

Our Ref: 23-616.01L

Richard Clubley
Richard James Homes Ltd
Lane End Farm
Rise Lane
Catwick
Beverley
HU17 5PL

11th August 2023

Dear Richard,

Re: Brief Ground Investigation at Rise Lane, Catwick, HU17 5PL

1.0 Introduction

As requested by Richard James Homes Limited, a Phase 1 Desk Top Study, Ref.23-616, August 2023, was undertaken by Arc Environmental Limited for a proposed residential development at the above location. The original farmhouse was demolished in February 2023 and the former farmhouse gardens, orchard and vegetable plot were stripped of topsoil, with the topsoil being stockpiled on site with a view to reuse within the private gardens of the 4 no. new dwellings. The proposed private gardens are situated within the footprint of the former farmhouse and gardens.

The main issue with developing former farm sites is historical bulk fuel / bulk chemical storage and asbestos building materials. The original farm had a small diesel tank situated on a concrete pad inside a farm building which it is understood was removed during early 2023. When the farm buildings were demolished, all asbestos sheeting was removed by specialist contractors and disposed of with appropriate documentation.

From the findings of the Phase 1 Desk Top Study, it was recommended that targeted ground contamination screening be undertaken for possible localised hydrocarbon contamination associated with the former diesel tank. It was also considered necessary to screen representative samples from the topsoil, stockpiled on site, to confirm its suitability for continued residential use.

2.0 Ground Conditions

3 no. trial pits (TP01 to TP03) were excavated to a depth of between c.0.60m and c.0.70m below ground level (bgl) around the area of the former diesel tank. The ground conditions comprised brown fine and coarse clayey gravels with brick fragments to depths of between c.0.20m and c.0.40m. The made ground was underlain by brown coarse clayey sandy gravel and dark brown sandy gravelly clay. The stockpiles (TP04 to TP06) comprised dark brown slightly sandy soil with rootlets.



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Re: Brief Ground Investigation at Rise Lane, Catwick, HU17 5PL (Cont'd)

2.0 Ground Conditions (Cont'd)

As part of the excavation works, a visual and olfactory inspection of the recovered materials was undertaken to ensure these materials were absent of obvious contamination i.e., staining, fuel odours, pieces of asbestos containing materials and the like. In total, 9 no. representative samples were recovered (6 no. from the trial pits around the former diesel tank and 3 no. from the stockpiles) for confirmatory screening and dispatched to Chemtech Environmental Limited for laboratory analysis.

Contamination screening was carried out following YALPAG guidance (Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG) 'Verification Requirements for Clean Cover Systems', Version 4.1, dated June 2021) to confirm its suitability for re-use in a residential setting. A minimum of 3 samples of topsoil were screened for standard metals, speciated PAH's and asbestos in accordance with the YALPAG Sampling and Testing Matrix.

3.0 Contamination Screening

3.1 Former Diesel Above Ground Storage Tank (Diesel Tank) Investigation

To ascertain the presence of any contamination within the shallow soil deposits around the former AST, the samples were screened for the following range of analytes:

- 3 no. samples screened for Speciated PAHs (Polycyclic Aromatic Hydrocarbons) - based on the current USEPA 16 PAH's + Benzo(j)fluoranthene, speciated TPHs (Ali / Aro split) and BTEX

The results can be seen in the Chemtech Environmental Limited analytical test report (Ref. 125296) attached.

The results have been assessed against the most up to date and appropriate guidelines and can be seen in Table 1 on the following page.

From the results of the sampling and screening no elevated levels of Total Petroleum Hydrocarbons (TPH's aliphatic aromatic split), Benzene, Toluene, Ethylbenzene or Xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAH's) were recorded and there was no visual (staining) or olfactory evidence (fuel odours) during the intrusive works.

Consequently, the former diesel tank is not considered to have leaked in the past and there is no evidence of past spillages or poor housekeeping.

Re: Brief Ground Investigation at Rise Lane, Catwick, HU17 5PL (Cont'd)

