total Organic Carbon	DETSC 2085	1	mg/l	7.2	3.0	2.1	5.6	7.2	4.9
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 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	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 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	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
PAHs									
Naphthalene	DETSC 3304	0.01	ug/l	0.11	0.23	0.11	0.43	0.23	0.07
Acenaphthylene	DETSC 3304	0.01	ug/l	0.01	0.02	0.01	0.01	0.02	< 0.01

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-99136-2

Client Ref 12032

Contract Title Herbert Road

Lab No	1169951	1169952	1169953	1169954	1169955	1169956
Sample ID	S13	S14	S15	S16	S17	S18
Depth						
Other ID						
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17	08-May-17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Acenaphthene	DETSC 3304	0.01	ug/l	0.27	0.45	0.22	0.30	0.55	0.24
Fluorene	DETSC 3304	0.01	ug/l	0.12	0.15	0.09	0.21	0.18	0.10
Phenanthrene	DETSC 3304	0.01	ug/l	0.37	0.72	0.27	0.51	0.55	0.32
Anthracene	DETSC 3304	0.01	ug/l	0.08	0.16	0.05	0.08	0.12	0.07
Fluoranthene	DETSC 3304	0.01	ug/l	0.16	0.39	0.12	0.12	0.29	0.15
Pyrene	DETSC 3304	0.01	ug/l	0.11	0.25	0.08	0.07	0.21	0.11
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	0.02	0.03	< 0.01	< 0.01	0.05	0.02
Chrysene	DETSC 3304	0.01	ug/l	0.02	0.04	< 0.01	< 0.01	0.06	0.03
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.07	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.05	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.06	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 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	< 0.01	0.06	< 0.01
PAH Total	DETSC 3304	0.04	ug/l	1.3	2.5	0.97	1.7	2.5	1.1
Phenols									
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-99136-2

Client Ref 12032

Contract Title Herbert Road

Lab No	1169957	1169958
Sample ID	S19	S20
Depth		
Other ID		
Sample Type	LEACHATE	LEACHATE
Sampling Date	08-May-17	08-May-17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Preparation					
NRA Leachate Preparation	DETS 036*			Y	Y
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.44	0.54
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	1.4	1.5
Chromium III, Dissolved	DETSC 2302*	1	ug/l	1.1	1.4
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.6	0.8
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.29	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3
Inorganics					
pH	DETSC 2008			10.4	10.4
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40
Chloride	DETSC 2055	0.1	mg/l	2.8	2.8
Fluoride	DETSC 2055	0.1	mg/l	< 0.10	< 0.10
Sulphate as SO4	DETSC 2055	0.1	mg/l	6.9	7.4
Total Organic Carbon	DETSC 2085	1	mg/l	8.4	4.7
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10	< 10
PAHs					
Naphthalene	DETSC 3304	0.01	ug/l	0.06	0.08
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-99136-2

Client Ref 12032

Contract Title Herbert Road

Lab No	1169957	1169958
Sample ID	S19	S20
Depth		
Other ID		
Sample Type	LEACHATE	LEACHATE
Sampling Date	08-May-17	08-May-17
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Acenaphthene	DETSC 3304	0.01	ug/l	0.04	0.13
Fluorene	DETSC 3304	0.01	ug/l	0.02	0.06
Phenanthrene	DETSC 3304	0.01	ug/l	0.09	0.19
Anthracene	DETSC 3304	0.01	ug/l	0.01	0.04
Fluoranthene	DETSC 3304	0.01	ug/l	0.03	0.10
Pyrene	DETSC 3304	0.01	ug/l	0.02	0.06
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	0.02
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	0.02
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304*	0.01	ug/l	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304*	0.01	ug/l	< 0.01	< 0.01
PAH Total	DETSC 3304	0.04	ug/l	0.27	0.70
Phenols					
Phenol	*	0.5	ug/l	< 0.50	< 0.50

