Our Ref: 16-136.08L

Arc Environmental Ltd
Solum House
Unit 1 Elliott Court
St Johns Road
Meadowfield
Durham
DH7 8PN

FAO Bill Bird
McCarthy & Stone Retirement Lifestyles Ltd
Aspen House
Wykeham Road
Northminster Business Park
York
YO26 6QW

7th December 2018

Dear Bill,

Re: Clean Cover Validation Report – 52, Harton Lane, South Shields, Tyne & Wear

As requested by McCarthy & Stone Retirement Lifestyles Ltd, a site visit was undertaken to check the suitability and thickness of imported clean cover materials at the above site, where a retirement apartment block has been constructed.

Full details of the locations of the trial pits, sample recovery and details of the findings can be found on the Clean Cover Validation Works Record Sheet attached. Representative samples of the imported clean cover materials were recovered from the completed soft landscaping areas in order to assess the suitability of these materials for use on site.

The following documents should be read in conjunction with this validation report.

- Arc Environmental Ltd - Phase 1: Desk Top Study Report (Ref. No. 16-136, March 2016)
- Arc Environmental Ltd - Phase 2: Ground Investigation Report (Ref. No. 16-136, July 2016)
- Arc Environmental Ltd - Hazardous Ground Gas Risk Assessment Addendum Report (Ref. No. 16-136, October 2017)
- Arc Environmental Ltd - Remediation Strategy & Interim Validation Report (Ref. No. 16-136, July 2018)

From the remediation strategy, the site was affected by several elevated contaminants (Arsenic, PAHs and VOCs / SVOCs and a 600mm clean cover system was recommended in all areas of soft landscaping to protect the future site end-users.

A volume of c.1900m^3 of material has been removed from site and a volume of c.460m^3 clean cover material imported to site. Examples of the waste transfer tickets and importation tickets are attached to this report.

We understand the source of the imported materials has purportedly been a “greenfield site” at Follingsby Park Hall in Tyne and Wear, with chemical screening of the soils provided to Arc Environmental for approval prior to importation. The results and declaration of compliance can be seen in the Chemtech Environmental Limited analytical test reports (report nos. 72252 and 73311) attached.

Re: Clean Cover Validation Report – 52, Harton Lane, South Shields, Tyne & Wear (Cont'd)

A representative from Arc Environmental Limited visited site on Friday 28th September 2018 in order to recover samples of emplaced materials from the completed soft landscaping areas, as detailed on the Clean Cover Validation Works Record Sheet attached. Four trial pits were excavated to recover soil samples, and a minimum 600mm clean cover was recorded. A further two samples were recovered from a stockpile of clean cover material awaiting emplacement.

Representative samples of the imported materials were collected from the trial pit locations and the stockpile for confirmatory laboratory analysis and were dispatched to Chemtech Environmental Limited. To ascertain the suitability of the materials used as part of the clean cover, the soils were screened for the following range of analytes;

- Arsenic, Cadmium, Chromium (III & VI), Copper, Lead, Mercury, Nickel, Selenium, Zinc, Sulphur, Cyanide and Total Organic Carbon.
- Speciated Polycyclic Aromatic Hydrocarbons (PAH's), based on the current USEPA 16 PAH's + Benzo(j)fluoranthene.
- Speciated Total Petroleum Hydrocarbons (TPH's – 8 Carbon Bands).
- Asbestos presence.

A summary of the results, based on the soil concentrations recorded can be seen in Table 1 below. The results can also be seen in the Chemtech Environmental Limited analytical test report (Report No. 74393) attached to this report. The results have been assessed against the most up to date and appropriate assessment criteria.

Table 1

Analyte	Critical Conc. (C_C) mg/kg	No. of Samples Screened	Max. Conc. (C_M) recorded (mg/kg)
Generic			
Arsenic	40(1)	6	3.7
Cadmium	85(1)	6	<0.2
Chromium III	3,000(1)	6	26
Chromium VI	6(1)	6	<1
Copper	7,100(1)	6	11
Lead	310(2)	6	28
Mercury	56(1)	6	<0.5
Nickel	180(1)	6	8.4
Selenium	430(1)	6	0.3
Zinc	40,000(1)	6	36
Cyanide	34(3)	6	<1
Asbestos	Presence	6	NAD
Speciated PAH's			
Acenaphthene	6,000(1)	6	<0.01
Acenaphthylene	6,000(1)	6	<0.01
Anthracene	37,000(1)	6	0.03
Benzo(a)anthracene	15(1)	6	0.09
Benzo(a)pyrene	3.2(1)	6	0.09
Benzo(b)fluoranthene	4(1)	6	0.14
Benzo(ghi)perylene	360(1)	6	0.07
Benzo(k)fluoranthene	110(1)	6	0.05
Chrysene	32(1)	6	0.13

Table 1 (cont'd)