3.0 Contamination Screening (Cont'd)

3.1 Former Diesel Above Ground Storage Tank (AST) Investigation (Cont'd)

Table 1

Analyte	Critical Concentration (C _c) (mg/kg)	Maximum Concentrations (C _m) recorded (mg/kg)
Acenaphthene	510 ⁽¹⁾	<0.02
Acenaphthylene	420 ⁽¹⁾	<0.02
Anthracene	5400 ⁽¹⁾	0.03
Benzo(a)anthracene	11 ⁽¹⁾	0.11
Benzo(a)pyrene	2.7 ⁽¹⁾	0.10
Benzo(b)fluoranthene	3.3 ⁽¹⁾	0.14
Benzo(ghi)perylene	340 ⁽¹⁾	0.07
Benzo(k)fluoranthene	93 ⁽¹⁾	0.04
Chrysene	22 ⁽¹⁾	0.10
Dibenz(ah)anthracene	0.28 ⁽¹⁾	<0.02
Fluoranthene	560 ⁽¹⁾	0.17
Fluorene	400 ⁽¹⁾	<0.02
Indeno(123cd)pyrene	36 ⁽¹⁾	0.08
Naphthalene	5.6 ⁽¹⁾	<0.02
Phenanthrene	220 ⁽¹⁾	<0.02
Pyrene	1200 ⁽¹⁾	0.19
Benzene	0.17 ⁽¹⁾	<0.01
Toulene	290 ⁽¹⁾	<0.01
Ethylbenzene	110 ⁽¹⁾	<0.01
m & p-Xylene	130 ⁽¹⁾	<0.02
o-Xylene	140 ⁽¹⁾	<0.01
VPH Aliphatic (>C5-C6)	78 ⁽¹⁾	<0.1
VPH Aliphatic (>C6-C8)	230 ⁽¹⁾	<0.1
VPH Aliphatic (>C8-C10)	65 ⁽¹⁾	<0.1
EPH Aliphatic (>C10-C12)	330 ⁽¹⁾	<6
EPH Aliphatic (>C12-C16)	2400 ⁽¹⁾	<6
EPH Aliphatic (>C16-C35)	92000 ⁽¹⁾	<15
EPH Aliphatic (>C35-C44)	92000 ⁽¹⁾	<10
VPH Aromatic (>EC5-EC7)	140 ⁽¹⁾	<0.01
VPH Aromatic (>EC7-EC8)	290 ⁽¹⁾	<0.01
VPH Aromatic (>EC8-EC10)	83 ⁽¹⁾	<0.01
EPH Aromatic (>EC10-EC12)	180 ⁽¹⁾	<10
EPH Aromatic (>EC12-EC16)	330 ⁽¹⁾	<10
EPH Aromatic (>EC16-EC21)	540 ⁽¹⁾	<1
EPH Aromatic (>EC21-EC35)	1500 ⁽¹⁾	24
EPH Aromatic (>EC35-EC44)	1500 ⁽¹⁾	<1

⁽¹⁾ = The LQM / CIEH Suitable 4 Use Levels – Residential with homegrown produce (2.5% SOM), ⁽²⁾ = CL:AIRE Category 4 Screening Levels – Residential with homegrown produce, ⁽³⁾ = ATRISK^{SOIL} Soil Screening Values (2015).

3.2 Re-use of Site-won Topsoil in Proposed Private Residential Gardens

The stockpiled topsoil was described as dark brown sandy soil with rootlets and appeared texturally suitable for re-use. There was no evidence of any anthropogenic debris or deleterious materials within the topsoil.

Re: Brief Ground Investigation at Rise Lane, Catwick, HU17 5PL (Cont'd)

3.0 Contamination Screening (Cont'd)

3.2 Re-use of Site-won Topsoil in Proposed Private Residential Gardens (Cont'd)

However, to assess the chemical suitability of the topsoil for re-use in private residential gardens, samples were recovered from two the stockpiles and were screened for the following range of analytes:

- 3 no. samples screened for a Generic Soil Suite (Arsenic, Cadmium, Chromium (III & VI), Copper, Lead, Mercury, Nickel, Selenium, Zinc, Cyanide and Total Organic Carbon)
- 3 no. samples screened for Speciated PAHs (Polycyclic Aromatic Hydrocarbons) - based on the current USEPA 16 PAH's + Benzo(j)fluoranthene
- 3 no. samples screened for Asbestos

The results can be seen in the Chemtech Environmental Limited analytical test report (Ref. 125296) attached. The results have been assessed against the most up to date and appropriate guidelines and can be seen in Table 2 below.

Table 2

Analyte	Critical Concentration (C_c) (mg/kg)	Concentrations (C_M) recorded
Arsenic	37 ⁽¹⁾	16
Cadmium	11 ⁽¹⁾	<2
Chromium III	910 ⁽¹⁾	37
Chromium VI	6 ⁽¹⁾	<0.04
Copper	2400 ⁽¹⁾	27
Lead	200 ⁽²⁾	103
Mercury	40 ⁽¹⁾	<2
Nickel	180 ⁽¹⁾	24
Selenium	250 ⁽¹⁾	<3
Zinc	3700 ⁽¹⁾	129
Cyanide	34 ⁽³⁾	<1
Asbestos	Presence	Yes - Chrysotile (TP06)
Acenaphthene	510 ⁽¹⁾	<0.02
Acenaphthylene	420 ⁽¹⁾	<0.02
Anthracene	5400 ⁽¹⁾	0.03
Benzo(a)anthracene	11 ⁽¹⁾	0.20
Benzo(a)pyrene	2.7 ⁽¹⁾	0.24
Benzo(b)fluoranthene	3.3 ⁽¹⁾	0.42
Benzo(ghi)perylene	340 ⁽¹⁾	0.24
Benzo(k)fluoranthene	93 ⁽¹⁾	0.15
Chrysene	22 ⁽¹⁾	0.24
Dibenz(ah)anthracene	0.28 ⁽¹⁾	0.07
Fluoranthene	560 ⁽¹⁾	0.33
Fluorene	400 ⁽¹⁾	0.02
Indeno(123cd)pyrene	36 ⁽¹⁾	0.28
Naphthalene	5.6 ⁽¹⁾	0.13
Phenanthrene	220 ⁽¹⁾	0.20
Pyrene	1200 ⁽¹⁾	0.28

⁽¹⁾ = The LQM / CIEH Suitable 4 Use Levels – Residential with homegrown produce (2.5% SOM), ⁽²⁾ = CL:AIRE Category 4 Screening Levels – Residential with homegrown produce, ⁽³⁾ = ATRISK^{SOIL} Soil Screening Values (2015).