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-99136-2

Client Ref 12032

Contract Title Herbert Road

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1169919	S1	SOIL	NAD	none	Steven Lambert
1169920	S2	SOIL	NAD	none	Steven Lambert
1169921	S3	SOIL	NAD	none	Steven Lambert
1169922	S4	SOIL	NAD	none	Steven Lambert
1169923	S5	SOIL	NAD	none	Steven Lambert
1169924	S6	SOIL	NAD	none	Steven Lambert
1169925	S7	SOIL	NAD	none	Steven Lambert
1169926	S8	SOIL	NAD	none	Steven Lambert
1169927	S9	SOIL	NAD	none	Steven Lambert
1169928	S10	SOIL	NAD	none	Steven Lambert
1169929	S11	SOIL	NAD	none	Steven Lambert
1169930	S12	SOIL	NAD	none	Steven Lambert
1169931	S13	SOIL	NAD	none	Steven Lambert
1169932	S14	SOIL	NAD	none	Steven Lambert
1169933	S15	SOIL	NAD	none	Steven Lambert
1169934	S16	SOIL	NAD	none	Steven Lambert
1169935	S17	SOIL	NAD	none	Steven Lambert
1169936	S18	SOIL	NAD	none	Steven Lambert
1169937	S19	SOIL	NAD	none	Steven Lambert
1169938	S20	SOIL	NAD	none	Steven Lambert

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 17-99136-2
 Client Ref 12032
 Contract Herbert Road

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1169919	S1 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169920	S2 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169921	S3 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169922	S4 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169923	S5 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169924	S6 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169925	S7 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169926	S8 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169927	S9 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169928	S10 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169929	S11 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169930	S12 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169931	S13 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169932	S14 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169933	S15 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169934	S16 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169935	S17 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169936	S18 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169937	S19 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169938	S20 SOIL	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169939	S1 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169940	S2 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169941	S3 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169942	S4 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169943	S5 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169944	S6 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169945	S7 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169946	S8 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169947	S9 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169948	S10 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169949	S11 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169950	S12 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169951	S13 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169952	S14 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169953	S15 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169954	S16 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169955	S17 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169956	S18 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169957	S19 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		
1169958	S20 LEACHATE	08-05-17	GJ 250ml, GJ 60ml, PT 1L x2		

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.

Information in Support of the Analytical Results

Our Ref 17-99136-2
Client Ref 12032
Contract Herbert Road

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425 μ m 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

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



DETS

Certificate of Analysis

Certificate Number 17-04852-1

19-Jul-17

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

Our Reference 17-04852-1

Client Reference 12302

Order No 12032NSI

Contract Title HERBERT ROAD

Description 6 Soil samples, 6 Leachate samples.

Date Received 10-Jul-17

Date Started 10-Jul-17

Date Completed 19-Jul-17

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

Notes This report supersedes 17-04852, extra testing.

Opinions and interpretations are outside the laboratory's scope of ISO 10725 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

Matrix Descriptions

Our Ref 17-04852-1

Client Ref 12302

Contract Title HERBERT ROAD

Sample ID	Lab No	Completed	Matrix Description
S1	1201981	18/07/2017	Brown very clayey, sandy, CLAY (Made ground - brick, ceramic)
S2	1201982	18/07/2017	Brown very clayey, gravelly SAND (Made ground - brick, ceramic)
S3	1201983	18/07/2017	Brown clayey, sandy GRAVEL (Made ground - brick) (sample matrix outside MCERTS scope of accreditation)
S4	1201984	18/07/2017	Brown, clayey, gravelly and SAND including odd rootlets (Made ground - plastic, brick)
S5	1201985	18/07/2017	Brown clayey, sandy GRAVEL including odd rootlets (Made ground - brick) (sample matrix outside MCERTS scope of accreditation)
S6	1201986	18/07/2017	Brown, clayey, gravelly and SAND including odd rootlets (Made ground - brick, sponge)