Speciated PAH's	Critical Conc. (C_C) mg/kg	No. of Samples Screened	Max. Conc. (C_M) recorded (mg/kg)
Dibenz(ah)anthracene	0.32[(1)]	6	<0.02
Fluoranthene	1,600[(1)]	6	0.19
Fluorene	4,500[(1)]	6	0.01
Indeno(123cd)pyrene	46[(1)]	6	0.08
Naphthalene	13[(1)]	6	0.03
Phenanthrene	1,500[(1)]	6	0.16
Pyrene	3,800[(1)]	6	0.16
Speciated TPH's			
VPH (>C5-C7)	78	6	<0.10
VPH (>C7-C8)	230	6	<0.10
VPH (>C8-C10)	65	6	<0.10
EPH (>C10-C12)	330	6	<4
EPH (>C12-C16)	2300	6	<4
EPH (>C16-C21)	1900	6	7
EPH (>C21-C35)	1900	6	68
EPH (>C35-C44)	1900	6	13

[(1)] = The LQM / CIEH Suitable 4 Use Levels – Residential without home-grown produce based on 6.0% SOM, [(2)] = CL:AIRE Category 4 Screening Levels – Residential without home-grown produce, [(3)] = ATRISK[SOIL] Soil Screening Values (2015).

The ground contamination screening has identified that none of the maximum concentration (C_M) values for the contaminants displayed in Table 1 exceed the critical concentration (C_C) values associated with the current designated end-use of Residential without home-grown produce. It has therefore been determined that the soils which have been imported to the site and used within the areas of soft landscaping are appropriate for use.

A minimum thickness of 600mm was recorded within the areas completed and a void of 600mm was identified where the soils were yet to be emplaced.

From the validation works undertaken it is the opinion of Arc Environmental Limited that the clean cover provided meets the requirements of the remediation strategy and is suitable for use.

We trust the contents of this report are to your satisfaction, and if you require any further information or clarification, please do not hesitate to contact us.

Yours Sincerely

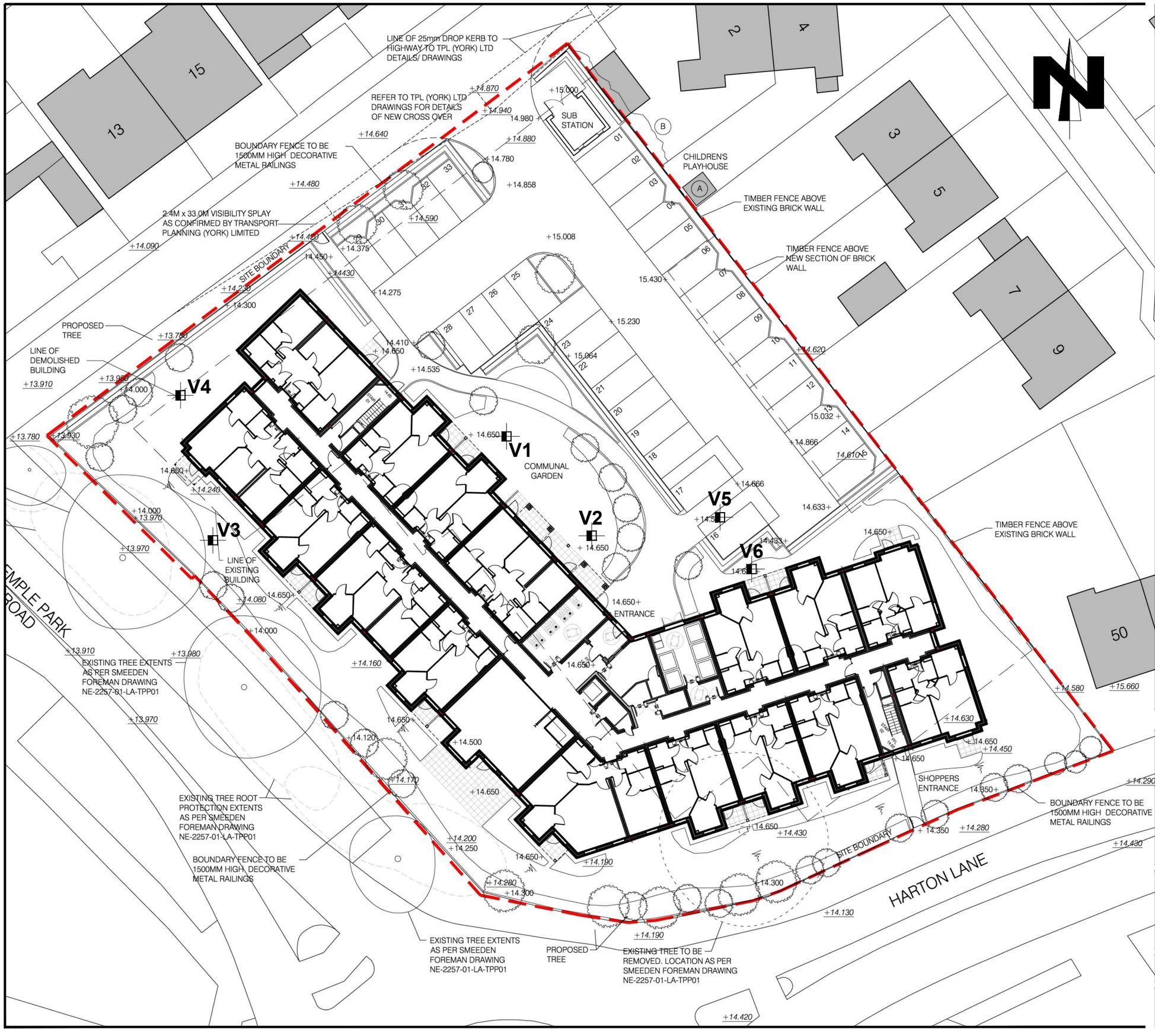
[redacted]