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Re: Brief Ground Investigation at Rise Lane, Catwick, HU17 5PL (Cont'd)

3.0 Contamination Screening (Cont'd)

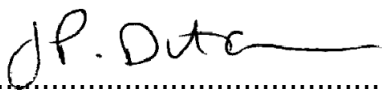
3.2 Re-use of Site-won Topsoil in Proposed Private Residential Gardens (Cont'd)

From the results of the sampling and screening although no elevated levels of metals / metalloids, Total Petroleum Hydrocarbons (TPH's aliphatic aromatic split), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), or Polycyclic Aromatic Hydrocarbons (PAH's) were recorded, asbestos was detected in one of the three topsoil samples screened.

Therefore, without the benefit of extensive further surveyed sampling and screening for asbestos to determine if this sample is representative or an outlier / anomaly (for example, as a result of windblown fibres locally impacting the stockpile) the topsoil materials are not considered suitable for re-use in a residential setting and should not be placed within private gardens where exposure pathways would be available.

We trust the information we have provided to you is to your satisfaction and if you require any further information or clarification, please do not hesitate to contact us.

Yours sincerely,
for and on behalf of Arc Environmental Limited



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John Ditchburn *BEng (Hons) CSci MIEEnvSc MCIEH FGS*
Director

Trial Pit Location Plan **Trial Pit Record Sheets**

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The contractor shall check all dimensions on site before commencement of any works. No dimensions to be scaled off this drawing.
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LEGEND	
	APPROXIMATE SITE BOUNDARY
	DASHED LINE DENOTES THE FORMER BUILDINGS ON SITE SUBSEQUENTLY DEMOLISHED