Summary of Chemical Analysis

Soil Samples

Our Ref 17-04852-1
 Client Ref 12302
 Contract Title HERBERT ROAD

Lab No	1201981	1201982	1201983	1201984	1201985	1201986
Sample ID	S1	S2	S3	S4	S5	S6
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	07/07/17	07/07/17	07/07/17	07/07/17	07/07/17	07/07/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%	3.3	5.0	6.4	6.1	3.9	2.4
Metals									
Antimony	DETSC 2301*	1	mg/kg	1.4	< 1.0	22	1.3	6.4	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	6.6	6.2	7.3	8.3	5.3	5.1
Beryllium	DETSC 2301#	0.2	mg/kg	< 0.2	0.4	0.4	0.5	0.3	0.3
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	0.9	0.5	< 0.2	1.0	0.2	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.4	0.7	0.4	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	24	22	18	14	16	34
Chromium III	DETSC 2301*	0.15	mg/kg	24	22	18	14	16	34
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	18	46	22	15	11	14
Lead	DETSC 2301#	0.3	mg/kg	21	270	2300	23	630	16
Manganese	DETSC 2301#	20	mg/kg	540	510	550	380	360	790
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.05	0.08	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	1.1	0.7	1.2	0.9	0.8	1.0
Nickel	DETSC 2301#	1	mg/kg	8.3	13	10	9.8	7.3	5.8
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	60	130	86	150	41	43
Inorganics									
pH	DETSC 2008#			12.5	11.6	12.1	11.3	12.2	12.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Organic matter	DETSC 2002#	0.1	%	0.9	2.1	2.4	1.5	1.6	1.0
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.35	0.65	0.74	2.2	1.1	0.45
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	1.5	< 1.5	< 1.5	2.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	4.0	5.4	1.6	< 1.2	5.6
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	16	25	8.0	2.0	9.1
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	7.1	440	190	100	56	120
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	< 3.4	150	54	37	25	52
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	460	220	110	60	130
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	1.2
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	2.0	1.5	2.5	< 0.5	2.0
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	2.3	4.2	4.4	< 0.6	4.0
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	61	38	30	< 1.4	26



Summary of Chemical Analysis

Soil Samples

Our Ref 17-04852-1
 Client Ref 12302
 Contract Title HERBERT ROAD

Lab No	1201981	1201982	1201983	1201984	1201985	1201986
Sample ID	S1	S2	S3	S4	S5	S6
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	07/07/17	07/07/17	07/07/17	07/07/17	07/07/17	07/07/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4	19	11	6.1	< 1.4	6.0
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	66	44	37	< 10	34
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10	520	260	150	60	170
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.37	0.25	< 0.03	0.10	0.22
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	0.04	< 0.03	0.04	0.07
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.15	0.69	0.33	0.07	0.10	0.31
Fluorene	DETSC 3303	0.03	mg/kg	0.10	0.75	0.30	< 0.03	0.08	0.26
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.81	5.4	1.7	0.81	0.87	2.3
Anthracene	DETSC 3303	0.03	mg/kg	0.19	1.1	0.41	0.26	0.17	2.3
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.0	5.9	1.9	1.5	0.97	2.9
Pyrene	DETSC 3303#	0.03	mg/kg	0.83	4.4	1.5	1.2	0.74	2.3
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.38	2.2	0.86	0.46	0.40	1.2
Chrysene	DETSC 3303	0.03	mg/kg	0.37	1.9	0.92	0.44	0.48	1.1
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.48	2.2	1.1	0.48	0.62	1.5
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.13	0.84	0.35	0.16	0.21	0.51
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.32	1.4	0.67	0.34	0.35	1.1
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.20	0.73	0.40	0.19	0.22	0.54
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.07	0.32	0.20	0.07	0.08	0.21
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.25	0.79	0.44	0.21	0.24	0.62
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	5.3	29	11	6.2	5.7	18
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-04852-1

Client Ref 12302

Contract Title HERBERT ROAD

Lab No	1201987	1201988	1201989	1201990	1201991	1201992
Sample ID	S1	S2	S3	S4	S5	S6
Depth						
Other ID						
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	07/07/17	07/07/17	07/07/17	07/07/17	07/07/17	07/07/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Leachate 10:1	DETS 036*			Y	Y	Y	Y	Y	Y
NRA Leachate Preparation	DETS 036*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.1	0.96	1.2	0.85	0.45	0.44
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	4.9	4.7	7.7	6.9	13	8.1
Chromium III, Dissolved	DETSC 2302*	1	ug/l	2.9	< 1.0	5.6	4.7	6.1	6.3
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	12	11	3.7	2.5	4.0	4.0
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.02	0.01	0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	0.8	0.9	< 0.5	0.8	0.9	0.8
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.1	1.1	0.86	0.72	0.56	0.53
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Inorganics									
pH	DETSC 2008			11.5	10.2	10.9	9.9	11.5	11.3
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40	< 40
Chloride	DETSC 2055	0.1	mg/l	7.4	11	13	6.6	10	8.5
Fluoride	DETSC 2055	0.1	mg/l	< 0.10	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Sulphate as SO4	DETSC 2055	0.1	mg/l	12	93	91	190	120	52
Total Organic Carbon	DETSC 2033	2	mg/l	8.1	5.2	5.2	5.7	6.2	6.1
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 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	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	2.9	2.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	1.3	< 1.0	6.7	4.6	< 1.0	4.6
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	9.7	< 1.0	< 1.0	1.6
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	20	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 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	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	1.5	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	4.6	2.3	1.8	< 1.0	1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	3.1	4.1	3.3	< 1.0	1.6
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	20	3.4	2.1	9.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	29	10	< 10	10	< 10
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10	30	30	15	10	10
PAHs									
Naphthalene	DETSC 3304	0.01	ug/l	0.20	0.28	0.19	0.02	0.14	0.33