……

For and on behalf of Arc Environmental Ltd
Geoff Heron
Senior Field Technician

Clean Cover Validation Works Record Sheet

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LEGEND	
	APPROXIMATE SITE BOUNDARY
	CLEAN COVER VALIDATION TRIAL PIT

rev.	date	amendments	drawn	chckd

Client:
McCARTHY & STONE (RETIREMENT LIFESTYLES LTD)

Project Title:
Proposed CAT II Accommodation
Harton Centre, 52 Harton Lane
South Shields, Tyne & Wear, NE34 0EE

Drawing Title:
Clean Cover Validation Plan

Scale at A3:	Date:	Drawn by:	Approved by:
NTS @ A3	08.10.18	P.D	G.H

Job Ref:	Drg no:	Rev:
16-136	–	–









































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rev.	date	amendments	drawn	chckd

Client:
McCARTHY & STONE (RETIREMENT LIFESTYLES LTD)

Project Title:
Proposed CAT II Accommodation
Harton Centre, 52 Harton Lane
South Shields, Tyne & Wear, NE34 0EE

Drawing Title:
Clean Cover Photographic Record Sheet

Scale at A3:	Date:	Drawn by:	Approved by:
NTS @ A3	08.10.18	P.D	G.H

Job Ref:	Drg no:	Rev:
16-136	–	–

Laboratory Contamination Results

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Registered in England No. 05539784

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ANALYTICAL TEST REPORT

Contract no: 74393

Contract name: Harton Lane, South Shields

Client reference: 16-136

Clients name: ARC Environmental

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

Samples received: 28 September 2018

Analysis started: 28 September 2018

Analysis completed: 05 October 2018

Report issued: 05 October 2018

Notes:
Opinions and interpretations expressed herein are outside the UKAS accreditation scope.
Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.
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 6 weeks from initial receipt unless otherwise instructed.

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: [redacted]

Karan Campbell
Director

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.

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.

Lab ref	Sample id	Depth (m)	Sample description	Material removed	% Removed	% Moisture
74393-1	V1	0.00-0.60	Loamy Clayey Sand	-	-	14.9
74393-2	V2	0.00-0.60	Loamy Clayey Sand	-	-	15.7
74393-3	V3	0.00-0.60	Clayey Sand with Gravel	-	-	16.3
74393-4	V4	0.00-0.60	Clayey Sand with Gravel	-	-	18.3
74393-5	V5	Stockpile	Loamy Clayey Sand	-	-	18.4
74393-6	V6	Stockpile	Clayey Sand	-	-	17.3

Chemtech Environmental Limited

SOILS

Lab number			74393-1	74393-2	74393-3	74393-4	74393-5	74393-6
Sample id			V1	V2	V3	V4	V5	V6
Depth (m)			0.00-0.60	0.00-0.60	0.00-0.60	0.00-0.60	Stockpile	Stockpile
Date sampled			28/09/2018	28/09/2018	28/09/2018	28/09/2018	28/09/2018	28/09/2018
Test	**Method**	**Units**						
Arsenic (total)	CE127 M	mg/kg As	3.7	1.5	1.2	<1	<1	2.1
Cadmium (total)	CE127 M	mg/kg Cd	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium (total)	CE127 M	mg/kg Cr	26	14	10	4.4	7.1	15
Chromium (III)	-	mg/kg CrIII	26	14	10	4.4	7.1	15
Chromium (VI)	CE146	mg/kg CrVI	<1	<1	<1	<1	<1	<1
Copper (total)	CE127 M	mg/kg Cu	11	7.1	5.9	6.7	5.5	7.1
Lead (total)	CE127 M	mg/kg Pb	28	17	15	20	20	22
Mercury (total)	CE127 M	mg/kg Hg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel (total)	CE127 M	mg/kg Ni	8.4	5.5	4.3	4.3	4.2	5.8
Selenium (total)	CE127 M	mg/kg Se	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Zinc (total)	CE127 M	mg/kg Zn	36	21	19	31	22	24
pH	CE004 M	units	7.0	7.2	7.3	7.4	7.4	7.4
Sulphate (2:1 water soluble)	CE061 M	mg/l SO_4	46	37	28	71	37	49
Cyanide (free)	CE077	mg/kg CN	<1	<1	<1	<1	<1	<1
Total Organic Carbon (TOC)	CE072 M	% w/w C	2.84	2.65	3.28	5.03	2.87	3.00
PAH								
Acenaphthene	CE087 M	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	CE087 M	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Anthracene	CE087 U	mg/kg	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)anthracene	CE087 U	mg/kg	0.09	0.05	0.06	0.05	0.04	0.06
Benzo(a)pyrene	CE087 U	mg/kg	0.09	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(b)fluoranthene	CE087 M	mg/kg	0.14	0.08	0.08	0.06	0.06	0.06
Benzo(ghi)perylene	CE087 M	mg/kg	0.07	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(k)fluoranthene	CE087 M	mg/kg	0.05	<0.02	<0.02	<0.02	<0.02	<0.02
Chrysene	CE087 M	mg/kg	0.13	0.06	0.07	0.04	0.07	0.05
Dibenz(ah)anthracene	CE087 M	mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	CE087 M	mg/kg	0.19	0.10	0.11	0.08	0.10	0.10
Fluorene	CE087 U	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Indeno(123cd)pyrene	CE087 M	mg/kg	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
Naphthalene	CE087 M	mg/kg	0.03	0.03	0.03	<0.01	<0.01	0.03
Phenanthrene	CE087 M	mg/kg	0.16	0.10	0.11	0.07	0.09	0.08
Pyrene	CE087 M	mg/kg	0.16	0.08	0.11	0.07	0.08	0.09
PAH (total of USEPA 16)	CE087	mg/kg	1.22	0.50	0.57	0.38	0.44	0.47
Benzo(j)fluoranthene	CE087	mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PAH (total of OIL 8)	CE087	mg/kg	0.57	0.19	0.21	0.16	0.17	0.17