rev.	date	amendments	drawn	chckd

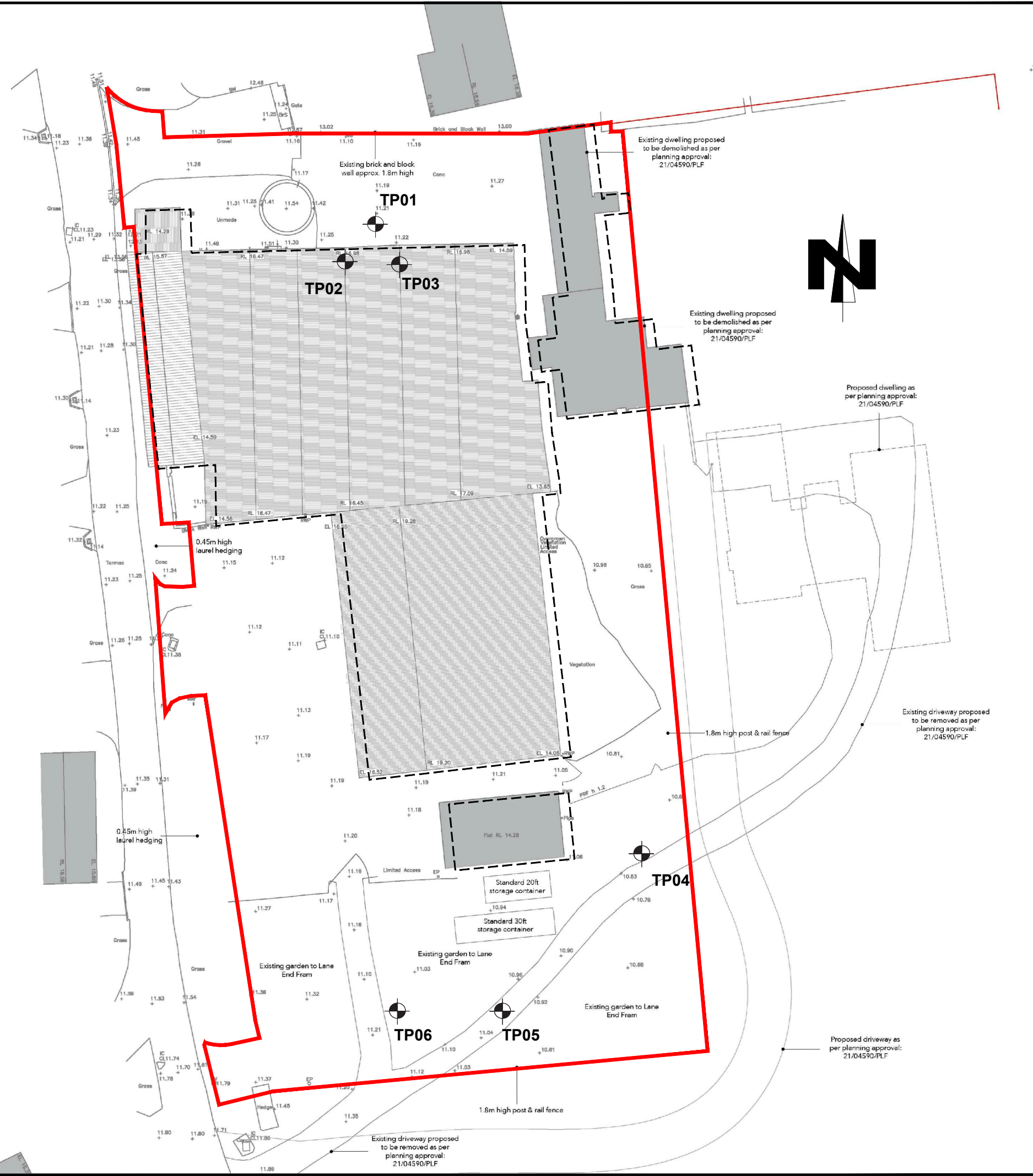
Client:
RICHARD JAMES HOMES LTD

Project Title:
Proposed New Residential Housing
Lane End Farm, Rise Lane
Catwick, Beverley, HU17 5PL

Drawing Title:
Existing Site Layout Plan

Scale at A3: | Date: | Drawn by: | Approved by:
NTS @ A3 | 02.08.23 | P.D | S.H

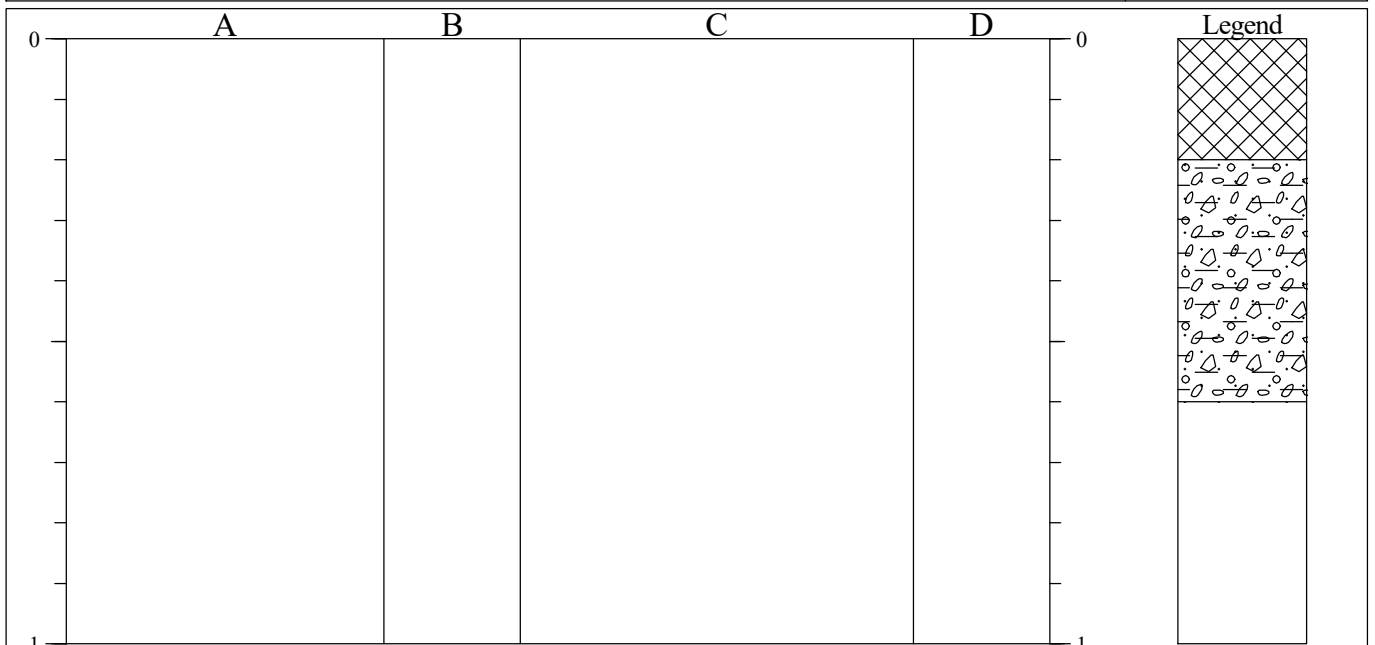
Job Ref: | Drg no: | Rev:
23-616 | - | -





TRIAL PIT LOG

Project Lane End Farm				TRIAL PIT No TP01
Job No 23-616	Date 20-07-23	Ground Level (m)	Co-Ordinates ()	
Contractor Arc Environmental				Sheet 1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.20		Multi-coloured medium to coarse gravel with common brick fragments (MADE GROUND)	0.00-0.20	J/D	
0.20-0.60		Brown fine to coarse clayey sandy GRAVEL (GLACIOFLUVIAL DEPOSITS)	0.20-0.60	J/D	