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-04852-1

Client Ref 12302

Contract Title HERBERT ROAD

Lab No	1201987	1201988	1201989	1201990	1201991	1201992
Sample ID	S1	S2	S3	S4	S5	S6
Depth						
Other ID						
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	07/07/17	07/07/17	07/07/17	07/07/17	07/07/17	07/07/17
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Acenaphthylene	DETSC 3304	0.01	ug/l	0.05	0.01	0.03	< 0.01	0.04	0.03
Acenaphthene	DETSC 3304	0.01	ug/l	0.32	0.07	0.11	< 0.01	0.05	0.11
Fluorene	DETSC 3304	0.01	ug/l	0.14	0.04	0.07	< 0.01	0.01	0.05
Phenanthrene	DETSC 3304	0.01	ug/l	0.70	0.06	0.07	0.04	0.06	0.13
Anthracene	DETSC 3304	0.01	ug/l	0.21	0.02	0.02	0.02	< 0.01	0.02
Fluoranthene	DETSC 3304	0.01	ug/l	0.95	0.03	0.03	0.04	0.02	0.06
Pyrene	DETSC 3304	0.01	ug/l	0.81	0.02	0.02	0.03	0.02	0.04
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	0.46	0.01	0.01	< 0.01	< 0.01	0.02
Chrysene	DETSC 3304	0.01	ug/l	0.48	0.01	< 0.01	< 0.01	< 0.01	0.02
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.64	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.25	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.54	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304*	0.01	ug/l	0.42	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	0.09	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304*	0.01	ug/l	0.42	< 0.01	< 0.01	< 0.01	< 0.01	0.02
PAH Total	DETSC 3304	0.04	ug/l	6.7	0.56	0.57	0.14	0.35	0.86
Phenols									
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-04852-1

Client Ref 12302

Contract Title HERBERT ROAD

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1201981	S1	SOIL	NAD	none	Paul Dunn
1201982	S2	SOIL	Chrysotile Amosite	Chrysotile and Amosite Present in Board Fragment within Soil	Paul Dunn
1201983	S3	SOIL	NAD	none	Paul Dunn
1201984	S4	SOIL	NAD	none	Bill French
1201985	S5	SOIL	NAD	none	Bill French
1201986	S6	SOIL	NAD	none	Bill French

Analysis was carried out at our Lanarkshire laboratory. DETS Newhouse Laboratory (BioCity Scotland, Room 1217, Block 41, Bo'Ness Road, Newhouse, Lanarkshire, ML1 5UH.) 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 17-04852-1
 Client Ref 12302
 Contract HERBERT ROAD

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1201981	S1 SOIL	07/07/17	GJ 250ml x2, GJ 60ml, PT 1L x2		
1201982	S2 SOIL	07/07/17	GJ 250ml x2, GJ 60ml, PT 1L x2		
1201983	S3 SOIL	07/07/17	GJ 250ml x2, GJ 60ml, PT 1L x2		
1201984	S4 SOIL	07/07/17	GJ 250ml x2, GJ 60ml, PT 1L x2		
1201985	S5 SOIL	07/07/17	GJ 250ml x2, GJ 60ml, PT 1L x2		
1201986	S6 SOIL	07/07/17	GJ 250ml x2, GJ 60ml, PT 1L x2		
1201987	S1 LEACHATE	07/07/17	GJ 250ml x2, GJ 60ml, PT 1L x2		
1201988	S2 LEACHATE	07/07/17	GJ 250ml x2, GJ 60ml, PT 1L x2		
1201989	S3 LEACHATE	07/07/17	GJ 250ml x2, GJ 60ml, PT 1L x2		
1201990	S4 LEACHATE	07/07/17	GJ 250ml x2, GJ 60ml, PT 1L x2		
1201991	S5 LEACHATE	07/07/17	GJ 250ml x2, GJ 60ml, PT 1L x2		
1201992	S6 LEACHATE	07/07/17	GJ 250ml x2, GJ 60ml, PT 1L x2		