Chemtech Environmental Limited

SOILS

Lab number			74393-1	74393-2	74393-3	74393-4	74393-5	74393-6
Sample id			V1	V2	V3	V4	V5	V6
Depth (m)			0.00-0.60	0.00-0.60	0.00-0.60	0.00-0.60	Stockpile	Stockpile
Date sampled			28/09/2018	28/09/2018	28/09/2018	28/09/2018	28/09/2018	28/09/2018
Test	**Method**	**Units**						
TPH								
VPH (>C5-C7)	CE067	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
VPH (>C7-C8)	CE067	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
VPH (>C8-C10)	CE067	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
EPH (>C10-C12)	CE033 [M]	mg/kg	<4	<4	<4	<4	<4	<4
EPH (>C12-C16)	CE033 [M]	mg/kg	<4	<4	<4	<4	<4	<4
EPH (>C16-C21)	CE033 [M]	mg/kg	5	6	5	4	7	5
EPH (>C21-C35)	CE033 [M]	mg/kg	29	29	28	19	68	28
EPH (>C35-C44)	CE033 [M]	mg/kg	11	<10	<10	<10	13	<10
Subcontracted analysis								
Asbestos (qualitative)	$	-	NAD	NAD	NAD	NAD	NAD	NAD

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
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
-	Chromium (III)	Calculation: Cr (total) - Cr (VI)	Dry		1	mg/kg CrIII
CE146	Chromium (VI)	Acid extraction, Colorimetry	Dry		1	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	Wet	M	-	units
CE159	Sulphate (2:1 water soluble)	Rapid method, aqueous extraction, ICP-OES	Dry		10	mg/l SO_4
CE077	Cyanide (free)	Extraction, Continuous Flow Colorimetry	Wet		1	mg/kg CN
CE072	Total Organic Carbon (TOC)	Removal of IC by acidification, Carbon Analyser	Dry	M	0.1	% w/w C
CE087	Acenaphthene	Solvent extraction, GC-MS	Wet	M	0.01	mg/kg
CE087	Acenaphthylene	Solvent extraction, GC-MS	Wet	M	0.01	mg/kg
CE087	Anthracene	Solvent extraction, GC-MS	Wet	U	0.02	mg/kg
CE087	Benzo(a)anthracene	Solvent extraction, GC-MS	Wet	U	0.02	mg/kg
CE087	Benzo(a)pyrene	Solvent extraction, GC-MS	Wet	U	0.02	mg/kg
CE087	Benzo(b)fluoranthene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Benzo(ghi)perylene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Benzo(k)fluoranthene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Chrysene	Solvent extraction, GC-MS	Wet	M	0.01	mg/kg
CE087	Dibenz(ah)anthracene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Fluoranthene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Fluorene	Solvent extraction, GC-MS	Wet	U	0.01	mg/kg
CE087	Indeno(123cd)pyrene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Naphthalene	Solvent extraction, GC-MS	Wet	M	0.01	mg/kg
CE087	Phenanthrene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Pyrene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	PAH (total of USEPA 16)	Solvent extraction, GC-MS	Wet		0.27	mg/kg
CE087	Benzo(j)fluoranthene	Solvent extraction, GC-MS	Wet		0.02	mg/kg
CE087	PAH (total of OIL 8)	Solvent extraction, GC-MS	Wet		0.15	mg/kg
CE067	VPH (>C5-C7)	Headspace GC-FID	Wet		0.1	mg/kg
CE067	VPH (>C7-C8)	Headspace GC-FID	Wet		0.1	mg/kg
CE067	VPH (>C8-C10)	Headspace GC-FID	Wet		0.1	mg/kg
CE033	EPH (>C10-C12)	Solvent extraction, GC-FID	Wet	M	4	mg/kg
CE033	EPH (>C12-C16)	Solvent extraction, GC-FID	Wet	M	4	mg/kg
CE033	EPH (>C16-C21)	Solvent extraction, GC-FID	Wet	M	4	mg/kg
CE033	EPH (>C21-C35)	Solvent extraction, GC-FID	Wet	M	6	mg/kg
CE033	EPH (>C35-C44)	Solvent extraction, GC-FID	Wet	M	10	mg/kg
$	Asbestos (qualitative)	HSG 248, Microscopy	Dry	U	-	-