Shoring/Support: Stability: 	GENERAL REMARKS
	Trial pit remained dry

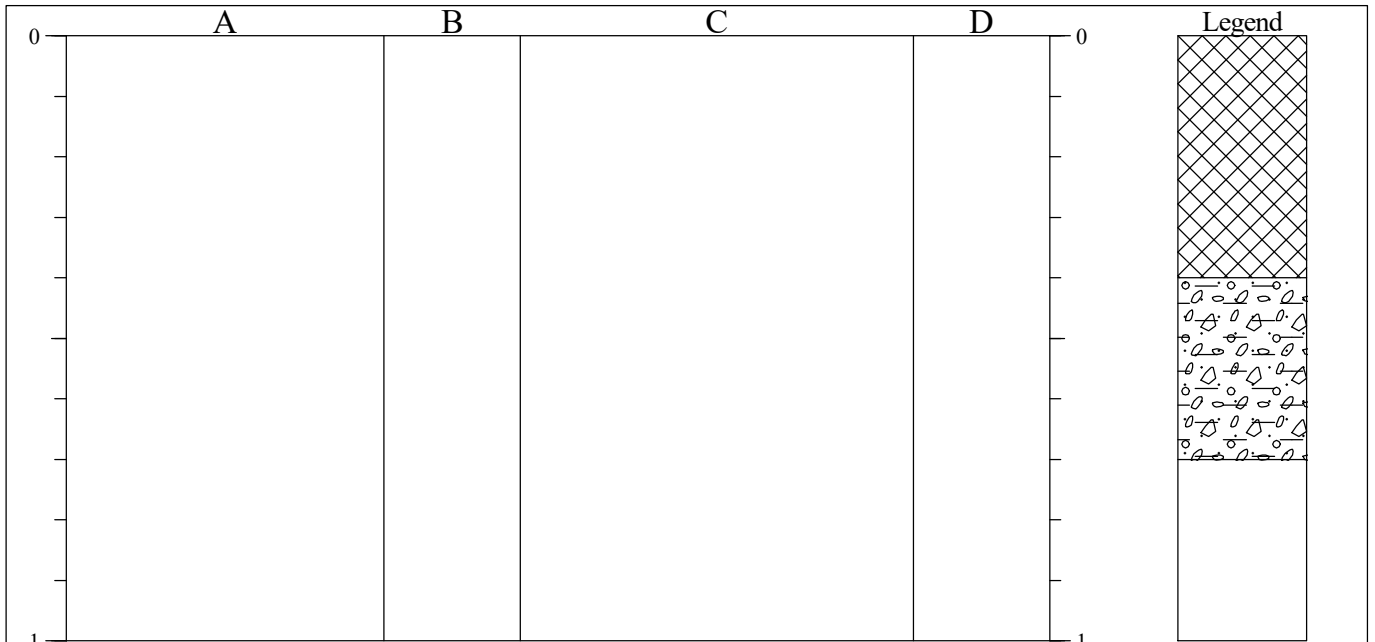
All dimensions in metres Scale 1:12.5	Client Richard James Homes Ltd	Method/ Plant Used Mechanically Excavated Trial Pit	Logged By SH
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AGS3 UK TP LOGS.GPJ AGS3_ALL_GDT 7/24/23



TRIAL PIT LOG

Project Lane End Farm				TRIAL PIT No TP02
Job No 23-616	Date 20-07-23	Ground Level (m)	Co-Ordinates ()	
Contractor Arc Environmental				Sheet 1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.40		Multi-coloured medium to coarse gravel with common brick fragments (MADE GROUND)	0.00-0.40	J/D	
0.40-0.70		Brown fine to coarse clayey sandy GRAVEL (GLACIOFLUVIAL DEPOSITS)	0.40-0.70	J/D	