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

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETS 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETS 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETS 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETS 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETS 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETS 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETS 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETS 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETS 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETS 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETS 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETS 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETS 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETS 2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETS 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETS 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETS 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETS 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETS 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETS 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETS 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETS 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETS 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETS 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETS 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETS 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETS 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETS 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETS 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



DETS

Certificate of Analysis

Certificate Number 17-07210

11-Aug-17

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

Our Reference 17-07210

Client Reference 12032

Order No 12032NSI

Contract Title H.Rd(Herbert Road)

Description 4 Soil samples, 4 Leachate samples.

Date Received 05-Aug-17

Date Started 05-Aug-17

Date Completed 11-Aug-17

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

Notes Opinions and interpretations are outside the laboratory's scope of ISO 10725 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

Matrix Descriptions

Our Ref 17-07210

Client Ref 12032

Contract Title H.Rd(Herbert Road)

Sample ID	Lab No	Completed	Matrix Description
S7	1214168	11/08/2017	Dark brown very clayey, gravelly SAND (Made ground - brick)
S8	1214169	11/08/2017	Dark brown very clayey, gravelly SAND including odd rootlets (Possible made ground - brick)
S9	1214170	11/08/2017	Dark brown very clayey, gravelly SAND (Possible made ground - brick)
S10	1214171	11/08/2017	Dark brown very clayey, gravelly SAND (Possible made ground - brick)

Summary of Chemical Analysis

Soil Samples

Our Ref 17-07210
 Client Ref 12032
 Contract Title H.Rd(Herbert Road)

Lab No	1214168	1214169	1214170	1214171
Sample ID	S7	S8	S9	S10
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/08/17	04/08/17	04/08/17	04/08/17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Preparation							
Moisture Content	DETSC 1004	0.1	%	13	12	13	11
Metals							
Antimony	DETSC 2301*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	4.4	22	3.7	5.2
Beryllium	DETSC 2301#	0.2	mg/kg	< 0.2	0.2	0.2	< 0.2
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	1.1	1.7	0.8	0.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	12	13	10	12
Chromium III	DETSC 2301*	0.15	mg/kg	12	13	10	12
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	10	12	12	9.6
Lead	DETSC 2301#	0.3	mg/kg	14	23	14	14
Manganese	DETSC 2301#	20	mg/kg	300	330	280	420
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.7	0.8	0.6	0.7
Nickel	DETSC 2301#	1	mg/kg	5.9	6.7	6.1	6.2
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	32	43	40	46
Inorganics							
pH	DETSC 2008#			12.2	11.8	11.9	12.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Complex	DETSC 2130*	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Organic matter	DETSC 2002#	0.1	%	0.9	2.1	0.9	1.0
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.25	0.39	0.23	0.28
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	2.0	1.7	2.3	3.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	7.6	14	13	9.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	37	230	220	45
Aliphatic C35-C44	DETSC 3072*	3.4	mg/kg	23	120	130	15
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	47	250	230	58
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	5.4
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	0.9	85
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	36	41	270

Summary of Chemical Analysis Soil Samples

Our Ref 17-07210

Client Ref 12032

Contract Title H.Rd(Herbert Road)

Lab No	1214168	1214169	1214170	1214171
Sample ID	S7	S8	S9	S10
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/08/17	04/08/17	04/08/17	04/08/17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Aromatic C35-C44	DETSC 3072*	1.4	mg/kg	< 1.4	8.2	9.0	13
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	37	42	360
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	47	280	270	420
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	0.13	0.06	0.10	0.07
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.11	0.08	0.18	0.10
Fluorene	DETSC 3303	0.03	mg/kg	0.10	0.07	0.14	0.10
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.69	0.50	1.2	0.58
Anthracene	DETSC 3303	0.03	mg/kg	0.18	0.16	0.35	0.15
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.82	1.0	1.9	0.90
Pyrene	DETSC 3303#	0.03	mg/kg	0.67	0.77	1.5	0.65
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.36	0.49	0.80	0.51
Chrysene	DETSC 3303	0.03	mg/kg	0.32	0.49	0.80	0.49
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.50	0.67	1.1	0.70
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.17	0.24	0.34	0.23
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.32	0.40	0.66	0.40
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.20	0.34	0.22
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	0.11	0.07
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.24	0.40	0.23
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	4.4	5.4	9.9	5.4
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-07210