Chemtech Environmental Limited

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)
74393-1	V1	0.00-0.60	N	
74393-2	V2	0.00-0.60	N	
74393-3	V3	0.00-0.60	N	
74393-4	V4	0.00-0.60	N	
74393-5	V5	Stockpile	N	
74393-6	V6	Stockpile	N	

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ANALYTICAL TEST REPORT

Contract no: 72252

Contract name: Follingsby Park

Client reference: -

Clients name: Burn Haulage (Contracts)

Clients address: Fallowfield Terrace
South Hetton
County Durham
DH6 2SQ

Samples received: 07 June 2018

Analysis started: 07 June 2018

Analysis completed: 14 June 2018

Report issued: 14 June 2018

Notes:
Opinions and interpretations expressed herein are outside the UKAS accreditation scope.
Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.
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 6 weeks from initial receipt unless otherwise instructed.

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

Approved by: [redacted]

Dave Bowerbank
Customer Services Co-ordinator

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.

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.

Lab ref	Sample id	Depth (m)	Sample description	Material removed	% Removed	% Moisture
72252-1	Sample 1	-	Clayey Sand with Roots	-	-	14.3

Chemtech Environmental Limited

SOILS

Lab number			72252-1
Sample id			Sample 1
Depth (m)			-
Date sampled			07/06/2018
Test	**Method**	**Units**	
Arsenic (total)	CE127 M	mg/kg As	8.3
Cadmium (total)	CE127 M	mg/kg Cd	0.3
Chromium (total)	CE127 M	mg/kg Cr	70
Chromium (III)	-	mg/kg CrIII	70
Chromium (VI)	CE146	mg/kg CrVI	<1
Copper (total)	CE127 M	mg/kg Cu	28
Lead (total)	CE127 M	mg/kg Pb	63
Mercury (total)	CE127 M	mg/kg Hg	<0.5
Nickel (total)	CE127 M	mg/kg Ni	17
Selenium (total)	CE127 M	mg/kg Se	1.0
Zinc (total)	CE127 M	mg/kg Zn	73
pH	CE004 M	units	7.4
Sulphate (2:1 water soluble)	CE061 M	mg/l SO_4	1576
Cyanide (free)	CE077	mg/kg CN	<1
Total Organic Carbon (TOC)	CE072 M	% w/w C	3.53
PAH			
Naphthalene	CE087 M	mg/kg	0.03
Acenaphthylene	CE087 M	mg/kg	<0.01
Acenaphthene	CE087 M	mg/kg	<0.01
Fluorene	CE087 U	mg/kg	<0.01
Phenanthrene	CE087 M	mg/kg	0.10
Anthracene	CE087 U	mg/kg	<0.02
Fluoranthene	CE087 M	mg/kg	0.17
Pyrene	CE087 M	mg/kg	0.14
Benzo(a)anthracene	CE087 U	mg/kg	0.08
Chrysene	CE087 M	mg/kg	0.11
Benzo(b)fluoranthene	CE087 M	mg/kg	0.13
Benzo(k)fluoranthene	CE087 M	mg/kg	0.05
Benzo(a)pyrene	CE087 U	mg/kg	0.06
Indeno(123cd)pyrene	CE087 M	mg/kg	0.06
Dibenz(ah)anthracene	CE087 M	mg/kg	<0.02
Benzo(ghi)perylene	CE087 M	mg/kg	0.06
PAH (total of USEPA 16)	CE087	mg/kg	0.98
BTEX & TPH			
Benzene	CE057 U	mg/kg	<0.01
EPH (>C10-C40)	CE033 M	mg/kg	110