<p>Shoring/Support: Stability:</p> <div style="text-align: center;"> </div>	<p>GENERAL REMARKS</p> <p>Water stuck at 0.6m</p>
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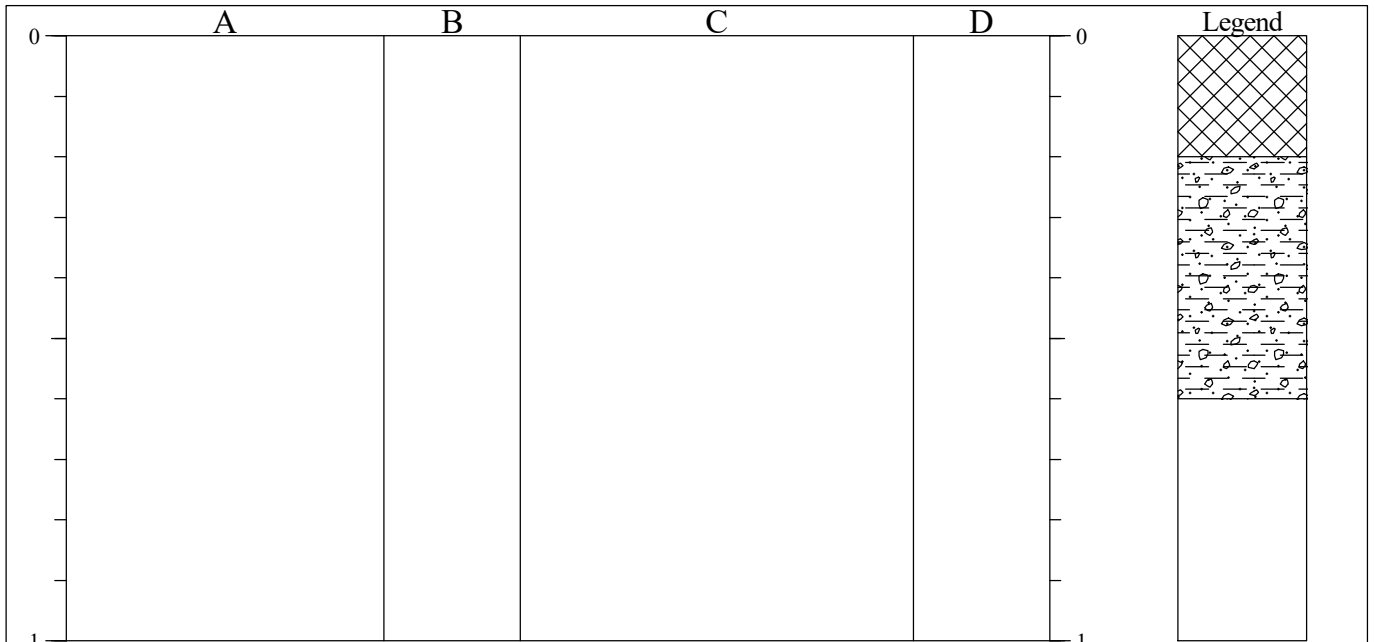
All dimensions in metres Scale 1:12.5	Client Richard James Homes Ltd	Method/ Plant Used Mechanically Excavated Trial Pit	Logged By SH
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AGS3_UK_TP_LOGS.GPJ AGS3_ALL_GDT_7/24/23



TRIAL PIT LOG

Project Lane End Farm				TRIAL PIT No TP03
Job No 23-616	Date 20-07-23	Ground Level (m)	Co-Ordinates ()	
Contractor Arc Environmental				Sheet 1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.20		Multi-coloured medium to coarse gravel with common brick fragments (MADE GROUND)	0.00-0.20	B	
0.20-0.60		Brown fine to coarse clayey sandy GRAVEL (GLACIOFLUVIAL DEPOSITS)	0.20-0.60	J/D	

Shoring/Support: Stability: 	GENERAL REMARKS Trial pit remained dry
--	--

All dimensions in metres Scale 1:12.5	Client Richard James Homes Ltd	Method/ Plant Used Mechanically Excavated Trial Pit	Logged By SH
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AGS3 UK TP TP LOGS.GPJ AGS3_ALL_GDT 7/24/23

Laboratory Results

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ANALYTICAL TEST REPORT

Contract no: 125296

Contract name: Richard James Homes Ltd

Client reference: 23-616

Clients name: ARC Environmental

Clients address: Solum House, Unit 1 Elliott Court
St Johns Road
Meadowfield
DH7 8PN

Samples received: 31 July 2023

Analysis started: 31 July 2023

Analysis completed: 11 August 2023

Report issued: 11 August 2023

Key

- U UKAS accredited test
- M MCERTS & UKAS accredited test
- \$ Test carried out by an approved subcontractor
- I/S Insufficient sample to carry out test
- N/S Sample not suitable for testing
- NAD No Asbestos Detected

Approved by:

Abbie Neasham-Bourn
Senior Reporting Administrator

Chemtech Environmental Limited

SAMPLE INFORMATION

MCERTS (Soils):

Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Lab ref	Sample id	Depth (m)	Sample description	Material removed	% Removed	% Moisture
125296-1	TP01	0.00-0.20	Sandy Clay with Gravel & Brick	-	-	9.4
125296-2	TP02	0.00-0.40	Sandy Clay with Gravel	-	-	10.9
125296-3	TP03	0.00-0.20	Sandy Clay with Gravel	-	-	16
125296-4	TP04	-	Loamy Sand with Gravel & Roots	-	-	13.4
125296-5	TP05	-	Loamy Sand with Gravel & Roots	-	-	16.6
125296-6	TP06	-	Loamy Sand with Gravel & Roots	-	-	19.3