Client Ref 12032

Contract Title H.Rd(Herbert Road)

Lab No	1214172	1214173	1214174	1214175
Sample ID	S7	S8	S9	S10
Depth				
Other ID				
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	04/08/17	04/08/17	04/08/17	04/08/17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Preparation							
Leachate 10:1	DETS 036*			Y	Y	Y	Y
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.64	0.85	0.61	0.47
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	5.3	4.0	4.3	5.1
Chromium III, Dissolved	DETSC 2302*	1	ug/l	5.3	4.0	4.3	5.1
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.6	2.0	2.1	5.5
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	0.01	0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	0.5	1.1
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.88	0.74	0.48	0.99
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3	< 1.3	< 1.3
Inorganics							
pH	DETSC 2008			11.2	10.5	11.1	11.4
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40
Chloride	DETSC 2055	0.1	mg/l	4.4	5.5	6.8	7.9
Fluoride	DETSC 2055	0.1	mg/l	< 0.10	< 0.10	< 0.10	< 0.10
Sulphate as SO4	DETSC 2055	0.1	mg/l	16	25	18	14
Total Organic Carbon	DETSC 2085	1	mg/l	3.1	4.0	3.3	4.6
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	1.5	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	1.4	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	29	17
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	32	17
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	5.9
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	60	64
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	62	70
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	< 10	< 10	94	87
PAHs							
Naphthalene	DETSC 3304	0.01	ug/l	0.04	0.02	0.04	0.10
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.01	< 0.01

Summary of Chemical Analysis

Leachate Samples

Our Ref 17-07210

Client Ref 12032

Contract Title H.Rd(Herbert Road)

Lab No	1214172	1214173	1214174	1214175
Sample ID	S7	S8	S9	S10
Depth				
Other ID				
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	04/08/17	04/08/17	04/08/17	04/08/17
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Acenaphthene	DETSC 3304	0.01	ug/l	0.03	0.03	0.05	0.07
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.02	0.02
Phenanthrene	DETSC 3304	0.01	ug/l	0.02	0.03	0.02	0.03
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	0.02	0.01	0.02
Pyrene	DETSC 3304	0.01	ug/l	< 0.01	0.02	0.01	0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	0.02	< 0.01	0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304*	0.01	ug/l	< 0.01	0.01	< 0.01	0.01
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	0.01
PAH Total	DETSC 3304	0.04	ug/l	0.09	0.16	0.16	0.31
Phenols							
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50

Summary of Asbestos Analysis

Soil Samples

Our Ref 17-07210

Client Ref 12032

Contract Title H.Rd(Herbert Road)

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1214168	S7	SOIL	NAD	none	Colin Patrick
1214169	S8	SOIL	NAD	none	Colin Patrick
1214170	S9	SOIL	NAD	none	Colin Patrick
1214171	S10	SOIL	NAD	none	Colin Patrick

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 17-07210
 Client Ref 12032
 Contract H.Rd(Herbert Road)

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1214168	S7 SOIL	04/08/17	GJ 250ml x2, GJ 60ml, PT 1L x3		
1214169	S8 SOIL	04/08/17	GJ 250ml x2, GJ 60ml, PT 1L x3		
1214170	S9 SOIL	04/08/17	GJ 250ml x2, GJ 60ml, PT 1L x3		
1214171	S10 SOIL	04/08/17	GJ 250ml x2, GJ 60ml, PT 1L x3		
1214172	S7 LEACHATE	04/08/17	GJ 250ml x2, GJ 60ml, PT 1L x3		
1214173	S8 LEACHATE	04/08/17	GJ 250ml x2, GJ 60ml, PT 1L x3		
1214174	S9 LEACHATE	04/08/17	GJ 250ml x2, GJ 60ml, PT 1L x3		
1214175	S10 LEACHATE	04/08/17	GJ 250ml x2, GJ 60ml, PT 1L x3		

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

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.