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
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
-	Chromium (III)	Calculation: Cr (total) - Cr (VI)	Dry		1	mg/kg CrIII
CE146	Chromium (VI)	Acid extraction, Colorimetry	Dry		1	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	Wet	M	-	units
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	M	10	mg/l SO_4
CE077	Cyanide (free)	Extraction, Continuous Flow Colorimetry	Wet		1	mg/kg CN
CE072	Total Organic Carbon (TOC)	Removal of IC by acidification, Carbon Analyser	Dry	M	0.1	% w/w C
CE087	Naphthalene	Solvent extraction, GC-MS	Wet	M	0.01	mg/kg
CE087	Acenaphthylene	Solvent extraction, GC-MS	Wet	M	0.01	mg/kg
CE087	Acenaphthene	Solvent extraction, GC-MS	Wet	M	0.01	mg/kg
CE087	Fluorene	Solvent extraction, GC-MS	Wet	U	0.01	mg/kg
CE087	Phenanthrene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Anthracene	Solvent extraction, GC-MS	Wet	U	0.02	mg/kg
CE087	Fluoranthene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Pyrene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Benzo(a)anthracene	Solvent extraction, GC-MS	Wet	U	0.02	mg/kg
CE087	Chrysene	Solvent extraction, GC-MS	Wet	M	0.01	mg/kg
CE087	Benzo(b)fluoranthene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Benzo(k)fluoranthene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Benzo(a)pyrene	Solvent extraction, GC-MS	Wet	U	0.02	mg/kg
CE087	Indeno(123cd)pyrene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Dibenz(ah)anthracene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Benzo(ghi)perylene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	PAH (total of USEPA 16)	Solvent extraction, GC-MS	Wet		0.27	mg/kg
CE057	Benzene	Headspace GC-FID	Wet	U	0.01	mg/kg
CE033	EPH (>C10-C40)	Solvent extraction, GC-FID	Wet	M	10	mg/kg

Chemtech Environmental Limited

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)
IT	Sample not cooled
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
72252-1	Sample 1	-	N	

DECLARATION OF COMPLIANCE (BS3882:2015)

CHEMTECH environmental

Lab ref	72252-1	**Date received**	07 June 2018
Soil source	Follingsby Park Sample 1	**Analysis started**	07 June 2018
OS Grid reference	Not supplied	**Analysis completed**	14 June 2018
Date sampled	07 June 2018	**Report issued**	14 June 2018

Test	Units	Result	Compliant with Multipurpose? (Y/N)	Compliant with specific purpose? (Y/N)				
				Acidic	Calcareous	Low Fertility	Low F Acidic	Low F Calcareous
Texture								
Clay content	% w/w	28	Y	Y	Y	Y	Y	Y
Silt content	% w/w	38	Y	Y	Y	Y	Y	Y
Sand content	% w/w	34	Y	Y	Y	Y	Y	Y
Soil texture	**class**	**Clay Loam**						
Stone content								
>2mm	% w/w	3	Y	Y	Y	Y	Y	Y
>20mm	% w/w	0	Y	Y	Y	Y	Y	Y
>50mm	% w/w	0	Y	Y	Y	Y	Y	Y
Mass loss on ignition								
Clay 5-20%	% w/w	-	-	-	-	-	-	-
Clay 20-35%	% w/w	13.02	Y	Y	Y	Y	Y	Y
pH	pH units	7.43	Y	N	N	Y	N	N
Carbonate (calcareous only)	% w/w	0.5			N			N
Nitrogen (total)	% w/w N	0.22	Y	Y	Y			
Carbon:Nitrogen ratio	-	15.6	Y	Y	Y	Y	Y	Y
Phosphorus (extractable)	mg/l P	42	Y	Y	Y	N	N	N
Potassium (extractable)	mg/l K	264	Y	Y	Y	Y	Y	Y
Magnesium (extractable)	mg/l Mg	366	Y	Y	Y	Y	Y	Y
Electrical conductivity	µS/cm	252	Y					
Phytotoxic contaminants (by soil pH)								
Copper (Nitric acid extract)	mg/kg Cu	25	Y	Y	Y	Y	Y	Y
Nickel (Nitric acid extract)	mg/kg Ni	16	Y	Y	Y	Y	Y	Y
Zinc (Nitric acid extract)	mg/kg Zn	65	Y	Y	Y	Y	Y	Y
VISIBLE CONTAMINANTS								
(air-dried soil)	% w/w	0	Y	Y	Y	Y	Y	Y
...of which plastics	% w/w	0	Y	Y	Y	Y	Y	Y
Sharps	% w/w	0	Y	Y	Y	Y	Y	Y

DECLARATION

I certify that this sample has been analysed in accordance with BS3882:2015.

Signature [redacted]

Name Dave Bowerbank

Position Customer Services Co-ordinator

Unit 6 Parkhead, Greencroft Industrial Park, Stanley, County Durham, DH9 7YB
Tel 01207 528578 Fax 01207 529977 Email info@chemtech-env.co.uk
Vat Reg No. 772 5703 18 Registered in England number 4284013

2531

ANALYTICAL TEST REPORT

Contract no:	73311
Contract name:	Ambleside Avenue, South Shields
Client reference:	-
Clients name:	Anwen Construction
Clients address:	12B Eldon Road Aycliffe Industrial Estate Newton Aycliffe DL5 6UL
Samples received:	27 July 2018
Analysis started:	27 July 2018
Analysis completed	03 August 2018
Report issued:	03 August 2018

Notes:

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.
Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.
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 6 weeks from initial receipt unless otherwise instructed.

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:

[redacted]

James Spittle
Customer Services Team Leader

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.

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.