Chemtech Environmental Limited

SOILS

Lab number			125296-1	125296-2	125296-3	125296-4	125296-5	125296-6
Sample id			TP01	TP02	TP03	TP04	TP05	TP06
Depth (m)			0.00-0.20	0.00-0.40	0.00-0.20	-	-	-
Date sampled			20/07/2023	20/07/2023	20/07/2023	20/07/2023	20/07/2023	20/07/2023
Test	Method	Units						
Moisture Content	CE001	% w/w	-	-	-	13.4	10.9	16.0
Arsenic (total)	CE127 ^M	mg/kg As	-	-	-	10	12	14
Cadmium (total)	CE127 ^M	mg/kg Cd	-	-	-	<2	<2	<2
Chromium (total)	CE127 ^M	mg/kg Cr	-	-	-	31	30	37
Chromium (III)	CE208	mg/kg CrIII	-	-	-	31	30	37
Chromium (VI)	CE263	mg/kg CrVI	-	-	-	<0.04	<0.04	<0.04
Copper (total)	CE127 ^M	mg/kg Cu	-	-	-	15	20	27
Lead (total)	CE127 ^M	mg/kg Pb	-	-	-	23	40	103
Mercury (total)	CE127 ^M	mg/kg Hg	-	-	-	<2	<2	<2
Nickel (total)	CE127 ^M	mg/kg Ni	-	-	-	18	21	24
Selenium (total)	CE127 ^M	mg/kg Se	-	-	-	<3	<3	<3
Zinc (total)	CE127 ^M	mg/kg Zn	-	-	-	88	100	129
pH	CE004 ^M	units	-	-	-	6.8	7.1	7.6
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	-	-	-	25	39	83
Cyanide (free)	CE077	mg/kg CN	-	-	-	<1	<1	<1
Total Organic Carbon (TOC)	CE197	% w/w C	-	-	-	1.4	2.4	3.6
PAH								
Acenaphthene	CE087 ^M	mg/kg	<0.02	<0.02	<0.02	<0.02	0.02	<0.02
Acenaphthylene	CE087 ^M	mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Anthracene	CE087 ^U	mg/kg	<0.02	0.03	<0.02	<0.02	0.03	0.02
Benzo(a)anthracene	CE087 ^U	mg/kg	0.02	0.11	<0.02	0.03	0.20	0.11
Benzo(a)pyrene	CE087 ^U	mg/kg	<0.02	0.10	<0.02	0.03	0.24	0.24
Benzo(b)fluoranthene	CE087 ^M	mg/kg	0.02	0.14	<0.02	0.04	0.42	0.25
Benzo(ghi)perylene	CE087 ^M	mg/kg	<0.02	0.07	<0.02	0.02	0.22	0.24
Benzo(k)fluoranthene	CE087 ^M	mg/kg	<0.03	0.04	<0.03	<0.03	0.15	0.09
Chrysene	CE087 ^M	mg/kg	<0.03	0.10	<0.03	<0.03	0.24	0.11
Dibenz(ah)anthracene	CE087 ^M	mg/kg	<0.02	<0.02	<0.02	<0.02	0.06	0.07
Fluoranthene	CE087 ^M	mg/kg	0.03	0.17	<0.02	0.04	0.33	0.16
Fluorene	CE087 ^U	mg/kg	<0.02	<0.02	<0.02	<0.02	0.02	<0.02
Naphthalene	CE087 ^M	mg/kg	<0.02	<0.02	<0.02	<0.02	0.13	0.03
Indeno(123cd)pyrene	CE087 ^M	mg/kg	<0.02	0.08	<0.02	0.03	0.23	0.28
Phenanthrene	CE087 ^M	mg/kg	<0.02	0.07	<0.02	0.02	0.20	0.06
Pyrene	CE087 ^M	mg/kg	0.02	0.19	<0.02	0.04	0.28	0.15
PAH (total of USEPA 16)	CE087	mg/kg	<0.34	1.10	<0.34	<0.34	2.77	1.81
BTEX & TPH								
Benzene	CE192 ^U	mg/kg	<0.01	<0.01	<0.01	-	-	-
Toluene	CE192 ^U	mg/kg	<0.01	<0.01	<0.01	-	-	-
Ethylbenzene	CE192 ^U	mg/kg	<0.01	<0.01	<0.01	-	-	-
m & p-Xylene	CE192 ^U	mg/kg	<0.02	<0.02	<0.02	-	-	-
o-Xylene	CE192 ^U	mg/kg	<0.01	<0.01	<0.01	-	-	-
VPH Aliphatic (>C5-C6)	CE067	mg/kg	<0.1	<0.1	<0.1	-	-	-

Chemtech Environmental Limited

SOILS

Lab number			125296-1	125296-2	125296-3	125296-4	125296-5	125296-6
Sample id			TP01	TP02	TP03	TP04	TP05	TP06
Depth (m)			0.00-0.20	0.00-0.40	0.00-0.20	-	-	-
Date sampled			20/07/2023	20/07/2023	20/07/2023	20/07/2023	20/07/2023	20/07/2023
Test	Method	Units						
VPH Aliphatic (>C6-C8)	CE067	mg/kg	<0.1	<0.1	<0.1	-	-	-
VPH Aliphatic (>C8-C10)	CE067	mg/kg	<0.1	<0.1	<0.1	-	-	-
EPH Aliphatic (>C10-C12)	CE250	mg/kg	<6	<6	<6	-	-	-
EPH Aliphatic (>C12-C16)	CE250	mg/kg	<6	<6	<6	-	-	-
EPH Aliphatic (>C16-C35)	CE250	mg/kg	<15	<15	<15	-	-	-
EPH Aliphatic (>C35-C44)	CE250	mg/kg	<10	<10	<10	-	-	-
VPH Aromatic (>EC5-EC7)	CE067	mg/kg	<0.01	<0.01	<0.01	-	-	-
VPH Aromatic (>EC7-EC8)	CE067	mg/kg	<0.01	<0.01	<0.01	-	-	-
VPH Aromatic (>EC8-EC10)	CE067	mg/kg	<0.01	<0.01	<0.01	-	-	-
EPH Aromatic (>EC10-EC12)	CE250	mg/kg	<10	<10	<10	-	-	-
EPH Aromatic (>EC12-EC16)	CE250	mg/kg	<10	<10	<10	-	-	-
EPH Aromatic (>EC16-EC21)	CE250	mg/kg	<1	<1	<1	-	-	-
EPH Aromatic (>EC21-EC35)	CE250	mg/kg	24	11	<1	-	-	-
EPH Aromatic (>EC35-EC44)	CE250	mg/kg	<1	<1	<1	-	-	-
Subcontracted analysis								
Asbestos (qualitative)	\$	-	-	-	-	NAD	NAD	Chrysotile

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE001	Moisture Content	Gravimetry	As received		0.1	% w/w
CE127	Arsenic (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg As
CE127	Cadmium (total)	Aqua regia digest, ICP-MS	Dry	M	0.2	mg/kg Cd
CE127	Chromium (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg Cr
CE208	Chromium (III)	Calculation: Cr (total) - Cr (VI)	Dry		1	mg/kg CrIII
CE263	Chromium (VI)	Acid extraction, Colorimetry	Dry		0.04	mg/kg CrVI
CE127	Copper (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg Cu
CE127	Lead (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg Pb
CE127	Mercury (total)	Aqua regia digest, ICP-MS	Dry	M	0.5	mg/kg Hg
CE127	Nickel (total)	Aqua regia digest, ICP-MS	Dry	M	1	mg/kg Ni
CE127	Selenium (total)	Aqua regia digest, ICP-MS	Dry	M	0.3	mg/kg Se
CE127	Zinc (total)	Aqua regia digest, ICP-MS	Dry	M	5	mg/kg Zn
CE004	pH	Based on BS 1377, pH Meter	As received	M	-	units
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	U	10	mg/l SO ₄
CE077	Cyanide (free)	Extraction, Continuous Flow Colorimetry	As received		1	mg/kg CN
CE197	Total Organic Carbon (TOC)	Carbon Analyser	Dry		0.1	% w/w C
CE087	Acenaphthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Acenaphthylene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Anthracene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Benzo(a)anthracene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Benzo(a)pyrene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Benzo(b)fluoranthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(ghi)perylene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(k)fluoranthene	Solvent extraction, GC-MS	As received	M	0.03	mg/kg
CE087	Chrysene	Solvent extraction, GC-MS	As received	M	0.03	mg/kg
CE087	Dibenz(ah)anthracene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Fluoranthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Fluorene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Indeno(123cd)pyrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Naphthalene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Phenanthrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Pyrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	PAH (total of USEPA 16)	Solvent extraction, GC-MS	As received		0.34	mg/kg
CE192	Benzene	Headspace GC-FID	As received	U	0.01	mg/kg
CE192	Toluene	Headspace GC-FID	As received	U	0.01	mg/kg
CE192	Ethylbenzene	Headspace GC-FID	As received	U	0.01	mg/kg
CE192	m & p-Xylene	Headspace GC-FID	As received	U	0.02	mg/kg
CE192	o-Xylene	Headspace GC-FID	As received	U	0.01	mg/kg
CE067	VPH Aliphatic (>C5-C6)	Headspace GC-FID	As received		0.1	mg/kg
CE067	VPH Aliphatic (>C6-C8)	Headspace GC-FID	As received		0.1	mg/kg
CE067	VPH Aliphatic (>C8-C10)	Headspace GC-FID	As received		0.1	mg/kg
CE250	EPH Aliphatic (>C10-C12)	Solvent extraction, GCxGC-FID	As received		6	mg/kg
CE250	EPH Aliphatic (>C12-C16)	Solvent extraction, GCxGC-FID	As received		6	mg/kg
CE250	EPH Aliphatic (>C16-C35)	Solvent extraction, GCxGC-FID	As received		15	mg/kg

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE250	EPH Aliphatic (>C35-C44)	Solvent extraction, GCxGC-FID	As received		10	mg/kg
CE067	VPH Aromatic (>EC5-EC7)	Headspace GC-FID	As received		0.01	mg/kg
CE067	VPH Aromatic (>EC7-EC8)	Headspace GC-FID	As received		0.01	mg/kg
CE067	VPH Aromatic (>EC8-EC10)	Headspace GC-FID	As received		0.01	mg/kg
CE250	EPH Aromatic (>EC10-EC12)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC12-EC16)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC16-EC21)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC21-EC35)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC35-EC44)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
\$	Asbestos (qualitative)	HSG 248, Microscopy	Dry	U	-	-

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DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.

Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
125296-1	TP01	0.00-0.20	N	
125296-2	TP02	0.00-0.40	N	
125296-3	TP03	0.00-0.20	N	
125296-4	TP04	-	N	
125296-5	TP05	-	N	
125296-6	TP06	-	N	

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ADDITIONAL INFORMATION

Notes

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

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

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

Samples will be disposed of 4 weeks from initial receipt unless otherwise instructed.

BTEX compounds are identified by retention time only and may include interference from co-eluting compounds.

All results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.

Analytical results are inclusive of stones, where applicable.