Lab ref	Sample id	Depth (m)	Sample description	Material removed	% Removed	% Moisture
73311-1	1	-	Clayey Sand with Gravel	-	-	13.6

Chemtech Environmental Limited

SOILS

Lab number			73311-1
Sample id			1
Depth (m)			-
Date sampled			27/07/2018
Test	Method	Units	
Arsenic (total)	CE127 M	mg/kg As	4.3
Cadmium (total)	CE127 M	mg/kg Cd	<0.2
Chromium (total)	CE127 M	mg/kg Cr	58
Copper (total)	CE127 M	mg/kg Cu	13
Lead (total)	CE127 M	mg/kg Pb	36
Mercury (total)	CE127 M	mg/kg Hg	<0.5
Nickel (total)	CE127 M	mg/kg Ni	13
Selenium (total)	CE127 M	mg/kg Se	0.5
Zinc (total)	CE127 M	mg/kg Zn	60
PAH			
Naphthalene	CE087 M	mg/kg	0.06
Acenaphthylene	CE087 M	mg/kg	<0.01
Acenaphthene	CE087 M	mg/kg	<0.01
Fluorene	CE087 U	mg/kg	<0.01
Phenanthrene	CE087 M	mg/kg	0.15
Anthracene	CE087 U	mg/kg	0.03
Fluoranthene	CE087 M	mg/kg	0.14
Pyrene	CE087 M	mg/kg	0.13
Benzo(a)anthracene	CE087 U	mg/kg	0.05
Chrysene	CE087 M	mg/kg	0.11
Benzo(b)fluoranthene	CE087 M	mg/kg	0.11
Benzo(k)fluoranthene	CE087 M	mg/kg	0.05
Benzo(a)pyrene	CE087 U	mg/kg	0.08
Indeno(123cd)pyrene	CE087 M	mg/kg	0.06
Dibenz(ah)anthracene	CE087 M	mg/kg	<0.02
Benzo(ghi)perylene	CE087 M	mg/kg	0.05
PAH (total of USEPA 16)	CE087	mg/kg	1.00
TPH			
EPH (>C10-C40)	CE033 M	mg/kg	50
Subcontracted analysis			
Asbestos (qualitative)	$	-	NAD

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
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
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
CE087	Naphthalene	Solvent extraction, GC-MS	Wet	M	0.01	mg/kg
CE087	Acenaphthylene	Solvent extraction, GC-MS	Wet	M	0.01	mg/kg
CE087	Acenaphthene	Solvent extraction, GC-MS	Wet	M	0.01	mg/kg
CE087	Fluorene	Solvent extraction, GC-MS	Wet	U	0.01	mg/kg
CE087	Phenanthrene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Anthracene	Solvent extraction, GC-MS	Wet	U	0.02	mg/kg
CE087	Fluoranthene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Pyrene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Benzo(a)anthracene	Solvent extraction, GC-MS	Wet	U	0.02	mg/kg
CE087	Chrysene	Solvent extraction, GC-MS	Wet	M	0.01	mg/kg
CE087	Benzo(b)fluoranthene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Benzo(k)fluoranthene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Benzo(a)pyrene	Solvent extraction, GC-MS	Wet	U	0.02	mg/kg
CE087	Indeno(123cd)pyrene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Dibenz(ah)anthracene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	Benzo(ghi)perylene	Solvent extraction, GC-MS	Wet	M	0.02	mg/kg
CE087	PAH (total of USEPA 16)	Solvent extraction, GC-MS	Wet		0.27	mg/kg
CE033	EPH (>C10-C40)	Solvent extraction, GC-FID	Wet	M	10	mg/kg
$	Asbestos (qualitative)	HSG 248, Microscopy	Dry	U	-	-

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

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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)
73311-1	1	-	N	

Waste Transfer and Importation Tickets

T: 0191 378 6380
E: admin@arc-environmental.com
W: www.arc-environmental.com
Registered in England No. 05539784

Hewitson Haulage Ltd

Teesside Grange, Eaglescliffe,
Stockton-On-Tees, TS16 0QH
Tel: 01642 786 969 Fax: 01642 786 323
Registered Waste Carriers Licence No CBDU207458



Ticket No: 037116

Name:	Spot-o
Vehicle Reg	[illegible]
Date:	23.2.18

DUTY OF CARE - WASTE TRANSFER NOTE

Customer:	ANWICK			
Site Address:	SOUTH SHIELDS			
Time Work	Start:	Dinner:	Finish:	Travel:
Standing Time:				

Business Category (SIC Code)	✓		✓
Construction - Commercial Buildings - 41-20/1		Construction - Domestic Buildings - 41-20/2	
Demolition (includes soft strip) - 43-11/0		Site Preparation - Excavation - 43-12/0	✓

Material Description	**EWC Code**	✓	**No. Of Loads**
Inert Soils	170504		
Non Hazardous Soils	170504	✓	
Hazardous Soils	170503		
Concrete	170301		
Tarmac	170302		

Waste Disposal Site	**Code**	✓	
MERIDIAN COUPON		✓	1 X 8W load

Materials Delivered			
Recycled Type 1:	Recycled 6F5:	Topsoil:	Type 1 G.S.B.:
10mm Clean:	20mm Clean:	6F5 Capping:	
Other:		Sand (Type):	
Materials Collected From:			

I confirm I have fulfilled my duty to apply the waste hierarchy as required by regulations 12 of the waste (England & Wales) regulations 2011.

Customer / Producer Signature:	[redacted]	Print Name	[redacted]
Driver / Carrier Signature:	[redacted]	Print Name	[redacted]
Disposer Signature:		Print Name	

All hires subject to FTA conditions.

HIGHFIELD ENVIRONMENTAL

HIGHFIELD ENVIRONMENTAL LIMITED

COMPLETED WEIGHING TICKET/DUTY OF CARE TRANSFER NOTE

Waste/Account Incoming

Wynyard Park House
Wynyard Avenue
Billingham
Stockton on Tees
TS22 5TB

Facility
Cowpen Bewley Landfill Site
Highfield Environmental Ltd
Cowpen Bewley
Billingham
Stockton On Tees TS23 4HS
Tel Nbr: 07931390270 Fax:
Permit Nbr: EA/EPR/RP3531DV

Customer Details HEW004
Hewitson Haulage Limited
Teesside Grange
Eaglescliffe
Stockton on Tees
Cleveland

Ticket Number: 20124185 **Trans Date:** 23/02/2018
Consignment Ref:
Order Nbr:

Vehicle Reg NX16LUH **F/N:**

Vehicle Type 8 Wheel Bulk Tipper

Site Addr HARTON LANE

Quote Nbr 220000059

Haulier: Hewitsons Ltd

Origin/Destination South Tyneside

Waste Carriers Licence Nbr: CBDU207485

EWC Code 17 05 04

Issuing Authority & Expiry Date Sheffield 01/12/2020

Product Description Sub-Soil

WEIGHTS		DATE	TIME	TALLY No
32360 kg	GROSS	23/02/2018	14:28	1
13500 kg	TARE	21/02/2018	09:26	1
18860 kg	NETT			
0	QUANTITY			

Notes

Operators Name Gordon Davies **OPERATOR'S SIGNATURE** [redacted]

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by regulation 12 of the Waste (England and Wales) Regulations 2011

DRIVER'S INITIALS AND SURNAME

DRIVER'S SIGNATURE

SUBJECT TO HIGHFIELD ENVIRONMENTAL LIMITED TERMS & CONDITIONS OF BUSINESS AS SHOWN OVERLEAF
REGISTERED IN ENGLAND AND WALES No. 10438194
VAT Reg Nbr: 253 6449 91

A record of the weights used for this transaction is available for six months

Burn Haulage (Contracts) Ltd. № 009224

Haulage Contractor

Burn Haulage (Contracts) Ltd, Fallowfield Yard, South Hetton, Durham DH6 2SQ

TOP SOIL • STONE • SITE CLEARANCE

Office: 0191 517 0917 Stan: 07720 078 077
Email: burnhaulage@outlook.com

Vehicle Registration	Driver	Date
MX05 NOH	J HARVEY	27. 9. 18

Customer Name: ANWEN	Order No.: ANC 872/4351/756/76[illegible]
Timework	Material: TOP SOIL
- =	Gross (Tonnes):
- =	Tare (Tonnes):
Hours Travel =	Net (Tonnes): 20 100
Total Hours =	Collect From: FOLLINGSBY PARK HALE
No. of Loads =	
Additional Information:	Delivery Address: HARTON LANE SO. SHIELDS

The above quantity of material has been received in good condition.

Print Name [redacted]

Signature [redacted]

The materials have been tipped accordingly to customer instructions and any damage caused by the vehicle off the highway is entirely the responsibility of the customer.
V.A.T. Registration No: 496027622 Waste Carriers Licence No: CBDU94713

White = Office Yellow = Office Pink = Customer

Burn Haulage (Contracts) Ltd. № 009269

Haulage Contractor

Burn Haulage (Contracts) Ltd, Fallowfield Yard, South Hetton, Durham DH6 2SQ

TOP SOIL • STONE • SITE CLEARANCE

Office: 0191 517 0917 Stan: 07720 078 077
Email: burnhaulage@outlook.com

Vehicle Registration	Driver	Date
PE56 ZNS	MATHEW	28/9/18

Customer Name: ANWEN	Order No.:
Timework	Material: TOP SOIL
- =	Gross (Tonnes): 1X8W
- =	Tare (Tonnes):
Hours Travel =	Net (Tonnes): 19-900
Total Hours =	Collect From: FOLL
No. of Loads =	
Additional Information:	Delivery Address: HARTON LANE S/SHIELDS

The above quantity of material has been received in good condition.

Print Name [redacted]

Signature [redacted]

The materials have been tipped accordingly to customer instructions and any damage caused by the vehicle off the highway is entirely the responsibility of the customer.
V.A.T. Registration No: 496027622 Waste Carriers Licence No: CBDU94713

White = Office Yellow = Office Pink = Customer